

GLI GLOBAL LIVER INSTITUTE™

LIVER HEALTH IS PUBLIC HEALTH

GLOBAL STATE OF LIVER HEALTH

TABLE OF CONTENTS

LETTER FROM GLI CEO, LARRY R. HOLDEN 1

INTRODUCTION 2

AFRICA 3
- Health Overview 3
- Liver Health Overview 4
- Cameroon 5
- Egypt 8
- Ethiopia 12
- Ghana 16
- Kenya 21
- Morocco 24
- Nigeria 28
- Rwanda 31
- South Africa 34
- Uganda 38

ASIA 42
- Health Overview 42
- Liver Health Overview 43
- China 44
- India 49
- Indonesia 53
- Japan 57
- Pakistan 62
- Philippines 66
- Singapore 69
- South Korea 72
- Thailand 75
- Vietnam 80

EUROPE 86
- Health Overview 86
- Liver Health Overview 87
- Belgium 88
- Bulgaria 92
- Czech Republic 95
- Denmark 99
- France 103
- Germany 107
- Ireland 112
- Italy 117
- Netherlands 121
- Poland 125
- Romania 130
- Spain 136
- United Kingdom 140

LATIN AMERICA 144
Health Overview 144
Liver Health Overview 145
Argentina 146
Brazil 149
Chile 152
Colombia 156
Mexico 160
Peru 164

MIDDLE EAST 167
Health Overview 167
Liver Health Overview 168
Iraq 169
Jordan 173
Lebanon 177
Qatar 180
Saudi Arabia 184
Türkiye 189
United Arab Emirates 193

NORTH AMERICA 197
Health Overview 197
Canada 198
United States of America 202

OCEANIA 207
Health Overview 207
Liver Health Overview 208
Australia 209
New Zealand 213

CONCLUSION 217

Call to Action 218

ACKNOWLEDGEMENTS 219

REFERENCES 220

A Note on Nomenclature

Following the publication of "A multisociety Delphi consensus statement on new fatty liver disease nomenclature" in 2023 by the American Association for the Study of Liver Diseases (AASLD) and the European Association for the Study of the Liver (EASL) in collaboration with the Asociación Latinoamericana para el Estudio del Hígado (ALEH), terminology has shifted in some regions to MASLD, while leading medical societies throughout the world continue to use both "NAFLD" and "MAFLD." Out of respect for the ongoing, global scientific discussion, this report defers to the terminology in use by the regional medical society at the time of publication. Additionally, interviews with experts have been conducted since 2022, and this report preserves terminology in use at the time of interview.

LETTER FROM GLI CEO
LARRY R. HOLDEN



The liver plays a foundational role in the overall health of the body, far beyond what most people realize. Through its over 100 functions, the liver regulates metabolic health, processes nutrients, produces bile for fat digestion, maintains blood glucose levels, and detoxifies harmful substances. Unfortunately, the liver remains poorly understood by much of the world and inadequately protected by most healthcare systems. Global Liver Institute was founded out of personal experience and a commitment to ensuring that patients and their families receive better support when facing liver disease.

We connect people to the tools they need to take care of their livers and encourage health systems and governments to do their part. Over the years, GLI has trained hundreds of patient advocates, convened leaders in liver health, and advanced equitable, effective policies. In 2026, these efforts reached a landmark achievement when the World Health Assembly (WHA) adopted a resolution recognizing steatotic liver disease (SLD) within the global noncommunicable disease (NCD) response, with GLI playing a pivotal role alongside the Egyptian Ministry of Health and Population. This milestone advances our vision ***for liver health awareness to be universal and for liver disease to take its proper place on the global public health agenda, consistent with its prevalence and impact.***

The *Liver Health is Public Health* initiative is GLI's response to the world's failure to meaningfully prioritize liver health. Together with dedicated organizations in hepatology and related specialties, we are expanding global conversations beyond traditional liver disease circles, bringing liver health onto the agenda of governments, NGOs, and the public. Everyone who can make a difference must be spurred to action, from those allocating research funds and shaping healthcare systems to the people making everyday food choices for their families. Each year we work on this report, I become more resolute in my conviction that the threats to liver health are dire and our collective work is essential. As risk factors rise, so will the incidence of liver disease, and the world remains unprepared to meet this growing challenge. Significant investment is needed to prevent and reduce liver disease worldwide. Yet the WHA resolution demonstrates what is possible when governments, patient advocates, healthcare professionals, and civil society work together. I remain confident that we can prevent chronic liver disease, improve early diagnosis and treatment, and ultimately save time, money, and lives.

I strongly believe that knowledge is power. Through this report, GLI strengthens global understanding of liver diseases in service of patients everywhere. The WHA resolution is an important step forward, but its impact will depend on translating this global commitment into meaningful national action. GLI remains committed to working with partners around the world to support implementation and ensure liver health receives the attention and resources it deserves.

Thank you for taking the time to read this report. May it serve as a resource as you work to advance liver health within your own communities.



Larry R. Holden
President and Chief Executive Officer
Global Liver Institute

© 2026 by Global Liver Institute. All rights reserved

INTRODUCTION

The liver is one of the body's most vital organs — essential for metabolism, detoxification, digestion, and overall well-being. Yet despite its importance, liver health often remains neglected on global public health agendas. Liver disease continues to be under-diagnosed, misrepresented, and stigmatized, leading to delayed diagnosis and treatment, in many cases.

Liver disease places a sizable personal and economic burden on communities across the world. This takes many forms: for instance, the many thousands of parents taking time off work to care for sick children, the loss of productivity caused by the millions living with fatty liver disease, or the developing countries that see significant portions of their working-age population succumb to liver cancer. Liver disease also increases the cost and outcomes of treating cardiovascular disease (CVD) and diabetes – for example, one recent study in India showed that diabetes was present in nearly 12% of all patients recently diagnosed with chronic liver disease.[1]

Nonetheless, several countries still have no policy on underage drinking, several have not operationalized the preventive and curative tools readily available for viral hepatitis B, and C, and too many governments have no public health policy on obesity and its link to steatotic liver disease. Liver disease, it appears, is simply not a public health priority today, tomorrow or in the foreseeable future.

This oversight has led the world directly to the public health catastrophe we now face:

- Today, **844 million people around the world are living with chronic liver disease,** which results in two million deaths per year[2] – including 700,000 from liver cancer[3] and 1.1 million from hepatitis B and C infection.[4]
- Globally, **1 in 4 people are impacted by metabolic dysfunction-associated steatotic liver disease (MASLD)**, and of those, 1 in 5 will go on to develop the more advanced liver condition metabolic dysfunction-associated steatohepatitis (MASH).[5]

As this tide of liver disease swells in regions around the world, it, through varied etiologies, places similar burdens on patients and their healthcare systems.



A NOTE FROM THE LIVER HEALTH IS PUBLIC HEALTH PROGRAM DIRECTOR, GIACOMO DONNINI

While working on this fifth edition of the report, I have been inspired by the dedication and passion of leaders across the globe. I am deeply grateful to every expert who has shared their time and insights with us over the years. Now in its **fifth edition**, this report brings together voices and data from **more than 50 countries**, reflecting the diverse realities of liver health worldwide. While global trends often hold true, each community faces unique challenges shaped by cultural, historical, and political realities, alongside remarkable creativity and resilience in addressing them.

This report has become one of GLI's strongest tools, helping us understand the needs of the liver health community and identify where action is most urgently needed. My hope is that it not only informs but also sparks dialogue and strengthens our work with policymakers to translate evidence into effective action. I believe readers will find this report both eye-opening and empowering, and that it will inspire meaningful progress around the world.

© 2026 by Global Liver Institute. All rights reserved

AFRICA



Africa is home to 1.37 billion people – **around 18% of the world's population.**

HEALTH OVERVIEW

Africa is the second largest continent on Earth, spread over approximately thirty million square kilometers (twelve million square miles). Africa is home to 1.37 billion people, around 18% of the world's population. A developing region that spends amongst the least in the world on healthcare, relying heavily on public health initiatives and the involvement of NGOs along with aid from other countries.

Current public health challenges include high rates of neonatal deaths, diarrheal disease, HIV/AIDS, malaria, tuberculosis and viral hepatitis – which leads to cirrhosis. Additionally, the next few decades will bring the need to restructure existing health initiatives to cope with significant changes in demographics. In sub-Saharan Africa, for example, where more than 1 billion people live, 50% of the population are predicted to be under the age of 25 years old by 2050. Conversely, North Africa saw a 50% drop-in fertility rate between 1980 and 2017.

There are significant economic disparities between both countries and various economic indicators. Nigeria for example, has the highest GDP in Africa (US$441 billion and 27th in the world) yet ranks at 18th in Africa according to GDP per capita. Meanwhile, 18 of the 20 countries with the lowest GDP per capita, worldwide, are African.

Healthcare spending is, by and large, aligned to GDP per capita, demonstrating more extreme inequalities between countries. In 2019, for instance, the Seychelles (which has the highest GDP per capita in Africa) spent more than four times Morocco and forty times more than Madagascar on healthcare per person.

Sources: The World Bank, Statista

© 2026 by Global Liver Institute. All rights reserved

According to the WHO, cirrhosis of the liver is the tenth leading cause of death across the continent, with 195 deaths per 100,000 population.[1]

Though limited liver disease surveillance is conducted across Africa, it appears to be a growing issue: Cirrhosis rates in sub-Saharan Africa doubled between 1980 and 2010, driven mainly by viral hepatitis and alcohol-associated liver disease.[2] More than 50% of all liver patients in sub-Saharan Africa are admitted to hospitals with advanced stage liver disease due to a combination of poverty, geographic barriers and distrust of Western medicine.[2]

The WHO notes that 'Dying from viral hepatitis in Africa is becoming a bigger threat than dying from HIV/AIDS, malaria or tuberculosis.' [3] It estimates that chronic viral hepatitis affects over 70 million people in Africa, 60 million of whom are infected with HBV and ten million with HCC.[97] Despite these staggering figures, the disease is, in many African countries, neglected, with less than one in ten people able to access testing and treatment. As a result, each year, around 200,000 Africans die from advanced liver disease directly as a result of viral hepatitis.[3]

Although viral hepatitis and excessive use of alcohol account for 70% of cirrhosis,[4] the widespread use of traditional herbal medicines may also contribute to the rates of advanced liver disease in Africa.[2]

Estimates suggest that metabolic dysfunction-associated fatty liver disease (MAFLD) rates are generally lower in African countries around the world,[5] but these are based upon relatively small studies – typical of the dearth of up-to-date, high-quality data about liver disease available in the region.

As with the rest of the globe, however, Africa faces rising rates of obesity and type 2 diabetes (T2D), both of which are risk factors for MAFLD.[6]

In Africa, liver cancer is the

4th

most common cancer



> Dying from viral hepatitis in Africa is becoming a bigger threat **than dying from HIV/AIDS, malaria or tuberculosis.**

What is required as a priority from Africa, are well-designed epidemiology studies that screen for MAFLD in the general population as well as in high-risk groups such as patients with T2D or obesity.[6]

Liver cancer is the fourth most common cancer in Africa, and the second most common cancer for men.[9] In men, it is also the second most common cause of cancer death.[7]

As with cirrhosis, by far the major causes of liver cancer in Africa are hepatitis B and C, followed by alcohol misuse. However, this region has another unusual risk factor: aflatoxin, a substance secreted by a mushroom called *Aspergillus flavus* and a known carcinogen linked to HCC.[8] It is often found in several food items used across southern Africa such as cereal grains, spices and coffee and has been linked with hepatocellular cancer around the world. Around 30% of all HCC mortality is linked to aflatoxin, and 40% of those deaths are in Africa, these deaths would be easily preventable with education and awareness.[7]

Alcohol provides a risk factor of 18% of all cirrhosis in northern Africa and 10% in sub-Saharan Africa.[101] In many areas of Africa, the risk of alcohol consumption factor is heightened as a result of degraded, adulterated, or artificial quality alcohol.[7] Still, alcohol consumption across the region is low compared to many other parts of the world. In sub-Saharan Africa for example, per capita consumption is about half of that consumed in Europe.[9] However, these figures hide a wide variation between countries such as Sudan, where 0.5 liters are consumed and more developed countries such as Nigeria where the figures rise to 10.8 liters per person each year.[9]

Despite the challenges, there is much opportunity for improvement of liver health in the region. A combination of prevention programs - nearly all African countries now provide the hepatitis B vaccine for newborns and awareness campaigns to reduce obesity – and the increasing availability of better and cheaper drug therapies for viral hepatitis could turn around the state of liver disease in the future in Africa.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

CAMEROON

Population: 27.22 million (2021)

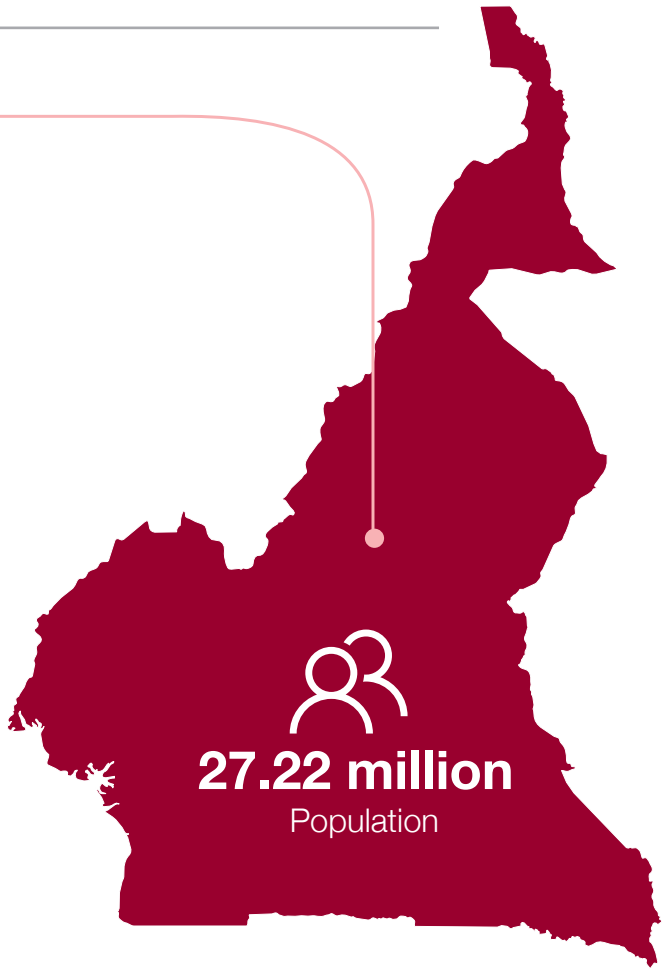
GDP per Capita: $1,674 USD

Life Expectancy: 59.4 years (men) and 62.6 years (women)

Healthcare Spending: 3.6% of GDP (2019)

Healthcare Funding: The main sources of funding for the health sector in Cameroon are: the state budget, households, external financing, local authorities, NGOs and private health insurance, which provide a marginal contribution. These sources do not contribute equally. In 2009, for example, out of a total funding estimated at $5,752,750,000, the contribution of households stood at 94.6% against 3.8% from the State and 1.6% for external partners. Healthcare hardly gets more than 5% of the country's budget – far below the 10% standard from the WHO.

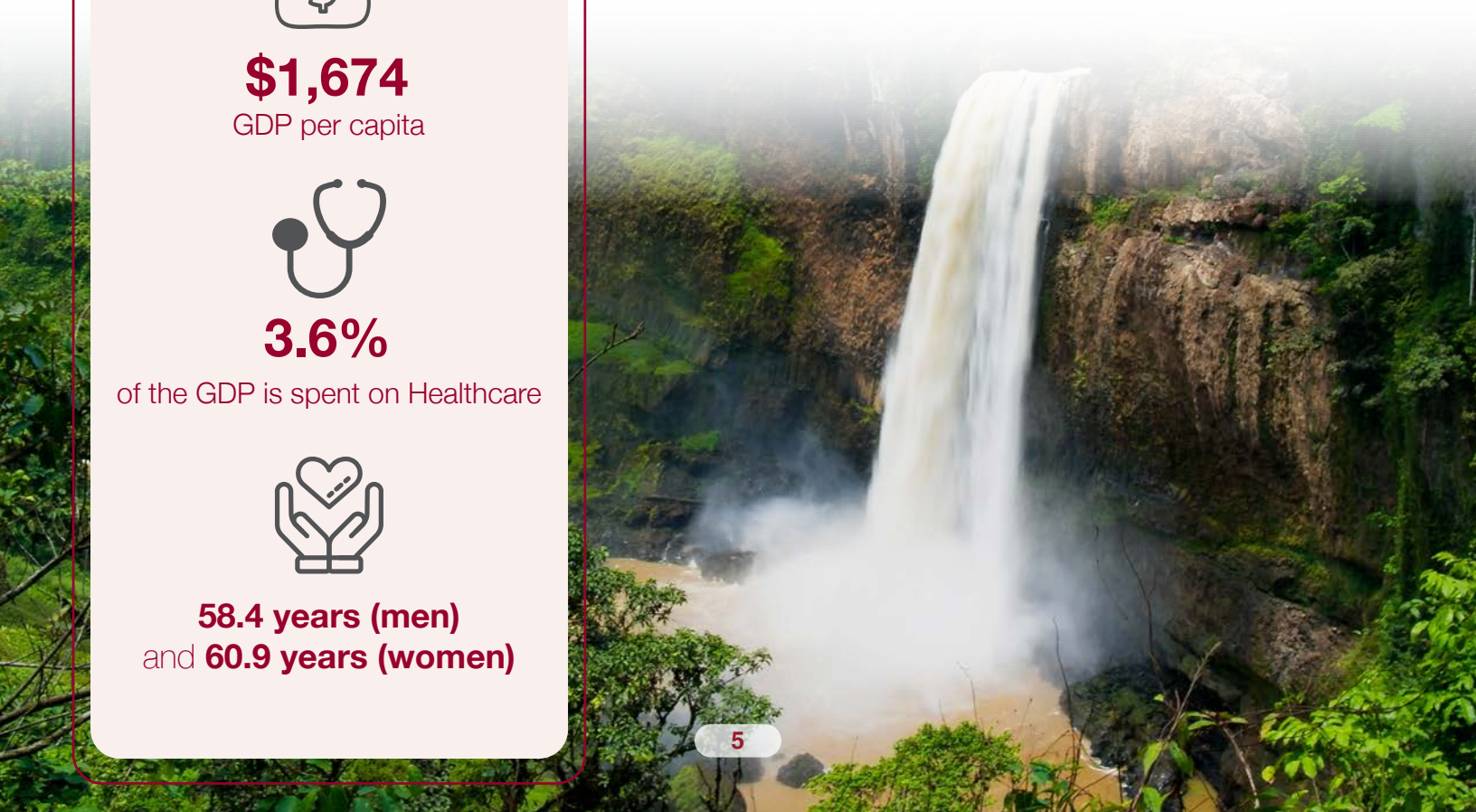
Sources: WorldData.Info, Salary Explorer, Data. WorldBank, MacroTrends.net, International Anatolia Academic Online Journal



$1,674
GDP per capita

3.6%
of the GDP is spent on Healthcare

58.4 years (men)
and **60.9 years (women)**



There is a general lack of information on the prevalence and mortality of liver disease in Cameroon. To address this issue, a recent study gathered and analyzed data on liver disease in a group of patients admitted to Yaounde University Teaching Hospital. Among admitted patients, the prevalence of cirrhosis was 6.7%.[1] The three main causes of cirrhosis were HBV infection, HCV infection and alcohol intake, with a prevalence of 40.2%, 36.8% and 22.2% respectively. Mortality rate was also found to be high, with a rate of 20.5%.[1] These results demonstrate the high prevalence of liver disease within the country and, more worryingly, a pattern of late diagnosis that greatly increases the chances of mortality.

A similar study found that 47% of cirrhosis patients tested positive for HBsAg, so HBV infection has been a major risk factor for cirrhosis in Cameroon for decades.[2] Despite the introduction of the HBV universal vaccine in 2005, the overall prevalence of hepatitis B in Cameroon is high when compared to other countries, ranging between 6-16% within the general population.[3] Indeed, there were 12,000 new cases of the virus in 2019, up from 9,600 cases in the previous year.[4] Knowledge of effective HBV prevention and safe practice remains poor. Indeed, pregnant women across the country have been shown to adopt poor practices regarding HBV prevention.[3] Furthermore, as is the case for other universal vaccine programs, those born before the implementation of the HBV vaccine in Cameroon are at a high risk of developing chronic HBV infection.

To help combat the prevalence of hepatitis B infection, the Cameroon government has reduced the cost of treatment from $250 a month to $50, to encourage hospital attendance.[4] However, hospital attendance is still universally low in Cameroon, with only 35% of the population regularly using this healthcare service. The remainder of the population relies on more traditional healers or only attend hospitals once their conditions become critical.[4] An additional factor that must be considered when analyzing hepatitis B in Cameroon is the prevalence of hepatitis D co-infection, which is greater in severity than HBV infection alone.[5] In a recent study, of HBV-infected samples, 46.73% were positive for hepatitis D virus and 34.2% had an active co-infection.[5] This has major implications for viral hepatitis in Cameron, as those infected with hepatitis B are at a greatly increased risk of medical complications and death.



1 in 6
people in Cameroon has **chronic HBV infection.**

Hepatitis C is also a major healthcare issue in Cameroon, and the country has a prevalence rate of approximately 4.9% amongst adults–the highest prevalence rate in world for HCV.[6] However, in a study published in 2018, the prevalence of HCV in Cameroon was found to be half of previous estimates, with a much higher prevalence amongst the older cohorts.[6] This was due to ages 49-59 having a reduced access to quality medical care in late 1950s, greatly increasing this groups infection rates for HCV. Indeed, the HCV prevalence for the 15-49 age group and 15-19 age group were only 0.81% and 0.2% respectively.[6] Due to this improved quality of healthcare in Cameroon over the last decade, an HCV-free generation is fully achievable as long as the prevalence of intravenous drug use is controlled.

Liver cancer is the fourth most common cause of cancer mortality in Cameroon, with approximately 955 deaths and 1021 new cases in 2020.[7] Both hepatitis B and C infection are the most common causes of HCC and account for approximately 90% of cases.[8] In June 2020, the Ministry of Public Health constructed a national strategic plan for the prevention of cancer in Cameroon, with the aim of improving primary and secondary care cancer services, along with developing new therapies and stimulating research. By implementing this plan, they hope to halve the morbidity and mortality caused by cancer in Cameroon within the next decade.[9]

In terms of metabolic dysfunction-associated fatty liver disease (MAFLD) and its more advanced stage, metabolic dysfunction-associated steatohepatitis (MASH) prevalence in Cameroon, there is little to no data available. However, many related risk factors are increasing. Obesity rates are 11.4%, which places the country at number 135 in the world.[10] More notably, diabetes rates in Cameroon are rising, with prevalence increasing from 2% to 5.8% in 1999 and 2019 respectively.[10] These findings indicate a potential correlated increase in MAFLD and MASH rates in the Cameroonian population.

© 2026 by Global Liver Institute. All rights reserved

CAMEROON NEEDS INVESTMENT IN DATA, DISEASE TESTING & DIAGNOSIS

Dr. Mbianke Livancliff is a Senior Immunization Officer and founder of the Empowering Women Foundation in Cameroon.

In Cameroon, we have many barriers which prevent us from providing anything more than a basic healthcare system, with liver disease hardly registering as a health issue at the government level.

Firstly, similar to many sub-Saharan countries, we have huge issues with health funding. Our funding partly comes from the government and partly from international partners such as the WHO and UNICEF, who mainly concentrate on infectious diseases such as HIV, malaria and tuberculosis.

Further, government commitment to health funding– which is distributed by the Ministry of Health–is inconsistent, badly managed and open to corruption both at a local and national level. As a consequence, funding often does not reach the areas it was intended for.

A second barrier is that, although the government provides some free healthcare, the reality is that most is paid for 'out of pocket' as and when needed. However, with an average wage in Cameroon of just $10 a day, for most people, anything but the most basic healthcare is out of reach.

Additionally, many Cameroonians do not leave their local area, so unless they can reach a government or NGO clinic nearby, or a doctor travels to them, it is hard for them to receive consistent and ongoing healthcare. This is a problem for liver disease patients.

Many people in rural areas still believe in and rely on traditional medicine. Not only does this discourage patients from seeking proper medical help, but often traditional treatments themselves can cause significant harm, particularly to the liver, and we often see cases of liver failure from such treatments.

Corruption at local or national level is also a real issue. For example, we have one of the highest rates of hepatitis B and C in the world and the government and NGO are investing in this with testing and vaccinations. However in reality, even 'free' testing for viral hepatitis often requires a fee, paid by the patient. This is having devastating consequences on attempts to control the spread of viral hepatitis and other diseases.

> **5% of our population are thought to have T2D** which we know is prevalent in all metabolic disorders.
>
> - DR. MBIANKE LIVANCLIFF

Finally, and importantly, we are hampered by an acute shortage of good quality data around liver disease. Most research here is carried out by smaller private institutions and extrapolated out throughout the rest of the country which does not provide a true picture of health on the ground. The figures that are available likely misattribute the cause of death due to limited understanding of liver disease and folk beliefs, like witchcraft. All this prevents us from making meaningful assessments of how and where we need to focus our efforts.

Around 5% of our population are thought to have T2D, yet there has been no interest from the government about NAFLD or NASH, which we know is prevalent in all metabolic disorders.

We do know, however, that the rates of liver cancer are rising and now account for 5% of all cancer deaths with liver cancer the fourth largest cause of cancer mortality.

At the same time, over the last few years, even some of the bigger hospitals have had to close their radiology departments for lack of funding and there are still too few clinicians who are experts in treating cancer, let alone liver cancer. Virtually all liver cancers are detected at a very late stage, and liver cancer treatment is usually limited to palliative chemotherapy with liver surgery pretty much non-existent. We have no liver transplant centers in Cameroon.

All this is frustrating for us as medical professionals; many of my colleagues have left to work in other countries, and I sometimes feel like giving up. However, I strongly believe that if we can make some changes on overall health policy, we can make a huge difference on the ground.

I would like to see the government focus on breaking the infection chain of viral hepatitis by investing in diagnosis and testing – all of which must be free. Furthermore, we urgently need better public education on all aspects of liver disease, including hepatitis, obesity, NAFLD and NASH.

Finally, I would beg the government to invest in a system of providing good quality data on all aspects of liver health, including outcomes, so that we who are working in public health can start to develop a relevant and effective plan of action.'

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

EGYPT

Population: 111,247,248

GDP per capita: $17,000 (2023)

Life Expectancy: 73.8 years (men) and 76.2 years (women)

Healthcare Spending: 4.4% of GDP (2020)

Healthcare Funding: In Egypt, a large part of healthcare spending comes out of the people's pockets. Despite federal budget increases, the government only covers around one-third of the total cost of healthcare – leaving over 60% of the total healthcare costs to the people. To help reduce these expenses, the Universal Health Insurance law was passed in 2017. This law aims to provide everyone access to quality healthcare without financial strain. The system is funded by a combination of government money, premiums paid by citizens, and contributions from businesses. However, many Egyptians still face high out-of-pocket costs for medical care.

Sources: US CIA's The World Factbook, International Health Policies, Ahram Online, Ministry of Planning and Economic Development of Egypt



$17,000
GDP per capita

4.4%
of the GDP is spent on Healthcare

73.8 (men) and **76.2 (women)**
Life Expectancy

In 2022, Egypt became the first country to achieve **"gold tier" status** for hepatitis C elimination

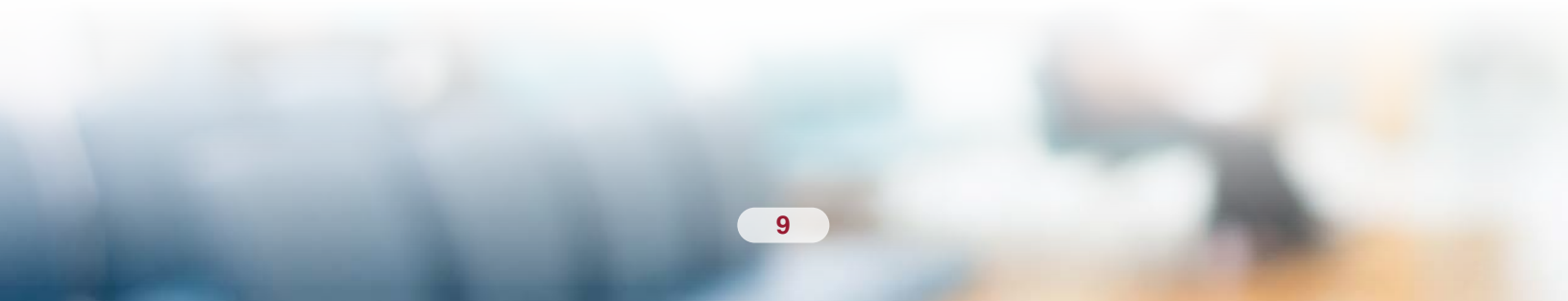
Liver health in Egypt has seen significant progress in recent years. While liver diseases such as viral hepatitis and metabolic dysfunction-associated fatty liver disease (MAFLD) have posed considerable challenges, Egypt has made impressive strides in combating these conditions. In 2022, Egypt became the first country to achieve "gold tier" status for hepatitis C elimination according to WHO criteria.[1] The following year, the World Bank Organization recognized this milestone as a significant achievement, marking the near eradication of an epidemic that had once been the third leading cause of death in the country.[2] By continuing to build on these achievements, Egypt is well-positioned to further enhance liver health outcomes and provide a model for other nations facing similar challenges.

Once known as a global epicenter for hepatitis C, Egypt's journey in improving liver health is a great example of combining accessibility and technology. In the mid-20th century, HCV infections swept through villages across the Nile Delta, a consequence of outdated medical practices like the use of parenteral antischistosomal therapy.[3] By 2015, Egypt's overall prevalence of HCV was the highest in world.

The country turned the tide through ambitious public health initiatives.[1,4] Over the past decade, Egypt has screened and treated millions to reduce hepatitis C prevalence by more than 95%. Globally, Egypt accounts for 3.6% of overall treatments provided.[1]

A cornerstone in Egypt's fight against hepatitis C was the "Miyat Milyon Sehha" or "100 Million Healthy Lives" campaign. This initiative sought to screen the entire adult population and ultimately reached over 60 million people and provided free treatment to more than 4 million patients.[5] Over three phases, the program targeted all Egyptians and residents 18 and above, with nearly 6,000 fixed testing sites and over 8,000 mobile units deployed to ensure even the most isolated communities were covered.[2,5] Additionally, a dedicated call center was established to handle follow-ups and answer questions from the public. Over 87% of people living with hepatitis C were diagnosed, and ultimately the prevalence of HCV dropped from 10% to just 0.38% within a decade.[1] This achievement earned Egypt "gold-tier" status with the World Health Organization.[1] This program not only provided life-saving treatment, but also raised awareness about liver health across the country, making it one of the most successful public health campaigns in Egypt's history.

Following the significant strides made in reducing hepatitis C prevalence, another challenge in Egypt's battle against liver disease is the small but persistent risk posed by schistosomiasis, commonly known as bilharzia. This parasitic disease, which has a long history in Egypt, is primarily transmitted through skin contact with contaminated water in the Nile River's canals, disproportionately affecting rural populations near the Nile.[6,7] As many as 50% of people with schistosomiasis in Egypt are co-infected with hepatitis C, which exacerbates liver disease.[7] Advanced cases of schistosomiasis often lead to liver enlargement, fluid accumulation in the peritoneal cavity, and hypertension of the abdominal blood vessels, all of which contribute to the development of liver fibrosis and increase the risk of bladder cancer.[8] Efforts including cementing the bottom of canals to eradicate snails, introducing natural predators, and mass treatment campaigns have helped eradication efforts significantly in Egypt. Still, schistosomiasis affects up to 4% of the population in certain areas.





In 2015, Egypt had the highest rate of hepatitis C **in the world.**

Additionally, Egypt is grappling with the ongoing burden of liver cancer, a condition closely tied to the country's past struggles with hepatitis C, making it a leading cause of cancer-related deaths.[9] It is especially prevalent among men, where it is responsible for 33.63% of all cancers, and among women it accounts for 13.54% of cancer cases.[9] The poor prognosis associated with HCC is often due to late-stage diagnosis, which limits the effectiveness of treatment options.[9] Immediately after the 100 Million Healthy Lives campaign, Egypt introduced a surveillance system for all patients presenting with liver steatotsis including free visits every four months to 58 surveillance centers and 93 imaging centers. At the regular visits, patients receive ultrasound screening and blood tests for HCC biomarkers. Although there are limited reports on HCC survival rates and relapse in Egypt, there is hope, as early detection and improved healthcare infrastructure offer new possibilities.[10]

Simultaneously, the country faces new challenges, such as the rising prevalence of MAFLD, driven by modern lifestyle changes. As of 2022, Egypt ranked as the 15th most obese country in the world.[11] This surge in obesity is significantly contributing to the increase in other metabolic disease, including cases of cancer, heart disease, and MAFLD cases. Despite this, awareness of MAFLD remains low, with only a third of the population aware that fat deposits in the liver can lead to serious health issues.[13] Alarmingly, MAFLD is not confined to adults; it also affects children and adolescents, with studies showing that 15.8% of Egyptian schoolchildren are impacted – higher than the global average of 13%.[14,15] In response, Egypt is making efforts to raise awareness about this condition, which remains poorly understood.

In response to the growing burden of liver disease, Egypt has expanded its liver transplantation services, offering a crucial lifeline to those with liver disease. As of 2022, Egypt has opened over 37 registered centers performing around 370 liver transplants annually across public and private hospitals.[16] However, a shortage of deceased donor organs due to cultural factors seriously limits the availability of liver transplants.[17] Many Egyptians do not subscribe to the concept of brain death; as a result, even after a 2010 law allowed deceased donor transplants in the country, Egypt's system still relies heavily on living donor transplantation.[17,18] Although it is lifesaving, living donor liver transplantation carries risks for donors and is not suitable for all patients, especially those with end-stage liver disease.[16] Despite these challenges, the growth of transplantation services marks a critical step forward in addressing liver health in Egypt.

In the ongoing fight to promote liver health and hope, Egypt is forging a path forward, addressing its challenges with determination and a clear vision for the future. The progress made so far is a testament to the power of concerted public health efforts and the resilience of a nation committed to improving the well-being of its people.



15.8%

of Egyptian schoolchildren has fatty liver disease, above the global average.

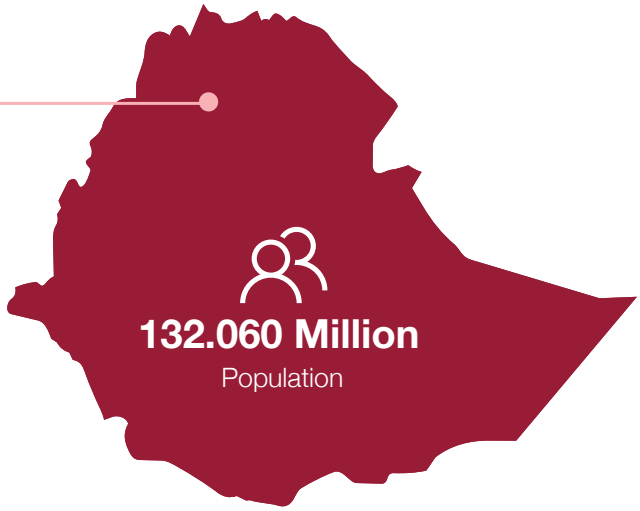
A TIMELINE OF PROGRESS FOR HEPATITIS ELIMINATION IN EGYPT

2006	Establishment of the National Committee for Control of Viral Hepatitis (NCCVH)
2008	Demographic health survey reveals 15% antibody prevalence and 10% virus prevalence between ages 13 to 59 NCCVH releases first National Control Strategy for Viral Hepatitis in collaboration with the Pasteur Institute
2014	DAAs developed, and Egypt negotiates 1% of global price – allows for scale up of treatment from 60,000 to more than 1 million annually; 100 Million Seha/ 100 Million Healthy Lives campaign launches Wait list for HCV treatment is cleared
2016	Egypt exclusively offering generic DAA treatment for HCV at the price of $ for the full course of treatment
2017	With 2 million people treated and 3 million still infected, nationwide rapid screening efforts launched and screening for those over 12 years completed within seven months
2018	First school screening program developed with confidential linkage to care
2023	Egypt becomes first country to receive “gold tier” status on the path to elimination of hepatitis C as per WHO criteria



OVERVIEW

ETHIOPIA



Population: 132.060 million (2024)

GDP per capita: $1,133.9 USD (2024)

Life Expectancy: 64 years (men) and 71 years (women) (2024)

Healthcare Spending: 2.8% of GDP (2023)

Healthcare Funding: Ethiopia's healthcare system is decentralised, with responsibilities distributed across federal, regional, and local levels. Furthermore, it relies on a mixed financing model drawing on government budget allocations, out-of-pocket household spending, external donor funding, and a limited but growing private sector contribution. Despite substantial growth in total health expenditure over the past two decades, from approximately USD 844 million in 2000 to USD 3.4 billion in 2022, the financing landscape remains structurally fragile. In 2022, government spending accounted for only 22.4% of total health expenditure, while out-of-pocket spending represented 39.2% and international development assistance 33.6%. Ethiopia spent 2.8% of GDP on health in 2023, well below the low-income country average of 6.6%, and 10.4% of the population was pushed below the poverty line by medical costs in 2022.

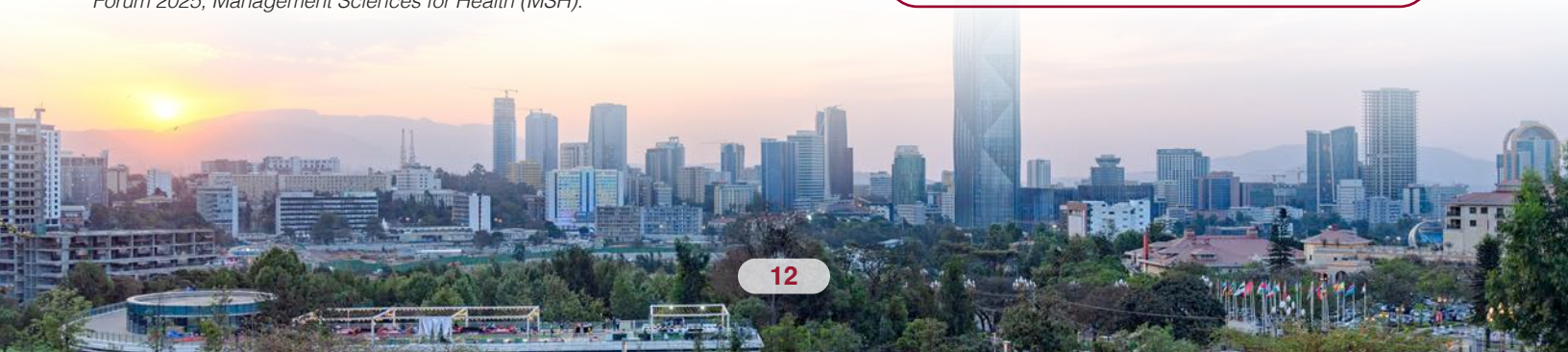
To address these challenges, Ethiopia developed the Health Care Financing Strategy 2022–2031 and, in December 2025, signed the National Health Compact, which sets ambitious targets for 2030, including increasing per-capita health spending by 50%, raising the government's share of the national health budget to 10% of total government expenditure, and reducing out-of-pocket expenditure to 20% or less through the expansion of Community-Based Health Insurance and the full implementation of Social Health Insurance, a program for formal sector employees that has faced repeated delays.

Sources: Data.WorldBank, World Bank Group, Commonwealth Fund; Ethiopian Public Health Institute / Ministry of Health Ethiopia (Evidence Brief, 2025) Federal Democratic Republic of Ethiopia National Health Compact, UHC High-Level Forum 2025; Management Sciences for Health (MSH).

$1,133.90
GDP per capita (USD)

2.8%
of the GDP is spent on Healthcare

64 (men) & 71 (women)
Life Expectancy



Liver disease constitutes a significant and growing public health burden in Ethiopia, where chronic liver disease (CLD) accounts for approximately 11.4% of all medical admissions nationwide. The aetiological landscape is dominated by viral hepatitis, primarily HBV and HCV: a systematic review and meta-analysis of observational studies conducted across multiple Ethiopian regions estimated pooled proportions of 40%, 15%, and 17% for HBV, HCV, and alcohol as drivers of CLD, respectively, with an overall inpatient mortality rate of 25%.[4] These national-level estimates are consistent with findings from individual studies.[1-3] Metabolic dysfunction-associated steatotic liver disease (MASLD) remains poorly characterized in Ethiopia due to the scarcity of dedicated studies, though available evidence tentatively estimates its contribution to CLD at approximately 12%.[4] These studies collectively highlight the urgent need for expanded prevention, early diagnosis, and treatment capacity across Ethiopia, particularly for viral hepatitis as the predominant driver of chronic liver disease.

Hepatitis B virus (HBV) infection represents a **major public health challenge** in Ethiopia.

Hepatitis B virus (HBV) infection represents a major public health challenge in Ethiopia. A 2019 systematic review and meta-analysis encompassing over 106,000 participants estimated a pooled HBV prevalence of 6% in the general Ethiopian population, placing the country within the medium-to-high endemicity range defined by the WHO.[5] Prevalence varied markedly by region, from 4% in Amhara to 10% in Addis Ababa, and by subgroup, with pooled estimates of 5% among pregnant women and healthcare workers, who face elevated occupational risk[7], and 4% among blood donors. The latter is a concern for transfusion safety given that an estimated 1 in 25 donors may carry the virus.[5] For example, a hospital-based study conducted in Northwest Ethiopia found a higher HBsAg (hepatitis B surface antigen, a blood marker used to detect active infection) seroprevalence of 14% among clinically suspected patients, corresponding to high endemicity under WHO criteria.[6] Furthermore, in Northeast Ethiopia, a cross-sectional study among medicine and health science students found an HBsAg seroprevalence of 4.2%; notably, despite adequate knowledge about transmission and prevention, only half of participants reported safe practices.[8] In response to this burden, Ethiopia introduced HBV vaccination into its national immunization programme in 2001, and the vaccine has been available free of charge for children since 2007; however, vaccination coverage among adults and healthcare workers remains suboptimal, and the burden of chronic infection persists across all regions of the country.[5,8]

Hepatitis C virus (HCV) infection in Ethiopia has historically been subject to considerable uncertainty, with earlier systematic reviews estimating general population seroprevalence of between 1.6% and 3.1%. The first nationally representative HCV seroprevalence study, based on dried blood spot samples from the 2016 Ethiopian Demographic and Health Survey (EDHS-2016) and encompassing 26,753 adults aged 15–59, reported a substantially lower overall weighted seroprevalence of 0.18%.[9] Regional variation was nonetheless substantial: the highest seroprevalence was recorded in Afar (0.92%) and the Southern Nations, Nationalities and Peoples' Region (0.44%), while the Amhara region and Somalia region reported the lowest estimates.[9] Among population subgroups, people living with HIV (0.62%), individuals from the poorest wealth quintile (0.35%), those with multiple lifetime sexual partners (0.31%), and widowed or divorced individuals (0.30%) showed higher seroprevalence than the general population.[5] Despite the low overall estimate, the authors calculated that approximately 132,000 Ethiopian adults had been exposed to HCV based on the 2023 adult

population, with roughly 92,000 estimated to have chronic infection. The Ethiopian Ministry of Health recognized HCV as a public health problem in 2016 and developed successive national viral hepatitis strategic plans for 2016–2020 and 2021–2025.[9]

Metabolic dysfunction-associated steatotic liver disease (MASLD) is an emerging but still poorly characterized liver health concern in Ethiopia, where dedicated epidemiological studies remain scarce. Two cross-sectional studies conducted in Northeast Ethiopia and Addis Ababa found MASLD prevalences of 28.1% among adults with cardio-metabolic risk factors and 48.3% among patients with T2DM specifically, with female sex, obesity, abnormal waist circumference, and elevated triglyceride levels consistently identified as independent predictors across both settings.[10,11] These findings are consistent with the broader sub-Saharan African pattern, and they highlight the close link between the growing burden of metabolic disease in Ethiopia and the parallel expansion of MASLD. As T2DM currently affects approximately 6.5% of the Ethiopian population and obesity rates are rising, the hepatic consequences of metabolic dysfunction are likely to become an increasingly significant public health challenge in the country, yet routine screening protocols and dedicated national guidelines for MASLD remain absent.[10,11]

Hepatocellular carcinoma (HCC) represents a severe and growing public health burden in Ethiopia. A systematic review of available evidence identified cirrhosis, viral hepatitis, hepatotoxic indigenous drugs, and aflatoxin exposure as the principal risk factors for HCC in the country.[12] HCC accounts for an estimated 16-19% of cases among patients with liver disease, and a multicenter retrospective study conducted across four referral oncology centers between 2016 and 2021 confirmed that cirrhosis (58%) and viral hepatitis (47%) were the dominant underlying conditions, with HBV the most frequent viral etiology.[12,13] Most patients present at a late clinical stage, when treatment options are severely constrained by resource limitations: the majority receive only supportive or palliative care, and targeted therapies such as sorafenib remain largely unavailable or unaffordable.[13] Liver transplantation is not yet available in Ethiopia; however, St. Paul's Hospital Millennium Medical College (SPHMMC) is actively working toward establishing the country's first liver transplant center.[14]



cirrhosis (58%) and **viral hepatitis (47%)** were the dominant underlying conditions, with HBV the most frequent viral etiology.[12,13]

Alcohol is the second most common etiology of chronic liver disease nationally, accounting for approximately 17% of cases in a systematic review and meta-analysis of observational studies[4], a figure that may be rising: a more recent multicenter study of cirrhotic inpatients at tertiary referral centers in Addis Ababa identified alcohol as responsible for 30.1% of cases, consistent with documented trends of increasing hazardous alcohol consumption across the country.[15] This upward trend is regionally uneven, as alcohol misuse remains rare in the predominantly Muslim communities of eastern Ethiopia, where khat chewing and aflatoxin exposure are the more prominent non-viral contributors to liver disease.[15,16]

Khat (Catha edulis) chewing and dietary aflatoxin exposure represent two regionally significant but incompletely characterized drivers of chronic liver disease in Ethiopia. A cross-sectional study conducted in Harar, eastern Ethiopia, found that over half of all patients hospitalized with chronic liver disease had no identifiable etiology

following comprehensive evaluation, and that 78% of these patients chewed khat daily.[15] Histological examination of a subset revealed features consistent with toxic liver injury, suggesting that khat may act as an independent or adjuvant hepatotoxin, though a causal relationship has not yet been established.[15] The widespread use of khat in eastern and south-central Ethiopia, contrasted with its near-absence in northern regions where chronic liver disease mortality is substantially lower, further supports the hypothesis that khat exposure may be a regionally important driver of unexplained liver disease.[15] A distinct but related environmental risk factor is dietary exposure to aflatoxin B1 (AFB1), a fungal toxin that contaminates staple crops including maize, sorghum, and groundnuts across Ethiopia. A case-control study conducted in Eastern Ethiopia found that patients with high AFB1 albumin adduct levels had twice the odds of developing liver cirrhosis compared to those with undetectable levels.[16]

Khat (Catha edulis) chewing and dietary aflatoxin exposure represent two regionally significant but incompletely characterized drivers of chronic liver disease in Ethiopia.



OVERVIEW

GHANA

Population: 32.83 million (2021)

GDP per Capita: $2,238 USD (2023)

Life Expectancy: 61.8 (men) and 66.1 (women)

Healthcare Spending: 3.42% GDP

Healthcare Funding: About half of Ghana's health care is financed by taxes, through the national health insurance (NHI) levy. The other half is informally/privately funded through out-of-pocket payments and payroll deductions from health insurance.

Sources: The World Bank, World Life Expectancy, The Global Economy, International Journal for Equity in Health



$2,238
GDP per capita

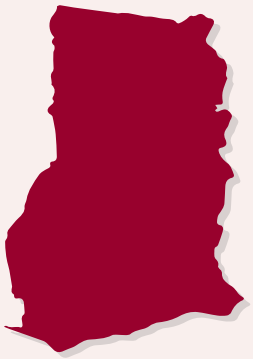
3.42%
of the GDP is spent on Healthcare

63.7 (men)
and **69.2 (women)**
Life Expectancy

Liver disease poses a significant health burden to the people of Ghana. In total, 8.8% of deaths in adults were due to liver-related causes – half due to HBV infection.[1] Liver cancer, overconsumption of alcohol, and viral hepatitis also contribute significantly to liver disease in the country, while metabolic dysfunction-associated fatty liver disease (MAFLD) and its risk factors are on the rise. With so many active paths to liver disease and damage, efforts both to raise awareness of the many risk factors and symptoms of liver disease and also to bolster the care pathways to prevent severe disease are necessary.

A change in lifestyle habits is increasing the prevalence of fatty liver disease and its risk factors in West Africa, including Ghana, following the global rise of fatty liver disease in developing countries, behind developed countries.[2] One study in the Ashanti region of Ghana found that more than half of the people with T2D had MAFLD, of whom more than 1 in 10 had significant liver fibrosis – though less than the global proportion of MAFLD in those with T2D, still a sizeable portion.[3] A prospective study on surgical patients found that 56% of patients had MAFLD – and those patients had a 5x likelihood to have an extended length of hospital stay.[4] While this is not representative of the general population – it is more than double the global prevalence of MAFLD, which is nonetheless alarming.

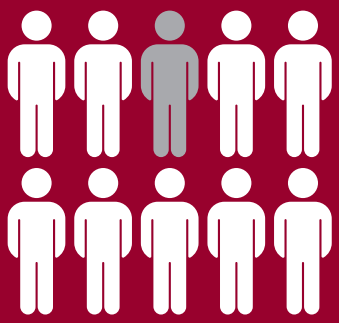
Although broader population prevalence data on fatty liver disease is unavailable in Ghana, there is a lack of reliable, safe, and cost-effective screening for MAFLD; referral is not standardized, biopsy is risky, while safe, low-cost diagnostic techniques like transient elastography are inaccessible.[2] Meanwhile, obesity and overweight are on the rise, with an overall prevalence found to be 15.6% overweight and 5.5% obese, with rates higher in women than in men.[5] While these rates are low on a global scale, lack of physical activity, drinking, and unbalanced diets appear to be heavily contributing and could snowball into increased numbers of liver disease as well, since obesity is a major risk factor for fatty liver disease. Screening and treatment should be standardized and accessible in order to mitigate this rising crisis early.



Deaths due to liver disease have **risen 80% in Ghana** over the last 3 decades.

Though a large proportion of Ghana's population abstains from alcohol consumption, it still poses a major obstacle to liver health in Ghana, driven predominantly by men. Yearly consumption on average is 2.7 liters per person, though this is 4.6 liters for men and 0.7 for women.[6] Among drinkers, these averages are much higher. Though nearly 3 in 4 Ghanaians has abstained from alcohol in the past year, 9.4% can be considered Heavy Episodic drinkers – and 7.3% of men can be considered to have alcohol use disorder.[6] Over time, this consumption leads to cirrhosis, alcohol-associated liver disease, and alcohol-associated hepatitis that account for 77.5 deaths per 100,000 each year.[6] Over the last three decades, mortality from cirrhosis and other chronic liver diseases has risen in Ghana by 80%.[6] Further, alcohol consumption was the main etiology for 38% of those hospitalized for cirrhosis in a district hospital in Ghana.[7]

Nearly 1 in 10 people in Ghana has viral hepatitis.



© 2026 by Global Liver Institute. All rights reserved

There is a relatively high prevalence of viral hepatitis in Ghana, especially hepatitis B, which is considered to have a high endemicity with a prevalence of approximately 8% in the population.[8] Higher prevalence was noted in northern regions of the country.[8] While surveillance data is unavailable on hepatitis A in the country, prevalence of HCV is estimated to be 3% in the population, while HDV prevalence has been measured at 8% of people with liver disease (much lower in the population overall).[9,10] HEV, particularly in pig farmers, has been found to have a seroprevalence greater than 10%.[11]

Ghana does not have a viral hepatitis (B or C) elimination plan in place.[9] HBV testing in Ghana is currently risk-based.[8] Population testing and appropriate linkage to care are necessary to overcome the heavy burden of HBV in the country. In good news, Ghana has 99% coverage with its infant vaccine program and all newborns are supposed to receive the hepatitis B vaccine, while a testing and treatment program is being developed.[12]

Unsurprisingly, the high rates of HBV lead to end-stage liver disease (about half of HCC liver cancer cases are attributable to the viral infection).[8] Deaths due to liver cancer in Ghana have been on the rise for the past two decades.[13] One study of hospital deaths found that nearly 2% were related to HCC.[1] Notably, liver cancer cases present at a young age and advanced stage in Ghana compared to non-African populations.[14] Double the amount of men than women present with liver cancer, and the mean age is 45.[15] This may be due to workplace or other risk factors for exposure as well as the greater alcohol consumption in men.

DID YOU KNOW?

Liver cancer patients are **diagnosed younger and at more advanced stages** in Ghana than in non-African populations.

Very little is known about pediatric and rare liver diseases in Ghana, which suggests that stronger screening measures should be implemented.

A locally based team in Ghana conducted the country's first liver transplant in 2021.[16] In a study of patients with HCC at the Komfo Anokye Teaching Hospital in Ghana, less than 8% of patients were eligible for transplantation – which is largely inaccessible in the country anyway.[17] Before it can grow as a curative treatment for end-stage liver disease, screening must catch these conditions when they are early enough to be treated.

Ghana does not have a **viral hepatitis plan** in place.

PUBLIC HEALTH AND PRIMARY CARE APPROACH NEEDED TO IMPROVE LIVER HEALTH IN GHANA

Dr. Josiah Nang-Bayi is an entrepreneur, researcher, and physician in Sunyani, Bono Region, Ghana with experience in internal medicine.

CHALLENGES

1. **Lack of Awareness:** A good percentage of those who are formally educated still don't know much about liver health beyond viral hepatitis, after government initiatives on hepatitis B vaccination. The rest of the population, without formal education, is almost completely ignorant of liver health. Even so, most people forget about non-infectious liver disease and mistake symptoms for malaria or other gastrointestinal infections.
2. **Over-Reliance on Traditional Medicine:** Traditional medicine is a very common practice in Ghana. People rely on herbal preparations – especially when they are advertised on the radio and TV as treatments for diabetes, hypertension, general chronic and even infectious diseases. These things have side effects on the kidneys and the liver that are not usually communicated, since these organs process and filter most of the medications – worsening any existing liver conditions.
3. **Late Diagnosis and Treatment:** Primary care facilities don't have doctors present most of the time – only a nurse or physician assistant or a community health worker. These health workers tend to not think about chronic liver conditions. Even when an individual's liver levels are elevated, they only check for viral hepatitis and just manage for common infections. People often are not referred for secondary care for the liver until they present with end-stage liver disease, usually in severe pain and too late for a positive outcome.

OPPORTUNITIES

1. **Government-Led Awareness Campaigns:** The people here tend to pay more attention to a message if they heard it in the media – TV ads or the radio. The government could go out on a massive sensitization program about chronic liver disease. The First Lady of Ghana currently has a campaign on TV telling women, especially pregnant wome about the need to take HIV antiviral medication, so we could do the same for liver health. We could combine this with dedicated health personnel in each district or health facility trained to constantly educate on liver health.
2. **Fortified Primary Healthcare:** People tend to access healthcare first through primary health facilities. When people present with nonspecific liver symptoms, they check for salmonella, malaria, or *h. pylori* bacteria as well as viral hepatitis – but if these are negative, they are sent away with minimal follow-up. At secondary facilities, we are beginning to run liver function tests, and we are picking up chronic liver disease in young people. Primary healthcare workers should be educated to provide these referrals and follow-ups.
3. **Expand Viral Hepatitis Programs:** Ghana has an immunization protocol in which all newborns are supposed to be vaccinated against hepatitis B. However, we still have a lot of children, especially in rural communities, who do not receive these vaccines, whether the vaccine ran out of stock or the mother delivered with a traditional birth attendant. We ran a project on university campuses and found over half of students were not vaccinated. We have to go back to a public health orientation to address viral hepatitis.

© 2026 by Global Liver Institute. All rights reserved

PERSPECTIVES AS BOTH A PATIENT AND A NONPROFIT ADVOCATE

William J. Ocran co-founded The Empowerment for Sustainable Livelihood, a charity that promotes disease awareness, prevention, education, advocacy, and research in 2007. He has over 25 years of experience in NGO activities throughout the war-torn and impoverished communities of Ghana.

I had very little awareness of liver health until I developed abdominal pain, went to the hospital, and was asked to do a scan. I learned that I had liver disease, which led me to do a lot of research into it. Later, I found Global Liver Institute, which has helped us to educate many people, especially in vulnerable regions, on the liver and its challenges. We have been able to run a sensitization program to raise awareness in the general public on the liver and challenges to the liver. We've met with industry associations, the church – even health workers!

> Later, I found Global Liver Institute, **which has helped us to educate many people**, especially in vulnerable regions, on the liver and its challenges.
>
> - WILLIAM J. OCRAN

One of the challenges that we have is the lifestyle. We don't have any good medicine to prescribe to solve liver disease – you have to check your lifestyle, you have to check your weight, and you have to make sure your cholesterol level is low. This is a major part of our education program.



OVERVIEW

KENYA

Population: 54 million (2021)

GDP per Capita: $1,950 USD

Life Expectancy: 59.6 (men) and 64.7 (women)

Healthcare Spending: 4.59% of GDP (2019)

Healthcare Funding: Kenya's health sector relies on different sources of funding, namely public (government), private firms, households and donors, as well as health insurance schemes.

Public healthcare service delivery is divided into four levels, starting with community services on the ground, followed by primary care health services, and secondary and national hospitals. Primary healthcare and maternity services are free in public health centers and dispensaries. However, public hospitals continue to charge user fees.

Due to the devolutionary shift within Kenya's healthcare financing structure, there is a significant inter-country variation in financing arrangements for healthcare facilities and services.

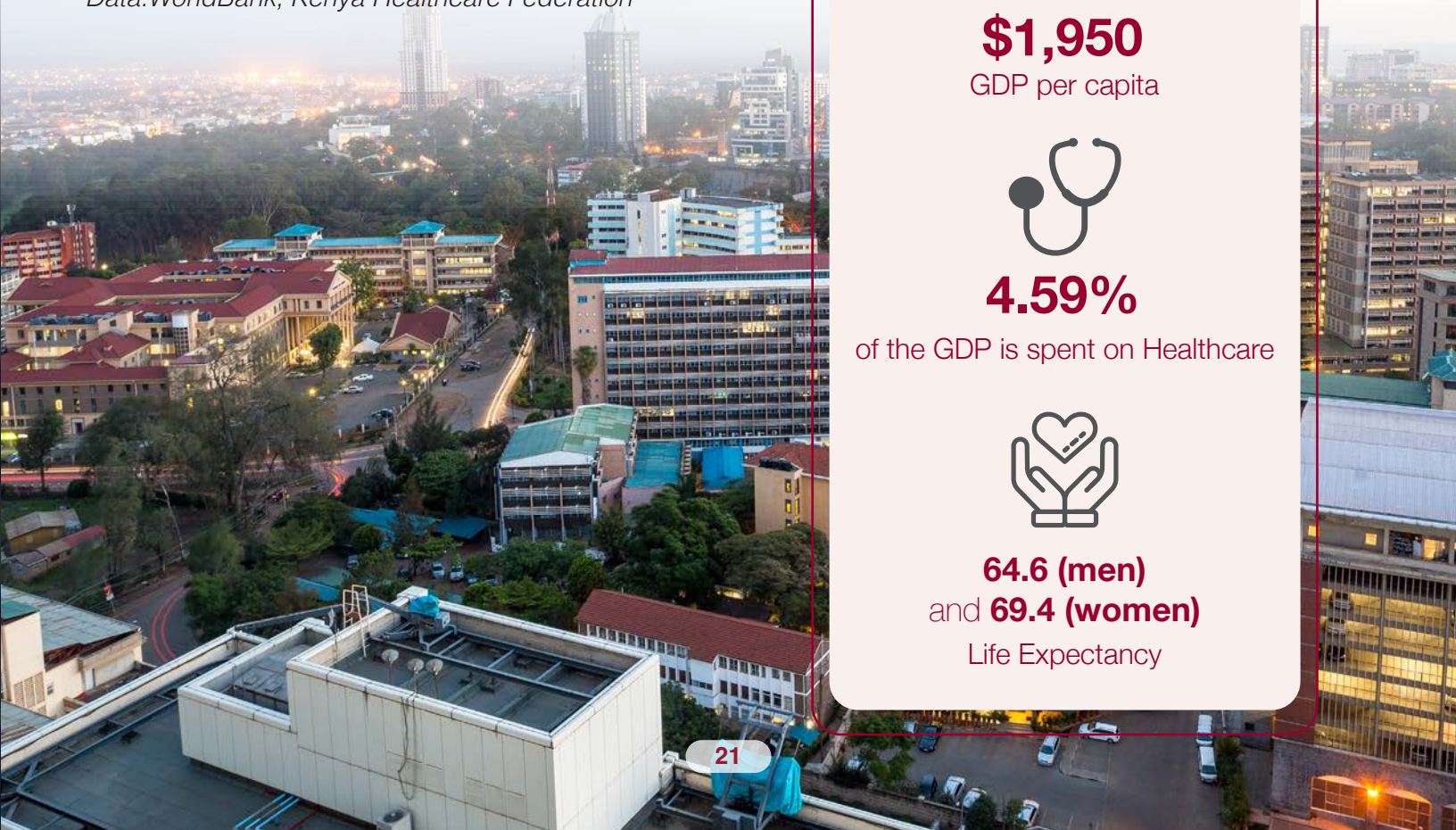
Sources: WorldData.Info, World Population Review, Data.WorldBank, Kenya Healthcare Federation



$1,950
GDP per capita

4.59%
of the GDP is spent on Healthcare

64.6 (men)
and **69.4 (women)**
Life Expectancy



Similar to other countries in sub-Saharan Africa, there is a significant lack of available data on the prevalence, incidence, and mortality of liver disease in Kenya. Between 1980 and 2010, cirrhosis-related mortality doubled in sub-Saharan Africa, making liver disease a major healthcare burden for this group of countries.[1] Significant investment in liver disease treatment, diagnosis and prevention, as well in the collection and analysis of data is required to address this growing healthcare issue.

HCC is the 11th most prevalent form of cancer and the 9th highest cause of cancer-related death in Kenya.[2,3] A major risk factor for liver cancer in Kenya is hepatitis B infection, with the virus having a prevalence of approximately 5-8% within the Kenyan population and attributing to over 60% and 90% of chronic liver disease and HCC cases, respectively.[4,5] The western area of Kenya, specifically the region of North Rift, has a particularly high prevalence of hepatitis B. It is hypothesized that this is due to a high concentration of mycotoxin grain contamination, since this region has extensive cereal production.[2]

To address the high prevalence of liver cancer in the region, the country's first liver cancer surgeries, funded by The French Ministry of Foreign Affairs, will be available in West Kenya.[3] Clinicians at the Moi Referral and Teaching Hospital (MTRH) will be trained to identify early risk factors, make diagnoses, and operate on living cancer patients with specialized equipment in both Peru and Paris.[3] If successful, this could be a flagship center to be replicated and established in other high-risk countries.



5 MILLION

people in Kenya are living with chronic HBV infection.



9 OUT OF 10 CHILDREN develop immunity to hepatitis A once they reach the age of 10

The hepatitis B vaccine was introduced in early 1980s, with the Kenyan Expanded Program of Immunization (KEPI) incorporating it into their initiative in 2002 by vaccinating newborns at six, 10 and 14 weeks.[5] Despite this program, a large proportion of the Kenyan population remain unvaccinated, especially those born prior to 2002 who missed out on the vaccine and are consequently at much higher risk of developing chronic hepatitis.

Although not as prevalent as hepatitis B, hepatitis A, C, D and E infection must also be considered when analyzing liver disease etiology in Kenya. In a 2017 report across four Kenyan hospitals, the most common cause of jaundice was chronic hepatitis B infection, with over half of the study participants testing positive for this virus.[6] Acute hepatitis A was the second most common cause of the symptom.[6] This was a relatively unexpected result, as previous studies carried out in Kenya have shown that 9 out of 10 children develop immunity to hepatitis A once they reach the age of 10. This indicates a re-evaluation of the need for an adult hepatitis A immunization program in Kenya.[7] Recent infection of hepatitis C, D or E was not found in the study.

Given the relatively limited data on the prevalence of metabolic dysfunction-associated fatty liver disease (MAFLD) in sub-Saharan Africa, the two main studies investigating this disease prevalence in Kenya have fairly small sample sizes.[8,9] A recent study involving 783 individuals in Kenya found that 15.9% had MAFLD, with a three-fold higher risk in urban populations when compared to rural population groups.[10] A surprising female-to-male prevalence ratio of 2.8 to 1 was also identified in this study, calling for further investigation on the potential high-risk level for black African women in developing MAFLD compared to their male counterparts.[10]

© 2026 by Global Liver Institute. All rights reserved

WE NEED A COHERENT STRATEGY FOR VIRAL HEPATITIS

Michael Nyawino is Executive Director Financial Awareness Foundation Ambassador of the Christian Community Healthcare Foundation in Kenya.

Liver disease accounts for 5% of deaths in Kenya, making it a serious public health issue. Yet despite this high figure, it has largely been ignored by our government. As a result, liver disease, whether from alcohol abuse, hepatitis or NASH is usually only detected when it is at an advanced stage. This is partly due to lack of awareness but also lack of funding for healthcare in general - most people must pay a certain amount towards hospital treatment including testing - so generally the poorer populations will wait until the last minute until they absolutely cannot carry on without medical help.

Unfortunately, by the time they have reached that stage, it is usually far too late to carry out any effective treatment and in any case, there is usually a wait for beds in most public hospitals. It is a desperate situation for them. Sometimes, if a transplant or other complex treatments are needed, the family in many cases raise funds so they can send the patient to India. Alternatively, the private hospitals have good facilities including diagnostic equipment, but this has to be funded upfront, and this is out of reach for most people in Kenya.

One of the key causes of liver disease in Kenya is the relatively high rate of hepatitis B, particularly in the coastal regions, which are the least developed part of our country. Although we have free vaccinations for infants, there is no coherent testing program for adults, and generally people are only diagnosed when they are being treated for something else. A lot of government - and external - funding has been put into raising public awareness of HIV, malaria and tuberculosis. I would very much like to see the same being done for viral hepatitis including highlighting its impact on liver disease.



IT'S A VERY SAD SITUATION

Liver disease is not only widespread but it is often fatal. We urgently need a program of education around obesity and alcohol abuse, starting from an early age in the schools.

- MICHAEL NYAWINO

We have no specific data on liver cancer in Kenya, although what we do have seems to indicate that liver is the third most common cancer amongst Kenyan males. It is almost certainly underdiagnosed. We hear regularly of people only going to the hospital at the very last minute or not even receiving treatment at all with their death not being correctly recorded as cancer. Currently viral hepatitis is believed to be the main cause of liver cancer here, but there is also concern about the rising rates of alcohol abuse.

In line with the rest of the world, obesity rates are rising, particularly in the urban areas where fast food consumption increases, moving away from the traditionally vegetarian diet of the past. We have no idea how people have NAFLD or NASH, as it is simply not recorded, partly due to government inaction, but also because we simply don't have the scanning equipment to carry out a proper testing program.

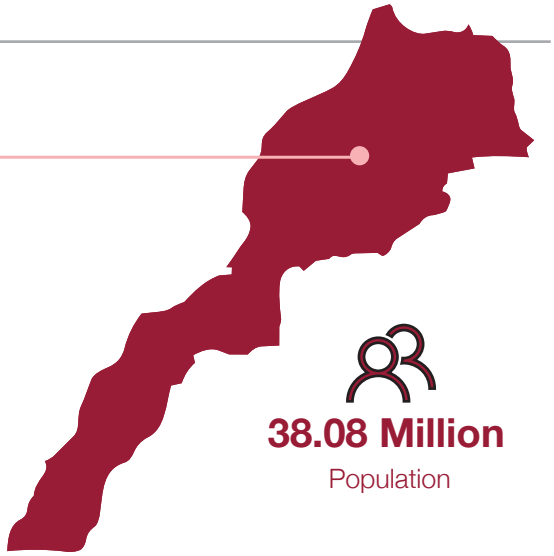
T2D is also becoming common, but it needs regular medication. Many people can't afford that, thus they resort to traditional remedies, which can often make things worse.

It's a very sad situation. Liver disease is not only widespread but it is often fatal. We urgently need a program of education around obesity and alcohol abuse, starting from an early age in the schools. Hospitals desperately need more diagnostic resources so that we can begin a proper screening program for those at risk of liver disease.

If we carry on as we are, especially with the new challenges presented by NAFLD and NASH, we will be looking at a very serious crisis in liver disease in the next decade. The government needs to take action – and soon.

OVERVIEW

MOROCCO



38.08 Million
Population

Population: 38.08 million (2024)

GDP per capita: $4,153.2 USD (2024)

Life Expectancy: 73 years (men) and 78 years (women) (2024)

Healthcare Spending: 6.06% of GDP (2023)

Healthcare Funding: Morocco's healthcare system is financed through state tax revenues, mandatory health insurance contributions, and direct household payments, with the Ministry of Health and Social Protection overseeing national policy and regulation. The state remains the principal healthcare provider, with public hospitals accounting for the majority of bed capacity, although spending patterns reveal a more balanced public-private split, with the private sector contributing a substantial share of total health expenditure.

The most significant reform of the past decade has been the expansion of Assurance Maladie Obligatoire (AMO), the country's mandatory health insurance scheme. Coverage rose from approximately 42% of the population in 2018 to 88% by the end of 2025, extending protection to more than 32 million people through several channels. In 2025, management of all basic health insurance schemes was consolidated under the National Social Security Fund (CNSS), replacing a previously fragmented administrative structure. This rapid expansion has nonetheless not yet resolved Morocco's reliance on out-of-pocket spending, which represented 45.6% of total health expenditure in 2018, a notable improvement from 50.7% in 2013 but still well above the 25% threshold considered consistent with adequate financial protection under Universal Health Coverage principles[1]. This persistent cost burden, compounded by limited healthcare infrastructure in remote areas, helps sustain a parallel reliance on traditional herbal medicine, which ethnobotanical surveys estimate is used by 60% to 80% of the Moroccan population to meet healthcare needs.[2]

$4,153.20
GDP per capita (USD)

6.06%
of the GDP is spent on Healthcare

73 (men) & 78 (women)
Life Expectancy

Sources: Data.WorldBank, World Bank Group, Kapsule, International Trade Administration (trade.gov), World Bank, ScienceDirect, Front Pharmacol.

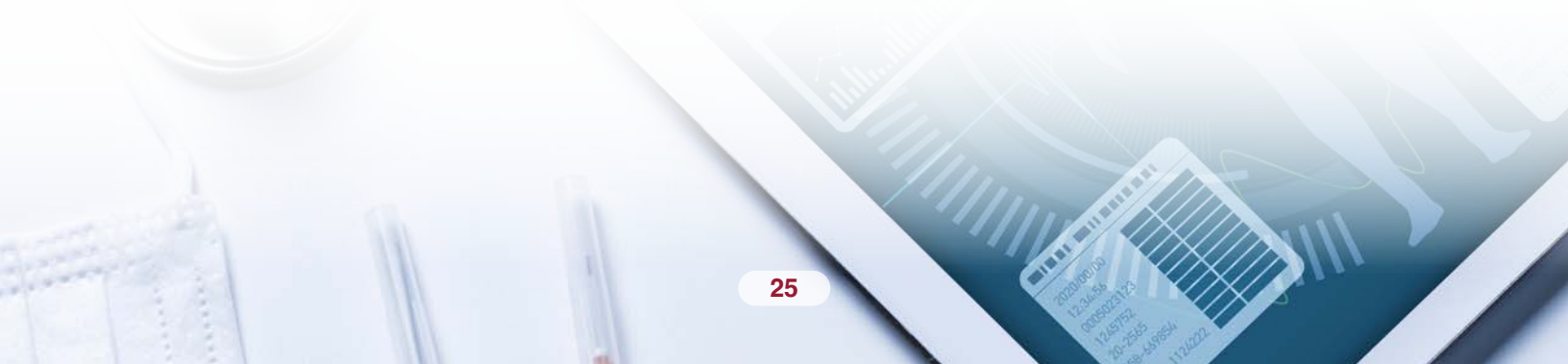


Liver disease constitutes a significant and evolving public health concern in Morocco, shaped by a combination of viral, metabolic, and alcohol-related factors. Chronic hepatitis B and C infections have historically been the leading drivers of cirrhosis and hepatocellular carcinoma in the country, even as their prevalence has declined considerably in recent decades.[3,6] More recently, rising rates of obesity and metabolic syndrome have positioned MASLD as an increasingly important contributor to the national liver disease burden, alongside alcohol-related liver disease, whose true scale remains likely underestimated due to persistent social stigma.[8,20]

Of 350000 Moroccans living with chronic HCV infection only **1500 are receiving DAA therapy.**

Hepatitis B virus (HBV) infection has historically been one of the principal causes of chronic liver disease in Morocco, although decades of sustained immunization efforts have considerably reduced its public health burden. An early nationwide screening campaign conducted between 2006 and 2009 among more than 16,000 working-age adults estimated overall HBsAg (hepatitis B surface antigen, the serological marker used to detect infection) seroprevalence at 1.66%, with a higher rate among men (2.16%) than women (0.90%), placing the country among zones of low HBV endemicity.[3] A more recent ten-year retrospective study (2014-2023) found that patients under 25 years of age account for only a small fraction of cases, a pattern attributed to the success of Morocco's 1999 infant vaccination program.[4] These cumulative gains were formally recognized in 2025, when the World Health Organization designated Morocco a "Hepatitis B Control Country" in light of its systematic newborn immunization coverage, strengthened epidemiological surveillance, and regularly updated treatment protocols, with a 2019 national survey placing chronic HBV prevalence at 0.7%, rising to over 1% among adults aged over 41.[5] Despite this progress, hepatitis B continues to spread through routes beyond blood exposure, including sexual contact, traditional circumcision practices, improperly sterilized piercing equipment, and mother-to-child transmission during pregnancy or breastfeeding, underscoring the continued importance of prenatal screening and sustained public awareness efforts.[5]

Hepatitis C virus (HCV) infection remains a significant contributor to chronic liver disease in Morocco, even as seroprevalence among the general population has continued to decline over time. The most recent national estimate placed anti-HCV prevalence at 0.50% in 2019, down from 1.80% reported between 2015 and 2018, reflecting improvements in blood screening and harm reduction practices.[6] Prevalence is considerably higher among specific at-risk groups, reaching up to 60% among people who inject drugs and ranging from 12% to 76% across different studies of hemodialysis patients.[6] Despite the availability of direct-acting antivirals (DAAs) capable of curing HCV within three months, access to treatment in Morocco has historically been limited and inequitable. As of 2017, more than 350,000 Moroccans were estimated to be living with chronic HCV infection, with approximately 5,000 deaths occurring annually from related complications, yet only 1,500 patients were receiving DAA therapy each year.[7] An investment case analysis subsequently demonstrated that scaling up treatment toward elimination by 2030 would be highly cost-effective, at less than half of Morocco's per capita GDP per disability-adjusted life year averted, and could avert over 50,000 deaths from HCV by 2050.[6] Following the adoption of this evidence, the Ministry of Health committed to treating more than 6,500 patients in the public sector during 2018-2019, marking the first large-scale expansion of HCV treatment access beyond the previously insured minority.[7]



In one large retrospective series of HCC patients, 1 in 440 underwent transplantation

Metabolic dysfunction-associated steatotic liver disease (MASLD) has emerged as a significant public health concern in Morocco, closely tracking the country's rising rates of obesity and metabolic disease. National survey data indicate that 53% of Moroccan adults are overweight and 20% are obese, alongside high rates of hypertension (29.3%), diabetes (10.6%) and pre-diabetes (10.4%).[8] A retrospective study at the Mohammed VI University Hospital in Marrakech found that approximately half of a sample of 386 patients presented some form of MASLD, with the prevalence of simple steatosis rising sharply with body mass index, from 6.1% among normal-weight individuals to 83.5% among those with obesity.[9] Among patients with type 2 diabetes specifically, a further study at the Mohammed VI University Hospital in Oujda found that almost half had MASLD, with the condition significantly associated with obesity, metabolic syndrome, hypertension, dyslipidemia, and macrovascular complications in this population.[10] As no approved pharmacological treatment for MASLD currently exists, a six-month nutritional education program was evaluated in 210 obese patients in Marrakech, 62% of whom had MASLD. The intervention achieved significant results, supporting lifestyle intervention as an effective strategy for managing obesity-related MASLD.[11]

Hepatocellular carcinoma (HCC) represents a substantial and growing burden in Morocco. According to 2020s national estimates, HCC annual incidence is at 3.20 per 100,000 individuals and its associated mortality is at 3.10 per 100,000, up from 1.73 per 100,000 recorded in 1990.[6] Hospital-based series from Marrakech and Rabat report underlying cirrhosis, frequently of viral origin, in 42 to 87 percent of cases, with chronic hepatitis B and C accounting for most identified causes and a sizeable proportion remaining of indeterminate origin.[6,12-14] Patients are typically diagnosed in their fifties to sixties, often presenting with right hypochondriac pain[12-14]; Most patients present at an advanced stage, consequently, curative options such as resection, ablation, or transplantation are achieved in only a minority of cases, and overall survival after diagnosis remains poor, averaging around six months.[12-14]

Liver transplantation itself remains an emerging rather than an established treatment option in the country; in one large retrospective series of HCC patients, only a single case among 440 underwent transplantation.[13] A milestone was reached in September 2024, when CHU Ibn Sina in Rabat, in collaboration with Paul Brousse Hospital in France, performed the country's first two living-related liver transplants within 48 hours, including an emergency procedure for a young woman with fulminant hepatitis who received a left hemi-liver graft from her father, and a second transplant for a patient with decompensated cirrhosis who received a right hemi-liver graft from her daughter.[15] Living-related donation currently represents the principal alternative to deceased-donor transplantation for Moroccan patients on the waiting list, applied in carefully selected cases meeting biological, anatomical, and medico-legal criteria.[15] Wider development of deceased organ donation, however, continues to be hindered by gaps in public awareness: national surveys report that only about a third of respondents are familiar with the legislation governing organ donation, that roughly half of the population is unwilling to donate their own organs, and that concern about medical error and the belief in organ trafficking are the most commonly cited reasons for refusal, leading survey authors to call for sustained public information and awareness campaigns to support the future development of transplantation services.[16]



LIVER HEALTH OVERVIEW

Population-based data on cirrhosis are unavailable for Morocco, with current evidence drawn from hospital-based cohorts and high-risk populations. Among patients with chronic hepatitis C, cirrhosis was identified in 31.8% of a 699-patient cohort, with a further 17.7% presenting advanced fibrosis.[17] A systematic review of Moroccan hospital-based cohorts reported cirrhosis-range liver stiffness in 27.3% of hemodialysis patients with hepatitis C, and described a cohort of 124 hospitalized cirrhotic patients in whom gastrointestinal bleeding was the most frequent complication (40.3%), with in-hospital mortality of 9.6%. In a further cohort of 120 patients, viral hepatitis was the leading cause of cirrhosis, followed by MASLD and alcohol-related liver disease.[18] Dedicated Moroccan data on alcohol-associated liver disease (ALD) remain unavailable, but regional findings offer relevant context. Across the Middle East and North Africa, the age-standardized death rate for alcohol-related cirrhosis fell by 46.0% between 1990 and 2021, despite raw incident cases more than doubling with population growth.[19] Within the North Africa subregion, which includes Morocco, 47.2% of healthcare providers surveyed reported an increase in ALD cases over five years, and 89.8% identified stigma as inhibiting patients' willingness to seek help.[20]



Healthcare providers surveyed reported an increase in ALD cases over five years, and

89.8%

identified stigma as inhibiting patients' willingness to seek help



OVERVIEW

NIGERIA



Population: 236 million (2024)

GDP per capita: $5,000 USD

Life Expectancy: 60.4 years (men) and 64.2 years (women)

Healthcare Spending: 3.4% of GDP

Healthcare Funding: Nigeria's healthcare system includes public and private providers and modern and traditional systems in a three-tier system. The primary healthcare system consists of community-based and primary care, mostly run by local government areas. Secondary care facilities include general clinics and hospitals, many run by the state government. Tertiary centers provide specialized care at federal government centers and research institutes. In response to the growing healthcare needs, Nigeria is actively working towards implementing its Universal Health Coverage Plan through a series of initiatives and investments to bring health security by 2030. However, due to a lack of funding through this complex transition, over 90% of Nigerians still do not have personal health insurance, and 77.2% rely on out-of-pocket healthcare spending.

Sources: *U.S.'s CIA The World Factbook, Severe Malaria, Nigeria Solidarity Fund*

$5,000
GDP per capita

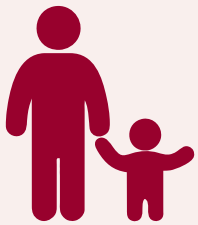
3.4%
of the GDP is spent on Healthcare

60.4 (men)
and **64.2 (women)**
Life Expectancy

Nigeria, a lower-middle-income country in West Africa, faces significant chronic liver disease due to widespread hepatitis B infection and excess consumption of alcohol. The healthcare system, facing financial inaccessibility and structural limitations, further contributes to high rates of treatable diseases among residents.

Metabolic dysfunction-associated fatty liver disease (MAFLD) is becoming increasingly prevalent in Nigeria, driven by rising rates of overweight, obesity, and diabetes. However, the incidence is not as high as in studies from Western and European countries.[1] The rise in obesity in Nigeria is linked to increased consumption of high-calorie foods and sedentary lifestyles, with higher rates among the upper and middle classes due to higher access to fast food restaurants.[1,2] Despite policies promoting healthy physical and nutritional habits, the focus remains more on undernutrition than obesity in Nigeria.[1,2] With the country's industrialization and the proliferation of nutrient-poor processed foods, this condition will pose an increasing challenge for Nigeria if it is not proactively addressed.

At the same time, 2 million children in Nigeria are currently suffering from severe acute malnutrition and only two out of 10 children receive treatment.[3] This introduces another pathway to fatty liver disease. With high rates of undertreated malnutrition, many children experience wasting and/or stunting, which can lead to metabolic syndrome and increase the likelihood of developing conditions like obesity, high blood pressure, and insulin resistance later in life.[4,5] Metabolic disease can lead to fatty liver disease due to the body's increased fat mobilization and insufficient nutrients for proper liver function. This is speculated to be further exacerbated by increasing urbanization that has introduced processed food and fast food chains in Nigeria while lifestyles become more sedentary.[4] Thus, malnutrition in childhood increases the risk of fatty liver disease for many Nigerians, and that risk may come to fruition if they gain access to high-calorie, low-nutrient foods in adulthood.



Malnutrition in childhood increases the risk of fatty liver disease in adulthood

In Nigeria, viral infections are the primary causes of chronic liver disease and liver cancer.[6] It is estimated that 35 million people are infected with hepatitis B and C virus, with higher prevalence in rural areas.[6] Those who suffer from HBV infection have a 15-25% chance of dying early in adulthood from cirrhosis and liver cancer, and a small number of people with acute infections might also die from sudden liver failure.[6] The rate of HBV infection is high among frontline health workers/surgeons as well as among people who have had certain health procedures, including traditional circumcision, a dental procedure outside of a health facility, a vasectomy, and wanzami – a traditional, surgical removal of the uvula.[6,7] Nigeria also has the second-highest rate of HIV infection in the world, so people with viral hepatitis are often co-infected with HIV.[8,9]

Although HBV is preventable through a free, three-part infant vaccination series as part of Nigeria's routine childhood immunization programs, only 51% of children are vaccinated.[10] This is due to a fractured medical system and inconsistent funding, promotion, and availability.[10] Even with annual screenings for HBV and HCV during National Hepatitis Day, much of the population is left vulnerable to these infections – and this situation has resulted in HBV causing nearly 80% of cases of liver cancer in Nigeria.[10,11]

35 million
people are infected with
hepatitis B and C virus

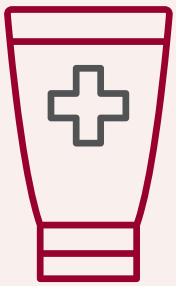
© 2026 by Global Liver Institute. All rights reserved

In 2016, hepatocellular cancer (HCC), accounted for 4.4% of cancer cases and 7.3% of cancer deaths, making it the fourth deadliest cancer in Nigeria.[12] Those who receive an HCC diagnosis have an average of 2.5 to 3 months to live – less when the patient also has HIV; this is a poor prognosis compared to global averages.[11] Further, aflatoxin, a cancer-causing poison naturally found in fungus, has been found at levels higher than is considered safe in major food sources like rice, maize, legumes, ground nuts, and more.[13] With over 90%of households consuming these products, it poses a major liver health risk to the population.[13]

Because many Nigerians pay out-of-pocket for healthcare, many seek affordable options for self-medication from places like roadside chemists, unauthorized shops, and stalls.[14] Therefore, the lack of standard screening for risk factors means that many patients with liver cancer do not see a physician until they have symptoms, have thus already developed advanced disease, and therefore have limited effective treatment options.[11]

Alcohol consumption contributes to chronic liver disease in Nigeria, especially for men. The country leads Africa at 13 liters per capita alcohol consumption per year.[15] In a 2022 self-report survey of Southeast Nigeria, 79% of participants indicated that men in their area drink daily, and 57% agreed that most men depend on alcohol.[16] This growing problem has increasingly begun to affect the younger populations, prompting the government to ban the sale of alcohol in small sachets, which are more accessible and popular among the youth.[17] Although the legal drinking age is 18, many begin drinking years earlier – especially boys.

Only
51%
of children are
vaccinated for HBV



The country leads Africa at **13 liters per capita alcohol** consumption per year.

This pattern of alcohol consumption leads to liver disease. Alcohol consumption follows viral hepatitis as the second leading cause of liver cancer.[18] A nationwide study also found that 80% of cases of cirrhosis were caused by alcohol consumption.[19] Enforcement of laws and stronger public health measures to reduce excess consumption of alcohol are necessary to address this growing problem and prevent cirrhosis and liver cancer.

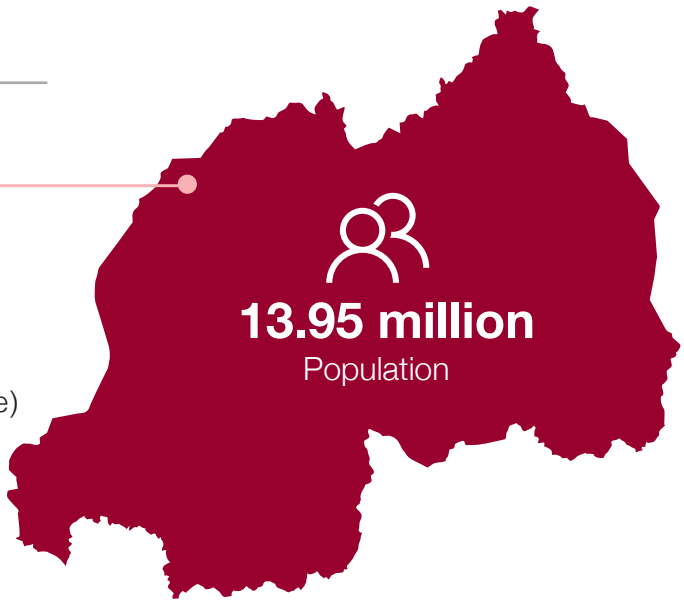
Unfortunately, treatment options for this type of end-stage liver disease are limited. Although renal transplantation has been available in Nigeria since 2000 from living donors, the skill and infrastructure to support liver transplantation is still under development.[20] Surgeons in Nigeria have held symposiums to establish a liver transplant center in the country and promote liver health.[21] This has led to an announcement from government-run Aminu Kano Teaching Hospital that it has acquired the equipment and technical expertise to conduct liver transplants soon.[21] However, liver transplantation services require substantial financial investment, advanced infrastructure, and highly specialized human resources, and the current health system in Nigeria is not built to sustainably meet this need.[22]

Liver health in Nigeria faces significant challenges due to high rates of viral infections like hepatitis B and C, compounded by inaccessible healthcare infrastructure and economic barriers that hinder early detection and treatment. Additionally, high alcohol consumption, particularly among men, exacerbates liver health issues, leading to increased cases of liver cancer and hepatitis. To improve liver health outcomes, Nigeria should expand its infrastructure to increase vaccinations and screenings, enhance public health education, and enforce regulations that curb harmful practices.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

RWANDA



Population: 13.95 Million (2023)

GDP per Capita: $1,010.27 USD

Life Expectancy: 69.4 Years (Female) and 65.4 Years (Male)

Healthcare Spending: 7.8% of GDP

Healthcare Funding: Rwanda's healthcare system is primarily funded through a combination of government spending, external donor aid, and community-based health insurance schemes. The *Mutuelle de Santé*, a community-based health insurance program, provides health insurance coverage for most of the population, especially those living in rural areas. This program operates on a tiered, premium, income-based structure to make healthcare affordable and accessible. The government subsidizes premiums for the poorest citizens, while wealthier households contribute more. International donors and development partners play a significant role in financing healthcare initiatives, including maternal health, infectious disease control, and health infrastructure development.

Sources: Data Commons, MacroTrends, Think Global Health

$1,010
GDP per capita

7.8%
of the GDP is spent on Healthcare

69.4 (men)
and **65.4 (women)**
Life Expectancy

Rwanda faces a significant burden from liver disease, primarily driven by viral hepatitis. In 2020, liver-related conditions accounted for approximately 4.4% of all mortality, resulting in an age-adjusted death rate of 41 per 100,000 population, relatively higher compared to the rest of Africa.[1] Chronic infections with hepatitis B virus (HBV) and hepatitis C virus (HCV) contribute heavily to liver cirrhosis and hepatocellular carcinoma (HCC).[2] Beyond viral hepatitis, risk factors for liver disease in Rwanda include excessive alcohol use and metabolic-associated steatotic liver disease (MASLD).

The state of liver health in Rwanda reflects a combination of lifestyle, infectious disease burden, and limited access to advanced treatment. MASLD, previously known as nonalcoholic fatty liver diseases (NAFLD), is emerging as a concern alongside rising rates of other metabolic disease. Although Rwanda's obesity prevalence (11.5% among adult women and 2.5% among adult men) is below the regional prevalence, women are disproportionately affected, and the trend poses a growing risk for liver complications.[3] Lifestyle and cultural factors, including a societal preference for weight gain in women after marriage, contribute to this disparity. This is compounded by the fact that 5.5% of Rwandan adults are living with diabetes, a key risk factor for MASLD.[4] As of 2017, the prevalence of MASLD in Rwanda was estimated at 5.2%, marking it a public health issue for the country.[5]

In 2020, liver-related conditions accounted for approximately

4.4%

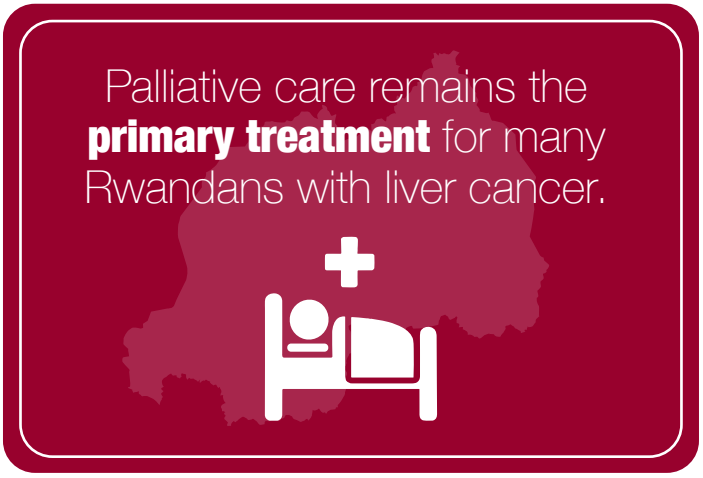
of all mortality, resulting in an age-adjusted death rate of **41 per 100,000 population**

Alcohol consumption represents another significant driver of liver disease in the country. With an average per capita consumption of 9.0 liters per year, Rwanda ranks among the highest in Africa.[6] According to Rwanda's Ministry of Health, alcohol use increased from 41% to 48% between 2013 and 2022, with men consuming significantly more than women.[7] The widespread availability of alcoholic beverages, including traditional brews, has exacerbated this trend, particularly in the younger population. Additionally, the fermentation of some traditional brews occurs in steel drums, which contributes to iron overload, resulting in additional strain on the liver. In response, the government has initiated a public health campaign entitled TunyweLess ("Let's Drink Less") to curb excessive alcohol intake, especially among the youth.[8]

Infectious liver disease also remains a concern. In a recent survey of non-communicable disease (NCD) patients, less than half of the participants reported prior screening for hepatitis.[9] Barriers for liver health screening in the region include the delays in turn around times for viral load testing and costs associated with accessing pre-treatment initiation lab tests. As of 2024, the estimated prevalence of HBV is 2% and 6.7% for HCV.[6] However, risk is not spread evenly in the population: Younger populations demonstrate a greater prevalence of HBV, while older patients have a greater prevalence of HCV. This may be a combination of a high incidence of mother-child transmission and prevalence of high-risk behaviors among older adults. Despite efforts to provide care, gaps remain in the testing and treatment protocols for viral hepatitis in Rwanda. To address this, Rwanda adopted a centralized approach to hepatitis treatment led by the Ministry of Health (MOH) in 2018, with mass screening campaigns and a national patient tracking system.[6] Through this centralized approach, the MOH established 13 centers for rapid diagnostics and nine centers capable of advanced PCR testing.[6] While mass campaigns have been effective, the country has also been shifting towards more targeted public health approaches, like the micro-elimination approach that focuses on high-risk patient populations.[6]

Liver cancer constitutes an estimated 12% of all cancers in Rwanda, making it the fifth most prevalent type of cancer among Rwanda's adult population.[10] This illustrates the high prevalence of liver risk factors in the region.[10] However, treatment options remain limited due to a lack of resources and accessible healthcare across the country. Access to curative interventions such as surgical resection, ablation, or liver transplantation is extremely limited.[11] As a result, palliative care remains the primary treatment for many Rwandans with liver cancer.

Due to an overarching lack of physicians and healthcare providers trained in organ transplantation, and an inadequate legal framework to regulate the procedure, Rwanda did not have a functional organ transplantation program until 2023.[12] Despite its recent establishment, Rwanda has made significant strides in the development of the program. The first successful liver transplant surgery was performed in April of 2023 at the Rwanda Military Hospital by a team of specialized hepatologists.[13] Prior to this, patients who needed liver transplants were referred abroad. Rwanda's Ministry of Health is working to expand organ transplant services, including establishing organ banks and conducting research, with the goal of reducing the need for patients to seek treatment outside the country.[14]



Liver health in Rwanda is challenged by rising lifestyle-related risk factors, significant burdens of viral hepatitis, and limited access to comprehensive liver care. While government initiatives and public health campaigns are steps in the right direction, ongoing investment in screening, treatment, and education will be critical to improving outcomes.

SOUTH AFRICA

Population: 60 million (2021)

GDP per Capita: $6,253 USD

Life Expectancy: 61 years (men) and 67.9 years (women)

Healthcare Spending: 9.11% of GDP (2019)

Healthcare Funding: Around 71% of the population is cared for by public sector healthcare, which is largely underfunded. The private sector is primarily funded by individual contributions to health insurance or medical aid schemes and serves ~27% of the population. To help mitigate this inequality, the South African government has introduced the National Health Insurance Scheme, which buys healthcare services for patients, which are then delivered at either public or private facilities.

Sources: WorldData.Info, Time Doctor, GlobalData, Data.WorldBank



$6,253
GDP per capita

9.11%
of the GDP is spent on Healthcare

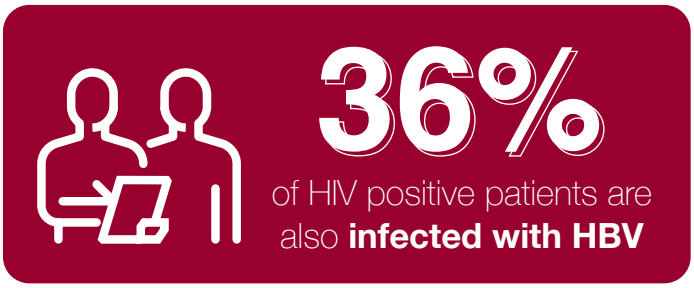
61 years (men)
and **67.9 years (women)**
Life Expectancy

South Africa has experienced great political and economic upheaval in the last few decades, which has inevitably impacted on the provision of healthcare. The additional burden of HIV and then COVID-19 have unsurprisingly contributed to significant gaps in the structure of the healthcare system, resulting in lack of progress in many key areas of health including liver disease. Overall, liver disease appears to take low priority: There are only three health professional councils registered as hepatologists in South Africa, all of whom are based in Groote Schuur Hospital in Cape Town.

There is also a dearth of epidemiological data on liver disease. Compared for example, to the widely accessible data on HIV, the quantification and management of viral hepatitis is greatly under-resourced.[1]

Much like most of southern sub-Saharan Africa, data shows an increasing prevalence of obesity in South Africa, with 13.5% of men and 42% of women obese.[1] However, despite having a greater prevalence of the associated risk factors, studies indicate that Black ethnic groups may have a lower risk of developing metabolic dysfunction-associated fatty liver disease (MAFLD) when compared to white or Hispanic ethnic groups.[2] It is hypothesized that this may be due to predominantly subcutaneous rather than visceral fat distribution; visceral fat is correlated with buildup of hepatic fat, which causes MAFLD.[2] This notion has been corroborated by, a study in South Africa that found that despite having a higher level of total body fat, African women had a lower level of hepatic fat when compared to the Caucasian and Asian Indian study participants.[3] This suggests that, all else equal, the African region would bear a lessened burden of MAFLD.

When examining the prevalence of viral hepatitis in South Africa, it is impossible to ignore the impact of HIV co-infection. South Africa has the highest prevalence of HIV in the world – 7.7 million people.[4] Due to the shared modes of transmission, HIV/HBV and HIV/HCV co-infections are common.[4] Figures from West and Southern sub-Saharan Africa show that approximately 36% of HIV positive patients are also infected with HBV.[5] Co-infection with HBV, however, has been shown to be more fatal than co-infection with HCV.[1]



Attempts to tackle the burden of viral hepatitis have had varying results. In April 1995, the South African government introduced a universal HBV vaccine program for newborns and infants, but has not yet begun to screen for the hepatitis B surface antigen (HBsAg), which indicates current or recent infection, during pregnancy.[6]

Still, the HBsAg prevalence in infants under the age of one, is high: 65.7%.[7] Meanwhile, the national prevalence will continue to grow, as it recently jumped ~20% over a period of 5 years.[7]

Alcohol consumption in South Africa varies between two extremes, with the population having a high prevalence of both binge drinkers and those who abstain from alcohol altogether.[8] Per 100,000 of compensated cirrhosis cases in South Africa, approximately 90,513 were due to alcohol-associated liver disease.[9] To counteract the alcohol-related harm that occurs within the population, political leaders in South Africa have taken drastic action, which included a nationwide prohibition of alcohol that was put in place during the COVID-19 lockdown.

Based on GLOBOCAN data, there were an estimated 37,353 deaths in South Africa due to liver cancer in 2012, with this figure expected to nearly double to 64,525 by 2030.[10] In addition, in recent years liver cancer rates have had a significant decrease among younger Black African men but increased in older Black African men and women.[10] The increased mortality in these age groups may be the consequence of improved overall life expectancy and the rising prevalence of risk factors related to lifestyle behaviors, though further investigation is merited.

For end-stage liver disease, approximately 40-50 liver transplants are carried out per year in South Africa, and outcomes are comparable to international transplant centers. However, transplant services are only available at three transplant centers in the country – one in Johannesburg and two in Cape Town.[11,12] Transplant facilities are in great need of expansion to address the increasing prevalence of liver disease in South Africa.

© 2026 by Global Liver Institute. All rights reserved

STIGMA AROUND LIVER DISEASE HOLDING BACK PROGRESS

Professor Wendy Spearman is Head of the Division of Hepatology, Department of Medicine, Faculty of Health Sciences at the University of Cape Town and Head of the Liver and Liver Transplant clinics at Groote Schuur Hospital. She is the Local Chair of the Conference on Liver Disease in Africa (COLDA) and was the WHO Africa appointed lead clinician for the development of the National Guidelines for the Management of Viral Hepatitis in South Africa.

Liver disease is generally not seen as a major health problem in South Africa, especially when compared to infectious diseases such as HIV and TB or respiratory and cardiovascular disease. Policymakers and the general public have struggled to get beyond the idea that liver disease must somehow be related to alcohol abuse, and this has allowed it to be relegated as a public health issue.

This lack of focus has a number of implications. Firstly, there is a lack of awareness about the causes of liver diseases within the general public and even amongst many clinicians. Secondly, there is an ongoing lack of investment into research and collating real world data so there is difficulty in accessing reliable information across all the etiologies of liver disease. Of course, without reliable data it is difficult to ask for, and obtain, appropriate funding for testing, diagnostics and treatment therapies.

For example, hepatitis B is endemic and underestimated. It is probably running at around 4% prevalence in the general population.These "HBV-infected individuals often present with complications of advanced liver disease such as inoperable liver cancer in their early 20s." Although in theory, viral hepatitis is a notifiable disease, the majority of these infections are not notified and in reality many of the deaths due to cirrhosis or liver cancer- particularly if they take place in rural areas which are serviced by overwhelmed primary care clinics - are not correctly recorded.



HBV-infected individuals often present with complications of advanced liver disease such as **inoperable liver cancer in their early 20s.**

Likewise, the majority of liver cancer patients present at the late or end stage of disease, usually after becoming jaundiced or suffering weight loss. Although there are screening and diagnostic facilities in secondary care across all the provinces, for MRI scans, chemotherapy and the latest interventional radiology, the patient must be referred to tertiary care. Unfortunately, tertiary care cannot deal with everyone who needs us, so we have to select depending on whether we can provide them with an appropriate treatment. Even in tertiary care, the reality is that lack of funding is a barrier. For example, we do not have access to the latest first-line combination systemic therapy for liver cancer.

Alcohol-associated liver disease is a big issue in South Africa, although we have no specific data on this. Alcohol plays a big part of life in South Africa, across all socioeconomic strata, and although there are high numbers of the population who don't drink at all, many South Africans are heavy drinkers.

> Of course, without reliable data it is difficult to ask for, and obtain, **appropriate funding for testing, diagnostics and treatment therapies.**
>
> - PROFESSOR WENDY SPEARMAN



STIGMA AROUND LIVER DISEASE HOLDING BACK PROGRESS
continued

There is little data on NAFLD or NASH in South Africa, nor is NAFLD currently incorporated into any non-communicable disease guidelines on diabetes, dyslipidemia and hypertension, even though obesity and diabetes rates are rising fast across the country. Obesity awareness campaigns do not mention fatty liver disease nor is there any education within schools. Even some clinicians are unaware of the link. This lack of awareness is also apparent within the health system - currently if a test shows abnormal liver enzymes, an obese patient will be referred straight to the hepatology department - whereas the correct management should probably be one of weight and metabolic control. Indeed, as the numbers of patients with NAFLD continue to increase, we are going to have to break down the barriers that see different specialists working in isolation and aim for a multi-disciplinary team approach.

We also must understand that social economic factors present real challenges to improving health care. Many South Africans live in rural areas and often have difficulty accessing tertiary healthcare. As a result, people will often only seek help when they become very ill. This is particularly relevant to liver disease which is mostly a silent disease with complications arise.

> **Obesity awareness campaigns do not mention fatty liver disease** nor is there any education within schools. Even some clinicians are unaware of the link.
>
> - PROFESSOR WENDY SPEARMAN

Recently there have been some positive developments in liver disease. For example, palliative care is now available even at primary care level with access to opiates and other forms of palliative support. In 2019, the first National Guidelines for the Management of Viral Hepatitis were published, providing clear pathways for testing and treatment – although many of these recommendations will take some time to implement.

How can we improve? We really do need to get on top of hepatitis B by screening pregnant women for HBsAg, identifying highly viraemic women for third trimester tenofovir prophylaxis and implementing the HBV birth dose vaccines. We also need simplified treatment algorithms with access to molecular diagnostics and imaging to identify those individuals with hepatitis B and C who need upscaling through the health system from those who can be managed in primary or secondary care.

Finally, we urgently need more data across all liver diseases so that we can properly assess the resources needed to tackle the ever-increasing burden of liver disease in South Africa.



OVERVIEW

UGANDA



Population: 48.7 Million

GDP per capita: $1,002 USD (2024)

Life Expectancy: 62.9 years (men) and 69 years (women)

Healthcare Spending: 4.67% (2021)

Healthcare Funding: Uganda's health system is served by a mix of public and private providers. The public sector includes national referral hospitals, regional hospitals, district health facilities, and community health centers. Government-run facilities are intended to offer free or subsidized care. Meanwhile, the private sector plays a major role in service delivery, often filling gaps where public services are limited, but it largely relies on out-of-pocket payments from patients and support from donors or NGOs. Since health insurance coverage is limited, a National Health Insurance Scheme was passed by Parliament in 2021, but has not yet been implemented nationwide. Household out-of-pocket payments currently make up an estimated one-third or more of total health expenditures.

The health sector received 6% of Uganda's national budget for 2023/24; however, almost 80% of total healthcare funding relies on international donor contributions and private entities like UNICEF and USAID. The government is exploring public-private partnerships for healthcare investments, in which it offers land while private entities finance, construct, and manage healthcare facilities.

Sources: *World Bank, Africa Health Sciences, International Trade Administration, World Health Organization, J Prev Med Public Health, New Vision*

$1,002
GDP per capita

4.67%
of the GDP is spent on Healthcare

62.9 (men) and **69 (women)**
Life Expectancy

Liver health in Uganda is complicated by equal parts of progress and unfinished business. For instance, hepatocellular carcinoma (HCC), the most common primary liver cancer, is one of the most common causes of both cancer and cancer-related death in the country.[1] This stems from a mix of viral infections, environmental exposures, alcohol use, and rising metabolic conditions. While hepatitis B remains the dominant threat, new concerns like fatty liver disease and alcohol-related diseases are gaining ground.

Uganda has long been regarded as highly endemic for HBV. In 2009, over 1.4 million adults lived with chronic hepatitis B infection in Uganda, with certain communities experiencing a disproportionately higher burden. More recent data indicate lower rates of prevalence around 4 to 6%.[2,3] The WHO estimated that there were 1,250 HBV-related deaths in Uganda in 2022.[3] Most infections occur perinatally or in early childhood.[4] In response, Uganda introduced universal infant HBV vaccination in 2002 and added a birth dose in 2023.[2,3]

Uganda's Ministry of Health has also implemented other major HBV control programs. Since 2015 a free nationwide HBV screening campaign has tested millions of people.[3] By mid-2023, over 4 million Ugandans had been screened, allowing diagnosis of roughly 30% of chronic cases (exceeding WHO's 2020 targets).[3] National hepatitis guidelines (2019) and a new 2023–28 strategic plan emphasize prevention (full infant immunization with birth dose and prenatal testing) and linkage to care. HBV services are provided free of charge.[3] Referral hospitals offer antiviral therapy to eligible patients.[2] Uganda's programs use WHO-recommended nucleoside analogues (primarily tenofovir, often with lamivudine) for treatment.[5] These combined initiatives aim to reduce HBV transmission and meet WHO elimination goals by 2030.
Hepatitis C in Uganda has a much lower prevalence than hepatitis B, and historically it has not been as thoroughly studied. National health authorities have noted that the true HCV prevalence is "unknown," with routine blood-donor screening indicating roughly 1–2% seropositivity.[2,6] Notably, high-risk groups such as people living with HIV have quite low prevalence of HCV antibodies.[7] To meet WHO's 2030 elimination targets, the Ministry of Health folded hepatitis C into its national viral hepatitis plan in 2019, thus expanding free screening and treatment, and commissioning a nationwide serosurvey to refine prevalence estimates.[2,3] Uganda has also helped propel regional commitment by hosting the inaugural African Hepatitis Summit.[8]

Another silent threat comes from environmental toxins, especially aflatoxins. These are poisons produced by mold that commonly grows on staples like maize and groundnuts.[9] In Uganda, aflatoxin contamination in food is an everyday reality – and it has dire consequences for liver health. Aflatoxins can cause liver cancer, and officials estimate they are responsible for nearly one in every four cases of liver cancer in Uganda.[10] Members of Parliament have voiced alarm that the Uganda Cancer Institute sees about 170–200 new liver cancer patients each year, of which an estimated 48–56 cases are directly linked to aflatoxin exposure.[10] Public health experts suggest that nationwide, around 3,700 new aflatoxin-induced liver cancers occur per year.[11]

© 2026 by Global Liver Institute. All rights reserved

Parasitic infections also contribute to Uganda's liver disease burden. Over 7 million Ugandans are currently infected with schistosomiasis and roughly 17 million, or about one-third of the population, live at risk of infection, despite nearly two decades of mass treatment campaigns.[12] Uganda has been aggressive in responding to the parasite. Ninety-six out of 135 districts are known to be endemic for schistosomiasis, and the Ministry of Health, with support from international partners, runs regular mass drug administration (MDA) programs in schools and communities to address infections.[13] These efforts have paid dividends, yet pockets of very high infection (>50% prevalence) persist in certain fishing villages and rice-farming areas.[13] New challenges, like the expansion of rice paddies and sand mining, which create snail-friendly habitats, are introducing the parasite to previously unaffected areas.[13] Although treatment, a yearly dose of praziquantel, is available and generally effective, re-infection rates remain high in some areas.

In Uganda, metabolic dysfunction-associated steatotic liver disease (MASLD) was largely overlooked until recently. Limited data suggest that Africa had the world's lowest MASLD rates, likely because obesity and type 2 diabetes have been relatively uncommon. However, this is changing as diets become more calorically dense and lifestyles become less active; Ugandans are quietly developing MASLD.[14,15] Overweight/obesity has climbed from roughly 19% of adults in 2014 to about 24% in 2023.[16] Similarly, measured diabetes prevalence has roughly doubled.[17] This signals that MASLD prevalence will likely also increase.

Hepatocellular carcinoma (HCC), the most common primary liver cancer, is one of **the most common causes of both cancer and cancer-related death in the country.**

In response, the government and partners have launched interventions like the "Healthy Diet, Healthy Lifestyle" campaign, which promotes better nutrition and exercise and has begun developing a National Diabetes/NCD Control Program.[18,19] The WHO has also supported diabetes control (e.g. piloting a WHO "Diabetes Compact" in select districts).[20] According to current practice guidelines, treatment in Uganda includes healthy lifestyle counseling alongside glucose-lowering medications, and MASLD is typically managed through dietary changes and weight loss. In practice, however, many cases go undiagnosed, and care is constrained by limited diagnostics, medication shortages, and under-trained healthcare providers.[20,21] Therefore, while the prevalence is still relatively low, the rising trends have led Uganda to prioritize prevention and control of obesity, diabetes and fatty liver.

According to a 2023 WHO report, the average Ugandan aged 15+ drinks about 5.6 liters of pure alcohol per year.[22] This is roughly double the average alcohol consumption in Africa. Moreover, while only 36% of Ugandans drink, WHO reports that many consume heavily, and over half of those who drink, roughly 57%, binge regularly.[23] While data on alcohol-associated liver disease (ALD) is sparse, one study from Kampala Hospital found that approximately 10% of emergency patients met criteria for alcohol-associated liver injury, and a 2023 meta-analysis estimated that 11% of Ugandans have ALD.[24,25]

Recognizing the toll of alcohol on society, the government developed a National Alcohol Control Policy, approved in 2019, to guide actions like restricting sales and marketing. The sale of potent sachet liquors was banned in 2019, as cheap sachets made hard liquor easily accessible to youth and even children.[26] Following that, an Alcoholic Drinks Control Bill was drafted that would limit hours of sale, ban the sale of small plastic sachets containing liquors, raise the legal drinking age from 18 to 21, and control alcohol advertising.[27] However, the bill was rejected in November 2024.[28]

Uganda has long faced a high burden of liver cancer due to pervasive risk factors. Liver cancer in Uganda is amongst the leading causes of cancer mortality nationally, ranking 4th or 5th highest cause of cancer death in Uganda.[29] It accounts for roughly 5–7% of all new cancer cases but nearly 1 in 10 cancers in men.[30] For patients who develop HCC, treatment options within Uganda are limited. Most cases present at advanced stages (Stage III/IV), when curative surgery or liver transplantation is not feasible.[31] The Uganda Cancer Institute and Mulago National Referral Hospital provide care that is largely palliative – about half of patients receive some form of chemotherapy or newer targeted therapy, and pain management is a central component of care.[31] However, outcomes remain low with a five-year survival rate of only 2–3%.[1] The combination of various risk factors and the aggressive late diagnoses makes liver cancer a major health challenge, and improved screening of groups with high risk would provide great benefit to patients.[29]

Uganda is in the beginning stages of offering liver transplantation to those with end-stage liver disease. The first liver transplant has only been planned in recent times and has not yet occurred.[32] In 2023, the Ugandan government passed a law to regulate organ donation and transplantation, opening the door for these surgeries to be done legally and safely within Uganda for the first time.[33] For years, if someone in Uganda needed a new liver, they had to collect the resources to fund surgery abroad, a cost of tens of thousands of dollars.[34] As a result, most patients who require a transplant never receive one.[34] This huge gap in care has made liver transplantation a pressing issue in the country. Uganda faces a growing liver disease burden shaped by both infectious and non-communicable factors. Despite national efforts in screening, vaccination, and policy reform, gaps in treatment access and early detection persist. Addressing liver health in Uganda will require stronger systems for prevention, diagnosis, and long-term care.

36% of Ugandans drink alcohol.



ASIA



HEALTH OVERVIEW

Asia, the largest continent in the world, makes up one third of the Earth's surface. It is also the most populous continent but, due to extreme geographical features, many of its 4.7 billion people live in some of the most densely populated cities in the world including Dhaka, Bangladesh, and Manila and Pateros in the Philippines.

Although Asia is generally classified as a developing region and has three of the poorest countries in the world (Afghanistan, Cambodia and Nepal) within its boundaries, it is also home to Japan and Singapore, two of the most economically advanced countries in the world. As well as wide economic disparities and resultant inequalities, Asia has a vastly diverging range of cultural, political and social models including around health.

Asia has a **diverse range** of cultural, political and social models, **including health models.**

© 2026 by Global Liver Institute. All rights reserved

Liver disease has long extracted a heavy toll of illness and mortality across Asia with the region experiencing some of the highest global rates of liver cancer and chronic liver disease.[1] In 2019 for example, estimates put the number of deaths from cirrhosis in southeast Asia alone at 442,000 – the highest in the world – and the WHO notes that 72.7% of global deaths due to HCC occur within the Asia Pacific region.[2]

Much of this disease burden has traditionally been ascribed to relatively high rates of viral hepatitis – which is still not fully controlled across many regions of the continent. Though richer countries have introduced successful vaccination and testing programs, many of the poorer countries – often with populations living in densely urbanized cities with poor sanitation and healthcare, or in very remote areas – have failed to reach similar targets. Indeed, between 1990- 2019, Asia had the largest burden of acute viral hepatitis of the continents.[3]

While struggling to control viral hepatitis at pace with the rest of the world, Asia still faces the globalized pattern of growing rates of obesity and an epidemic of T2D, particularly amongst the aging population. Further, research has indicated that Asians may be genetically predisposed to the negative effects of metabolic disorders on liver health.[4]

Studies predict that the prevalence of metabolic dysfunction-associated fatty liver disease (MAFLD) cases across the Asia Pacific region will increase between 2019-2030 by 6% to 20%, and NASH cases will increase by 20% to 35%.[5] Concurrently, cases of decompensated liver cirrhosis are expected to as much as double, and cases of hepatocellular carcinoma are also projected to rise by 65% to 85%.[5] Nonetheless, there have been some positive initiatives over the last few years. Asia was one of the first regions to put together a work group to establish guidelines on metabolic dysfunction-associated fatty liver disease (MAFLD, then known as NAFLD) in 2017, and in 2020 the Asian Pacific Association for the Study of the Liver released clinical practice guidelines for the diagnosis and management of metabolic–associated fatty liver disease.[6]

442,000

estimated deaths in 2019 from cirrhosis in Southeast Asia – the highest in the world



OVERVIEW

CHINA



Population: 1.42 billion

GDP per Capita: $12,614 USD (2023)

Life Expectancy: 76 years (men) 81.7 years (women)

Healthcare Spending: 5.38% GDP

Healthcare Funding: China's overarching health reform goal is to establish a universal basic health care system that provides safe, effective, convenient, and affordable services to all citizens. To achieve this, health financing policies have been implemented to ensure that financial resources are effectively allocated, allowing different population groups — especially the most vulnerable and high-risk — to access affordable care. Since the reforms began in 2009, government health expenditure has more than tripled from approximately 71 billion USD in 2009 to approximately 248 billion USD in 2018. As a result, the basic health insurance system now covers over 95% of the population. In 2018, the National Healthcare Security Administration was established to manage all basic health insurance schemes nationwide. These efforts have led to a significant reduction in out-of-pocket expenses for individuals; the percentage of out-of-pocket expenditure as a portion of total health expenditure dropped from 37% in 2009 to 29% in 2018, the lowest point in 20 years.

Sources: US CIA's The World Factbook, World Health Organization, World Bank Group

$12,614
GDP per capita

5.38%
of the GDP is spent on Healthcare

76 (men)
and **81.7 (women)**
Life Expectancy

Liver disease has emerged as a significant public health challenge in China, affecting an estimated 300 million people.[1] As the country has undergone rapid economic transformation, it has also witnessed a rise in liver-related health problems. Conditions such as viral hepatitis, metabolic dysfunction-associated fatty liver disease (MAFLD), and alcohol-associated liver disease (ALD) have surged in recent decades, driven by changing lifestyles, environmental factors, and the prevalence of infectious diseases. Today, China faces one of the largest liver disease burdens in the world, both per capita and in raw numbers.

Viral hepatitis remains a dominant health concern in China, particularly hepatitis B virus (HBV) and hepatitis C virus (HCV). An estimated 90 million people live with chronic HBV, contributing to about 300,000 deaths annually.[2] Chronic carriers of HBV in China account for nearly one-third of the global burden.[3] From 2002 to 2021, HBV was responsible for nearly 80% of hepatitis cases in China.[3] The incidence rate has begun to decline thanks to proactive public health initiatives.

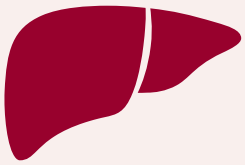
China has made substantial progress in combating viral hepatitis through financing HBV treatment and the hepatitis B vaccination program for newborns, which began in 2002.[4,5] These efforts have dramatically reduced HBV transmission among infants and young children.[5] By 2015, nearly 90% of children in China had received the full three-shot HBV vaccination series.[6] As a result of these widespread vaccination efforts, the HBV incidence rate of new cases, which had peaked at 89 per 100,000 people in 2007, declined to 69.25 per 100,000 by 2021.[3] However, the fight is far from over. Many adult populations, especially in rural and economically disadvantaged regions, remain vulnerable to HBV.[3]

For HCV infection, challenges persist. HCV incidence climbed from 1.24 new cases per 100,000 people in 2002 to 15 in 2013.[3] The WHO has that stated roughly 7.6 million people are living with chronic HCV in China.[3,4] In response, China has made strides in controlling and preventing hepatitis C. In 2018, the country launched the Hepatitis C Elimination Action by 2030 in accordance with WHO's HCV elimination campaign and later introduced the National Action Plan for Eliminating Hepatitis C (2021–2030).[7] This plan outlines a main objective and 15 specific targets that cover areas like health education, prevention, free testing, free treatment, and capacity building.[7,8] It emphasizes strategies such as enhancing health education and expanding testing – particularly universal screening for people aged 3-80 years, which has proven to be cost-effective and capable of reducing excess mortality by 62%.[9] The Chinese Medical Association has also developed guidelines to increase awareness among medical professionals and standardize the screening, diagnosis, treatment, and management of hepatitis C, contributing to reduced infection rates through the focus on at-risk groups.[8] Yet, infection rates are higher in certain regions due to socioeconomic and environmental factors.[10]

In recent decades, MAFLD has emerged as a major liver health crisis in China, fueled by the country's rapid economic development and changing lifestyles.[1,11] As industrialization has spread, sedentary lifestyles, extended working hours, lack of physical exercise and sleep, and the adoption of Western diets have increased the prevalence of obesity, which has increased MAFLD.[11] In just one decade, MAFLD nearly doubled from 17% in 2003 to almost 30% of the population in 2022.[1,11] MAFLD has become the leading contributor to chronic liver disease in China. As a result, MAFLD is expected to account for 34% of liver-related deaths by 2030.[11]

© 2026 by Global Liver Institute. All rights reserved

The prevalence of **MAFLD nearly doubled** from 17% to 33% in the last decade



MAFLD is not limited to obese individuals. Recent data reveal that 30.5% of the non-obese population in China suffers from this condition, with a notable presence of 21.4% even in lean individuals.[11] The co-existence of MAFLD with metabolic disorders such as type 2 diabetes and hypertension has further complicated the issue. If not controlled, the rise in MAFLD could have far-reaching implications for public health in China, particularly due to its progression to liver cirrhosis and cancer.[12]

China has initiated various policies, campaigns, recommendations, and guidelines to fight obesity in both children and adults over the past decade.[13] In 2022, the Obesity Prevention and Control Section of the Chinese Nutrition Society published "The Expert Consensus on Obesity Prevention and Treatment in China."[14] This consensus aims to guide national efforts in obesity prevention and control, promote widespread societal participation, and contribute to the "Healthy China 2030" development goals which aim to curb obesity by 2030.[13,14]

Also, studies in China have linked exposure to air pollutants like PM1, PM2.5, PM10, and NO_2 to an increased risk of MAFLD, particularly among males, alcohol drinkers, smokers, those with high-fat diets, and individuals with central obesity.[15] 70% of cities fail to meet national air quality standards, so this environmental risk is widespread in China.[16] Recognizing many pollution-related health risks, China pledged at the 2015 Paris Climate Conference to reduce carbon intensity by 60–65% relative to 2005 levels and to peak carbon emissions by 2030 or earlier, emphasizing a shift to clean and low-carbon energy sources that should also benefit liver health.[16]

Alcohol-associated liver disease (ALD) is another growing concern in China, driven by increasingly accessible alcohol leading to rising alcohol consumption in recent decades. This, in turn, has fueled the increase in ALD, which now affects about 4.5% of the population.[1]

The Chinese Society of Hepatology established the Fatty Liver and ALD Study Group in 2001, which has since published several Clinical Practice Guidelines for the Diagnosis and Management of ALD, starting in 2003.[17] Despite these efforts, ALD prevention in China remains challenging when the annual per capita alcohol consumption is expected to reach 8.1L – more than 2L above the global average – by 2025 for people aged 15 and above.[18] The low cost of hard liquor, easy access to alcohol, and widespread alcohol advertising contribute to the difficulty in curbing alcohol consumption and reducing the prevalence of ALD across the country.[17] However, the rate of alcohol consumption in China is rising fast, with 56% of men and 15% of women identified as current drinkers.[1] ALD is a significant contributor to liver cancer and other chronic liver conditions.[19] In fact, in 2005, ALD accounted for nearly a quarter of liver cancer deaths in men.[19]



Alcohol-associated liver disease (ALD) is a growing concern in China driven by rising alcohol consumption in recent decades.

Liver cancer remains a significant concern, with China accounting for over half of the world's liver cancer deaths and approximately 383,203 fatalities annually.[17] 3 in 4 reported cases are men, making it the third most common cancer among males.[12] As of 2024, the survival rate for liver cancer in China remains significantly low, with a five-year survival rate of approximately 12%.[12,20] The survival rates have not seen substantial improvement over the years due to late-stage diagnoses and the high prevalence of risk factors that include chronic HBV and HCV infections, exposure to aflatoxins from contaminated food, cirrhosis, diabetes, and metabolic disorders.[20]

In response, China has worked to extensively expand and develop its liver transplant system.[21] According to the China Liver Transplant Registry (CTLR), China now performs over a third of all liver transplants worldwide.[21] Efforts to increase transparency and efficiency in organ donation have led to the establishment of the China Organ Transplant Response System.[21] From 2015 to 2020, 24,423 adult patients underwent liver transplantation in China.[22] After more than 20 years of progress, liver transplants in China now have a 90% survival rate one year after the procedure and a 70% survival rate after three years.[17]

Living donor liver transplantation has also expanded, offering an alternative to address the donor shortage. Yet, traditional beliefs about maintaining an intact body after death impact the availability of living donors.[21] While deceased donors account for a large proportion of donations, options to increase the donor pool are limited due to extremely narrow criteria for brain death.[21,22]

Liver health is a growing concern in China because of diseases like hepatitis and fatty liver disease. Education, vaccinations, and promoting healthy lifestyles are key to fighting these illnesses. The government has shown commitment by adding hepatitis prevention to national health plans and covering treatments with health insurance since 2020. Ongoing efforts in public education, awareness campaigns, and affordable treatments are essential to improve liver health outcomes in China.



More than half of the world's deaths due to liver cancer occur in China.

HEPATITIS B CONTINUES TO SHAPE THE STORY OF LIVER HEALTH IN CHINA

Dr. Guo Simin is Associate Chief Physician in the Ruijin Hospital, Shanghai, with expertise in viral hepatitis B and parasitology. Dr. Guo trained in China, France, and the UK, and is a dedicated physician-scientist actively engaged in clinical care and research.



Thirty years ago, approximately **one in ten people in China was infected with HBV.**

Thirty years ago, approximately one in ten people in China was infected with HBV. Through national efforts to provide HBV vaccination free to infants, the prevalence is now half of what it once was, significantly reducing mother-to-infant transmission. Younger patients are now rarely seen in my department. Still, this achievement has not erased the stigma of hepatitis B. Almost all patients want a clinical cure desperately (to clear the antigen and be seen as “clean” by family and colleagues). Stigma continues to impact marriage, employment, and education for patients infected with hepatitis B.

The legacy of hepatitis B continues to shape liver health in China. Infectious disease doctors are responsible for most liver care in the nation, even when a condition is not infectious. Unfortunately, this means training for liver care is fragmented across infectious disease and internal medicine. When people have elevated ALTs, some general practitioners still refer to an infectious disease, and most people immediately assume that they may have a contagious disease.

This contrasts with the actual etiology of liver disease. There has been a rise in non-viral cases of liver disease, as shown by more cases of HCC linked to diabetes and fatty liver. Additionally, drug-induced liver injury (DILI) is increasing with the popularity of treatments like traditional medicine and silymarin — often marketed to address liver hazards like heavy alcohol consumption. These cases, especially HCC, are often complex and require collaboration across specialties as part of multidisciplinary teams (MDTs), including radiologists, endocrinologists, nephrologists, and pathologists. Weekly MDT discussions are standard to ensure individualized and well-coordinated care.

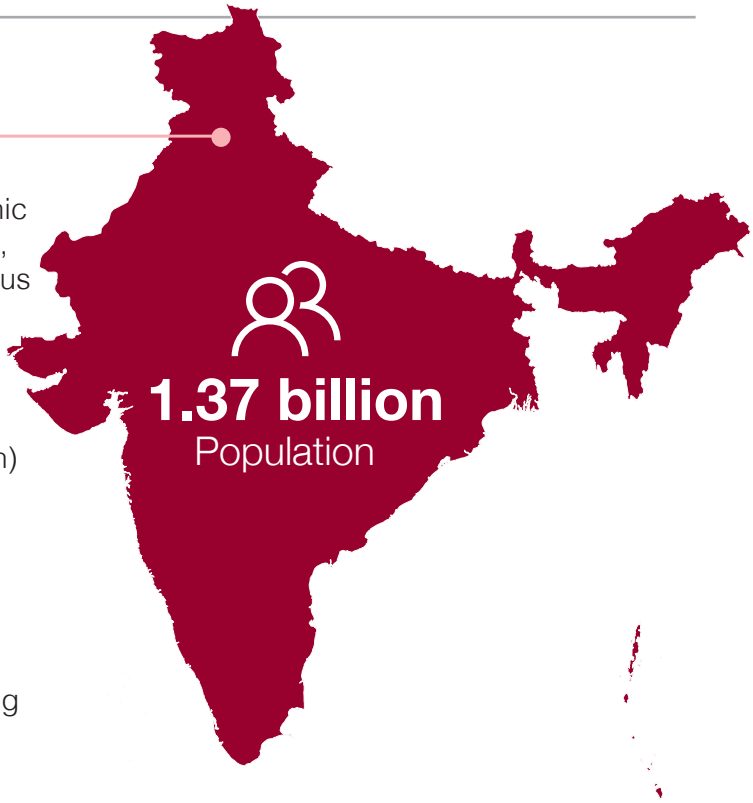
In China, people take their liver health seriously, though misconceptions remain. The major campaign each year, Love Your Liver Day, is in July, and many hospitals and liver associations will put out a publication and provide free tests and scans for patients. Even this reflects the prioritization of hepatitis B, as elsewhere in the world, it is World Hepatitis Day.

I am hopeful for my patients that we will find a cure for hepatitis B infection and that, in collaboration with patient groups, the stigma of infection will decrease.



OVERVIEW

INDIA



India is the 7th largest country in the world by geographic size. Split between 29 states and seven union territories, India is second only to China as one of the most populous countries in the world.

Population: 1.37 billion (2020)

GDP per Capita: $2,485 USD

Life Expectancy: 66.3 years (men), 69.4 years (women)

Healthcare Spending: As of 2019, India has a GDP of $2.83 trillion USD, and government spending on healthcare is approximately 1.23% of GDP (2019). Including out-of-pocket costs paid by patients, the country's total healthcare GDP equates to 3.6%

Healthcare Funding: About 20% of healthcare spending in India falls under the category of public funding, with the remainder being privately based. Due to the rapid rise of urbanization and a cultural lifestyle shift, almost 50 percent of this healthcare spending is now directed at in-patient beds to cope with the rising prevalence of lifestyle diseases. Unlike most other countries, demand for private healthcare in India is primarily driven by poorer patients, who are forced to pay out-of-pocket due to the shortcomings of public healthcare facilities.
To mitigate this, in 2018 the Indian government introduced Ayushman Bharat, a national health protection plan, which allocates $7,200 in annual coverage per patient for the most vulnerable and created Health and Wellness Centers to increase primary care access.

Sources: World Bank, Understanding India's Healthcare System

$2,485.40
GDP per capita

3.6%
of the GDP is spent on Healthcare

70.19 years
Life Expectancy



Out of the 2 million global liver disease deaths in 2015, liver disease mortality in India made up approximately 18.3%.[1] Indeed, mortality due to chronic liver disease has been steadily increasing in India since 1980, while with other large Asian countries, such as China, liver disease mortality has either remained stationary or been on downward trajectory.[1] Liver disease is rapidly being recognised as a major public health issue for India.

As is the case with most developing nations, there is a limited body of epidemiological data available on liver disease in India. This can mainly be attributed to a lack of electronic healthcare databases, poor uniformity of reporting and low levels of diagnostic precision and phenotyping.[1] Still, the increasing impact of liver disease on India's economy and healthcare system is evident.

A cultural, lifestyle shift is a driving factor in this increasing burden of liver disease. Western diets and sedentary habits are becoming the norm in India, and once-prominent taboos about alcohol consumption have begun to ease.[2] As these lifestyle patterns shift, NAFLD/NASH and alcohol-associated liver disease are now among the main contributors to cirrhosis and liver-cancer related mortality in India, in addition to hepatitis B and C.[3]

As is the case worldwide, the increasing prevalence of obesity, hypertension and T2D has resulted in a significant increase in the prevalence of NAFLD in India. Current estimates state that approximately 16-32% of the country's population have NAFLD, with around 31% of these patients being diagnosed with NASH.[4] Data also suggests that this condition is highly prevalent within younger population, with one study estimating that over one in three children have NAFLD in India – much higher than the global estimates.[5]

DID YOU KNOW?

In 2015, there were 2 million global liver disease deaths. **India made up 18.3%.**

Interestingly, an anomaly has been identified within Asian populations when analyzing the prevalence of NAFLD, referred to as the 'Asian Paradox.' NAFLD patients with Asian ethnicity, including in South Asia specifically, appear to have lower BMI and obesity rates when compared to patients from the west, making them more susceptible to developing NAFLD and other BMI related chronic conditions.[4]

In June 2022 as part of International NASH day, the Indian National Association for the Study of the Liver (INASL) and Indian Consortium on NAFLD (ICON-D) announced the creation of an action plan for the prevention and control of NAFLD, in partnership with Global Liver Institute. Although the Action Plan is not yet complete, the first survey was launched in August 2022 to gather data for the second national action plan in the world.

Viral hepatitis is a major healthcare threat for India; it can be compared, in terms of risk level, to the "big three" communicable diseases – tuberculosis, malaria and HIV/AIDS. According to the WHO, there are over 40 million carriers of HBV in India, with over 115,000 deaths per year associated with the virus.[6] Despite the fact that hepatitis B vaccinations have been part of India's Universal Immunization Program for over a decade, only half of children are effectively immunized against the virus.[7]

Hepatitis B vaccinations have been part of India's Universal Immunization Program.

Only half of the children are effectively immunized against the virus.

© 2026 by Global Liver Institute. All rights reserved

Hepatitis C is also common in India, with many of the major risk factors for the virus being highly prevalent throughout the country, including hazardous medical practices, such as unsafe injections, and intravenous drug use. Consequently, 12-18 million people are infected with the virus, with an estimated prevalence of 0.1-1.5%.[8] A high concentration of HCV has also been observed specifically in the state of Punjab, known as the 'hepatitis C belt.'[8] An initiative has been launched by the Punjabi state government to combat this prevalence; however, similar efforts must also come from HCV stakeholders, such as healthcare professionals, drug companies and non-government organizations, if HCV is to be effectively controlled in this region.

Hepatitis E is still the most common cause of acute liver failure in India.[3] Indeed, a study in north western India found that 49.7% of acute sporadic hepatitis cases were associated with HEV infection.[9] Unique to India, acute liver failure due to HEV infection is associated with a very high mortality in pregnant women, 20-30% in contrast to 0.2-1% in the general population.[9]

In response to the high prevalence of viral hepatitis, the Indian government launched an initiative in 2018 called the National Viral Hepatitis Control Program (NVHCP).[10] The NVHCP aims to strengthen diagnostics and management services, and develop treatment protocols for the management of viral hepatitis, with the aim of eliminating viral hepatitis in India by 2030.



According to the WHO organization there are

40 MILLION

carriers of HBV in India.

As is the case globally, alcohol consumption is the most important and common cause of liver mortality in India, accounting for 34.3% of all cirrhosis cases and 20% of liver disease patients.[10] Alcohol-associated liver disease has severely increased in prevalence over the recent years in India, mainly due to the increased availability and consumption of alcohol from younger ages.[11]

Estimated incidence rates for liver cancer range from 0.7 to 7.5 per 100,000 and 0.2 to 2.2 per 100,000 for men and women, respectively.[12] The readily available guidelines on liver disease management from Europe, Asia and the USA are often inapplicable for the Indian population due to the expense of the proposed treatments. To address this, a task force set up by INASL was developed. They presented a consensus guide for diagnosis and management of liver cancer in 2014, tailored to the issues and resources of India.

India has also made some great strides in the last decade with its liver transplantation program. The Indian Liver Transplant Registry was recently formed, with the aim of providing more transparent and prospective data on liver transplantation. It is, however, still worth noting that less than 2000 liver transplants are carried out each year in India, in a country of 1.3 billion people.[3]



AN URGENT CALL TO ACTION FOR GOVERNMENT AND CLINICIANS
continued

Retired hepatologist Dr. Shivaram. P. Singh is President of the South Asian Association for Study of the Liver and of the Indian National Association for Study of the Liver.

The data tell the story of liver diseases in India today. While the incidence of alcohol-associated liver disease is rising exponentially, obesity rates and the numbers of people with T2D are climbing steadily and, with them, the rates of NAFLD and NASH. Meanwhile, millions of people in India are still infected with hepatitis B, with only around half of babies currently receiving the infant vaccination. I have been fighting to get the government to prioritize liver health for the last 20 years but, if nothing changes soon, liver diseases have the potential to become a real threat to public health across the country within the next decade.

Across India, public awareness of liver disease is patchy at best and non-existent at worst. For example, despite all the data we have on HBV and the resources given to treating it, around two in three Indians still have no idea what hepatitis B is. We need a widespread public awareness campaign so that people can understand how to protect themselves together with an effective testing program.

When it comes to alcohol, it could be argued that the government is more interested in raising taxes rather than reducing rates of alcohol consumption. To date, there have been no national government campaigns warning of the risk of alcohol abuse, and, although alcohol is banned in some states, there is little attempt to prevent the manufacture and sale of illicit and highly dangerous non-regulated alcohol.

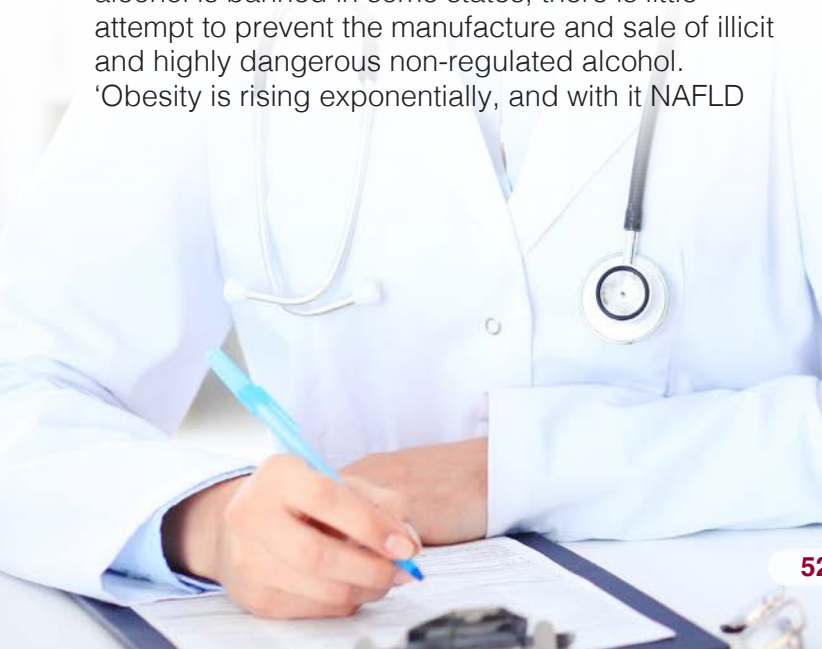
‘Obesity is rising exponentially, and with it NAFLD and NASH. This is of great concern to us all, given that south Asians are predisposed towards NAFLD, either genetically or through some other factor such as a unique gut microbiome. It is heartening that the government appears to have recognized this risk and have included NAFLD in a national action prevention program, although we are yet to see what this will mean in practice.

> **Liver disease is almost always preventable** and awareness is key.
>
> - PROFESSOR DR. SHIVARAM. P. SINGH

Meanwhile, together with my colleagues at the INASL, we are in the process of setting up an educational program on NAFLD for schools and colleges to raise awareness in young people. To do that, we have joined forces with The Rotary Club who are providing us with financial and other support.

Health inequality is a real challenge to receiving good quality healthcare. Although all states provide free medicines, whether you receive free diagnostic or other treatment depends on the state in which you live. This inequality especially affects liver diseases, which in the later stages will often require complex surgery or other treatments such as liver transplant. If you live in a state which requires you to pay for these treatments, and you are unable to do so, you either travel to another state and hope you can get admitted to a hospital there or, sadly, you die.

Liver disease is almost always preventable, and awareness is the key to this. We really need a concerted and joined-up effort by our government and professional medical bodies to ensure that the population is properly educated about how they can protect themselves and their families against viral hepatitis, alcohol-associated liver disease, NAFLD and other liver conditions. We need to do it now.



INDONESIA



Population: 283.49 million (2024)

GDP per capita: $4,925.4 USD (2024)

Life Expectancy: 69 years (men) and 73 years (women) (2023)

Healthcare Spending: 2.7% of GDP (2023)

Healthcare Funding: Indonesia's healthcare system is primarily financed through a combination of government budget allocations, the national health insurance scheme, and out-of-pocket household spending. The cornerstone of Indonesia's health financing architecture is *Jaminan Kesehatan Nasional* (JKN), the national health insurance scheme launched in 2014 and implemented by the *Badan Penyelenggara Jaminan Sosial Kesehatan* (BPJS Kesehatan) social security agency. The JKN program was designed to provide affordable, universal access to basic medical services for all citizens. By December 2023, the scheme had achieved near-universal coverage, enrolling more than 95% of the population (over 260 million people).

Out-of-pocket spending fell from 45% of current health expenditure in 2014 to 28.6% in 2023. Over the same period, the rate of catastrophic health expenditure dropped from 4.5% in 2017 to 2% in 2021. Primary health care spending rose by 18.3% compared to pre-pandemic levels, expanding access to essential health services across the archipelago.

Despite this progress, significant challenges remain. Inequitable distribution of health facilities and workforce, particularly in remote and eastern regions of Indonesia, continues to limit the practical impact of insurance coverage. To bridge these gaps, in 2022 the Ministry of Health launched the Health System Transformation Agenda (HSTA), structured around six pillars: primary care, referral services, health resilience, health financing, human resources, and health technology.

Sources: Data.WorldBank, World Bank Group, World Health Organization, International Citizens Insurance

283.49 Million
Population

$4,925.40
GDP per capita (USD)

2.7%
of the GDP is spent on Healthcare

69 (men) & 73 (women)
Life Expectancy



Liver disease in Indonesia reflects a dual burden of infectious and metabolic conditions. Viral hepatitis remains the leading driver of liver-related morbidity and mortality, with hepatitis B virus (HBV) highly endemic and hepatitis C virus (HCV) contributing to a substantial share of cases.[1,2] Alongside infectious aetiologies, metabolic dysfunction-associated steatotic liver disease (MASLD) is emerging as an increasingly important contributor, in line with rising rates of obesity and other cardiometabolic risk factors.[3,4] These underlying conditions are major determinants of advanced liver disease, including cirrhosis and hepatocellular carcinoma (HCC), which represent a growing component of the overall disease burden in the country.[9]



The absolute burden remains high, with **millions of individuals still living with chronic HBV infection.**

The country is classified as having intermediate-to-high endemicity for HBV, with substantial geographic variation across its archipelago and persistent transmission occurring both vertically and horizontally in early life.[2,5] Based on the national health survey Riskesdas 2013, the prevalence of hepatitis B surface antigen (HBsAg), the primary marker of chronic HBV infection, was estimated at 7.1%, declining from 9.4% in 2007 and indicating a transition from high to moderate endemicity.[2,6] More recent estimates suggest a further decline in prevalence to approximately 2.4% in 2023, reflecting the cumulative impact of vaccination programmes and improved awareness, although the absolute burden remains high, with millions of individuals still living with chronic HBV infection and substantial hepatitis-related mortality reported annually.[14] However, prevalence varies markedly across regions, with a clear east-west divide: rates around 4.9% have been reported among blood donors in Java, compared with averages of 8.5% in eastern Indonesia and peaks exceeding 15%-30% in specific areas.[2] These disparities reflect differences in socioeconomic development, healthcare infrastructure, and the challenges of delivering health services across a vast archipelago, with eastern provinces bearing a disproportionate share of the burden.[6,7]

Indonesia introduced universal infant HBV vaccination in 1997, with progressive expansion of birth-dose coverage from 1999 onward. These efforts have substantially reduced HBV prevalence among younger cohorts, with studies reporting near-zero HBsAg prevalence among vaccinated preschool children and significant reductions observed in immunization programmes such as the Lombok Hepatitis B Model Project.[1,5] By 2015, full vaccination coverage had reached approximately 84% of the target population, although important gaps persist in remote areas due to home births, uneven vaccine distribution, and limited healthcare infrastructure.[7] Mother-to-child transmission remains a major unresolved challenge, with an estimated 150,000 pregnant women at risk of transmitting HBV annually in the absence of systematic screening and adequate access to immunoglobulin.[2] In addition, certain high-risk groups remain vulnerable: studies report HBsAg prevalence of 6.8% among pregnant women and 6.2% among healthcare workers, alongside low levels of immunity in the latter group, indicating ongoing transmission risks and gaps in prevention strategies.[5,8]

For HCV, the epidemiological picture differs geographically from that of HBV: prevalence is notably higher in Java than in the outer islands. Among blood donors in major Javanese cities, anti-HCV prevalence was 1.5% and HCV RNA positivity 1.1%, compared with 0.7% and 0.2% respectively in ten large cities outside Java.[2,5] Based on estimates derived from Indonesian Red Cross blood donation data and Riskesdas 2013, approximately 1.28 million people were living with active HCV infection in 2014. Indeed, despite the scale of the problem, diagnosis and treatment rates for viral hepatitis in Indonesia remain extremely low. It has been estimated that, at most, 10% of the HCV-infected population is aware of their infection. Projections suggest that the proportion of people with HCV infection will remain broadly stable in the absence of focused intervention.[6]

80%
of HBV and HCV infections contribute to HCC cases in Indonesia.



Hepatocellular carcinoma (HCC) represents a critical and growing public health concern in Indonesia. Together, HBV and HCV infections contribute to approximately 80% of HCC cases in Indonesia, particularly in patients with advanced cirrhosis or fibrosis.[9] A multicenter study following 282 HCC patients across two major Jakarta hospitals between 2015 and 2017 found that HBV was the most common cause of HCC, accounting for 63.1% of cases, while HCV accounted for 17% and co-infection for a further 3.5%.[10] According to Global Cancer Statistics 2020 (GLOBOCAN), in Indonesia, the age-standardized mortality rate for HCC is 7.7 per 100,000 population.[9] In addition to its clinical burden, liver cancer imposes a substantial economic burden on both patients and the healthcare system, with annual direct medical costs estimated at approximately $3.8 million (USD) in a single referral hospital setting, and per-patient costs increasing markedly with disease severity.[12]

A critical challenge in Indonesia is the late-stage diagnosis of liver cancer, which significantly limits access to curative treatment options. Evidence suggests that only a minority of patients present at stages amenable to surgical intervention, while the majority are diagnosed with advanced disease and require palliative care. Moreover, patients frequently present with advanced disease and comorbidities, which further increases both mortality and healthcare costs. Clinical observations indicate that roughly 30% of patients are eligible for surgical resection, highlighting substantial gaps in screening and awareness.[11,12]

Although Indonesia has developed the technical capacity for complex liver surgeries, including the use of advanced imaging and minimally invasive techniques, these capabilities are underutilized due to delayed diagnosis and limited access to specialized care. This mismatch between clinical capacity and patient presentation underscores the need for stronger surveillance systems and earlier detection strategies.[11] Liver transplantation is available but highly centralized, with procedures largely performed in a single national referral center, and relies almost exclusively on living donor liver transplantation. While transplant activity has increased over time, overall volumes remain low, and access is restricted by donor shortages, cultural barriers, and the absence of a well-established deceased donor system.[13]

Metabolic dysfunction-associated steatotic liver disease (MASLD) is emerging as a major and rapidly growing contributor to liver disease burden in Indonesia. In Southeast Asia, prevalence is estimated at around 33%, with Indonesia reporting some of the highest rates in the region, reaching over 50% in selected populations. The rising burden of MASLD in Indonesia is closely linked to the growing prevalence of metabolic syndrome and related conditions. National estimates suggest that metabolic syndrome affects approximately 23% of the population, with central obesity, insulin resistance, hypertension, and dyslipidemia acting as key drivers of disease development.[15] Evidence from local studies highlights a particularly high prevalence among high-risk groups, including individuals with obesity or dyslipidemia. In addition, evidence from specific clinical populations further underscores the scale of the problem: a recent study reported that 52.4% of people living with HIV on long-term antiretroviral therapy in Indonesia had fatty liver disease, with hypertension and elevated triglyceride levels identified as key associated factors.[4] Despite these trends, MASLD remains underdiagnosed and insufficiently characterized in the general population, with limited epidemiological data available outside selected cohorts.

Alcohol-associated liver disease represents a less dominant but still relevant contributor to liver cirrhosis in Indonesia, where viral hepatitis remains the leading cause. Hospital-based evidence indicates that alcohol accounts for only a very small proportion of cirrhosis cases, with one study reporting alcohol-related etiology in approximately 0.4% of hospitalized patients with acutely decompensated cirrhosis.[16] Despite this relatively low contribution at the national level, alcohol consumption remains limited in the general population, with national survey data indicating a prevalence of approximately 3.7% among adults.[17] Alcohol consumption patterns also show important regional variability, with higher prevalence observed in certain provinces often influenced by socio-cultural practices and local traditions.[18]



OVERVIEW

JAPAN

Population: 124.3 Million (2023)

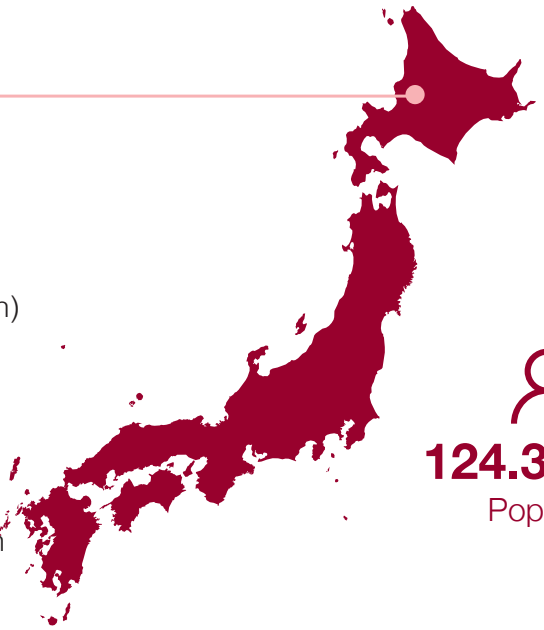
GDP per capita: $33,834 (2023)

Life Expectancy: 82.3 years (men) and 88.2 years (women)

Healthcare Spending: 10.9% of GDP

Healthcare Funding: Japan's healthcare system is predominantly funded by public sources, with over 85% of health spending coming from public funds. Private out-of-pocket spending accounts for approximately 12% of health spending.

Sources: World Bank Open Data, OECD, Worldometer, Trading Economics, The Commonwealth Fund



124.3 million
Population

$33,834
GDP per capita

10.9%
of the GDP is spent on Healthcare

82.3 (men) and **88.2 (women)**
Life Expectancy

Liver disease has become a prevalent health issue in Japan. Some of the main causes of liver disease include hepatitis B, hepatitis C, alcohol misuse, and metabolic dysfunction-associated fatty liver disease (MAFLD), which affects over 10 million people in Japan, with men at greater risk than women.[1] Viral hepatitis constitutes the leading cause of liver cancer in Japan, including hepatitis C virus (HCV) infection (more than half of cases) followed by hepatitis B virus (HBV).[2] However, the etiology of liver disease in Japan is undergoing a significant transition. Proactive prevention, screening, and treatment efforts have led to a decline in viral hepatitis, while alcohol-related liver disease (ALD) and metabolic liver diseases such as MAFLD are increasing.[3] This shift reflects broader changes in liver health in Japan in recent years, highlighting the need for continued public health focus on these emerging concerns.

Alcohol consumption in Japan is a significant public health concern. In Japan, there is a cultural tradition of social drinking integral to work and social life, often facilitated by the custom of *nomikai*, parties specifically meant for drinking. There is often social pressure that pushes many to attend and drink heavily.[4] As a result, heavy alcohol consumption is the second leading cause of liver diseases such as ALD and cirrhosis in Japan.[5] The Japanese government has recognized this issue and thus implemented public health campaigns to reduce excessive drinking and promoting liver health awareness.[5] Currently, the *nomikai* culture is gradually shifting from mandatory to optional outings to socialize with friends and colleagues.[4] The COVID-19 pandemic further complicated the situation, with a 21% rise in hospital admissions for alcohol-associated liver disease and alcohol-associated cirrhosis in the first year of the pandemic.[6] Though the precise etiology of this change is unclear, liver health nonetheless declined during that period. These trends highlight the lasting impact of the pandemic on public health, beyond the direct effects of the virus.

The rising prevalence of MAFLD in Japan is a public health issue that demands attention. This condition affects 15.2% of non-obese individuals and an alarming 68.5% of obese individuals.[7] Those who have a poor diet or high alcohol consumption, frequently smoke, and have low levels of physical activity, especially in urban areas, are at a higher risk. 20% of those with fatty liver disease were considered lean – and those with lean fatty liver disease were older on average and faced a higher mortality rate.[8] This is highly concerning, since Japan has a rapidly aging population of which the elderly comprise 1 out of 4 people.[9] With these factors at play, half of Japan's population is expected to have fatty liver disease by 2040.[8] Although Japan has a lower obesity rate than most Western countries, MAFLD is steadily increasing and measures need to be put into place to combat the growing issue.

The Japanese population, like many other Asian populations, is at risk of these conditions at lower BMI levels compared to Europeans. This heightened risk is due to greater amounts of visceral and subcutaneous fat and an earlier onset of insulin resistance.[2] These complexities showcase the need for targeted public health strategies to address fatty liver disease and associated health conditions separate from interventions and discussions solely about weight.



Heavy alcohol consumption is the **second leading cause of liver diseases** such as ALD and cirrhosis in Japan

20%

of those with fatty liver disease were **considered lean**

Japan has the tenth highest tobacco use in the world.[10] Liver disease has directly claimed at least 1.7% of the many lives lost by smoking, including secondhand smoke.[11] Researchers have found a strong link between smoking and increased relative risk of liver disease, in addition to well-known links to lung and heart disease.[1] Therefore, the government has enacted several laws to decrease the amount of smoking, such as higher taxes on tobacco and banning indoor smoking.[10] As a result, the amount of smokers in Japan has decreased by nearly half over the last decade.[1,12]

While the link between smoking and liver disease underscores the importance of public health interventions, Japan also faces challenges with rare liver conditions that require specialized attention and care. For example, rare and varied symptoms for conditions present in Japan like Alagille syndrome – a rare, congenital disease that affects the heart and liver– can make the diseases challenging to diagnose.[13] Thus, genetic testing is needed for proper identification and management of the disease and others like it.

Japan has the **tenth highest** tobacco use in the world.

Since the 1980s, Japan has consistently sought prevention methods to address viral hepatitis, the main upstream risk factor for liver cancer. First, gamma shot programs were introduced to prevent mothers with hepatitis B from transmitting it to their children.[14] This was followed by an intense effort to screen blood and educate the people, which worked to reduce the infections from blood, razors, and tattoos.[14] To further reduce rates, Japan started testing people over 40 for hepatitis B and C between 2002 and 2006.[15] Because of these efforts, the number of people with hepatitis in Japan decreased by 2.20 million people from 2000 to 2011.[15] This led to enacting the Basic Act of Hepatitis Control which set a nationwide guideline on how to prevent, control, and promote hepatitis safety.[15]

Two years later, Japan enacted the Basic Guidelines for Promotion of Control Measures, which further emphasized the need to spread awareness and accurate information on viral hepatitis.[15,16] This policy framework focused on promoting research and information, ensuring equal access to testing and treatment despite location, and safeguarding the rights of hepatitis patients.[16] As a result, Japan's efforts to raise awareness included designating July 28 as Hepatitis Day and launching a national campaign to improve understanding of hepatitis, promote prevention and treatment, and encourage screenings in partnership with governments, medical organizations, and employers.[16] The Ministry of Health, Labour and Welfare launched the "Shitte kan-en" ("Let's Learn About Hepatitis") subsidy program in 2011, using popular celebrities to raise awareness. By 2013, it had become a national campaign promoting accurate hepatitis information and testing through celebrity visits, events, and workplace initiatives.[16] Awareness efforts shifted after the COVID-19 pandemic to focus on youth engagement, and this content has garnered millions of views.[16] The program's impact is reviewed every five years, and Japan remains committed to eradicating hepatitis through ongoing prevention and treatment initiatives.[16]

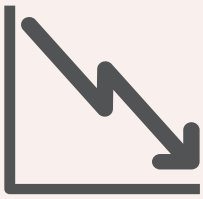
While smoking, drinking, overeating, and lack of exercise are the most important risk factors for the development of cancer of all types, HCV is the leading cause of liver cancer in Japan, followed by HBV.[1,14] To catch liver cancer early, Japan has set up nationwide screening programs that regularly check high-risk individuals with advanced imaging tools and special blood tests.[17] Treatment is then executed through a mix of approaches – including surgery to remove tumors (radiofrequency ablation), local treatments that destroy cancer cells (transarterial chemoembolization), procedures that block the tumor's blood supply, and new medicines like lenvatinib, sorafenib, that help the immune system fight cancer or target cancer cells directly.[17] The combination of surveillance programs and advanced treatment options have significantly improved survival rates for liver cancer patients at all stages, with a five-year survival rate of 58% – the highest in the world.[17]

Japan has become proficient in liver transplantation, particularly with living donor liver transplants (LDLT). Acute liver failure patients who undergo LDLT show high survival rates.[18] The country has successfully implemented a system for LDLT with over 7,837 transplants since 2014, projected to increase each year.[19,20]

The combination of surveillance programs and advanced treatment options have significantly improved survival rates for liver cancer patients at all stages, with a

five-year survival rate of 58%

– the highest in the world.



The number of people with hepatitis in Japan **decreased** by

2.20 million

people from 2000 to 2011

However, many patients who suffered from liver cirrhosis or alcoholic liver diseases and received transplants have experienced substance relapse after receiving surgery.[1,20] Compared to those who received mental health care, those who did not address their mental health were more than likely to relapse.[1,20] Therefore, additional mental health services are needed to address mental health discrepancies that could lead to further liver damage.

Japan has made significant progress in liver health through advances in transplantation, effective surveillance, early detection, and proactive disease management. While there are successes, there is also a need for more information and focus on alcohol consumption and specific prevention programs to continue improving liver health outcomes.

© 2026 by Global Liver Institute. All rights reserved

SUCCESS IN JAPANESE LIVER CANCER CARE THROUGH COOPERATION AND COMPREHENSIVE SURVEILLANCE

Masatoshi Kudo, MD, PhD, is a professor and chairman of the Department of Gastroenterology and Hepatology at Kindai University in Osaka, Japan. A research leader on the diagnosis and treatment of HCC, Dr. Kudo has published prolifically, contributed to clinical guidelines in Japan for HCC, and has served on leadership teams for several medical societies including the Liver Cancer Study Group of Japan, the Japan Society of Hepatology, the International Liver Cancer Association, and more.

The current topic in Japan's hepatology is liver cancer – and nationally, that still is the biggest problem. Japan has the highest five-year survival rate for liver cancer in the world. Surveillance and early detection are very key. For this success, the Japan Society of Hepatology (JSH) patient advocacy groups, and the government (especially the Ministry of Health, Labour and Welfare) work well together to eliminate hepatitis and liver cancer.

Hepatitis testing is available free of charge at any clinic, hospital, or health center. JSH asked for this widespread access, and the government responded. The national health insurance covers everything for DAA treatment for patients with HCV as well as nucleoside analogs to treat HBV. Additionally, HBV infection is on the decline because of universal infant vaccination.

Japan has had nationwide surveillance for liver cancer since the 1980s. In 1999, JSH released a white paper that discussed "How to Eliminate Viral Hepatitis and Liver Cancer," which has been our guide. From then on, we launched a nationwide campaign to eradicate HCC, and each year, JSH appoints at least one person for each of the 47 prefectures to give a lecture or hold a meeting to educate ordinary people who are at high risk or super high risk for liver cancer.

After years of public lectures about liver health, awareness of the liver is very high. The public will voluntarily ask their doctors for a referral to the hepatologist for ultrasound, because the people think that liver disease is very important.

Japan regularly screens for
3 highly effective liver cancer biomarkers
unavailable elsewhere:

Globally, only AFP is measured, but the other markers, PIVKA-II and AFL-L3 are also important.

Similarly, almost all physicians, especially those in internal medicine, acknowledge the risk of liver cancer. If they find a patient with viral hepatitis, they know to refer to a hepatologist or perform an ultrasound and check for tumor markers themselves. In the past ten years, not only the private practitioners but also ordinary people have known about liver cancer. Patients can sue if a tumor is found more than 10 cm, unresectable, without any surveillance. The doctor should have known to check for liver cancer.

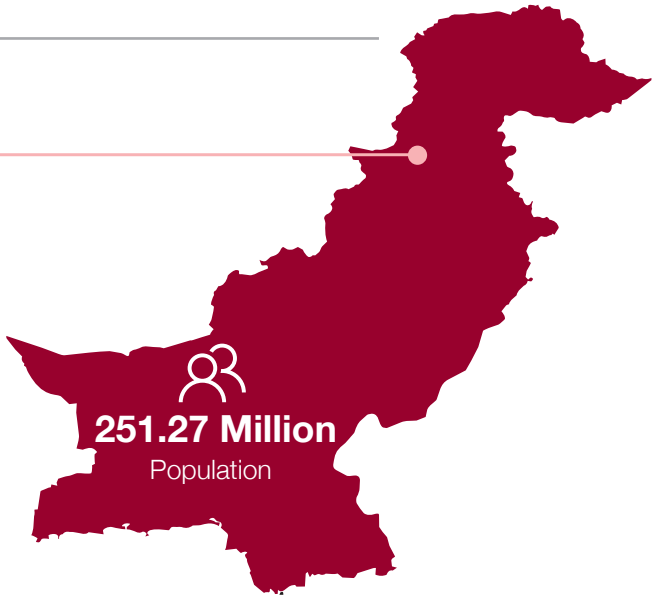
We recommend checking patients with HBV, HCV, or cirrhosis at least every six months with ultrasound and the measurement of three tumor markers. Globally, only AFP is measured, but the other markers, PIVKA-II and AFL-L3 are also important. Japan developed these two markers 20 years ago, and they have been very effective in screening for liver cancer. Other countries have not developed the process to measure these routinely, and these tests are not covered by insurance elsewhere. I have written several papers that PIVKA-II and AFP-L3 should be measured globally.

In 2009, JSH released clinical practice guidelines defining high-risk and super high-risk patients. Every six months, high-risk patients should be surveyed with ultrasound, and super high-risk patients should receive CT or MRI scans once or twice a year. For this group, cirrhotic or viral hepatitis patients, sometimes the ultrasound cannot detect a small tumor. MRI, especially the EOB-MRI technology, can detect less than 1cm HCC.

The Japanese government is generous and wants to help viral hepatitis patients, and listens to the medical societies and patient groups, so we can maintain this very thorough surveillance system.

© 2026 by Global Liver Institute. All rights reserved

PAKISTAN



Population: 251.27 million (2024)

GDP per capita: $1,478.8 USD (2024)

Life Expectancy: 65 years (men) and 70 years (women) (2024)

Healthcare Spending: 2.52% (2023)

Healthcare Funding: Pakistan has a mixed healthcare system in which public and private sectors operate in parallel. The public sector provides services at federal, provincial, and district levels through an extensive network of hospitals, rural health centers, basic health units (BHUs), and specialized facilities. Despite this broad infrastructure, healthcare delivery remains structurally strained. Persistent underinvestment, infrastructure limitations, workforce shortages, and uneven resource distribution limit system capacity and contribute to disparities in access and quality of care, particularly in preventive and primary healthcare services.[8] These systemic constraints, alongside rapid population growth, have reinforced the role of the private sector, particularly in urban areas where facilities are generally better equipped and frequently preferred over public providers.

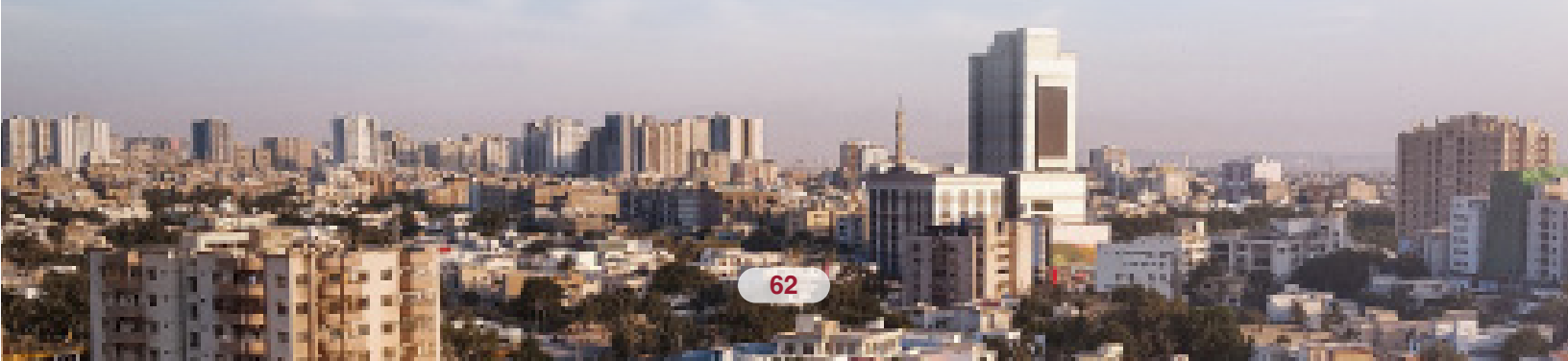
In recent years, Pakistan has undertaken important reforms to expand financial protection and move toward Universal Health Coverage (UHC). With support from the World Health Organization, Pakistan became the first country to define its Essential Package of Health Services using the Disease Control Priorities (DCP3) framework. This initiative aims to prioritize cost-effective interventions and rationalize resource allocation. Additionally, the Sehat Sahulat Program (SSP), a publicly funded health insurance initiative, has expanded coverage for inpatient care to millions of households, particularly targeting low-income populations. International donors and development partners continue to contribute significantly to priority health programs, in areas such as maternal and child health, infectious diseases, and post-disaster recovery.

Sources: World Health Organization, World Bank, International Trade Administration, OECD Data.

$1,478.80
GDP per capita

2.52%
of the GDP is spent on Healthcare

65 (men) & 70 (women)
Life Expectancy



Pakistan carries one of the world's heaviest liver disease burdens, driven primarily by viral hepatitis and compounded by delayed diagnosis, unsafe medical practices, and uneven access to prevention and care.[3,4,10] The country's liver health profile remains dominated by hepatitis C virus (HCV), but the broader burden encompasses hepatitis B virus (HBV), cirrhosis, hepatocellular carcinoma (HCC), and a growing challenge from metabolic liver disease.[1-4,6,9]

The burden of viral hepatitis in Pakistan remains substantial and continues to dominate the country's liver disease profile. According to the 2025 National Hepatitis Elimination Profile (N-HEP), chronic HCV prevalence is estimated at 4.1%, corresponding to approximately 9.8 million people living with infection and over 110,000 new cases reported in 2022, while hepatitis B surface antigen (HBsAg) prevalence was around 1.1% in 2019, with 15,068 new infections recorded in 2022, with ongoing transmission largely driven by blood-borne and healthcare-related exposures, including unsafe injections, inadequate blood screening, dental procedures, and surgical practices, as well as community-based risks such as barber-related transmission.[3,4,11] Viral hepatitis continues to account for the majority of cirrhosis and HCC cases in the country.[3] In this context, recent evidence highlights a clear epidemiological shift, with HCV progressively overtaking HBV as the leading cause of cirrhosis, partly reflecting the expansion of HBV vaccination programmes.

At the same time, Pakistan has made important policy advances, particularly for HCV. The federal government recommitted in 2024 to hepatitis elimination, including phased national screening of individuals older than 12 years and free public-sector treatment supported by low-cost, locally manufactured direct-acting antivirals. The World Health Organization estimates that scaling up these interventions could avert hundreds of thousands of deaths while reducing liver cancer and cirrhosis burden. However, the principal bottleneck is no longer drug availability but implementation: diagnosis remains incomplete, hepatitis B birth-dose coverage is still low, and fragmented coordination across federal and provincial systems continues to limit effective surveillance, screening, and follow-up.[4,12]

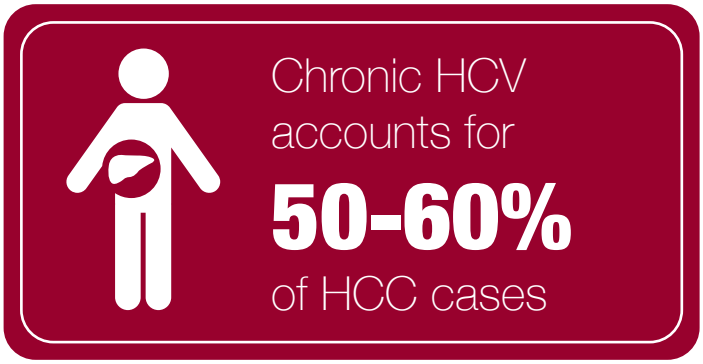
Hepatitis C was found to be the underlying cause in

86% of cirrhosis cases

The downstream consequences of chronic liver disease are severe. Hospital-based evidence highlights the human cost behind these epidemiological patterns. A 2024 study from Lahore involving 450 cirrhosis patients found that HCV was the underlying cause in 86% of cases, that most patients had experienced repeated hospital admissions at a cost of PKR 50,000 to 150,000 each, and that four out of five patients required regular financial support from relatives. One in four had sold personal assets to continue treatment, and nearly all patients reported a substantially reduced ability to work and a high degree of dependence on children, spouses, or other family members.10 Quality of life is significantly reduced across physical, emotional, and social domains, with worse outcomes observed among patients with more advanced disease and lower income.[3,5]

At the same time, the liver disease landscape is broadening beyond viral hepatitis. Metabolic dysfunction-associated steatotic liver disease (MASLD) is becoming an increasingly important contributor to liver disease in Pakistan, particularly in the context of rising diabetes and obesity. MASLD is increasingly prevalent in Pakistan. Recent pooled estimates from a 2024 systematic review suggest that approximately 30% of the general population may be affected, with substantially higher prevalence among individuals with metabolic conditions such as diabetes, obesity, and hypertension.[6,7] Earlier estimates based on smaller or urban cohorts (for example, tertiary-care centres in Karachi and Lahore) reported lower prevalence ranges (18–25%), but more recent evidence indicates that the true burden may be considerably higher.[9] A Pakistani cohort study cited by the World Gastroenterology Organisation reported a prevalence of fatty liver disease of 14.8% overall and 19.9% among adults aged 40 years and above.[6]

With Pakistan among the countries most affected by type 2 diabetes and facing a substantial obesity burden, MASLD is likely to become an increasingly important driver of future cirrhosis and liver-related morbidity if early detection and prevention are not strengthened.[2]



Regarding HCC specifically, Pakistan's estimated annual incidence is 4-5 per 100,000 population, with chronic HCV accounting for 50–60% of cases, followed by HBV (25–30%) and MASLD (10–15%). This distribution reflects the long-standing high prevalence of viral hepatitis in the country, alongside a gradual epidemiological transition towards metabolic risk factors. Registry-based data further indicate that HCC ranks as the third most common cancer among men in Pakistan, and as the seventh most common cancer among women.[3] Despite increasing availability of ultrasound and alpha-fetoprotein screening, over 70% of Pakistani HCC patients present at an advanced stage, contributing to one-year survival rates below 30%.[9] This pattern reflects systemic gaps in early detection, surveillance of high-risk populations, and timely referral pathways. Additionally, available evidence suggests a rising trend in HCC cases over time, coupled with a shift in underlying causes from predominantly HBV-related disease in earlier decades to HCV-driven and increasingly metabolic-related liver disease.[3]

Liver transplantation in Pakistan remains severely limited and largely inaccessible for the majority of patients, despite being the only curative option for end-stage liver disease and selected cases of HCC. Evidence from tertiary care settings indicates that although nearly half of patients with advanced liver disease meet clinical criteria for transplantation, only around 2% are able to undergo the procedure, primarily due to financial constraints and limited availability of transplant services.[10] This gap reflects a substantial mismatch between need and capacity, with estimates suggesting that more than 2 million individuals in Pakistan require liver transplantation, while only a small number of procedures are performed nationwide.[13] A substantial proportion of patients are also deemed ineligible at the time of evaluation because of advanced disease stage or comorbidities, further reflecting delayed diagnosis and referral. Although liver transplantation procedures performed in government centers are publicly funded, access remains constrained by infrastructural limitations, low capacity, and high out-of-pocket costs associated with pre- and post-transplant care.[10] The cost of a living donor liver transplant, estimated at approximately USD 35,000–45,000, represents a major barrier in a system largely reliant on out-of-pocket healthcare financing.[13]

Nearly half of patients with advanced liver disease meet clinical criteria for transplantation, **only around 2% are able to undergo the procedure.**

Although alcohol is not the leading driver of liver disease in Pakistan, accounting for only a small proportion of cirrhosis cases compared with viral hepatitis, available evidence indicates that alcohol-induced liver disease remains clinically relevant and is frequently detected at advanced stages.[10] Hospital-based data suggest that the burden is concentrated in men and characterised by late presentation. In a Karachi liver clinic cohort, alcohol-related liver disease was predominantly observed in men in their mid-40s, with frequent patterns of dependence and binge drinking; importantly, a substantial share of patients already had advanced fibrosis at diagnosis, and steatosis was further associated with metabolic risk factors, including higher body weight and insulin resistance.[14] A separate hospital-based study of 104 men with alcohol-associated liver disease similarly described a severe clinical profile at presentation: 92.3% had cirrhosis, 85.6% had abdominal distension, 75% had peripheral edema, 85.6% had esophageal varices, and more than half of those staged were Child-Turcotte-Pugh class C, indicating substantial decompensation by the time care was sought.[15] These findings are consistent with broader regional trends showing that, while alcohol contributes a smaller share of cirrhosis in South Asia, alcohol-related liver disease is associated with high mortality and increasing global burden, particularly when combined with metabolic risk factors.[9]

Pakistan's liver health landscape is defined by a paradox: the country now possesses the technical means to treat HCV at scale, yet preventable liver disease remains deeply entrenched. The aetiology of cirrhosis is changing: viral infections remain the leading cause, but MASLD-related cirrhosis is increasing rapidly. Without stronger preventive action, the burden of advanced liver disease and its complications is expected to rise further in the coming decades.[9] The most urgent priorities are therefore not only clinical but also relate to public health and health system strengthening. These include stronger screening, safer blood and injection practices, wider hepatitis B birth-dose coverage, improved surveillance, earlier linkage to care, and greater attention to the growing metabolic contribution to liver disease.[2,4,12]

The country now possesses the technical means to treat HCV at scale, **yet preventable liver disease remains deeply entrenched.**



OVERVIEW

PHILIPPINES



Population: 111 million (2021)

GDP per Capita: $3,726 USD

Life Expectancy: 67.4 (men) and 75.6 (women)

Healthcare Spending: 4.08% of GDP (2019)

Healthcare Funding: In general, there are four main sources of financing:
(1) national and local government,
(2) insurance (government and private),
(3) user fees/out of pocket and (4) donors.

As of 2007, 57% is paid out-of-pocket, 12% is paid for by the national government, 11% is paid for by the local government, 9% is paid for by social health insurance and 11% is paid for by other sources.

The 'Sin Tax' introduced in 2012, raised the State income from duty on alcohol and tobacco directly to fund healthcare, tripling the Department of Health budget within a year. Since then, two further tax bills have cemented this as part of the national health funding program.

Sources: WorldData.Info, Statista, Data.WorldBank, Republic of the Philippines – Department of Health

$3,726
GDP per capita

4.08%
of the GDP is spent on Healthcare

67.4 (men) and 75.6 (women)
Life Expectancy

Liver disease is a significant healthcare burden in the Philippines, with approximately 16,500 deaths per year due to liver disease complications, accounting for 2.65% of the country's total deaths in 2017.[1] Chronic hepatitis infection, metabolic dysfunction-associated fatty liver disease (MAFLD) and alcohol-associated liver disease are the country's most common causes of liver disease.[1] Furthermore, liver cancer is the fourth most common cause of cancer in the Philippines, leading to approximately 9,950 deaths in 2020.[2]

Hepatitis B is a major concern, with the WHO considering the Philippines to be hyperendemic for the virus. It is the country's leading cause of hepatocellular carcinoma (HCC) and has a prevalence of approximately 16.7% within the general population, equating to 7.3 million persons infected.[3] Whereas with other countries in the Asia Pacific region in which the prevalence rate for hepatitis B has steadily decreased in the last few decades, mainly due to effective vaccination programs, the hyperendemic status of the Philippines has persisted.[3] As is the case in other countries, studies have also found that a lower annual income is a significant determinant of HBV infection in the Philippines, reducing the patients access to quality healthcare and increasing the risk of missed vaccinations.[3] The limitations in healthcare resources available for treatment underscore the necessity for prevention to limit infection. Although a universal immunization program was introduced for infants for hepatitis B in 1992, it wasn't fully implemented until 2007 due to significant lack of funding. This greatly delayed its preventative effect, which may be a key reason for why the Philippines is so far behind many other nations in relation to hepatitis B eradication.[3]



Chronic hepatitis infection, NAFLD and alcohol are **common causes of liver disease.**

Since 1988

59
Liver Transplants

56%
Overall Survival Rate

Following global trends, obesity is a growing healthcare issue in the Philippines. The number of Filipinos that are overweight or obese is approximately 27 million, with these numbers nearly doubling in the past two decades for both adults and adolescents.[4] Consequently, MAFLD risk is also increasing, though specific prevalence data is scarce. In one study published in 2008, patients admitted to a Philippine general hospital were tested for MAFLD and analyzed for common characteristics. Out of 12% of admitted patients in the study had MAFLD, with 29% being male and 71% being female and a mean age of 42.2 – a lower age when compared to previous studies.[5] A more recent study investigating Filipino MAFLD patients found that 11.9% of them were classed with "lean MAFLD," providing an insight into this sub-condition found more frequently in Asian populations.[6,7]

Excessive alcohol use is common in the Philippines: A 2018 WHO study noted that around 60% of adult Filipinos were binge drinking regularly.[8] In that year, 6 deaths per 100,000 were caused by alcohol-associated cirrhosis.[9]

Since 1988, there have only been 59 liver transplants carried out in the Philippines, with an overall survival rate of 56%; this is below the standard rate for transplant centers worldwide.[10] Liver transplantation is expensive in the Philippines – at least three times more than in India, meaning many patients require travel abroad for the life-saving procedures.[11] To address this issue, a new center has been funded by the Filipino government – the NKTI Liver Center. This facility will be equipped to carry out surveillance on liver disease patients, as well as provide treatments, preventative measures, and a state-of-the-art liver transplant service.[12]

© 2026 by Global Liver Institute. All rights reserved

AN URGENT NEED FOR DATA, CLINICAL STUDIES AND AWARENESS OF LIVER HEALTH CHALLENGES

Dr. Diana Payawal is a professor at Fatima University Medical Center. She is the former President of the Asian Pacific Association for the Study of Liver and the current President of the Philippines College of Physicians.

Similar to many other countries in southeast Asia, we are facing an epidemic of obesity which will almost inevitably result in an increase in the rates of NAFLD and NASH and eventually a burden of end stage liver disease.

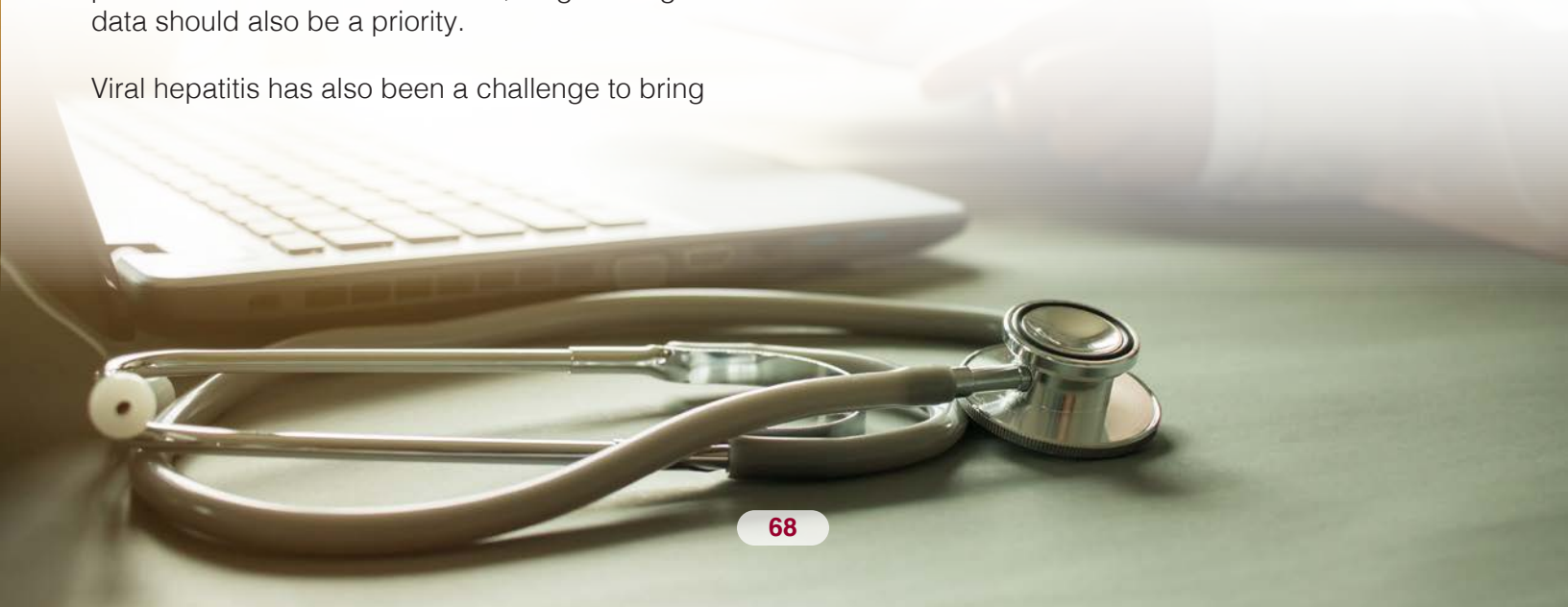
So far, the government has run awareness campaigns on healthy eating, and there are many weight-loss programs available, particularly on the internet. **However, the link between obesity and liver health has not been highlighted and most of the public have no awareness that it is a health issue.** Even some doctors will concentrate more on diabetes and cardiovascular disease rather than focus on the risk to the liver when they see an obese patient.

We need both national and clinical strategies to deal with obesity, NAFLD and NASH including awareness campaigns along with clinical treatment guidelines. A multi-disciplinary approach within hospitals and clinics would also help, for example, endocrinologists working alongside gastroenterologists and dieticians. This is not something that hepatologists can manage on their own. Finally, in common with many developing countries, we have very little information on the prevalence of NASH and NAFLD, so gathering this data should also be a priority.

Viral hepatitis has also been a challenge to bring under control, and this, along with our high rate of alcohol consumption, is one reason why we have relatively high rates of liver cancer. However, over the last few years, the government has made efforts to focus on reducing the rates of viral hepatitis with the Department of Health recently producing comprehensive guidelines on the management of hepatitis B, C and hepatocellular cancer.

> **We are facing an epidemic of obesity** which will almost inevitably result in an increase in the rates of NAFLD and NASH and eventually a burden of end stage liver disease.
>
> - DR. DIANA PAYAWAL

Although the introduction of the ‘Sin Tax’ in 2012 made some impact on the sales of alcohol and tobacco, our rates of alcohol– induced liver cirrhosis are still far too high. As well as focussing on increasing taxes, we need an effective and sustained awareness campaign to try to reduce our national dependence on alcohol.



OVERVIEW

SINGAPORE



Population: 5.45 million (2021)

GDP per Capita: $84,734 USD

Life Expectancy: 80.7 (men) and 85.2 (women)

Healthcare Spending: 5.9% GDP

Healthcare Funding: Singapore has achieved universal health coverage through a combination of financing sources, including the public statutory insurance system, MediShield Life, which covers large bills from hospital care and certain outpatient treatments, private health insurance and insurance through employers, government subsidies, and a compulsory medical savings account called MediSave, which can help with inpatient care and certain outpatient services. Patients pay premiums, deductibles, co-insurance, and any costs above the claim limit. A safety net called MediFund helps those who cannot cover their out-of-pocket expenses.

Sources: The World Bank, World Health Rankings, International Trade Administration, The Commonwealth Fund

$84,734
GDP per capita

5.9%
of the GDP is spent on Healthcare

81.5 (men) and **83.2 (women)**
Life Expectancy



Liver disease accounts for approximately 4% of deaths each year in Singapore, and liver cancer is the 5th most common cancer in men in the country.[1, 2] While hepatitis B continues to cause a significant portion of end-stage liver disease, rising rates of obesity and fatty liver disease are beginning to change the etiology landscape. Coherent efforts for screening for liver disease are necessary in Singapore to prevent large, ongoing challenges to liver health in the country.

Like many neighboring countries in southeast Asia, Singapore's population faces endemic viral hepatitis. About 1 in 25 people in Singapore has chronic hepatitis B infection.[3] This is considered an intermediate prevalence.[4] Hepatitis A, C, and E are also endemic, though reported in small numbers in the country (single digit cases, for instance, of HCV).[5] Treatment is available for hepatitis B and C in the country, while its prevention efforts for HBV are also effective for HDV.[5] Chronic hepatitis B is the leading cause of liver cirrhosis in Singapore – with approximately 20-40% of patients developing the condition if it is not treated.[6]

As part of the Singapore National Childhood Immunisation Schedule, all children should complete the hepatitis B vaccination series beginning at birth and finishing at around 6 months of age.[7] Singapore is one of the first countries to implement such a program. Adults who were not previously vaccinated are also recommended to receive the full series.[7] This immunization scheme began in 1985.

DID YOU KNOW?

About **1 in 25 people** in Singapore has chronic hepatitis B infection.



Liver disease accounts for approximately

4% OF DEATHS

each year in Singapore

The obesity rate has risen over the past several decades and is now 8.9% for working-age adult Singaporeans, with a rate of 6.9% for older adults (above 60); this is driving increasing rates of fatty liver disease in the country.[8, 9] Based on trends in diabetes and obesity, cases of metabolic dysfunction-associated fatty liver disease (MAFLD) are expected to increase by 20% in the nation by 2030 to affect 28.7% of the population – placing a sizeable potential burden on the nation's healthcare system.[9] This also affects liver disease later in the progression: NASH cases are expected to increase by 35% during that same time, and fatty liver disease-cases of compensated cirrhosis are expected to double.[9]

A significant portion of MAFLD in the Singaporean population includes non-obese individuals.[10] At the same time, cost analysis in Singapore has found that transient elastography and FIB-4 have been identified as cost-effective MAFLD screening strategies in the diabetic population, so long as the annual cost of treatment remains under control.[11] An estimated 9.8% of liver transplants in Singapore are related to MAFLD.[9] Given all this information about the current state and trends in fatty liver disease, increased public awareness and education about the disease is becoming necessary.

Liver cancer is the fourth most common cancer in men in Singapore and **the third most deadly.**

Alcohol also poses a small but nontrivial challenge to liver health in Singapore. An average of two liters of pure alcohol per person are consumed each year in Singapore (though this number is about three times higher in men than in women) – among the lowest in Asia, in part due to heavy taxation.[12] However, health officials have noted a rise in unhealthy drinking habits in the younger population – especially with the rise of buffet-style drinking.[12] Though available data is limited on the liver impact, one study found that 11.2% cases of cirrhosis at Singapore's largest tertiary hospital were mainly due to alcohol.[13]

Though studies are limited, rare liver diseases appear to be particularly uncommon in Singapore, though whether this is due to prevalence or gaps in diagnosis is unclear.[14,15,16]

Liver cancer is the fourth most common cancer in men in Singapore and the third most likely to be deadly; it is also the fourth most common cause of cancer death in women.[17] The most prominent etiology for liver cancer in Singapore has historically been the hepatitis B virus – which makes carriers about a hundred times more likely to develop liver cancer than those without the virus.[17] The overall survival rate of liver cancer in Singapore is greater than 20% – one of the best in the world.[18]

Chronic hepatitis B is the **leading cause of liver cirrhosis** in Singapore.

Liver transplantation is a treatment option available for those with end-stage liver disease in Singapore. The first liver transplant in the nation took place in 1990 – and more than 500 transplants have been performed since then.[19] Both living donor and deceased donor transplants are available in Singapore, and there are two public and two private liver transplant centers.[19] Unfortunately, Singapore has low deceased donation rates (about 6 per million each year), potentially linked to discrepancies in donor referral and conflicting cultural and religious beliefs, especially when there are concerns of family objection. Meaningful effort to increase participation in organ donation upon death will be helpful in increasing the supply of transplantable livers for patients in Singapore.

More than **500 liver transplants** have been performed in Singapore.



OVERVIEW

SOUTH KOREA



Population: 52.08 million (2023)

GDP per Capita: $33,121 USD (2023)

Life Expectancy: 80.3 years (men) and 86.6 years (women)

Healthcare Spending: 8.4% of GDP (2020)

Healthcare Funding: Korea has adopted a unique health security system that includes social health insurance and medical aid. This universal healthcare system, known as the National Health Insurance Service (NHIS), is mandatory for all Korean nationals and residents to participate in at a fee. The fee is dependent on each person's work income but starts at a base of 150,000 won ($112 USD) each month. Compared to other OECD countries, Korean nationals and residents pay less for healthcare out-of-pocket since the NHIS covers 50-80% of most medical costs. Despite this, many opt for additional private health insurance to cover fees incurred with the NHIS plan.

Korea has also adopted a fee-for-service model, which requires patients to pay for their care prior to rendered services. The Health Insurance Review and Assessment Service has stated that this has widened the variety of services a doctor gives to patients. Korean emergency room wait times tend to be 10 minutes or less.

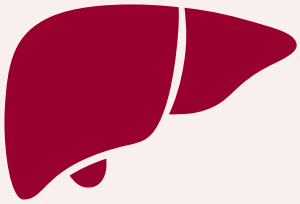
Sources: US CIA's The World Factbook, World Bank Group, Health Insurance, Review and Assessment Service

$33,121
GDP per capita

8.4%
of the GDP is spent on Healthcare

80.3 (men)
and **86.6 (women)**
Life Expectancy





The country has achieved one of the **highest five-year liver cancer survival** rates in the world.

Liver health in South Korea is influenced by a mix of factors like viral infection, alcohol use, lifestyle diseases, and socioeconomic conditions. The country has made significant progress in tackling these issues through its strong healthcare system, but challenges remain. For instance, despite the establishment of the National Liver Cancer Surveillance Program in 2003, the screening rate for hepatocellular carcinoma (HCC) among high-risk groups remains low; the country has nonetheless achieved one of the highest five-year liver cancer survival rates in the world.[1] At the same time, South Korea has made significant progress in liver transplants, achieving the highest rate of living donor liver transplantation (LDLT) globally. [2] Liver health in South Korea is characterized by both achievements and ongoing challenges that emphasize the need for more efforts to improve early detection, access to care, and management of long-term outcomes for those affected.

The fight against viral hepatitis faces persistent challenges despite well-directed efforts. Hepatitis B (HBV) has long cast a shadow over the nation, being the leading cause of chronic liver disease and responsible for 60–70% of chronic liver disease.[3] The government's response to this challenge began in the 1980s, in the lead-up to the 1988 Seoul Olympics.[3] The establishment of the "Hepatitis B Eradication 5-Year Plan" marked a turning point that led to widespread vaccination efforts for infants and toddlers to protect the next generation from this pervasive threat.[3] Yet, even with these measures, hepatitis B still accounts for a significant amount of chronic liver disease cases.

Hepatitis C (HCV), though less prevalent, poses its own challenges. With no vaccine available, the focus remains on treatment, where highly effective antiviral therapies have offered hope.[3] Despite these advances, many patients with HCV have not received the care they need, with treatment rates falling below global targets set by the WHO.[4] As a result, the Korean Association for the Study of the Liver has set a goal to eliminate HBV and HCV by raising awareness from 30% to 90%, increasing testing rates from less than 10% to 90%, and boosting treatment rates from 60% to 90% by 2030.[5] This plan would also include establishing a dedicated division for viral hepatitis within the Korea Disease Control Agency, increasing funding for hepatitis C research, and evaluating the cost-effectiveness of introducing HCV antibody testing into the National Health Screening program.[5]

In addition to the challenges posed by viral hepatitis, South Korea faces increasing rates of alcohol consumption. The average Korean consumes 10.2 liters of alcohol annually, significantly higher than the global average of 6.4 L.[6] Therefore, alcohol accounts for more than 13% of liver disease cases.[7] High-risk drinkers face a much greater likelihood of developing liver cirrhosis or HCC than social drinkers.[7]

This is exacerbated by hoe-siks, after-work company outings, that are often seen as mandatory and necessary depending on the company's culture.[8] These events often involve high-calorie foods and excessive drinking.[8] One study found that more than 30% of office workers in metropolitan areas reported binge drinking more than four times in one month.[9] This is concerning when 82.1% of the Korean population live in metropolitan cities. Such practices are amplifying the rise in liver diseases linked to alcohol.

13%

of cases of liver disease in South Korea are **caused by alcohol consumption.**

© 2026 by Global Liver Institute. All rights reserved



Liver cancer is the **second leading cause of cancer-related deaths** in South Korea.

As South Korea has become more globalized and rapidly expanded into the 14th largest economy worldwide, the prevalence of lifestyle-related diseases has also risen.[11] Metabolic dysfunction-associated fatty liver disease (MAFLD) has emerged as a significant public health concern, driven by increasing rates of obesity and diabetes, with the prevalence of metabolic disorders in Korea rising from 24.9% in 1998 to 30.3% in 2020, further contributing to the issue.[12] Korean food has undergone "Westernization," with an increased consumption of refined grains, processed meats, and fried foods.[13] Recent studies have shown that the traditional Korean diet, high in carbohydrate intake, is associated with an increased risk of MAFLD.[14] Other lifestyle changes, such as sedentary behaviors, have exacerbated the effects of this diet on liver health.[14] In contrast, a "simple meal" pattern, characterized by lower carbohydrate intake, has been associated with a decreased risk of MAFLD in the Korean population.[14] MAFLD is not a benign condition; it can progress to scarring, liver cirrhosis, and even liver cancer.[15] As the prevalence of metabolic disorders continues to rise, so too does the burden of MAFLD.

Beyond the well-known risk factors, Korea faces unique challenges that further complicate liver health. One of the most troubling aspects is an increased risk of suicide among patients with liver cirrhosis, particularly in the early stages of diagnosis.[16] The psychological toll of living with a chronic, often irreversible disease is immense, and for many, the burden becomes too great to bear.[16] This is exacerbated by the socioeconomic inequalities that pervade the healthcare system. Despite the universal coverage provided by NHIS, out-of-pocket expenses remain high, particularly for low-income individuals.[17] This financial strain can limit access to necessary care, further exacerbating health disparities.[17]

In South Korea, liver cancer is the second leading cause of cancer-related deaths, accounting for 13% of the nation's cancer fatalities.[18,19] The primary factor behind this epidemic is chronic HBV infection, which significantly increases the risk of developing hepatocellular carcinoma (HCC).[20] As a result, the National Liver Cancer Surveillance Program (NLCSP) in 2003, aimed at reducing the socioeconomic burden of liver cancer, many challenges remain.[1] During this time, the 5-year relative survival rate for liver cancer significantly improved, rising from 10.7% for those diagnosed between 1993 and 1995 to 32.8% for those diagnosed between 2010 and 2014.[21] However, screening rate among high-risk groups is only 23%, and the incidence of liver cancer continues to rise.[19] Liver cancer in Korea challenges the healthcare system to keep pace with the rapidly growing public health crisis.

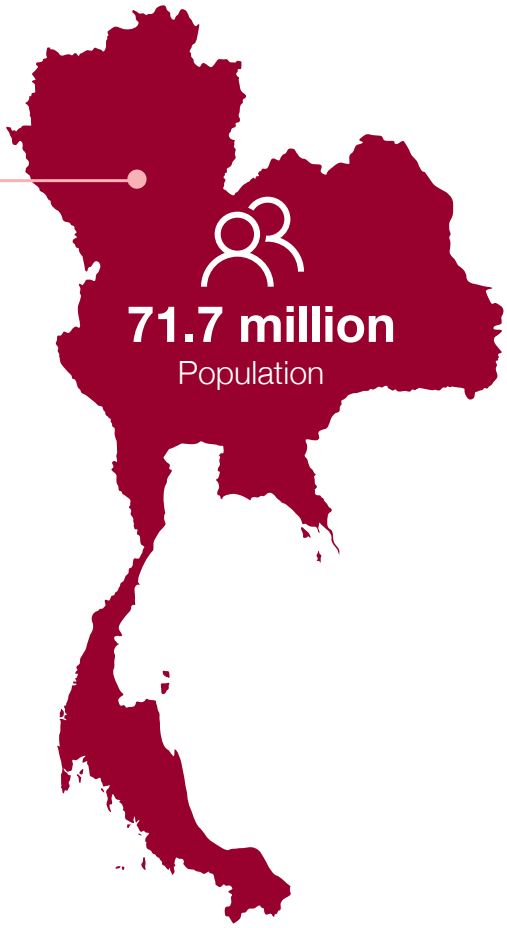
For those with end-stage liver disease, liver transplantation offers a lifeline. Annually, South Korea performs more than 10x the number of living donor liver transplants per million than neighboring Japan and Hong Kong.[2] Since its first liver transplant in 1988, the number of procedures has skyrocketed in South Korea, given the country's commitment to meet the increased demands for donors.[22] The five-year survival rate for LDLT is 81% post-transplant.[22] However, the reliance on living donors illustrates a critical shortage of deceased donors, with only 8.7 per million people in South Korea, far lower than countries like Spain, with 49.6 per million, and the USA, with 36.1 per million.[23] This has prompted the creation of laws like the National Transplant Act, and organizations like the Korean Network for Organ Sharing and the Korea Organ Donation Agency to regulate and manage organ donations from deceased and brain-dead patients.[1,24] Yet, despite efforts, stigma continues to be a major barrier, with 58% of families refusing organ donation, even when the donor had expressed their consent to donate.[25] The future of liver transplantation in Korea hinges on addressing the persistent shortage of deceased donors.

Despite challenges like high rates of viral hepatitis, alcohol use, and MAFLD, South Korea is making progress. It leads globally in living donor liver transplants and continues to improve public health initiatives and healthcare access, working to reduce the overall burden of liver disease and its effects.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

THAILAND



Population: 71.7 million (2023)

GDP per Capita: $7,182 USD

Life Expectancy: 71.8 years (men) and 79 years (women)

Healthcare Spending: 5.16% GDP

Healthcare Funding: Thailand's Universal Health Coverage initiative, established in 2002, has significantly enhanced public healthcare accessibility and outcomes across the nation. Currently, more than 99.5% of Thais receive comprehensive preventive, curative, and palliative healthcare throughout all stages of life. With the abolishment of co-payments in 2007, the healthcare system became more accessible to all Thais, effectively reducing the cost for the poor. The system, primarily funded through taxation, has effectively maintained equitable access to healthcare services for those enrolled in the Universal Coverage Scheme (UCS).

However, approximately one in eight individuals enrolled in Thailand's Universal Coverage Scheme still opts to seek healthcare services outside the UCS, resulting in additional out-of-pocket expenses. Despite this, out-of-pocket expenses remain relatively low, dropping to 9% of health expenditure in 2019 from 34% of health expenditure in 2000. Thailand's healthcare system aims to remain equitable, effective, and sustainable amidst evolving demographic and economic pressures.

Sources: WHO Data, World Bank Group, Bulletin of the World Health Organization, BMJ Global Health

$7,182
GDP per capita

5.16%
of the GDP is spent on Healthcare

71.8 (men) and **79 (women)**
Life Expectancy

In Thailand, liver diseases present persistent health challenges influenced by traditions, infectious diseases, and evolving lifestyle factors. Liver diseases rank among the top causes of mortality; for example, a 2020 hospital report noted liver disease as one of the 10 most common causes of death nationally.[1] In response, the Thai government has implemented numerous programs over the past decades to address these issues, from nationwide vaccination campaigns and parasite control programs to public health strategies targeting non-communicable diseases.

A distinctive risk factor for liver disease in Thailand is the traditional consumption of raw or fermented freshwater fish, especially in the northeastern region. Dishes such as *koi pla,* a raw fish salad, are popular in rural communities. Eating raw or undercooked fish can transmit the liver fluke *Opisthorchis viverrini,* a parasitic trematode (flatworm). Chronic infection with *O. viverrini* has been strongly linked to cholangiocarcinoma (CCA), a bile duct cancer.[2,3] In Thailand, an estimated 6 to 10 million people are infected with the liver fluke.[2] The highest burdens are in northeast Thailand, where the tradition of consuming raw, pickled, or fermented fish is most ingrained.[2] As of 2022, the Sakon Nakhon province, which has historically seen high fluke infection rates, reported that 1,000+ new CCA cases are still diagnosed annually at the provincial hospital even though CCA is otherwise a rare disease.[2]



Liver disease is one of the **10 most common causes of death** each year in Thailand

To combat this, Thailand launched the Lawa Lake Project in 2008 in Khon Kaen using collaborative efforts across multiple disciplines.[4] The Lawa Lake Project integrated community- and school-based education on avoiding raw fish, technical training for hospital staff and volunteers, environmental management, and widespread drug accessibility and administration. With the administration of the drug praiquantel, the recovery rate was measured to be 95%.[2] Following successful pilots implementing community treatment and training that have reduced the prevalence of liver fluke by as much as 75%, national efforts have expanded, especially in rural and endemic areas.[4]

Hepatitis B was once hyper-endemic in Thailand: a 1986 study found 5-10% of Thais (around 5 million people) were chronic HBV carriers, with most infections acquired from mother-to-child transmission and HBV contributing to high rates of liver cancer.[5] In 1992, Thailand introduced universal hepatitis B vaccination for newborns (after pilot trials in 1988), achieving about 95% infant coverage by 1999.[5] This nationwide immunization program drastically reduced new infections – by 1999, only 0.7% of children tested positive for HBV, a significant decrease from the 3.4% prior to the immunization program. By 2014, fewer than 1% of people under age 20 were carriers of HBV.[5] The government also implemented routine screening of pregnant women for HBV to prevent mother-to-child transmission.[5] As a result, hepatitis B infection in young children is now under control; still, many adults infected before the 1990s remain chronic carriers (around 3 million as of 2015).[6] Effective antiviral treatments for chronic HBV (e.g. tenofovir) are available in Thailand's health system, which can slow disease progression and reduce liver complications.[6] However, improving screening and treatment uptake remains a public health priority, as only an estimated 10% of people with chronic HBV have been diagnosed.[6]

Thailand's HCV prevalence is relatively low and has been declining. In 2014, national surveys found HCV seroprevalence to be around 0.94%, a notable decrease from approximately 2.15% in 2004 – corresponding to roughly 400,000 people living with chronic HCV infection.[7, 8] Aligned with WHO's elimination goals, Thailand has been proactive in scaling up HCV treatment and prevention by increasing blood-borne pathogen awareness, improving blood donor screening, and infection control measures.[8,9] As a result, most current HCV cases are in adults over 35 years old, while infection is very rare among younger Thais.[7] After advocacy efforts by patient groups and civil society from 2015 to 2018 — such as mass treatment campaigns and a letter to the National Health Security Office — Thailand introduced direct-acting antiviral medications, provided free of charge under the Universal Coverage Scheme.[10,11,12,13] The cure rates exceed 90% for all HCV types.[11] These efforts are part of Thailand's strategy to reduce HCV-related liver disease and align with WHO goals to eliminate viral hepatitis as a public health threat by 2030.[8]

As rates of obesity and type 2 diabetes have risen in recent decades in Thailand, metabolic dysfunction–associated steatotic liver disease (MASLD) has become a growing health issue.[14,15] A 2021 study reports a prevalence of MASLD ranging from roughly 25% of the general population to as high as 67% in certain high-risk groups like patients with obesity or diabetes.[16] The high prevalence of MASLD in Thailand raises concerns about the increased risk of progressive liver fibrosis. While Thailand does not have a dedicated MASLD control program, the government has worked to introduce programs that target risk factors like diabetes and obesity in their Prevention and Control Plan (2017–2021) by 2025.[17] Also, in response to a 25% increase in average daily sugar from 2001 to 2011, Thailand implemented a sugar-sweetened beverage tax starting in 2017 to reduce consumption of sugary drinks.[18,19]



Thailand has also deployed efforts to curb alcohol consumption in the context of rising cases of liver disease linked directly to drinking patterns. According to the most recent WHO data, adults in Thailand consume an average of 7.99 liters of pure alcohol per person each year.[20] However, consumption is driven by men, who drink four times more than women on average in Thailand.[20] Consequently, liver disease from alcohol disproportionately affects Thai men. 73% of cirrhosis cases with identified causes were due to alcohol, and alcohol-related liver disease (ALD) is the leading alcohol-attributable cause of death in the country, especially amongst men.[21, 22] Treatment for ALD in Thailand is available through the universal health care system, but advanced interventions like liver transplantation remain limited.[21] Recently, the Thai government amended the Alcoholic Beverage Control Act to include the banning of online sales of alcoholic beverages, which increased during the COVID-19 pandemic, to combat alcohol consumption.[23]

As of 2022, Thailand has the fourth most cases of liver cancer per capita in the world, with 22.7 new cases diagnosed each year for every 1000 people.[24] Liver and bile duct cancers, including hepatocellular carcinoma (HCC) and cholangiocarcinoma (CCA), are amongst the most common cancers in both Thai men and women, causing roughly 27,000+ deaths per year.[25, 26] This heavy burden is largely attributed to chronic hepatitis B infections and liver fluke infections.[26] CCA is more common in Thailand than in other countries due to the impact of liver fluke.[27] On the other hand, HCC is the most frequent type of malignant liver tumor in Thailand. It ranks as the leading cause of cancer-related mortality among Thai males and is the third most common among females.[28] For patients who do develop liver cancer, Thailand's healthcare system provides a range of treatments through its universal health coverage, including standard therapies such as surgical resection, radiofrequency ablation, and transarterial chemoembolization, which are widely available at public hospitals.[29]

For those who develop end-stage liver disease, like liver cancer, Thailand offers liver transplantation. The nation's first liver transplant was performed in 1987 at King Chulalongkorn Memorial Hospital, and today, the country has 28 transplant centers capable of liver, kidney, heart, and lung transplants.[30,31] However, liver transplantation remains relatively rare, with 3.66 donors per million population in 2019.[31] This shortage makes liver transplantation a significant public health challenge. In 2019, only about 10% of patients on the organ transplant waiting list in Thailand received a transplant, while many others died waiting for a donor organ to become available.[32] To improve access, the government integrated transplantation into public healthcare. Since 2008, Thailand's Universal Coverage Scheme has fully funded liver transplant surgery, post-operative care, and immunosuppressive therapy for all citizens.[31] The Thai Red Cross Organ Donation Center also coordinates national organ donation and awareness campaigns.[31] Because Thailand is predominantly Buddhist, attitudes towards organ donation may be low as core teachings dissuade followers from any action following clinical death that may cause trauma in their journey to rebirths.[33] A survey also found that the low consent rate amongst Thai people was attributed to reasons such as not wanting the potential donor patient to experience more pain, not fully accepting the death, or believing that the donor would miss their organs in the next life.[34]

Thailand has made significant progress in managing liver diseases through targeted public health programs and improved medical care. Ongoing community education and healthcare initiatives are essential to address emerging and ongoing liver health concerns. These efforts remain crucial for ensuring long-term public health improvements across the country.

Thailand has achieved

95%



coverage of infant vaccination for HBV, but many chronic adult carriers remain undiagnosed.

© 2026 by Global Liver Institute. All rights reserved

SHIFTING TO A MULTIDISCIPLINARY, POPULATION-LEVEL LENS OF LIVER HEALTH IN THAILAND

Professor Pisit Tangkijvanich, MD, serves as the Head of the Center of Excellence in Hepatitis and Liver Cancer at the Department of Biochemistry, Faculty of Medicine, Chulalongkorn University. As a highly respected figure in hepatology and liver research, he has an advanced understanding of viral hepatitis B and C, hepatic fibrosis, cirrhosis, tumor markers, hepatocellular carcinoma, and gut microbiota, while improving clinical practices and patient outcomes. Prof. Tangkijvanich serves as the past president of the Thai Association for the Study of the Liver (THASL).

When I started my career, I strictly treated individual patients in the specialty clinic. Since then, I have worked with the government and policymakers, and that experience has shifted my viewpoint to consider the general population. If we focus only on the specialty clinics to treat liver disease, we cannot cover most patients.

We are addressing this gap in a few ways. Liver specialists work closely with oncologists, and we are strengthening our relationships with endocrinologists and others as we see more cases of diabetes and obesity leading to liver disease. In the future, we will try to work together on guidelines to manage patients with fatty liver disease and MASH. It is a systemic disease, so it needs a multidisciplinary team.

We also need more policies developed in collaboration with both specialists and policymakers, who each look at the problem in a different way. I have seen the role of THASL expand beyond training hepatologists to helping the government develop well-informed guidelines that promote and protect liver health.

The community of liver specialists is also trying to translate our knowledge from specialists to the general doctors. In line with Thailand's health policy to establish hepatitis clinics in every hospital, we, as experts, aim to support and facilitate knowledge sharing with general doctors who have completed and received a certificate from our training. We are also helping every hospital have the capacity to treat liver cancer, and specialists are available to provide consultation for complicated cases, even online. We have a digital application to help general doctors handle treatment and help them consult specialists when needed, including digital tumor boards to develop a solution together for each patient.

In Thailand in the next several years, we are hoping to see the eradication of hepatitis B and C. We are headed in the right direction after convening the government entities, specialists, and NGOs to achieve this goal. In the past ten years, the percentage of newborns infected with hepatitis B at birth is close to 0, and we now screen the general population born before we began newborn vaccination following the guidelines. After screening, we can cure hep C and provide long-term treatment for hep B, and we hope to see fewer cases of HCC over time.

In the past ten years, the percentage of newborns infected with hepatitis B at birth is **close to 0.**

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

VIETNAM



97.47 million
Population

Population: 97.47 million (2021)

GDP per Capita: $4,347 USD

Life Expectancy: 71 years (men) and 80 years (women)

Healthcare Spending: 5.25% GDP

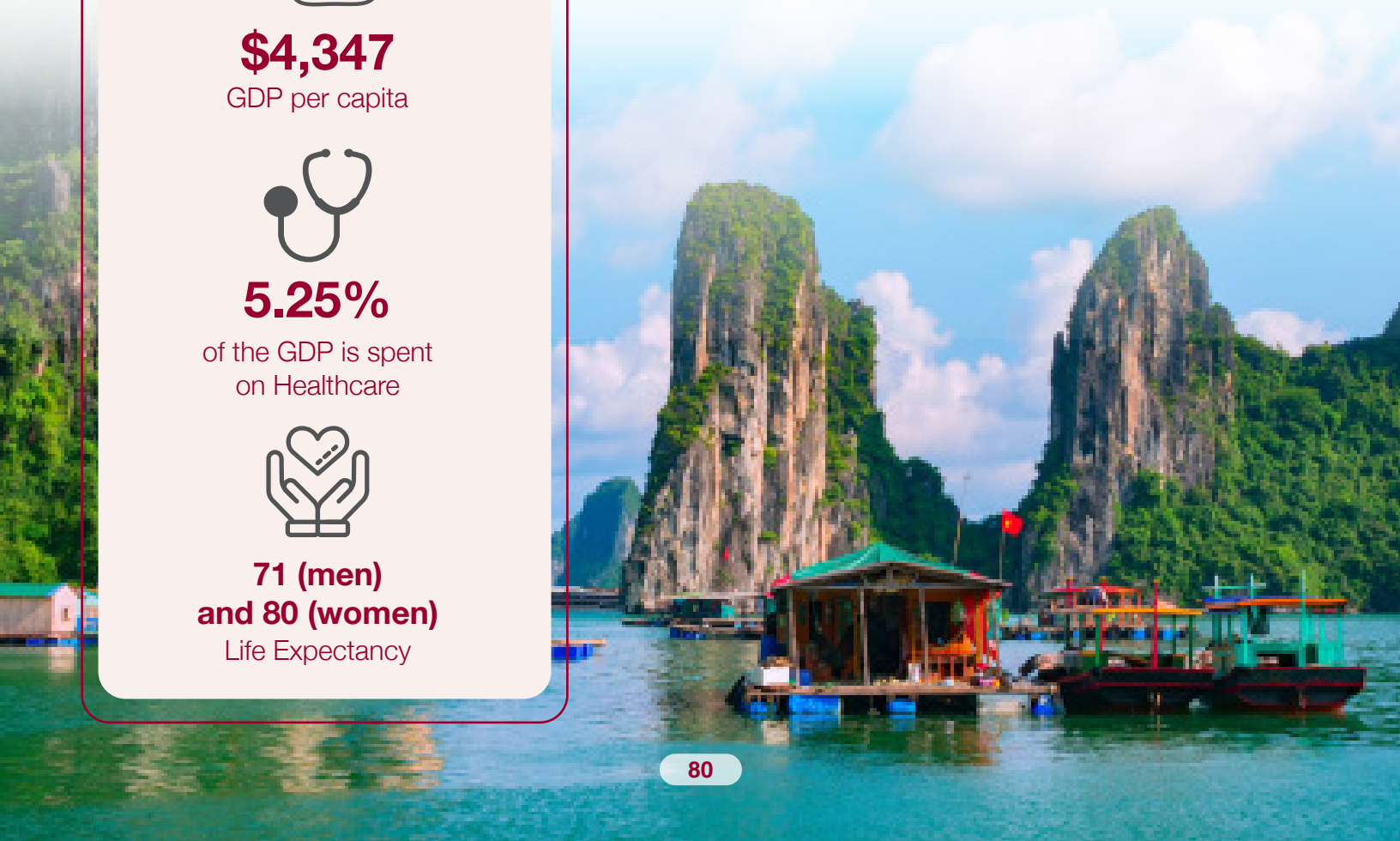
Healthcare Funding: About 87% of the population in Vietnam is covered by health insurance. Public spending on health care, which accounts for about half of healthcare spending, comes from the social health insurance program as well as additional tax-funded supplements for vulnerable populations. Still, 41% of total expenditure on healthcare in the country is out-of-pocket.

Sources: World Health Organization, The World Bank, Macrotrends

$4,347
GDP per capita

5.25%
of the GDP is spent on Healthcare

71 (men) and 80 (women)
Life Expectancy



A unique combination of risk factors, including smoking, alcohol consumption, high BMI and HBV prevalence lead to devastating consequences for liver health in Vietnam.[1] As a result, unlike in most other countries, the leading cause of cancer death in Vietnam is liver cancer.[2] Further, Vietnam has an alarming rate of cirrhosis, it is estimated that by 2025 related to HBV alone, there will be 60,000 cirrhosis patients, 25,000 liver cancer patients, and 40,000 deaths in Vietnam due to cirrhosis.[3]

Vietnam currently has low rates of obesity compared to the rest of Asia and the Western world at large, with the most recent available rate of 2.1% in 2016.[4] However, the rate has nearly doubled since 2010.[4] This suggests that rather than being a nonissue, obesity in Vietnam is in fact lagging behind other nations but will rise to become a dominant health concern in coming years. Furthermore, using the WHO BMI cut-off for Asian populations, this rate goes up to nearly 15% as of 2015.[5]

As obesity and diabetes continue to rise in the nation, metabolic dysfunction-associated fatty liver disease (MAFLD) become more prevalent as well. In one study of patients with T2D in Vietnam, the prevalence of MAFLD was more than 70%, on par with the highest estimates worldwide.[6] With these changing lifestyle patterns, experts in Vietnam should continue to keep an eye on MAFLD and take guidance from best practices developing elsewhere in the world.

DID YOU KNOW?

The **leading cause of cancer death** in Vietnam is liver cancer.

Liver health risk factors: high smoking, alcohol consumption, high BMI, and HBV prevalence.

Alcohol consumption remains a major concern for liver health in Vietnam. Per capita, adults in Vietnam consume 8.3 liters of pure alcohol annually, the equivalent of 170 liters of beer.[7] This number has more than doubled in two decades, signaling changing cultural patterns and driven primarily by men.[7] This increases risks of alcohol-associated liver disease, and also increases the risk of cirrhosis for those infected with viral hepatitis.[8] To fully address the issues in liver health in Vietnam, efforts to reduce alcohol consumption, whether public education campaigns or policy measures, are absolutely necessary.

Vietnam has one of the highest prevalence rates of viral hepatitis in the world. In the general population, chronic HBV infection has an estimated prevalence of 12% and chronic HCV has at least 1% prevalence.[9] Unfortunately, rates have not been reported at the national level and rely on regional or community-based reports. Still, these rates are even higher amongst at-risk groups, including health care workers, blood donors, and intravenous drug users.[10] In part due to the lack of a laboratory test, a national prevalence of HDV and its complications has not been reported.

In 2003, universal infant HBV vaccination was introduced in Vietnam, after which the peak number of infections occured in about 2012.[11] The prevalence of infection was estimated to decline in subsequent birth cohorts by as much as 90%.[11] HBV control, however, relies heavily on this program, which leaves all non-infant age groups to bear the burden of HBV infection. The general population lacks knowledge on HBV transmission, progress, and risk factors – and few are able to receive treatment due to financial constraints and lack of awareness.[12]

© 2026 by Global Liver Institute. All rights reserved

Calls for a systematic screening program in the country for high-risk populations were made by experts as recently as 2010 and 2017.[12, 13] Further, for the millions in Vietnam who are infected with HBV, therapeutic intervention is absolutely necessary but may be financially out-of-reach, and the government as well as international agencies must increase investment in infrastructure and subsidies for HBV and HCV treatment for the Vietnamese people.[11] A collaborative center from Johns Hopkins called the Center of Excellence for Liver Disease in Vietnam and its initiatives provide promise for advancement on this front.[14]

HCV, which is less prevalent but still relatively high (1-4%) amongst the Vietnamese population compared to neighboring countries, is a particular issue amongst high-risk populations and the more populous northern and southern provinces.[13] A pilot HCV program supported by the Clinton Health Access Initiative has been successfully implemented in Vietnam using pricing negotiations, policy development, fast-track registrations of generic treatments, financing advocacy, and strengthened service delivery.[15]

Vietnam has the fifth highest rate of liver cancer incidence in the world.[16] Distressingly, as reported by a nationwide study that covered nearly 95% of the health service stations in the country, liver cancer is both the most common cancer among both men and women and causes one in four cancer deaths in the nation – the leading cause of cancer death.[17, 2] The incidence of liver cancer has also been observed to be rising in recent years.[18]



Vietnam has one of the highest prevalence of viral hepatitis **in the world.**

Vietnam has the

5TH HIGHEST RATE

of **liver cancer** incidence in the world



While it is the leading cause among both genders, prevalence has been nearly three times higher among men.[17] This is understood to be primarily the downstream effect of high prevalence of HBV and followed by HCV and alcohol.[19] This is similar to many other developing countries, in which the dominant causes of cancer are related to infectious factors.[17] Aflatoxin exposure is also thought to be an upstream risk factor for the development of HCC.[20]

Though the state of liver cancer is dire in Vietnam, there is much hope in the fact that its etiology in the nation is overwhelmingly preventable via available technologies, and the universal HBV infant vaccination is an important first step. Clear education about the relationship between HBV and liver cancer is important to turn the tide, and long-term surveillance for liver cancer are of the utmost importance.

Chemicals and parasitic infections also pose distinct threats to certain communities. Agricultural pesticides, industrial chemicals, and herbicides have been linked to increased rates of hepatitis among agricultural workers in south Vietnam.[20] In part due to the tropical nature of the country, liver abscesses are common in Vietnam.[20] Prompt identification and surgical treatment of these conditions is an important feature of the healthcare system in order to avoid high mortality.



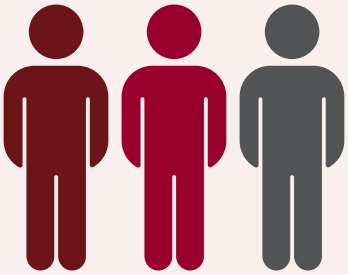
Vietnam performed their first **liver transplant** in

2004

For autoimmune, pediatric, and other rare liver diseases, little epidemiologic or investigative research is available. Alpha 1 antitrypsin (A1AT) deficiency has been identified in Vietnam – which was previously considered a disease of Caucasians.[21] Biliary atresia is the leading indication for liver transplantation and main cause of end-stage liver disease for children.[22] Otherwise, data that has not been updated in nearly two decades points to the fact that unsurprisingly, viral hepatitis was the primary diagnosis, followed by congenital bile duct dilation, liver/biliary tract infections, cholestasis syndrome, cirrhosis, autoimmune and drug-induced hepatitis, liver tumors, metabolic disorders, and biliary atresia.[23] There is much to be learned about the incidence and etiology of rare and pediatric liver diseases in Vietnam.

The first liver transplant in Vietnam occurred in 2004, and several hospitals have since launched liver transplant centers.[24, 25] Still, between 1992 and 2018, only about 2,400 total organ transplantation procedures had been conducted in Vietnam (including the liver, kidney, and heart). This falls far short of the nearly 8,000 patients each year who require a transplant in the nation – many of whom need a new liver due to end-stage liver disease. The primary barriers to transplantation were financial costs, distance from home, lack of ability to commit to lifelong follow-up and treatment, and shortage of organ donors.[24] As a middle-income country, Vietnam has developed an impressive technical capacity for liver transplantation, and has even incorporated living donor transplantation as an effective, safe treatment for HCC – but there is still room for improvement in accessibility, affordability, and organ donation.[26]

Liver cancer prevalence is



3X

higher among **men than women.**



STRENGTHS, CHALLENGES, AND NEXT STEPS FOR LIVER CARE IN VIETNAM

Dr. Dao Viet Hang is the Vice General Secretariat of the Vietnam Association of Gastroenterology (VNAGE) and an experienced gastroenterologist and hepatologist, a clinical researcher and a lecturer at the Hanoi Medical University. She focuses on viral hepatitis, liver cancer treatment, and the application of IT in the medical field.

CHALLENGES

1. Patients struggle to become connected to the healthcare system, especially in HBV and HCV. Though there is a lack of data available on the process, we would find that there are many lacking points where the system fails to monitor at-risk patients.
2. In most cases, especially rural areas, the care a liver patient receives depends on which specialty they go to first, which means a lot of nonstandard care. The several overlapping specialties who treat the liver – including surgery, transplantation, infectious disease, internal disease, hepatology, oncology, and even radiology – becomes challenging, because everyone wants to keep the patient in their specialty.

STRENGTHS

1. In recent years, there has been a more active and impactful involvement of academic associations around liver health. This has helped educate doctors across different fields about viral hepatitis, liver cancer, and other liver diseases.
2. Digital health technologies have strengthened liver care and will continue to in the future:
   - **a**. The ecosystem of smartphone apps has been building. In other fields of gastroenterology, there are many good products available for patients. In the next few years, smartphone apps will be used more and more to help monitor chronic viral hepatitis patients.
   - **b.** Online and hybrid webinars have become more popular, which has allowed greater access for doctors to have CME, especially in the rural areas.
   - **c.** The awareness of liver disease has been strengthened immensely by social media. If you go on Facebook in Vietnam, there is a huge community to educate and raise concern for chronic hepatitis and liver cancer. It helps because most people in Vietnam have basic knowledge of hepatitis B – which is important when it affects about 8% of the population.
3. Rapid tests used during the COVID-19 crisis have made the general population much more comfortable with rapid tests for hepatitis – so they can take what they are learning on social media and apply it to screen their families in real time. Sometimes they even post it on social media!

CALL TO ACTION

1. We absolutely need a national screening program for viral hepatitis. Even after the introduction of a universal screening program, the greatest risk factor for liver cancer in Vietnam is still HBV.
2. We need to use the tools we have to prevent the spread and progression of liver disease: checking pregnant women for HBV and follow-up for liver cirrhosis patients so they don't develop liver cancer.
3. There are many efforts and resources invested in Vietnam now, which is great – but many of these efforts overlap. It is critical that the many NGOs develop a strong, comprehensive network to inform each other about what we are doing and save resources.

© 2026 by Global Liver Institute. All rights reserved

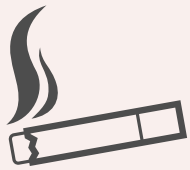
DIGGING INTO EPIDEMIOLOGY TO UNDERSTAND FACTORS DRIVING LIVER HEALTH

Dr. Tung Pham is a lecturer, researcher, and curriculum fellow in cancer epidemiology at the Harvard T.H. Chan School of Public Health. His research focuses on topics including developing a cancer prevention strategy system in low resource settings, mental health, and medical education.

"My research focus is on epidemiology – and it's important to take a look at the risk factors that drive the key issues in liver health here in Vietnam. Regarding obesity in Vietnam, for instance, the rate of obesity is not very low once you consider abdominal obesity and the BMI cut-off for Asian populations. In a study we just published in the Lancet Regional Health, using the WHO BMI cut-off for Asian populations, the prevalence of obesity among women in 2009 was almost 10%, and by 2015 it had increased to 16%. If you use the waist-to-hip ratio in women, that number goes up to 40% in 2015.

The interesting thing is that when we use BMI, the rates of obesity are much lower among men. That is partly due to the fact that about half of the men in Vietnam are smokers. When you smoke, you tend to have a lower BMI, even if your abdominal obesity is high. When we only screen with BMI, we miss all the male smokers.

Smoking, as well as alcohol consumption, actually account for a substantial proportion of liver disease in Vietnam. About 22% of liver cancer cases in the country are attributable to smoking. We also have very high alcohol consumption here, and although the government has tried to put some limits on it, such as taxes or rules about driving, they face strong pushback from the alcohol industry about job loss and economic impact. And there is also a lot of homemade alcohol production, which cannot be regulated or taxed – especially in the rural areas. Alcohol accounts for about 6% of all cases of liver cancer. Even high BMI is attributed to 10% of cases of liver cancer. So even though HBV drives the high rate, there are many other factors at play.

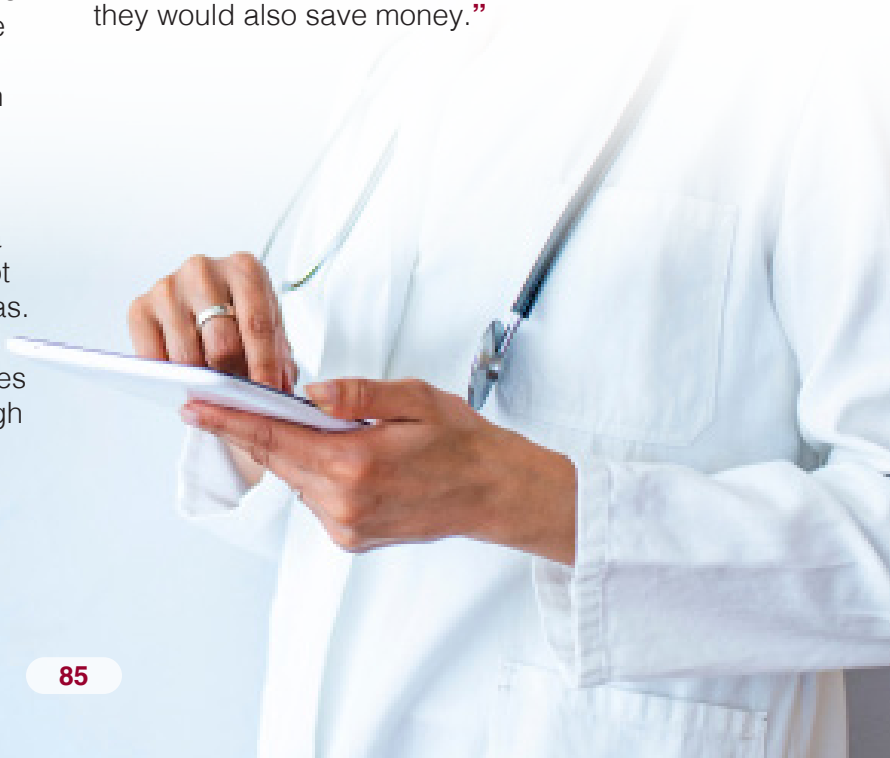


22%

of liver cancer cases in the country are **attributable to smoking**

I think we will begin to see the impacts of the universal HBV vaccine program in the coming years, since it takes a few decades to see that decrease – although a growing anti-vaccine movement does put all that work at risk. Now, we don't have many tools currently to control tobacco smoking, alcohol consumption, and to control unhealthy diets in Vietnam. These are the second and third leading factors, so a tightening of standards, maybe raising taxes and implementing other promotional programs, will be essential.

From an economic perspective, taxing these things will decrease the consumption and then the chronic disease that results. That would eventually save money for the government in the long run, since most people draw funds from the social insurance program. So not only would these policies save lives, they would also save money."



EUROPE

750 MILLION
people



HEALTH OVERVIEW

Covering 10.53 million km, Europe is the second most densely populated continent after Asia.

The many countries of Europe straddle a widely varying range of economic indicators. The top four economies, Germany, UK, France and Italy, between them hold more than 50% of the share of the European GDP, and annual GDP per capita ranges from US$143,000 dollars (Liechtenstein) to $14,150 (Ukraine).

Across Europe, healthcare is the responsibility of, and administered by, individual countries and virtually all provide some form of universal healthcare. Funding is either wholly or partly by taxes, sometimes supplemented with varying forms of point of care payments.

Health spending per head varies widely across the continent, with Norway and Germany coming out top at around €4,500 per capita. Italy, despite being the fourth largest economy in Europe, spends nearly 45% less at €2,470.

Sources: International Monetary Fund: World Economic Outlook Database

© 2026 by Global Liver Institute. All rights reserved

According to a recent commission report published in the Lancet, chronic liver disease led to 287,000 deaths in Europe in 2019, of which 63,500 were due to primary liver cancer.[1]

Liver-related deaths accounted for 3% of all deaths in Europe in 2019, which is an increase from the 204,000 deaths in 1990 (2%-3% of all deaths).[1] These changes equate to a 25% increase in deaths due to chronic liver disease and a 70% increase in deaths to primary liver cancer.[5] After ischaemic heart disease, liver disease is now the second biggest cause of deaths of people of working age in Europe.[1]

Obesity rates across the continent are, in line with the rest of the world, rising quickly. According to a World Health Organization Report released in May 2022, Europe has the second highest rates of obesity globally, after America.[2] Across Europe as a whole, 21.8% of men and 24.5% of women are deemed obese, with the UK leading the way (26.9% of men and 28.6% of women).[2]

Obesity is currently responsible for around 1.2 million fatalities in the region each year – around 13% of all deaths – and predicted by the WHO to overtake cancer as the leading cause of death in the next decades.[2]

The WHO notes that the European Region has the highest proportion in the world of total ill health and premature death due to alcohol. One-fifth of the European population aged 15 and above report heavy episodic drinking (five or more drinks on one occasion) at least once a week. Binge drinking is widespread across all ages and across all the countries of Europe, not just those in the North.[3] More than 50% of all end-stage liver disease across Europe is due to unhealthy alcohol consumption.[4]

Chronic liver disease led to

287,000 Deaths

63,500 Due to Liver Cancer



Obesity is responsible for

1.2 MILLION

fatalities in the region each year

There have, however, been some success stories across Europe, most notably in the vaccine and treatment programs introduced to combat viral hepatitis, including childhood vaccination against the hepatitis B virus (HBV) and antiviral drugs to combat the hepatitis C virus (HCV). So, although it is currently estimated by the European Centre for Disease Control (ECDC) that more than 10 million Europeans may be living with chronic HBV or HCV, the prevalence of chronic HCV is estimated to have declined, perhaps by as much as a third, in many western European countries during the past five years.[5]

Liver disease is now a major threat to public health in every country across Europe. Yet the three main causes of liver disease – viral hepatitis, obesity and alcohol abuse - are all preventable. A concerted commitment to address the need for education around obesity and alcohol, intervention programs, early detection, readily available and free vaccinations and treatments could save the lives of almost 300,000 people across Europe each year.[1]

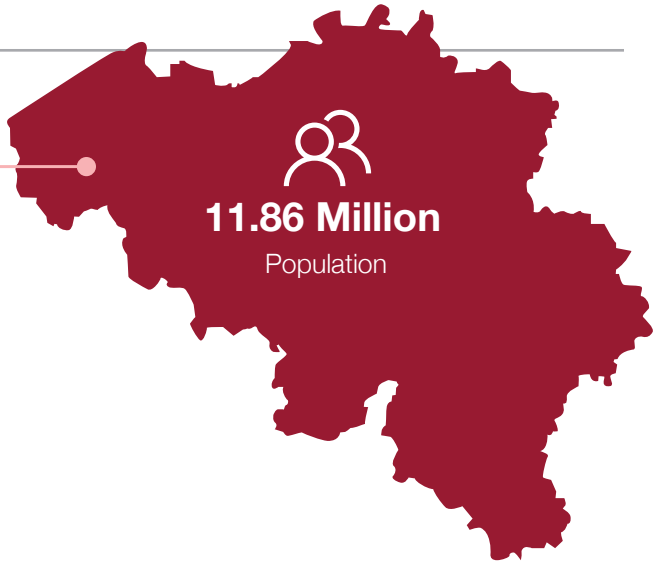


Liver disease is a **major threat to public health** across Europe

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

BELGIUM



Population: 11.86 million (2024)

GDP per capita: $56,614.6 USD (2024)

Life Expectancy: 80 years (men) and 84 years (women) (2024)

Healthcare Spending: 10.8% of GDP (2023)

Healthcare Funding: Belgium has a federal and mixed healthcare system in which a dominant public component coexists with private providers, both for-profit and not-for-profit. The system is organized around compulsory social health insurance that covers 99% of residents. The system is financed primarily through income-proportional social contributions and is managed by the National Institute for Health and Disability Insurance (NIHDI), a public body that pools resources and allocates prospective budgets to each fund to cover members' healthcare costs. Governance responsibilities are shared between federal authorities, who oversee national health insurance, hospital budgets, and pharmaceutical regulation, and federated entities (regions and municipalities), which are primarily responsible for primary care organisation, mental health, and health promotion.

In 2023, per capita health expenditure reached EUR 4,570, nearly 20% above the EU average, representing 10.8% of GDP. At least 1% of the population lacks social health insurance coverage, rising to around 2% in the Brussels region. While a maximum billing system introduced in 2001 caps annual co-payments, it does not apply to fee supplements, limiting financial protection for patients. In June 2025, a preliminary draft law was circulated proposing reforms to the convention mechanism, including caps on supplementary fees for non-conventioned providers.

Sources: *Data.WorldBank; World Bank Group; OECD/European Observatory on Health Systems and Policies, Country Health Profile 2025: Belgium (State of Health in the EU); WHO Regional Office for Europe.*

€4,570
GDP per capita

10.8%
of the GDP is spent on Healthcare

80 years (men), 84 years (women)
Life Expectancy



In Belgium, liver disease is driven primarily by excessive alcohol consumption, viral hepatitis, and metabolic dysfunction, with alcohol-related cirrhosis accounting for approximately two-thirds of all cirrhosis cases and chronic HBV and HCV infection posing a persistent but declining burden, particularly among migrant populations and people who inject drugs.[1,4,14] MASLD affects the majority of individuals with prediabetes and type 2 diabetes, with a substantial proportion already presenting with significant fibrosis at the time of diagnosis, while hepatocellular carcinoma incidence has risen steadily over the past decade, with alcohol and viral hepatitis as the leading etiological contributors.[9-11]

Belgium is classified as a low-endemic country for hepatitis B virus (HBV), with a long-established vaccination programme that has demonstrably reduced the burden of infection over time. A nationwide population-based serosurvey conducted in 2020 estimated the true prevalence of chronic HBV infection at 0.25%.[1] Belgium introduced universal HBV vaccination in 1999, targeting all infants and including a catch-up programme for 12-year-olds; consistent vaccine coverage rates above 90% have been maintained since 2007 and above 96.8% since 2012.[1] Testing for HBV in primary care remains suboptimal: a registry-based study of 48 general practitioner practices in Flanders found that only 1.8% of approximately 440,000 registered patients were screened for HBsAg (the surface antigen used to diagnose active HBV infection) over a twenty-year period, with no improvement in testing rates over time, even among patients with chronically elevated liver enzymes.[3] Migration represents the most important residual driver of HBV burden in Belgium: in the blood donor cohort, foreign-born donors had an HBsAg prevalence of 0.33% compared with 0.02% among Belgian natives, and accounted for approximately 55% of all HBsAg-positive cases.[8] This pattern is further confirmed by clinical registry data from newly diagnosed HBV patients across Belgium, among whom 43% were of Asian or African origin, reflecting the predominance of vertical and familial transmission routes in migrant populations.[7]

Hepatitis C virus (HCV) infection in Belgium is characterized by low overall prevalence but persistent challenges in screening, diagnosis, and linkage to care. The first nationwide HCV prevalence study, conducted between 2013 and 2015 on 3,209 residual serum samples, estimated HCV seropositivity at 0.22%, with a prevalence of chronic, active HCV infection of 0.12%.[4] These figures represent a substantial decline from the 0.87% seroprevalence recorded in Flanders in 1993–1994, attributed to a genuine reduction in incidence driven by blood donor screening programs, needle exchange initiatives targeting people who inject drugs, and advances in antiviral treatment over the intervening decades.[2,4] In terms of transmission patterns, clinical registry data from newly diagnosed patients across Belgium show a markedly different epidemiological profile from HBV: intravenous drug use was identified as the main transmission route in 44% of newly diagnosed HCV patients, while blood transfusion accounted for 34% of cases in sharp contrast to HBV, where sexual and familial transmission predominated.[7] Belgium introduced unrestricted access to direct-acting antivirals (DAAs) – i.e., highly effective oral treatments that cure HCV in over 95% of cases – for all infected patients in January 2019.[5] However, screening remains the weakest link in the HCV care pathway: real-life data from Flemish general practices show that only 1.6% of registered patients were tested for HCV antibodies over two decades, with no improvement over time.[3] Structural gaps compound this challenge, as Belgium has lacked a national HCV disease register, a cascade-of-care monitoring system, and a clear linkage-to-care mechanism, while a national HCV plan developed in 2014 had largely failed to implement its key objectives around screening and data collection, with efforts remaining at the local level.[5,6]



Migration represents the most important residual driver of HBV burden in Belgium

~55% accounted for all HBsAg-positive cases.[8]

© 2026 by Global Liver Institute. All rights reserved

Metabolic dysfunction-associated steatotic liver disease (MASLD) is an increasingly significant liver health concern in Belgium, driven by the rising prevalence of obesity, type 2 diabetes mellitus (T2DM), and related metabolic disorders. A prospective bi-national cohort study conducted between 2019 and 2024, involving 1,928 individuals from Belgium and the Netherlands, found MASLD to be highly prevalent among people with disordered glucose metabolism: 72.5% of Belgian individuals with prediabetes and 82.3% of those with T2DM were found to have MASLD.[9] These figures exceed those observed in the Dutch comparator cohort (64.3% and 74.6%, respectively), a difference that may partly reflect differences in healthcare emphasis, with Belgium's system showing a greater orientation towards treatment than prevention.[9] Key risk factors for steatosis across the combined cohort included obesity, metabolic syndrome, and male sex, with BMI showing a non-linear positive association with liver fat content.[9] These findings reinforce the clinical urgency of systematic MASLD and fibrosis screening among individuals with prediabetes and T2DM in Belgium, populations that remain incompletely addressed by current national guidelines.[9]

Hepatocellular carcinoma (HCC) represents a growing public health concern in Belgium, with incidence rising steadily over the past decade. Data from the Belgian Cancer Registry show that in 2022, a total of 1,209 new liver cancer cases were diagnosed, with a markedly higher burden in men (881 cases, 16.3 per 100,000) than in women (328 cases, 5.2 per 100,000).[10] The prognosis of liver cancer in Belgium remains poor: five-year net survival for the period 2018–2022 was 21.8% in men and 23.1% in women, with outcomes declining markedly in patients aged 75 and older.[10] At diagnosis, approximately 30% of male and 36% of female patients already present with stage IV disease, reflecting the challenge of early detection.[10] The etiological landscape of HCC in Belgium has evolved over time: while excessive alcohol consumption has historically been the dominant risk factor for the underlying cirrhosis that precedes most HCC cases, data from Belgian registry studies indicate that HCV infection has become an increasingly prominent contributor.[11]

Liver transplantation remains the only curative option for patients with end-stage liver disease and selected cases of early HCC arising on a cirrhotic background, and Belgium operates six accredited transplant centres with coordinated national oversight. A nationwide retrospective study conducted across five Belgian transplant centres examined the outcomes of bariatric surgery performed after liver transplantation in 25 patients, providing insight into the metabolic challenges of the post-transplant period: the prevalence of obesity increased from 38.1% before transplantation to 42.2% five years after, and MASLD was identified in 16% of patients prior to the bariatric procedure, with complete resolution in all cases following sleeve gastrectomy.[13] Sleeve gastrectomy, performed in 84% of cases, proved safe and feasible in this post-transplant setting, with significant and sustained reductions in BMI levels and no instances of liver failure or dysphagia post-operatively.[13] These findings are particularly relevant given that MASLD is projected to become the leading indication for liver transplantation by 2030, and that recurrence of MASLD post-transplantation can reach up to 60% in some series, potentially compromising graft survival.[13]



Excessive alcohol consumption remains the leading cause of cirrhosis in Belgium, accounting for approximately 65-67% of cirrhosis cases across two prospective cohorts collected fifteen years apart at a Belgian liver center, a proportion that remained stable between the periods 1995-1999 and 2010-2014.[14] Over the same interval, the etiological landscape of cirrhosis shifted notably: the prevalence of HCV-related cirrhosis fell from 22% to 10%, while MASLD-related cirrhosis rose from 3% to 16%, reflecting both the impact of effective antiviral therapies and the growing metabolic burden in the Belgian population.[14] The public health burden of alcohol-related liver disease is considerable: Sciensano data show that in 2021, cirrhosis of the liver was the single leading cause of alcohol-attributable mortality in men in Belgium, accounting for 729 deaths.[15] From an economic perspective, alcohol-associated liver disease and cirrhosis carried one of the highest unit hospitalization costs among all alcohol-attributable conditions in Belgium, estimated at €8,729 per care episode in a comprehensive cost-of-illness analysis.[17] Research from the Hôpital Universitaire de Bruxelles further highlights that alcohol-related liver disease disproportionately affects socially and economically disadvantaged populations, with studies showing that, given equal alcohol consumption, the health damage is approximately three times higher among disadvantaged individuals.[16]



Alcohol-associated liver disease and cirrhosis carried **one of the highest unit hospitalization costs** among all alcohol-attributable conditions in Belgium.



BULGARIA

Population: 6,916,548 (2021)

GDP per Capita: $15,798 USD
Almost half of Bulgarian households say they find it difficult to cover healthcare costs.

Life Expectancy: 70.8 years (men) and 78.1 years (women)

Healthcare Spending: 8.1% of GDP

Healthcare Funding: A mix of a compulsory social health insurance (SHI) scheme with additional 'out-of-pocket costs' (mainly for medicines and medical devices) borne by the individual. There are a small number of voluntary health insurance schemes. An estimated one million Bulgarians have no health insurance, and out of pocket spending is 2.5 times the EU average.[10]

Sources: EC Commission Report: The State of Health in the EU, Bulgaria: Country Health Profile 2021



$11,635
Average Income Per Household

8.1%
of the GDP is spent on Healthcare Spending

71.1 years (men)
and **78.2 years (women)**
Life Expectancy



Collating data on the causes, epidemiology, treatment pathways and outcomes around liver disease in Bulgaria has proven to be a challenge. Bulgaria's first National Cancer Plan for example, published in May 2022, made no specific mention of liver cancer even though Bulgaria ranks eighth in the WHO European Region for alcohol consumption, which is closely tied to liver cancer.

A search for figures on autoimmune liver disease proved to be fruitless. Likewise, it has proven impossible to establish the economic burden of liver disease to the Bulgarian people.

The Global Nutrition Report estimates that 26.3% of adult women and 28.3% of adult men in Bulgaria live with obesity. This is higher than the regional average of 25.3% for women and 24.9% for men (an average of 25.1%). At the same time, diabetes is estimated to affect 7.6% of adult women and 9.7% of adult men (an average of 8.65%).[1]

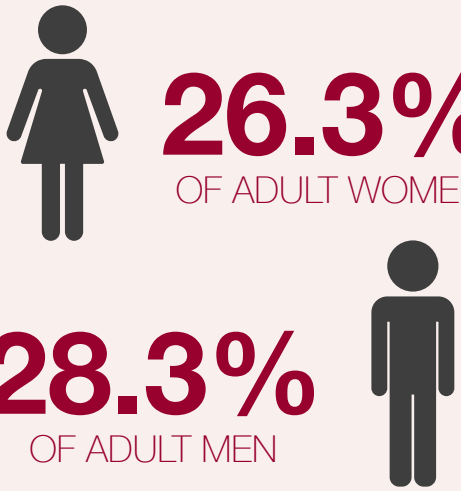
Assuming that the prevalence rate for metabolic dysfunction-associated steatotic liver disease (MASLD) is around 60% in high-risk populations including the obese and those with diabetes, it could be estimated that around 2.1 million Bulgarians are living with the condition.[2]

According to the Organization for Economic Co-operation and Development (OECD), Bulgaria has one of the highest levels of alcohol consumption – 12.7 liters of pure alcohol per capita per year.[3] The WHO International Agency for Research on Cancer cites 640 cases of liver cancer in 2020.[4]

The National Program for the Prevention and Control of Hepatitis was finally implemented in 2021, after a nine-year campaign by the HepActive Patient Association Bulgaria and other patient and clinical groups. The current plan (running from 2021-2025) aims to test all adults between the ages of 40-65 for HBV and HCV every five years.

In 2021 there were

13 Liver Transplants



There have been compulsory vaccinations for all newborn children against HBV since 1992. However, these rates are dropping. In 2011, 96% of newborns completed the course of vaccinations but, in 2018, that number had fallen to 85.1%.

There is currently no national or regional register for chronic viral hepatitis, but there were 2,249 cases of acute viral hepatitis registered in 2019, over 50% of which were specified as caused by hepatitis A.

According to data from the Polaris Observatory, in 2020 1% of the population of Bulgaria (around 86,000) people were living with HCV, and 3% (around 227,000) with HBV (2016 figures). They estimate that 19% of HCV are diagnosed and there are 412 deaths each year from the disease. Only 13% of HBV infections are diagnosed, 3% are treated, and there are 93 deaths each year.[5]

In 2021 around 540 people were being actively treated for HCV and 2,300 for HBV. This represents a drop in numbers from 2019, which has been directly attributed to a cessation of the screening program during COVID-19.[5]

Liver transplants are extremely rare in Bulgaria. The register of the Executive Agency Medical Supervision records that, between 2016-2019, only 41 liver transplants took place in Bulgaria. There were 13 liver transplants in 2021.[6]

© 2026 by Global Liver Institute. All rights reserved

LIFE ON THE FRONT LINE OF LIVER DISEASE IN BULGARIA

Silvana Lesidrenska has been the President of the HepActive Patient's Association, Bulgaria since 2012. She lives with chronic hepatitis B and campaigns for improved treatment for hepatitis and liver disease patients.

In Bulgaria, nearly all medicine is clinic-based, doctors and hospitals are paid by the government according to the numbers of procedures and tests they carry out. The downside of this is that, sadly, the patient often undergoes needless hospital-based tests which could easily be carried out on an outpatient basis or, sometimes, are not needed to begin with. For example, patients may have to be admitted twice a year for three days just to undergo a simple blood test, missing out on work and family life. I am relatively lucky because my doctor only admits me for a few hours for my blood tests. Others are not so fortunate.

FEW STATISTICS BUT MANY CHALLENGES TO LIVER HEALTH

LACK OF DATA:



There is currently no national register for the number of patients living with viral hepatitis, liver cancer or autoimmune liver disease, NAFLD or NASH. There is no data on long term patient outcomes in liver disease either by disease or region. Hospitals and clinics are not required to keep data on their patient outcomes.

HEALTH SPENDING IS CONCENTRATED ON HOSPITAL/IN PATIENT CARE:



Because of a system that rewards state and private hospitals and doctors for inpatient care, inpatient spending took up 40% of the health budget in 2019, almost double that of other European countries, with outpatient care only accounting for 18.3%.[7]

In order to receive a hepatitis blood test check, a healthy patient will have to spend up to three days in the hospital twice a year. After a five-year court battle, which was contested by the hospitals, patients with well-managed HCV are no longer required to have a mandatory liver biopsy, although this is still required for HBV.

HIGH BURDEN OF 'POINT OF CARE' PAYMENTS:



State spending accounts for around 60% of all health spending. This leaves nearly 40% to be covered by the individual at point of care – one of the highest rates of out-of-pocket payments in Europe. The majority of this spending is on medicines. Many patients, particularly those who are uninsured, may struggle to pay for vital treatments. This is particularly relevant for liver disease which tends to be a chronic condition often requiring lifelong medication.

HIGH NUMBER OF UNINSURED AND VULNERABLE PATIENTS:



The Ministry of Finance estimates that around 10% of the population are not paying into the social health insurance (SHI) scheme and are therefore uninsured. These include the long-term unemployed and those unable to obtain a national identity card. These populations are more likely to experience lifestyle and living conditions that are implicated in liver disease, including poor nutrition and sanitation, alcohol and drug abuse.

REFERRAL QUOTAS:



GP and clinic referrals to specialist centers for tests and diagnostic procedures are subject to a quota system that often results in patients paying for the procedures themselves, or if they are unable to pay, going without. Effective ongoing management of liver disease relies heavily on lifelong liver function and other crucial tests. Without these, patient outcomes will most likely be greatly reduced.

LACK OF PALLIATIVE CARE:



Palliative care in a hospital setting is rationed to 22 days within the SHI scheme. End-stage liver disease requires specialist palliative care to include treatments for many potentially distressing complicationss.

POSITIVE CHANGES:



The Bulgarian government is planning a €310 million investment to modernize state hospitals and to upgrade diagnostic and other equipment.

© 2026 by Global Liver Institute. All rights reserved

CZECH REPUBLIC



Population: 10.91 million (2024)

GDP per capita: $31,823 USD (2024)

Life Expectancy: 77 years (men) and 83 years (women) (2024)

Healthcare Spending: 8.51% of GDP (2024)

Healthcare Funding: The Czech Republic operates a universal social health insurance system, regulated by the government and funded primarily through compulsory contributions from employees, employers, the self-employed, and state transfers on behalf of economically inactive groups such as children, pensioners, students, and the unemployed. Seven semi-public health insurance funds act as purchasers of care, with the largest fund, the General Health Insurance Company (VZP), covering approximately 56% of the population. The Ministry of Health is the key regulatory body, responsible for setting healthcare policy, supervising the insurance funds, and issuing annual reimbursement directives that determine how providers are paid. Outpatient care is predominantly delivered by private providers, while most inpatient facilities are publicly owned.

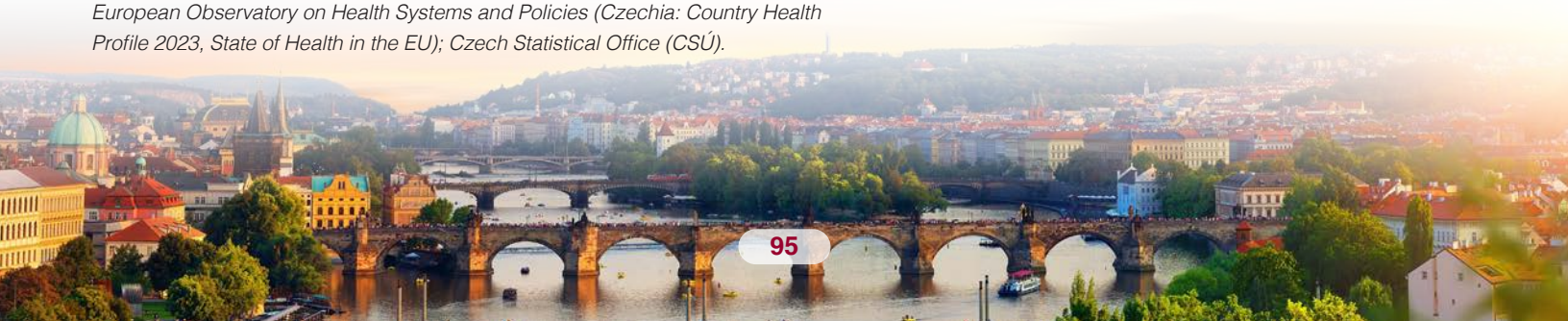
Public funding accounts for the highest share of total health expenditure in the EU: in 2021, 86.4% of current health expenditure came from public sources, well above the EU average of 81.1%. Out-of-pocket payments, which consist mainly of copayments on prescription pharmaceuticals and dental care, represented 12.7% of total health spending in 2021, below the EU average, and voluntary health insurance plays a negligible role. The broad statutory benefits package and low cost-sharing result in high financial protection and very low levels of unmet medical care needs across income groups.

$31,823
GDP per capita (USD)

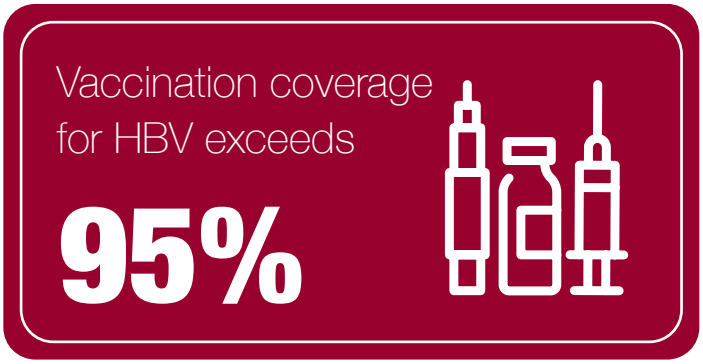
8.51%
of the GDP is spent on Healthcare

77 (men) & 83 (women)
Life Expectancy

Sources: Data.WorldBank; World Bank Group; IBA Healthcare and Life Sciences Law Committee (Healthcare Financing and Reimbursement Survey, Czech Republic); European Observatory on Health Systems and Policies / WHO Regional Office for Europe (Czechia: Health System Summary, 2024); OECD/ European Observatory on Health Systems and Policies (Czechia: Country Health Profile 2023, State of Health in the EU); Czech Statistical Office (CSÚ).



Liver disease in the Czech Republic is driven by a combination of viral, metabolic, and alcohol-related causes, each contributing to a substantial and evolving burden of chronic liver conditions. Hepatitis B and C infections have historically represented major drivers of liver morbidity, though their relative importance is declining as viral hepatitis treatment improves and vaccination coverage remains high.[1,2] Metabolic dysfunction-associated steatotic liver disease (MASLD) and alcohol-related liver disease (ALD) are meanwhile emerging as the dominant challenges, reflecting broader trends in obesity, type 2 diabetes, and alcohol consumption across the population.[6,14]

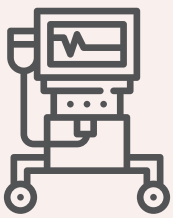


Hepatitis B virus (HBV) infection in the Czech Republic has followed a sustained downward trajectory over the past two decades, a trend largely attributed to the success of the national vaccination programme. Universal HBV vaccination for infants was introduced in 2001, and compulsory vaccination for children over nine weeks of age is currently mandated; targeted vaccination is also provided for high-risk adults, including healthcare workers and employees of the emergency services.[1] Between 2000 and 2021, a total of 8,762 HBV cases were recorded in the Czech Republic; the annual number of acute cases fell dramatically over this period, from 604 in 2000 to just 17 in 2021.[2] Vaccination coverage has exceeded 95% in recent years, and the incidence rate among healthcare workers declined tenfold following the introduction of mandatory occupational vaccination in 1983.[2]

HBV infection disproportionately affects men, who account for approximately 64% of reported cases.[2] Among those with a documented risk behaviour, people who inject drugs (PWID) represent the largest group at 53.9% of cases.[2] Imported cases have also contributed to the overall burden, with 462 cases recorded during the observation period.[2] Despite the overall progress, the chronic form of HBV has shown more variable trends, and the absence of a systematic general population screening programme means that many cases of HBV-related liver disease may remain undetected.[1]

Hepatitis C virus (HCV) infection presents a more persistent public health challenge in the Czech Republic than HBV, as transmission continues primarily through the sharing of injection equipment among people who inject drugs. A population-based seroprevalence study conducted in 2015 among 3,000 adults found that 1.67% carried anti-HCV antibodies, an eightfold increase compared to the 0.2% recorded in 2001, and that the overall prevalence of chronic HCV was 0.93%, rising to 1.5% in men, with an estimated 80,000 people living with chronic hepatitis C in the country.[3] Strikingly, only 4% of those testing positive were aware of their infection prior to the study, highlighting the substantial burden of undiagnosed disease.[3] Between 2000 and 2021, a total of 19,398 HCV cases were reported. In contrast, acute cases declined over time; chronic HCV trends remained variable, with the highest incidence recorded in 2019.[2] People who inject drugs account for the overwhelming majority of HCV cases with a documented risk factor (86%). The disease is heavily concentrated in specific regions, particularly Prague and the Ústecký region, which are characterised by higher rates of drug use and lower socioeconomic status.[2] Access to direct-acting antiviral (DAA) therapies has improved substantially, with restrictions on their use having been lifted and financing no longer considered a major barrier; approximately 2,600 individuals were treated in 2023.[1] However, treatment remains largely centralized in

hepatology clinics, and linkage to care is weakened by the absence of patient registries, inconsistent reflex testing, and the stigmatisation of people who inject drugs.[1,4] These structural barriers, combined with insufficient screening coverage and the lack of a national HCV elimination plan, mean that the Czech Republic is unlikely to meet the WHO 2030 elimination targets without urgent and coordinated policy action.[1]



Among people living with type 2 diabetes mellitus (T2DM), **79% showed evidence** of MASLD on ultrasound examination

Metabolic dysfunction-associated steatotic liver disease (MASLD) represents a growing liver health concern in the Czech Republic, closely linked to the rising burden of obesity, type 2 diabetes, and metabolic syndrome in the population.[8] A study conducted at Charles University in Prague found that among people living with type 2 diabetes mellitus (T2DM), 79% showed evidence of MASLD on ultrasound examination, with the condition closely associated with higher body weight, body mass index (BMI), waist circumference, and serum triglycerides; nearly all those affected also met the criteria for metabolic syndrome.[6] On the therapeutic front, a crossover randomised trial conducted at the Institute for Clinical and Experimental Medicine (IKEM) in Prague showed that treatment with semaglutide, a glucagon-like peptide-1 (GLP-1) receptor agonist, reduced liver fat content by approximately 30% in obese men with MASLD. Despite this emerging evidence base, the Czech Republic has not developed a dedicated national strategy or action plan for MASLD; although the Czech Republic does have national clinical practice guidelines that mention MASLD, these remain largely embedded within broader frameworks for obesity and liver disease rather than constituting a standalone operational response.[8,9] This policy gap mirrors a broader European pattern of low readiness to address MASLD at the system level.[8]

Hepatocellular carcinoma (HCC) poses a significant and evolving clinical challenge in the Czech Republic. A ten-year retrospective analysis of cirrhotic patients with HCC treated at a Prague university centre between 2011 and 2021 found that the three leading causes of underlying liver cirrhosis were metabolic dysfunction-associated steatohepatitis (MASH) at 39%, alcohol-related liver disease (ALD) at 36%, and hepatitis C virus (HCV) infection at 18%.10 Notably, over the same period, the proportion of HCV-related HCC declined markedly, from 22% in the earliest cohort to 11% in the most recent, a trend attributed in part to the introduction of direct-acting antiviral therapies and the subsequent reduction in the pool of patients with HCV-associated advanced fibrosis.[10] Conversely, ALD-related HCC increased from 30% to 47% across the three study periods.[10] The distribution of disease stage at diagnosis also improved substantially over time at this centre: the proportion of patients diagnosed at early stages of disease rose from 15% in 2011-2013 to 45% in 2018-2021, a shift attributed to the systematic implementation of ultrasound surveillance for at-risk patients and the growing experience of specialist sonographers.[10]

Liver transplantation in the Czech Republic is organised across seven transplant centres, with the Institute for Clinical and Experimental Medicine (IKEM) in Prague performing the majority of procedures for both adult and paediatric recipients.[11] Between 1995 and 2022, IKEM performed a total of 2,302 liver transplants, and

the program has expanded substantially in recent years, with the number of transplants nearly doubling between the periods 2001-2011 and 2012-2022.[12] A nationwide program of deceased donor organ procurement operates under a presumed consent model established by the 2002 Transplantation Act, and the Czech Republic has historically recorded among the highest deceased donor rates in Europe.[11] A study of 548 liver transplant recipients at IKEM found that steatosis developed in 56.4% of patients following transplantation, with prevalence increasing from 30.3% at one year to 47.6% at ten years after transplant; significant steatosis was associated with pre- and post-transplant obesity, hypertriglyceridaemia, type 2 diabetes, and a prior indication of alcohol-related cirrhosis, highlighting the continued importance of metabolic risk management in the post-transplant setting.[13]

Alcohol-related liver disease (ALD) constitutes a significant and growing public health burden in the Czech Republic, a country that consistently ranks among the highest globally in per capita alcohol consumption. Annual registered consumption averages approximately 10 litres of pure ethanol per capita, and between 15% and 19% of the adult population engage in risky or harmful drinking, corresponding to an estimated 1.3 million people.[14] In 2022 alone, 2,409 deaths were directly attributable to alcohol as the primary cause, of which 1,827 were due to alcohol-associated liver disease and 505 due to alcohol intoxication; in the same year, approximately 4,000 of the 13,000-14,000 annual hospital admissions for fully alcohol-attributable conditions were for alcohol-associated liver disease.[15] Alcohol-associated liver disease follows a well-characterised spectrum – from reversible steatosis, which develops in the majority of heavy drinkers, through steatohepatitis and fibrosis, to cirrhosis and hepatocellular carcinoma – with the risk of cirrhosis increasing sharply with the amount and duration of alcohol consumed; abstinence can halt and partially reverse disease progression even at the cirrhotic stage.[16] Long-term trend data show that chronic liver disease has been the dominant component of alcohol-related mortality in the Czech Republic, with male alcohol-related mortality declining steadily since the mid-2000s.[17] Despite the scale of this burden, alcohol control policies in the Czech Republic have historically been among the most liberal in Europe, and fully evidence-based measures remain inconsistently implemented.[15]



OVERVIEW

DENMARK

Population: 5.9 million

GDP per Capita: $76,687 USD (2023)

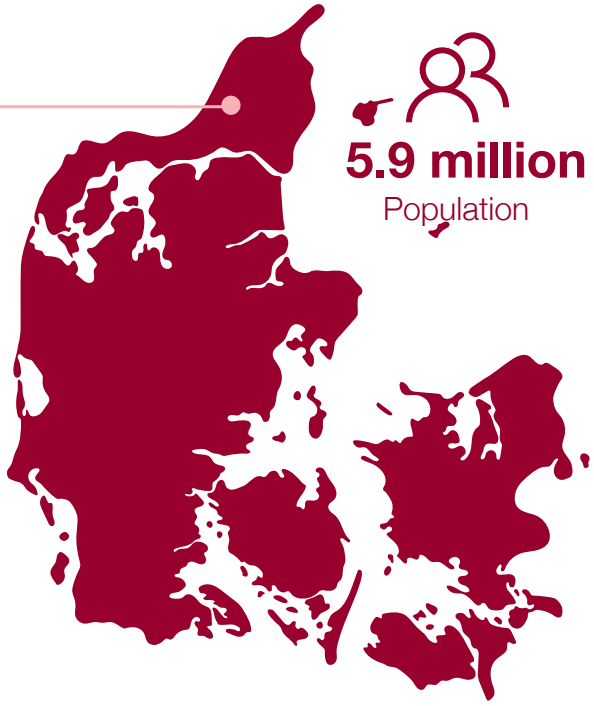
Life Expectancy: 80.2 years (men) and 84.1 years (women)

Healthcare Spending: 10.5% GDP (2020)

Healthcare Funding: Denmark's healthcare system provides universal access through a decentralized structure that offers publicly financed medical care to all registered Danish residents — including citizens, immigrants, and asylum-seekers. Undocumented immigrants have access to acute-care services through a voluntary, privately funded initiative supported by the Danish Medical Association, the Danish Red Cross, and the Danish Refugee Council.

Regions and municipalities receive tax-funded, block grants from the federal government to deliver health services. While services are largely available without a fee at the point of service, out-of-pocket payments still account for about 13% of current health expenditures (as of 2021), mainly for outpatient prescription medicines and dental care. As a result, approximately 40% of Danes hold voluntary private health insurance, often an employee benefit, to cover services not fully included in the public system, secure quicker access to elective surgeries, or utilize private hospitals and clinics.

Sources: US CIA's The World Factbook, World Bank Group, Euro Health Observatory, The Common Wealth Fund

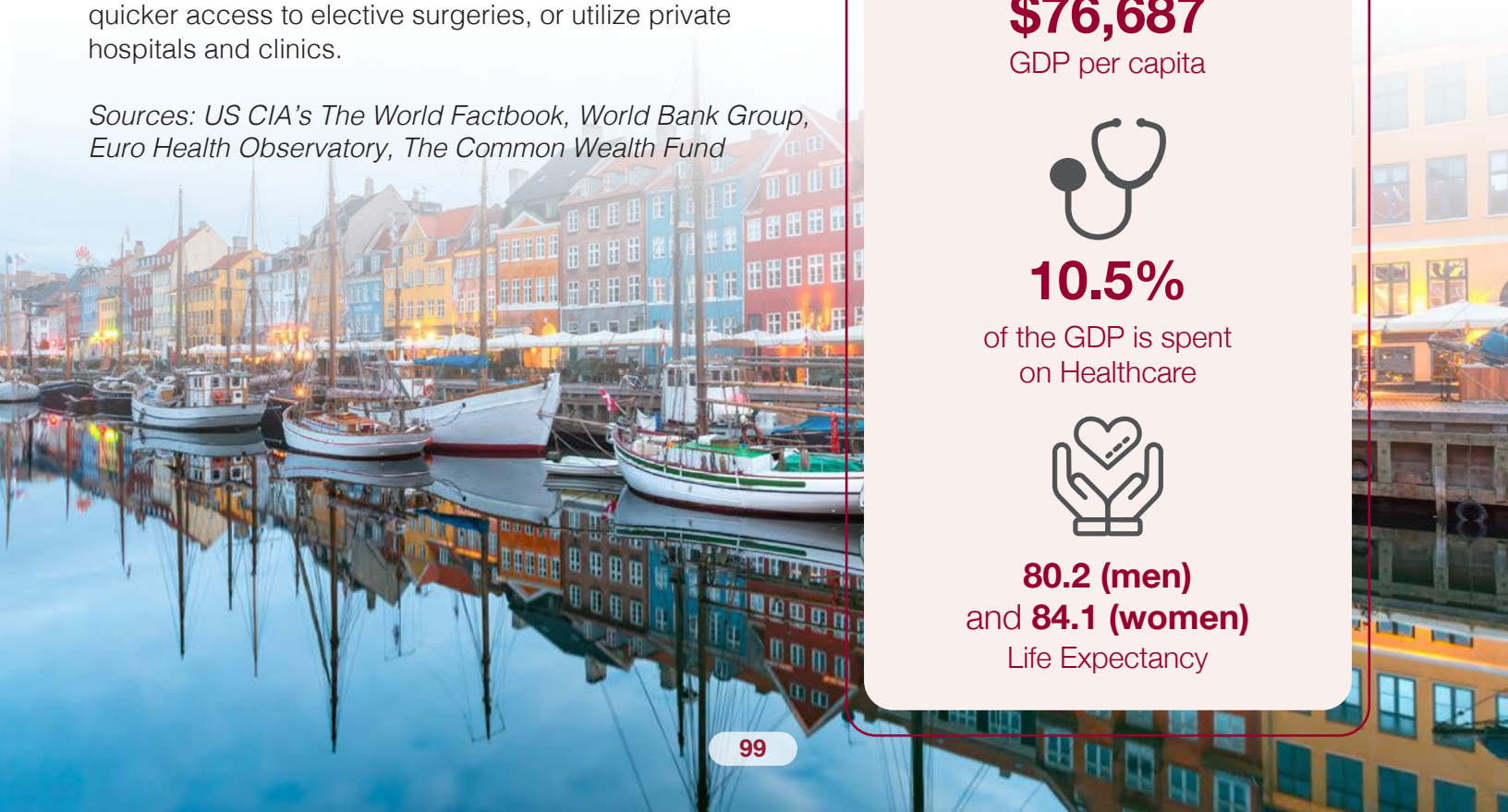


5.9 million
Population

$76,687
GDP per capita

10.5%
of the GDP is spent on Healthcare

80.2 (men) and **84.1 (women)**
Life Expectancy



Denmark's healthcare system is committed to public well-being, with universal access and health interventions across all areas of medicine, including liver health. Central to this effort is the Danish Liver Association, a key player in raising awareness and reducing the stigma around liver diseases.[1] Although Denmark has relatively low rates of liver disease compared to many other countries, challenges persist, particularly in the final push to eliminate viral hepatitis, an emerging concern about fatty liver disease, and alcohol-related liver damage.

As Denmark faces rising rates of obesity, like many other nations, metabolic dysfunction-associated steatotic liver disease (MASLD) is a growing problem. Roughly 20% of the general population has MASLD, and those with metabolic conditions like type 2 diabetes and obesity have even higher rates. A 2023 survey has found that 52.6% of Danes have a BMI greater than 25 (considered overweight) and 18.5% have a BMI greater than 30 (considered obese). [3] As these numbers rise, MASLD is expected to become more widespread as well. Denmark has taken active steps to curb obesity and metabolic health disease. In 2001, Denmark launched a pioneering health policy banning trans fats, one of the first of its kind worldwide.[4] The policy directly reduced cardiovascular mortality and halted a rise in adolescent obesity.[4] Although adult obesity rates have been rising, Denmark's proactive public health measures showcase the country's commitment to long-term solutions for liver and public health.

More than
52%
of Danes have an **overweight BMI,** and more than **18% have an obese BMI.**



Alcohol has a significant impact on liver health in Denmark. Approximately one in five Danes can be considered heavy drinkers, while 14% have what is considered to be harmful alcohol consumption.[5] For years, alcohol consumption in Denmark has damaged liver health by causing cirrhosis and the majority of cases of liver cancer.[6] However, recent trends show a decline.[6] In 2023, for instance, the average Dane consumed around 9.3 liters of pure alcohol—down from previous years.[7] This is mirrored by liver health outcomes: The incidence of new cases of alcohol-associated liver disease (ALD) in Denmark each year dropped by about 33% between 2009 and 2018.[8] Mortality rates also declined during this period.[8] Despite this decline, Denmark still leads Nordic countries in alcohol consumption – especially in binge drinking among the youth.[9] Fifteen-year-olds in Denmark lead Europe in binge drinking, consuming five or more alcoholic drinks in one sitting.[10] The strong influence of the alcohol industry makes it difficult to implement impactful, proven policies, while enforcement of the legal drinking age is often lax.

Those most at risk for ALD tend to come from lower socioeconomic backgrounds, and age, low educational level, and lack of employment are each correlated with heightened risk.[11] Still, there is some legislative momentum to reduce excessive drinking, especially among younger people. A recent law increased the minimum age for purchasing high-alcohol-content beverages from 16 to 18, but beer, wine, and other low-alcohol-percentage beverages are available for purchase at 16.[7] Unfortunately, metabolic factors interact with alcohol consumption to the detriment of liver health in Denmark, as the two risk factors act synergistically to damage the liver.

Denmark has managed to maintain one of the lowest prevalence rates of viral hepatitis in Europe, particularly for hepatitis B and C. Hepatitis B (HBV) affects around 0.3% of the population, with approximately 14,500 individuals living with the infection.[12] 93% of HBV cases have been diagnosed.[12] Despite – or perhaps because of – this success, Denmark does not have a national strategy to reach full disease elimination of viral hepatitis.[12,13]

Still, Denmark has committed to the World Health Organization's ambitious goal of eliminating hepatitis C virus (HCV) infection by 2030.[13] Regions like Southern Denmark have implemented local action plans for early diagnosis and treatment.[13] The plan targets key populations, such as individuals who inject drugs, and sets a goal to diagnose 90% of those infected by 2025.[13] Shifts in drug consumption patterns as well as broadly implemented harm reduction programs like opioid substitution treatments and needle exchange programs are thought to have lessened the spread of the infection in Denmark.[14] Alongside a low prevalence of 0.21%, about three in four people with HCV infection are estimated to be diagnosed in Denmark.[15] Proactive community outreach to identify and treat these final undiagnosed cases will be needed to reach elimination.

Although liver cancer is on the rise in Denmark, survival rates are also increasing.[16] Unfortunately, Denmark still has the lowest five-year survival for liver cancer among Nordic countries and poor survival among high-income countries.[17,18] Alcohol-associated cirrhosis accounted for nearly 62% of liver cancer cases in Denmark, and underlying conditions like cirrhosis and chronic viral hepatitis are also closely linked.[6] As alcohol consumption and viral hepatitis decline, this cause of liver cancer is expected to decline as well. However, a growing proportion of liver cancer is attributable to overweight, obesity, and MASLD.[19] Cohort studies have also linked cases of liver cancer to occupational exposure and air pollution.[19,20] The risk of developing liver cancer is four times greater for those over 70 than younger people in Denmark.[21] Also, though liver cancer tumors are extremely rare in the pediatric population, they have many times greater survival than adult cases.[22] Prevention remains a key focus, with early detection of all-cause cirrhosis and viral hepatitis playing a crucial role in reducing the incidence of liver cancer.[16] Monitoring at-risk patients has become a central strategy in managing and mitigating cancer risks.



For patients who reach end-stage liver disease, Denmark's liver transplantation program is integrated into the broader Scandinavian transplant network called Scandiatransplant.[23] This collaboration allows Denmark to share organs with neighboring countries like Finland, Iceland, Norway, Sweden, and Estonia.[23] In 2023, Denmark completed 63 deceased donor liver transplants and no living donor transplants.[24] While short-term survival rates post-transplant have improved dramatically, long-term outcomes remain more challenging, with cardiovascular complications posing a significant risk for liver transplant recipients.[25]

Denmark has made strides in improving liver health through proactive public health policies, effective treatment programs, and continued research. While challenges remain—such as undiagnosed viral hepatitis cases, rising obesity, and the ongoing risks of alcohol-related liver disease—the country's efforts in prevention, awareness, and medical intervention provide a strong foundation for tackling liver health issues.

OVERLAPPING, MODIFIABLE RISK FACTORS THREATEN LIVER HEALTH IN DENMARK

Aleksander Krag, MD, PhD, MBA is Professor and Department Chair, Department of Gastroenterology and Hepatology Odense University Hospital, Director of Centre for Liver Research (FLASH) Odense University Hospital and DIAS Chair of Health Sciences, University of Southern Denmark. He also serves as Secretary General of the European Association for the Study of Liver (EASL) 2023-2025. His research interest focuses on clinical aspects of steatotic liver diseases (alcohol and non-alcohol related).

The main problem of liver health going into the future is steatotic liver disease – overweight, obesity, and alcohol. We are a country with very high alcohol consumption and a high level of cardiometabolic risk factors. 18% of the population has a BMI over 30. Around 10% have a harmful level of alcohol consumption.

Unfortunately, even in a well-educated, wealthy country like Denmark, we have low health literacy and low awareness regarding the liver. We have some of the highest rates of young people consuming alcohol. Our society and our government need to do a better job to protect these kids, because they don't know.

Alcohol has been a taboo. Socially, it is very common, but as soon as it is related to health, it is stigmatized, even among doctors. We have not taken it seriously enough: alcohol is the number one driver of severe liver disease. But that also means we can work on several layers.

1. Policy can make the most impact, but that is also where the resistance is the biggest, with a very strong lobbying alcohol industry. **Minimum unit pricing** is shown to reduce consumption and reduce the burden of cirrhosis and liver cancer – one study reduced the burden by between five and seven percent in the population. **Increasing the age limit** for purchasing alcohol is important. **Advertising laws** can be adjusted, as well as accessibility – the hours that alcohol is available for sale.

2. At the doctor level, we can also do a lot. Most people drink alcohol, yet we are not good enough at asking, and considering how we ask, about our patients' alcohol consumption. Do we actually use the unit that they would recognize? Otherwise, we will miss an important risk factor.

3. Then there's the patients themselves. They know alcohol is a taboo topic, and they also know it is unhealthy, so there is a massive underreporting of consumption. New biomarkers to detect alcohol consumption will be a helpful point of departure for a conversation.

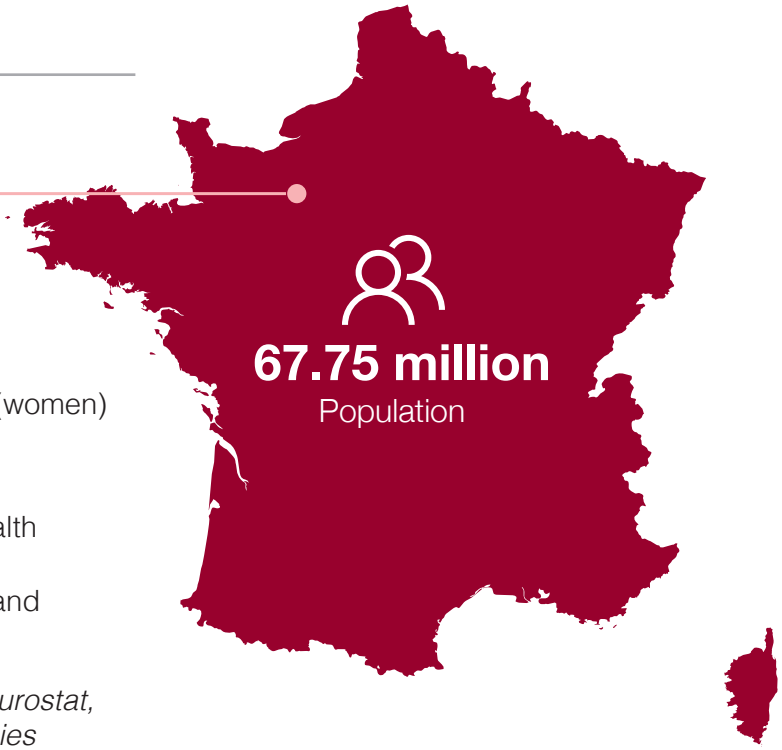
We also need to begin to talk about alcohol consumption in conjunction with unhealthy food and obesity, because the synergy of these risk factors puts people at much, much higher risk. Reduction of alcohol consumption must be linked to healthy eating behaviors. Why is it so difficult to make unhealthy food expensive? Why is it so difficult to alleviate some of the tax for healthy food? So unfortunately there is a big overrepresentation of socioeconomically deprived people, with lower education and less money, with liver disease.

However, we are at the brink of being able to do something about liver disease in the next five to ten years. One, I think we will have less stigma, and easier to talk about for both doctors and patients. Then, I think the success of treatments for obesity and type 2 diabetes that are now showing promise in testing for steatotic liver disease, will lead to more options. Historically, when we have breakthroughs in the drugs, we have a push for more diagnostics, and greater awareness, because suddenly we have something to offer patients. So that would mean a declining burden of liver disease.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

FRANCE



Population: 67.75 million (2021)

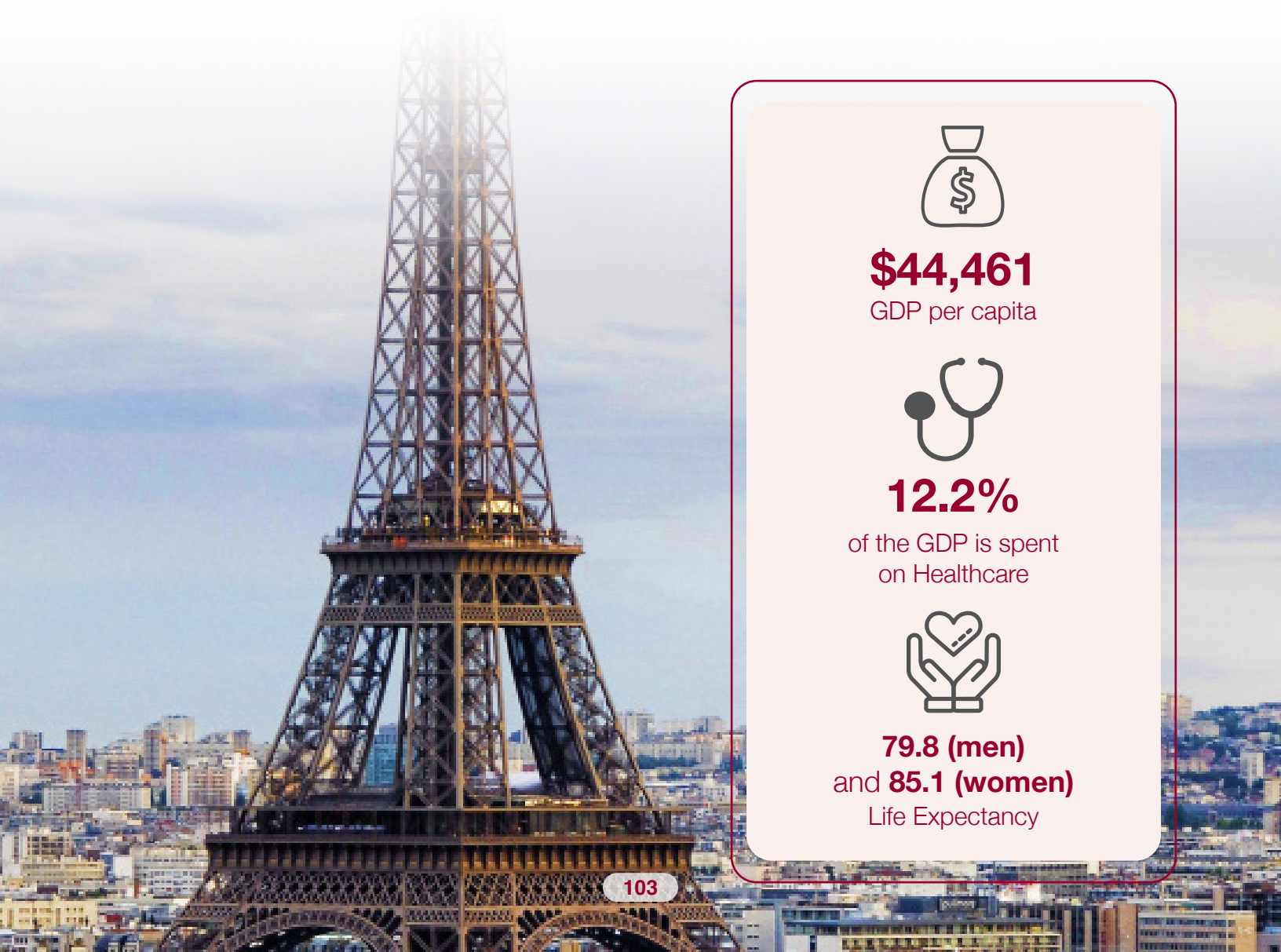
GDP per Capita: $44,461 USD (2021)

Life Expectancy: 79.4 years (men) and 85.2 years (women)

Healthcare Spending: 12.2% GDP

Healthcare Funding: France provides universal health coverage to its residents through a statutory health insurance (SHI) system that is funded by employer and employee contributions and various taxes.

Sources: The World Bank, World Life Expectancy, Eurostat, European Observatory on Health Systems and Policies



$44,461
GDP per capita

12.2%
of the GDP is spent on Healthcare

79.8 (men)
and **85.1 (women)**
Life Expectancy



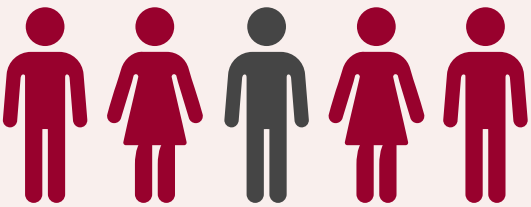
France ranks in **the best quartile** for liver health.

Relative to the rest of the world, liver health in France is in a good position. French culture keeps the liver in high regard, with longstanding myths of "liver attacks" understood as common ailments.[1] With approximately 1.5% of deaths each year due to liver disease, France ranks in the best quartile for liver health.[2] While historically more than two-thirds of primary liver cancer cases have been caused by excess alcohol consumption, the deaths due to chronic liver disease has declined by more than half in the past fifty years.[3, 4] Still, attention to emerging patterns in nutrition and physical activity will be important to keep up this high standard of liver health in the nation.

Excessive consumption of alcohol is the leading cause of liver-related death and severe liver disease in France.[5] The country has seen about a threefold decrease in liver deaths since the 1970s, while other countries in Europe saw opposite patterns. Total alcohol consumption has fallen by 12 liters per capita since the 1950s, perhaps because wine consumption was closely linked to the rural lifestyle, which became less prevalent over the decades.[4] Per capita consumption annually now sits at 10.82 liters.[6] At the same time, a consumer focus on quality rather than quantity of wine in France (which has led to increased profits for the wine industry) has driven consumption forward – which suggests that the alcohol industry in France and other countries can maintain profitability by embracing this trend.[4]

A recent population-level study in France estimates that one-fifth of French adults (without excess alcohol consumption or viral hepatitis) are affected by metabolic dysfunction-associated steatotic liver disease (MASLD).[7] While this is notably below the global average, it is still tied to known risk factors. Prevalence was higher among the following groups: men (with double the rate), increasing age, and metabolic disorders. Advanced fibrosis was 3 times higher for those with type 2 diabetes.[7] Unfortunately the rates of MAFLD and and the more advanced metabolic dysfunction-associated steatohepatitis (MASH) are at risk, as almost half of the French population can be considered overweight, with 17% considered obese.[8] Rates of people either overweight or obese have held steady for about a decade, but the proportion of obesity within that group has continued to increase.[8] Meanwhile, diabetes, another close risk factor for MASH, is estimated to be 6% of people, the highest prevalence among chronic conditions covered 100% by French SHI.[9] If these trends persist, MAFLD and MASH rates will also increase.

Viral hepatitis remains endemic in France, though available epidemiological data is suspect. Excluding a spike in 2017, when almost 3400 cases were reported, each year a low number of hepatitis A cases are reported: between several hundred and about 1,500.[10] France is classified as a low-endemic country with HBsAg prevalence below 2%, but it remains the most frequently detected virus in blood donors.[11] In EU epidemiological reports, France is estimated to underreport nearly 3 in 4 hepatitis B cases, having only reported 82 acute cases between 2014 and 2018.[12] Approximately 0.3% of the adult population in France is chronically infected with HCV;[13] France is on the road to elimination of HCV but still far from WHO's 2030 target.[14] Though France does not have consistent data estimating HDV prevalence in the population, it appears that prevalence has increased primarily due to migration from endemic countries.[15] Further, a bolstered HBV prevention campaign will reduce new incidence of HDV. Finally, though data is limited, HEV appears to be highly endemic in southwestern France in particular, perhaps tied to local dietary practices such as eating uncooked pork and game products.[16]



1 in 5

French adults

is affected by NAFLD.

© 2026 by Global Liver Institute. All rights reserved

Men account for **80%** of new cases of liver cancer in France.

Targeted vaccination programs against hepatitis B began in France in 1982, with the vaccination included in the infant immunization schedule in 1995.[17] Since then, controversy tied to misinformation about risks from the vaccine sharply decreased the rate of vaccination in France, which remains low among older cohorts.[18] Today, the vaccination for hepatitis B is a mandatory part of the vaccine schedule for residents of France and covered by the SHI system; vaccines are provided at birth, 2, 4, and 6 months as well as two doses from 11 to 15 years.[19]

Approximately 8,500 to 9,000 cases of HCC occur each year in France, with between 6,700 and 8,000 deaths each year due to liver cancer.[20] With a meager 5-year survival rate of only about 10%, this places it in one of the lowest survival rates of all cancers.[21] Since it is "silent" and symptoms often do not present until late stages, it is diagnosed at a curable, early stage in only 25% of cases.[21] Notably, men account for 80% of new cases of liver cancer in France,[20] likely linked to the fact that cirrhosis leading to liver cancer was associated with excessive alcohol consumption in the vast majority of cases.[20, 22] A national-level cancer cohort that includes all people living in France are tracked by the French National Cancer Institute as part of the Cancer Plans of France, which will continue to produce treatment and outcome data for the full cohort of patients with liver cancer in the nation.[23]

Though epidemiologic data about rare liver diseases is limited, an estimated 12,000 people in France are affected by rare liver diseases. In children, almost half of cases are life-threatening and lead to an approximately 35% mortality rate in the first year of life.[24] Notably, the French Network for Rare Liver Diseases (FILFOIE), a network created by the second French National Plan for Rare Diseases, helps track patient prevalence and outcomes in addition to bringing together all stakeholders to guide patients and healthcare providers through the care pathway and encourage exchanges in research and best practices.[25] Some research into treatment options and disease pathophysiology of rare liver diseases in France, for instance for PBC and PSC.[26, 27, 28]

The primary indications for liver transplantation in France are HCC and alcohol-associated cirrhosis. Since direct-acting antiviral agents were introduced, hepatitis C has been a much smaller contributor to transplantation. Compared with other developed countries, NASH contributes to a lower proportion of liver transplants. Donation is almost exclusively from deceased donors, with very limited living donor transplantation, and campaigns are underway to increase the number of people willing to donate their organs upon death.[29] Approximately 18.7 liver transplants are carried out in France per million people in 2021, more than the previous year and comparable to peer countries in Europe.[30]

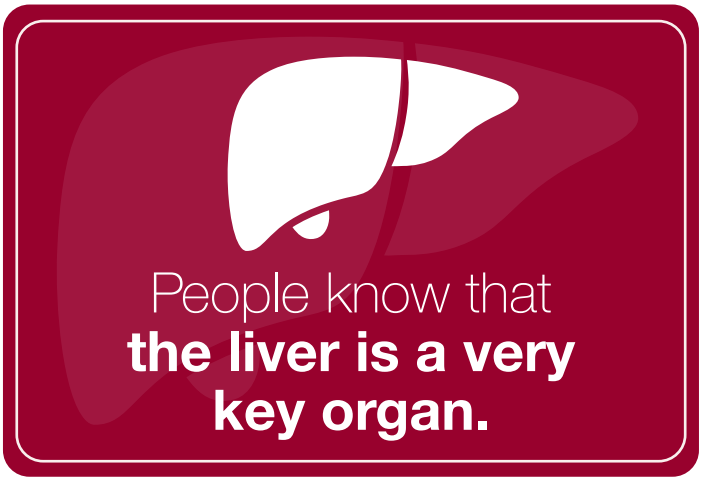


Cyrielle Caussy, MD, PhD is a Professor of Nutrition and an Endocrinologist/Diabetologist at Lyon 1 University and Lyon South Hospital in France. While her research interests include insulin resistance, obesity, and NAFLD, she now has a special interest in non-invasive biomarkers and pathophysiology of NAFLD, especially in high-risk populations such as type 2 diabetes and obese patients.

As both a physician and researcher, I have the opportunity to involve research in my practice. A recent study we undertook studied patients at high risk (with diabetes or obesity) and screened them with a fibroscan for liver stiffness assessment, as well as blood-based biomarkers. Our major finding was that among all T2D or obese patients over 40 years old, we found 38% above the threshold required for referral. About 7% had advanced fibrosis, in the end. This gives a good idea for how screening could be implemented in the existing patient journey. My department is equipped with transient elastography, so we integrated the liver stiffness assessment directly when our patients come in for their yearly check-up.

This research is part of the work driven by a special interest group that I am leading with Prof. Laurent Castera which includes the French Society for the Study of Liver Disease (AFEF) and the French Diabetes Association (SFD). We have a group of diabetologists and hepatologists working together to design studies and write reviews as well as making recommendations for the treatment of patients with cirrhosis and diabetes.

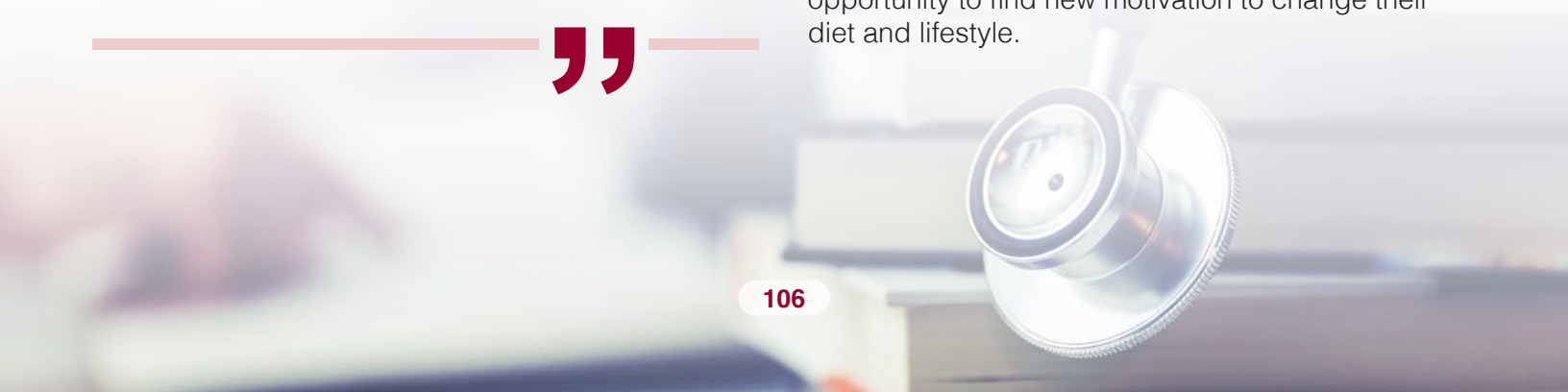
> For some patients, a new diagnosis of liver disease has provided new motivation to change their lifestyle.
>
> - CYRIELLE CAUSSY, MD



We recognize the importance of not just advancing the science of fatty liver disease but also how critical it is to mentor future researchers, so both senior and junior participants are encouraged to participate in the collaboration.

Unfortunately, this collaboration is less frequent in the field. Specialists are busy and often practice out of different centers – which is a huge barrier to working together. So far, the scientific program that joins diabetology and hepatology is mostly academic.

In France, people know that the liver is a very key organ – if it fails, it can really ruin your health. A few celebrities have discussed NASH and other liver diseases in the past, which has elevated public awareness. It is still confusing in the minds of the people because it's an asymptomatic disease in early stages. People have in mind the representation of very bad, severe cirrhosis, but at the spectrum in between scarring or fibrosis, people do not feel that they need an intervention. At the same time, there is a notion that the liver is very important compared to diabetes or obesity. For some of our patients, a new diagnosis of liver disease has provided them the opportunity to find new motivation to change their diet and lifestyle.



OVERVIEW

GERMANY

Population: 84.5 million (2023)

GDP per Capita: $52,746 USD

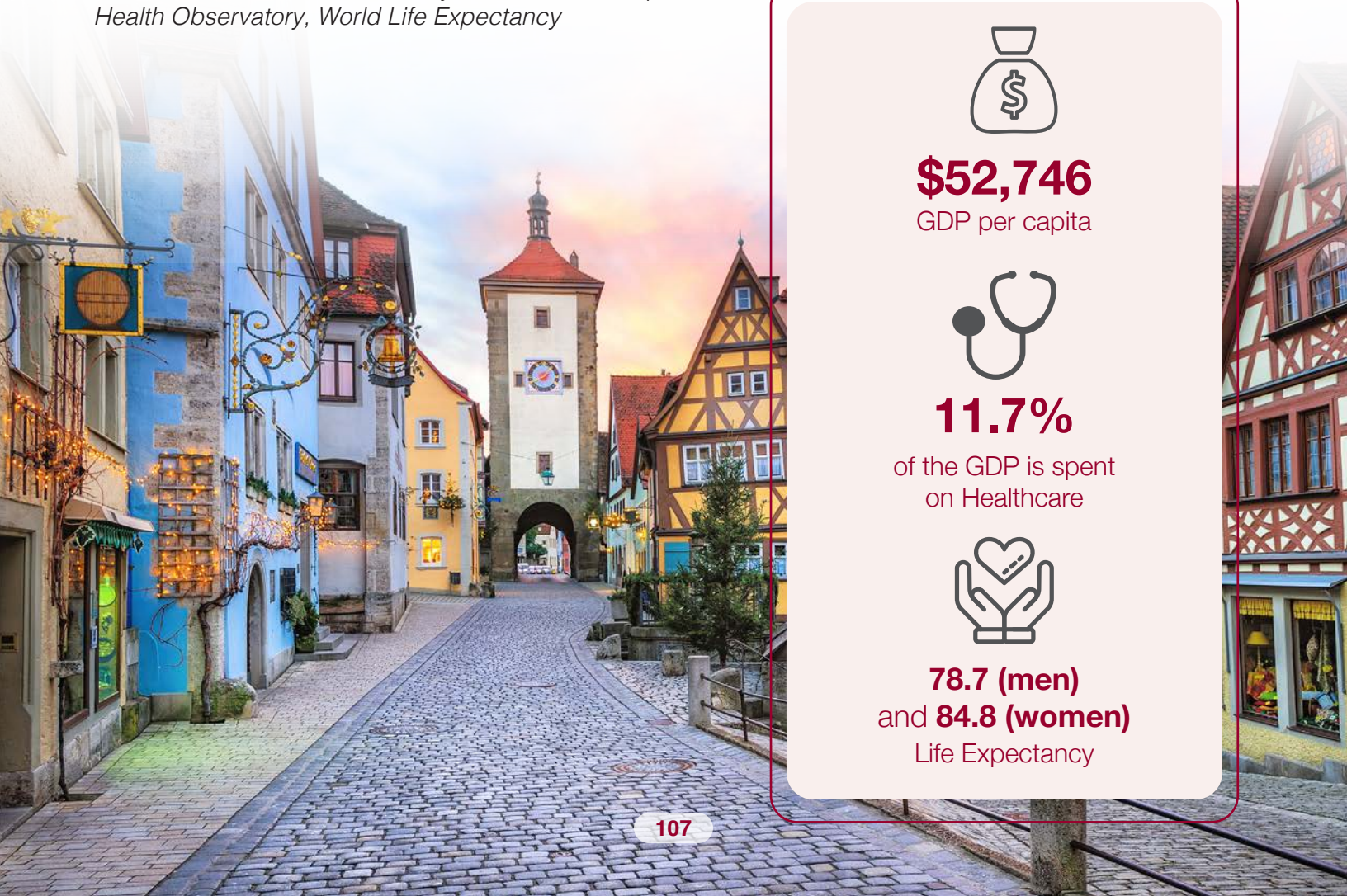
Life Expectancy: 78.3 years (men) and 83.2 years (women)

Healthcare Spending: 11.7% GDP

Healthcare Funding: Health insurance is mandatory in Germany – and it spends the highest proportion of its GDP on healthcare amongst the European Union. This is mostly managed by nongovernmental agencies called sickness funds, which are funded by general wage contributions as well as dedicated contributions from both employees and employers. All employed citizens and their dependents are covered under this statutory health insurance (SHI) system, which covers around 88% of the population. Above a specific income threshold, Germans can opt out of SHI in favor of private insurance.

Sources: The Commonwealth Fund, Worldometer, The World Bank, World Health Systems Facts, European Health Observatory, World Life Expectancy





$52,746
GDP per capita

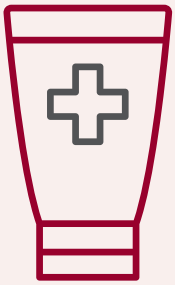
11.7%
of the GDP is spent on Healthcare

78.7 (men)
and **84.8 (women)**
Life Expectancy

Liver disease is prevalent in Germany as a source of both morbidity and mortality in the population. In many cases, lifestyle factors are linked to the greatest proportion of liver disease, with metabolic dysfunction-associated steatotic liver disease (MASLD) being the most common form of liver disease and misuse of alcohol linked to most cirrhosis cases.[1] Troublingly, liver cirrhosis has the highest rate of mortality of any condition that requires hospital admission in Germany – and when it is a diagnosed comorbidity with other diseases, the mortality rate doubles.[1] Per the WHO, liver disease accounted for 2.17% of total deaths in Germany in 2020, or the 15th leading cause of death.[2] Liver cancer itself ranks as the 25th leading cause of death in the country.[2] Between 2005 and 2018, nearly 1% of all hospital admissions in the country involved a liver cirrhosis diagnosis.[3] Liver disease clearly poses a significant burden to Germany.

MAFLD has rapidly become the most common form of liver disease in Germany following the trends of rising obesity and diabetes in the nation. Between 2005 and 2018, for instance, MAFLD prevalence among hospital admissions increased four times.[3] 18 million Germans have MAFLD, and 3 million of those people have the more advanced metabolic dysfunction-associated steatohepatitis, MASH.[4] These patients place an estimated burden of $4.3 billion in direct medical costs on the nation, though the figure increases tenfold when the total societal costs are considered.[5]

The epidemic of obesity in Germany is tied very closely to rising rates of fatty liver disease in the country. Among adults, 53.5% are overweight, and 19% are obese.[6] The prevalence of overweight and obesity is higher with greater age, in lower education groups, and in men compared with women.[6] Disease Management Programs are being developed for obesity to better prevent and treat the disease,



Hospitalizations due to alcohol-related liver disease are on the rise in Germany among younger patients.



Costs associated with NASH and NAFLD in Germany account for

$4.3 BILLION

in health spending

which should provide promise to those at risk of developing obesity as well as fatty liver disease in the future.[6]

Even though the impact of fatty liver disease is rising in Germany, alcohol consumption still plays a large role in the etiology of liver disease throughout the nation. Germans consume 13.4 liters of pure alcohol each year per capita, higher than the European region average and more than double the global average.[7] In light of this high volume of consumption, it is unsurprising that alcohol-related cirrhosis accounts for more than half of hospital admissions with cirrhosis – and this rate has been rising.[3] Notably, these patients are markedly younger than patients with other etiologies for their cirrhosis.[3] Population-level alcohol consumption measures are necessary to prevent a significant proportion of severe cases of liver disease and resulting hospitalization.

As a high-income country, Germany has been able to successfully deploy the prevention and treatment measures for viral hepatitis such that it is well-controlled throughout the nation. Prevalence of HBV is only 0.3% in the population, though this prevalence is greater in specific groups such as travelers, the immunocompromised, and those with occupational risk.[8] HAV has low rates on the global scale,[9] and for HCV infection, for instance, infection is more prevalent among those not of German descent.[10] Notably, 17% of the German population is estimated to have been infected with HEV, but the disease is severely underreported because

many cases are asymptomatic and resolve without becoming chronic.[11]

There is still ongoing work in Germany to prevent, treat, and control viral hepatitis. Twenty-five years after inclusion in the national immunization schedule, vaccine coverage for HBV is still well below the WHO target of 95%.[8] The HBV vaccine is still recommended for everyone under the age of 60, covered in entirety by SHI and most private plans, and many programs target increased vaccination among the following groups: pediatric/adolescent patients, immunocompromised people, and those with occupational exposures to viral hepatitis.[8] A drug to treat HDV is also currently under research and development.[12]

There is evidence that PBC, AIH, and PSC are all increasing by about 30% in the German population in recent years.[13, 14] Unfortunately, especially among older patients, under-treatment is common, treatment can be inaccessible, and increased understanding among providers and support in general for these patients is necessary.

End-stage liver disease, especially liver cancer, burdens the German people and healthcare system. In 2022, over 10,000 cases were estimated to have occurred, leading to more than 8,000 deaths.[15] Even though it is relatively rare, with only a 14% five-year survival rate for women and 18% for men, a diagnosis of liver cancer remains a severe diagnosis. At the same time, both noninvasive cancer treatment and surgical resection can cost thousands of euros, which is out of reach for many.[16] Ongoing research is being conducted in Germany to reduce the economic impact on both patients and the broader system of cancer, including liver cancers, in the region.[17]

Transplantation remains the most effective solution for liver failure and end-stage liver disease. Selection criteria to receive a liver transplant is based on urgency, following the Model for End-Stage Liver Disease (MELD). In 2015, there were 1500 patients on the waiting list for liver transplantation, with the leading causes being fibrosis, cirrhosis, and alcohol-associated liver disease; that same year, however, less than 900 transplants were carried out at the 23 centers due to a shortage of organs.[18] This imbalance between need and availability of donor livers underscores a need for increased organ donation, whether through a public campaign or changes in policy that might expand the number of suitable donors.

This imbalance between **need and availability of donor livers** underscores a needfor increased organ donation.



MISSED OPPORTUNITIES AND NEW CHANCES FOR LIVER HEALTH

Dr. Jörn Schattenberg is a renowned professor of medicine, Director of the Metabolic Liver Research Program at the University Medical Center Mainz, Germany. In addition to his research on acute and chronic liver injury with a focus on metabolic liver disease and NASH, he is part of the scientific steering committee of the United European Gastroenterologist (UEG) and the public health, policy, and advocacy committee of the European Association for the Study of the Liver (EASL).

Liver health is crucial to the well-being of a person, and liver disease moves slowly. This means that there are many opportunities we have to intervene: to identify disease, and use established, proven techniques to improve liver health, and through liver health, global health and overall well-being.

Unfortunately, in Germany as well as globally, we often miss those opportunities. So even though liver disease is usually slowly progressive, in my clinic I'll see a patient come in with liver cancer – or decompensation – and their quality of life is miserable. The whole family suffers. We could have done something over the course of 10 years leading up to that.

There are multiple layers to why this is the case.

1. **AWARENESS:** Patients, physicians, payers, and even regulators don't always give appropriate consideration to the impact liver health has on total well-being.

2. **FUNDING:** For clinicians to incorporate a liver exam into regular checkups, payers need to provide reimbursement – which means that we need to define which inexpensive tests are effective for which at-risk populations. I think those tests already do exist.

3. **STIGMA:** We need to move away from the blame game and the lie that liver disease is self-inflicted. It's no one's fault and no one's choice. One's environment, financial situation, genetic predisposition, or even geography can play a defining role – and if we focus on individual choices, we miss key opportunities for improvement.



In Germany, a standard clinical care pathway has been established for T2D and is currently being developed for obesity. Neither of these realize liver disease as significant morbidity leading to a loss in quality of life or years lived. The lack of a health research agenda around liver disease needs to be addressed in the face of a growing burden.

I think, when we talk about liver health, we should link it to environmental health and healthy living. If our planet becomes burdened and we see an environmental crisis, we will see a parallel healthcare crisis.

- For example, if you have a little bit less meat per week, you're cutting down on CO2 emission from livestock while balancing your diet.

- We have found in a recent study that if you have a park next to your apartment, you are more likely to go out and exercise versus when you are growing up next to a subway or a highway where there's no greenspace. You might not feel safe on the streets and never exercise.

These are things that could even be implemented at a small scale, first. The mayor of a town could decide, "we want to provide a healthier living space to our people." They might close down a high-traffic street by a school, add trees and some public transportation there and soon people are playing and walking and shopping outside in their neighborhoods. The environmental crisis and the liver crisis are interrelated, but there are so many levels of well-being that stand to benefit.

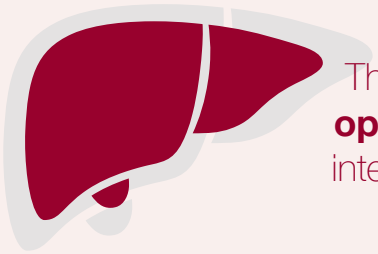
© 2026 by Global Liver Institute. All rights reserved

BEST PRACTICES: PARTNERING WITH PRIMARY CARE AND ENDOCRINOLOGISTS

From Dr. Jörn Schattenberg

We have run small experiments with partners in primary care and endocrinology to develop best practices. The whole project relied on research funding, since there was no reimbursement for our efforts. However, we were able to provide our partners with a study nurse and equipment, and once we did that, people were intrigued. They would volunteer to be scanned using an ultrasound elastography device or have a blood test or filling out a questionnaire about the risk factors of liver disease. And we did find patients with early liver disease. I'm hopeful that through this intervention we will help them avoid deterioration and cirrhosis that otherwise might not have been detected.

> When we talk about liver health, **we should link it to environmental health and healthy living.** If our planet becomes burdened and we see an environmental crisis, we will see a parallel healthcare crisis.
>
> - DR. JÖRN SCHATTENBERG



There are **many opportunities** to intervene with liver disease.

Of course, it could be a burden to know their result early, which is the downside of screening. This is why it's essential to have the voice of the patients and make sure they have a choice. I think the right to choose is important.

For this model to work outside a study, we need reimbursement of liver testing for the payers. We are in the process of generating evidence to convince physicians and payers that these liver exams will save money in the long run and be medically useful.



OVERVIEW

IRELAND

Population: 5.3 million (2023)

GDP per Capita: $107,240 USD

Life Expectancy: 79.9 years (men) and 81.6 years (women)

Healthcare Spending: 6.72% GDP

Healthcare Funding: Ireland has a mixed public-private healthcare system, with the public component managed by the Health Service Executive (HSE), primarily funded through taxation. The health budget for 2023 was €23.4 billion, the largest in the history of the state. Roughly 37% of the population possesses a Medical Card, which allows the holder to use most public health and social care services free of charge.

Even with universal access to public healthcare system in Ireland, capacity constraints in the service have resulted in private insurance being purchased by nearly half the population for faster access to healthcare. To facilitate change in the health system, Ireland is implementing *Sláintecare*, a reform plan intended to achieve a universal, single-tiered health system that is funded through taxation in ten years.

Sources: *World Bank Group, International Monetary Fund, WHO Data, Citizens Information, Irish Congress of Trade Unions, Euro Health Observatory, The Irish Healthcare System*



$107,240
GDP per capita

6.72%
of the GDP is spent on Healthcare

79.9 (men)
and **81.6 (women)**
Life Expectancy

Chronic liver disease is a growing public health concern in Ireland, driven by excessive alcohol use, viral hepatitis, and, increasingly, MASLD.[1] Liver disease now causes a substantial number of premature deaths, with 4 in 5 of those deaths linked to alcohol.[2] A comprehensive awareness of the widespread risk factors and the governmental responses in Ireland is key to grasping the country's landscape of liver health.

Alcohol plays a complex role in Irish society and social life and exacts a high toll on liver health.[3] In 2019, Ireland's per capita alcohol consumption for ages 15+ was 10.8 liters of pure alcohol, nearly double the global average consumption.[3,4] The HSE reports that alcohol misuse is the dominant cause of serious liver disease in Ireland, accounting for about 50–80% of the burden: specifically, over half of all inpatient liver disease hospital admissions are due to alcohol-associated liver injury.[1] Liver specialists have noted that ALD-related hospital admissions and deaths continue to increase, and there has been a threefold increase in alcohol-associated liver cancer (HCC) over a decade.[5]

Alcohol-associated liver failure is one of the leading reasons for liver transplants in Ireland, though transplants are only offered to patients who can stay off alcohol due to scarce donor organs.[6] For those with liver damage due to ALD already, treatment in Ireland focuses on helping people reduce or stop drinking, counseling, medications to aid withdrawal effects, and, in advanced cases, liver transplantation.[6]

HSE reports that **alcohol misuse is the dominant cause of serious liver disease in Ireland,** accounting for about

50–80% OF THE BURDEN:



specifically, over half of all inpatient liver disease hospital admissions are due to alcohol-related liver injury.

To tackle ALD diseases, the Irish government passed Public Health (Alcohol) Act 2018, which put in place steps like minimum unit pricing and stricter advertising restrictions to curb excessive drinking.[7] From May 2026, Ireland will implement Europe's first full alcohol health labels, warning of liver disease, cancer risk, and pregnancy dangers.[8,9]

However, recently, researchers have also identified a subtype of ALD called metabolic dysfunction–associated alcohol-associated liver disease (MetALD).[10] MetALD refers to liver disease in people who have metabolic health issues (such as obesity or diabetes) and drink alcohol. Even moderate drinking, when combined with metabolic problems, can greatly worsen liver damage and the disease.[10] Given the high prevalence of alcohol consumption in Ireland, additional research and targeted public education about the impact and prevalence of MetALD will be invaluable.

Ireland, like most countries around the world, is experiencing a surge in obesity and type 2 diabetes, which has led to a rapid rise in MASLD. By 2019, the prevalence of obesity in Irish adults had doubled over three decades to about 23%, with about 60% of adults either overweight or obese.[11] Obesity has also risen to 8% in 2020 from nearly 0% in 1990 in adolescents, and about 20% of school-age children are overweight or obese.[12,13] It is estimated that roughly 25–30% of Irish adults have MASLD.[14] With so many cases, there are many instances of advanced disease. In a 2017 Irish MASLD screening initiative, 1 in 5 patients with type 2 diabetes had evidence of advanced liver fibrosis or cirrhosis.[15] Clinicians are now being encouraged to screen high-risk groups for fatty liver using non-invasive tools like the fibrosis-4 (FIB-4) score or elastography, which are becoming more available in primary care.[1] Early identification of MASLD/MASH with fibrosis is critical since intervention can reverse or halt progression.

© 2026 by Global Liver Institute. All rights reserved

In light of the rising challenge of metabolic health, the Irish government has recognized obesity as a major health priority. A national policy titled *A Healthy Weight for Ireland* (2016–2025) tackles obesity through multi-sectoral action, which includes public awareness campaigns, school nutrition and activity programs, and community initiatives.[16] One unique liver disease risk factor in Ireland is a genetic disorder called hereditary hemochromatosis, also known as the "Celtic gene." Hereditary hemochromatosis causes excessive iron accumulation in the liver and other organs if untreated.[17] About 1 in 5 Irish people are said to be carriers of this genetic variation.[18] Without early detection and phlebotomy treatment, it can lead to cirrhosis or liver cancer.

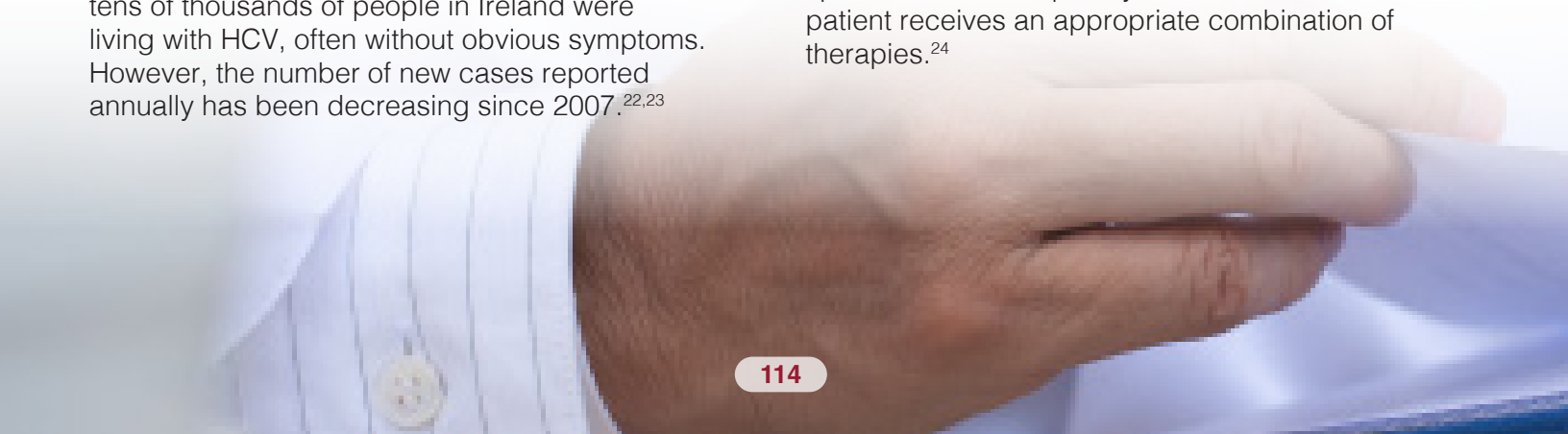
Ireland has historically had a low rate of hepatitis B infection. A vaccine has been available since the 1980s, but Ireland only introduced hepatitis B into its routine childhood immunization schedule in 2008.[19] Today, hepatitis B remains relatively uncommon in the general population, with an estimated prevalence under 0.5%.[19] The Health Service Executive (HSE) also provides targeted HBV vaccination to high-risk groups like healthcare workers, people who inject drugs, and men who have sex with men.[20] Those who test positive will receive antiviral therapy to reduce disease progression.[20]

Hepatitis C virus (HCV), however, has been a significant liver health issue for Ireland, though major progress has been made in the past decade. Ireland's HCV epidemic historically stemmed from transmission through injection drug use and the Blood Transfusion Service Board anti-D scandal from the 1970s to the 1990s.[21] During this time, it is estimated that hundreds of Irish women were infected with contaminated anti-D immunoglobulin injections and some others via blood transfusions. These events led to a national scandal and heightened awareness of HCV. By the mid-2000s, tens of thousands of people in Ireland were living with HCV, often without obvious symptoms. However, the number of new cases reported annually has been decreasing since 2007.[22,23]

Irish people are more likely to carry the "Celtic gene," which causes hereditary hemochromatosis, which can lead to iron overload in the liver.

Since 2015, the Irish health service has run a National Hepatitis C Treatment Programme to find and treat cases, and the overall prevalence of hepatitis C in Ireland has dropped to roughly 0.1% of the population.[23] DAA medications are provided free of charge through the HSE.[23]

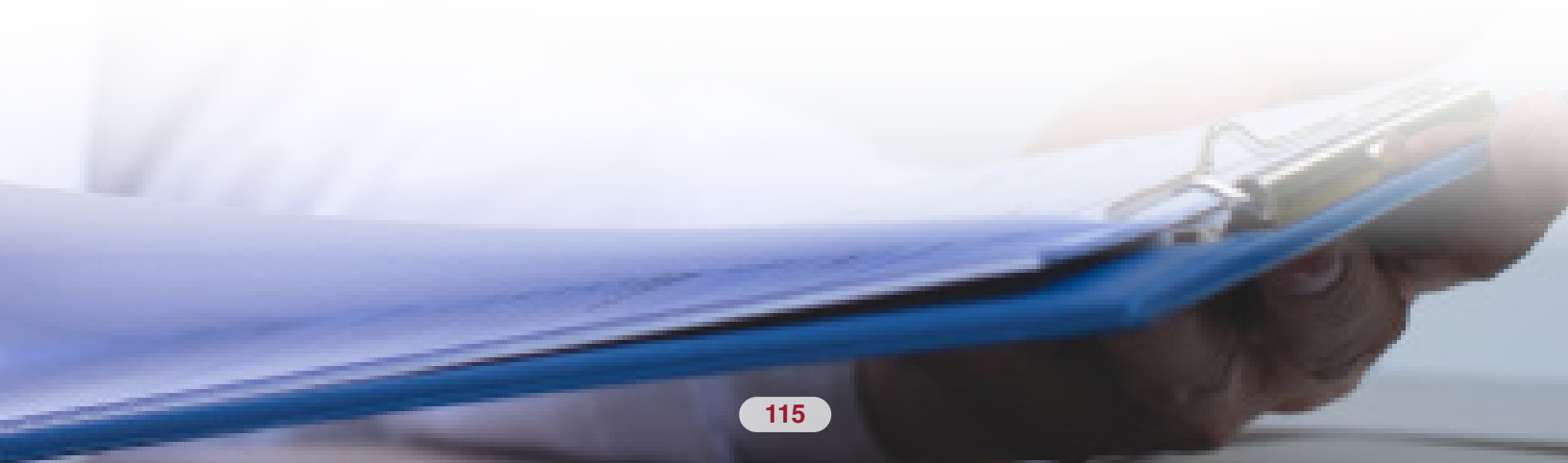
Liver cancer in Ireland, mostly hepatocellular carcinoma (HCC), was once relatively rare but has been rising significantly in recent years.[24] The National Cancer Registry reported around 285 new cases of primary liver cancer in 2018 (up roughly threefold in a decade) and about 290 deaths annually from this disease.[24] Although liver cancer still accounts for only a small share of overall cancers, its increasing incidence and high fatality rate have made it a growing public health concern.[24,25] When liver cancer is diagnosed, patients in Ireland have access to a full range of treatments. Depending on the stage and the patient's condition, treatment might involve surgery to remove the tumor or even a liver transplant in select early-stage cases.[24] For others, localized therapies like thermal ablation or transarterial chemoembolization can control the cancer, and advanced cases may be treated with systemic medications such as targeted drugs or immunotherapy.[24] Care is centralized through specialist multidisciplinary teams to ensure each patient receives an appropriate combination of therapies.[24]



Ireland's national liver transplant program was established in 1993 at St. Vincent's University Hospital in Dublin.[26] Since then, over 1,000 liver transplants have been performed, with approximately 40–50 transplants now carried out each year.[27,28,29] This procedure is fully funded by the public healthcare system, and St. Vincent's remains the only hospital in the country that performs liver transplants.[27] Success rates are high, with a one-year patient survival rate of 93% and a five-year survival rate of 79%.[27] Despite these achievements, the demand for liver transplants continues to outpace donor supply.[30] In response, the government has strengthened organ donation policies under the Human Tissue Act of 2024, which introduces a soft opt-out system for the Irish population to increase the donor pool.[28] Public attitudes toward organ donation in Ireland are generally very positive.[30]

Chronic liver disease in Ireland continues to impose a significant public health burden, driven by excessive alcohol consumption, rising obesity rates, persistent viral infections, and a prevalent genetic predisposition. Although measures such as the Public Health (Alcohol) Act 2018, national obesity-reduction initiatives, and the National Hepatitis C Treatment Programme have begun to address these challenges, important gaps persist in early detection, treatment accessibility, and organ donation capacity. A coordinated strategy that expands routine screening, enhances access to evidence-based treatments, and strengthens the donor organ pool is essential to curb the rising morbidity and mortality associated with liver disease in Ireland.

Over **1,000 liver transplants** have been performed in Ireland since 1993.



UNIQUE CHALLENGES AND LEADING SOLUTIONS FOR LIVER HEALTH IN IRELAND

Professor John Ryan is a Consultant Hepatologist, Gastroenterologist, and General Physician at Beaumont Hospital, Dublin, where he serves as the Clinical Lead for Hepatology. He is an Honorary Clinical Associate Professor of the Royal College of Surgeons in Ireland. He holds a PhD in Haemochromatosis and Chronic Liver Disease and is a Founding Director of the Irish Liver Foundation. Prof. Ryan's work on liver health focuses on epidemiology and public health medicine, chronic disease, weight management, and liver cancer.

The field of hepatology in Ireland lags behind that of many neighboring nations. Limited epidemiological data are available, and the field is part of gastroenterology, which is part of general medicine, so the training is quite long and demanding. Hepatology has been underserved; there were years when very few trainees entered the field or saw opportunity in hepatology. Recent advances in academic output, treatment options, and awareness have increased interest in the specialty.

Over half the Irish population who drink alcohol do so harmfully. Alcohol has been a major risk for liver disease in Ireland for so long, and it has only gotten worse after COVID, with more admissions and deaths. There are many cases of fatty liver, MASLD, with over half of the Irish population either overweight or living with obesity. These are the main, preventable issues that we are trying to tackle.

Still, Ireland has seen successes in liver health. After lobbying efforts from the medical profession, the country passed and implemented the Public Health Alcohol Bill, marking the first time that the country acknowledged the harm caused by alcohol and its high consumption levels. Hopefully, we will see younger generations drink less as a result.

Forty years ago, there was a cohort of individuals who received blood products from the state contaminated with hepatitis C, which caused a significant scandal. Some died, but most survivors were later identified and treated, and hepatology services were developed in response.

However, the scandal is not the only unique liver health concern in the country. Ireland has the highest reported prevalence of hereditary hemochromatosis in the world: **1 in 83 individuals are genetically predisposed**, mostly those of Celtic background. Damage is preventable with treatment, but universal screening has not yet been implemented.

The Irish public is often reluctant to discuss personal liver issues due to the strong association with "bad lifestyle choices." In fact, people associate "cirrhosis" only with alcohol here, and changing that term may minimize stigma and help us increase awareness of the other causes of liver damage. Due to this reluctance/stigma, part of the approach of Ireland's first liver charity, the Irish Liver Foundation, is to focus on positive health behavior for liver health rather than only the negative factors.

I would like to see us institute universal screening for cirrhosis through blood markers at the primary care level to achieve earlier diagnosis. We need to improve screening for liver disease while also increasing the availability of healthcare professionals with the right expertise to manage and treat it. We also need to increase awareness and willingness of organ donation to meet a growing need. Success in all areas will rely on reducing the stigma associated with liver health issues.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

ITALY



60 million
Population

Population: 60 million (2019)

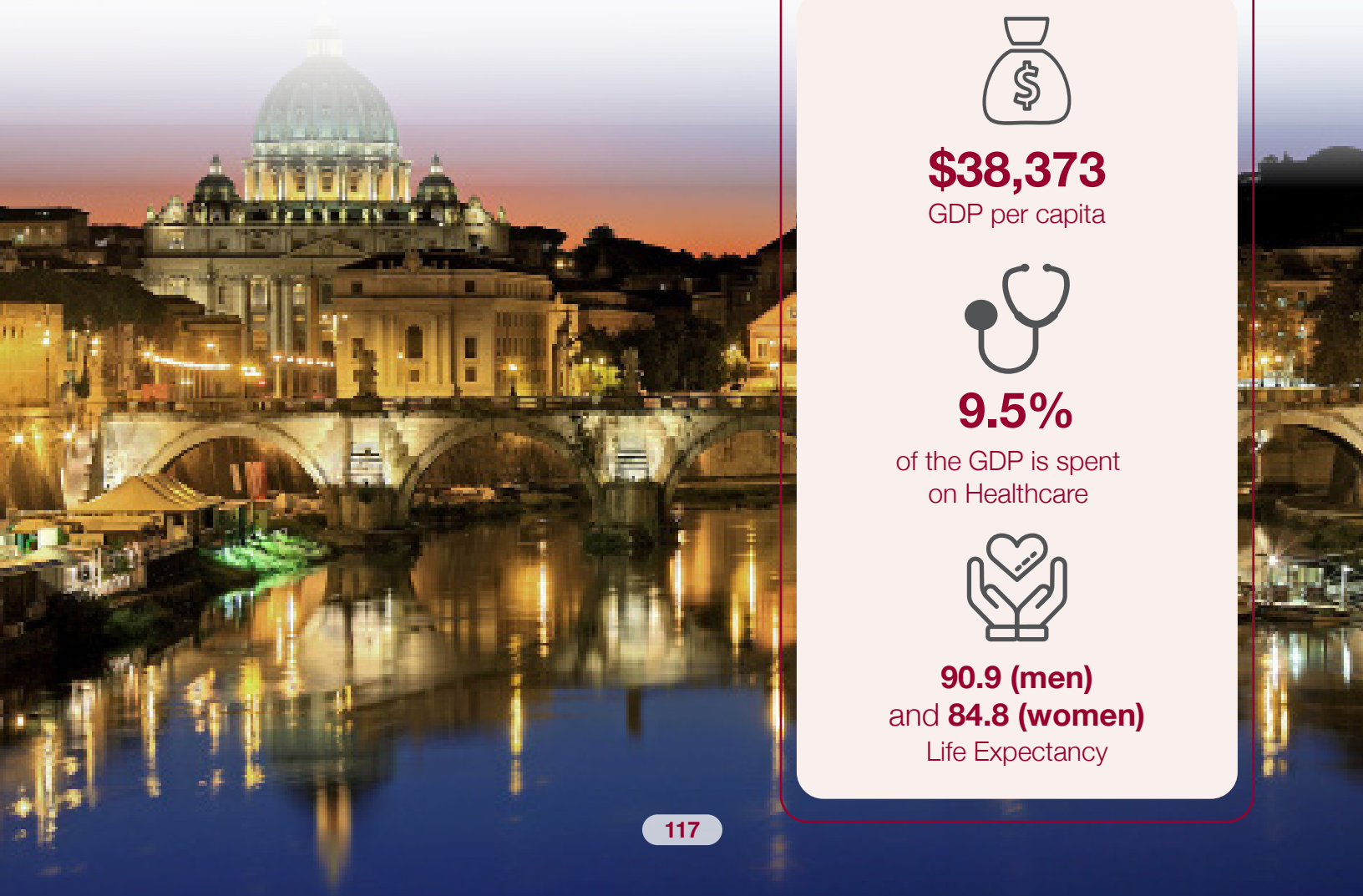
GDP per Capita: $38,373 USD

Life Expectancy: 80.9 years (men) and 85.0 years (women)

Healthcare Spending: 9.5% GDP

Healthcare Funding: Italy has a decentralized National Health Service (*Sistema Sanitario Nazionale* or SSN), in which each region organizes and delivers its own health services, funded through the central government's national benefits package and financial allocation. The SSN automatically covers all citizens and legal foreign residents. This leads to comprehensive care throughout the nation, though regional differences are apparent. About three-quarters of health expenditure in Italy is funded by public sources, while the remaining expenses come from household, out-of-pocket expenses.

Sources: Worldometers, World Bank, Statista, European Health Observatory



$38,373
GDP per capita

9.5%
of the GDP is spent on Healthcare

90.9 (men)
and **84.8 (women)**
Life Expectancy

The SSN automatically covers all citizens and legal foreign residents. This leads to comprehensive care throughout the nation, though regional differences are apparent.

As reflected by long life expectancies and other strong outcomes, Italy has a relatively robust and comprehensive healthcare system – and this is also true in liver health. Liver diseases in Italy claim about 2.77% of total deaths each year – which is better than more than 90% of countries, for liver disease.[1,2] Still, lifestyle factors in the country have adverse effects on livers and affect quality-of-life as well as place financial burdens on the broader system.

Studies in Italy show a prevalence of metabolic dysfunction-associated steatotic liver disease (MASLD) between 22.5 - 27%, or approximately the same as the global prevalence.[3] As in many other countries, obesity, metabolic syndrome, and especially diabetes have strong associations with MAFLD.[3] Italian studies have also linked MAFLD to an increased chance of dementia and cognitive decline – which will continue to be a problem as Italy's population ages.[4] The total direct cost for MAFLD to progress to advanced stage, including liver transplant and HCC, is an estimated € 65.000/ year.[3] As more and more Italians develop MAFLD, this cost will continue to rise.

Currently, 1 in 10 people is obese in Italy – less than the global average. However, more than 50% of men, and more than 33% of women and children are overweight.[5] Overweight rates are projected to continue to increase by at least 5% within ten years, and the rates are higher amongst those who are less educated.[5] As the prevalence of overweight and obesity continues to grow in Italy, so will the issue (and related expenses) of fatty liver disease.

Clinical practice guidelines for NAFLD in adults were released in Italy in 2021 as a joint project by the Italian Association for the Study of the Liver (AISF), the Italian Society of Diabetology (SID) and the Italian Society of Obesity (SIO).[3] This suggests that meaningful collaboration between related specialties is ongoing in Italy to stem the rising tide of metabolic conditions, including fatty liver disease.

Alcohol consumption also plays a leading role in liver disease in Italy. Men consume on average 12.5 liters of pure alcohol per person, per year, while women consume 3.5 liters.[6] A study done in 2016 of people ages 11 and older found that 65% had consumed at least one alcoholic drink in the year.[7] Approximately 1 in 5 individuals with chronic liver disease in Italy reports a risky level of alcohol intake – and of these, more than 40% have alcohol consumption as their only causal factor for liver disease.[8] Alcohol-associated liver disease is unsurprisingly more common in men, with a shift towards older age in both sexes as well as more advanced disease state.[8] In good news, the proportion of risky alcohol consumers has decreased in recent decades, a promising trend.



Italy has a relatively robust and comprehensive healthcare system – and this is **reflected in liver health.**

© 2026 by Global Liver Institute. All rights reserved

Italy has the **highest prevalence of HCV** in Europe

Despite its relatively high GDP, hepatitis remains an ongoing issue in Italy: It has, for instance, the highest prevalence of HCV in Europe (between 3 and 4.4%).[9] Rates as high as 26% have been reported in Southern regions and major islands.[9] HCV screening remains minimal on a national scale.

For HBV, a gradual reduction of both acute and chronic disease has occurred over the last 50 years.[10] In 1991, universal, compulsory vaccination of newborns and adolescents was implemented to stem the large number of carriers and resulting deaths due to the virus.[10] Unfortunately, one-third of healthcare resources for chronic HBV patients, especially those in the countryside, have devolved due to the COVID-19 pandemic, which threatens to disrupt the favorable trends thus far.[10]

Much of the existing and ongoing hepatitis prevalence in Italy is due to continuous migration from eastern Europe and sub-Saharan Africa, which means that even as the country works towards eradication, ongoing surveillance and vaccination efforts will remain vital to keep the virus contained.[10] This is reflected in the relative disappearance of HDV infections, with most new cases only from migrants in HDV-endemic areas.[11]

The features of rare, autoimmune liver diseases in Italy are not notable. AIH, PBC, and PSC are all incident, and the first two primarily affect women, while more men develop PSC in Italy.[12, 13, 14] Patients with these diseases will benefit as advances in treatment techniques and technologies become available.

In many cases, other liver disease progresses to end-stage liver disease in Italy, including HCC and other liver cancer. Italy has one of the highest incidences of liver cancer outside of Asia, although its survival figures are relatively strong, having reached a 30% five-year survival rate.[15] In recent years, the total incidence of HCC has decreased for both sexes, which reflects a trend in prevention; an opposite trend is shown through increasing intrahepatic cholangiocarcinoma (ICC) incidence rates.[15]

The major risk factors for HCC (approximately 80% of liver cancer cases) are HBV and HCV, which are both on the decline in Italy; other factors include aflatoxins, alcohol misuse, diabetes, obesity, and MAFLD.[15] Still, liver cancer due to HCV infection is as high as 50-60%, much higher than the global average of 19%.[16] Due to universal vaccination as well as a historical understanding of HCV spread and its correlation to downstream peaks in liver cancer incidence (first when syringes were reused and blood transfusions were common, and then again during a period of IV drug use in people born after WWII), this trend is expected to taper off.

The downtrend in HCC reflects decreasing prevalence of exposure to viral infections as well as improved surveillance and treatment of HBV and HCV patients. New chemotherapy, as well as multiple embolisation, ablation surgery, and liver transplantation have expanded the treatment options for Italians who develop liver cancer.[15]

Liver transplantation, both from living and deceased donors, is available in Italy for those with end-stage liver disease. Over the past 15 years, more than 1000 liver transplants have been conducted each year in Italy, with steady growth and more than 1400 transplants conducted in 2022.[17] The vast majority of these procedures are conducted from a deceased donor. Over the last decades, following disease patterns, patients on the liver transplant waitlist for cirrhosis decreased from over 60% to less than half, while those due to HCC increased from less than a third to nearly half.[18] Still, a substantial number of skilled transplant centers provide promise for those in Italy with end-stage liver disease.

© 2026 by Global Liver Institute. All rights reserved

Dr. Alessio Aghemo is the Hepatology Unit Director in Humanitas Research Hospital in Milan, Italy. In addition to clinical practice in liver disease, Dr. Aghemo conducts research in viral hepatitis and its natural history and treatment, metabolic hepatitis, and liver cirrhosis. He is a member of the AISF (Italian Association for the Study of the Liver) commission for antiviral drugs directed against HCV, a member of the scientific committee of the European Association of Gastroenterology (UEG) and a former scientific member of the governing board of the European Association for the Study of the Liver (EASL).

An Undefined Field with an Undefined Path

Hepatology is not a clinical specialty for physicians in Italy, so the people that cure liver diseases might be infectious disease specialists, gastroenterologists, internal medicine specialists, and sometimes diabetologists for NAFLD/NASH. It is a bit of a mess, which could translate into confusion and possibly negative effects for patients. They do not know where to go for liver problems. Even the general practitioner is sometimes confused on where to send the patient.

This means there is no standard diagnostic-therapeutic path for liver disease. There is no dedicated space for liver treatment, no dedicated agenda for surveillance of liver cancer in regular screenings, and no indication of who should be the first referral for someone with liver disease. A patient's pathway and care vary widely depending on who they visit first – and where in the country they seek care.

DID YOU KNOW?

Over the past 15 years more than **1,000 Liver Transplants** have been conducted **each year in Italy**

> **There is no dedicated space for liver treatment,** no dedicated agenda for surveillance of liver cancer in regular screenings, and no indication of who should be the first referral for someone with liver disease.
>
> - DR. ALESSIO AGHEMO

Prevention Is Key

This makes prevention and education key. A lot of this work begins with diet education in schools. All food provided at schools is centralized and follows strict rules in terms of calories, fat, and quality. The students receive training on nutrition, water consumption, recycling, and meat consumption. Of course, there is less training about alcohol, maybe at a high school level, but this is more challenging since alcohol (red wine) has powerful interests in Italy.

Generally, wine is perceived to be a healthy drink, and "moderate" quantities of wine, say one to two glasses at lunch and one to two glasses at dinner (which is not really moderate) is not even considered to be drinking. So that is a barrier to liver health in the country.

Trends In Liver Health

We have seen a huge change in etiology of liver diseases throughout my career. Italy was a country mainly affected by viral hepatitis C until the introduction of directly-acting antivirals. Now it is a country which is more affected by metabolic liver diseases – NAFLD, NASH. This is supported by data in the scientific literature, but it is also reflected in our practice as well.

This shift has also had a huge impact on liver cancer. Where we previously had huge numbers of patients with viral hepatitis who would go for regular screening every six months, we had early diagnosis of HCC. Now, when patients present with HCC, they more often have large masses and are symptomatic – and unlike hepatitis patients, they are less adherent to follow-up. So the type of liver cancer patients has changed, too.

© 2026 by Global Liver Institute. All rights reserved

NETHERLANDS



Population: 17.99 million (2024)

GDP per capita: $67,520.4 USD (2024)

Life Expectancy: 81 years (men) & 83 years (women) (2024)

Healthcare Spending: 10.01% of GDP (2024)

Healthcare Funding: The Netherlands operates a universal social health insurance system based on regulated competition between private nonprofit insurers, established by the Healthcare Insurance Act of 2006. All residents are legally required to purchase basic health insurance from a private insurer of their choice, and insurers are obliged to accept every applicant regardless of age or health status. The standard benefits package, defined annually by the government, covers a comprehensive range of services including inpatient and outpatient care, prescription drugs, maternity care, mental health services, and long-term care. As of 2025, near-universal coverage has been achieved, with only approximately 28,500 people, representing 0.13% of the population, remaining uninsured.

Funding draws on three main sources: individual monthly insurance premiums, averaging approximately EUR 1,900 per year in 2025; income-related payroll contributions of 9.7% levied on employees and employers; and government grants. In 2024, government spending and compulsory statutory insurance together accounted for 83.2% of total health expenditure, with out-of-pocket payments representing 11.8% and voluntary private spending 5%.

Sources: *Data.WorldBank; World Bank Group; Commonwealth Fund; Zorginstituut Nederland (National Health Care Institute); Feather Insurance*

$67,520.40
GDP per capita (USD)

10.01%
of the GDP is spent on Healthcare

81 (men) & 83 (women)
Life Expectancy



Liver disease poses a significant and growing public health challenge in the Netherlands, driven by a combination of infectious, metabolic, and behavioural risk factors. Viral hepatitis B and C, though relatively low in prevalence compared to other European countries, remain concentrated among first-generation migrants and specific high-risk groups, and continue to account for a substantial proportion of liver-related morbidity and mortality.[1,2] Metabolic dysfunction-associated steatotic liver disease (MASLD) has emerged as the leading cause of chronic liver disease in the country, affecting approximately one in four adults in the general population and reaching considerably higher prevalence among those with obesity, type 2 diabetes, or hypertriglyceridaemia.[6,7] Alcohol-related liver disease and cirrhosis complete the burden, with hospital registrations for cirrhosis having increased by more than 50% in just five years, at considerable and rising cost to the healthcare system.[14]

The Netherlands is a low-endemic country for hepatitis B virus (HBV), with an estimated chronic HBV prevalence of 0.34% among adults, corresponding to approximately 49,000 infected individuals.[1] First-generation migrants account for the vast majority of infections, representing around 81% of all chronic HBV cases in the country.[1] Among migrant communities living in Amsterdam, chronic HBV prevalence was found to be highest in individuals of Ghanaian (5.4%), Turkish (4.1%), and African-Surinamese (1.9%) origin, compared to just 0.4% among those of Dutch origin.[4] A particularly concerning finding is that over 40% of chronically infected migrants were unaware of their infection status, underscoring the urgent need for targeted screening programs in these communities.[4] Universal HBV vaccination for newborns, introduced in 2011, and antenatal screening have contributed to reducing transmission, though older individuals and those living in rural areas remain at risk.[4] Between 2013 and 2019, the prevalence of HBV in primary care declined by 43%, from 5.21 to 2.99 cases per 1,000 person-years, reflecting the cumulative effect of vaccination, improved treatment options, and harm reduction strategies.[2] Nevertheless, a substantial proportion of patients in primary care did not receive adequate surveillance, with 36.2% of chronic HBV patients lacking sufficient monitoring either by a general practitioner or a specialist, highlighting persistent gaps in the management of the disease.[2]



The Netherlands has one of the lowest HCV prevelnace rates globally.

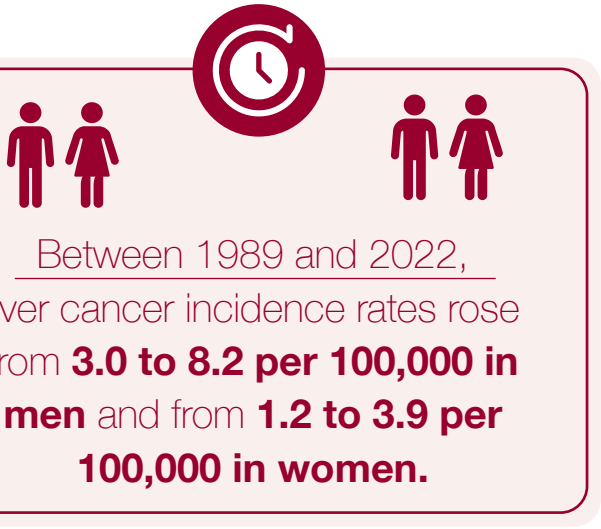
Hepatitis C virus (HCV) infection is also low in the Netherlands, with an estimated ever-chronic HCV prevalence to 0.16% among adults, one of the lowest rates globally.[1] First-generation migrants and people who inject drugs represent the largest groups affected, though active HCV transmission is now considered virtually non-existent among people who inject drugs, largely due to successful harm reduction programs implemented over recent decades.[3] Men who have sex with men, particularly those living with HIV, have emerged as the primary risk group for new HCV infections in recent years.[3] Since the introduction of direct-acting antivirals (DAAs) in 2015, access to curative HCV treatment has expanded significantly, with all DAA regimens reimbursed by basic health insurance regardless of fibrosis stage.[3] Between 2013 and 2019, HCV prevalence in primary care declined by 53%, and HCV incidence fell by 77% over the same period.[2] Despite this progress, 44.4% of chronic HCV patients in primary care had no record of successful antiviral treatment, pointing to ongoing challenges in linkage to care and patient follow-up.[2] Modelling studies project that the Netherlands is on track to meet the World Health Organization hepatitis C elimination targets by 2027 under a stable diagnosis and treatment scenario, with liver-related mortality projected to fall by 97% between 2015 and 2030.[5]

Between 2013 and 2019 HCV prevalence in primary care **declined by 53%, and HCV incidence fell by 77% over the same period.**



Metabolic dysfunction-associated steatotic liver disease (MASLD) is an emerging public health concern in the Netherlands. A large population-based study of nearly 40,000 adults in the northern Netherlands estimated a MASLD prevalence of 22%, with men, older individuals, and those with metabolic comorbidities disproportionately affected.[6] A separate study using proton magnetic resonance spectroscopy in a middle-aged Dutch population reported a prevalence of 27%, rising sharply among individuals with obesity (62%), diabetes (69%), and hypertriglyceridaemia (57%), and reaching as high as 86% in those with both diabetes and hypertriglyceridaemia combined.[7] In a Dutch bariatric cohort, MASLD was identified in approximately half of patients scheduled for bariatric surgery, while metabolic dysfunction-associated steatohepatitis (MASH) was found in 5.3% and at-risk MASH in 2.6%, with most patients showing no or only mild liver fibrosis, a pattern attributed in part to the relatively low prevalence of diabetes and the effectiveness of the Dutch healthcare system in providing timely care.[8] Across all studies, the strong co-occurrence of MASLD with type 2 diabetes, metabolic syndrome, and cardiovascular disease highlights the need for integrated screening and management strategies targeting individuals with multiple metabolic risk factors.[6,7]

Hepatocellular carcinoma (HCC) represents the predominant form of primary liver cancer in the Netherlands, accounting for approximately 64% of all primary liver malignancies registered between 1989 and 2000.[9] While the age-standardised incidence of HCC remained stable through that period, subsequent decades have seen a marked increase: between 1989 and 2022, liver cancer incidence rates rose from 3.0 to 8.2 per 100,000 in men and from 1.2 to 3.9 per 100,000 in women, with mortality trends broadly mirroring this pattern.[10] Encouragingly, age-standardised five-year relative survival improved substantially over the same period, rising from 3.4% to 20.8% in men and from 6.7% to 18.3% in women, a trend attributed in part to the centralisation of liver surgery and the availability of new systemic treatment options.[10] The large majority of HCC cases in the Netherlands arise in the context of cirrhosis, though approximately 19% of patients in a large Dutch academic cohort had no underlying cirrhosis at the time of diagnosis; in this non-cirrhotic group, MASLD and absence of identifiable risk factors were the most common associated conditions, and surgical resection was more frequently feasible, contributing to significantly better overall survival compared to cirrhotic patients.[11] Inter-hospital variation in the management of liver malignancies has been documented in the Netherlands, with patients diagnosed in dedicated liver centres or university hospitals being significantly more likely to undergo liver resection than those diagnosed in general hospitals, underscoring the importance of early referral to specialist centres.[12]



Liver transplantation in the Netherlands has evolved considerably in both volume and technique over recent decades. Among patients with HCC, transplantation has been used primarily in cirrhotic patients with early-stage disease, where it offers a potential cure by simultaneously addressing both the tumour and the underlying hepatic dysfunction; in the large Dutch academic cohort, transplantation was performed in 12% of cirrhotic HCC patients compared to only 2% of those without cirrhosis.[11] More broadly, minimally invasive approaches to liver surgery have expanded rapidly in the Netherlands: robotic liver surgery, introduced in 2014, grew from 0.2% to nearly 12% of all liver resections nationwide by 2020, and by that year accounted for more than one quarter of all minimally invasive liver resections, with a severe postoperative complication rate of 7.0% and a 30-day mortality of 0.8%

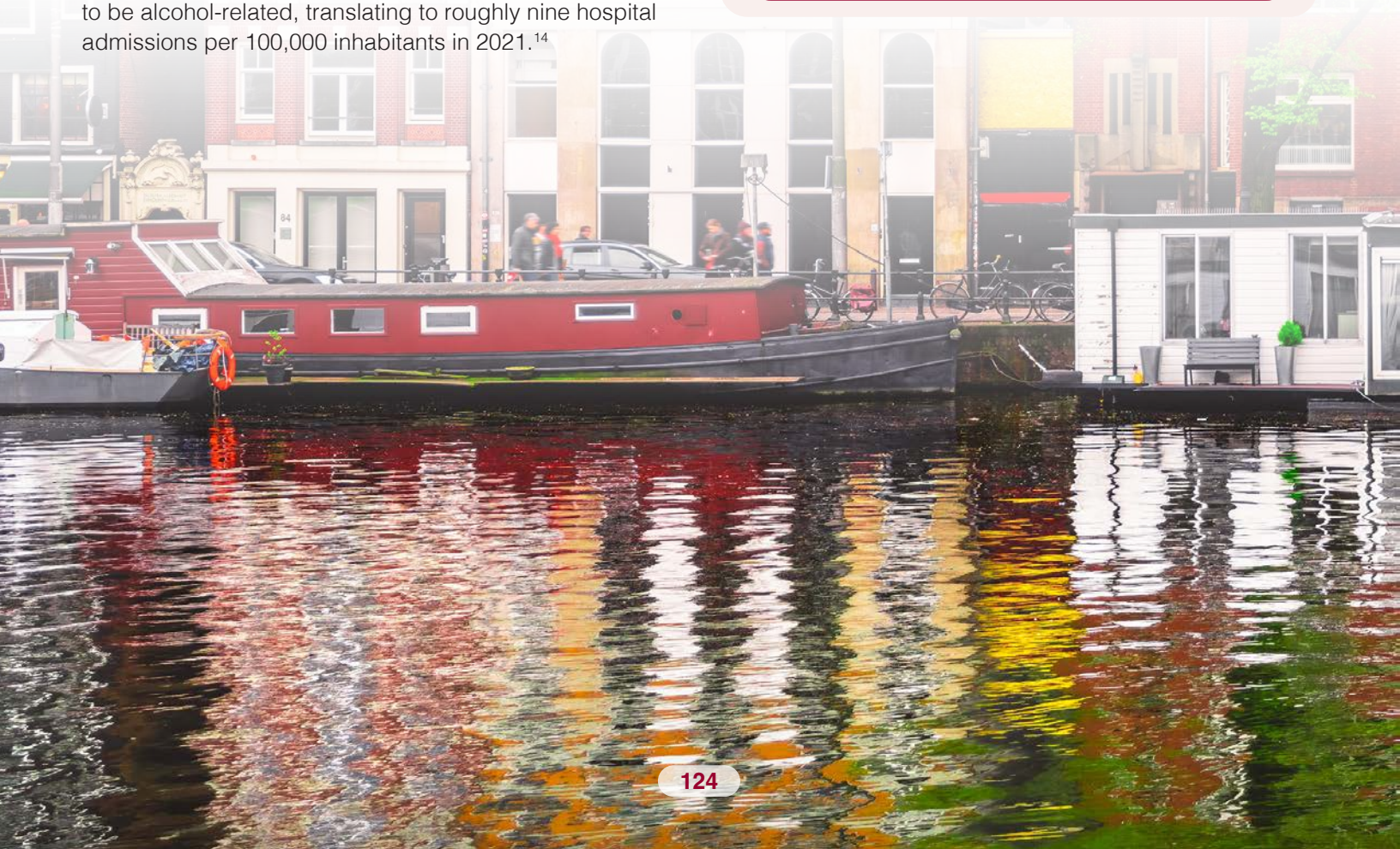
in selected patients.[13] This rapid adoption reflects both the technical maturation of minimally invasive platforms and structured national training programmes, though prospective comparative data against laparoscopic approaches remain needed to fully establish the added value of robotic techniques in the Dutch setting.[13]

Cirrhosis represents a growing public health burden in the Netherlands, with the prevalence of patients registered with this diagnosis in Dutch hospitals increasing by more than 50% between 2017 and 2021. This rise was most pronounced for compensated cirrhosis, which may partly reflect improved detection and an increased awareness of cirrhosis among physicians treating patients with metabolic comorbidities.[14] Regional differences are notable, with prevalence reaching as high as 105.6 per 100,000 in some provinces, while others report considerably lower figures.[14] The total healthcare costs associated with cirrhosis more than doubled in under five years, rising from approximately €35 million in 2017 to €78 million in 2021 – a 143% increase when adjusted for inflation – with the sharpest cost increase observed in patients with compensated disease.[14] Alcohol-related cirrhosis is a major contributor to this burden: among patients with decompensated cirrhosis admitted to hospitals in the Amsterdam metropolitan area, approximately 70% of admissions were estimated to be alcohol-related, translating to roughly nine hospital admissions per 100,000 inhabitants in 2021.[14]

Among people who use drugs (PWUD) in Amsterdam – a population in which chronic HCV infection and heavy alcohol use frequently co-occur – the burden of advanced liver disease is particularly severe, with 26.4% showing moderate to severe fibrosis and 22.9% showing cirrhosis at transient elastography assessment; heavy alcohol use was independently associated with increased liver stiffness in this group, underlining alcohol as a key modifiable driver of liver fibrosis even in the presence of other risk factors.[15]



The total healthcare costs associated with cirrhosis more than doubled in under five years, **rising from approximately €35 million in 2017 to €78 million in 2021**



POLAND

Population: 37,747,124 (2021)

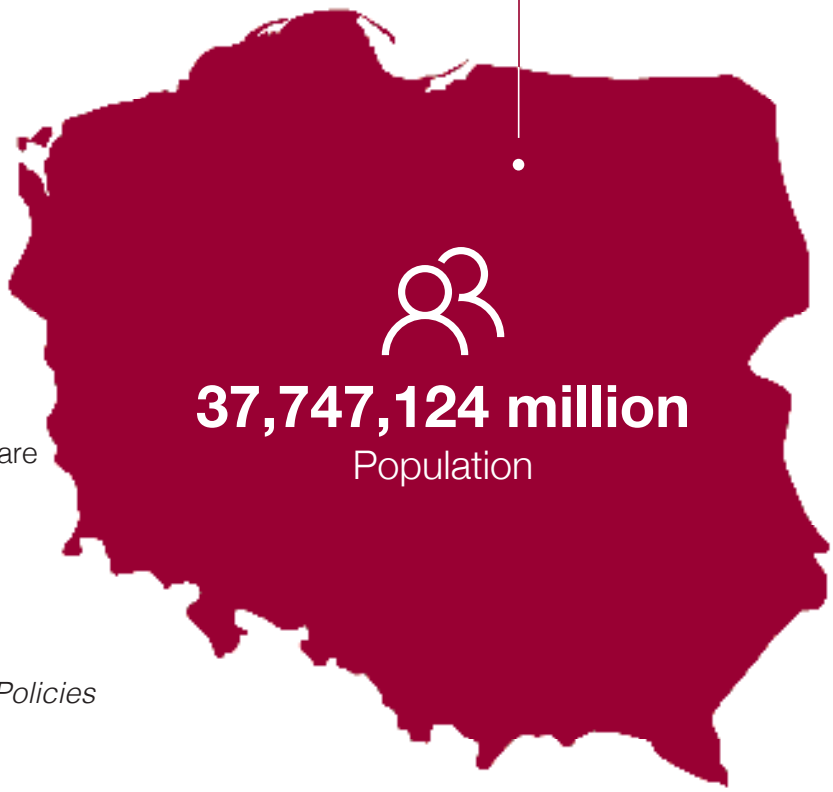
GDP per Capita: $22,113 USD

Life Expectancy: 73.5 years (men) 81.3 years (women)

Healthcare Spending: 6.6% of GDP

Healthcare Funding: Poland's healthcare system is decentralized and partially privatized. 72% of funding comes from tax revenue, with the other 28% from the private sector. Only 2.7% of healthcare spending focuses on public health and disease prevention, while cancer, cardiac disease, and mental health receive the bulk of the budget.

Sources: The World Bank, World Health Rankings, Macrotrends, World Health Organization, European Observatory on Health Systems and Policies



$22,113
GDP per capita

6.6%
of the GDP is spent on Healthcare

74.5 years (men)
and **81.9 years (women)**
Life Expectancy



Like in many other European countries, liver disease is on the rise in Poland. Each year, about 8,000 deaths are attributed to liver disease in Poland, which accounts for 2.22% of total deaths – or, in other words, the ninth leading cause of death in the country.[1] While issues related to HIV, life expectancy, and infant mortality improve in the nation, there is adequate evidence that similar, appropriate prioritization is now necessary to address liver health. While the majority of its healthcare funding goes to cancer and cardiac diseases, liver disease is just as prevalent and can lead to cancer and other expensive complications.[2]

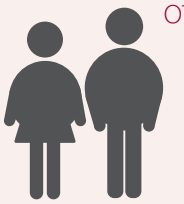
Each year, about **8,000** deaths are attributed to liver disease in Poland, which accounts for **2.22%** of total deaths – or, in other words



THE 9th LEADING CAUSE OF DEATH IN POLAND

The most prevalent form of liver disease in Poland is metabolic dysfunction-associated steatotic liver disease (MASLD), which comprises an estimated 59.7% of liver disease.[3] 68% of men and 53% of women are considered overweight, and a quarter of Poland's total population is considered obese. The outlook for future generations is not better: Child obesity is sharply increasing in Poland at one of the highest rates in all of Europe.[4] Though a lower proportion of women are obese, the rates vary widely depending on occupational status and parental status for women only, suggesting that further research is necessary to understand and address this variation.[5] Still, average BMI is on the rise in Poland, and rates of MAFLD and more advanced metabolic dysfunction-associated steatohepatitis (MASH) are expected to follow this pattern.

68% of men and **53% of women** are considered overweight, and a quarter of Poland's total population is



CONSIDERED OBESE

As alcohol consumption also increases, deaths due to related liver disease are drastically increasing. Alcohol consumption increased by nearly half, from 6.5 liters per capita each year to more than 10 liters.[6] From 2002-2017, the prevalence of liver disease from alcohol consumption increased from sevenfold in women.[6] For men, the rate tripled.[6] In the same manner, the absolute number of deaths from the effects of alcohol-related liver disease for those ages 20-64 have increased sevenfold for women and more than threefold for men since the turn of the century.[7] Changes in alcohol consumption are likely to have an immediate impact on decreasing mortality rates, which means that it is not too late for immediate, impactful action.



Between 2003 and 2017, **ALCOHOL CONSUMPTION** increased by nearly half.

Of the forms of viral hepatitis, hepatitis B is the most common form of viral hepatitis with almost 3,000 yearly cases in Poland – though the vast majority of cases are not active carriers.[7] Vaccines are available to protect against hepatitis A and B and are recommended for all travelers to Poland as well as residents of the country.[8] Hepatitis B vaccines are free of charge for infants and those at high risk of the disease, but should be offered free of charge to everyone in order to decrease liver disease and death incidence in Poland.[9] Polish public health

© 2026 by Global Liver Institute. All rights reserved

officials have set a vaccine schedule for HBV that includes immediate vaccination and two boosters in the first year of life.[10] Failure to adhere to vaccination requirements may jeopardize a child's ability to attend school, daycare, and other populated institutions.[11] Due to this comprehensive programming and disease management, viral hepatitis does not pose a large threat to liver health in the country. However, despite these improvements, viral hepatitis remains a leading cause of death by liver disease in Poland.[12]

There are a few autoimmune liver diseases predominant both in Poland and around the world. Polish patients with primary biliary cholangitis (PBC) have been studied closely and found to have a diminished quality of life as a result of the disease itself, lack of treatment, and lack of awareness. Female patients exhibited more severe cognitive effects compared to their male counterparts.[13] Each year, there are 300 new cases of autoimmune hepatitis (AIH).[14] Primary sclerosing cholangitis (PSC) is another similar liver disease in which the majority of cases are comorbid with ulcerative colitis, a disease for which 2-5% of those affected will develop PSC.[15]

Despite these improvements,

VIRAL HEPATITIS

remains a leading cause of death by liver disease in Poland.

Liver cancer only has a

one-year survival rate of 23%

and a

five-year survival rate of 7.9%

in Poland

Per WHO data, Poland, along with Western Europe, belongs to a group of nations with relatively low HCC incidence. Alcohol and obesity are identified as key risk factors, and prevention efforts should focus on decreasing alcohol consumption and promoting healthier lifestyles. Still, both incidence and mortality due to liver cancer in Poland seem to be slightly on the decline.[16] Liver cancer only has a one-year survival rate of 23% and a five-year survival rate of 7.9% in Poland.[16] With such a bleak outlook upon diagnosis, the prevention of liver cancer by addressing upstream factors like fatty liver disease and chronic hepatitis infection is critical.

Poland spent 2.3 billion euros on oncology in 2020,[17] of which a small amount could have been allocated towards the prevention and early diagnosis of liver cancer to mitigate its devastating impact. Each year, about 300 liver transplants from deceased donors are conducted in Poland, while only about 20 partial liver transplants are conducted from living donors. The five-year survival for those who receive a liver from a living donor is about 80%, and about 70% for those who receive a liver from a deceased donor. Both living and deceased donor liver transplantation have been transformative for liver health.



LACK OF WORKFORCE SPECIALIZATION, LIMITED INVESTMENT, AND LIFESTYLE HABITS HINDER LIVER HEALTH

Dr. Marek Hartleb is a gastroenterologist in Katowice, Poland. Dr. Hartleb is an active clinical researcher, involved in ongoing clinical trials, has published many hepatology papers, and serves as the president of the Polish Society of Gastroenterology, an affiliate of United European Gastroenterology (UEG).

While our spending on health in Poland has been slowly growing, GI concerns do not receive that attention. Oncology and cardiology are currently government priorities in Poland – with direction towards the overwhelming supremacy of oncology in a manner I think can be disproportionate.

A similar disregard for hepatology is reflected in the Polish healthcare workforce itself. Due to historical reasons in Poland, hepatology is a no man's land! Rather than a specialization, it is considered part of gastroenterology. However, many gastroenterologists focus more on endoscopy and bowel diseases, leaving liver care split between internists, surgeons, and infectious disease doctors, who took over much of liver care back when viral hepatitis was the major liver disease. Now that this is shifting, I anticipate that gastroenterology training should at some point be dichotomized to those focused on the gastrointestinal tract and those focused on liver diseases.

> Due to historical reasons in Poland, **hepatology is a no man's land!** Rather than a specialization,it is considered part of gastroenterology.
>
> DR. MAREK HARTLEB

The workforce issue extends beyond training, however. There is a large gap in collaboration between GPs and specialists. Patients want to be treated by specialists, and GPs are not motivated to keep them in their offices – even though many liver patients could be well managed in the primary care setting. That means that the wait time for a first visit with a specialist can be unreasonably long. Meanwhile, there is a massive exodus of gastroenterologists to the private sector, where work is less traumatic, requires less paperwork, and provides better pay.

There is also an ongoing quality issue. Financing of hospital gastroenterological departments is mostly based upon endoscopic procedures rather than their quality of consultation, clinical decision-making experience, or even scientific expertise. Gastroenterologists end up drifting into surgical medicine, while bureaucracy shifts attention away from patients towards computer monitors. At the same time, efficiency is lost and money is wasted from unnecessary examinations because doctors are not obligated to follow recommended standards. We need a strict application of standards and recommendations in management of gastroenterological disease.

At the same time, lifestyle patterns in Poland define the current landscape of liver disease prevalence, while features of our healthcare training and funding system impede the quality of care for patients. There has been a rise in the consumption of an unhealthy diet and sugary drinks – in many cases, for economical reasons. Unfortunately as a result, we are seeing a rise in metabolic syndrome, BMI, obesity, and type 2 diabetes. With the rise of these risk factors, it makes sense that in Poland, NAFLD is the most common chronic liver disease. Luckily, awareness of it is growing among general practitioners, diabetologists, and cardiologists. Over the years I have been practicing, there are now more treatment options. I have a lot more courage, now than before, in using antidiabetic, antihypertensive, and hypolipidemic drugs. So there are many more possibilities to influence a patient's metabolism.

Additionally, alcohol consumption is a real problem in Poland. While cigarette smoking is disappearing, the fight against alcohol will be much, much more difficult. While we know that alcohol is dangerous from a hepatology point of view, it is also associated with many cancers. This is especially true for women, who tend to be more predisposed to alcohol toxicity. From my perspective, alcohol-associated liver disease is probably the primary cause of liver-

© 2026 by Global Liver Institute. All rights reserved

LACK OF WORKFORCE SPECIALIZATION, LIMITED INVESTMENT, AND LIFESTYLE HABITS HINDER LIVER HEALTH

related mortality in Poland, rates are increasing, and from the perspective of the transplant centers, alcohol-associated cirrhosis and hepatocellular cancer are becoming the leading indications for liver transplantation.

We can also track the success in viral hepatitis from the perspective of the transplant centers. Liver transplantation due to hepatitis C is clearly declining, while those due to alcohol-associated liver disease as well as NAFLD are increasing. At this point, neither acute hepatitis B nor acute hepatitis C are big problems in Poland, since there are few active carriers. With the current tests available, viral hepatitis is straightforward to diagnose and treat, but we are still awaiting efficient screening programs that search for HCV-infected individuals.

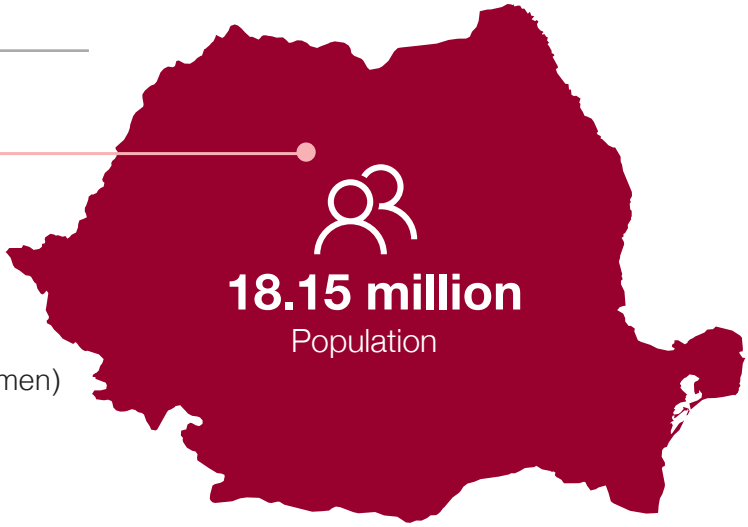
HCC, on the other hand, tends to have a low survival rate. Under-diagnosis of early stages of this tumor seems to stem from low adherence to clinical alcohol surveillance programs. It is largely under-treated in Poland because there is low availability and geographic scattering of the centers that can perform advanced therapeutic procedures like ablation and chemoembolization, important for treatment of advanced HCC.

It is interesting, but there is not a direct correlation between the actual prevalence of liver diseases and their economical burden with financial support for these diseases in Poland. As I've noticed in my involvement with UEG, ulcerative colitis and Crohn's disease, for example, have had significantly improved access to and quality of treatments in recent years in large part due to pressure from patient-led organizations. In part since Poland has a dearth of patient-led organizations, liver diseases remain scientifically and financially neglected.



OVERVIEW

ROMANIA



Population: 18.15 million (2025)

GDP per Capita: $18,404.39 USD

Life Expectancy: 69.2 years (men) and 76.5 years (women)

Healthcare Spending: 5.69% GDP

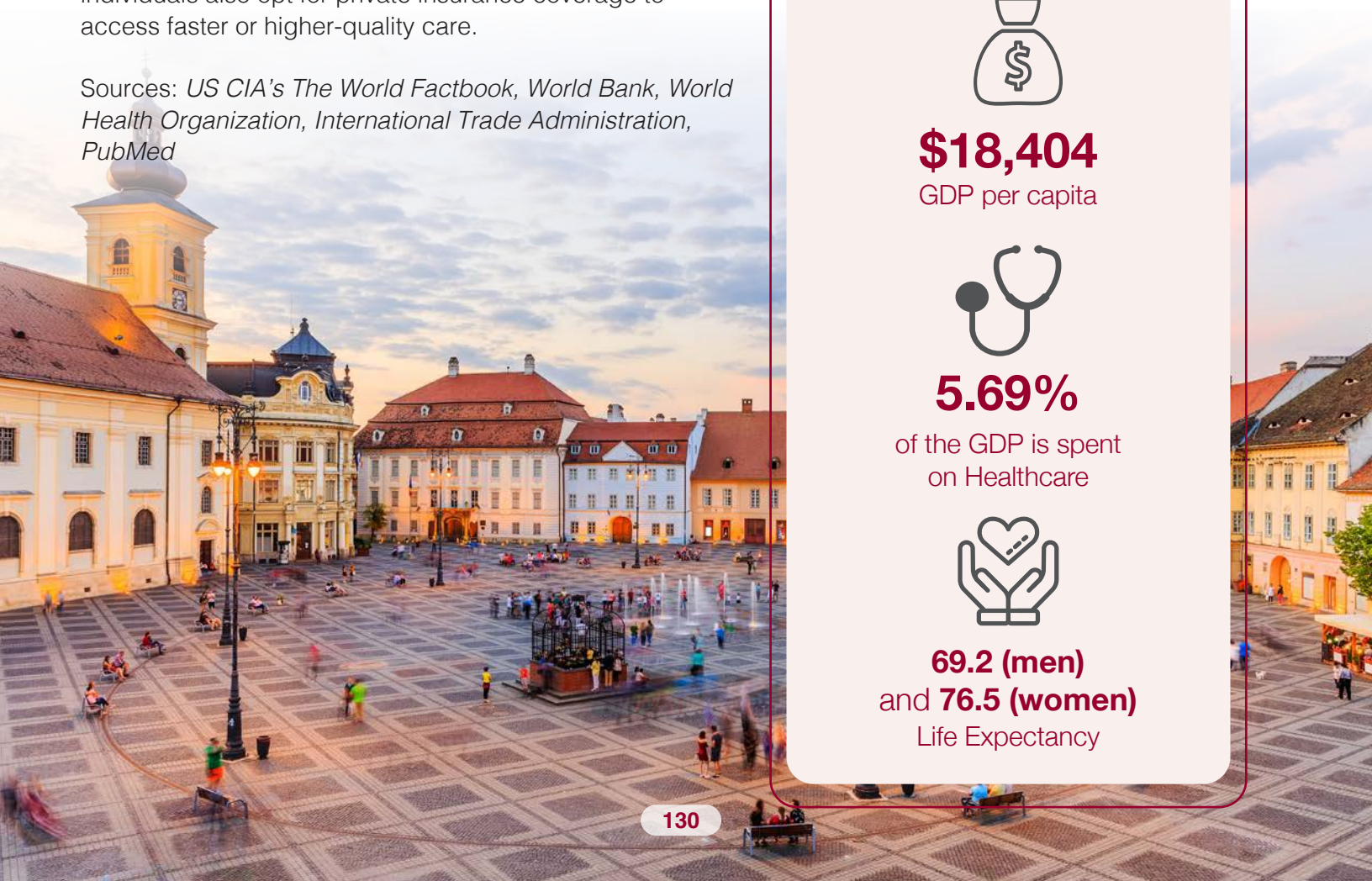
Healthcare Funding: The National Health Insurance House (NHIH) oversees the coordination of healthcare insurance coverage for Romanian citizens. The public health insurance system, known as the Social Health Insurance (SHI), aims to provide accessible, high-quality care for all citizens, including emergency medical services, clinical examinations, medical and surgical treatment, rehabilitation procedures, and pharmaceutical prescriptions. SHI revenue is funded primarily by Romanian employers and employees and is supported by subsidies from the State Budget. While the public health insurance system is rather expensive, the delivery of health services can vary by region. In addition to mandatory public insurance, many individuals also opt for private insurance coverage to access faster or higher-quality care.

Sources: *US CIA's The World Factbook, World Bank, World Health Organization, International Trade Administration, PubMed*

$18,404
GDP per capita

5.69%
of the GDP is spent on Healthcare

69.2 (men) and **76.5 (women)**
Life Expectancy



While the treatment of chronic liver disease has made tremendous progress over the last few decades, the prevalence of liver disease across Romania remains worrisome. According to the World Health Organization (WHO), the number of liver disease-related deaths in Romania reached 8,920 in 2020.[1] In Romania, there is an especially high prevalence of liver cirrhosis, alcohol-associated liver disease, and metabolic disease.[2] All of these conditions are associated with an increased risk of liver cancer, with liver cirrhosis being the 7th leading cause of death, at an average of 50.7 deaths per 100,000 people.[3]

Compared to other European nations, Romania has a set of unique risk factors that position the country to a greater prevalence of liver disease. Romania's history of famine is linked to a high prevalence of metabolic disease and chronic illness, making residents particularly susceptible to metabolic-associated steatotic liver disease (MASLD).[4] Liver cancer and overall liver disease rates are characterized by a high prevalence of chronic hepatitis B and hepatitis C infection.[5] Viral hepatitis infection across the country is also driven by HDV underdiagnosis and high rates of HBV/HDV co-infection.[6] The prevalence of liver disease is exacerbated by regional limitations to access to healthcare, which further prevents the early diagnosis and equitable treatment of liver disease. In Romania, the risk of developing liver disease increases based on rural residency and age and decreases with greater educational attainment and greater economic condition.[6]



Liver Cirrhosis is the

7th LEADING

Cause Of Death in Romania



Romania has one of the **highest rates of HCV infection in Europe**

Viral hepatitis poses a serious threat to liver health in Romania. The country faces one of the highest rates of HCV infection in Europe at a prevalence of 2.7%.[7] Limited access to treatment, caused by low testing rates and insufficient awareness of viral hepatitis, has further increased the prevalence of viral hepatitis across Romania.[8] As of 2022, chronic HBV had a prevalence of 5.06%, also high, in the Romanian population.[9]

In order to mitigate the effects of viral hepatitis in the country, the Ministry of Health in Romania developed a national plan to eliminate viral hepatitis by promoting testing, prevention, and treatment programs. In 2018, Romania implemented free viral hepatitis testing for all residents with the referral of a general practitioner.[9] Additionally, the Romanian government initiated the establishment of large-scale testing protocols across four regions throughout the country to promote the early detection and treatment of viral hepatitis.[9] The Romanian Ministry of Health is also working with WHO and the European Centre for Disease Prevention in order to extend treatment coverage and mitigate the effects of viral hepatitis on the nation.[9]

© 2026 by Global Liver Institute. All rights reserved

Metabolic disease also threatens the liver health of Romania's residents, with conditions like diabetes and obesity being closely tied to the development of MASLD. According to a 2016 study, 31.90% of Romania's adult population is considered to be obese, with another sizable portion considered overweight (34.7%).[10] A comprehensive national study found the prevalence of diabetes to be 11.6%, troublingly high.[11] Thus, the prevalence of MASLD has also been on the incline over the last several years, with the current prevalence estimated to be over 20% of the general population.[2] Though slightly lower than the global prevalence, the rise of MASLD and obesity across Romania remains concerning, from a public health perspective. A notable trend that has been observed is the rise in MASLD among pediatric patients, which has been tied to an increase in pediatric obesity in Romania. Educational programs structured around the importance of a healthy lifestyle and its relationship to the development of diabetes, obesity, and other metabolic disorders would be beneficial to the Romanian population.

In a 2023 study, approximately 26% of the participants with clinically significant liver cirrhosis across various counties in northeastern Romania had a history of heavy alcohol intake.[13] Northeastern Romania is particularly vulnerable to alcohol-associated liver disease due to a greater exposure than other regions to risk factors like heavy alcohol intake, physical inactivity, and high body mass index, and decreased access to health services.[16] The strong correlation between alcohol intake and the development of metabolic disorders suggests that populations with lifestyle or demographic risk factors would benefit from early screening protocols for liver fibrosis in individuals with excessive alcohol intake.[16]

Due to data limitations around rare liver disease, it is difficult to know the exact prevalence of rare liver disease in Romania. Due to this knowledge gap, patients living with a rare liver disease face a lack of access to treatment options, particularly in rural and underserved communities. However, the Emergency Clinical Hospital for Children Cluj-Napoca, Romania is a major treatment center for pediatric patients with rare liver disease.[14]



A **rise in pediatric MASLD** has been linked to a rise in pediatric obesity in Romania.

Pediatric liver health in Romania is characterized by high rates of MASLD due to rising rates of pediatric obesity.[12] In addition to the rising cases of fatty liver disease in children due to increasing rates of pediatric obesity, acute liver failure is another major concern for pediatric hepatology in Romania, due to its high mortality rate. A 2020 study found that the causes for acute liver failure (ALF) varied among age groups, with ALF having a particularly high mortality rate (50%) in infants.[15]

Liver cancer in Romania is a major public health concern due to its high mortality rate among diagnosed cases. About 1.33% of total deaths in the nation are a result of liver cancer.[16] Because Romania does not have a national screening policy for hepatocellular carcinoma (HCC), the country has seen limited success with early screening and treatment.[17] A more comprehensive program for the staging of HCC and a streamlined process for determining eligibility for HCC treatment would increase access to timely treatment and would promote better healthcare outcomes.[19]

When patients do have end-stage liver disease, liver transplantation can be a life-saving treatment option, preserving quality of life and improving chances of survival. The organ transplantation activity in Romania has been characterized primarily by a scarcity of resources and a lack of transplantation centers throughout the country. Since 2012, the number of transplantation centers performing liver transplantations has increased from one to four.[18] With the increasing number of transplant centers, the total rate of liver transplants has also increased from 0.36 per million population (PMP) in 2000 to 3.23 PMP in 2020.[21] In 2020, the mortality of patients waiting for a liver transplantation was about 7.7%.[21] Notably, the transplantation rate of living donors has also increased significantly from 0.36 PMP in 2000 to 2.76 PMP in 2020.[21] While Romania has made tremendous progress in increasing its liver transplantation activity, the number of patients awaiting transplantation largely outweighs the number of transplanations being done every year. More comprehensive transplantation protocols and increased funding to transplant centers would promote better health outcomes and mitigate the mortalities caused by liver failure.

Liver disease remains a significant public health challenge in Romania. The liver conditions discussed in this overview not only contribute to a high prevalence of liver-related morbidity and mortality but also to an increased risk of liver cancer. The interplay of multiple risk factors, along with the lack of a national screening program, further complicates the nation's ability to effectively combat liver disease. Although Romania's efforts to address these issues are promising, there is still a considerable gap in healthcare access, health literacy, and early diagnosis. This gap in knowledge and access underscores the need for a multifaceted approach to health policy.



Since 2012, the number of transplantation centers performing liver transplantations has **increased from 1 to 4.**

With board certifications in Internal Medicine, Gastroenterology, and Interventional Abdominal Ultrasonography, Prof Carmen Fierbinteanu-Braticevici is Division Chief of Internal Medicine and Gastroenterology at University Hospital Bucharest and clinical instructor at "Carol Davila" University of Medicine in Bucharest, Romania. She has served as the Vice-President of The Romanian Society of Internal Medicine and as a member of the European Association for the Study of the Liver (EASL) and the American Gastroenterological Association Fellow (AGAF) and has a prolific body of published work studying liver health and liver disease.

As the landscape of liver disease shifts in Romania, the field is adjusting and strengthening to meet the current and future needs of liver patients in the country.

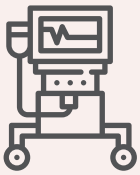
In the past, viral hepatitis was a problem and a main cause of cirrhosis. With the efficient, new generation of treatment for hepatitis C, we have been able to make good progress. For hepatitis B, we can treat many more patients, even though we cannot cure the disease.

Unfortunately, there are still challenges with alcohol-associated liver disease and metabolic liver disease. We don't have biomarkers or a specific treatment without abstinence, which is difficult to obtain. And while obesity and diabetes are increasing manyfold, metabolic liver disease is as well. We are starting to prepare for this influx. For patients with MASLD, we form multidisciplinary teams that include the hepatologist, primary care, cardiologist, endocrinologist, diabetologist, and nutritionist. We have also deployed an algorithm to diagnose, monitor, and create management plans for patients, because I believe many countries are not ready for this epidemic increase.

We need to increase awareness about the liver and its impact on quality of life, especially for communities that have limited access to medical care, whether those living in rural areas, people without strong family ties, the homeless, those with addiction, and marginalized groups like the Roma. We cannot consider it a success, unless we start with these populations.
The public generally considers cardiovascular disorders to be more important than liver diseases, but now there are many more programs on TV and conferences in rural areas that help us educate people that it is important to take care of the liver. This should start in school, especially in communities that already struggle with medical and social problems. Unfortunately, teenagers and children are affected by obesity due to nutritional factors.

Over the years, I have seen improvements in liver care in Romania. Access to care is increasing; we continue to increase the number of liver transplantations and have a national social program to refer people to hepatology medical centers.
We have many centers for liver disease and many places able to perform elastography – in fact, Romania had one of the first centers that practiced elastography. This is very useful because many patients do not accept a biopsy, and so we can replace it with this non-invasive test. At the same time, many of us in the field are involved in research about liver disease, whether about biomarkers, elastography, viral hepatitis, and much more.

In the next ten years, I am hoping we can cure hepatitis C and have a cure for hepatitis B available to all communities in Romania.



Romania had one of the first centers that **practiced elastography**



OVERVIEW

SPAIN



Population: 47.9 million

GDP per Capita: $33,509 USD (2023)

Life Expectancy: 80 years (men) and 85.3 years (women)

Healthcare Spending: 10.74% GDP (2021)

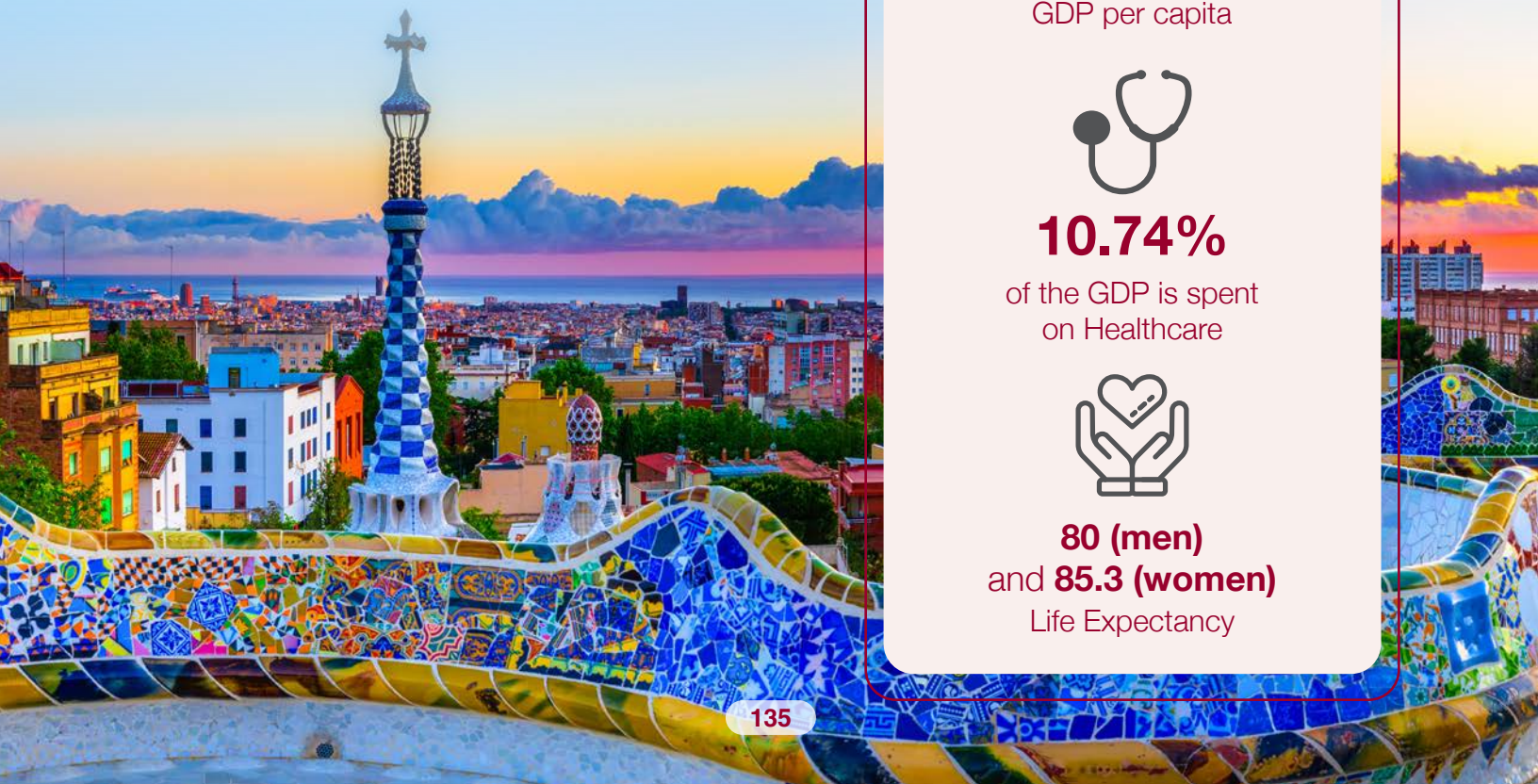
Healthcare Funding: Spain operates a decentralized National Health System (*Sistema Nacional de Salud*, SNS) that provides universal coverage, primarily funded through taxation. Healthcare services are predominantly delivered within the public sector and are free at the point of delivery. In 2023, out-of-pocket payments made up 21% of total health expenditure, higher than the EU average of 14.5%. These expenses mainly cover co-payments for pharmaceuticals, medical devices outside hospitals, and dental care. Despite the comprehensive benefits package, cost-sharing is required for certain services, but mechanisms are in place to prevent significant spending by households. Reforms since 2020 have introduced further exemptions to reduce the financial burden on vulnerable groups.

Sources: WHO Data, World Bank Group, State of Health in the EU Spain, Spain: health system review 2024

$33,509
GDP per capita

10.74%
of the GDP is spent on Healthcare

80 (men) and **85.3 (women)**
Life Expectancy

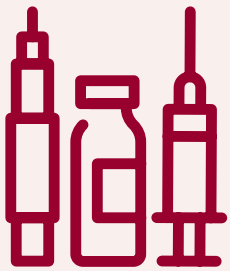


Liver health in Spain has undergone significant changes in recent decades, shaped by shifting disease patterns, medical advancements, and public health initiatives. While some conditions have declined due to targeted interventions, others pose challenges. From vaccination campaigns to evolving trends in metabolic and alcohol-related diseases, Spain's approach to liver health reflects progress and ongoing efforts to improve prevention, early detection, and treatment.

Historically, Spain has been classified as a country with intermediate HBV prevalence, with rates between 2% and 8% in 2013.[1] However, more recent studies indicate a significant decline in prevalence, now estimated between 0.27% and 1.69%.[1] This reduction is attributed to effective public health interventions that include widespread immunization programs and improved screening practices.[1] However, the prevalence differs by age and region, with older populations having a higher prevalence of HBV. Migrants, for instance, are estimated to have a prevalence level as high as 31.7%.[2] Since the late 1990s, all autonomous communities – self-governing regions with legislative powers in Spain – have systematically immunized newborns against HBV. As of 2018, the coverage rate for the third dose of the hepatitis B vaccine was 94%.[3]

As of 2018, the coverage rate for the **third dose of the hepatitis B vaccine** was

94%



A survey from 2017-2018 showed that about 0.85% of people aged 20-80 in Spain had been exposed to the hepatitis C virus (HCV), and 0.22% had an active infection.[4] However, nearly 30% of those with active infections were unaware, a fact which highlights the importance of early screening programs.[4] To combat this, Spain's Ministry of Health, Social Services, and Equality created a strategic plan for tackling HCV called, Spain National Strategic Plan to Control Hepatitis C in the National Health System, in 2015.[5] This strategy aims to prevent infections, catch cases early, and provide effective treatment; since the program's launch, more than 135,000 people in Spain have received HCV treatment.[6] Despite these achievements, efforts to find and treat undiagnosed cases are still essential to prevent serious liver damage and keep HCV under control.

Nearly 30% of people in Spain are living with a liver condition linked to obesity and diabetes known as metabolic dysfunction-associated steatotic liver disease (MASLD).[7] MASLD, as a metabolic disease, is closely tied to both obesity and diabetes. While diagnosed cases measure 6.7% of Spain's population, estimates suggest the true prevalence is close to 14% – and a gradual increase has been observed over the past decade.[8] A rise in diabetes is troubling to liver health because an estimated 70% of people with T2D also have MASLD.[9] At the same time, the overall prevalence of obesity in Spain has more than doubled between 1987 and 2020.[10] Liver health in Spain will suffer as diabetes and obesity rates continue to increase.



These metabolic disorders exacerbate liver fat and increase the risk of severe liver complications, including fibrosis and cirrhosis.[11] Spain has implemented the Feel4Diabetes Program to prevent diabetes in vulnerable families through community-based interventions and promote behavioral changes and supportive environments.[12]

Although alcohol plays a frequent role in Spanish social life, its consumption is linked to serious health problems like alcohol-associated liver disease (ALD). In 2019, it was estimated that around 23% of Spaniards drink every week, and over 13% drink every day.[13] By 2022, the number of registered cases of chronic alcohol misuse in Spain surpassed 323,000, the highest figures recorded compared to previous years.[14] This consumption is troubling given that alcohol-associated liver disease (ALD) is linked to about half of cirrhosis-related deaths.[15] A 2018 survey in Spanish secondary schools found that most students have tried alcohol, with nearly 78% having had a drink in the past year and around 58% in the past month, with slightly higher rates among girls than boys.[16]

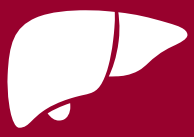
In response, the Spanish government has implemented public health campaigns, laws, and educational programs to raise awareness and reduce alcohol use, especially among younger generations. For example, Spain passed the Citizen Safety Law in 2016, which fined individuals up to €600 for drinking alcohol inside establishments or on public transportation when it poses a serious disturbance of the peace.[17] To further reduce teenage drinking, a community-based intervention in Spain focused on increasing vendors' compliance with age restrictions in supermarkets, ensuring stricter enforcement of laws prohibiting alcohol sales to minors.[18] Treatments for ALD, including medical care and lifestyle changes, are available through Spain's healthcare system, but the growing number of cases shows that more prevention and support are still needed.



Alcohol-associated liver disease is linked to about **half of cirrhosis-related deaths**

Liver cancer is the sixth most commonly diagnosed cancer in Spain and is increasing in incidence.[19] The majority of hepatocellular carcinoma (HCC) cases are linked to underlying liver conditions, particularly cirrhosis caused by chronic HCV infection and excessive alcohol consumption.[19] Over the past few decades, cancer of the liver and intrahepatic bile ducts has remained a significant health concern in Spain, with an incidence rate of 13.8 cases per 100,000 people and a high mortality rate of 12.0 deaths per 100,000 people as of 2022.[20] Spain has taken steps to reduce liver cancer risks, including a universal hepatitis B vaccination program implemented in 1991 and participation in European projects focused on liver cancer prevention and treatment.[21] For example, Spain has shaped global HCC care through the Barcelona Clinic Liver Cancer (BCLC) and its system for staging liver cancer.[22] The BCLC staging system stratifies HCC into distinct stages, each linked to specific therapeutic strategies – and it is used around the world.[22] Despite these efforts, many cases are diagnosed in late stages, when treatment options are limited. Since liver cancer is projected to rise 40% by 2024, Spain's healthcare system is focusing on early detection and improved treatment strategies to combat this life-threatening disease.[23]





Spain has shaped **global hepatocellular carcinoma (HCC)** care through the Barcelona Clinic Liver Cancer (BCLC) and its system for staging liver cancer.

Spain has become a global leader in liver transplantation, with a well-established system that has performed over 23,700 liver transplants since the program began in 1984.[24] The establishment of the National Transplant Organization (ONT) in 1989 has played a key role in coordinating organ donation and managing distribution through a national waiting list system.[25] To add, Spain follows a soft opt-out system for organ donation in which individuals are presumed donors unless they have explicitly opted out, though families still have the final decision.[26] With this model, along with effective public awareness campaigns and a well-organized healthcare system, Spain has consistently had the highest organ donation rates in the world, reaching 48 donors per million people in 2018.[27] The country's liver transplant needs have evolved, with a decline in hepatitis C-related transplants due to improved medical treatments, allowing for expanded eligibility for other liver diseases.[28] With its highly organized transplant system and continued advancements, Spain remains at the forefront of liver transplantation, setting a global standard for organ donation and patient care.

Spain's approach to liver health has led to advancements in disease prevention, treatment, and organ transplantation. However, metabolic and alcohol-associated liver diseases continue to impact public health, and liver cancer incidence remains a concern. Strengthening early detection programs, increasing public awareness, and refining treatment strategies will be important in addressing these ongoing challenges. By maintaining its commitment to liver health initiatives, Spain can continue to improve outcomes and reduce the burden of liver disease.



Spain consistently has the **highest organ donation rates** in the world with its soft opt-out system.

© 2026 by Global Liver Institute. All rights reserved

Dr. Maria Reig is an internationally recognized physician-scientist with expertise in liver diseases and liver cancer. She currently heads the Hepatic Oncology Unit at the Hospital Clinic of Barcelona and leads the influential multidisciplinary Barcelona Clinic Liver Cancer (BCLC) group in innovation, global collaboration, and cultivation of the next generation of researchers. She has been instrumental in the 2022 updated version of the BCLC Staging System, a globally utilized classification system for liver cancer. She is involved with the European Association for the Study of the Liver (EASL), represents EASL to the United European Gastroenterology organization, and served as an Associate Editor of the Journal of Hepatology from 2019 to 2025.

CHANGES IN THE LIVER HEALTH LANDSCAPE OVER THE YEARS

The etiology is changing. When I started my career, most liver disease was linked to alcohol and hepatitis C. Now, these are still issues, but patients can be cured for hepatitis C, and I see many patients cured from hepatitis C with or without obesity and metabolic syndrome. However, I have seen many improvements.

First, the management of liver disease has improved. We now have five options for systemic therapy for HCC – and there were none when I started. This has increased median survival for patients and also quality of life.

Second, I have seen the multidisciplinary approach grow. Specifically in Spain, it started at my hospital in 1986, grew throughout the country, then Europe, and then around the world. **Spain is a pioneer in the multidisciplinary approach, starting in liver cancer** but now in many different types of disease as a model for patient management.

Third, we have changed how we measure quality of care. Previously, this focused on safety and efficacy. **Now, we also consider patient experience, which means the patient is more represented**, and we have moved past a paternalistic approach towards shared decision-making. When I started, there were no patient associations. Now there are associations for liver disease and liver cancer. This is a big advantage.

ONGOING WORK

I live my life very happily working in liver cancer. I am excited to help junior physicians evolve. Additionally, we have a few key studies happening with a diverse group at BCLC:

1. **Investigating the impact of the microbiome on immunotherapy:** Our goal is to develop probiotics or a rationale for transplanting fecal material to improve immunotherapy treatment.
2. **Expanding treatment options for patients:** I am working with Professor Bruno Sangro and their team to develop vaccines for HCC to be used in combination with immunotherapy for patients who do not respond to other treatments.
3. **Innovation in clinical decision-making, neuroscience, and artificial intelligence:** Working with neuroscientists and other disciplines who are not used to working on liver cancer, we are studying how liver doctors make decisions currently, without AI, and how AI can be incorporated, since liver cancer does not have a specific biomarker or radiological marker.

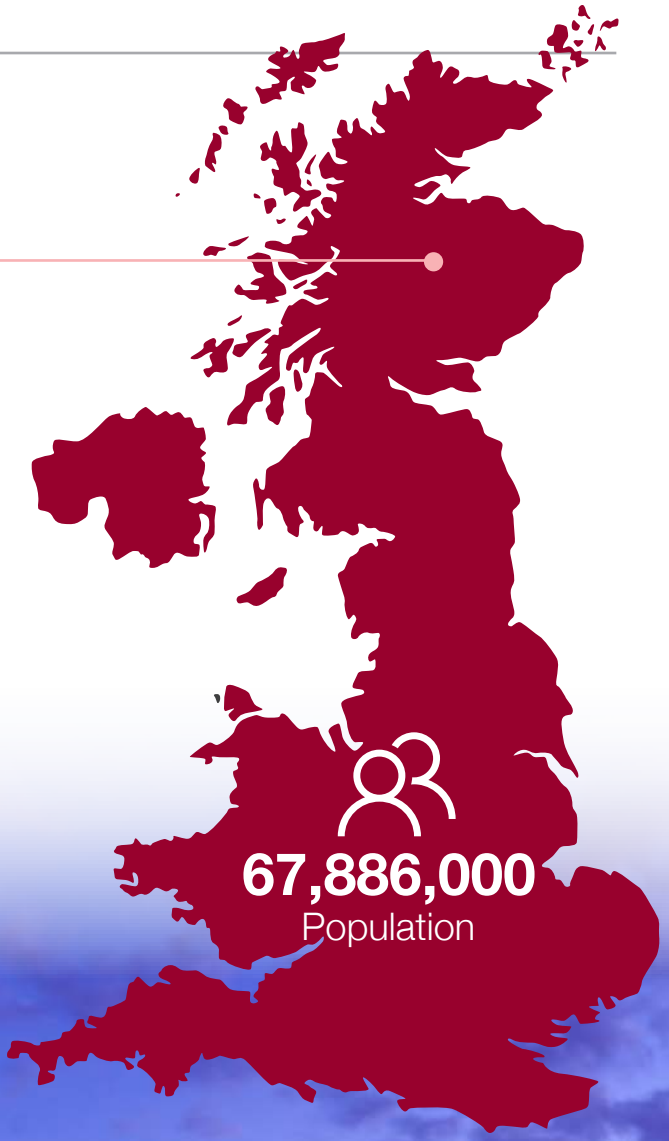
LOOKING FORWARD

As I look forward to the future of liver health and liver cancer treatment in the coming years, my hope is to add value for patients beyond the technology. While treatment has improved a lot in my career, now we are at a plateau. So the challenge is to develop creative systems or uses for existing technology. With all the new technology, I hope to have more patients who can access treatments to cure them, more patients with access to a multidisciplinary team for liver care, and more patients with access to lifestyle approaches. From a public health perspective, **the most important thing is that we change the overall mindset about liver health.** Current patients could be ambassadors to help others learn about the impact of risk factors for people who are still without liver disease. Because liver disease is silent and does not appear until late, we must better understand people's mindset and approach to risk. We have to work with experts in stigma to take a middle-to-long-term approach to benefit people in the future.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

UNITED KINGDOM



Population: 67,886,000 (2022)

GDP per Capita: $48,867 USD

Life Expectancy: 80.4 years (men) and 83.8 years (women)

Healthcare Spending: 11.9% GDP

Healthcare Funding: Funded through general taxation and National Insurance contributions. Patients, with some exceptions, contribute via prescriptions costs and dental treatment. Private health insurance schemes are available, and most private hospitals accept a mix of private and the National Health System (NHS)-funded patients.

Source: World Bank

$48,867
Average Income Per Household

79 years (men) and **82.9 years (women)**
Life Expectancy

11.9%
of the GDP is spent on Healthcare

Since 1970, deaths due to liver disease in the UK have increased by 400%–almost fivefold.[1] Overall, it is estimated that 600,000 people in the UK are living with serious liver disease. Liver disease itself is set to overtake CVD as a main cause of premature death in the UK.[1]

However, some areas of liver disease are better served statistically than others. Data are readily available on the prevalence of metabolic dysfunction-associated steatotic liver disease (MASLD) and prevalence of metabolic dysfunction-associated steatohepatitis (MASH) are generally estimates. With the rapid increase in obesity seen in recent years, these figures are generally accepted to represent a significant underestimation of the real statistical picture around MAFLD and the danger this represents.

Indeed, one in four adults in the UK are now classified as obese,[2] with adult obesity rates the sixth highest in the OECD (26.9% compared to an OECD average of 19.4%).[3]

The overall costs of MAFLD and MASH in the UK was estimated in 2016, as £5.24 billion of economic ('direct') costs and £26.03 of billion well-being ('societal') costs. MAFLD is set to overtake alcohol as the main cause of liver disease in the next few years.[4]

However, the UK government, similar to many developed countries, has continued to focus efforts and budgets on raising awareness of the link between obesity and type 2 diabetes (T2D) rather than obesity and MAFLD.

As a result, there is a real lack of awareness of the condition including the causes, comorbidities, and the consequences of the condition. Worryingly, this poor awareness is not just seen in the general public, who have a one in five risk of MAFLD, but also in high-risk groups such as patients with T2D who have a prevalence of MAFLD of around 70% (see page 64 for Pilot Study).[5]

180,000
PEOPLE



are living with chronic hepatitis B

Along with MAFLD, alcoholic-associated liver disease (ALD) accounts for much of the rise in the rates of liver disease in the UK, with the number of hospital admissions due to ALD increasing by 57% since 1970. In the last 15 years alone, admissions have nearly doubled, from 13,201 in 2004 to 24,544 in 2020/21.[6] According to the British Liver Trust, alcohol consumption is now the most common cause of liver disease in the UK, accounting for 60% of all liver disease cases.

However, although awareness levels of the risks of alcohol abuse have risen, alcohol consumption shows little sign of reducing, and the incidence of alcoholic-associated liver disease continues to rise.

Viral hepatitis is contained and well-managed in the UK with well-established and effective national strategies for prevention and control. The HBV vaccination program is available for all new-born babies as well as high risk adults. Vaccination against hepatitis A virus not usually offered as the rates are so low. Hepatitis E virus are low, with around 1,200 registered infections in 2019.[7]

Around 180,000 people are living with chronic HBV infection in the UK and 95% of new infections are now found in individuals who were infected overseas, including during early childhood.[8] The number of people living with chronic HCV infection in



England has fallen by 37% since 2015, to 81,000 in 2020.[9] Hepatitis D is rare in the UK.

The incidence of liver cancer is rising exponentially in the UK. Between 1993-1995 and 2016 and 2018, liver cancer increased by 141% in females and 171% in males.[10] Rates are still climbing and expected to continue to do so, driven by alcohol consumption and obesity.

Each year, around 6,000 cases of primary liver cancer are now diagnosed in the UK, making a once relatively rare cancer the 8th most common cancer. Outcomes are poor, with 40% of males and 36% of females surviving for one year after diagnosis, though five-year survival rates are 13%. There are 5,800 deaths each year.[10]

The UK spends less than almost any other western European country on cancer (and nearly half the amount of Austria, the top spending country).[11] This relatively low level of investment impacts on diagnostic services and medicines and, ultimately, on UK survival rates, which are lower than those in other similarly wealthy countries.

Autoimmune liver diseases are classed as rare and have, up until recently, been under-diagnosed and under-resourced. There are now guidelines for primary biliary cholangitis (PBC), (which is thought to affect around 20,000 people in the UK), autoimmune hepatitis (AIH) (10,000) and primary sclerosing cholangitis (PSC) (less than 1,000). However, some patient groups argue that these guidelines are not always followed, and good treatment can be sporadic and location-dependent.[12]



Each year, around

6,000

CASES

of liver cancer are diagnosed in the UK



Alcohol Consumption

is now the most common cause of liver disease in the UK

PILOT STUDY IN AN OUTPATIENT DIABETES CARE SETTING

A recent pilot study, led by Professor Saima Ajaz, carried out by Kings College Hospital London at an outpatient Diabetes Care Center in South London, set out to evaluate the awareness of NAFLD knowledge, the prevalence of it, and the prevalence of advanced fibrosis in patients with T2D who regularly attend a secondary diabetes clinic.

The pilot study used the Fibroscan method to examine the livers of 90 T2D patients and questioned them about their awareness of NAFLD/NASH.

In total, 85.6% (87) patients were unaware of NAFLD/NASH. Of the 87 valid scans, 56.3% of patients had steatosis and 27.6% already had advanced fibrosis, which required referral to a specialist liver center. The authors of the pilot study concluded that this group of high-risk patients were 'mostly unaware of this silent epidemic' and called for 'better screening of patients who are already in our healthcare system due to other pre-existing conditions.'

NAFLD, NASH AND ALD: A LOOMING CRISIS IN UK HEALTH

Dr. Saima Ajaz is a gastroenterologist at Kings College Hospital and Honorary Senior Clinical Lecturer at the School of Immunology and Microbial Sciences, Kings College London. She runs clinics for patients with NASH.

In the UK millions of pounds have been poured into raising awareness of T2D and CVD, yet the same has somehow not happened with NASH and NAFLD. As a result, we have a huge lack of awareness of these conditions and crucially, the link with obesity. This is not just true of the general public: A recent informal survey carried out at our hospital found that only 20% of hospital staff were aware of what NASH was, and, if indicative of clinicians as a whole, we can see that there is definite need for more education on these diseases.

Further, we are clearly underdiagnosing NAFLD and NASH, even in high risk populations as demonstrated by our recent pilot study. Additionally, we do not have an effective screening program. Even our high-risk populations, such as those with diagnosed T2D and metabolic syndrome are not being regularly screened, while others at risk populations – for example the overweight and obese – are extremely unlikely to be offered any liver screening until and unless they are admitted to secondary care. Finally, we have no established patient treatment pathways between primary and secondary care and, as a result, the specialists often don't see patients until the disease is quite advanced.

> Here in the UK **millions of pounds have been poured into raising awareness of T2D and CVD,** yet the same has somehow not happened with NASH and NAFLD.
>
> DR. SAIMA AJAZ

However, it is important to point out that preventing liver disease is only partially a clinical issue. In general, and as a society, we are not dealing well with obesity. It is still something we do not like to talk about or address, often the obese person and their family will be in denial. There is little education at school level and clinical advice usually consists of telling the patient to lose weight and come back when they have. That is not an effective way to see change.

In my experience, no one wants to be overweight, most people at least try to lose weight, but it can be a very difficult thing to do for a variety of reasons. It can be down to economic issues, or the person may be immobile and unable to exercise, and depression, or loneliness or stress can all lead to overeating.

Likewise, as a society we tend to look on alcoholic-associated liver disease as being the 'fault of the patient' rather than a manifestation of economic or mental health or life issues. This stigma discourages people from asking for help, or seeing their doctor, or attending alcohol support clinics. As a result sadly, we often onwly see patients with ALD when the disease is far advanced and much harder to treat.

AN EIGHT-POINT PLAN FOR AVERTING A DISASTER IN LIVER DISEASE

#1 FUND A ROBUST COST BENEFIT TRIAL

#2 RAISE AWARENESS OF NAFLD AND NASH

#3 TACKLE THE OBESITY CRISIS

#4 ESTABLISH AND RESOURCE AN EFFECTIVE DIAGNOSTIC SCREENING SYSTEM

#5 HARNESS NEW TECHNOLOGY

#6 REMOVE THE STIGMA OF ALCOHOL-ASSOCIATED LIVER DISEASE

#7 ENCOURAGE POINT-OF-CARE TESTING

#8 CREATE A CLEAR PATIENT PATHWAY FOR ALL HIGH-RISK PATIENTS

LATIN AMERICA



Many countries in the region can point to a **high quality healthcare.**

HEALTH OVERVIEW

Stretching from Cape Horn in the south to the Mexican US border in the north, and encompassing South America, Central America and the Caribbean, Latin America covers just over 19 million square kilometers – almost 13% of the Earth's landmass – and is home to nearly 650 million people.

According to a report by the United Nations, Latin America has some of the starkest inequity in the world, with GDP per capita in 2023 ranging from $17,093 USD (Chile) and $22,565USD (Uruguay) to under $7,000 USD (Bolivia, Ecuador and Paraguay).

This disparity is reflected in healthcare spending. In 2019, Uruguay allocated $1660.95 USD per capita to health, nearly seven times that of Bolivia, at $245.92 USD per capita.

The majority of Latin American countries provide some form of free state-sponsored healthcare. However, vast differences between the health funding systems from country to country results in wide variation in accessibility. Many countries require some level of patient financial contribution at point of care. According to a 2015 joint Pan American Health Organization/World Health Organization (PANO/WHO) report, approximately 30% of the population in Latin America and the Caribbean lack access to healthcare for economic reasons. In addition to this, the report found that 21% of the population do not seek care because of geographical barriers.

However, many countries in the region can point to a high quality healthcare network for those that can access it. Brazil, for example, boasts 6,642 hospitals (1 for every 32,000 people). Chile, which has over double the GDP per capita of Brazil has just 322 (1 for every 60,512 people).

Sources: TheGlobalEconomy.com, Pan American Health Organization, United States of America International Trade Administration, Statista

© 2026 by Global Liver Institute. All rights reserved

Despite limitations in available data on liver health, it is clear that one of the primary challenges to liver health in Latin America is obesity (as an etiology of metabolic dysfunction-associated steatotic liver disease, or MASLD).[1]

The 2022 Report 'Liver Diseases in Latin America: Current Status, Unmet Needs, and Opportunities for Improvement' notes:

'The high prevalence of liver diseases in Latin America is influenced by genetic factors, the elevated prevalence of obesity and metabolic syndrome, and environmental factors such as diet, low exercise and excessive alcohol intake.'[2]

Latin America is experiencing some of the highest obesity rates in the world, alongside the fastest growing rate of T2D.[3] In Mexico and Bolivia for example, 32.2% of adults (nearly one in three) are classed as obese, and a 2017 meta-analysis of 19 Latin America countries found that only five of the named countries could manage rates of obesity below 20%.[4] Given regional and global trends, it is likely that figures have increased since then.

The average prevalence of MAFLD in the general population is now estimated to be around 24%, though in high-risk groups, such as the obese and those with T2D, this figure soars to around 68%.[5]

However, despite the prevalence of MAFLD and the danger it represents to the liver health of Latin America, there are no prevalence figures for metabolic dysfunction-associated steatohepatitis (MASH) and no formal screening programs for high-risk groups.

Viral hepatitis continues to be a significant burden on liver health in Latin America. According to figures from WHO/PANO Mortality Information System 2008 and 2010, 10% of all deaths in Latin American countries were due to the effects of viral hepatitis.[6]

A 2021 report noted that less than half of Latin American countries collect data on the prevalence of HCV, and several have no national viral hepatitis program to provide estimates of the HCV disease burden.[7]

Figures from 2010 estimated that approximately 7.8 million (2010) persons were infected with HCV in Latin America.[8] Despite this high burden, rates of diagnosis of HCV range widely from 56% (Mexico) to 3% (El Salvador).[9]

HBV antibody prevalence among 12,000 people in 6 countries

21.4%	Dominican Republic
7.9%	Brazil
3.2%	Venezuela
2.1%	Argentina
1.4%	Mexico
0.6%	Chile[10]

Figures from an investigation into the prevalence of HBV antibodies in over 12,000 subjects in six countries found:

Additionally, in 2018 there were an estimated 38,400 cases of liver cancer in Latin America and 38,000 deaths with the highest rates seen in Honduras, Costa Rica and Cuba (1.4-1.9 per 1000,00) and Chile (1.00-1.39 per 100,000).[2]

The main cause of liver cancer in the region is still viral hepatitis, followed by alcohol consumption, although it is thought that MAFLD may soon become a predominant risk factor for the cancer.[11] Many studies refer to the challenge of late-stage diagnosis in liver cancer in Latin America, exacerbated by geographical distances and economic inequalities.[12]

Latin America has high alcohol per capita consumption, with those aged over 15 years drinking 6.8 liters of pure alcohol per year compared to the global average consumption (6.4 liters per capita).[13] Thus, excessive alcohol consumption is the leading cause of cirrhosis in Argentina, Brazil, Chile, Mexico and Peru with around 53% of cirrhosis attributable to alcohol.[2]

Despite the disparity in healthcare, Latin America also boasts a large number of tertiary hospitals with high levels of equipment and expertise. More than 2,500 liver transplantations are performed yearly – equating to 17% of global liver transplants.[14]

© 2026 by Global Liver Institute. All rights reserved

ARGENTINA

Population: 47,327,407 (08/2022)

GDP per Capita: $13,731 USD

Life Expectancy: 73.5 years (men) and 80.12 years (women) (2020)

Healthcare Spending: 9% GDP

Healthcare Funding: A mix of social security/union-run health insurance system, which covers 50% of the population, private medical insurance (Prepagas) (10%), and PAMI, a system which covers the elderly and disabled. Public hospitals are the responsibility of each province's Ministry of Health, and around 35% of the population relies on this free care.

Sources: United States of America International Trade Administration, SAHE



$10,729.20
GDP per capita

9%
of the GDP is spent on Healthcare

73.5 years (men)
and **80.12 years (women)**

In 2019, it is estimated that 15-20 people per 100,000 died of cirrhosis in Argentina.[1]

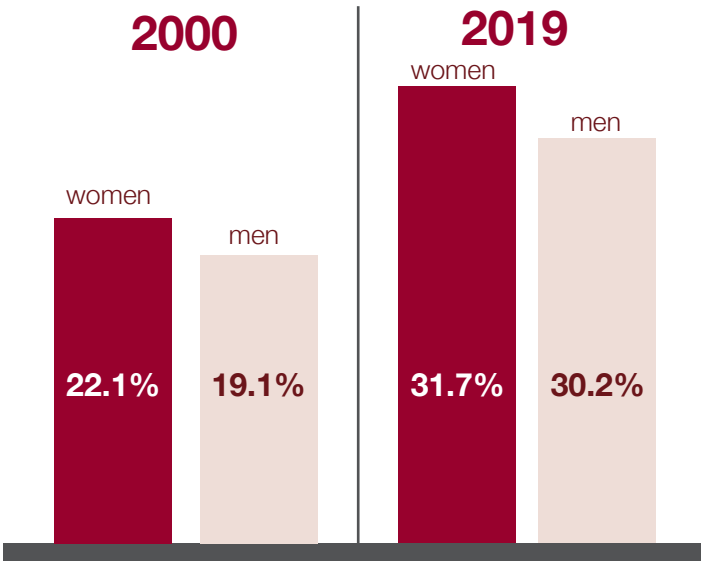
As in many Latin American countries, the most robust data for liver disease is related to viral hepatitis. It is estimated that 400,000 people in Argentina live with chronic HCV infection.[2]

A estimated that 326,000 people live with HCV infection, 9% of whom were diagnosed in 2019.[3]

Despite the decrease in incidence, hepatitis continues to take a toll on liver health. Of the 4650 liver transplants carried out in between 2006 and 2019,16.4% of them due to hepatitis.[4]

However, Argentina has been at the forefront of attempts in Latin America to reduce the rates of hepatitis. For example, following an outbreak of hepatitis A between 2003 and 2004, Argentina became the first country in the region to introduce a single-dose vaccine against hepatitis A in 1-year old children, resulting in a dramatic reduction in the virus. Today, there is an effective HBV vaccination strategy for babies, while clinics throughout the country provide free testing on demand for HBV and HCV.

The data on obesity demonstrate that rates are rising fast in Argentina. The Global Nutrition Report reports that in 2000,19.1% of males and 22.1% of females were classified as obese in Argentina. By 2019, those figures had risen to 30.2% and 31.7% of females.[5]



Classified as **obese** in Argentina



In 2019, it is estimated that

15-20

people per 100,000 **died of cirrhosis** in Argentina.[88,90]

As a result, there is increasing concern about the rates of metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic dysfunction-associated steatohepatitis (MASH). Obesity is classed as high risk for MASLD, and studies across Latin America have put the rate of MASLD in high-risk for NAFLD, and studies across Latin America have put the rate of NAFLD in high risk populations at around 68%.[6]

The ongoing prevalence of early stage liver disease leads to many patients who develop liver cancer. A study of liver cancer found that although 37% of all cases of liver cancer was caused by HCV, ALD was the cause of 20.8% of cases and MAFLD was 11.4%.[7] Crucially, there was a sixfold increase in the percentage of MAFLD as a cause of liver cancer between the years of 2009 and 2016. Given that obesity rates have risen dramatically since the close of this study, it can be hypothesized that this percentage has increased commensurately.[7]

Non-complex CLD, for example, early stage hepatitis or MAFLD, is managed in primary care or clinic settings within the 22 provinces. Scans and diagnostics are carried out at secondary care hospitals, where treatments such as chemoembolization, radioembolization and hepatobiliary surgery, are also offered.

Complex care needs, including end-stage liver disease, liver cancer and liver transplant are referred to tertiary centers usually situated in the large cities such as Buenos Aires. There are 35 centers, albeit many based in the large cities, with the expertise to carry out liver transplantation in Argentina. In 2021, despite the burden placed on the health system by the COVID-19 pandemic, 377 liver transplants were performed, although there are currently 1523 patients waiting for transplants.[8]

© 2026 by Global Liver Institute. All rights reserved

ACCESS AND EDUCATION FOR THE FUTURE OF ARGENTINA'S LIVER HEALTH

Dr. Ignacio Roca is a staff physician and liver transplant hepatologist at Hospital de Alta Complejidad en Red "El Cruce." He holds a specialization in statistics for health science (CEECS). He is involved with the Sociedad Argentina De Hepatologia (SAHE) and its interdisciplinary work throughout Argentina.

People in Argentina do not think about their liver health very often, and maybe that is partly the fault of hepatologists. People are aware of heart problems, but they do not understand the connection between obesity and liver cirrhosis. The population also has an issue with alcohol that is difficult to recognize, so there is a lot of work to be done.

Still, liver health has taken great strides over the course of my career. About 20 years ago, the field of hepatology completely separated from gastroenterology, and we have seen impressive advances since treatment for HCV became available and vaccination dramatically reduced the incidence of both HAV and HBV. Everyone has access – no one is left without these treatments because they are poor. There is also an unusually high prevalence of autoimmune hepatitis in Argentina compared to many other countries, and between 15-17% of the transplant list is due to this disease. I have seen an increase in early recognition and diagnosis, which helps people manage their progression and prevent the need for transplant later in life.

There is great access to transplantation in Argentina. We are doing well with about 13 to 15 per million with organ donation, and transplantation programs are available for everyone, whether their health coverage is public or private. Every person in Argentina, whether citizens or residents, has access to liver transplantation completely free. It is a requirement of insurance programs that they cover liver transplantation.

Unfortunately, Argentina is a large country, and transplant programs are all clustered in one side — in Cordoba, Mendoza, and Formosa. In Patagonia, referrals from primary care to a transplant center are less common, and it can be difficult for patients to travel to the centers to receive care. Nonetheless, even in such a remote area, there is the liver transplant center of Neuquén, of which I am part, which has improved access to transplantation for patients in the region. Better organization and distribution of expertise to make transplantation available will be important to improve the system.

When I look forward, I hope to see more education. I think we should also increase the education of nutrition and exercise in primary and secondary schools so our young people build healthy habits and a healthy life. MASLD is going to become the leading cause of liver transplantation, but the root cause dates back many years.

I work with patients with end-stage liver disease, and so many of these people would not have required liver transplant if someone had intervened twenty years earlier to tell them how to take care of their liver and monitored it regularly. With education and minimal lifestyle adjustments, we could have better outcomes and prevent end-stage liver disease.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

BRAZIL

Population: 215,347,203 (2022)

GDP per Capita: $10,044 USD (2022)

Life Expectancy: 70.3 years (men) and 76.6 years (women) (2021)

Healthcare Spending: 10.5% GDP (2019)

Healthcare Funding: *The Sistema Unico de Saude*, or SUS (Unified Health System) is funded through general taxation and provides free access to primary, secondary and tertiary care, including medications, to all Brazilians. The private sector is accessed via pay as you go or insurance schemes.

Sources: Organization for Economic Co-operation and Development (OECD), 2020 Epidemiological Bulletin: Health Surveillance Secretariat of the Ministry of Health, Brazil Epidemiological Bulletins Ministry of Health



$10,044
GDP per capita

10.5%
of the GDP is spent on Healthcare

73.3 years (men)
and **80.3 years (women)**
Life Expectancy

In 2019, it is estimated that **15-20 people** per 100,000 **died of cirrhosis** in Brazil. [1,2]

In 2019, it is estimated that 15-20 people per 100,000 died of cirrhosis in Brazil.[1, 2] As with the other countries featured in this chapter, research and data on liver disease are disproportionately focused on viral hepatitis, which, in Brazil, is still the main etiology for deaths from liver disease.

In 2019, Brazil had

37,771

NEW CASES OF VIRAL HEPATITIS

2%	Cases of Hepatitis A
37%	Cases of HBV
60%	Cases of HCV
0.4%	Cases of Hepatitis D[3]

According to a 2021 report, there are currently 1,787,000 people living with HCV, equating to 0.9% of the population, of whom 8% were newly diagnosed in 2019.[71] There are up-to-date clinical guidelines on HCV, a universal screening program, a national registry and government financial assistance for treatment therapies.[4]

From 1999 to 2020, there were 254,389 confirmed cases of HBV in Brazil.[5] A 2016 modeling study found that the prevalence rate of HBV infection was 0.6%, of which only 28% of infected individuals were diagnosed and only 12% of the population was treated.[6]

HBV particularly affects people living in poverty and, although a relatively wealthy country within the Latin American region, remote areas of Brazil are some of the most deprived in the region. A study from the favelas in Goiás State, Central-West Region of Brazil, for instance, found that the prevalence rate of HBV exposure was more than ten times the national rate.[6]

Similar to other Latin American countries, obesity rates are soaring. Between 1990 and 2017, the prevalence of obesity increased by 244.1%, and 165.7% for men and wo men, respectively.[7] However, there are no registered figures on metabolic dysfunction-associated steatotic liver disease (MASLD), though prevalence is estimated to be about 38%.[1]

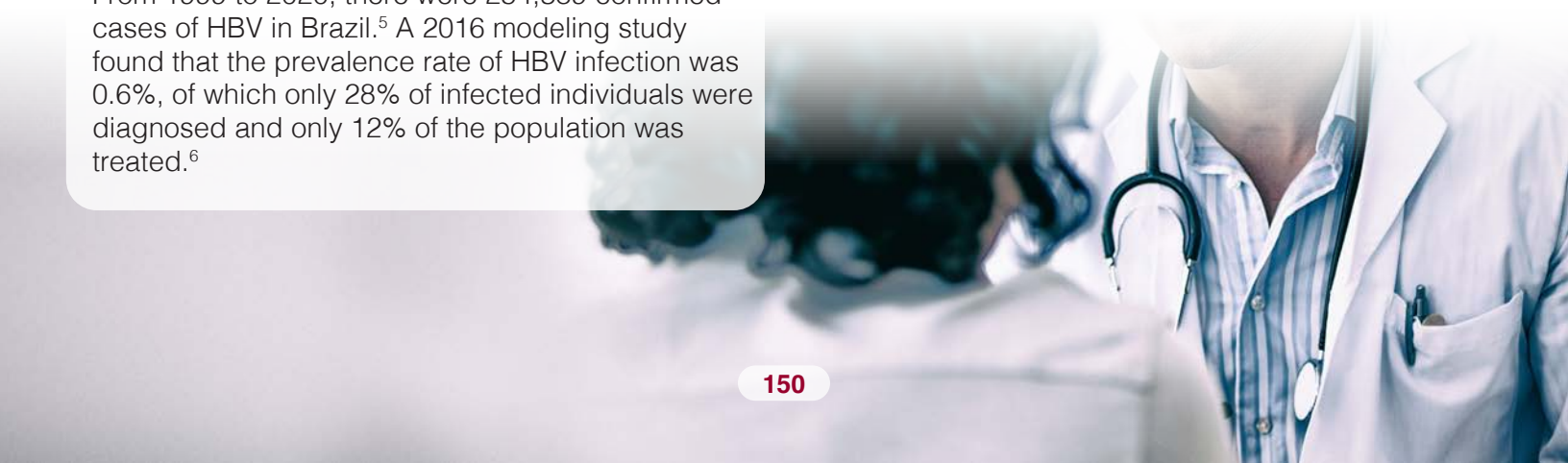
Brazilians drink around 7.5 liters of alcohol per year per person, which is on a par with their neighbors. When adjusted to those who actually drink alcohol, the amount rose to 19.2 liters per year. Alcohol-associated liver disease is one of the main causes of cirrhosis in Brazil.[8]

According to DATASUS, only 11% of cases of liver cancer were diagnosed at an early stage. 67% of diagnoses could only receive palliative care.[9]

Nonetheless, Brazil is a key center of expertise for liver transplant needs from across Latin America, and now carries out the second highest number of liver transplants in the world.[9]

2,033

Liver Transplants were performed in 2021.



AN URGENT NEED FOR EDUCATION, DATA AND DIAGNOSTICS

Dr. Bianca Della-Guardia and Dr. Marcio Dias de Almeida are hepatologists based at the Albert Einstein Hospital, San Paulo, Brazil. They specialize in liver transplantation.

The prevalence of NAFLD and NASH is growing fast in Brazil as in all countries, but while we have some individual pieces of research from universities or hospitals, there is no significant national data. All we can do is estimate the size of the problem.

All hepatologists are now regularly seeing patients with advanced cirrhosis because of NASH, and we think it could soon become one of the main reasons for liver transplant in the next decade. NASH is also impacting our liver cancer rates, which are rising fast.

Our government has put some effort into raising awareness of diabetes, which affects 12% of the population, and trying to tackle childhood obesity; but we really need to do the same and more for NASH and NAFLD. If we carry on as we are, and with the obesity rates we have, we are heading for a public health crisis in Brazil and very soon.

We believe that the government should prioritize health education, including funding a properly targeted national awareness program about NASH, NAFLD and liver disease. Secondly, we are in need of accurate and current data. We need a government-funded and supported research project to establish the extent of liver disease across Brazil. Once we know the extent of the challenge, we can show that we need action fast and can start to put focussed health policies into place.

Our viral hepatitis rates are high compared to other South American countries, particularly in the remote areas and away from the cities. This is partly because Brazil came too late to tackle this disease, but also because there has been a big national effort recently to raise awareness of hepatitis and to screen and diagnose hepatitis, so we are finding previously unrecorded cases.

Now, real efforts are being made by both the government and the World Health Organization to reduce the rates of viral hepatitis. In addition to awareness programs, there is a vaccination program for new-borns and infants, and anyone can walk into a clinic and have a free blood test for hepatitis. The problem, of course, is that in remote areas, where it can take a few days to get to a clinic, people may not go for a test until they feel ill – by which time the liver disease is much harder to manage. In an attempt to solve this problem, we are having conversations about self-testing, particularly in remote areas.

We believe that the government should prioritize health education, including funding a properly targeted national awareness program about NASH, NAFLD and liver disease. Secondly, we are very short of good quality data. We need a government-funded and supported research project to establish precisely the extent of liver disease across Brazil, especially NAFLD and NASH. Once we know the extent of the challenge, we can show that we need action fast and can start to put focussed health policies into place.

Finally, we need more diagnostic resources so that when we get more people coming forward, we can scan them within weeks, not months, to begin treatment as soon as possible.

> If we carry on as we are, and with the obesity rates we have, **we are heading for a public health crisis in Brazil and very soon.**
>
> DR. BIANCA DELLA-GUARDIA AND DR. MARCIO DIAS

OVERVIEW

CHILE

Population: 19,658,835 (2023)

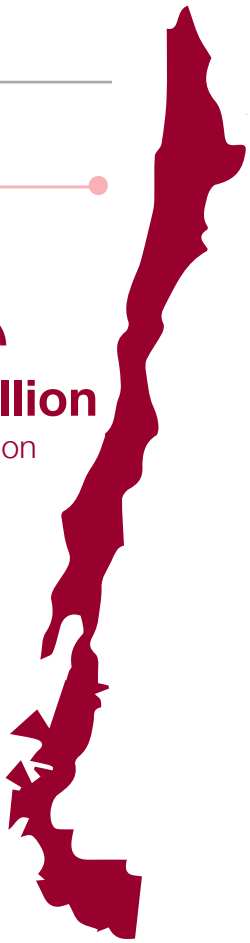
GDP per Capita: $16,437 USD

Life Expectancy: 76.7 years (men) and 81.4 (women)

Healthcare Spending: 9.34%

Healthcare Funding: Chile's healthcare funding system is funded by a mixed financing model of both public and private sources. The public sector gets most of its money from the government, while a smaller portion comes from workers, who are required to contribute 7% of their pay. The public insurance system from the National Health Fund (FONASA) covers roughly 77–78% of the population, while private insurance, *Instituciones de Salud Previsional* (ISAPREs), is financed through premiums and a law-mandated premium for the Explicit Health Guarantees, GES.

Sources: World Health Organization, Rev Panam Salud Publica

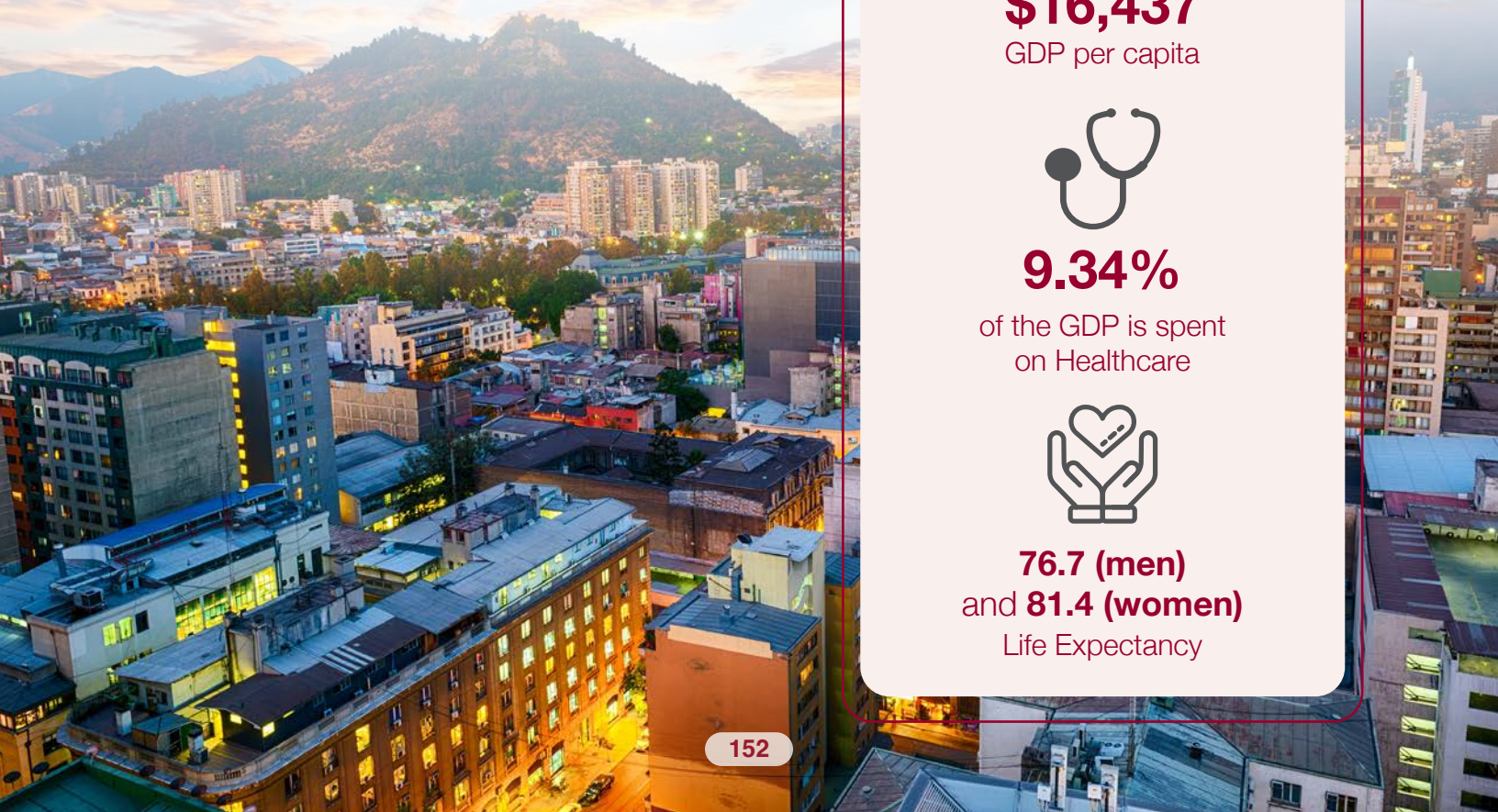


19.6 Million
Population

$16,437
GDP per capita

9.34%
of the GDP is spent on Healthcare

76.7 (men) and **81.4 (women)**
Life Expectancy



Chile faces a significant burden of liver disease. Chronic liver diseases cause an estimated 3,000 deaths per year in Chile.[1] The major drivers are metabolic dysfunction-associated steatotic liver disease (MASLD) and alcohol-associated liver disease (ALD), as shown in both prevalence and causes for liver transplantation.

Chile is considered a low-endemic country for viral hepatitis. The prevalence of chronic infection with hepatitis B virus (HBV) infection is estimated at around 0.5%.[2] Chronic infection with hepatitis C virus (HCV) is similarly infrequent: A 2003 national survey found anti-HCV antibodies in ~1.15% of adults.[3] Current estimates put chronic HCV RNA prevalence around 0.16%, reflecting an aging cohort of infected individuals with minimal new transmissions.[4] The age distribution of HCV cases in Chile also suggests that most infections occurred 30–50 years ago and that the incidence of new HCV infection is now very low.[3]

Chile has been proactive in hepatitis prevention and control. Universal HBV vaccination was introduced in stages: initially targeted to high-risk groups (e.g. healthcare workers in 1990) and later to universal infants.[5] In 2005, HBV vaccination was added to the routine infant schedule.[6] Since April 2019, Chile has also administered a birth dose of hepatitis B vaccine to further prevent mother-to-child transmission.[6] As a result of these efforts, over 95% of children now receive the HBV vaccine series, creating a highly immune younger generation. Chile's blood banks have performed mandatory HBV screening on all donated blood since as early as 1982 (and anti-HCV since the 1990s), virtually eliminating transfusion-transmitted hepatitis.[5] For those living with chronic hepatitis, the government provides universal access to treatment. A national program guarantees antiviral therapy for hepatitis B patients meeting treatment criteria, and direct-acting antivirals (DAAs) for hepatitis C are available through the public health system.[2] Chile's health benefits plan (GES) assures that any confirmed chronic HCV patient can receive treatment, with target timelines for diagnostic workup and therapy initiation.[7] Because of the low prevalence, Chile does not conduct general population screening for HCV (screening is focused on risk groups).[7] Overall, Chile's combination of strong immunization coverage, blood safety, and free treatment access has kept viral hepatitis relatively controlled.



Chile now has one of the **highest rates of overweight and obesity** in Latin America.

Chile is in the midst of an obesity and metabolic disease epidemic, which has driven a steep rise in MASLD. As a result, Chile now has one of the highest rates of overweight and obesity in Latin America.[8] The latest National Health Survey found 74% of Chilean adults are overweight or obese.[9] Prevalence of obesity itself climbed in adults from roughly 23% in 2003 to over 31% by 2017 and was reported at more than one-third of the adult population by the early 2020s.[10,11] This has translated into a high MASLD prevalence at about 47.5% in 2019.[12]

Besides obesity, about 12% of Chilean adults have type 2 diabetes and nearly 30% have metabolic syndrome, conditions that are highly correlated with MASLD.[13] Consequently, MASLD has become a leading cause of cirrhosis and liver transplantation. In Latin America overall, MASLD is estimated to cause about 24–35% of cirrhosis cases.[13] In Chilean transplant candidates, MASLD/NASH overtook viral hepatitis as a leading cause of end-stage liver disease in 2019.[1] In response to high rates of cardiometabolic disease, the Chilean government has become a global leader in anti-obesity policy. In 2016, Chile implemented a pioneering, often-cited Food Labeling and Advertising Law that mandates front-of-package warning labels on foods high in sugar, salt, saturated fat, or calories.[14] Further, Chile implemented a sugar-sweetened beverage tax of 18% in 2014 and banned the sale and marketing of junk foods in schools in 2016.[10] As of 2022, these measures, along with public education campaigns for healthy eating and exercise, have started to shift consumer habits: The country has seen a 24%

© 2026 by Global Liver Institute. All rights reserved

decrease in the purchase of sugar-rich foods.[10] However, obesity rates have not yet declined, and experts note it may take decades to see an impact on population weight and MASLD rates.[8] Chile also runs programs to promote physical activity and has updated clinical guidelines for managing metabolic syndrome and MASLD in primary care.[15]

Chile also has a high per-capita alcohol consumption compared with neighboring countries, which contributes to a significant burden of alcohol-related liver disease. The World Health Organization estimates Chile's total alcohol consumption at 9.3 liters of pure alcohol per adult per year, notably higher than the global average ~6.4 L.[16] About 22% of Chileans over 15 report binge drinking in the past month, and among drinkers the prevalence of heavy episodic drinking is 32%[16] The prevalence of alcohol use disorder (AUD) in Chile is estimated to be 6.0.[16] Some data suggest alcohol-associated liver disease is the leading cause of cirrhosis in Chile (disproportionately affecting men).[13,16] With Chile's growing obesity prevalence, there is also concern about the synergistic impact of alcohol and metabolic risk: Even moderate drinkers who are obese may have accelerated liver damage, causing metabolic and alcohol-associated liver disease (MetALD).[13]

Liver cancer in Chile is a major health concern, ranking as the 7th leading cause of cancer-related death.[17] Over the past decade, the liver cancer death rate has increased by around 13%, reaching about 10 deaths per 100,000 people, slightly above the average for similar countries.[18] In 2020, the government passed a National Cancer Law and launched a National Cancer Plan (2022–2027) to expand access to cancer prevention, screening, and treatment services.[19] Treatments available include surgery, liver transplants, and more advanced options like targeted medications and immunotherapy.[20]

Liver cancer is the **7th leading cause** of cancer-related death in Chile.

Chile was an early adopter of liver transplantation in Latin America. The first liver transplant in Chile was performed in 1969.[21] Today, Chile has several active liver transplant centers with about 150 liver transplants performed annually.[21,22] However, the Chilean transplant system is mostly centralized in the capital, which poses access challenges for patients from distant regions.[21,22] Chile adopted the Model for End-Stage Liver Disease (MELD) score for organ allocation in 2011 to prioritize the sickest patients and the Pediatric End-Stage Liver Disease (PELD) scoring system for children.[1,23] However, Chile's organ donation rate remains low, with approximately 5 to 7 deceased donors per million.[21,24] Cultural barriers (family refusal of donation) and past scandals have hindered donation.[25] As a result, the waiting list far exceeds available livers.[21] In response, Chile has started expanding living donor liver transplantation. In 2010, Chile adopted an opt-out donation model by law, but family override is still respected; ongoing efforts aim to improve identification of donors in ICUs and consent rates.[21] Despite limited supply, Chile has excellent liver transplant outcomes. One report noted Chile's post-transplant survival rates are comparable to international standards: Overall patient survival of 82% at 1 year and 70% at 5 years.[21,26] Continuing to close the gap between waitlist demand and organ availability is a top priority for Chilean hepatology in the coming years. Initiatives to improve donation, along with upstream prevention of liver diseases, will both be crucial to improving liver health outcomes in Chile.[13]

Liver disease is an increasing problem in Chile, now driven mostly by obesity, diabetes, and alcohol use rather than viral hepatitis. Although Chile has made progress with public health policies and transplant care, organ shortages and rising obesity make progress difficult, especially for individuals with late-stage disease. To continue to make a real difference, ongoing efforts in prevention, organ donation, and access to treatment are necessary to help shape future outcomes for liver health in the country.

REFLECTIONS ON LIVER HEALTH IN CHILE: PROGRESS AND NEXT PRIORITIES

Dr. Barrera is a board-certified internist and gastroenterologist at Pontificia Universidad Católica of Chile (PUC). He completed the clinical research program in hepatology at SLU, University of Sydney. He is currently the president of the Chilean Association of Hepatology (ACHHEP), an investigator of the experimental hepatology laboratory, a member of UC-Christus Institute of Transplant, and an assistant professor at PUC studying liver diseases.

Chile has made meaningful progress in liver health, but our system remains uneven: strong in viral hepatitis, and still largely reactive for cirrhosis, transplantation, metabolic liver disease, alcohol-related liver disease, and hepatocellular carcinoma (HCC).

Viral hepatitis is our clearest success. Hepatitis C treatment is well covered for both public and private patients and has been sustained as a national program for roughly the last 15 years. This was achieved even though Chile is not a high-income country. A key driver was patient advocacy: families affected by hepatitis C organized and showed the Ministry of Health the importance of the disease, which was taken seriously, alongside hepatologists working togetherto implement treatment. We also have strong hepatitis B and A vaccination programs, with high adherence starting at birth. Access to therapy in chronic hepatitis B is also guaranteed by the health system. At the same time, hepatitis C epidemiology is changing in ways that will require adaptation in prevention and surveillance. Recent Ministry of Health data indicate the most prevalent age at diagnosis is now 30–39 years, with 76% male, and approximately **20% with HIV co-infection**. We are seeing fewer cases detected late in a cirrhotic phase and more sexually transmitted infections with co-infection.

Besides viral hepatitis, coverage has lagged. Cirrhosis was not covered by public or private insurance until this year; inclusion now occurs mainly after hospitalization, which does not address the need for prevention and earlier treatment. In transplantation, a deceased donor transplant is covered, but donor scarcity remains severe, with roughly **30% mortality on the waiting list**. Living donor transplant exists, although it is not yet covered by public insurance.

Metabolic-associated steatotic liver disease and alcohol-related liver disease are major emerging priorities. Chile has implemented effective public health measures, including food labeling, restrictions on marketing unhealthy foods to children, and healthy food programs in schools, and these are well perceived. However, these efforts have focused primarily on obesity and metabolic disease broadly, without explicitly incorporating steatotic liver disease. In Chile, government action depends on local evidence; therefore, Chilean epidemiologic data are essential, as is collaboration with diabetes and obesity associations to integrate steatotic liver disease into guidelines and policy.

Finally, HCC is increasing and is not fully covered despite high mortality and the availability of effective surveillance and treatment pathways (e.g., ultrasound-based surveillance and improved regional access to therapies). Implementing formal HCC coverage should be a near-term priority. Chile's experience shows that alignment between patient advocacy, clinical leadership, and governmental commitment can produce rapid progress. Extending that alignment beyond viral hepatitis is now the central challenge.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

COLOMBIA



Population: 52.3 million (2023)

GDP per capita: $6,960 USD (2023)

Life Expectancy: 71.6 years (men) 77.6 years (women)

Healthcare Spending: 6.55% GDP (2021)

Healthcare Funding: Colombia's healthcare operates under the General Social Security Health System, which provides universal health coverage through a mix of public and private funding, supported by payroll contributions and taxes. This system, managed by certified health insurers (EPS), offers services like medical care, maternity support, and basic dental coverage for all citizens and legal residents. Out-of-pocket costs for patients are low, with only 13.67% of healthcare spending coming from individuals in 2021. However, the system faces financial challenges; around 80% of EPS providers lack the necessary financial reserves, raising concerns about long-term stability. Therefore, despite significant progress, funding struggles to keep up with the growing demand.

Sources: International Monetary Fund, World Health Organization, World Bank, Center for Global Development, Lockton, Pan American Health Organization

$6,960
GDP per capita

6.55%
of the GDP is spent on Healthcare

71.6 (men)
and **77.6 (women)**
Life Expectancy



Liver disease poses a significant challenge to the population health in Colombia. This significant health burden is due to the prevalence of hepatitis, alcohol consumption, obesity, and other risk factors affecting the population. Recognizing these challenges, Colombia is making strides to address risk factors for liver disease through steps such as decreasing the cost for medicine like antiviral treatments for hepatitis, increasing accessibility, and launching vaccination programs.[1]

Approximately 12.14% of the general population in Colombia are living with diagnosed hepatitis B virus (HBV) infection.[2] Of those diagnosed, only 7.8% receive the appropriate treatment. The rate varies among vulnerable groups.[2] For example, in certain indigenous populations in the Amazon, HBV prevalence is notably higher, with studies reporting a prevalence of up to 3.6% among children and 30.9% among mothers.[3] Colombia has set goals to eliminate HBV as a public health threat by 2030 by expanding vaccination coverage, especially among newborns, and has achieved an 85% HBV birth dose vaccination rate reported as of 2022.[2]

Hepatitis C virus (HCV) infection, on the other hand, affects about 0.6% of the general population in Colombia, but a study found that infection rates are anticipated to be as high as 22.8% among people who inject drugs.[2,4] Despite improvements in blood safety practices to curb HCV transmission, efforts to expand access to testing and treatment remain challenging.[4,5] Although highly effective direct-acting antivirals are available, their historically high prices have posed financial barriers.[5] Colombia has initiated a centralized purchase process for HCV treatments via the Pan American Health Organization. To obtain treatment, patients are required to enroll in a program called, Cuenta de Alto Costo, overseen by public and private health insurers and regulated by the Ministry of Health.[1] This program oversees medication distribution, adherence to treatment guidelines, and systematic follow-up of patients.[1] While generic alternatives have lowered treatment costs, Colombia still faces obstacles in making these treatments widely accessible due to ongoing funding and infrastructure limitations.[1]

1 in 10



people in Colombia has **chronic HBV infection.**

In Colombia, metabolic dysfunction-associated steatotic liver disease (MASLD) affects about 26.6% of the population, a figure that mirrors rising trends across Latin America, where rates are around 31%.[6] From 2009 to 2016, over half of liver disease cases in Colombia were linked to metabolic issues like obesity and diabetes.[7] A study in Cartagena found that MASLD was the second leading cause of liver cirrhosis, accounting for 30.9% of cases, with most patients also struggling with diabetes or overweight.[8]

Obesity and diabetes, major contributors to MASLD, have become commonplace in Colombia. Around 29.3% of adult women and 20% of adult men have obesity, with rates especially high in cities, where healthier foods like fruits and vegetables tend to be expensive.[9,10] To help address these issues, Colombia introduced a tax on sugary drinks and processed foods in 2022 and passed a “Junk Food Law” in 2021 that requires clear labeling on food packaging to indicate high sugar or salt content.[9] Today, diabetes affects about 9.5% of Colombian adults, with rates steadily increasing over recent decades.[9,10] The COVID-19 pandemic further exacerbated these problems, as lockdowns limited physical activity and altered eating habits.[10]

With an average of 4.09 liters of alcohol consumed per person, Colombia has a lower drinking rate than neighboring Latin American countries.[11,12] However, alcohol use remains widespread. High cases of alcohol-associated liver disease (ALD) have been reported in areas that have high alcohol sales.[13] Young adults are particularly affected, with the average age of drinking initiation around 12–13 years of age.[14] Despite the legal drinking age being 18, many students between the ages of 12 and 18 report drinking at least once or twice a week, which indicates early and frequent exposure.[14]

© 2026 by Global Liver Institute. All rights reserved

In 2021 Colombia passed a "junk food law"

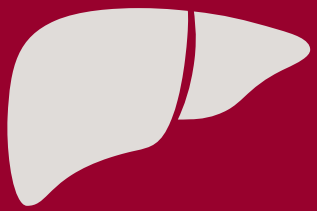
that requires clear labelling on food packaging, particularly on sugar and salt content.

Drinking has cultural roots in Colombia, especially in rural and indigenous communities, where sharing alcohol is common and occurs regardless of age or gender.[15,16] Prolonged use of alcohol from an early age raises the likelihood of developing long-term health issues, including ALD and eventually cirrhosis.[14,17]

In response, the government has partnered with alcohol companies like Diageo to reduce underage drinking through the "Alianza +18" project.[18,19] This initiative has trained thousands of retail staff to enforce age verification by placing reminders near cash registers and using software to prompt ID checks before selling alcohol.[19]

With rising rates of MASLD and alcohol consumption, liver cancer is becoming more of an issue in Colombia. In 2020, the International Agency for Research on Cancer reported that liver cancer affected about 2% of Colombians, with a mortality rate of 4%.[17] Between 2017 and 2021, 2,244 cases of hepatocellular carcinoma were reported in adults across the country.[20] Of those cases about 23.2% of patients had liver disease due to alcohol consumption, and 20.7% had cirrhosis with no known cause.[20]

Colombia has completed over



3,000 **liver transplants** since 1979.

Liver transplants in Colombia are most often needed for people with cirrhosis caused by hepatitis, alcohol use, MASLD, and liver cancer.[21] Since the first transplant in 1979, Colombia has completed over 3,000 liver transplants, making it the fourth-leading country for these procedures in Latin America after Brazil, Argentina, and Uruguay.[21] The Donation and Transplant Network of Colombia coordinates the system through a national organization and six regional offices, with 10 hospitals authorized to perform liver transplants.[21] Both deceased and living donor transplants are covered by the national health system, ensuring that cost does not prohibit anyone who needs a liver transplant from receiving one. Transplants from living donors, which are especially beneficial for children on the waitlist, have grown in recent years and accounted for 14% of all liver transplants in 2017.[21]

Challenges remain, such as an insufficient number of organ donors, donor health, culture reluctance to religion, and liver transplant costs.[21,22] A liver transplant can cost between $27,000 and $38,500, depending on complications, with additional expenses for those with end-stage liver disease due to more frequent hospitalizations.[22] Since Colombia has a universal healthcare system these costs are normally shared by both the government and the patient but the extent to which the patient covers is unknown. Despite these challenges, outcomes are promising, with recent studies showing a 5-year survival rate of around 71% and 80% for transplant recipients.[23] Building a stronger culture of organ donation and enhancing organ availability are key goals to sustain and expand Colombia's transplant program.

Efforts to improve liver health in Colombia reflect the country's commitment to expanding healthcare access and tackling complex public health challenges. Continued focus on preventive measures, early interventions, and community education could further enhance outcomes for those affected by liver disease.

STRENGTHENING PREVENTION FOR BETTER LIVER HEALTH IN COLOMBIA

Dr. Mónica Tapias is a leading hepatology specialist with over 25 years of experience in the care and treatment of liver diseases. Recognized for her dedication and commitment to her patients' health, Dr. Tapias has led numerous successful cases in the early detection and management of complex liver disorders and contributes to research and clinical guidelines on all types of liver disease in Colombia and Latin America.

1. What is the biggest challenge of liver disease in Colombia?

Liver cirrhosis is one of the main causes of liver disease in Colombia. This problem has caused the loss of more than 600,000 years of healthy life, due to the disability it causes. In general, men lose more years of healthy life due to premature deaths, while women do so due to disability. The biggest challenge in Colombia is to strengthen prevention strategies, so that people are diagnosed and treated in time.

2. What does the Colombian population think about the liver and liver health?

Unfortunately, there is a lot of misinformation about liver care. Many people do not understand the importance of keeping it healthy. This not only means avoiding alcohol, but also following a balanced diet, since most cases of liver disease are caused by metabolic problems, such as obesity. In the early stages, liver diseases may not present symptoms, but if not treated in time, they can be fatal in up to 80% of cases. This leads to many patients needing frequent hospitalizations and treatments such as liver transplants, placing a huge burden on both patients and the health system.

3. What has been a great success in Colombia's effort against liver disease?

One of the main causes of liver disease is infection with the hepatitis B virus, which can be prevented with a vaccine. Although the government has promoted the importance of vaccination, data shows that by 2022, less than 80% of newborns received the hepatitis B vaccine, and only 87% of children under one year of age completed their vaccination schedule.

On the other hand, hepatitis C, another important cause of liver disease, does not yet have a vaccine, but there are treatments that cure more than 95% of cases. The government in Colombia ensures the purchase and distribution of these medications to ensure that patients have access to treatment, which already has an impact on the causes of liver transplants, with hepatitis C not being one of the main causes of this.

There are increasingly more campaigns and education from basic education for children and adolescents to promote healthy habits such as physical activity and healthy eating.

4. What else should the Colombian government do for liver health?

Although progress has been made in public health with vaccination campaigns, healthy lifestyle habits and control of alcohol consumption, the burden of liver diseases in Colombia remains high. This shows the need to strengthen prevention, diagnosis and treatment strategies. If measures are not taken, economic and social costs, such as expenses on medicines and treatments, can become unsustainable. It is also essential to strengthen organ donation policies, as many patients die while waiting for a transplant.

The biggest challenge in Colombia is to strengthen prevention strategies, **so that people are diagnosed and treated in time.**



© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

MEXICO



Population: 131,873,500 (2022)

GDP per Capita: $13,926 USD

Life Expectancy: 71.5 years (men) and 78.2 years (women) (2021)

Healthcare Spending: 6.2% GDP

Healthcare Funding: A complex mix of several employment-based social insurance schemes managed by national institutions, an insurance funded private sector, pay at point of care and a public assistance scheme for the uninsured operated by both state and federal authorities and supported by a financial protection scheme. A 2020 WHO review found that 14% of the population lacked financial healthcare protection, and the other insured sectors are wildly varying in the amount and type of health cover they provide.

Sources: World Bank, WHO

$9,926.40
GDP per capita

6.2%
of the GDP is spent on Healthcare

71.7 years (men)
and **77.1 years (women)**
Life Expectancy

Liver disease poses a substantial burden for the people of Mexico. In 2019, cirrhosis of the liver was reported to be the fourth most common cause of death in Mexico, behind diabetes, CVD, and chronic kidney disease,[1] with more than 30 people per 100,000 living with the condition.[2]

Between 2012 and 2017, the most frequent causes of **liver cirrhosis** included

36.2% HCV
31.2% ALD
23.2% NASH[3]

The **least frequent** were

1.1% HBV
7.3% Autoimmune Disorders
1.0% Other Conditions[3]

It is impossible to discuss liver health in Mexico without discussing the country's obesity epidemic – Mexico currently has the highest rate of obesity in OECD.[4] Over the past two decades, adult obesity, morbid obesity, and even childhood obesity are all rising quickly.[4,5] In 2018-2019, 36.1% of the population were deemed to be obese, while only 23.5% of the population were of a healthy weight.[5]

In response, the Mexican government has implemented a series of measures to try to improve the eating habits of the population, including taxes on sugary drinks and non-nutritional high calorie foods, clear nutritional labeling on products and beverages as well as banning the use of cartoon characters on children's foods.

However, despite this emerging catastrophe, there is still no national register for metabolic dysfunction-associated steatotic liver disease (MASLD) or MASH. Based upon the current numbers of people with diabetes, an estimated 14.4 million people in Mexico have MAFLD, of whom approximately 4.3 million suffer from its more severe form, metabolic dysfunction-associated steatohepatitis (MASH).

2 MILLION
Mexicans will be living with chronic liver disease **by 2050.**



Studies into liver disease trends predict the outcome of this public health crisis. If present trends continue, two million Mexicans will be living with chronic liver disease by 2050 (see breakout).[6]

In 2016, Mexico joined the WHO global campaign for the elimination of viral hepatitis. Detection campaigns have been implemented in the open population and in at-risk groups that include sex workers, people who inject drugs, immigrants, and prisoners. The 'Specific Action Program' was launched within the WHO global framework with the aim of detecting 90% of all HBV and HCV cases.

Additionally, there have been concerted efforts by the Mexican government to reduce the burden of disease and mortality from HCV and associated diseases, including liver disease. In addition to patient education campaigns, the latest treatment regimens, rescue medications (in case of failure of the first treatment regimen), and tests to corroborate HCV elimination are all used regularly in Mexican hospitals today.

As noted in 2020 by the Epidemiological Surveillance Program, these efforts have paid off with a sharp downward trend – 57% reduction in total cases of HCV. Still, prevalence remains at about 1.5% of the general population.

Around three million adults are estimated to have acquired HBV, though 90% of these cases are inactive.[83] However, geography plays a role in these patterns: Higher rates of HBV infection are found in areas of dense populations and in regions with frequent itinerant populations.[7]

Average alcohol consumption in Mexico is around 5.05 liters per year, lower than that of many neighboring countries.[8] However, the rate of alcoholism is estimated to be around 3.4% of the population. Alcohol-associated liver disease currently accounts for around 30% of all liver cirrhosis in the country.[3] According to estimates, ALD will account for nearly a million cases of liver disease by 2050.[8]

© 2026 by Global Liver Institute. All rights reserved

LIVER HEALTH OVERVIEW

Mortality from liver tumors in Mexicans over the age of 60 is now the third most common cause of cancer deaths in the country for men and the second for women**.** In recent years, the mortality for HCC per 100,00 people in the country has more than doubled.[9]

To deal with liver disease, most patients must receive care from the specific network of doctors, clinics, hospitals, and pharmacies in their scheme. Within the state sector, non-complex CLD, early stage hepatitis or MAFLD is managed in primary care or clinic settings. Larger hospitals in bigger cities manage complex liver care through a system of referrals.

The private healthcare sector is well-resourced and sought after, and liver scans and complex treatments are carried out in private hospitals.

Though there is infrastructure to support liver transplants in the country, rates were affected by the COVID-19 pandemic. According to the Mexican National Transplant Registry, a total of 72 liver transplants were performed in 2020, which is only a third of those performed in 2019.[10] Of the 23 currently active liver centers, only seven performed 10 or more liver transplants each year. 22 centers were based in or around Mexico City, raising the question of geographic inequality.[10]

MEXICO AND THE COST OF OBESITY

The economic, social and physical costs that obesity represents for the people of Mexico was spelled out by the OECD Secretary General Angel Gurría, speaking at the 2020 Mexico City launch of the OECD study, *"The Heavy Burden of Obesity: The Economics of Prevention."* Mr. Gurria noted:

'According to our projections, overweight-related diseases will reduce life expectancy in Mexico by more than four years over the next 30 years … Our analysis estimates that overweight and related diseases will:

- **Reduce Mexico's labor force by the equivalent of 2.4 million full-time workers per year**, as people with overweight and related conditions are less likely to be employed and, if employed, tend to be less productive;
- Account for around **8.9% of health expenditure per year between** 2020 and 2050;
- **Curb Mexico's GDP by an estimated 5.3%,** well above the OECD average of 3.3%, a figure that is already too high.

In fact, Mexico is the OECD country where overweight, obesity and related diseases will have the greatest impact on GDP between 2020 and 2050.'



OBESITY RATES SET TO OVERWHELM OUR HEALTHCARE SYSTEM

Dr. Alma Laura Ladrón de Guevara is a gastroenterologist at Hospital Angeles in Mexico City. She has a special interest in metabolic disorders and obesity.

Obesity is becoming a killer in Mexico. We saw that in COVID – although we lost elderly and vulnerable people - most of the younger victims were obese.

The causes are fairly obvious. In a few decades, we have gone from being a country that ate mainly vegetarian foods and only rich foods occasionally to one where over 40% of our diet is processed food which are full of carbohydrates, sugars and fat. Add to that a genetic preposition to metabolic disorders in some of our ethnic populations and a cultural love affair with eating and you have a recipe for disaster. As well as terrifying rates of obesity, we also have entire families who have T2D. We spend more on diabetes medication than any other country in the world.

> **Obesity is becoming a killer in Mexico.**
>
> DR. ALMA LAURA LADRÓN DE GUEVARA

Even doctors and nurses are obese, which adds to the problem. If our clinicians are overweight, how can they tell their patients to lose weight? The government is talking about tackling obesity, but we do not see any effective plans.

In the past we have run successful health campaigns for breast cancer and diabetes. As a country we made a concerted effort to get on top of hepatitis, and over the last 20 years we have seen huge improvements in the reduction of hepatitis infections. However, it feels as if the government is not prioritizing health at the moment, much less liver health. We do not even have the resources to screen patients living with diabetes for NASH, even though we know it is present in around 50%-60% of these patients.

We need to make people understand the link between obesity and liver disease, and we can do that through a concerted effort to educate people from a very young age. If not, we will face a rising death rate and a health system overwhelmed by far too many people dying early of liver disease.



OVERVIEW

PERU



Population: 33,845,617 (2023)

GDP per Capita: $7,906.60 USD

Life Expectancy: 69 years (men) and 75 years (women)

Healthcare Spending: 6.09% of GDP

Healthcare Funding: Peru's healthcare system consists of a network that combines public and private providers, with a national emphasis on achieving universal health coverage. The system comprises four key entities: the Ministry of Health (MINSA), EsSalud, the health services for the armed forces, and the National Police. Central to Peru's efforts is the *Seguro Integral de Salud* (SIS), a government-run insurance program aimed at providing healthcare access to economically disadvantaged populations.

Between 2004 and 2023, Peru has increased the coverage of health insurance from 37% to 88% of the overall population. The passage of the Universal Health Insurance Law of 2009 has contributed to the shift towards increasing accessibility of healthcare throughout the country. Despite these significant strides, Peru still faces persistent challenges. Disparities in healthcare access and quality persist between urban and rural areas, and many primary care facilities struggle with inadequate staffing and outdated equipment. Additionally, fragmentation across healthcare networks hinders coordination. Nonetheless, Peru's progress in expanding its healthcare infrastructure and improving access reflects the government's commitment to strengthening the healthcare system and achieving equitable health outcomes for all citizens.

Sources: World Bank, World Health Organization

$7,906
GDP per capita

6.09%
of the GDP is spent on Healthcare

69 years (men) & 75 years (women)
Life Expectancy



Liver disease poses a significant public health burden in Peru, accounting for 6,375 deaths in 2020, 5.2% of all deaths in the population.[1] Major contributing factors include high alcohol consumption and the rising prevalence of metabolic-associated steatotic liver disease (MASLD), which reflects broader health trends across Latin America.[2] Across the region, the burden of liver disease is attributed to excessive alcohol consumption, the increasing prevalence of risk factors for MASLD (sedentary lifestyles, easy access to ultra-processed foods, obesity, and type 2 diabetes mellitus) and cirrhosis (which is especially concentrated along the coastal regions). [2, 3]

Peru was observed to have the lowest prevalence of MASLD among South American nations.[4] Risk factors like a sedentary lifestyle, unhealthy diets, obesity, and type 2 diabetes mellitus drive the prevalence of MASLD across Latin America. In 2022, 58% of Peru's population was observed to be overweight or obese, an overall increase from 55% in 2010, putting a majority of the Peruvian population at risk for developing MASLD and other metabolic-associated diseases.[5]

In 2022,

58%



of Peru's population was observed to be **overweight or obese**

Additionally, women were observed to have a higher prevalence of obesity compared to men in this region.[5] A 2016 study also found that living at lower altitudes was associated with a higher prevalence of obesity in Peruvian individuals.[6] Type 2 diabetes, another major risk factor for MASLD, affects more than 7% of the Peruvian population, making it the eighth leading cause of death in the country.[7] Studies estimate that over half of the individuals living with diabetes in the country have not been formally diagnosed with the condition, making early screening and treatment initiatives imperative for protecting the public health of the population.[8] Peru's national strategy for tackling diabetes includes promoting healthy lifestyles, training primary care physicians, and developing a comprehensive healthcare network for early referral and treatment of complications.[7] Organizations like Partners in Health have partnered with the Ministry of Health in Peru to mobilize local communities and improve access to screening and treatment resources.[9]

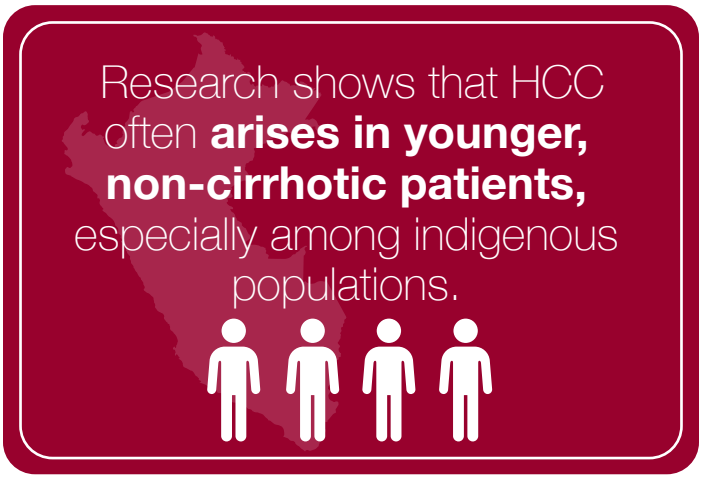
Due to a high prevalence of alcohol-use disorder, alcohol-associated liver disease is also a pressing public health concern for the Peruvian population. A 2019 study found that over 5% of Peruvian adults have experienced alcohol abuse, with more men being affected than women.[10] Alcohol-associated liver disease (ALD) is a leading cause of chronic liver disease in Peru, contributing to a significant portion of cirrhosis in adults. The prevalence of hazardous drinking and alcohol-related problems is higher in lower socioeconomic groups,.[11] Effective management of ALD requires addressing both the liver disease itself and the underlying alcohol-use disorder through a multidisciplinary approach.

© 2026 by Global Liver Institute. All rights reserved

Viral hepatitis remains a public health concern in Peru, particularly hepatitis B (HBV), which is endemic in the Amazon and highland regions. About 20% of the indigenous population in the Amazon is infected with HBV. In comparison, the coastal regions of Peru have an estimated HBV prevalence of 1-3.5%. Although Peru is considered a country with intermediate HBV prevalence, significant strides have been made through a comprehensive vaccination program introduced to endemic areas in 1991 and 1994, which includes immunization for newborns and expanded coverage.[12] Existing universal screening guidelines also require the screening of pregnant women to prioritize the prevention of mother-to-child transmission. Peru's ongoing regional elimination plan for HBV is focused on prevention, diagnosis, and treatment, through universal vaccination of newborns and targeted interventions for populations that are at high risk of developing HBV. Continued progress relies on improving access to healthcare in rural and remote areas and promoting public awareness to reduce transmission through unsafe lifestyle practices. Additionally, there is a particularly high prevalence of HBV/HDV comorbidity, which may be a result of the endemicity of hepatitis D in the region.

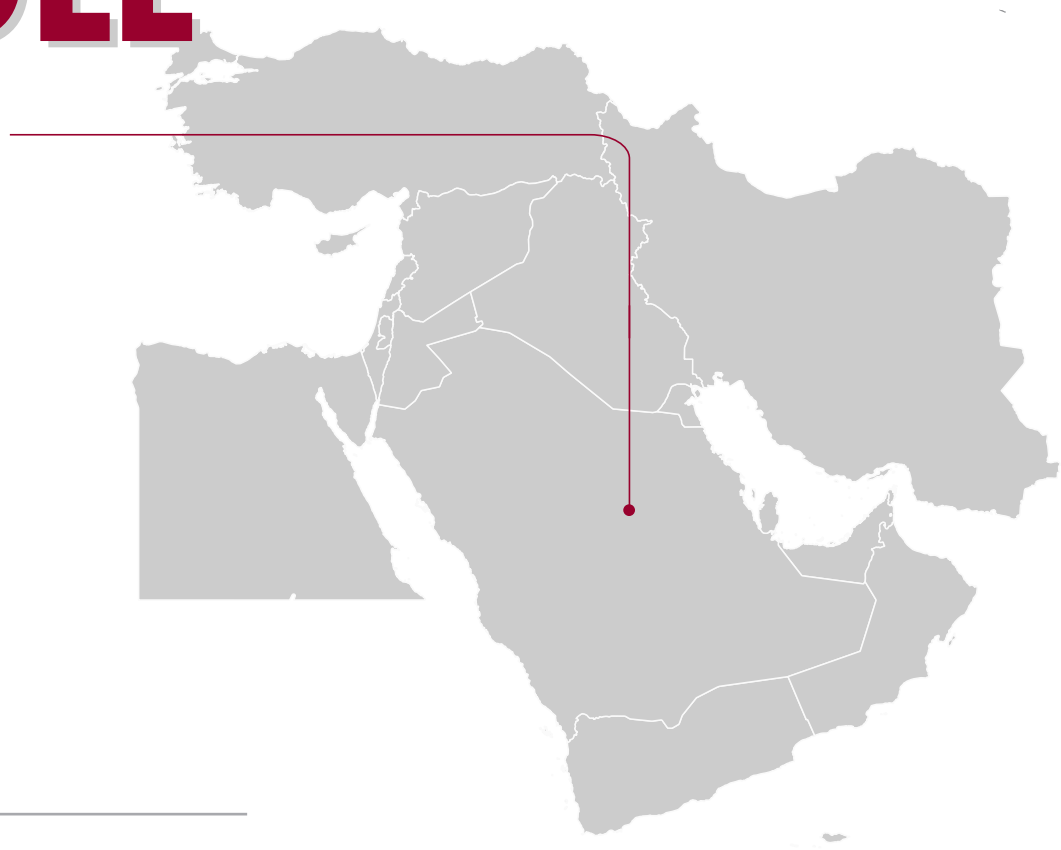
In 2020, liver cancer accounted for 2.02% of all deaths in Peru. Specifically, hepatocellular carcinoma (HCC) exhibits an unusual prevalence pattern compared to other regions. In Peru, research shows that HCC often arises in younger, non-cirrhotic patients, especially among indigenous populations.[13] A 2018 study concluded that this may be a result of genetic differences among individuals with indigenous ancestry, resulting in a different mechanism of tumor formation compared to the rest of the world.[13]

Liver transplantation in Peru faces challenges, including a low donation rate, inequitable access to care, and cultural barriers.[14] Consistent with the rest of Latin America, Peru struggled with establishing a robust organ transplantation system due to low organ donation rates.[14] Additionally, providers in many regions lack the training and education necessary to perform organ transplantation.[15] When compounded with the lack of access to healthcare in certain regions of the country, this makes it particularly difficult for patients to utilize transplant programs and post-transplant care. As of 2023, Peru has three active liver transplant centers, two in Lima. Despite the existence of these centers, a fragmented healthcare system limits access for much of the population, especially those insured under the *Seguro Integral de Salud* (the public health insurance that provides basic healthcare coverage for low-income citizens).[14]



© 2026 by Global Liver Institute. All rights reserved

MIDDLE EAST



HEALTH OVERVIEW

Home to more than 400 million people, the Middle East is a transcontinental area that covers countries across western Asia such as Iran, Saudi Arabia and Türkiye, all the way through to North Africa, including Egypt and Libya.

Throughout this geopolitical region, there is a wide range of economies. Qatar and Israel are global economic leaders, while others, for example Iraq and Syria, are plagued by war and poverty. There are also a range of cultural and historical factors which engenders many different healthcare systems – and often uneven levels of health – in the region.

As expected, those countries with a stable and successful economy have well-funded healthcare centers, accessible to the majority of the population and even sometimes sought after by patients across the globe. This includes Qatar, which has an exclusively public healthcare system and is ranked 13th in terms of the best healthcare systems globally.

In contrast, Iraq's healthcare system has undergone a 90% funding cut due to war and the resulting economical and political instability; many healthcare professionals have left the country for a more stable home. This predicament is mirrored in other Middle Eastern countries such as Syria, where the healthcare system has been decimated by conflict.

Increasing rates of non-communicable diseases, such as heart disease, obesity and diabetes can be seen across the Middle East. As in other regions, this can be attributed to the recent and rapid adoption of Western diets and lifestyle patterns, placing a significant burden on the various healthcare systems.

Sources: Legatum Institute – Cloud Hospital, Prosperity Index, The World Bank

The Middle East has the **highest prevalence of NASH**

32%

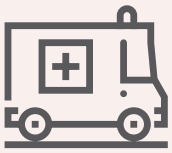
when compared to worldwide figures.

© 2026 by Global Liver Institute. All rights reserved

As diarrheal and infectious diseases have decreased in prevalence over the last few decades across the Middle East, they have been replaced by gastrointestinal cancers and cirrhosis. Indeed, liver disease is now amongst the top four killers across all countries in this region, with Egypt having by far the highest mortality rates, followed by Yemen and Morocco.[1] Chronic liver disease is responsible for two thirds of hospital admissions in Iraq, most commonly hepatitis B, alcohol, hepatitis C, immune hepatitis and metabolic disorders.[1]

In parallel with the increase in obesity and diabetes, metabolic dysfunction-associated fatty liver disease (MAFLD) rates are also on the rise in the Middle East. A global analysis has found that the region has the highest prevalence for this condition (32%) when compared to worldwide figures, and approximately 20%-30% of these cases progress to MASH.[2] This is expected to continue to rise, with one study reporting that by 2030 there will be an increase of 48% and 46% in MAFLD cases for Saudi Arabia and the United Arab Emirates, respectively.[2] This pattern can largely be attributed to lifestyle changes: changes in dietary patterns, such as the adoption of more Western-based diets, as well as widespread physical inactivity. These factors must be addressed by policymakers to combat the growing burden of MAFLD.

Viral hepatitis has a wide range of prevalence across the Middle East, with hepatitis B ranging from 0.6% (Iraq) to more than 8% (Sudan).[3] For hepatitis C infection, Egypt has had the highest prevalence of HCV in the world (18%) until very recent successful efforts, whereas in Lebanon, Saudi Arabia, and Iran, prevalence is less than 1%.[3] The occurrence of extremely high rates of viral hepatitis infection indicates an urgent need for government and policymaker intervention. However, the broad disparity across the region, as well as in associated risk factors, calls for tailored solutions.



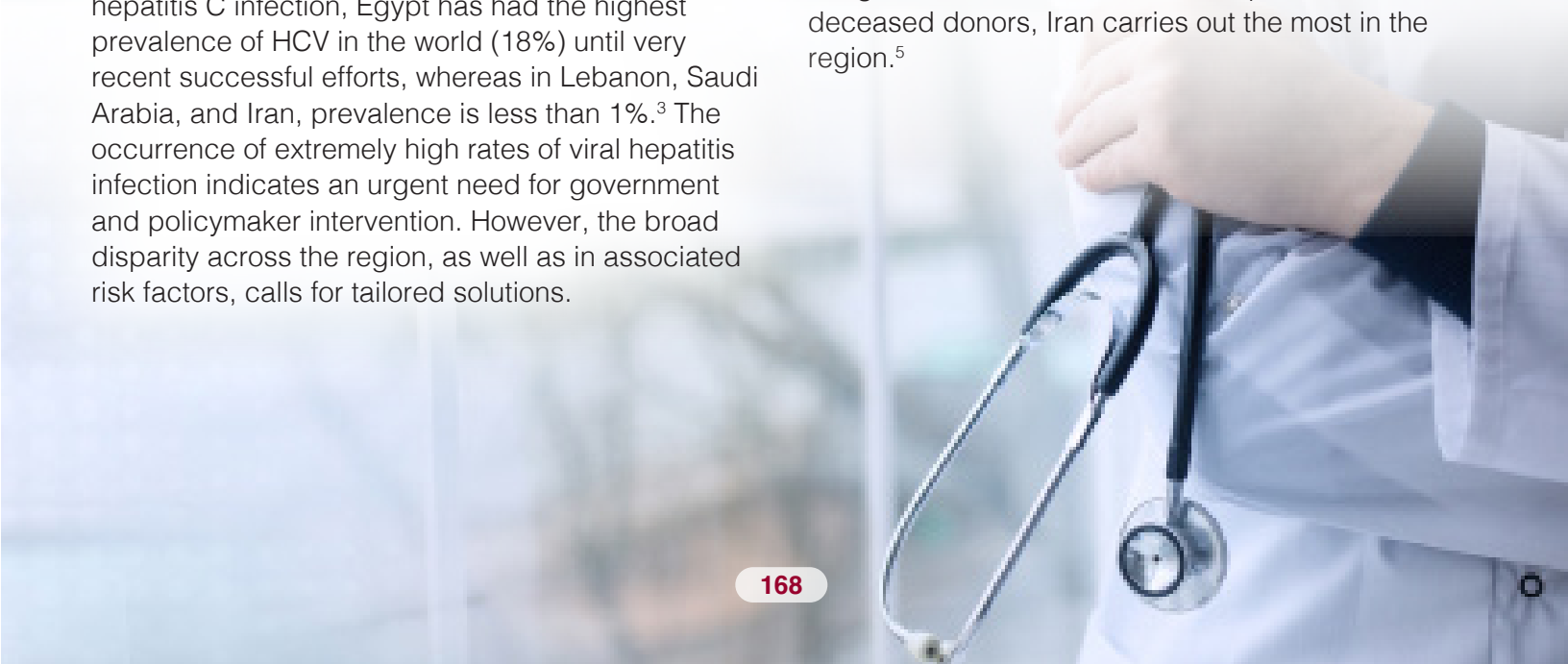
CHRONIC LIVER DISEASE

is responsible for **two thirds of hospital admissions in Iraq.**

Liver cancer is one of the top four causes of death in the Middle East, with hepatitis B and C infection being the main causes of hepatocellular carcinoma.[1]

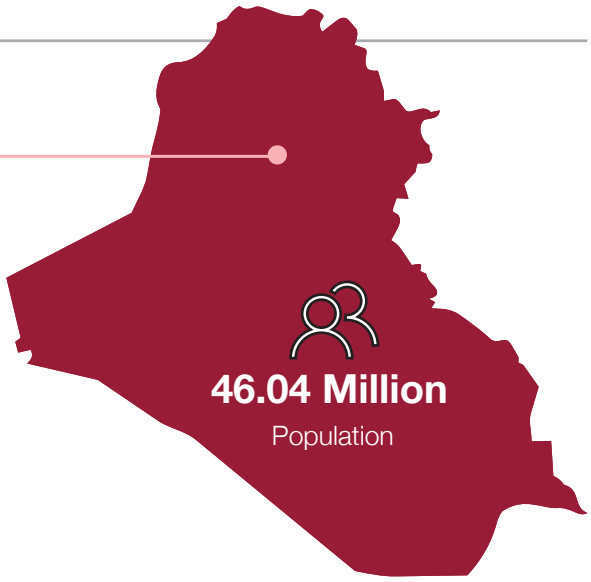
Although the occurrence of hepatocellular carcinoma is lower than in East Asia, it is expected that it will increase in parallel with the rising incidence of MAFLD and HCV.[4]

More than other regions, religion also plays a critical role in liver health in the Middle East, given that Islam is the dominant religion and Islamic policymakers have complex views on organ transplantation from dead donors. However, in 1986, the Amman declaration was passed, which allowed for the recognition of brain death in Muslim countries.[5] This opened a door for organ transplantation in the region and kick-started programs in several countries in the early 1990s. Türkiye carries out the most liver transplants in the region by far – mostly from living donors. In terms of liver transplantation from deceased donors, Iran carries out the most in the region.[5]



OVERVIEW

IRAQ



Population: 46.04 million (2024)

GDP per capita: $6,073.6 USD (2024)

Life Expectancy: 71 years (men) & 74 years (women) (2024)

Healthcare Spending: 5.53% of GDP (2024)

Healthcare Funding: Iraq's healthcare system is predominantly government-funded, with the Ministry of Health overseeing the allocation of public resources across federal, provincial, and district levels. The system relies on a centralised model financed primarily through oil revenues, which account for most of the state's income and make health expenditure particularly vulnerable to fluctuations in global energy markets. International organizations, including the World Health Organization, UNICEF, USAID, and other United Nations agencies, play a critical complementary role in supporting health service delivery, particularly in areas affected by conflict and displacement.

Despite substantial oil wealth, structural inefficiencies and decades of political instability have severely constrained the health sector. During the 1970s, Iraq's healthcare system was considered one of the strongest in the Middle East; however, sustained reductions in public investment following successive conflicts led to a marked deterioration in service availability and quality.

Out-of-pocket expenditure remains a significant burden for Iraqi households, given that most of the population has historically lacked formal health insurance coverage. In recent years, however, the government has taken steps to expand financial protection: the Ministry of Health launched a national health insurance program, initially piloted in Baghdad, and announced in late 2025 a major expansion of the scheme to nine additional provinces, with full integration planned by 2026. This expansion represents the most significant extension of formal health coverage since the program's inception and signals a meaningful shift towards Universal Health Coverage, though substantial implementation challenges remain.

$6,073.60
GDP per capita (USD)

5.53%
of the GDP is spent on Healthcare

71 (men) & 74 (women)
Life Expectancy

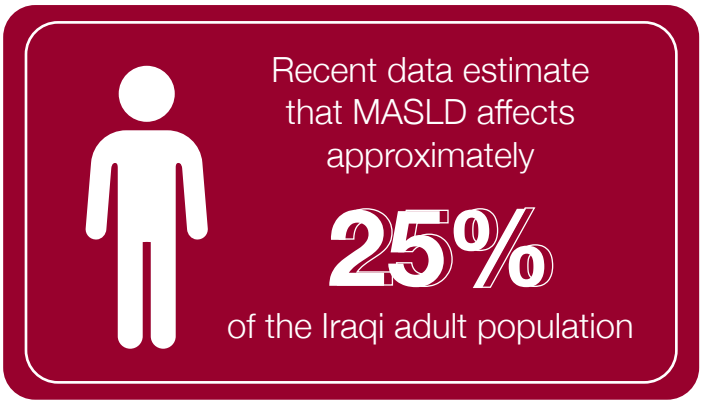
Sources: *Data.WorldBank, World Bank Group, World Health Organization, UNICEF, Iraqi Research Foundation for Analysis and Development (IRFAD), P4H Network*



Liver cancer has more than quadrupled between 2000 and 2016.

Liver disease represents a significant and growing public health burden in Iraq, shaped by a combination of viral, metabolic, and behavioural risk factors. Hepatitis B and C infections, MASLD, and alcohol-associated liver disease are among the principal drivers of cirrhosis and hepatocellular carcinoma across the country [2,11,16], with liver cancer incidence having more than quadrupled between 2000 and 2016.[11] The consequences extend beyond physical health: a multicentre study of Iraqi patients with liver disease found strong negative correlations between disease severity and quality of life across physical, mental, and emotional domains, with anxiety and depression scores escalating markedly in advanced stages.[1] These findings reflect the broader challenge Iraq faces in managing liver disease within a healthcare system characterised by underinvestment, workforce shortages, and uneven access to specialist care, particularly outside Baghdad and the Kurdistan Region.[13]

Iraq has made measurable progress in controlling hepatitis B virus (HBV) infection over recent decades. A national community-based cross-sectional survey conducted across all 18 governorates in 2005–2006 found an HBsAg (hepatitis B surface antigen, a blood marker used to detect active infection) prevalence of 1.6%, down from approximately 3% recorded in the preceding decades and placing Iraq in the low-endemicity category.[2] A subsequent ten-year analysis of national surveillance data from 2012 to 2022 confirmed a significant and sustained decline in overall HBV incidence, from 9.7 per 100,000 population in 2012 to 3.5 per 100,000 in 2022.[3] This downward trend is largely attributed to the national immunisation programme: Iraq introduced the HBV vaccine as part of its Expanded Program on Immunization in 1993, and the Kurdistan Region formally incorporated it into the routine childhood vaccination schedule in 2001.[2,4] Despite these gains, important gaps remain. Incidence in individuals aged over 45 years increased until 2015 and then stabilised rather than declining, suggesting that adults who were not reached by childhood vaccination programmes remain a vulnerable group.[3] Regional variation is also considerable: studies from the Kurdistan Region of Iraq have reported HBV prevalence of approximately 1% in the north, while rates in southern governorates such as An-Najaf and Babil have exceeded 3%.[2,4] Among couples attending premarital screening in Zakho (Kurdistan Region) between 2019 and 2023, HBV prevalence was 0.92%, with males, individuals aged 23–31 years, and urban residents exhibiting significantly higher infection rates.[4]



Hepatitis C virus (HCV) has historically been of low endemicity in Iraq. The 2005–2006 national survey recorded an anti-HCV prevalence of only 0.4% in the general population, with slightly higher rates in older age groups and in males, though neither association reached statistical significance.[2] An earlier hospital-based study conducted at Al-Karama Hospital in Baghdad between 2001 and 2002 found a substantially higher anti-HCV prevalence of 8.37% among a clinical sample.[5] In that

study, the highest rates of HCV infection were detected among healthcare workers, underscoring the role of nosocomial transmission.[5] In more recent community-level data, HCV prevalence appears to have remained low: among couples attending premarital screening in Zakho between 2019 and 2023, HCV was detected in only 0.07% of participants, a rate lower than the 0.2% reported among blood donors in the same region.[4]

MASLD is an emerging public health concern in Iraq, driven by rapid urbanisation, sedentary lifestyles, and a dietary shift towards refined carbohydrates and high-fat foods.[6] Recent data estimate that MASLD affects approximately 25% of the Iraqi adult population, with a higher burden in urban areas, and identify obesity and type 2 diabetes mellitus as its two strongest risk factors.[6,7] Among Iraqi MASLD patients, central obesity is closely associated with elevated liver enzymes, insulin resistance, and more advanced hepatic steatosis and fibrosis, with physical inactivity and an unhealthy diet emerging as the leading modifiable predictors of disease severity.[8] Given the strong association between MASLD and modifiable risk factors such as obesity, T2DM, and physical inactivity, lifestyle modification encompassing dietary changes, increased physical activity, and weight management represents a key first-line approach to reducing the disease burden in Iraq.[6,7] MASLD burden is further compounded by its co-occurrence with inflammatory conditions: a case-control study from Basrah found that MASLD was significantly more prevalent in psoriasis patients than in matched controls, with metabolic syndrome identified as the strongest independent predictor of disease.[9]

Hepatocellular carcinoma (HCC) poses a significant and growing challenge in Iraq, where the incidence of liver cancer has risen substantially over recent decades. National cancer registry data show that liver cancer incidence increased from 0.40 per 100,000 population in 2000 to 1.91 per 100,000 by 2016, with both genders equally affected and a marked acceleration in the rate observed after 2008.[10] This upward trend parallels the growing burden of MASLD and metabolic risk factors in the country. A recent analysis of HCC burden across Arab countries placed Iraq among the nations with the highest absolute number of cases in the region, with an estimated 1,091 new cases annually.[11] Despite this burden, access to oncological care remains highly uneven across Iraq. The number of oncologists is markedly insufficient relative to international recommendations, particularly outside Baghdad and the Kurdistan Region.[12] As a consequence, most HCC cases are diagnosed at an advanced stage, when curative options such as surgical resection or ablation are no longer feasible, and treatment is largely limited to palliative approaches.

A recent analysis of HCC burden across Arab countries **placed Iraq among the nations with the highest absolute number of cases in the region**, with an estimated

1,091 NEW CASES ANNUALLY

Liver transplantation has historically been largely unavailable within Iraq, with most patients in need of the procedure having to travel abroad at considerable personal expense, often with partial financial support from the Ministry of Health.[13] The unmet need is particularly acute in the paediatric population: a study of children with end-stage liver disease and acute liver failure found a high proportion requiring transplantation, yet access within the country remained critically limited by the absence of a national transplant programme and insufficient diagnostic resources.[13] Recent developments signal progress: in

2023, Faruk Medical City in Sulaymaniyah announced a formal partnership with Aster Healthcare to introduce liver transplant surgery in the Kurdistan Region, and in 2025, Iraq's Ministry of Health confirmed the successful completion of the country's first liver transplant performed entirely within the national health system.[14]

Alcohol-associated liver disease (ALD) is an important and often underrated contributor to liver morbidity in Iraq. A cross-sectional study of 1,000 patients with liver cirrhosis admitted to Baghdad Teaching Hospital found that ALD was the leading single cause of cirrhosis, accounting for 20% of cases, tied with HCV infection and ahead of HBV (18%), MASLD (14%), and cryptogenic cirrhosis (14%).[15] These findings highlight that, despite cultural and religious norms discouraging alcohol use, alcoholism represents a clinically significant burden in Iraqi hospitals and warrants systematic screening and early intervention. Illicit drug use, and in particular methamphetamine (METH), represents a further and growing threat to liver health. A case-control study conducted at Ibn-Rushed Psychiatric Hospital in Baghdad found that METH-addicted Iraqi males showed significantly elevated liver enzymes, reduced albumin levels, and histopathological evidence of hepatocyte damage and intrahepatic cholestasis compared to healthy controls.[16] Together, these data indicate that alcohol and drug-related liver disease constitute a meaningful and underreported share of the liver disease burden in Iraq, and that greater investment in awareness, screening, and addiction services is needed.



OVERVIEW

JORDAN

Population: 11.4 million (2023)

GDP per Capita: $4,455.50 USD

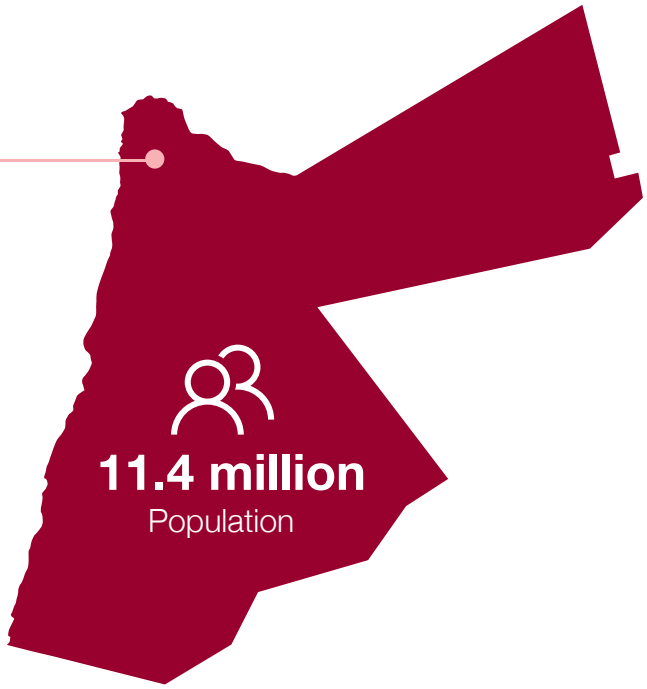
Life Expectancy: 77 years (men) and 78.8 years (women)

Healthcare Spending: 6.37% GDP

Healthcare Funding: Jordan's national health insurance program covers 64.3% of the total population, with pharmaceutical expenses comprising 26.6% of the national healthcare budget. The United Nations Relief and Works Agency for Palestine Refugees in the Near East and the United Nations High Commissioner for Refugees serve the refugee population (7% of the total) in Jordan, providing them with access to quality healthcare. Additionally, about 12.5% of Jordan's total population opt for private insurance. In 2020, Jordan's healthcare expenditure was valued at $3.79 billion. Notably, Jordan's well-established medical tourism industry, along with projects to modernize healthcare facilities, has been a significant contributor to the country's healthcare spending.

About 51% of healthcare visits in Jordan result in no out-of-pocket expenses for the patient. However, uninsured individuals face a disproportionate amount of out-of-pocket costs compared to insured individuals. According to a 2018 analysis of Jordan's healthcare expenditure, 80% of uninsured healthcare visits result in out-of-pocket expenses, while only 34% of insured visits result in out-of-pocket expenses.

Sources: World Health Organization, BMC Health Services Research, World Bank, U.S. International Trade Administration, USAID DHS Program, International Labor Organization



$4,455
GDP per capita

6.37%
of the GDP is spent on Healthcare

77 (men)
and **78.8 (women)**
Life Expectancy



Liver disease poses a notable concern for population health in Jordan. Metabolic-associated liver disease (MASLD) and hepatitis B are two major contributors to the prevalence of liver disease in the country, driven by rising rates of obesity and diabetes, as well as excessive alcohol use. To address these challenges, Jordan has made massive strides in liver disease prevention and awareness through robust vaccination campaigns for hepatitis B and widespread public health education programs. Additionally, regular monitoring of liver disease across the country has promoted targeted interventions and more effective liver disease prevention programs.

Liver health in Jordan is characterized by a unique set of risk factors that are influenced by the nation's cultural and medical norms. With many potent drugs available over-the-counter without medical oversight, Jordanian patients are susceptible to overuse of medications that can cause acute liver damage or failure.[1]

Viral hepatitis remains a major public health issue in Jordan, and is characterized by low awareness of the disease among the general population and medium awareness among primary care providers.[2] Still, over the past three decades, Jordan has made massive improvements in screening and immunization practices against hepatitis B virus (HBV), driving down the prevalence of viral hepatitis across the nation. As of 2020, the national prevalence of hepatitis B was measured to be 2.4% of the overall population, which is just a third of the prevalence of HBV during the pre-vaccination era.[2]



Viral hepatitis remains a major public health issue in Jordan due to low awareness in the public and medium awareness among primary care providers.

In 1995, Jordan integrated the HBV vaccination into its childhood immunization program. Currently, the immunization rate of newborns is greater than 95%.[2] Furthermore, mandatory HBV screening for at-risk individuals, including medical personnel, medical students, blood donors, and dialysis patients, has increased rates of early screening and treatment for HBV across the country.[2] Jordan's Ministry of Health also recommends pre-marital screening and HBV testing in prison inmates and rehabilitation individuals.[2] While these screening interventions have helped the country make marked progress in driving down the prevalence of viral hepatitis, there are still notable gaps in viral hepatitis surveillance and prevention programs in Jordan. Notably, the lack of a nationally representative population-based prevalence study of HBV in Jordan, including in rural regions, would allow for a better understanding of HBV morbidity in the country.[2] Lack of knowledge about the level of awareness of HBV in high-risk populations is also hindering prevention and screening programs in Jordan.[2] Due to access to immunization and care facilities, older individuals and individuals living in rural Jordan remain at risk of developing HBV. Jordan's residents would benefit greatly from educational programs that are aimed towards the general population, including those living in rural areas, as well as more accessible screening resources, allowing at-risk individuals to get screened for HBV frequently.[2]

As of 2023, the prevalence of chronic infection with hepatitis C virus (HCV) was approximately 5% of the general population, making it significantly more common than HBV.[3] Males and older adults are predisposed to developing the disease. While more research is needed to better understand the underlying factors of the high prevalence of HCV in Jordan, a 2023 observational study shows that suggests that a sizeable portion of HCV is being transmitted as a result of healthcare exposure (e.g. blood transfusions, major surgeries, invasive dental procedures, etc.), *hijama* (a traditional cupping practice), and injection drug use.[3] Notably, mother-to-child transmission of HCV was found to be low in Jordan. Given the troubling incidence and prevalence of HCV in Jordan, screening and treatment practices for the disease must be expanded across the country.

© 2026 by Global Liver Institute. All rights reserved

Rising rates of diabetes and obesity, especially in women, caused by lifestyle factors like diet and exercise, also put Jordan residents at risk of liver disease.[4] A 2025 study shows that the rise in the prevalence of obesity is driven by a rapid shift in diet from undernutrition to overnutrition and an increase in the consumption of fat, sugar, and refined carbohydrates.[5] Diabetes and obesity are both closely linked to the development of MASLD. According to a 2024 study, MASLD was present in 4 out of 5 Jordanian patients with type 2 diabetes mellitus (T2DM), making early screening and prevention of T2DM a pressing liver health issue.[6] In addition to a lack of public knowledge about the risk of MASLD, the upward trend in obesity may be influenced by societal norms and responsibilities that hinder women from practicing a healthy lifestyle. In order to combat this, Jordan's health policies should use public campaigns to promote a social and cultural shift to embracing physical activity and healthy dietary trends, especially in at-risk populations. The implementation of standard screening protocols would also help prevent negative health outcomes as a result of MASLD.

Alcohol-associated liver disease (ALD) is a leading cause of severe liver disease around the world.[7] However, due to the largely Muslim population, public alcohol consumption is taboo. As a result, there is little literature describing the prevalence of ALD in Jordan. However, cultural norms and stigma result in an underreporting of alcohol use by patients on a global scale, and this pattern is likely exacerbated by the heightened stigma surrounding alcohol in Jordan.[8] In fact, a 2018 survey in Jordan found that 92.7% of participants considered alcohol consumption to be forbidden and reported such behavior would double their sins. These cultural nuances and societal stigma can make it particularly difficult for Jordanians living with ALD to seek treatment and share their condition with their friends and family.



Alcohol-associated liver disease (ALD) is a **leading cause of severe liver disease around the world.**

While Jordan has fairly strong data about disease states like MASLD and viral hepatitis, epidemiological data about rare and pediatric liver disease remains limited. Autoimmune hepatitis, neonatal cholestasis, and pediatric acute liver failure (PALF) are three rare disease states that affect children in Jordan. A lack of awareness, paired with the lack of resources needed for screening, make diagnosing and treating these rare pediatric liver diseases particularly difficult.

In Jordan, the prevalence of liver cancer, particularly hepatocellular carcinoma (HCC) is particularly low, with the second-lowest annual incidence of liver cancer among all Middle Eastern countries.[9] According to the 2018 Jordan Cancer Registry, liver cancer makes up only 1% of all newly diagnosed cancer cases in the country.[10] Robust immunization programs and antiviral therapies to prevent and treat viral hepatitis, a major risk factor for developing liver cancer, has contributed to the decreasing burden of liver cancer in Jordan.[3, 9] The King Hussein Cancer Center, the leading cancer center in Jordan, treats about 60% of all cancer cases in the country and provides cancer care free of cost to Jordanian citizens (Jordan's Ministry of Health bears the cost of cancer care).[11] Despite the efforts to reduce the financial burden of cancer care for citizens, accessibility of healthcare remains a challenge in rural areas.[12]

© 2026 by Global Liver Institute. All rights reserved

Jordan's policies surrounding liver transplantation make it difficult for patients to access care in a timely and equitable manner. While the country is advanced in its administration of organ transplants due to the establishment of a medical tourism infrastructure, Jordan's Ministry of Health only permits living donors who are first-degree relatives to the patient.[13,14] There has been limited deceased donor organ transplantation due to cultural stigma and a lack of awareness across the general population, but the Ministry has been working towards promoting deceased donor organ transplantation. In fact, a 2022 study found that while 72% of the Jordanian population had favorable attitudes towards organ donation, only 0.0025% were registered organ donors.[15] This may be a result of low levels of awareness about organ donation in the public or an underdeveloped organ transplantation program in the country.[15] The disparity between the number of people willing to be an organ donor and the number of registered donors indicates a need for improvements in the current organ donation and transplantation system.[15] Awareness campaigns about the organ donation registration process and the benefits of organ donation as a whole stand to improve the rates of organ donation in Jordan.[15]

In summation, liver disease remains a significant public health concern in Jordan. MASLD, viral hepatitis, and ALD disease currently pose notable risks to the population health of the country, and residents would benefit from educational campaigns promoting regular screening and early detection of liver disease. Despite the country's considerable strides in public health education, surveillance, and prevention programs, there are still gaps in awareness and accessibility for effective liver disease prevention and treatment. Addressing these challenges through continued policy development, public education, and increased healthcare infrastructure would be essential to improving liver health outcomes in Jordan.



Jordan's Ministry of Health only permits **living donors who are first-degree relatives to the patient.**

OVERVIEW

LEBANON

Population: 6.77 million (2021)

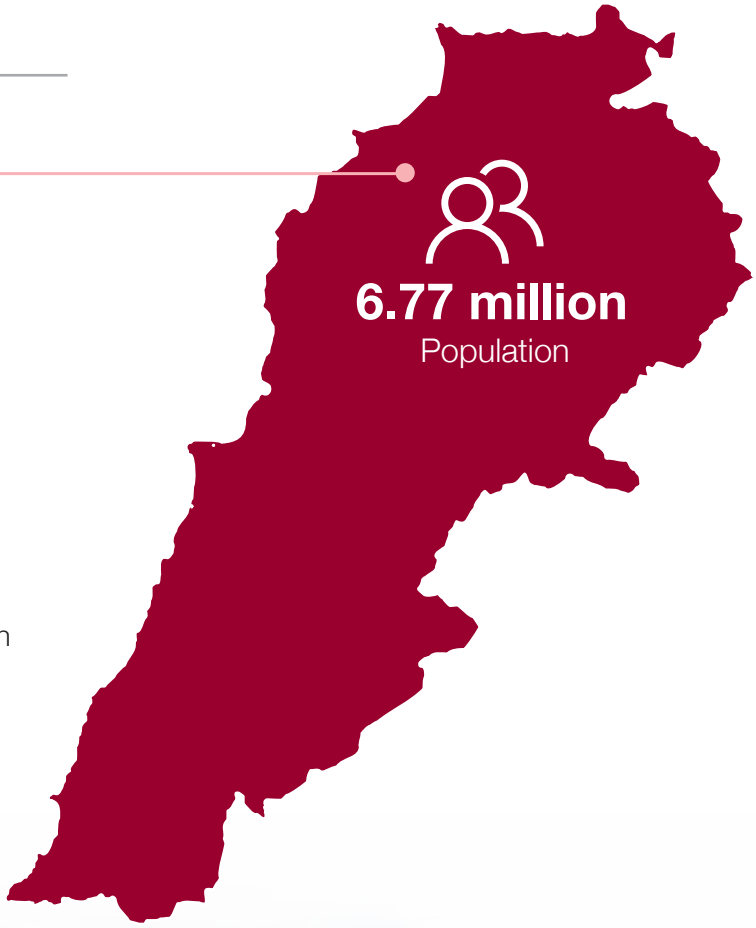
GDP per Capita: $3,350 USD

Life Expectancy: 72.2 years (men) and 76.6 years (women)

Healthcare Spending: 8.65% GDP (2019)

Healthcare Funding: The main source of funding is out-of-pocket payments from patients. Primary healthcare centers are mainly operated by non-governmental organizations through agreements with the Ministry of Public Health. However, secondary health care services, for example the majority of hospital beds (86%), are provided by the private sector. Lebanon's health sector has long been viewed as fragile, but over the last two years a combination of COVID-19, high levels of poverty, hyper-inflation and heightened security risks have inflicted major damage on Lebanese healthcare.

Sources: WorldData.Info, salaryexplorer, Data. WorldBank, LSE Middle East Center Blog



$3,350
GDP per capita

8.65%
of the GDP is spent on Healthcare

77.2 years (men) and 80.9 years (women
Life Expectancy

There is a limited amount of published data on the prevalence of liver disease in Lebanon. A study of patients who had undergone fibroscan in Beirut found that 58.3% had metabolic dysfunction-associated fatty liver disease (MAFLD).[1] Viral hepatitis infection was the second most common cause, with hepatitis B and C having a prevalence of 14.3% and 11.1% respectively.[1] Other causes included alcohol-associated liver disease (7.7%), drug-induced liver disease (3.3%) and autoimmune hepatitis (2.9%).[1] This provides a basis to begin to understand the leading causes of chronic liver disease in Lebanon, though its limitations in size and geography mean multi-center studies and epidemiologic surveillance efforts are necessary to further characterize liver disease in Lebanon.

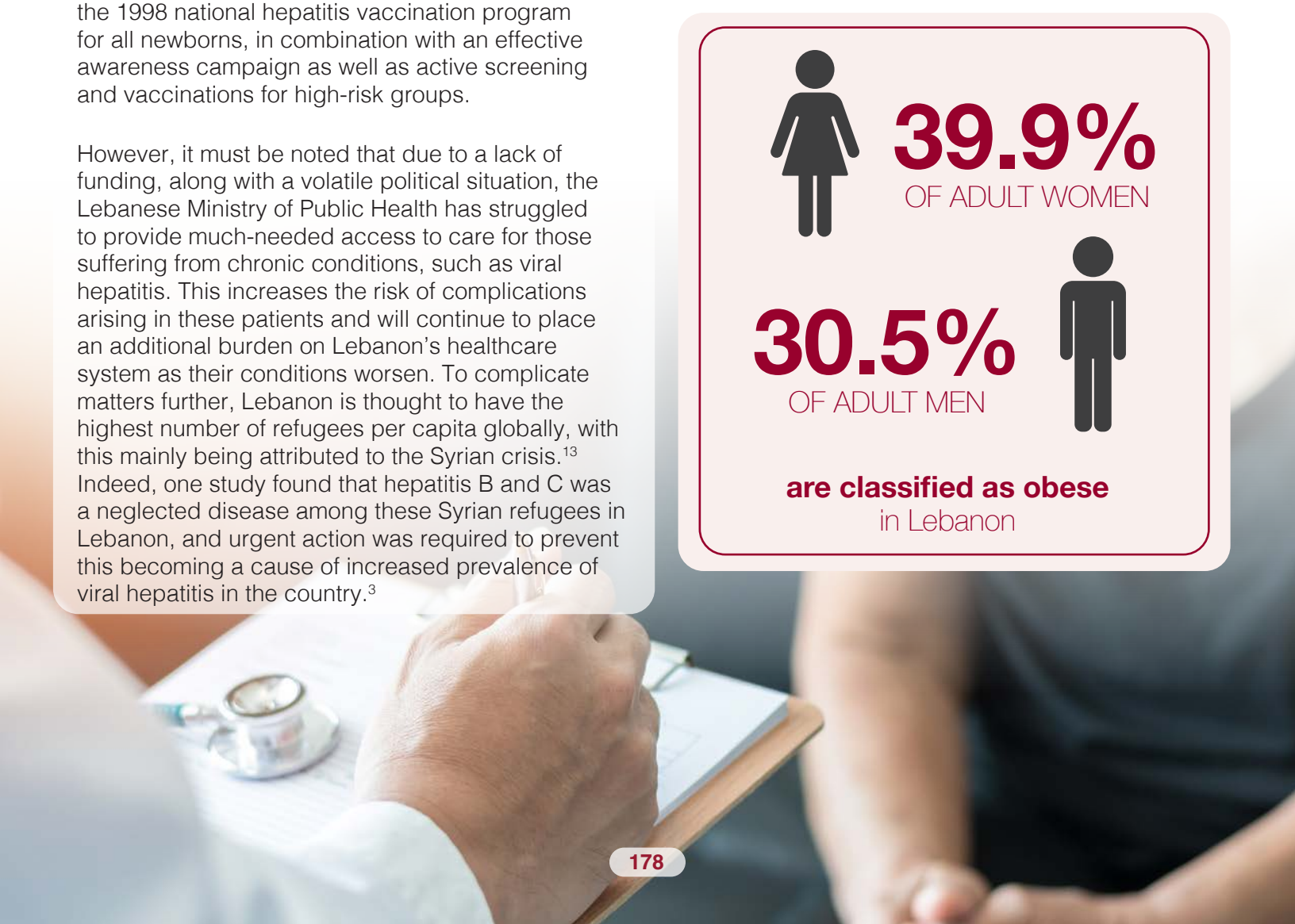
Lebanon is an area of moderate endemicity for both hepatitis B and C infection per several sources. Indeed, a 2016 study found that HBV and HCV prevalence of 1.74% and 0.21%, respectively.[2] This low prevalence can be attributed in part to the 1998 national hepatitis vaccination program for all newborns, in combination with an effective awareness campaign as well as active screening and vaccinations for high-risk groups.

However, it must be noted that due to a lack of funding, along with a volatile political situation, the Lebanese Ministry of Public Health has struggled to provide much-needed access to care for those suffering from chronic conditions, such as viral hepatitis. This increases the risk of complications arising in these patients and will continue to place an additional burden on Lebanon's healthcare system as their conditions worsen. To complicate matters further, Lebanon is thought to have the highest number of refugees per capita globally, with this mainly being attributed to the Syrian crisis.[13] Indeed, one study found that hepatitis B and C was a neglected disease among these Syrian refugees in Lebanon, and urgent action was required to prevent this becoming a cause of increased prevalence of viral hepatitis in the country.[3]

Although health experts believe it is becoming a common cause of chronic liver disease, the prevalence of MAFLD in Lebanon is unknown.[1,4]

However, several Lebanese studies have analyzed dietary patterns of patients with MAFLD and found that their intake of Western diets of more meat, fruit and fast food was greatly increased compared to the more traditional, native diets.[4,5] An estimated 30.5% of men and 39.9% of women are classed as obese in Lebanon, which is significantly higher than the global national average of 7.5% and 10.3% for men and women respectively.[6] These figures may give an indication of the consequential health burden that MAFLD is and will continue to inflict on the Lebanese population.

Limited data on liver transplantation in Lebanon is available, although one center in Beirut recorded 10 liver transplants between the years of 1998-2010, with an acceptable 10-year survival rate of 67%.[7]



WE MUST USE WHAT LITTLE HEALTHCARE RESOURCES WE HAVE EFFICIENTLY AND EFFECTIVELY

Dr. Jacqueline Kassouf Maalouf, PhD is the Founder and President of the National Diabetes Organization (DiaLeb). She is a certified diabetes educator and member of the International Diabetes Federation.

In Lebanon, we are facing an unprecedented economic collapse, which is impacting our healthcare system tremendously. Although, in theory we have a free or low cost primary healthcare system, along with a form of free secondary care, the reality is that many specific treatments are no longer available in the public health system. This is forcing people into the private health sector where they have to pay for treatment and medicines, often in US dollars.

At the same time, the costs of many medicines are rising exponentially so, for many Lebanese people, finding the money to pay for medicines and treatment is extremely difficult. As a result, many patients will avoid going for essential tests until they feel very ill. This is particularly relevant for liver conditions such as viral hepatitis, where regular checks are essential to maintaining good control of the disease, and cirrhosis, which often needs rapid and urgent treatment. Unfortunately, we have no way of knowing exactly how the current economic situation is impacting the health of the Lebanese people.

Another major challenge for our healthcare system is a lack of accurate and up to data on many of our key health issues, including liver disease. For example, there are no figures on NAFLD or NASH rates, while our figures on liver cancer date from 2016 and the latest figures on diabetes are from 2018. These almost certainly represent an underestimate of the true picture.

The truth is we really do not know how many people are living with or dying of liver disease in our country and, because we have no national liver transplant program or liver donation registry, we cannot even look to end stage liver disease for guidance in this area.

We do know however that obesity rates are rising, as are the number of people with diabetes, so we can assume that NAFLD and NASH rates will also be rising.

> Reducing the number of people who are obese will not only reduce the rates of T2D, but it also represents our best chance of **preventing a huge rise in liver disease.**
>
> - JACQUELINE KASSOUF MAALOUF

However, while there are government-run awareness campaigns around diabetes, few people are aware of the link between obesity and liver disease. This lack of awareness is even found within health care professionals – I have spoken to nurses and medical students who have never heard of NASH and NAFLD, much less how to treat it.

To improve this situation, we must be realistic about what resources we have and use them as efficiently as possible. It seems logical that if we tackle obesity, which is a cause of both T2D, NAFLD and NASH, we could make some progress in both these disease areas. I would like to see our government focus on reducing obesity, perhaps through a national campaign where national experts visit schools, perhaps with initiatives on healthy eating in the workplace and training programs for healthcare professionals to support their patients to lose weight safely. Here at DiaLeb, we have been successfully running similar programs, although at a very small scale, so we know it can be done.

Reducing the number of people who are obese will not only reduce the rates of T2D, but also represents our best chance of preventing a huge rise in liver disease cases. With the few resources we have, and are likely to have for the foreseeable future, this is our only realistic chance of salvation. It is as simple as that.

© 2026 by Global Liver Institute. All rights reserved

QATAR



Population: 2.86 million (2024)

GDP per capita: $76,688.7 USD (2024)

Life Expectancy: 82 years (men) and 83 years (women) (2024)

Healthcare Spending: 2.52% of GDP (2023)

Healthcare Funding: Qatar's healthcare system is predominantly government-funded, with public expenditure covering the vast majority of total health costs and patient out-of-pocket expenses remaining among the lowest in the world. The Ministry of Public Health (MoPH) oversees health policy and regulates both public and private healthcare providers. The two principal public providers are the Hamad Medical Corporation (HMC), a not-for-profit entity managing a network of 15 hospitals, and the Primary Health Care Corporation (PHCC), which served 1.8 million registered patients across 31 health and wellness centers in 2023. Qatari citizens receive free or highly subsidized care, while residents access services through a government-issued health card.

Private expenditure, primarily driven by employer-sponsored insurance covering the large expatriate population (approximately 88% of Qatar's roughly 3 million residents), is forecast to grow at 9.6% year-on-year and is expected to surpass public spending in the medium term, in line with the government's gradual privatization strategy. Around 22% of the total population holds private health insurance. The Social Health Insurance Scheme (SHIS)[i] aims to achieve universal health coverage (UHC) by providing compulsory basic health insurance for all residents, funded jointly by employers and the government. Public-private partnerships (PPPs)[ii] are increasingly central to healthcare expansion. Health is a core pillar of the Qatar National Vision 2030 and the successive National Health Strategies, with domestic healthcare spending forecast to reach $11 billion (USD) by 2028, growing at a compound annual growth rate of 5.2%.

Sources: Data.WorldBank; World Bank Group; Oxford Business Group; 2024 Qatar Health Report; WHO Regional Office for the Eastern Mediterranean; Understanding the Private Health Sector in Qatar, 2023; WHO Country Cooperation Strategy at a Glance: Qatar, 2018.

$76,688.7
GDP per capita

2.52%
of the GDP is spent on Healthcare

82 (men) & 83 (women)
Life Expectancy

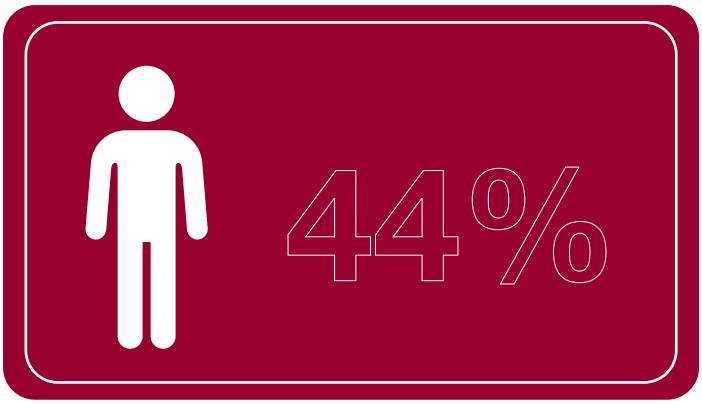
Qatar's liver disease burden reflects a distinctive epidemiological profile shaped by the country's unique demographic composition and rapid economic development. While both hepatitis C virus (HCV) and hepatitis B virus (HBV) infection represent significant public health concerns, HCV has emerged as the predominant form of viral hepatitis across the resident population.[2,4,5] Metabolic dysfunction-associated steatotic liver disease (MASLD) poses an equally pressing challenge, with Qatar recording one of the highest prevalence rates in the Middle East and North Africa region.[7] Additional contributors to liver morbidity include alcohol-associated liver disease (ALD) and hepatocellular carcinoma (HCC),[10,13,14] with liver transplantation remaining a critical yet constrained therapeutic option.[11,12]

Hepatitis B virus (HBV) infection has historically been a significant public health concern in Qatar, though sustained vaccination and screening efforts have driven a notable downward trend in recent decades. A cross-sectional study conducted in 2000 among pregnant women found an HBsAg (hepatitis B surface antigen, a blood marker used to detect active infection) seroprevalence of only 1% in Qatar, consistent with low endemicity.[1] A more recent study in Qatar, covering 2010 to 2014, reported 2,901 cases of HBV in total, with an average annual incidence of approximately 31 per 100,000 population.[3] Consistent with Qatar's demographic structure, the vast majority of cases (89.4%) were reported in non-Qatari residents, who make up more than 80% of the population and frequently arrive from countries in Asia and Africa where HBV is endemic.[3] Crucially, no cases were reported in children under five years of age in either 2013 or 2014, reflecting the effectiveness of Qatar's universal childhood HBV vaccination program, which has been in place since the early 1990s and provides the vaccine free of charge to all newborns.[3] More recent data from a nationwide cross-sectional study conducted in 2020 among migrant workers, who constitute approximately 60% of Qatar's total population, estimated the prevalence of current HBV infection at just 0.4%, well below the global average of 3.8%.[6] The Ministry of Public Health also mandates HBV screening for all expatriates entering Qatar, alongside routine testing of pregnant women, blood donors, and certain professional categories. These combined measures underscore Qatar's commitment to viral hepatitis elimination, though enhanced surveillance and targeted vaccination campaigns directed at the expatriate population remain important priorities.[3]



The Ministry of Public Health mandates HBV screening for all expatriates entering Qatar

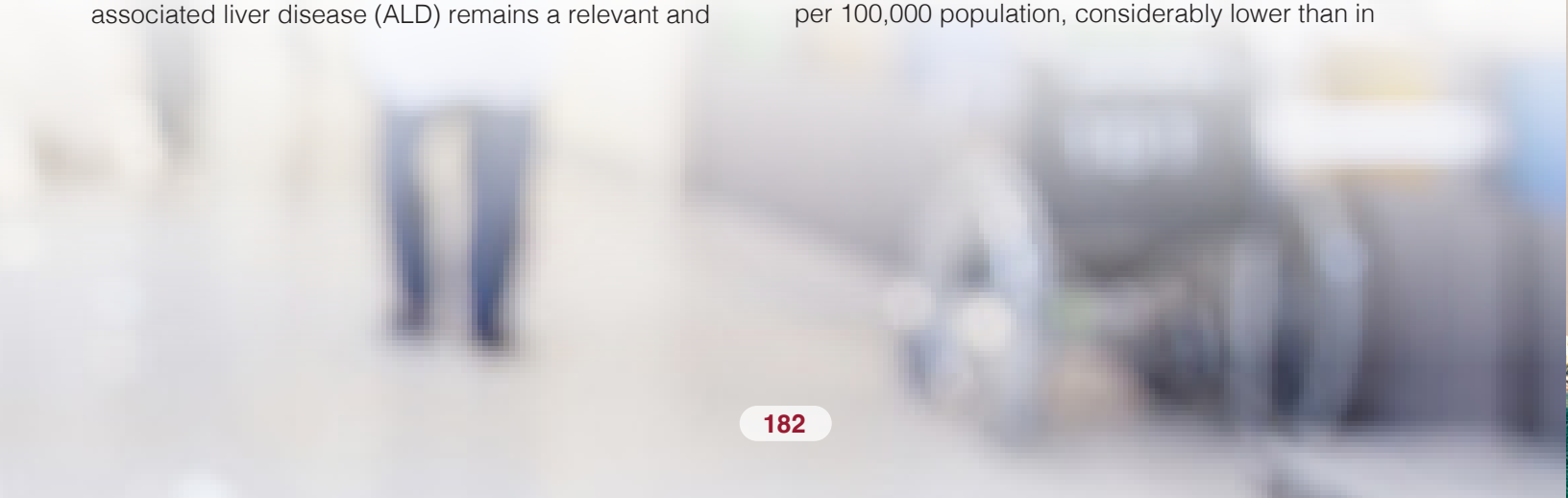
Hepatitis C virus (HCV) infection represents a considerable and growing burden in Qatar, with data consistently showing it to be more prevalent than HBV across the resident population. The hospital-based study at Hamad General Hospital (2002–2006) found HCV to be the most common form of viral hepatitis, with an incidence rate of 6.3 per 10,000 population in 2006.[2] Among patients with chronic liver disease specifically, 29.4% were found to have HCV infection, compared to only 2.5% with HBV, with a particularly sharp rise in HCV incidence observed in liver patients between 2000 and 2005, reaching 481 per 1,000 liver patients by 2005.[4] As with HBV, non-Qatari residents accounted for the majority of HCV cases (82.9%), and males were disproportionately affected across all years of follow-up.[2,4] The most recent and comprehensive estimate of HCV prevalence in Qatar comes from a national awareness and surveillance campaign conducted by the MoPH between January 2017 and December 2019, which tested 81,615 individuals from 137 nationalities. The weighted HCV antibody prevalence in the resident population was estimated at 1.4%, higher than previous meta-analytic estimates and exceeding the WHO's 2030 elimination target threshold.[5]



As mentioned above, MASLD affects approximately 44% of Qatar's adult population, placing the country among the most affected in the MENA region. A large case-control study conducted in primary health care centres across Qatar found an overall MASLD prevalence of 58.5% among adults undergoing abdominal ultrasound, with risk rising sharply with the number of metabolic syndrome components present: from 31.3% in those with one component to 90.2% in those with all five.[8] Local dietary habits further compound this risk: MASLD patients in Qatar show excessive intake of fat, saturated fat, cholesterol, and sodium, alongside deficient intake of key micronutrients such as vitamins E, A, and K, calcium, and magnesium. This profile is consistent with the widespread consumption of fast food, refined grains, and energy-dense snacks that characterise the Qatari diet.[7] MASLD is also observed among patients with other chronic conditions: among individuals with inflammatory bowel disease followed at Hamad Medical Corporation, the prevalence of MASLD was 11.8%, with older age, higher BMI, and diabetes mellitus identified as the main independent risk factors, while biological therapy was not found to increase the risk of steatosis.[9]

Despite cultural, religious, and legal constraints that place restrictions on alcohol consumption in Qatar, alcohol-associated liver disease (ALD) remains a relevant and underreported public health concern. A prospective study of patients admitted with cirrhotic ascites at Hamad General Hospital found that chronic alcoholism was the single most common underlying cause, accounting for 46.8% of cases, a proportion comparable to figures reported in Western countries and notably higher than those documented in neighbouring Saudi Arabia.[13] Strikingly, among Qatari nationals specifically, chronic alcoholism accounted for 57.7% of cases of cirrhotic ascites, suggesting that alcohol-related liver damage may be considerably more prevalent within the national population than commonly acknowledged.[13] A large retrospective study of alcohol-related emergency department admissions at Hamad General Hospital, covering 1,506 patients between 2013 and 2015, further documents the scale of the problem. Liver disease was recorded as a comorbidity in 13% of all alcohol-related admissions overall, rising sharply to 42.6% in patients aged 55 years and above.[14] The overall in-hospital mortality rate across the study period was 6.6%, with the highest mortality observed in the 45–54 age group (16.5%). The stigma surrounding alcohol use in Qatar, combined with the absence of a standardised screening protocol for alcohol-related harm, likely contributes to significant underreporting and delayed diagnosis, making the true burden of ALD in the country difficult to fully assess.[14]

Hepatocellular carcinoma (HCC) represents a significant liver health concern in Qatar, with HCV infection being the predominant underlying cause. This pattern more closely resembles Western European countries than the broader Middle Eastern region, where HBV typically predominates.[10] A retrospective study of 150 HCC patients diagnosed at Hamad Medical Corporation between 2004 and 2010 found that HCV was the underlying cause in 45% of cases, followed by HBV in 27%, with alcohol-associated liver disease accounting for only 4%.[10] The disease disproportionately affected males, with a male-to-female ratio of 3:1, and the mean age at diagnosis was 58.8 years. The annual incidence of HCC in Qatar was estimated at 3-4 per 100,000 population, considerably lower than in



most other parts of the world.[10] A particularly concerning finding was that the majority of patients (53%) were diagnosed at an advanced stage and were therefore candidates only for palliative treatment, and surgery, including liver resection or transplantation (12%), was used in the remaining cases.[10] Among those who received chemoembolisation, the longest median survival was achieved at 27 months. These findings underscore the critical importance of improving the implementation of systematic screening programs in high-risk patients, particularly those with HCV - or HBV - related cirrhosis, to increase the proportion of early-stage diagnoses and expand access to curative treatment options.[10]

Qatar launched its liver transplant program in December 2011 at Hamad Medical Corporation.[11] In the initial phase, the program faced significant challenges from the outset, most notably a severe shortage of deceased donors.[11] Although deceased organ donation was legalized in Qatar in 1997, and an estimated 50 to 70 potential deceased donors per year were identified, the actual number of organs made available for transplantation remained limited due to complex logistical barriers across all stages of the donation process, including donor identification, management, documentation, and, critically, obtaining consent.[11] As a result, the vast majority of patients requiring liver transplantation (86.8% of those followed at Hamad Medical Corporation) were forced to seek transplantation abroad, predominantly in China (44%), where liberal donor selection criteria posed additional clinical risks.[12] A study of 159 post-transplant patients followed at the Liver Transplantation Clinic at Hamad Medical Corporation found an overall incidence of de novo hepatitis B infection of 10.7% post-transplant, substantially higher than international benchmarks of 1.7-3.5%, a discrepancy largely attributable to transplantation at centres outside Qatar with insufficient donor screening for HBV.[12] The mortality rate among those who developed de novo hepatitis B was 23.5%, compared to 2.8% in those without, highlighting the serious consequences of inadequate donor screening.[12]



OVERVIEW

SAUDI ARABIA



Population: 36.4 million (2022 year)

GDP per Capita: $33,040 USD

Life Expectancy: 75.7 years (men) 77.4 years (women)

Healthcare Spending: 5.97% GDP (2021)

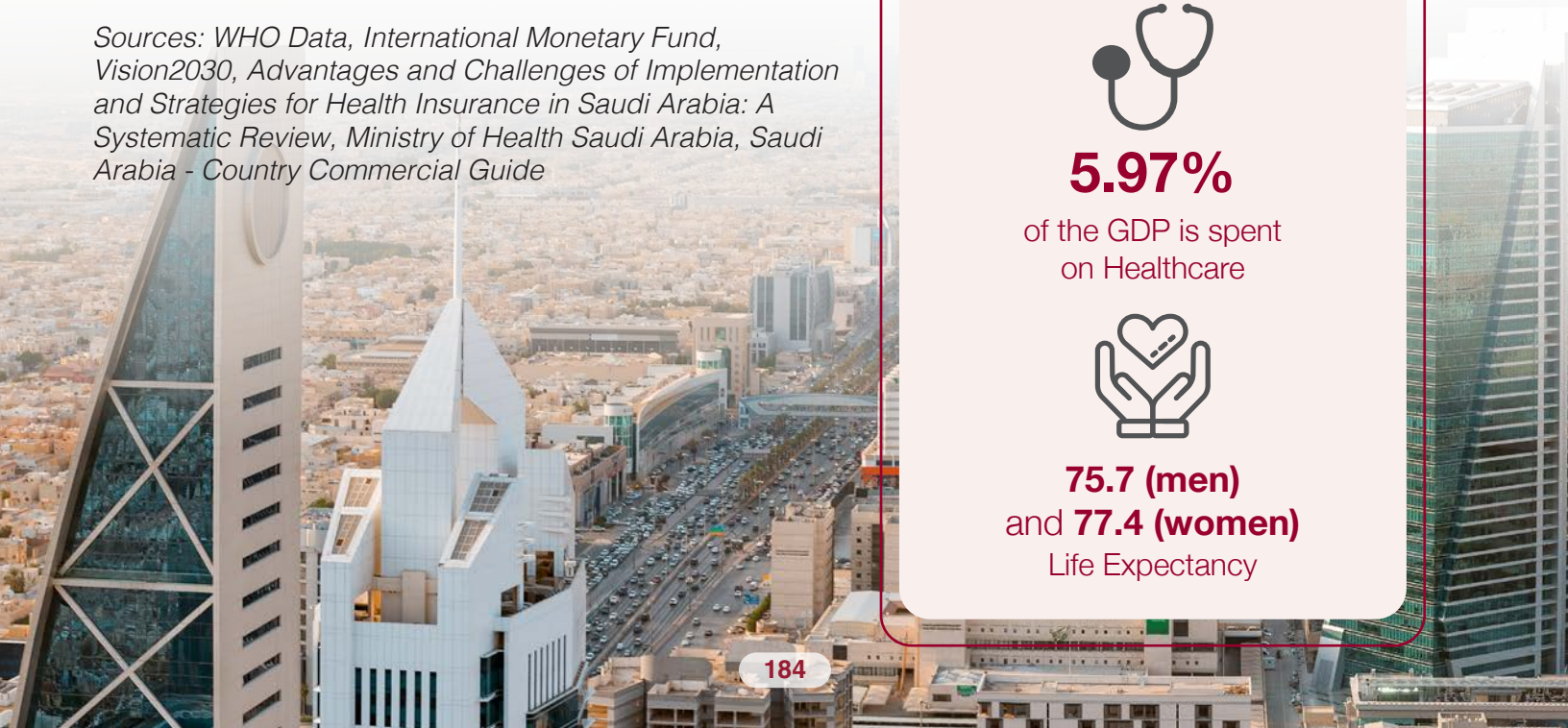
Healthcare Funding: Saudi Arabia's healthcare system, predominantly funded by government revenues, provides free universal healthcare to its citizens. In 2023, the government allocated approximately $50.4 billion, or 16.96% of its total budget, to healthcare and social development, with the Ministry of Health receiving 7% of the state budget in 2024. However, to reduce reliance on government funding and promote private sector involvement, Saudi Arabia has introduced mandatory health insurance for private sector employees, including expatriates. Saudi Arabia's residents currently spend about 4% of their monthly salaries, 191 SR (~$51 USD), on healthcare expenses. As a result of the aging population and rising chronic diseases, Saudi Arabia is implementing reforms under Vision 2030 to reshape the healthcare system. These reforms focus on improving healthcare quality, promoting preventive care, ensuring financial sustainability, and boosting private sector involvement. With plans to invest over $65 billion in healthcare infrastructure and e-health services, Saudi Arabia is opening new commercial opportunities for global companies.

Sources: WHO Data, International Monetary Fund, Vision2030, Advantages and Challenges of Implementation and Strategies for Health Insurance in Saudi Arabia: A Systematic Review, Ministry of Health Saudi Arabia, Saudi Arabia - Country Commercial Guide

$33,040
GDP per capita

5.97%
of the GDP is spent on Healthcare

75.7 (men)
and **77.4 (women)**
Life Expectancy



Liver disease is a growing public health issue in Saudi Arabia, now ranking as the seventh leading cause of death.[1] Although viral hepatitis cases have been steadily decreasing, major contributors such as environmental toxins, obesity, and undiagnosed metabolic dysfunction-associated fatty liver disease (MAFLD) continue to pose significant threats to liver health. However, efforts are underway to combat these challenges. Initiatives like the Rashaka program, aimed at reducing obesity, and childhood vaccination campaigns have shown positive results in improving liver health.[2] Although early diagnosis of MAFLD remains limited, increasing public education and awareness are gradually addressing this gap. Despite the persistent rise in obesity, prevention and early intervention strategies remain key priorities in improving liver health outcomes.

Viral hepatitis, particularly hepatitis B virus (HBV) and hepatitis C virus (HCV), has long been a public health concern in Saudi Arabia, ranking as the second most common viral disease after chickenpox.[3] Historically, the country was considered highly endemic for HBV, with studies in the 1980s showing that 5% to 10% of the population was infected.[4] Because close personal contact is necessary for most transmission, children under 12 faced some of the greatest risk of infection – around 7%.[5] However, starting in 1990, all Saudi children were required to be vaccinated before school entry, leading to a significant reduction in HBV prevalence to around 1.3% in the population as of 2019.[5,6]

Studies from Saudi Arabia suggest that HBV infection makes up the slight majority of viral hepatitis cases – with HBV more common in individuals under 44, and HCV more common in older individuals.[7] Although the incidence of viral hepatitis has decreased due to widespread vaccination and improved healthcare, a large number of individuals infected before the vaccination era continue to develop chronic liver conditions.[8] Also, many healthcare professionals and hospital staff in Saudi Arabia often have limited awareness of current treatment protocols and vaccination guidelines for managing HBV.[5] Comprehensive surveillance, targeted prevention, and access to treatment remain imperative.

HCV has remained relatively low in Saudi Arabia, with prevalence ranging from 0.4% to 1.1%.[9] Generally, most HCV infections in the country are caused by blood transfusions or other medical procedures like hemodialysis rather than by intravenous drug use. Patients undergoing maintenance hemodialysis are at heightened risk of contracting HCV due to their weakened immune systems and the need for frequent blood transfusions.[10] In 2011, the introduction of direct-acting antivirals marked a significant improvement in HCV treatment, with a response rate of over 90%.[11] To further work towards eradicating HCV, the Ministry of Health launched a national campaign in 2018 focusing on early detection, treatment, enhancing diagnostic services, and increasing public awareness among healthcare professionals.[11]

While viral hepatitis poses a significant health challenge, alcohol-associated liver disease (ALD) remains rare. Except for in diplomatic areas, the sale of alcohol has been banned in the country since 1952 until recently.[12] The country's strict legal penalties for the consumption, sale, and distribution of alcohol have limited the availability of the product.[12,13] This has contributed to a low prevalence of alcohol consumption and alcohol-related disorders.[13] According to the World Health Organization (WHO), the per capita alcohol consumption among individuals aged 15 and older was only 0.2 liters in 2016.[13] Additionally, less than 0.5% of men and 0.1% of women are estimated to have alcohol use disorders in the country.[13]

Given the extremely uncommon nature of alcohol consumption, the Saudi Association for the Study of Liver Diseases and Transplantation medical guidelines recommend routine screening for HCV in high-risk populations, such as individuals who consume alcohol regularly or use intravenous drugs.[14]

© 2026 by Global Liver Institute. All rights reserved

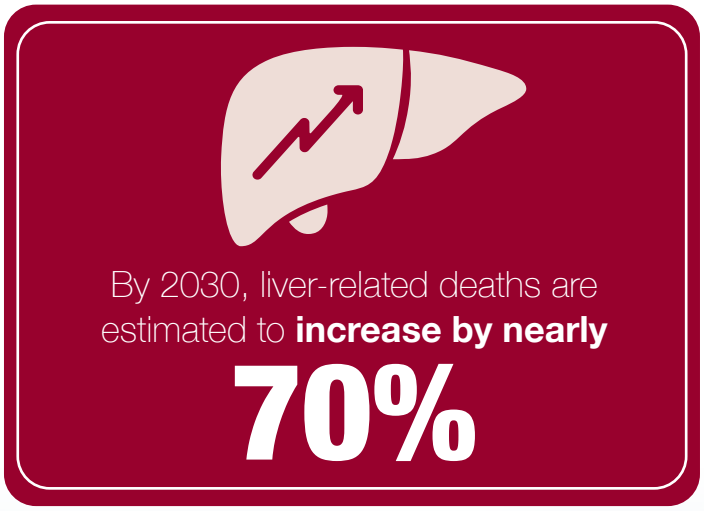
In Saudi Arabia, several environmental toxins pose significant risks to liver health, with heavy metals and cyanotoxins being prominent concerns. In regions with intensive agriculture and industrial activity, such as farms around Riyadh, soil samples have shown high concentrations of mercury, arsenic, and uranium.[15] These heavy metals can accumulate through ingestion or inhalation, leading to liver damage over time.[15] Additionally, cyanotoxins such as microcystins have been detected in freshwater sources like the Tendaha dam reservoir that provides irrigation and drinking water for the Asir region.[17] Prolonged exposure to these toxins presents a growing risk for liver-related health issues in affected communities.[17]

Metabolic factors like obesity and type 2 diabetes (T2D) are now contributing heavily to the rising burden of liver disease in Saudi Arabia.[1] The prevalence of obesity is approximately 38%, with projections estimating it could reach 45% by 2025.[17] The country's trends are consistent with the Middle East and North Africa region, where T2D has become highly prevalent, affecting 12.3% of the population and as many as 32% certain parts of Saudi Arabia.[17] These two conditions significantly increase the risk of developing MAFLD.

One of the key impacts of this trend is the rising burden of MAFLD in Saudi Arabia. MAFLD has seen a sharp increase in prevalence, affecting over 33% of the population in 2019.[1] From 2011 to 2019, MAFLD overtook HCV as the leading cause of liver transplants, accounting for 29.7% of cases.[17]

In response to the increasing burden of MAFLD, Saudi Arabia has implemented several prevention and educational strategies aimed at raising public awareness about these chronic conditions. One such initiative is the Rashaka program, which aims to reduce obesity rates in the general population by 5% by 2020.[2] This program was launched in the 2016–2017 academic year targeting national schools.[18] This program led to a 2.7 reduction in BMI among students, with girls' schools experiencing a more pronounced decrease in BMI compared to boys' schools.[18]

Hepatocellular carcinoma (HCC) is the third most prevalent cancer in Saudi Arabia, and liver-related deaths are estimated to increase by nearly 70% by 2030.[19,20] One of the major challenges in managing HCC in Saudi Arabia is frequent late-stage diagnosis of the disease due to a lack of comprehensive screening practices.[21] Most patients remain asymptomatic until the disease has progressed to advanced stages, at which point treatment options are limited. While surgical interventions, such as liver resection or liver transplantation (LT), are effective for treating HCC, less than 5% of patients in Saudi Arabia are diagnosed early enough to be eligible for curative options.[21] Other treatment options, like transarterial chemoembolization (known as TACE), have demonstrated some success, though survival rates decrease significantly beyond two years.[21] To address these challenges, the Saudi Association for the Study of Liver Diseases and Transplantation recently updated HCC management guidelines, which are endorsed by the Saudi Oncology Society.[21,22]



Liver transplantation in Saudi Arabia has seen remarkable progress since the first successful transplant in 1990.[23] The country formally launched its LT program in 1994, focusing initially on transplants from deceased donors.[23] However, due to growing demand, the program expanded to include living donor liver transplants for children in 1997 and adults in 2001.[23] By 2017, the country had completed 2,233 liver transplants, with 1,133 involving living-related donors, 95 from living-unrelated donors, and 1,005 from deceased donors.[23] Despite these achievements, there are still not enough donor organs to meet the demand, partly because many adults are overweight, obese, physically inactive, or have T2D, which affects the quality of their organ donation.[23,17] This leads to more complications for both donors and recipients — since overweight donors are more likely to have fatty livers that can fail early — and raises concerns that the pool of potential donors may shrink even more in the coming years.[17]

In response to these issues, the Ministry of Health introduced a joint initiative in 2017 aimed at boosting organ donation and transplantation rates.[24] This program, developed in collaboration with the Donation Transplantation Institute and Saudi Center for Organ Transplantation, implemented a quality management system influenced by successful organ donation models from Europe and the U.S.[23,24] A key part of this initiative was the creation of an electronic alert system that improved communication between donor hospitals and intensive care units, ensuring more efficient coordination for organ donation.[23.24] While the living donor transplant rate reached 7.22 per million population (pmp) by 2019, the rate of transplants from deceased donors lagged at 2.33 pmp, reflecting the ongoing need for further improvements in organ donation infrastructure.[24]

In Saudi Arabia, liver disease remains a major public health issue due to factors like viral hepatitis, environmental toxins, and rising obesity rates. While vaccination efforts have successfully reduced hepatitis cases, challenges such as limited organ availability and late-stage liver cancer diagnoses persist. Ongoing initiatives, including public health programs and improved organ donation systems, aim to address these issues and improve liver health outcomes.

In Saudi Arabia, liver disease remains a major public health issue

due to factors like viral hepatitis, environmental toxins, and rising obesity rates.

FATTY LIVER DISEASE HAS SWIFTLY ECLIPSED VIRAL HEPATITIS AS SAUDI ARABIA'S MAIN THREAT TO LIVER HEALTH

Mahmoud S. Desoky, MD, is a Consultant Internist / Gastroenterologist at Sultan Bin Abdulaziz Humanitarian City (SBAHC) in Saudi Arabia as well as an Assistant Professor of Medicine at Minia University. Through a strong career throughout the Gulf Area, he has contributed to the elimination progress of hepatitis C in Egypt and has continuously advanced patient care, medical education, and research.

In practice, the most concerning threat to liver health is the increasing prevalence of obesity and fatty liver disease: the management and the awareness of the condition. I have a very big concern about the swift rise of obesity and overweight that has occurred after the COVID era and the impact this will have on liver health in Saudi Arabia.

Fatty liver disease is a new dilemma in liver health, but we know that it can be controlled through weight reduction, for instance through anti-obesity medication or bariatric surgery. However, people might not know to seek this treatment unless they are aware of the risks of liver disease.

Unfortunately, awareness about liver disease among the general public is low. People do not seek treatment until they have symptoms, which often does not occur until they develop cirrhosis. Right now, awareness focuses on other diseases: obesity, diabetes, hypertension, hyperlipidemia, cardiovascular disease, gout, and fatty liver disease is at the very end. It is underestimated. As we raise awareness, we can increase early screening, early detection, and early treatment – needed to improve outcomes for fatty liver disease as well as liver cancer.

I am confident that we will get the country to a healthier level in this era of controlling fatty liver disease. We have a strong liver transplantation center here that is well-recognized worldwide. Also, Saudi Arabia had a very impressive response to the last major threat to liver health and has seen success with hepatitis B and hepatitis C. Since they were introduced, patients have been able to access the treatment. The success of these efforts, as well as the national programs against diabetes and obesity, suggest that the treatment of metabolic-associated fatty liver disease will see great success in the future.

These efforts have to be multi-level, not only by specialists but also by primary care, students, and schools. Everyone who can share information or awareness should contribute, and then it is the government's job to ensure medication is available to stop the progression of the disease.

© 2026 by Global Liver Institute. All rights reserved

TÜRKIYE



Population: 85.04 million (2021)

GDP per Capita: $12,986 USD

Life Expectancy: 75.4 years (men) and 81.5 years (women)

Healthcare Spending: 4.34% GDP (2019)

Healthcare Funding: Taxes (41%), insurance premiums (31%), and out-of-pocket payment (28%) fund the healthcare system, along with a combination of national and private health insurance. The coverage offered by compulsory health insurance provided by social security foundations, namely the Government Employees Retirement Fund to serve pensions for civil servants, the Social Insurance Organization for blue-collar workers, and Bag-Kur for the self-employed, is comprehensive. The private sector is rapidly growing and complements, rather than competes with, the state system.

Sources: WorldData.Info, Global Data,WorldBank, Ministry of Health (Türkiye)

$12,986
GDP per capita

4.34%
of the GDP is spent on Healthcare

75 years (men)
and **80.8 years (women)**
Life Expectancy

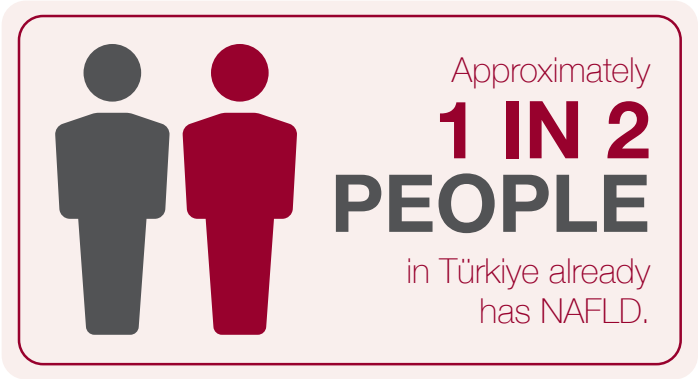
Türkiye faces many obstacles to liver health, including both unique challenges and those of broader global shifts.

Türkiye has high rate of obesity – a prevalence of approximately 32.1% according to 2016 data from the WHO.[1] Consequently, metabolic dysfunction-associated fatty liver disease (MAFLD) is a major public health concern with some studies estimating that almost half of the Turkish population currently have MAFLD, with prevalence expecting to continue its upward trajectory over the next decade.[1,2] Between 2007 and 2016, there was a 22% rate of increase of the prevalence of MAFLD to 53.1% of the population in 2016.[2]

Additional data from this study show that the condition was most prevalent amongst men over 50.[2] Furthermore, it appears that MAFLD patients are at high risk of advancing to MASH. Another study found that, 90.4% of MAFLD patients screened at a Turkish healthcare center had MASH – much higher than the typical 20% – which highlights not only the severity of this epidemic but also the high risk of mortality due to advanced liver disease.[3]

Another key cause of liver disease in Türkiye is hepatitis B – about 56% of patients with HCC were infected with the virus.[4] Hepatitis B is also thought to be the cause of between 30%-40% of the country's cases of cirrhosis.[5] As of 2019, the estimated prevalence of hepatitis B in the Turkish population was estimated to be approximately 4.57%, or 3.3 million people.[6] An HBV vaccine was integrated into the Turkish child vaccination program in 1991 with two booster vaccines administered within 12 months of birth, which has resulted in a reduction of the incidence of HBV to less than 100,000 in children less than five years old.[5]

Although not as prevalent, hepatitis C infection is another major cause of cirrhosis and HCC in Türkiye, responsible for 20% to 25% and 25% to 30% of cases respectively.[5] Based on a national study carried out between 2009-2010, prevalence of HCV infection ranged from 0.5% to 0.96% of the population, with a higher concentration amongst the poor and older groups.[7,8] It is predicted that the burden of HCV infection will increase in the next decade, with an estimated 80,000 people being infected by 2030.[5]



An at-risk group that is somewhat unique to Türkiye are barbers due to their regular exposure to the bodily fluids of their customers. One study found that HBV and HCV had a higher prevalence in barbers when compared to the general population, making HCV and HBV infection an occupational hazard for this profession.[9]

To combat viral hepatitis, the Turkish government has established "The Turkish Viral Hepatitis Prevention and Control Program" with an aim to implement and improve policies and strategies targeting viral hepatitis. This includes raising awareness amongst the high-risk groups, along with the improvement of early diagnosis and preventative treatments.

Alcohol is considered to be a significant risk factor for liver disease in Türkiye, and an approximate 15.9% of HCC patients in the country have a history of heavy drinking.[4] However, given that the vast majority of the population is Muslim, alcohol consumption tends to be limited, though relevant data is limited as well.

In 1989, the Ministry of Health in Türkiye established a national organ-sharing program, followed in 2001 by the establishment of the National Coordination Centers for the allocation of deceased donors. Following on from these programs, liver transplantation has made great strides in Türkiye. Between the years of 2002-2013, almost 7000 liver transplants were carried out with an 83% success rate, which is highly competitive with global figures.[10,11] As it currently stands, there are now 45 liver transplant centers across the country, with treatment costs starting at $52k per transplant, much lower when compared to other countries.[11]

© 2026 by Global Liver Institute. All rights reserved

A HIGH QUALITY HEALTHCARE SYSTEM BUT LOW PRIORITY FOR LIVER HEALTH

Dr. Fulya Gunsar is Professor of Gastroenterology at Ege University School of Medicine in Izmir. She is the current president of the Turkish Association for the Study of Liver Disease (TASL).

The picture in Türkiye around liver disease is quite varied. For example, we have excellent transplant centers, our university hospitals and the public and private hospitals are generally well equipped with up-to-date diagnostic equipment and cutting edge treatments, and we have highly skilled hepatologists and gastroenterologists.

On the other hand – and with the exception of viral hepatitis – liver disease has not really been a priority for our government who have instead mainly focused on heart disease, diabetes and cancers rather than the links between obesity, NAFLD and NASH.

So currently we are in a situation where, although the rates of liver disease caused by viral hepatitis are falling, we are now dealing with increasing numbers of patients with NAFLD and NASH who need urgent interventions, often from a range of healthcare professionals.

However, this is an expensive system to maintain, and we know from the rates of obesity and the high rates of T2D in our population, that this cause of liver disease will continue to rise. The reality is that both clinicians and the government must work together to put strategies, including early detection, in place to deal with this upcoming crisis.

Currently the Turkish Association for the Study of Liver Disease is developing clinical guidelines for NAFLD which can be shared and used in both primary and secondary care. We sincerely hope that the government endorses and supports these guidelines. We really need to have national awareness of NAFLD and for everyone to understand that NASH can lead to cirrhosis or liver cancer.

> The reality is that **both clinicians and the government must work together** to put strategies, including early detection, in place to deal with this upcoming crisis.
>
> - DR. FULYA GUNSAR

Viral hepatitis is generally well managed, with a program for the elimination of HBV and HCV by 2023, and treatment and testing available for all. However, there are still concerns about the rates of awareness of hepatitis B or C. We believe that the key here is to educate the primary care physicians, not just to be alert for symptoms of hepatitis B, but also to encourage testing for patients who could be at risk and to refer for diagnosis as quickly as possible.

Ninety percent of the population in Türkiye is Muslim, therefore, alcohol consumption is generally limited. Despite this, we have many patients with alcohol induced liver disease, and as required for these patients, we will carry out liver transplants after six months' abstinence, or as an emergency if necessary.

Although our numbers on liver cancer are relatively low compared to other countries, we still see 70% of our patients at a late stage where curative treatments are often not an option. However, we have access to the latest medical advances, including radio frequency ablation, trans arterial radio embolization, chemoembolization, liver transplantation and liver resection for eligible patients with hepatocellular carcinoma. We generally use a multi-disciplinary approach with weekly input from radiologists, hepatologists, transplant surgeons and oncology.

Our national liver transplant program has been established for many years and is highly successful. Patients travel from many other countries to receive transplants. We have recently expanded our living donor program allowing us to increase our rate of transplantation. (See page 85).

A key consideration when we look to the future is the disparity between funding for the private and public hospitals. As the burden of liver disease continues to rise, the public sector, including the university hospitals are struggling to cope, often with basics such as bed space. Although the private system is very good, most people here cannot afford to pay for it. If we want liver health equality for all, not just for those who can pay, we need to invest in our public system once more.

© 2026 by Global Liver Institute. All rights reserved

BEST PRACTICE LIVING DONOR LIVER TRANSPLANTATION

‘Our national liver transplant program was established in 1988,’ explains Dr. Fulya Gunsar. ‘However due to the lack of donors from deceased patients, quite early on there was much clinical focus on living donor liver transplant (LDLT) as the most likely source of hope for patients awaiting liver transplant.

‘The first successful partial living donor liver transplant (LDLT) in children in Turkiye was performed by Haberal et al in 1990 and out of the 17544 liver transplantations performed in our country since 1988, 12839 (73%) of them have been from LDLTs.

‘All this experience has led to Türkiye becoming a center of excellence for LDLT. The one year patient survival rate after LDLT is between 80% - 90% and we have patients coming from all over the region and beyond to receive living donor transplants.

DID YOU KNOW?

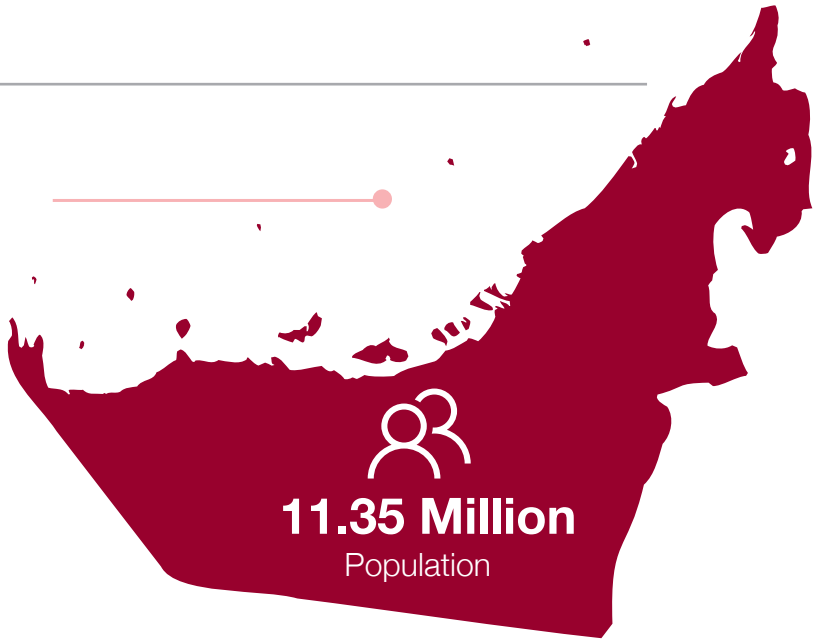
The **first successful partial liver transplant** in Türkiye was performed in 1990.

‘One of the key issues when carrying out LDLT is the safety of the donor material and this was, unfortunately, a significant challenge during the Covid 19 epidemic. However, despite this, we have recently expanded our living donor program to allow us to increase our rate of transplantation and we expect this success to continue.’



OVERVIEW

UNITED ARAB EMIRATES



Population: 11.35 Million (2025)

GDP per Capita: $51,290 USD

Life Expectancy: 79.2 years (men & women)

Healthcare Spending: 5-6% of GDP

Healthcare Funding: The United Arab Emirates is a federation that consists of seven Emirates: Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah, and Umm al-Quwain. While the health policy of most of the Emirates is regulated by the Ministry of Health and Prevention (MoHaP), the Emirates of Abu Dhabi, Dubai, and Sharjah each have their own healthcare authorities that regulate private and public medical entities.

The passing of Federal Law N. 6 of 2007 requires all seven Emirates to provide free and universal healthcare to all citizens. Currently, only Dubai and Abu Dhabi have implemented universal health coverage for their citizens. However, all UAE citizens have access to public health insurance, *Thiqa*, which offers a comprehensive range of health services. Coverage of specific healthcare services that are offered through *Thiqa* varies across the Emirates. All non-citizens, however, are required to use private health insurance. In 2020, the UAE reported spending $19.7 billion on healthcare. The Emirati healthcare system is primarily funded through taxation.

Sources: Global Media Insight, International Monetary Fund, World Bank, Freopp

$51,290
GDP per capita

5-6%
of the GDP is spent on Healthcare

79.2 (men & women)
Life Expectancy

As of 2025, there is limited literature regarding the overall burden of liver disease in the United Arab Emirates due to a rapidly growing population and a diverse ethnic makeup of the population.[1] Additionally, because almost 90% of the population of the UAE is comprised of expatriates, there is a wide range of variability in risk factors for developing liver disease. However, certain studies show that liver health is a growing concern in the UAE due to an increasing prevalence of metabolic-associated steatotic liver disease (MASLD) across the region. MASLD is projected to be the main driver of liver disease burden in the nation, due to epidemic levels of obesity and type II diabetes mellitus (T2DM).[2] As a result of the rise in prevalence of liver disease in the UAE, the number of liver-associated deaths in the nation is projected to increase by 270% by 2030.[3] Metabolic conditions like T2DM, obesity, and dyslipidemia (high cholesterol levels) are common risk factors for developing liver disease in the UAE.[3]



As a result of the **rise in prevalence of liver disease in the UAE,** the number of liver-associated deaths in the nation is projected to grow

270% by 2030

Similar to other Gulf countries, MASLD is expected to increase due to the high prevalence of obesity and T2DM.[2] As of 2018, the prevalence of MASLD was reported to affect about a quarter of the general population. The prevalence of MASLD increased with age, and men were 1.3 times as likely to be diagnosed with MASLD as women. Additionally, diabetes and obesity, which are closely-linked to the development of MASLD, have been observed to be prevalent in this region, with 35% of the population living with obesity and 18% of the population living with diabetes.[4] Studies report a three-fold increase in the prevalence of obesity in the UAE between 1989 and 2017.[5] Due to the strong link between the development of MASLD and obesity and T2D, a resulting rise in MASLD is also expected. The prevalence of metabolic syndrome, another common risk factor for developing MASLD, is estimated to affect between 22% and 50% of the nation's population.[3] The migrant population is especially at risk of developing these metabolic conditions, with an estimated 16% to 64% of the migrant population being undiagnosed with diabetes.[6] Despite the high prevalence of common comorbidities in the population, MASLD remains underdiagnosed in the UAE due to lack of awareness among healthcare providers and the general public.[2] Awareness of MASLD among primary care providers would encourage early screening and treatment in at-risk populations.[2] Fortunately, the UAE government launched important programs like the Beat Diabetes Initiative and the National Obesity Control Programme to increase public awareness of the risks of diabetes and obesity, respectively. The Beat Diabetes Initiative, initially launched in the UAE in 2009, has engaged over 120,000 participants and raises awareness about diabetes prevention and management.[7] Additionally, the National Obesity Control Programme is an initiative led by UAE's MoHaP with an aim to reduce obesity rates, specifically among children, by promoting nutritional diets and physical activity.[8] These initiatives have seen significant success in raising awareness for metabolic conditions like obesity and diabetes, and continue to engage UAE's population.

HCV is notably **lower** than that of HBV, with a national prevalence of

0.24%



Due to cultural and religious norms, alcohol use is significantly more stigmatized in the UAE than in the rest of the world.[9] This is reflected in policies that prohibit the possession of alcohol outside of licensed bars, clubs, and restaurants.[10] As a result of these cultural and legal restraints, the UAE's alcohol consumption per capita is reported to be 2.08 liters, less than half of the global average of 5.5 liters per capita. Recently, policy surrounding alcohol in the UAE has become more relaxed, especially in urban regions like Abu Dhabi, to promote the tourism industry.[11] As a result, alcohol abuse across the country is reportedly on the rise.[7] Due to the cultural stigma around alcohol use, there is limited literature reporting the levels of alcohol use in the population and its effects on the liver disease burden on the UAE's healthcare system. More research is needed on how cultural stigma and legal constraints on alcohol use affect the timely diagnosis of alcohol-associated liver disease and other disease states. It is also important that healthcare providers are able to diagnose and treat ALD in a culturally sensitive manner, taking into account the societal stigma around alcohol and substance use.

The UAE is currently considered a low-endemic region for hepatitis B (HBV), with an estimated prevalence of 1.0-1.5% of the overall population.[12] The UAE was among the first of the Gulf countries to implement a comprehensive mass vaccination program in the 1990s, which was a driving force in the low prevalence of HBV among the younger population.[9] Additionally, the UAE prevents the spread of HBV through strictly enforcing policy that denies work permits and residence to individuals who test positive for hepatitis B surface antigen (HBsAg), a protein that indicates the presence of HBV in the blood.[9] HBV screening is also a component of the mandatory pre-marriage screening in the UAE; however, societal stigma has resulted in noncompliance in the general public.[11] Individuals who are living with HBV continue to face systemic challenges, like a lack of public awareness, social stigma, and limited healthcare coverage.[11] Additionally, the lack of national treatment guidelines for HBV seems to be hindering the efficacy of treatments provided to patients.[11] In addition, the lack of a nationally-representative study reporting the prevalence of HBV in the UAE is preventing the implementation of a well-informed treatment guide.[13]

The prevalence of HCV is notably lower than that of HBV, with a national prevalence of 0.24%.[14] The prevalence of HCV was significantly higher among expatriate populations, with the prevalence of each community reflecting the prevalence of their country of origin, the highest being among residents of Pakistani origin.[14] High-risk patients who are undergoing dialysis and multi-transfused patients were also observed to contract HCV at a high rate.[14] Prevention and treatment measures are being taken at the national level, and within each emirate. In 2018, the UAE's MoHaP launched the "Ready To Be Hepatitis C Cured" campaign, which aims to raise public awareness of the risks and prevention methods associated with HCV and provide support for patients and families undergoing the treatment process.[15]

As a result of the rising rates of obesity, diabetes, and excessive alcohol consumption in the UAE, the incidence of liver cancer is projected to rise in the coming years.[16] Between 2013 and 2021, there were 60-100 newly diagnosed cases of hepatocellular carcinoma (HCC) per year in the UAE.[12] Currently, patients are being diagnosed in the intermediate or advanced stages of HCC, when timely and effective treatment is difficult.[17] However, the emergence of immunotherapies has begun to change what is considered first-line HCC treatment. While results are promising, more research needs to be conducted about the efficacy of these therapy options. Currently, atezolizumab and bevacizumab are considered the most effective first-line therapy for advanced HCC patients around the world. While several treatment centers offer comprehensive care for liver cancer treatment in the UAE, they are heavily concentrated in Dubai and thus difficult to access for residents living in the other six emirates. Nonetheless, the available cancer centers provide a wide range of treatment options for liver cancers, including surgical treatments, ablation therapies, and chemotherapy.

For patients who develop end-stage liver disease, liver transplantation is available, though fairly new in the UAE. The first successful liver transplant was conducted in 2017, and the country has made massive strides in establishing comprehensive organ transplant programs throughout the country.[18] As of 2023, organ transplantation with both living and deceased donors has been made legal, making organ transplantation much more accessible for patients.[19] While living donors used to be the sole source of donor organs, the policy change is quickly closing the gap with the introduction of deceased donor organs to the organ transplantation landscape.[20] Currently, Cleveland Clinic Abu Dhabi, Burjeel Medical City (Burjeel Hospital) in Abu Dhabi, and King's College Hospital Dubai are the leading facilities in organ transplantation. The UAE is also actively expanding organ transplantation practices and has been working to increase public awareness of organ donation through initiatives like the National Digital Organ Donor Registry and a move to include consent for organ donation on the UAE national ID card.[21] Additionally, as of 2024, the UAE has begun offering living donor pediatric organ transplantation.[22] As a result of these initiatives and other factors, there was a 117% increase in organ donation rates in 2023 from the previous year.[23] The UAE aims to be a regional center specializing in organ transplantation for the Middle Eastern and Northern African regions.[24]

In conclusion, liver disease is an increasingly significant public health concern in the United Arab Emirates, driven largely by the rising prevalence of MASLD, obesity, and T2DM. Although the country has made commendable progress in areas such as hepatitis B vaccination and the development of organ transplantation infrastructure, several challenges remain. These include the underdiagnosis of MASLD, limited data on alcohol-associated liver disease due to cultural stigma, and gaps in public awareness and healthcare provider training. Additionally, disparities in access to care and the lack of comprehensive, nationally representative data hinder effective disease management and policy development. As the burden of liver disease continues to grow – alongside associated complications such as liver cancer –it is critical for the UAE to invest in population-level screening, expand access to care across all Emirates, and implement targeted public health strategies. Continued research, health education, and national policy coordination will be essential in mitigating the future impact of liver disease on the UAE's diverse and rapidly evolving population.

© 2026 by Global Liver Institute. All rights reserved

NORTH AMERICA



HEALTH OVERVIEW

The third largest continent in the world geographically, with a population of around 370 million, North America comprises the northern portion of the Western hemisphere. With a combined GDP of over $20 trillion USD and GDP per capita income of $67,514 USD, North America is the wealthiest region on earth. 16.32% of the GDP is spent on healthcare in North America, with health spending per capita at around $10,000 USD a year, although around 11% of this amount comes from out-of-pocket payments.

Despite its wealth, North America is also a region of great inequality, often along racial lines. In the United States for example, an estimated 28% of Black households and 26% of LatinX households had zero or negative net worth in 2019, twice the proportion of white communities. This inequality is particularly reflected in healthcare, especially in the United States where, unlike other developed countries, residents do not have universal healthcare access. Although North America has a highly developed medical infrastructure – world-class hospitals equipped with cutting-edge diagnostic equipment and staffed with globally-recognized experts providing the latest treatment therapies – many low-wage workers receive no health insurance, sick pay or pension plans. They have little hope of funding medical insurance costs and instead rely on emergency care facilities or poorly funded public clinics and hospitals.

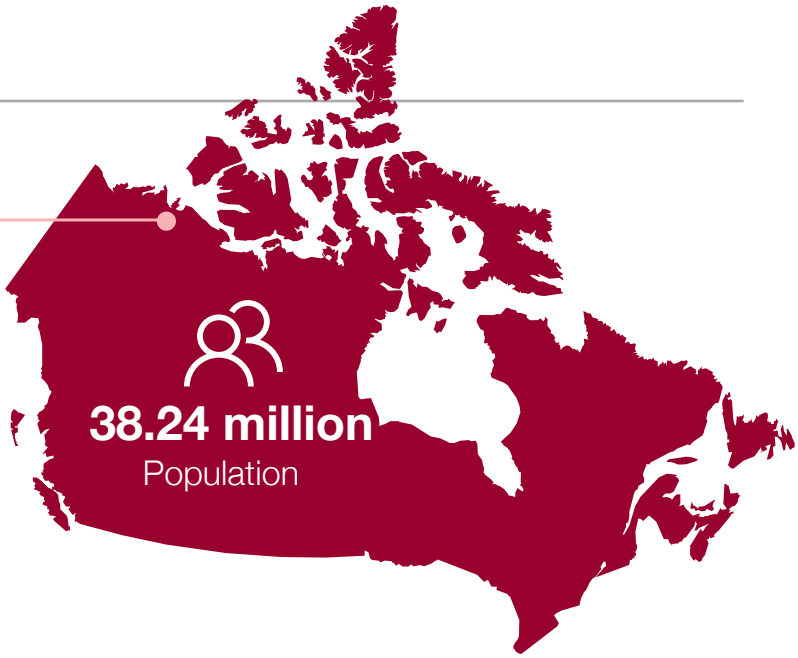
North America is also a region of immigrants; 2017 saw a net migration of nearly six million people from around the world. This migration brings with it many health challenges, including chronic hepatitis, tuberculosis and HIV. At the same time, many of these immigrant communities begin their lives in North America living in areas of deprivation where often basic amenities, including access to healthcare, are unavailable and adding to their health burden.

Sources: World Bank, Institute for Policy Studies, US Census Bureau

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

CANADA



The second largest country in the world by area, 80% of which is uninhabited. Canada is a developed country divided into English speaking (58%) and French speaking (20%) territories. Around 5% of the population identify as native Indigenous people.

Population: 38.24 million (2021)

GDP per Capita: $53,372 USD

Life Expectancy: 79.7 (men) and 83.9 (women)

Healthcare Spending: As of 2021, Canada had a GDP of $1.99 trillion USD, and government spending on healthcare is approximately 10.8% of GDP (2019) equating to around $5,000 USD per capita. Domestic private health expenditure is around 29% of all healthcare spending.

Healthcare Funding: The Canadian Medicare system provides for universally available and free necessary primary and hospital care, administered and funded by the individual provinces supported by per capita assistance from the federal government.

Funding for other healthcare services, for example dental care and prescriptions, vary depending on the provincial funding but is usually available for certain low income groups such as pensioners, veterans and the Indigenous populations. Around two thirds of Canadians have some form of private insurance either through their employment, unions, or paid for privately, which also covers services such as optical and dental care.

Each province and territory is responsible for administering and overseeing its own health, and, as a result, there are wide variations in the focus on and availability of different healthcare services, including treatment pathways. Experts have cited this fragmented approach along with lack of federal leadership as one of the reasons why Canada was recently placed 10th out of 11 developed countries for the provision of good quality healthcare, ahead only of the USA.

Overall, the Canadian healthcare system provides a GP-led primary care which is available for all, although in some remote areas – which particularly affects Indigenous people – these services can be geographically difficult to access and may be nurse rather than doctor-led.

Secondary and tertiary care is provided by a mix of public and private (although usually not-for-profit) hospitals mostly overseen by local authorities or community boards. Specialist care can be accessed privately but is usually available via GP referral to the relevant tertiary care center.

Sources: World Bank, The Commonwealth Fund, WorldData.Info

$53,372
GDP per capita

10.8%
of the GDP is spent on Healthcare Spending

79.7 years (men)
and **83.9 years (women)**
Life Expectancy

A universal healthcare system, globally recognized research centers, and world class hospitals benefiting from the best diagnostic equipment and clinical expertise should, in theory, be good news for liver health. Yet Canadians are facing a crisis in liver health. Deaths from liver disease rose nearly 30% from 7.2 per 100,000 to 11 per 100,000 between 2000 and 2020 and, in 2013, the Canadian Liver Foundation estimated that one in ten Canadians were living with liver disease, with the number likely to have risen in recent years due to a rise in the rates of obesity and the corresponding emergence of metabolic dysfunction-associated steatotic liver disease (MASLD) and its more advanced form, metabolic dysfunction-associated steatohepatitis (MASH).[1,2]

Historically, viral hepatitis has been the main driver of chronic liver disease in Canada. This has been caused in part by relatively high rates of HBV found in immigrants arriving from developing countries, along with challenges in ensuring appropriate testing and treatment for Indigenous populations, who have a five-times higher incidence and prevalence rate of HCV than in the general population.[3,4]

A lack of federal initiatives has resulted in a fragmented approach to hepatitis control. For example, although childhood vaccinations for HBV have been in place since the 1990s, the age at which it is offered still varies widely between provinces and territories from birth to age 12.[4] Still, overall rates of viral hepatitis are showing a downward trend. Following a 14.4% rise between 2014 and 2018, between 2018 and 2019, the rates of HCV dropped by 10.2% in adults (although it rose in children). HBV rates also fell to their lowest in ten years between 2018 and 2019.[5]

Additionally, the introduction of widely available and fully funded antiviral therapies have transformed the outlook for HCV, which is now by and large considered to be a curable disease in Canada.[6] This is reflected in the liver transplant rate. Although the number of liver transplants in Canada per year increased from 251 in 2000 to 349 in 2018, the proportion of patients transplanted for HCV decreased from 31.5% in 2000 to 3.4% in 2018.[7]

However, as the danger from viral hepatitis slowly recedes, the transplant rates clearly demonstrate that another crisis is looming in liver health.

Canada, in line with the rest of the developed world, is beginning to suffer the consequences of the obesity epidemic on liver health. Just over one in four adults in Canada are now considered obese, with 62.6% either overweight or obese; MAFLD and MASH rates are soaring commensurately.[8] Estimates suggest that today 21.1% of all Canadians have some form of MAFLD and that 5.4% – just over 2 million adults – have MASH, the consequences of which are already being felt in liver health.[9] In 2000, just 0.4% of all liver transplants were performed due to MASH. By 2018 that number had risen to 12.6%, and by 2040 MASH is now expected to be the number one cause of liver cirrhosis in Canada.[7,10] However, despite this threat and the potential financial burden this represents to the health system, there appears to be little federal leadership around the liver health crisis, with no national guidelines and treatment pathways for MAFLD and MASH varying between individual provinces and territories.

There is also another danger looming with 22.2% of all Canadian adults classified as heavy drinkers, and, based on current trends, alcohol-associated liver disease is expected to become one of the main causes of liver cirrhosis (just behind MASH) by 2040.[8,10]

With increasing chronic liver disease upstream, the number of new cases of liver cancer in Canada is also increasing, with the percentage of transplants for HCC rising from 2.3% in 2000 to 32.4% in 2018 and a projected expectation of 3,500 new cases in 2022.[7,11,12]

There is little data on autoimmune liver disease in Canada. A 2018 study identified around 8680 cases of PBC across Canada, and another estimated the rate of PSC at 0.92 per 100,000.[13,14] There is no data on autoimmune hepatitis in the adult population.



In 2013, an estimated **one in ten Canadians were living with liver disease**

© 2026 by Global Liver Institute. All rights reserved

WE NEED TO BE PROACTIVE, INNOVATIVE AND MAKE OURVOICE HEARD

Dr. Mark G. Swain is Professor of Medicine and holds the Cal Wenzel Family Foundation Chair in Hepatology at the University of Calgary, Alberta, Canada. He is the current President of the Canadian Association for the Study of the Liver (CASL).

In Canada, as in many areas of the world, liver disease is shaping up to be one of the major health issues of the next few decades. Currently, at least a quarter of the Canadian population are living with NAFLD. However, with the rates of alcohol-associated liver disease, NAFLD and NASH, and liver cancer all projected to rise over the next few years, it is perhaps not an exaggeration to say that we are facing a tsunami of liver disease which will place an increasingly unsustainable burden on our healthcare system.

We can see the early waves of this tsunami lapping up on our shores already. For example, seven years ago I didn't need to hold a clinic specifically for NASH or NAFLD patients. Today, due to increased demands, we dedicate NASH and NAFLD clinics on a regular basis.

Alcohol-associated liver disease used to be considered a disease of older, male, lifelong heavy drinkers, and we rarely saw young people with severe alcohol-associated liver disease. Now, and especially since the pandemic when alcohol intake soared, it is common for me to be called in to hospital to deal with people in their 20s and 30s who have been admitted with acute alcohol-associated hepatitis or even liver failure. Even more striking, increasingly these are young women. Liver cancer, once a fairly rare cancer in Canada, has unfortunately become a 'growth industry', with incidence rates rising faster than any other cancer.

It is quite shocking for us as hepatologists to witness these dramatic changes in such a short period of time, and we understand that this situation cannot continue. Thus, we are working hard to try to be more proactive in making effective changes. For example, we don't currently have NAFLD or NASH guidelines in Canada, so CASL members are in the process of setting up a committee with primary care physicians, nursing and other specialists, to develop guidelines that will also include more multi-disciplinary approaches.
In Calgary, together with our primary care colleagues, we have co-developed an innovative screening and treatment pathway for NAFLD (see page 90 for more info). 'This model has been running since 2017 and has proven to be a great success. This type of primary care-based approach to liver disease case finding needs to be more widely employed across Canada.

> Our challenge then isn't so much in treating the patients with liver disease that we do see. **It's finding the patients - preferably as early as possible - that don't even know they have it!**
>
> - DR. MARK G. SWAIN

However, we are clinicians, not policy makers, and it is they who can make the big difference to liver health in terms of disease awareness, prevention, and early diagnosis. Unfortunately, possibly due to an established – and incorrect – narrative of liver disease always being the fault of the patient, there appears to be a lack of will, at the government level, to face up to and tackle the oncoming challenges of liver health.

We believe that it is imperative for liver disease to have a national voice, and to this end we are working with external partners to try to reach health policymakers in order to better achieve the big changes needed. To support this strategy, we also need accurate data to reinforce the message that prevention and early diagnosis can prevent the spending of healthcare dollars on liver disease further down the line, when people present for care with advanced cirrhosis, liver failure or liver cancer.

When I became a hepatologist in the early 1990s, we had very few effective liver treatments to help our patients. Today, while we have effective therapies and a growing number of care pathways for almost every type of liver disease, we can still only ever treat the patients we know about. Unfortunately, liver disease is typically a silent disease and many people do not know that they are living with it, so they do not ask for and receive help until it is often too late.

To a certain extent, our challenge then is not so much in treating the patients with liver disease that we do see. It is finding the patients – preferably as early as possible – that do not even know they have it!

© 2026 by Global Liver Institute. All rights reserved

BEST PRACTICES IN NAFLD CARE IN CALGARY, ALBERTA

A multi-disciplinary collaboration exists to develop a pathway for the screening and triaging of patients at risk of NAFLD within a primary care setting.[15]

Between January 2016 and December 2017, it was noted that around 40% of patient referrals to the Calgary hepatology service were for patients with NAFLD, to be assessed for the risk of liver fibrosis. Most were found to be of low risk and did not require further tertiary follow up.

Hepatologists, radiologists and primary care physicians in Calgary therefore partnered to co-develop an innovative screening pathway for those NAFLD patients at risk of fibrosis. Rather than referral, the primary care physician could directly order an ultrasound-based test called shear wave elastography (SWE), from a community ultrasound provider, assess the results, and, based on a pathway-based algorithm, advise on best treatment options which might then include referral or ongoing management in the primary care medical setting, in conjunction with management of common comorbidities including diabetes, high blood pressure and elevated cholesterol where relevant. Along with SWE-based screening blood serum, liver tests were also taken and, based on the pathway, other potential causes of liver disease were ruled out.

DID YOU KNOW?

Between 2016-2017, it was noted that around 40% of patient referrals to the Calgary hepatology service **were for patients with NAFLD.**

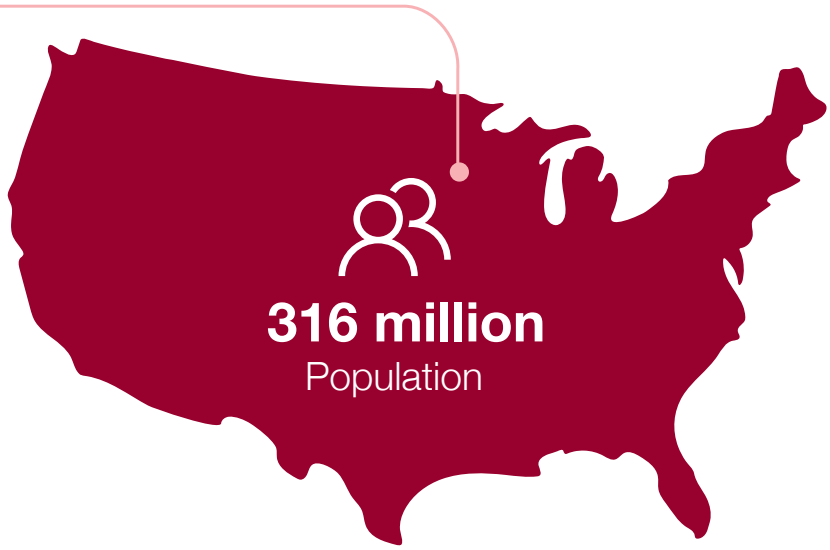
The NAFLD pathway was implemented in January 2018 and made available to all primary care physicians in the Calgary Health Zone. Of the 2084 patients with suspected NAFLD who were initially evaluated in primary care using the pathway, 91.5% were found not to need referral to hepatology, 60.3% were classified as being obese, and 52.5% had elevated serum liver enzymes which would have previously qualified them for tertiary referral. The pathway is now standard practice in primary care settings across Calgary.

'Since January 2016 almost 14,000 patients have gone through this pathway,' explains Dr. Mark Swain who led the initiative. 'Of those, only around 7% of patients have needed to be referred to a liver specialist, with the remainder being effectively treated within their primary care setting.

'This innovative primary care-based case finding system has provided significant benefits, for both the tertiary care service and the patients who are now able to have their disease managed within a primary care setting, alongside their own primary care physician, in conjunction with any other health issues they may have.'



UNITED STATES OF AMERICA



The third largest country in size in the world, the US has the third largest population after China and India. The US is a federal republic made up of states, territories, and a federal district. There is no official language although English is the first language for around 79% of the population, and Spanish is spoken by around 13% of the population (equating to approximately 41 million people). 2% of the population (around 6.6 million people) identify as native Indigenous people

Population: 316 million

GDP per Capita: $81,695 USD

Life Expectancy: 74.8 (men) and 80.2 (women)

Healthcare Spending: As of 2021, the US had a GDP of $21.37 trillion USD, making it the world's largest economy. Government spending on healthcare is approximately 16.77% of GDP (2019) equating to around $10,92 USD per capita. Private health expenditure makes up over 50% of all healthcare spending.

Healthcare Funding: Uniquely in the developed world, the US has no universally available healthcare program. Private insurance, obtained as an employee benefit or privately purchased, provides health coverage for 67% of Americans, and the details of private coverage vary widely. Other forms of health provision include Medicare for those over 65 or with long-term disabilities and Medicaid for low income families, both of which are government-funded. There is no universal coverage for long-term health care, and few insurance policies provide this cover. Just over half of the hospitals are nonprofit, a quarter are for-profit and 19% are state-owned public hospitals. It is estimated that 8.5% of the population is uninsured.

Sources: World Bank, The Commonwealth Fund, WorldData.Info

$81,695
GDP per capita

16.77%
of the GDP is spent on Healthcare Spending

74.5 (men) and 80.2 (women)
Life Expectancy

The wealthiest and probably the most medically advanced country in the world is facing a crisis in liver disease of dramatic proportions. Currently, around 4.5 million adults in the US are living with a diagnosed liver disease and just over 50,000 people die of the condition every year, with 60% of these deaths attributed to alcohol-associated liver disease.[1] By 2030 however, it is predicted that liver deaths will have increased (since 2015) by 178% to an estimated 78,300 deaths, mostly attributable to metabolic dysfunction-associated steatotic liver disease (MASLD) and its more advanced form, metabolic dysfunction-associated steatohepatitis (MASH), which are expected to overtake alcohol-associated liver disease as the main liver-related cause of death.[2]

This dramatic change in the liver disease landscape is directly attributable to the high rates of obesity which has been a characteristic of American health for several decades. Indeed, 42.4% of Americans are now classified as obese, so the burden of fatty liver disease is translating into serious liver health issues including cirrhosis and decompensated liver disease.[3] A 2020 study of 100 physicians involved in treating liver disease found that MASH and MAFLD combined make up around 42% of specialists' and primary care physicians' liver patients.[4]

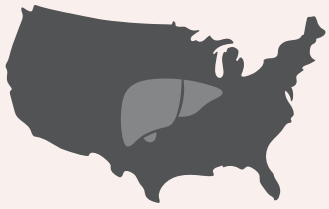
During the period 2015-2030, there are projected to be nearly 800,000 excess liver deaths with the accompanying social and economic costs.[2] A 2016 study estimated the annual medical costs of MAFLD in 2016 as $103 billion USD.[5] This figure is likely to have risen and to continue to rise exponentially over the next few years in parallel with the incidence of MAFLD and progression to MASH.

As with the rest of the developed world, liver health appears to be low on the list of priorities for both health administrators and health campaigners in the US. Obesity is regularly linked to diabetes and cardiovascular disease, but liver disease is rarely cited as a consequence of obesity. Thus 30% of physicians from across primary and secondary care were unable to name any national guidelines for the management of chronic liver disease.[4]

In 2020, Global Liver Institute and its MASH Council (known as the Fatty Liver Disease Council) released the U.S. MASH Action Plan to address MASH (now known as MASH), the most advanced form of MAFLD, and its impact on patients, families, public health, and the economy.

The U.S. MASH Action Plan, the first national MASH strategy, was a logical next step in the work of the GLI MASH Council to address the multiple challenges and barriers to better NASH screening, diagnosis, and treatment. Against the backdrop of MASH's prevalence and impact, each of these recommendations plays an instrumental role in elevating the disease to its rightful place on the public health agenda.

While the MAFLD/MASH epidemic continues to grow, alcohol-associated liver disease continues to be a significant cause of liver-related death. The age-adjusted death rate from alcohol-associated liver cirrhosis increased by 47.0%, from 4.3 deaths per 100,000 population in 2000 to 6.4 deaths per 100,000 population in 2019, with rates for white males increasing by 106%.[6]



4.5 MILLION

Adults in the US are **living with a diagnosed liver disease**

A 2019 national survey of around 25% of the adult population (aged over 18) reported binge drinking at least once in the previous month and estimates suggest 14.5 million people over the age of 14 have an alcohol use disorder.[7] At the same time, it is reported that less than one in ten people received any treatment for their condition.[6] In total, 29,505 people died from alcohol-associated liver diseases in 2020.[7] Further, between 2008 and 2019, alcohol-associated liver disease increased from 22% to 31% as a proportion of candidates for liver transplantation.[8]

On another hand, viral hepatitis is generally well controlled with effective vaccination and testing programs, combined with the latest available antiviral treatments which have kept acute case numbers stable for HBV and HCV (although infection rates for HCV are slowly rising).[8] Between 2010 and 2019, the proportion of candidates for liver transplant with a diagnosis of HCV dropped from 30.6% to 12.6%.[8]

However, it is not all good news. Both acute and infection rates of hepatitis A have been rising steadily since 2017 with an unprecedented spike in acute cases in 2019 attributed to a rise in needle-to-needle drug use and homelessness.[8] Overall, just under 4,000 people died from viral hepatitis in 2020, representing 1.2 deaths per 100,000 of population.[9]

The US carries out the highest number of liver transplants in the world and continues to be a center of global expertise. In 2019, there were 8,896 liver transplants were performed including 524 living liver donor transplants.[8,10]

Finally, it must be noted that the US benefits from numerous highly motivated and well-organized clinical and patient groups who have, between them, produced a large, high-quality and focussed database of relevant information on the current and future state of liver health. If there was any doubt before, there can be no more excuses for the government not to develop a national strategy on MAFLD and MASH as a matter of urgency to combat this potentially catastrophic public health crisis.

In 2019,

8,896

Liver Transplants

were performed, including **524 living liver** donor transplants.



MANY CHALLENGES IN LIVER HEALTH, BUT THE POSITIVES ARE WITHIN REACH

Professor Scott Friedman is the Chief of the Division of Liver Diseases and Dean for Therapeutic Discovery and Professor of Pharmacologic Sciences at the Icahn School of Medicine at Mount Sinai Hospital in New York.

We are facing several significant and interrelated challenges in liver health, all of which, if unresolved, are set to place a progressively larger burden on our healthcare system and providers over the next few years and even decades to come.

The first major challenge is that posed by NAFLD and NASH. Driven by our high obesity rates, there is every indication that the prevalence of these conditions is increasing fast and will continue to do so for the foreseeable future. Concurrently, and as a direct consequence of this, we are also facing rapidly rising rates of liver cancer. Primary liver cancer has the fastest rising incidence rates of any cancer, not just in the US, but globally.

There is a further danger to note here. Whereas with viral hepatitis, less than 5% of patients progress to liver cancer without at least some cirrhosis, the pathology pathway of NASH is somewhat different, and we estimate that around 30% of patients with NASH may progress to liver cancer without cirrhosis. This group of patients will have been far less likely to be in a screening program, and, therefore, their cancer is more likely to be diagnosed at a more advanced stage.

Currently we are not in a great position to counteract the effects of NAFLD and NASH through medications. The only approved treatment we can offer is to work with our patients to lose weight and exercise more, and in extreme cases bariatric surgery may improve NASH, as discussed below. However, as every clinician knows, weight loss can be extremely difficult for some patients to achieve – let alone managing and maintaining the weight – and is also a challenging therapy for the doctor to manage.

Additionally, there is a lack of regular screening for patients who are at high risk of NAFLD or NASH. In part, this is due to limits on capacity, but it is true to say that there is also a certain mindset amongst some clinicians, perhaps particularly in primary or general medicine, who feel there is little point looking for a disease for which there is no effective treatment. Even if the patient is included in a screening program, there is often uneven knowledge of 'what to do next' with someone who has elevated transaminases or high levels of fat around the liver. We need to change that clinical mindset – early detection always means better outcomes.

One potential solution to obesity is, of course, bariatric surgery, with many patients and their clinicians opting for this route in increasing numbers. However, while bariatric surgery is indeed beneficial for weight loss (along with providing some other metabolic benefits), it is an invasive and life-changing procedure, not to mention costly. As a result, this is not a solution that can be scaled up to an extent that it would provide a solution to the current US numbers of patients with NAFLD and NASH. Likewise, while we have a world-class liver transplantation program, with ongoing incremental improvement in transplant medicine, you simply cannot expect this complex and expensive procedure to provide a broad solution for the oncoming wave of medical need.

“We are facing several significant and interrelated challenges in liver health, all of which, if unresolved, **are set to place a progressively larger burden on our healthcare system.**”

- PROFESSOR SCOTT FRIEDMAN

© 2026 by Global Liver Institute. All rights reserved

MANY CHALLENGES IN LIVER HEALTH, BUT THE POSITIVES ARE WITHIN REACH

That leaves us with future pharmaceutical therapies, which have the advantage of being available to potentially treat large numbers of people. Probably our best hope of turning the tide of liver disease will come from treatments which directly work on the pathology of the liver to reverse the damage caused by NAFLD and NASH, and with several drugs currently undergoing late-stage trials we hope that at least one or two of these prove to be an effective therapy.

However, we cannot rely on the pharmaceutical industry to provide all the solutions to liver health. We have to consider that it may be time for a re-think of our current healthcare structure in order to meet this new type of health challenge.

Previously most liver disease was caused by viral hepatitis, or was alcohol-associated, with both conditions managed wholly within the specialty of hepatology. Now we have a situation where a patient who is at high risk for liver disease (i.e. an obese or T2D patient) may see a primary care doctor or a family practitioner. Then, depending on their most pressing medical need, they might be receiving specialist treatment from an endocrinologist, a cardiologist and other specialists.

Therefore, rather than being seen as a disease of just one speciality, NAFLD and NASH may be better managed via multi-disciplinary pathways effectively coordinated across all the various relevant specialities, supported by robust, widely approved clinical guidelines. This change would take a comprehensive conversation between clinicians and health care providers, and it is something we should think about sooner rather than later.

Apart from NASH and NAFLD there are several other areas of liver health that are challenges for hepatologists and their patients. Alcohol-associated liver disease continues to rise – especially during the COVID-19 pandemic – with little sign of slowing down. Pediatric liver disease may not affect the same numbers as NAFLD and NASH, but they can prove to be catastrophic for the child and, of course, devastating for their families. Unfortunately, we still have too few treatments and incomplete understanding of these often very complex conditions.

Drug-induced liver injury is another area of liver health which is often downplayed and while sporadic, is still a major unmet need. Often, we only reach diagnosis by exclusion of other conditions, and far too late to prevent severe damage from occurring. Hepatologists have also noted that COVID-19 can worsen liver function in patients with advanced liver disease, and we are continuing to see the effects of this in our patients, even while the epidemic is waning.

It is important, however, to remember that while liver disease presents a huge challenge for us all, we have many positives to think about. Firstly, most liver diseases are mostly either preventable or treatable, so if we focus on implementing effective preventative and awareness strategies then the burden should start to reduce. Secondly, we have some pharmaceutical therapies coming down the line which should improve outcomes of some liver conditions. Finally, and perhaps most importantly, uniquely of all our organs the liver has an amazing capacity to heal. All we have to do is give it a chance.

> Uniquely of all our organs **the liver has an amazing capacity to heal.** All we have to do is give it a chance.
>
> - PROFESSOR SCOTT FRIEDMAN

© 2026 by Global Liver Institute. All rights reserved

OCEANIA



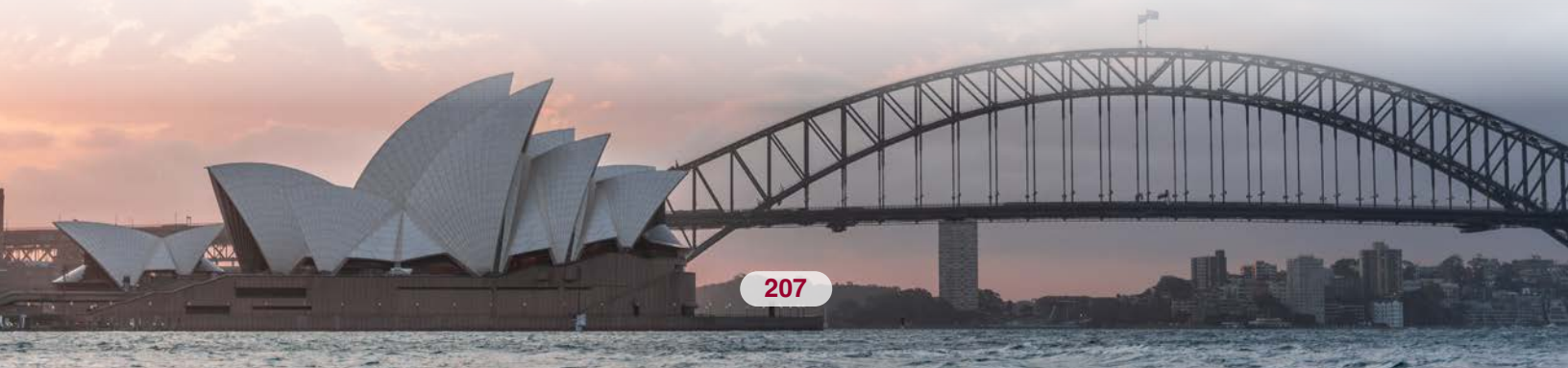
HEALTH OVERVIEW

Oceania, a vast region encompassing Australasia, Melanesia, Micronesia, and Polynesia, presents a diverse health landscape characterized by both challenges and successes. The health status across Oceania is influenced by factors such as geography, culture, socioeconomic conditions, and access to healthcare.

In Australia and New Zealand, two of the more developed countries in the region, health indicators generally reflect high standards of living. The healthcare systems in these countries are robust, providing comprehensive services and advanced medical technologies. Non-communicable diseases (NCDs) like cardiovascular diseases, diabetes, and obesity are prevalent, attributed in part to affluent lifestyles. Mental health is also a growing concern, prompting increased efforts to address awareness and support.

In the Pacific Islands, including Melanesia, Micronesia, and Polynesia, many health challenges become more pronounced. Many island nations face limitations in healthcare infrastructure, human resources, and accessibility. Communicable diseases such as tuberculosis and malaria persist in some areas, rates of obesity are high, and climate change poses additional risks to health, food security, and increased vector-borne diseases.

Sources: WHO Western Pacific Health at a Glance



The divide in health outcomes between Australia and New Zealand and the rest of Oceania persists in liver health as well. While Australia and New Zealand enjoy some of the lowest death rates due to liver disease in the world (New Zealand, for instance, has the third lowest death rate in the world), many island nations face mortality rates due to liver disease between 3 and nearly 10 times as high.[1]

The smaller island nations in Oceania face some of the highest rates of incidence and mortality due to liver cancer around the world, second as a region only to Asia.[2] Indigenous populations in Oceania, especially in the small island regions of Melanesia, Polynesia, Micronesia, and Papua, as well as from Australia and New Zealand, are over-represented for the burdens of infectious diseases (including viral hepatitis).[3] These communities face many challenges to positive health outcomes, including health system access and infrastructure, they also have some of the highest rates of obesity and fatty liver disease.

New Zealand has the
3rd lowest
death rate due to liver disease
in the world

DID YOU KNOW?

Oceania has the
3rd highest NAFLD prevalence in adolescents.[5]

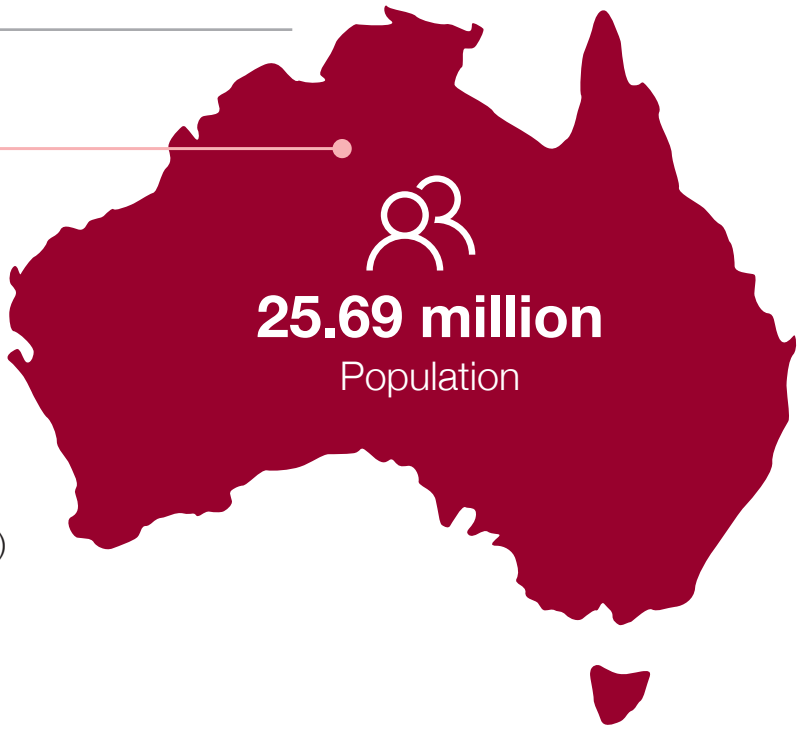
In fact, all of the nations with 50% or more people with obesity are found in Oceania – Nauru, Palau, the Marshall Islands, Tuvalu, and Niue.[4] Accordingly, Oceania has, for instance, the third highest metabolic dysfunction-associated fatty liver disease (MAFLD) prevalence in adolescents.[5] A similar pattern can be followed in the shared transplantation system of Australia and New Zealand, where NASH is increasing as the primary indication for liver transplantation.[6]

Viral hepatitis also poses a serious risk for the region, in which HBV causes more deaths than tuberculosis, HIV infection, and malaria, combined, and HCV leads to many cases of liver cancer.[7] Although Australia has implemented a remarkably successful HCV elimination strategy, there is still much work left to be done in the region.



OVERVIEW

AUSTRALIA



Population: 25.69 million (2021)

GDP per Capita: $64,712 USD

Life Expectancy: 81.2 (men) and 85.3 (women)

Healthcare Spending: 10% GDP

Healthcare Funding: Australia uses a combined system to achieve universal health coverage. Its universal public health insurance program (Medicare) covers care and prescriptions delivered outside of public hospitals and clinics. Public hospitals and clinics, are owned, operated, and funded by state, territory, and local governments. Medicare coverage is automatic for citizens and eligibility is available for permanent residents, people from countries with reciprocal benefits, and New Zealand citizens. Funding is financed through tax revenue and a government levy. About half of Australians purchase supplemental insurance for private hospital care, dental services, and other health services; this accounts for about a third of health spending in the country.

Sources: The World Bank, Australian Institute of Health and Welfare, Australian Department of Health and Aged Care, Commonwealth Fund

$64,712
GDP per capita

10%
of the GDP is spent on Healthcare

81.2 (men) and **85.3 (women)**
Life Expectancy



Liver disease affects more than six million people in Australia, leading it to become the 11th leading cause of death in the nation.[1, 2] Males account for approximately two-thirds of those deaths, suggesting a particular set of etiologies that affects the distribution of liver disease in the population.[2] Several global patterns that affect liver disease also appear in Australia.

In Australia, non-alcoholic fatty liver disease is the most common cause of chronic liver disease – and cases are continuing to rise.[3] While accurate prevalence data is limited without population-based studies, estimates track with global estimates.[4] The epidemic of fatty liver disease follows the growing prevalence of overweight and obesity. One in four children and teens and two in three adults in Australia are considered overweight or obese.[4] Based on data from member countries of the Organization for European Co-operation and Development (OECD), Australia ranks 9th of 21 countries for prevalence of overweight and obesity over 15, greater than the OECD average. This proportion is even higher on the list for men than for women.[5] (metabolic dysfunction-associated fatty liver disease, or MAFLD is also more common in men than women in Australia.) Unfortunately, this trend in overweight and obesity has been on the rise for many years without signs of slowing down.[5] The prevalence of type 2 diabetes is also related to the rise of MAFLD and its more advanced form, metabolic dysfunction-associated steatohepatitis (MASH).[4] In parallel, prevalence of MAFLD is expected to increase by 25% by 2030, while MASH prevalence is expected to increase by 40%.[6] Prevalence in children is also on the rise – which, unfortunately, carries higher rates of progression to cirrhosis, liver cancer, or end-stage liver disease requiring transplantation than adults.[3, 4]

6 MILLION PEOPLE

(about 1 in 4) are affected by liver disease.





EXCESS ALCOHOL CONSUMPTION

is the leading cause of cirrhosis in Australia.

While MAFLD is the most common liver disease, excess alcohol consumption is the leading cause of cirrhosis.[3] Most Australians over the age of 14 have consumed alcohol in their lifetime, with the annual consumption rate of 9.5 liters of pure alcohol per capita for this age group, above OECD averages.[7] While there has been a decline in the proportion of people exceeding lifetime risk in recent decades, this improvement has paused since 2016;[7] about 1 in 4 men and 1 in 10 women exceed these guidelines today. Though this decline is positive, 25% of Australians 14 or older drink at a risky level at least monthly; this is also higher in men than in women.[7] An estimated 40% of liver cancer burden and nearly 20% of the chronic liver disease burden in Australia can be attributed to alcohol consumption – and liver disease is the most common cause of alcohol-induced death.[7] Notably, consumption is higher in regional areas than capital cities, which suggests geographic demographic differences in risk.



DID YOU KNOW?

Prevalence of NAFLD is expected to **increase by 25% by 2030,** while NASH prevalence is expected to **increase by 40%.**

Approximately 0.9% of the Australian population are living with hepatitis B, which represents a slight increase in the past two decades.[8] Hepatitis C has been about half as common.[9] However, since 2016, rates of new hepatitis C infections have declined, after highly effective direct acting antiviral treatments became widely available in a national scheme.[10] Hepatitis A, D, and E are known to be rare in the country, with A primarily caused by international travel.[11,12,13] Aboriginal and Torres Strait Islander people are at a greater risk of liver disease than other groups, in particular hepatitis B.[2]

There is a four-dose hepatitis B vaccination program for Australian newborns during the first four months of life, available freely through the National Immunisation Program, while eligible people under 20 years old, refugees, and other humanitarian entrants to the country can receive a free catch-up vaccination as well.[14] While the vaccination became available in the early 1980s, free infant vaccination began in 1990 and began nationally in 2000; as soon as 2017, 95% of Australian 1-year-olds were fully vaccinated against hepatitis B, and related hospitalizations have decreased since the vaccination programs began.[15]

While rare liver diseases do not receive widespread research attention, PBC incidence has been increasing, with women receiving the vast majority of diagnoses.[16] AIH cases are about 3 in 4 women, with about 1 in 4 having developed cirrhosis at time of diagnosis.[17] PSC is rare but present, with under a thousand cases diagnosed throughout the country annually.[18]

The total cost of cancer in Australia is 6 billion US dollars each year, and the country has nearly tripled its research spending in the last two decades.[19, 20] However, with only 1.8% of cancer cases being liver cancer, the diseases likely receive only a small portion of that allocation.[21] However, 5% of cancer deaths are attributable to liver cancer, disproportional to its prevalence.[21] Unfortunately, parallel to many other countries around the world, liver cancer only has a 22% five-year survival rate, and both preventive efforts as well as earlier diagnosis and improved treatment options will be important to increase survival rates.[22] Liver cancer is the most rapidly rising cause of cancer death in Australia.[2]

Liver transplants have been carried out in Australia since 1985, with one unit regulating liver transplantation in each state or region.[23] Almost all liver transplants are performed from deceased donors in Australia.[24] Because collaborative research is organized by the Australia and New Zealand Liver Transplant Registry and counts both countries, for which the most recent data available indicates that approximately 260 liver transplants across adults and children occur annually, though that number has likely increased following a growing trend.[23]

An estimated 40% of liver cancer burden and nearly 20% of chronic liver disease burden in Australia **can be attributed to alcohol consumption.**



AUSTRALIA'S SUCCESSFUL PROGRESS TOWARDS HEPATITIS C ELIMINATION

Dr. Simone Strasser is an Clinical Associate Professor in Medicine at the Central Clinical School at the University of Sydney and a hepatologist and researcher at Royal Prince Alfred Hospital A W Morrow Gastroenterology and Liver Centre in Sydney. Her work and research focus on transplantation and liver cancer, and she serves as the director of The Liver Foundation in Australia.

Overall, liver health is in a similar place in Australia as it is around the world. There is rapidly rising metabolic-associated fatty liver disease, which is becoming overwhelming here. While viral hepatitis is dropping as a cause for end-stage liver disease and liver cancer, the non-viral liver diseases are increasing (alcohol- and obesity-related liver disease). So we're trying to engage general practice more.

Hepatitis C itself is an absolute success story for Australia. At a time when, in the US and Europe, access to hepatitis C treatments were restricted to people with advanced disease, diagnosis rates were low, and prisoners and drug injection communities did not have access to treatment, everyone without restriction had access in Australia.

Now, the epidemiology of hepatitis C has changed drastically. We've seen a dramatic downturn in the amount of hepatitis C in the community; almost all patients with advanced liver disease have been treated, and the diagnosis rates now are 80%. So we have high rates of diagnosis, and the number of people with hepatitis C in the community is dropping quite quickly.

> Everyone with hepatitis C in the bloodstream is **eligible for federally - funded treatment in Australia.**
>
> - DR. SIMONE STRASSER

How the Program Works:

- The eligibility criteria was having the hepatitis C virus in the bloodstream – severity of disease, drug use, or imprisonment were not barriers to treatment.
- The program was federally funded, with **no direct cost to patients** to receive treatment.
- General practitioners (GPs), nurse practitioners, or other physicians, in addition to liver specialists were allowed to write prescriptions.
- The Gastrointestinal Society of Australia (GESA), launched a consensus; educated GPs, who were not confident treating this new, infectious, dangerous disease; and even set up a system where GPs could fax a form to liver specialists with patient details and receive sign-off on their treatment plan.
- Patients received a prescription for direct acting antivirals to their pharmacy of choice for two to three months of treatment, funded through the pharmaceutical benefits scheme (about $7.90 a month for pensioners or $35 a month for everyone else).

The story of hepatitis C treatment in Australia has been fantastic. Within the first year we had already treated 25% of the affected population. We have now treated at least 50-69%, including the majority of people with advanced liver disease. We are seeing the results now in reduced rates of transplant for hepatitis C, reduced liver cancer due to hepatitis C. Now there's a big shift in the population that we are transplanting – the driver for their progressive liver disease is often obesity and diabetes, and they've got multiple conditions. But with hepatitis C, we really opened up access universally for residents, with federally-funded therapy, and we've seen that it's been very effective.

© 2026 by Global Liver Institute. All rights reserved

OVERVIEW

NEW ZEALAND

Population: 5.29 million (2024)

GDP per capita: $49,205.2 USD (2024)

Life Expectancy: 80 years (men) and 84 years (women) (2024)

Healthcare Spending: 10.06% of GDP (2024)

Healthcare Funding: New Zealand operates a predominantly publicly funded healthcare system, with the central government covering most of the health and disability services through general taxation. Public funding pays for most hospital care, maternity services, prescriptions, and a broad range of community health services, with eligible citizens and permanent residents able to access these services free of charge or at subsidized cost. The primary vehicle for funding and delivering these services is Health New Zealand - *Te Whatu Ora*[i], which consolidated the functions of 20 former district health boards into a single national organization. Healthcare spending has historically represented around 5.3–6% of GDP, rising towards the upper end of that range in the post-COVID period.

In recent years, the government has committed to a significant multi-year increase in health funding: Budget 2024 launched a three-year health funding plan totaling NZD $16.68 billion for Health New Zealand aimed at addressing workforce shortages, infrastructure deficits, and growing demand from an ageing population. Persistent health inequities, particularly for Māori and Pacific communities, remain a central policy concern, and efforts to address them are embedded in the statutory objectives of Health New Zealand, even as the institutional landscape continues to evolve following the disestablishment of the Māori Health Authority in 2024.

Sources: *Data.WorldBank, New Zealand Government (govt.nz), Ministry of Health New Zealand (health.govt.nz), Health New Zealand | Te Whatu Ora*



5.29 Million
Population

$49,205.2
GDP per capita

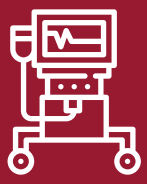
10.06%
of the GDP is spent on Healthcare

80 years (men), 84 years (women)
Life Expectancy



Liver disease represents a significant and growing public health challenge in New Zealand, driven by a combination of viral, metabolic, and alcohol-related aetiologies. Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections collectively remain the dominant causes of chronic liver disease and hepatocellular carcinoma in the country, with their burden falling disproportionately on Māori, Pacific, and Asian communities.[1,2] Metabolic-dysfunction-associated steatotic liver disease (MASLD) is an increasingly important contributor, fuelled by some of the highest rates of obesity and type 2 diabetes in the developed world, while alcohol-related liver disease adds a further and often underestimated dimension to the national liver disease burden.[5,15]

Hepatitis B virus (HBV) infection is one of the most significant liver health challenges in New Zealand. An estimated 93,600 people were living with chronic HBV infection in 2018, representing approximately 2% of the total population, with the burden falling disproportionately on Asian, Māori, and Pacific communities.[1] Earlier analysis of chronic liver disease (CLD) mortality from 1992 to 1997 estimated that HBV was responsible for over half of all CLD deaths in Māori and Pacific people, compared with only 10% in Europeans, a disparity that has persisted to the present day.[2,3] Universal infant vaccination was introduced in 1988, and antenatal HBsAg screening is now routine practice.[1,3] Despite these measures, fewer than one in five people with chronic HBV had been recruited into the Hepatitis Foundation of New Zealand (HFNZ) national surveillance programme as of 2019, and among patients who presented with advanced HBV-related hepatocellular carcinoma (HCC), almost 40% were unaware of their HBV status at the time of diagnosis.[1] A National HBV Action Plan, including government endorsement of the surveillance programme and targeted screening of Māori, Asian, and Pacific Islander adults over 35, has been proposed as the most effective route to reducing health inequalities and improving outcomes.[1]



The absence of a national HCV registry and universal screening programme **remains a key structural barrier.[4]**

Early data on chronic liver disease (CLD) mortality from 1992 to 1997 highlighted HCV as an important contributor across all ethnic groups, with population attributable risk estimates ranging from 6% to 14%, sustained primarily by injecting drug use after transfusion-related transmission was eliminated through blood product screening in 1992.[2] More recent modelling placed the viraemic prevalence at approximately 0.9% in 2020. A 2025 primary care-based screening study across three general practices found an HCV viraemia prevalence of 0.2%, substantially lower than earlier estimates, though these results require cautious interpretation given that Māori, Pacific people, and individuals with high deprivation index scores were markedly under-represented among volunteers.[4] New Zealand is a signatory to the WHO 2030 hepatitis elimination goal, and direct-acting antiviral therapies now offer a cure for almost all people with chronic HCV. However, the absence of a national HCV registry and universal screening programme remains a key structural barrier.[4]

Metabolic-dysfunction-associated steatotic liver disease (MASLD) is an increasingly important cause of liver morbidity in New Zealand, driven by high rates of obesity and type 2 diabetes. In 2012/2013, 31% of New Zealand adults were living with obesity, giving the country the third-highest obesity rate globally, and rates are especially elevated among Māori (48%) and Pacific communities (68%).[5] Among bariatric surgery patients at Auckland City Hospital, intraoperative liver biopsy found MASLD in 88% of cases, with Pasifika patients (a term used in New Zealand for people of Pacific Island descent) showing a significantly higher rate than non-Pasifika (98% versus 87%).[6] At the transplant level, metabolic-

associated steatohepatitis (MASH) has emerged as the third leading indication for both wait-listing and liver transplantation in Australia and New Zealand, rising from 2% of transplant registrants in 2003 to nearly 11% by 2017. This increase reflects the growing burden of obesity and metabolic disease in the population, and MASH is projected to become the leading transplant indication as its absolute numbers continue to rise alongside an ongoing decline in HCV-related end-stage liver disease driven by the availability of direct-acting antivirals.[7]

Hepatocellular carcinoma (HCC) is the most common form of primary liver cancer in New Zealand, accounting for 71% of all primary liver cancer diagnoses in the country.[8] Chronic infection with HBV and HCV collectively represents the principal drivers of hepatocellular carcinoma (HCC) in New Zealand.[8] Liver cancer is among the least survivable cancers in New Zealand: approximately 40% of patients survive one year post-diagnosis and only 20% survive five years, with most presenting at intermediate or advanced stage when curative options are no longer available.[8] HCC incidence has been increasing in New Zealand, driven in part by an ageing cohort of pre-vaccination individuals with chronic HBV, sustained migration from HBV-endemic countries, and the growing contribution of MASLD alongside rising obesity and type 2 diabetes rates.[8]



Liver cancer rates are over **7x higher in Pacific men and ~5x higher in Pacific women** when compared to European or other New Zealandars.

The burden of liver cancer falls disproportionately on Māori and Pacific peoples. Over a 24-year study period (1981–2004), Māori males had nearly five times the rate of HCC compared to European/Other males, and Māori females approximately three times the rate of their European counterparts, with the absolute gap widening over time for males.[9] HBV infection is the primary driver of this inequity: the prevalence of hepatitis B among Māori HCC patients was more than double that of non-Māori patients.[9] Pacific peoples carry an even heavier burden, with liver cancer rates over seven times higher in Pacific men and approximately five times higher in Pacific women compared to European/Other New Zealanders.[10] A review of advanced HBV-related HCC cases referred to the New Zealand Liver Unit between 2003 and 2017 found that 39% of patients were Māori and 34% were Pacific, with a median survival of only 138 days. Critically, 40% had no prior HBV diagnosis at the time of HCC presentation, and a further 26% had a known HBV diagnosis but were not enrolled in any surveillance programme.[12] Māori patients also face a significant structural barrier to care, travelling on average 121 km to access first primary liver surgery compared to 56 km for European patients.[11]

Liver transplantation in New Zealand is provided through a single nationally funded unit established in Auckland in 1997, with the first adult transplant performed in February 1998. Access is publicly funded and determined solely by medical criteria, governed by guidelines developed by the Liver and Intestinal Transplant Advisory Committee of the Transplantation Society of Australia and New Zealand.[13] The organ donation rate in New Zealand remains low at approximately 11.6 per million of population per year, significantly below rates in comparable countries, which constrains transplant activity.[13] The profile of transplant indications has shifted markedly over recent decades: the proportion of adult liver transplants in Australia and New Zealand performed for potentially preventable liver diseases, including HCV, HBV, alcohol-related liver disease, and MASLD, rose from 21% in the period 1985–1993 to 64% in the period 2004–2012.[14]

HCV has become the most common primary indication for adult liver transplantation, while HBV as a transplant indication has declined significantly, reflecting the combined impact of national vaccination programmes and effective antiviral therapies. MASLD has emerged as a rapidly growing indication over the same period.[14]

Alcohol-related liver disease (ALD) is a significant and often underappreciated contributor to liver morbidity and mortality in New Zealand. According to the most recent New Zealand Health Survey (2024/25), 74.9% of adults consumed alcohol in the preceding 12 months, and 16.6% were classified as hazardous drinkers, though both figures represent a meaningful decline from 81.6% and 21.3% respectively in 2019/20.[15] The economic burden of alcohol-related harm in New Zealand is substantial, estimated at approximately NZD $9.1 billion for 2024, encompassing health and accident compensation expenditure, lost productivity, justice system costs, and increased demand on social services.[15] The Public Health Agency within the Ministry of Health leads a national Alcohol Harm Reduction Programme aligned with the Government Policy Statement on Health 2024–2027, which identifies reducing alcohol consumption as a key public health priority in the context of major non-communicable diseases.[15]



CONCLUSION

Liver disease remains a largely silent and underrecognized public health challenge, often diagnosed only after significant damage has occurred. Many forms of liver disease are preventable and treatable, yet millions of people face barriers to timely diagnosis, effective care, and affordable treatment. Liver disease encompasses a range of conditions, from metabolic dysfunction and alcohol-associated liver disease to viral hepatitis and liver cancer, placing a growing burden on individuals, families, and health systems worldwide.

The evidence presented in this report reinforces an urgent message: liver health must become a global public health priority commensurate with its prevalence and impact. The World Health Organization estimates that steatotic liver disease (SLD) affects approximately 1.7 billion people worldwide[1]. Meanwhile, viral hepatitis B and C caused an estimated 1.3 million deaths in 2024, primarily from cirrhosis and liver cancer[2]. These figures reflect both the scale of the challenge and the cost of failing to act. Despite effective prevention and treatment options, gaps in awareness, diagnosis, access to care, and political commitment continue to leave millions of people.

Yet 2026 has marked a historic turning point. On 21 May, the Seventy-ninth World Health Assembly adopted resolution WHA79.4, Steatotic liver disease: a missing piece in the global noncommunicable disease response. This landmark achievement, to which Global Liver Institute (GLI) played a pivotal role alongside the Egyptian Ministry of Health and Population and other partners, formally recognized SLD as an important and growing contributor to the global burden of noncommunicable diseases (NCDs). The resolution calls on governments to integrate SLD into national NCD strategies, strengthen prevention and early detection, improve surveillance, and expand access to diagnosis and care. It also calls on WHO to support countries in advancing these efforts.

This milestone is a beginning, not an end. Its success will depend on translating international recognition into national action, adequate resources, measurable commitments, and tangible improvements in people's lives. GLI will continue working with policymakers, governments, clinicians, researchers, patient organizations, and civil society to support implementation across countries and ensure that liver health remains firmly on the global public health agenda.

[1] https://apps.who.int/gb/ebwha/pdf_files/WHA79/A79_39-en.pdf
[2] https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hepatitis/reports/global-hepatitis-report-2026

5 Throughout the report, **several interconnected priorities emerge**

1. **Metabolic health and obesity.** The global rise in obesity, type 2 diabetes, and other metabolic risk factors is contributing to the growing burden of SLD and its potential progression to cirrhosis and liver cancer. Prevention requires healthier food environments, physical activity, early identification of people at risk, and integrated approaches to metabolic health.
2. **Alcohol-associated liver disease.** Harmful alcohol consumption continues to contribute substantially to liver disease and premature death. Evidence-based measures, better access to prevention and treatment services, and public education are essential to reduce alcohol-related harm and challenge the normalization of harmful drinking.
3. **Viral hepatitis.** Effective hepatitis B vaccination, testing, and treatment, alongside curative treatment for hepatitis C, offer powerful opportunities to prevent cirrhosis and liver cancer. However, major gaps in diagnosis and treatment persist, making equitable access and sustained investment essential to achieving global elimination targets.
4. **Equity, early detection, and integrated care.** Liver disease must be addressed across the life course and within stronger primary healthcare systems. Better surveillance, timely diagnosis, appropriate screening of at-risk populations, affordable treatment, and meaningful patient involvement are essential to reducing preventable complications and inequalities.
5. **Political commitment and accountability.** Global commitments must be translated into national strategies, funded programmes, measurable targets, and regular monitoring. Policymakers must work across health, education, food systems, and other relevant sectors to address shared risk factors and make liver health an integral part of NCD prevention and universal health coverage.

© 2026 by Global Liver Institute. All rights reserved

Scientific advances, improved diagnostic tools, innovative treatments, and the dedication of patient communities offer real reasons for optimism. The WHA79 resolution demonstrates that sustained collaboration can bring an overlooked disease onto the global agenda. The challenge now is to build on this momentum, strengthen national responses, and ensure that the commitments made translate into better prevention, earlier diagnosis, and more equitable care.

The majority of liver disease burden can be reduced through timely, evidence-based action. Investing in prevention and early intervention can improve quality of life, reduce avoidable healthcare costs, and save lives. GLI remains committed to working with policymakers and partners around the world to turn this opportunity into lasting progress and, ultimately, to reverse the growing global burden of liver disease.

We urge everyone, wherever they are and whatever their role, to act now to improve the global state of liver health.

WE CALL ON GOVERNMENTS & POLICY MAKERS GLOBALLY TO:

- Translate the WHA79 resolution into national action by integrating SLD and broader liver health priorities into NCD strategies, health plans, and budgets.
- Strengthen high-quality data collection, surveillance, and accountability to guide decisions and measure progress.
- Invest in prevention, public education, risk assessment, timely diagnosis, and access to effective treatment.
- Address shared risk factors through coordinated measures on healthy diets, obesity, physical inactivity, harmful alcohol consumption, and viral hepatitis.
- Ensure equitable access to liver health services, diagnostics, and treatments, particularly for underserved and high-risk populations.
- Work with clinicians, researchers, patient organizations, and civil society to develop and implement evidence-based, nationally appropriate solutions.

WE CALL ON CLINICIANS & HEALTHCARE PROFESSIONALS GLOBALLY TO:

- Recognize liver disease as a major public health concern and strengthen the identification and management of its causes and risk factors.
- Promote evidence-based clinical guidance, appropriate risk assessment, early detection, and timely referral.
- Support research, innovation, and the translation of scientific advances into accessible, effective care.
- Educate and empower patients to manage their health and participate meaningfully in decisions about their care.
- Collaborate across specialties and with patient organizations to improve integrated, person-centred liver health services.

WE CALL ON THE PUBLIC TO:

- Understand the risk factors for liver disease, including metabolic health, harmful alcohol consumption, and exposure to viral hepatitis.
- Seek appropriate medical advice, testing, vaccination, or screening according to individual risk and clinical recommendations.
- Support liver health organizations and patient groups working to improve prevention, diagnosis, treatment, and care.
- Share reliable information and help make liver health a priority in families, schools, workplaces, and communities.
- Call on local and national representatives to support stronger commitments and greater resources for liver health.

The global recognition of liver disease has advanced. Now, we must turn recognition into action. Together, we can change the trajectory of liver disease and build a healthier future for generations to come

© 2026 by Global Liver Institute. All rights reserved

ACKNOWLEDGEMENTS

This report is supported by organizations globally including: AISF - Associazione Italiana per lo Studio del Fegato, ALEH - Asociacion Latino Americana para el Estudio del Hígado, APAC - Asia Pacific Liver Disease Alliance, Arizona Liver Health, CASL - Canadian Association for the Study of the Liver, Community Liver Alliance, ERN - European Reference Network, ESOT - European Society for Organ Transplant, Fatty Liver Alliance, Fatty Liver Foundation, Hepatology Society of the Philippines, Liver Coalition of San Diego, Liver Health Foundation, Liver Patients International, Northeast Ohio Liver Alliance, PBC Foundation, SAASL - South Asia Association for the Study of the Liver, Algerian Society of Gastroenterology and Digestive Endoscopy, TASL - Turkish Association for the Study of the Liver, Texas Liver Foundation, World Hepatitis Alliance

REPORT PRODUCTION:
Shakerra Bartley, Lily Benig, Meghan Cook, Donna R. Cryer, Giacomo Donnini, Larry R. Holden, Kayla Johnson, Christine Maalouf, Roslyn Marano, Jeff McIntyre, Nikhitha Muthineni, Ludovica Spinola, Isla Whitcroft

REPORT ADVISORS:
Dr. Alessio AGHEMO, Former Secretary of AISF, Hepatology Unit Director at Humanities Research Hospital, Italy

Dr. Saima AJAZ, Clinical Research Fellow, King's College Hospital, Institute of Liver Studies, United Kingdom

Mr. Michael BETEL, President and Founder of the Fatty Liver Alliance, Canada

Dr. Graciela CASTRO, ALEH Past President, Latin America

Dr. Cyrielle CAUSSY, Prof of Nutrition and Endocrinologist/ Diabetologist at Lyon 1 University, France

Dr. Raymond CHUNG, AASLD Past President, United States of America

Dr. Bianca DELLA GUARDIA, Hepatologist, Hospital Israelita Albert Einstein, Brazil

Dr. Mahmoud Saad DESOUKY, MD, Consultant in Internal Medicine and Gastroenterology, University Lecturer, Founder of the Egyptian Hepatitis Alliance

Dr. Marcio DIAS DE ALMEDIA, Hepatologist, Hospital Israelita Albert Einstein, Brazil

Dr. Manal EL SAYED, is Professor of Pediatrics, Chair of the Pediatric department and director of the Clinical Research Center (MASRI-CRC) Faculty of Medicine, Ain Shams University, Egypt

Prof. Carmen FIERNBINTEANU, Chief of Internal Medicine and Gastroenterology at University Hospital Bucharest and clinical instructor at "Carol Davila" University of Medicine in Bucharest, Romania

Dr. Scott FRIEDMAN, Past AASLD President, Chief of the Division of Liver Diseases, Icahn School of Medicine at Mount Sinai, United States of America

Dr. Fulya GÜNSAR, Prof. of Gastroenterology, Ege Üniversitesi, Past President of TASL, Türkiye

Dr. Dao Viet HANG, Vice General Secretariat of VNAGE, gastroenterologist and, hepatologist at Hanoi Medical University, Vietnam

Dr. Marek HARTLEB, President of the Polish Society of Gastroenteroly, Gastroenterologist in Katowice, Poland

Ms. Vanessa HEBDITCH, Director of Communications & Policy, British Liver Trust, United Kingdom

Dr. Jacqueline KASSOUF MAALOUF, President & Founder of DiaLeb - The National Diabetes Organization, Lebanon

Dr. Aleksander KRAG, Aleksander Krag, MD, PhD, MBA Professor and Department Chair, Department of Gastroenterology and Hepatology Odense University Hospital, Denmark

Dr. Masatoshi KUDO, MD, PhD Professor and Chairman Department of Gastroenterology and Hepatology, Kindai University Faculty of Medicine, Japan

Dr. Alma Laura LADRON DE GUEVARA, Hepatologist, Centro de Investigación y Gastroenterología, México

Ms. Silvana Tsochkova LESIDRENSKA, Chair of Hepactive Patient Association, Bulgaria

Dr. Mbianke LIVANCLIFF, NCD Coordinator, VAHA, Cameroon

Dr. Josiah NANG-BAY, researcher and physician with experience in internal medicine, Ghana

Dr. Phil NEWSOME, EASL Past President, European Union

Mr. Michael Ochieng NYAWINO, Executive Director, Christian Community Healthcare Foundation, Kenya

Mr. William J. OCRAN, Co-Founder of empowerment for Sustainable Livelihood, a charity that promotes disease awareness, prevention, education, advocacy, and research, Ghana

Dr. Linda Achieng ORUMA, Medical Officer, St. Elizabeth Mukumu Hospital, Kenya

Dr. Diana PAYAWAL, Professor, Fatima University Medical Center, Former APASL President, President of the Philippines Collegium of Physicians, The Philippines

Dr. Juanita PEREZ-ESCOBAR, ALEH Secretary, Latin America

Dr. Tung PHAM, Lecturer, researcher and curriculum fellow in the cancer epidemiology at the Harvard T.H. Chan School of Public Health, Vietnam

Dr. Maria REIG, Head of the Hepatic Oncology Unit at the Hospital Clinic of Barcelona and leads the influential multidisciplinary Barcelona Clinic Liver Cancer (BCLC), Spain

Dr. Shivaram P. SINGH, President Elect of INASL, President of SAASL, Gastroenterologist, India

Dr. Jörn SCHATTEMBERG, Director of Metabolic Liver Research Program, University Medical Centre Mainz, Germany

Dr. Wendy SPEARMAN, Head of Hepatology, University of Cape Town, South Africa

Dr. Simone STRASSER, Hepatologist, Clinical Associate Prof in Medicine, University of Sydney, Australia

Mr. Liam A.SWAIN, Dept of Community Health Sciences, Univ. of Calgary, Volunteer for the Fatty Liver Alliance, Canada

© 2026 by Global Liver Institute. All rights reserved

ACKNOWLEDGEMENTS

Prof. Pisit TANGKIJVANICH, MD, serves as the Head of the Center of Excellence in Hepatitis and Liver Cancer at the Department of Biochemistry, Faculty of Medicine, Chulalongkorn University, Thailand

Dr. Mark SWAIN, CEO of CASL, Head of Gastroenterology, University of Calgary, Canada

Dr. Mónica TAPIAS, Hepatology Internist, Hospital Universitario Fundación Santa Fé de Bogotá, Colombia

Dr. Laz UDE EZE, MBBS, MPH, CPH, FAPH, FCAI, Health Policy & Management Specialist| Sustainable Development Consultant, Founder/CEO, Talk Health Real Media Ltd (talkhealth9ja.com), Founder, Make Our Hospital Work Campaign, Co-Founder, Sub-Saharan Brain Health Initiative (SSABHI), Nigeria

Mr. George WHITE, BSc, MSc Microbiology, University of Nottingham, United Kingdom

Dr. Zobair YOUNOSSI, President of Inova Medicine, United States of America

Dr. Marouan ZOGHBI, family medicine, Saint Joseph University, Lebanon

REFERENCES

INTRODUCTION

1. Mukherjee PS, Vishnubhatla S, Amarapurkar DN, et al. Etiology and mode of presentation of chronic liver diseases in India: A multi centric study. PLoS One. 2017;12(10):e0187033. Published 2017 Oct 26. doi:10.1371/journal.pone.0187033
2. Marcellin, P., Kutala, B.K., 2018. Liver diseases: A major, neglected global public health problem requiring urgent actions and large-scale screening. *Liver International* 38, 2–6.
3. Key Statistics About Liver Cancer. American Cancer Society. https://www.cancer.org/cancer/liver-cancer/about/what-is-key-statistics.html Updated 2022. Accessed October 15, 2022.
4. Global Viral Hepatitis: Millions of People are Affected | U.S. Centers for Disease Control and Prevention, 2021. Accessed October 5, 2022. https://www.cdc.gov/hepatitis/global/index.htm
5. Kabarra, K., Golabi, P., Younossi, Z.M., 2021. Nonalcoholic steatohepatitis: global impact and clinical consequences. *Endocr Connect* 10, R240–R247.

AFRICA

1. Leading ten causes of death in Africa 2019. Statista. https://www.statista.com/statistics/1029287/top-ten-causes-of-death-in-africa/ Accessed September 19, 2022.
2. Vento, S., Dzudzor, B., Cainelli, F., Tachi, K., 2018. Liver cirrhosis in sub-Saharan Africa: neglected, yet important. *The Lancet Global Health* 6, e1060–e1061.
3. Hepatitis. WHO | Regional Office for Africa. https://www.afro.who.int/health-topics/hepatitis. Accessed September 19, 2022.
4. Mokdad, A.A., Lopez, A.D., Shahraz, S., Lozano, R., Mokdad, A.H., Stanaway, J., Murray, C.J.L., Naghavi, M., 2014. Liver cirrhosis mortality in 187 countries between 1980 and 2010: a systematic analysis. *BMC Med* 12, 145.
5. Younossi, Z.M., Koenig, A.B., Abdelatif, D., Fazel, Y., Henry, L., Wymer, M., 2016. Global epidemiology of nonalcoholic fatty liver disease-Meta-analytic assessment of prevalence, incidence, and outcomes. *Hepatology* 64, 73–84.
6. Paruk, I.M., Pirie, F.J., Motala, A.A., 2019. Non-alcoholic fatty liver disease in Africa: a hidden danger. *Glob Health Epidemiol Genom* 4, e3.
7. Ndom P. Cancer prevention in Africa: liver cancer. Ecancermedicalscience. 2019;13:950. Published 2019 Jul 25. doi:10.3332/ecancer.2019.950
8. Liu, Y., Wu, F., 2010. Global burden of aflatoxin-induced hepatocellular carcinoma: a risk assessment. *Environ Health Perspect* 118, 818–824.
9. Alcohol consumption per capita, by country Africa 2019. Statista. https://www.statista.com/statistics/1038427/alcohol-per-capita-consumption-african-countries/ Accessed September 19, 2022.

CAMEROON

1. Kowo M, Pessidjo L, Fouwou Njoya C, et al. Prevalence, clinical characteristics and related mortality of cirrhosis in a tertiary hospital setting in Sub Saharan Africa. *Open Journal of Gastroenterology and Hepatology.* 2021. doi:10.28933/ojgh-2021-01-0605
2. Skalsky, J.A., Joller-Jemelka, H.I., Bianchi, L., Knoblauch, M., 1995. Liver pathology in rural south-west Cameroon. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 89, 411–414.
3. Eyong, E.M., Yankam, B.M., Seraphine, E., Ngwa, C.H., Nkfusai, N.C., Anye, C.S., Nfor, G.K., Cumber, S.N., 2019. The prevalence of HBsAg, knowledge and practice of hepatitis B prevention among pregnant women in the Limbe and Muyuka health districts of the South West region of Cameroon: a three-year retrospective study. *The Pan African Medical Journal* 32.
4. Kindzeka, M.E. Cameroon Dispatches Healthcare Workers to Find, Treat Hepatitis Patients. VOA. Published July 28, 2020. Accessed September 22, 2022. https://www.voanews.com/a/africa_cameroon-dispatches-healthcare-workers-find-treat-hepatitis-patients/6193561.html
5. Butler, E.K., Rodgers, M.A., Coller, K.E., Barnaby, D., Krilich, E., Olivo, A., Cassidy, M., Mbanya, D., Kaptue, L., Ndembi, N., Cloherty, G., 2018. High prevalence of hepatitis delta virus in Cameroon. *Sci Rep* 8, 11617.
6. Njouom, R., Siffert, I., Texier, G., Lachenal, G., Tejiokem, M.C., Pépin, J., Fontanet, A., 2018. The burden of hepatitis C virus in Cameroon: Spatial epidemiology and historical perspective. *J Viral Hepat* 25, 959–968.
7. Cameroon. WHO – International Agency for Research on Cancer. Updated

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

October 2020. Accessed September 22, 2022. https://gco.iarc.fr/today/data/factsheets/populations/120-cameroon-fact-sheets.pdf

8. Ankouane, F., Noah Noah, D., E, H., I, K., EC, N., 2014. Hepatocellular Carcinoma in Cameroon: Epidemiology and Risk Factors. *Journal of Applied Medical Sciences* 3, 27–33.
9. National Strategic Plan for Prevention and Cancer Control. Republic of Cameroon – Ministry of Public Health. Published June 2020. Accessed September 22, 2022. https://www.iccp-portal.org/system/files/plans/FINAL%20COPY%20OF%20PSNPLCa%20ENGLISH.pdf
10. Spearman, C.W., Afihene, M., Betiku, O., Bobat, B., Cunha, L., Kassianides, C., Katsidzira, L., Mekonnen, H.D., Ocama, P., Ojo, O., Paruk, I., Tzeuton, C., Sonderup, M.W., 2021. Epidemiology, risk factors, social determinants of health, and current management for non-alcoholic fatty liver disease in sub-Saharan Africa. *The Lancet Gastroenterology & Hepatology* 6, 1036–1046.

EGYPT

1. Administrator. Egypt becomes the first country to achieve WHO validation on the path to elimination of hepatitis C. World Health Organization - Regional Office for the Eastern Mediterranean. https://www.emro.who.int/media/news/egypt-becomes-the-first-country-to-achieve-who-validation-on-the-path-to-elimination-of-hepatitis-c.html.
2. World Bank Group. How Egypt Won its Battle Against Hepatitis C. World Bank. https://www.worldbank.org/en/news/feature/2024/04/05/how-egypt-won-its-battle-against-hepatitis-c#:~:text=STORY%20HIGHLIGHTS,more%20than%204.1%20million%20patients. Published April 5, 2024.
3. Stroffolini T, Stroffolini G. Prevalence and modes of transmission of Hepatitis C virus infection: A Historical Worldwide review. Viruses. 2024;16(7):1115. doi:10.3390/v16071115
4. Alboraie M, Youssef N, Sherief AF, et al. Egyptian liver library: An indexed database for liver disease evidence in Egypt. Arab J Gastroenterol. 2019;20(2):109-113. doi:10.1016/j.ajg.2019.05.004
5. Egypt's Ambitious Strategy to Eliminate Hepatitis C Virus: A Case Study. Vol 9.; 2021:187-188. https://www.ghspjournal.org/content/ghsp/9/1/187.full.pdf.
6. El-Kassas M, Sheemy RE, Elbadry M. Strategies and achievements in controlling and eliminating schistosomiasis from Egypt. Egypt Liver J. 2024;14(1). doi:10.1186/s43066-024-00339-2
7. Amen R, Shady R, Department of Biotechnology, Faculty of Science, Cairo University, Cairo 424010, Egypt. Coinfection of schistosomiasis and hepatitis C in Egypt: challenges and possible management strategies. Ann Clin Med Case Rep. 2024;(15):1-10. https://acmcasereport.org/wp-content/uploads/2024/05/ACMCR-v13-2189.pdf.
8. World Health Organization: WHO. Schistosomiasis (Bilharzia). https://www.who.int/health-topics/schistosomiasis#tab=tab_1. Published February 28, 2020.
9. Elghazaly H, Gaballah A, Bahie NE. Clinic-pathological pattern of hepatocellular carcinoma (HCC) in Egypt. Ann Oncol. 2018;29. doi:10.1093/annonc/mdy151.018.
10. Rashed WM, Kandeil MAM, Mahmoud MO, Ezzat S. Hepatocellular Carcinoma (HCC) in Egypt: A comprehensive overview. J Egypt Natl Canc Inst. 2020;32(1). doi:10.1186/s43046-020-0016-x
11. ProCon.org. Global obesity levels. Obesity. https://obesity.procon.org/global-obesity-levels/. Published July 15, 2024.
12. Fouad Y, Esmat G, Elwakil R, et al. The egyptian clinical practice guidelines for the diagnosis and management of metabolic associated fatty liver disease. Saudi J Gastroenterol. 2022;28(1):3. doi:10.4103/sjg.sjg_357_21
13. Hegazy MA, Elshafei A, Salem MR, Ashoush O, Abdelghani A. Non-alcoholic fatty liver disease related knowledge among a sample of Egyptians: an exploratory cross-sectional study. Front Public Health. 2024;11. doi:10.3389/fpubh.2023.1290842
14. Hassan AM, Haridy MA, Shoaeir MZ, et al. Non-alcoholic fatty liver disease is associated with decreased bone mineral density in upper Egyptian patients. Sci. Rep. 2023;13(1). doi:10.1038/s41598-023-31256-w
15. 15.Lee EJ, Choi M, Ahn SB, et al. Prevalence of nonalcoholic fatty liver disease in pediatrics and adolescents: a systematic review and meta-analysis. World J Pediatr. 2024;20(6):569-580. doi:10.1007/s12519-024-00814-1
16. Egypt has over 44 registered centers for organ transplants: Health minister. Ahram Online. Avaliable: https://english.ahram.org.eg/News/477067.aspx. Accessed: July 1, 2024
17. Amer KE, Marwan I. Living donor liver transplantation in Egypt. PubMed. 2016;5(2):98-106. doi:10.3978/j.issn.2304-3881.2015.10.03
18. Amer K, Elmoghazy W, Abdelhady M, et al. Surgical outcomes after donor hepatectomy for adult living-donor liver transplants: A single-center experience. J Liver Transpl. 2021;2:100023. doi:10.1016/j.liver.2021.100023

ETHIOPIA

1. Gage et al. Magnitude and factors associated with chronic liver disease among adults (≥18 years) attending gastroenterology and hepatology clinics in selected public hospitals, West Arsi Zone, Ethiopia: a cross-sectional study. BMC Public Health. 2025;25:2575. https://doi.org/10.1186/s12889-025-23811-z.
2. Nuri A, Jeilu S, Teklu Y, et al. Magnitude, patterns, and factors associated with liver disease among clinically suspected clients in Eastern Ethiopia: hidden public health tragedy. BMC Gastroenterology. 2025;25:36. https://doi.org/10.1186/s12876-025-03628-1.
3. Alemnew Ayal M, Dessie YA, Nega ME, Negash WT, Berihun SM. Treatment outcomes of chronic liver disease and associated factors among patients treated at hospitals in Bahir Dar city, north-west Ethiopia. BMC Gastroenterology. 2025;25:141. https://doi.org/10.1186/s12876-025-03719-z.
4. Tesfaye BT, Feyissa TM, Workneh AB, Gudina EK, Yizengaw MA. Chronic liver disease in Ethiopia with a particular focus on the etiological spectrums: a systematic review and meta-analysis of observational studies. Canadian Journal of Gastroenterology and Hepatology. 2021;2021:8740157. https://doi.org/10.1155/2021/8740157.
5. Yazie TD, Tebeje MG. An updated systematic review and meta-analysis of the prevalence of hepatitis B virus in Ethiopia. BMC Infectious Diseases. 2019;19:917. https://doi.org/10.1186/s12879-019-4486-1.
6. Belete D, Fekadie E, Kassaw M, et al. Seroprevalence of hepatitis B and hepatitis C virus among clinically suspected cases of viral hepatitis visiting Guhalla Primary Hospital, Northwest Ethiopia. Scientific Reports. 2024;14:21956. https://doi.org/10.1038/s41598-024-71363-w.
7. Berhanu L, Desye B, Daba C, Berihun G, Geto AK. Seroprevalence and risk factors of hepatitis B virus infection among healthcare workers in Africa: A systematic review and meta-analysis. PLoS ONE. 2025;20(3):e0319986. https://doi.org/10.1371/journal.pone.0319986.
8. Demsiss W, Seid A, Fiseha T. Hepatitis B and C: Seroprevalence, knowledge, practice and associated factors among medicine and health science students in Northeast Ethiopia. PLoS ONE. 2018;13(5):e0196539. https://doi.org/10.1371/journal.pone.0196539.
9. Kassa GM, Weldemariam AG, Abrahim SA, et al. Seroprevalence of hepatitis C in Ethiopia: First national study based on the 2016 Ethiopian Demographic and Health Survey. Journal of Viral Hepatitis. 2025;32:e14037. https://doi.org/10.1111/jvh.14037.
10. Aydagnuhm GB, Tefera AS, Getahun GT, Melaku EE. Predictive factors of metabolic dysfunction associated steatotic liver disease (MASLD) among individuals with cardio-metabolic risk factors, multicenter cross-sectional study, North East Ethiopia. BMC Gastroenterology. 2026;26:161. https://doi.org/10.1186/s12876-026-04656-1.
11. Berhe EA, Sema RA, Tesfaye YM, et al. Assessing nonalcoholic fatty liver disease in type 2 diabetes patients at a tertiary hospital, Addis Ababa, Ethiopia. Journal of Diabetes Research. 2025;2025:5555842. https://doi.org/10.1155/jdr/5555842.
12. Mekonnen D, Derbie A, Biadglegne F, et al. Knowledge and practice on magnitude, diagnosis, treatment and prevention strategies of Hepatocellular Carcinoma in Ethiopia: A Systematic Review. Ethiop J Health Dev. 2017;31(1):44–56.
13. Abza GB, Ahmed JH, Yesufe AA, Seife E, Erkie M, Spriet I, Chelkeba L, Annaert P. Clinicopathological features and survival of patients with hepatocellular carcinoma in Ethiopia: A Multicenter Study. Cancers. 2023;15:193. https://doi.org/10.3390/cancers15010193

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

14. St. Paul's Hospital Millennium Medical College (SPHMMC). SPHMMC moves closer to establishing Ethiopia's first liver transplant center. https://oncodaily.com/voices/sphmmc-379839.
15. Orlien SMS, Ismael NY, Ahmed TA, et al. Unexplained chronic liver disease in Ethiopia: a cross-sectional study. BMC Gastroenterology. 2018;18:27. https://doi.org/10.1186/s12876-018-0755-5.
16. Mekuria A, Xia L, Ahmed TA, Bishaw S, Teklemariam Z, Nedi T, et al. Contribution of aflatoxin B1 exposure to liver cirrhosis in Eastern Ethiopia: a case-control study. International Journal of General Medicine. 2023;16:3543–3553. https://doi.org/10.2147/IJGM.S425992.

GHANA

1. Nartey YA, Antwi SO, Bockarie AS, et al. Mortality burden due to liver cirrhosis and hepatocellular carcinoma in Ghana; prevalence of risk factors and predictors of poor in-hospital survival. *PloS one.* 09/13/2022 2022;17(9) doi:10.1371/journal.pone.0274544
2. Agyei-Nkansah A. Mitigating the scourge of non-alcoholic fatty liver disease in Ghana. *Ghana medical journal.* 2017 Sep 2017;51(3)doi:10.4314/gmj.v51i3.1
3. Wiafe YA, Afihene MY, et al. Non-Alcoholic Fatty Liver Disease and Liver Fibrosis in Persons with Type 2 Diabetes Mellitus in Ghana: A Study of Prevalence, Severity, and Contributing Factors Using Transient Elastography. *Journal of clinical medicine.* 05/29/2023 2023;12(11)doi:10.3390/jcm12113741
4. Ssentongo A, Ssentongo P, Keeney L, et al. Opportunistic Screening for Nonalcoholic Fatty Liver Disease (NAFLD) in Ghana: A Prospective Study. *Curr Dev Nutr.* 2020;4(Suppl 2):909. Published 2020 May 29. doi:10.1093/cdn/nzaa053_114
5. Biritwum R, Gyapong J, Mensah G. The epidemiology of obesity in ghana. *Ghana Med J*. 2005;39(3):82-85.
6. Boachie M, Immurana M, Iddrisu A-A, Ayifah E, Darington Logo D, Owusu S. *Alcohol Use in Ghana: A Situational Analysis.* 2022. https://movendi.ngo/wp-content/uploads/2022/07/GhNCDA-Alcohol-use-in-Ghana_-A-Situational-Analysis-_-Final.pdf
7. Duah A, Agyei-Nkansah A, Osei-Poku F, Duah F, Addo BP. Sociodemographic characteristics, complications requiring hospital admission and causes of in-hospital death in patients with liver cirrhosis admitted at a district hospital in Ghana. *PLoS One*. 2021;16(6):e0253759. Published 2021 Jun 24. doi:10.1371/journal.pone.0253759
8. Nartey YA, Okine R, Seake-Kwawu A, et al. A nationwide cross-sectional review of in-hospital hepatitis B virus testing and disease burden estimation in Ghana, 2016 - 2021. OriginalPaper. *BMC Public Health.* 2022-11-23 2022;22(1):1-15. doi:doi:10.1186/s12889-022-14618-3
9. Ghana National Hepatitis Elimination Profile: Key Takeaways | Coalition for Global Hepatitis Elimination. Coalition for Global Hepatitis Elimination. https://www.globalhep.org/news/ghana-national-hepatitis-elimination-profile-key-takeaways
10. Vlachogiannakos J, Papatheodoridis GV. New epidemiology of hepatitis delta. *Liver international : official journal of the International Association for the Study of the Liver.* 2020 Feb 2020;40 Suppl 1doi:10.1111/liv.14357
11. Bagulo H, Majekodunmi AO, Welburn SC, Bimi L. Hepatitis E seroprevalence and risk factors in humans and pig in Ghana. OriginalPaper. *BMC Infectious Diseases.* 2022-02-07 2022;22(1):1-12. doi:doi:10.1186/s12879-022-07127-6
12. Renewed hope for all people living with viral hepatitis in Ghana. World Health Organization. https://www.who.int/news-room/feature-stories/detail/renewed-hope-for-all-people-living-with-viral-hepatitis-in-ghana
13. Dokua Sasu D. Number of deaths from liver cancer in Ghana from 2000 to 2019. Statista. https://www.statista.com/statistics/1288364/number-of-deaths-from-liver-cancer-in-ghana/
14. Sonnebring G. End-stage liver disease in Ghana - a clinical epidemiological study. Karolinska Institutet. https://news.ki.se/end-stage-liver-disease-in-ghana-a-clinical-epidemiological-study
15. Tachi K, Agyei-Nkansah A, Archampong T. Hepatocellular carcinoma in Ghana: a retrospective analysis of a tertiary hospital data. *Pan Afr Med J.* 2020;36:43. Published 2020 May 28. doi:10.11604/pamj.2020.36.43.21085
16. Korle-Bu to commence liver transplant procedures - Hospital CEO. Pulse Ghana. 2023. doi:28380667-c8ad-48b4-8c34-8c0bc0649008 https://www.pulse.com.gh/news/local/korle-bu-to-commence-liver-transplant-procedures-hospital-ceo/k0tf8nb
17. Gyedu A, Shrauner WR, Kingham TP. No patients to resect or transplant: an analysis of patients with hepatocellular carcinoma admitted to a major African referral hospital. *World journal of surgery.* 2015 Jan 2015;39(1)doi:10.1007/s00268-014-2762-1

MOROCCO

1. Zahidi K, Moustatraf A, Zahidi A, Naji S, Obtel M. Universal Health Coverage in Morocco: The Way to Reduce Inequalities: A Cross-sectional Study. Open Public Health J. 2022;15: e221226. https://doi.org/10.2174/18749445-v15-e221226-2022-160.
2. Bencheikh N, Elbouzidi A, Baraich A, Bouhrim M, Azeroual A, Addi M, Mothana RA, Al-Yousef HM, Eto B, Elachouri M. Ethnobotanical survey and scientific validation of liver-healing plants in northeastern Morocco. Front Pharmacol. 2024; 15:1414190. doi:10.3389/fphar.2024.1414190.
3. Sbai A, Baha W, Ougabrai H, Allalia T, Dersi N, Lazaar F, Ennaji MM, Benjouad A, El Malki A, Hassar M, Benani A. Hepatitis B prevalence and risk factors in Morocco. Pathologie Biologie. 2012;60(2): e65-e69. doi: 10.1016/j.patbio.2011.06.001.
4. Madihi S, Charoute H, Boukaira S, Bouafi H, Baha W, Zyad A, Benani A. Virological characterization of Hepatitis B virus infection in Morocco: A ten-years study (2014-2023). Diagnostic Microbiology & Infectious Disease. 2024; 110:116502. doi: 10.1016/j.diagmicrobio.2024.116502.
5. Morocco World News. WHO Recognizes Morocco as 'Hepatitis B Control Country'. November 2025. Available at: https://www.moroccoworldnews.com/2025/11/267968/who-recognizes-morocco-as-hepatitis-b-control-country/.
6. Boukaira S, Madihi S, Bouafi H, Rchiad Z, Belkadi B, Benani A. Hepatitis C in North Africa: A Comprehensive Review of Epidemiology, Genotypic Diversity, and Hepatocellular Carcinoma. Advances in Virology. 2025; 2025:9927410. doi:10.1155/av/9927410.
7. Hecht R, Kaddar M, Resch S, El Kaim JL, Perfect C, Sodqi M, Himmich H, Hiebert L. Morocco investment case for hepatitis C: using analysis to drive the translation of political commitment to action. Journal of Global Health Reports. 2019;3:e2019011. doi:10.29392/joghr.3. e2019011.
8. Liba H, Mziwira M, Belahsen R. Non-alcoholic fatty liver disease in Morocco: The situation, the determinants and the challenges for health care. World J Adv Res Rev. 2020;6(1):207-217. doi:10.30574/wjarr.2020.6.1.0100.
9. Liba H, Belahsen R. Models to predict non-alcoholic fatty liver disease linked to obesity in Morocco. Rocz Panstw Zakl Hig. 2022;73(3):325-332. doi:10.32394/rpzh.2022.0223.
10. Assarrar I, Messaoudi N, Mawa Ongoth FE, Abdellaoui W, Malki A, Rouf S, Abda N, Ismaili Z, Latrech H. Prevalence and specific manifestations of non-alcoholic fatty liver disease (NAFLD) and diabetes mellitus type 2 association in a Moroccan population: a cross-sectional study. Rev Diabet Stud. 2022;18(3):140-145. doi:10.1900/RDS.2022.18.140.
11. Liba H, Belahsen R. Evaluation of the nutritional education program for the prevention of non-alcoholic fatty liver disease in people with obesity in Morocco. Rev Esp Antrop Fís. 2024; 49:53-63. ISSN: 2253-9921.
12. Zouaki I, Aiterrami A, Samlani Z, Oubaha S, Krati K. Epidemiological, Diagnostic and Therapeutic Aspects of Hepatocellular Carcinoma in Morocco: A Case Series and Review of Literature. The Gulf Journal of Oncology. 2024;1(45):75-90. PMID: 38774936.
13. Firwana M, Aomari A, Rahaoui A, Afifi R, Benelbarhdadi I, Ajana FZ, Essaid AE. Hepatocellular Carcinoma In Morocco. Clinical Research and Trials. 2017;3(1):1-3. https://doi.org/10.15761/CRT.1000167.
14. Ghizlane E, Imane A, El Fadli M, Essadi I, Belbaraka R. P-183 Hepatocellular carcinoma: 9 years of experience in the medical oncology department at Mohammed VI University Hospital in Marrakech, Morocco. Annals of Oncology. 2022;33(S4):S315. https://doi.org/10.1016/j.annonc.2022.04.273.
15. Ibn Sina University Hospital Successfully Performs Two Liver Transplants in Less than 48 Hours. 2M.ma, 23 September 2024. https://2m.ma/fr/news/Ibn-Sina-University-Hospital-Successfully-Performs-Two-Liver-Transplants-in-Less-than-48-Hours-20240923.
16. Bel'eed-Akkari K, Hafidh K, Hajjaji IM, Beshyah SA, Elkhammas EA. Solid Organ Transplantation Medicine in Arab Countries: A Narrative Review Focused on Ethical Aspects. Ibnosina Journal of Medicine and Biomedical Sciences. 2021; 13:3-13. https://doi.org/10.4103/ijmbs.ijmbs_16_21.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

17. Bouayad A, Laamiri FZ, Elmoumou L, Rezzouk B, Hadef R. Prevalence of liver fibrosis and cirrhosis in 699 Moroccan patients with chronic hepatitis C. Pan African Medical Journal. 2021;39(32). https://doi.org/10.11604/pamj.2021.39.32.21235.
18. Ennadi R, Esselmani H, Nadir Y, Najimi M, Merzouki M. Prevalence of Liver Fibrosis and Cirrhosis in High-Risk and Hospital-Based Populations in Morocco: A Systematic Review and Narrative Synthesis. Livers. 2026;6(3):52. https://doi.org/10.3390/livers6030052.
19. Al Ta'ani O, Aleyadeh W, Al-Ajlouni Y, Alnimer L, Ismail A, Natour B, Njei B. The burden of cirrhosis and other chronic liver disease in the Middle East and North Africa (MENA) region over three decades. BMC Public Health. 2024; 24:2979. https://doi.org/10.1186/s12889-024-20445-5.
20. El-Kassas M, Awad A, Medhat MA, Yilmaz Y, Labidi A, AlNaamani KM, Sanai FM, Almattooq M, Debzi N, Tumi A, Benazzouz M, Yaghi C, Elbadry M, Alsenbesy M, Waked I, Elzouki AN, Nour MO, Alswat KA, Diaz LA, Arab JP, Younossi ZM, on behalf of the Steatotic Liver Disease Study Foundation in Middle East and North Africa (SLMENA) Collaborators. Alcohol-associated Liver Disease in the MENA Region: A 16-Country Survey of Healthcare Provider Perspectives. Annals of Hepatology. 2026. https://doi.org/10.1016/j.aohep.2026.102253.

NIGERIA

1. Chukwuonye II, Ohagwu KA, Ogah OS, et al. Prevalence of overweight and obesity in Nigeria: Systematic review and meta-analysis of population-based studies. PLOS Global Public Health. 2022;2(6):e0000515. doi:10.1371/journal.pgph.0000515
2. Olusanya TO, Lesi OA, Adeyomoye AA, Fasanmade OA. Non alcoholic fatty liver disease in Nigerian population with type II diabetes mellitus. Pan Afr Med J. 2016;24. doi:10.11604/pamj.2016.24.20.8181
3. UNICEF. Nutrition. Unicef.org. https://www.unicef.org/nigeria/nutrition. Published 2015.
4. Yakubu A, Maiyaki A. Pattern of Liver Disease Admissions at a Tertiary Hospital in North Western Nigeria. IJSHR. 2020;5(4)2020;5:250. https://ijshr.com/IJSHR_Vol.5_Issue.4_Oct2020/IJSHR0031.pdf
5. Department of Health & Human Services. Metabolic syndrome. Better Health Channel. https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/metabolic-syndrome#:~:text=Metabolic%20syndrome%20is%20a%20collection.
6. Olayinka AT, Nasidi A, Gidado S, et al. Seroprevalence of Hepatitis B Infection in Nigeria: A National Survey. J Natl Malar Soc. 2016;95(4):902-907. doi:https://doi.org/10.4269/ajtmh.15-0874
7. Ijaduola GT. Uvulectomy in Nigeria. J Laryngol Otol. 1981;95(11):1127-1133. doi:https://doi.org/10.1017/s0022215100091908
8. Ladep NG, Taylor-Robinson SD. Management of liver disease in Nigeria. J. Clin. Med.. 2007;7(5):439-441. doi:https://doi.org/10.7861/clinmedicine.7-5-439
9. UNICEF. Health & HIV. www.unicef.org. Available at: https://www.unicef.org/nigeria/health-hiv. Accessed July 01, 2024
10. Nwokediuko S. Putting money on the table: Nigeria's policy response to hepatitis B and C. Hepat. Mon.. 2011;11–10:786-793. https://impact.economist.com/perspectives/sites/default/files/eiu-abbott-nigeria.pdf.
11. Davwar PM, Ayomoh F, Imoh LC, et al. Hepatocellular cancer Surveillance in Nigeria: The time for action is now! Jos J Med. 2021;15(2):27-30. https://www.ajol.info/index.php/jjm/article/view/260530
12. World Health Organization. Nigeria: Cancer Country Profile 2020. https://cdn.who.int/media/docs/default-source/country-profiles/cancer/nga-2020.pdf?sfvrsn=16c2215b_2&download=true. Published 2020.
13. International Institute of Tropical Agriculture (IITA), University of Ibadan, University of Bonn, et al. Nigeria's Aflatoxin Challenge.; 2020. https://www.iita.org/wp-content/uploads/2021/03/Nigeria-Country-Status-Report_Final-161120.pdf.
14. Oyediran OO, Ayandiran EO, Olatubi MI, Olabode O. Awareness of risks associated with Self-medication among Patients attending General Out-patient Department of a Tertiary Hospital in South Western Nigeria. Int J Afr Nurs Sci. 2019;10:110-115. doi:https://doi.org/10.1016/j.ijans.2019.03.001
15. Alcohol consumption per capita, by country Africa 2019 | Statista. Statista. Avaliable here: https://www.statista.com/statistics/1038427/alcohol-per-capita-consumption-african-countries/#:~:text=Nigerians%20consumed%20over%2013%20liters. Accessed: July 3, 2024.
16. Nwosu IA, Joseph, Njemanze VC, et al. Self-Report on Men's Beliefs and Perceptions on Their Alcohol Use/Misuse in Southeast Nigeria. Am J Mens Health 2022;16(6):155798832211301-155798832211301. doi:https://doi.org/10.1177/15579883221130193
17. Belabo D. Press Briefing on ban on Sachet Alcohol: Responding to Publications in the Punch and Vanguard Newspapers, as Well as Arise TV News and Social Media. NAFDAC. Available at: https://nafdac.gov.ng/press-briefing-on-ban-on-sachet-alcohol-responding-to-publications-in-the-punch-and-vanguard-newspapers-as-well-as-arise-tv-news-and-social-media/ Accessed July 28, 2024.
18. Odutola MK, Jedy-Agba EE, Dareng EO, et al. Cancers Attributable to Alcohol Consumption in Nigeria: 2012–2014. Front Oncol. 2017;7. doi:https://doi.org/10.3389/fonc.2017.00183
19. Ndububa D, Ojo O, Adetiloye V, Aladegbaiye A, Adebayo R, Adekanle O. The contribution of alcohol to chronic liver disease in patients from South-West Nigeria. PubMed. 2010;13(4):360-364. https://pubmed.ncbi.nlm.nih.gov/21220846.
20. Ulasi II, Ijoma CK. Organ Transplantation in Nigeria. J. Transplant.. 2016;100(4):695-697. doi:https://doi.org/10.1097/tp.0000000000001149
21. Awuah WA, Ng JC, Bulut HI, et al. The unmet need of organ transplantation in Africa. Int J Surg. 2023;109(3):519-520. doi:10.1097/js9.0000000000000025
22. Umar GI, Ibrahim A, Muhammad H. Liver transplantation in Nigeria: The road so far. Available at: https://www.researchgate.net/profile/Garzali-Ibrahim-Umar/publication/365294492_Liver_transplantation_in_Nigeria_The_road_so_far/links/636d46802f4bca7fd04bed85/Liver-transplantation-in-Nigeria-The-road-so-far.pdf.Accessed July 28, 2024

RWANDA

1. Liver disease in Rwanda. World Life Expectancy. Accessed August 25, 2025. https://www.worldlifeexpectancy.com/rwanda-liver-disease?utm_source=chatgpt.com.
2. Uwimana A, Kubwayo PA, Dukundane D, et al. Risk factors, clinical characteristics, and treatment outcomes for hepatocellular carcinoma in Rwanda. Journal of Clinical Oncology. 2023;41(16_suppl). doi:10.1200/jco.2023.41.16_suppl.e16339
3. Rwanda. Global Nutrition Report | Country Nutrition Profiles - Global Nutrition Report. Accessed August 25, 2025. https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa/rwanda/.
4. Mukabutera A, Nsereko E, Aline U, Umwungeriwisa YD, Cyprien M. African Journals Online. Accessed August 26, 2025. https://www.ajol.info/index.php/ajol.
5. Ge X, Zheng L, Wang M, Du Y, Jiang J. Prevalence trends in non-alcoholic fatty liver disease at the global, regional and National Levels, 1990–2017: A population-based observational study. BMJ Open. 2020;10(8). doi:10.1136/bmjopen-2019-036663
6. Rosenberg N, Buono M, Ndebwanimana V, et al. Adaptation and validation of a Rwanda-focused version of the Alcohol Use Disorder Identification Test (audit). PLOS ONE. 2025;20(2). doi:10.1371/journal.pone.0316993
7. Tunywe less: Curbing the rise in alcohol consumption among the youth. MOH. July 24, 1970. Accessed August 25, 2025. https://www.moh.gov.rw/news-detail/tunywe-less-curbing-the-rise-in-alcohol-consumption-among-young-people-in-rwanda.
8. (Hello Africa) Rwanda launches campaign to tackle rising alcohol use among youth. Xinhua. Accessed August 25, 2025. https://english.news.cn/20230721/535d9b5748ea4f749ede0c54464bb473/c.html.
9. Musafiri T, Kamali I, Kayihura C, et al. Prevalence of hepatitis B and C infection and linkage to care among patients with non-communicable diseases in three rural rwandan districts: A retrospective cross-sectional study. BMC Infectious Diseases. 2024;24(1). doi:10.1186/s12879-023-08678-y
10. Newton R, Ngilimana PJ, Grulich A, et al. Cancer in Rwanda. Int J Cancer. 1996;66(1):75-81. doi:10.1002/(SICI)1097-0215(19960328)66:1<75::AID-IJC14>3.0.CO;2-A
11. Uwimana A, Kubwayo PA, Dukundane D, et al. Risk factors, clinical characteristics, and treatment outcomes for hepatocellular carcinoma in Rwanda. Journal of Clinical Oncology. 2023;41(16_suppl). doi:10.1200/jco.2023.41.16_

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

suppl.e16339

12. Awuah WA, Ng JC, Bulut HI, et al. The unmet need of organ transplantation in Africa. Int J Surg. 2023;109(3):519-520. Published 2023 Mar 1. doi:10.1097/JS9.0000000000000025
13. Medical specialists conduct first liver surgery at Rwanda Military Hospital. MOD. August 29, 1970. Accessed August 25, 2025. https://www.mod.gov.rw/news-detail/medical-specialists-conduct-first-liver-surgery-at-rwanda-military-hospital.
14. 44 kidney transplants successfully performed in Rwanda. Accessed August 26, 2025. https://en.igihe.com/health/article/44-kidney-transplants-successfully-performed-in-rwanda.

KENYA

1. Vento S, Dzudzor B, Cainelli F, Tachi K. Liver cirrhosis in sub-saharan africa: Neglected, yet important. *The Lancet Global Health.* 2018;6(10). doi:10.1016/s2214-109x(18)30344-9
2. Guerin, M. Here is how we're wrestling liver cancer in Western Kenya. *The Standard.* Published June 2022. https://www.standardmedia.co.ke/health-science/article/2001448348/here-is-how-were-wrestling-liver-cancer-in-western-kenya. Accessed September 21, 2022.
3. Kairu, P. Kenya gets Sh62m for liver cancer project in North Rift. *Business Daily*. May 25 2022. Accessed September 21, 2022. https://www.businessdailyafrica.com/bd/lifestyle/health-fitness/kenya-gets-sh62m-for-liver-cancer-project-in-north-rift-3826042
4. Ly, K.N., Kim, A.A., Umuro, M., Drobenuic, J., Williamson, J.M., Montgomery, J.M., Fields, B.S., Teshale, E.H., 2016. Prevalence of Hepatitis B Virus Infection in Kenya, 2007. *Am J Trop Med Hyg* 95, 348–353.
5. Saya, M. WHO issues new proposal in fight against Hepatitis B. *The Star.* July 28, 2020. Accessed September 21, 2022. https://www.the-star.co.ke/news/2020-07-28-who-issues-new-proposal-in-fight-against-hepatitis-b/?utm_term=Autofeed&utm_medium=Social&utm_source=Facebook&fbclid=IwAR0puJip32a3duoTwSk4ZG1yDPzIYX-O5yOkhiQitLDtOAzrt9Y4Ad6Zg5o
6. Ochwoto, M., Kimotho, J.H., Oyugi, J., Okoth, F., Kioko, H., Mining, S., Budambula, N.L.M., Giles, E., Andonov, A., Songok, E., Osiowy, C., 2016. Hepatitis B infection is highly prevalent among patients presenting with jaundice in Kenya. *BMC Infectious Diseases* 16, 101.
7. Greenfield, C., Karayiannis, P., Wankya, B.M., Shah, M.V., Tukei, P., Galpin, S., Jowett, T.P., Thomas, H.C., 1984. Aetiology of acute sporadic hepatitis in adults in Kenya. *J Med Virol* 14, 357–362.
8. Almobarak, A.O., Barakat, S., Khalifa, M.H., Elhoweris, M.H., Elhassan, T.M., Ahmed, M.H., 2014. Non alcoholic fatty liver disease (NAFLD) in a Sudanese population: What is the prevalence and risk factors? *Arab J Gastroenterol* 15, 12–15.
9. Onyekwere, C.A., Ogbera, A.O., Balogun, B.O., 2011. Non-alcoholic fatty liver disease and the metabolic syndrome in an urban hospital serving an African community. *Ann Hepatol* 10, 119–124.
10. Kastberg SE, Lund HS, De Lucia-Rolfe E, et al. Hepatic steatosis is associated with anthropometry, cardio-metabolic disease risk, sex, age and urbanisation, but not with ethnicity in adult Kenyans. *Trop Med Int Health*. 2022;27(1):49-57. doi:10.1111/tmi.13696

SOUTH AFRICA

1. Spearman, C.W., Sonderup, M.W., 2015. Health disparities in liver disease in sub-Saharan Africa. Liver International 35, 2063–2071.
2. Paruk, I.M., Pirie, F.J., Motala, A.A., 2019. Non-alcoholic fatty liver disease in Africa: a hidden danger. *Glob Health Epidemiol Genom* 4, e3.
3. Naran, N.H., Haagensen, M., Crowther, N.J., 2018. Steatosis in South African women: How much and why? *PLoS One* 13, e0191388.
4. As HIV incidence declines in South Africa, new infections are concentrating in those over 25. NAM AIDS Map. https://www.aidsmap.com/news/sep-2021/hiv-incidence-declines-south-africa-new-infections-are-concentrating-those-over-25. Accessed September 16, 2022.
5. Matthews, P.C., Geretti, A.M., Goulder, P.J.R., Klenerman, P., 2014. Epidemiology and impact of HIV coinfection with hepatitis B and hepatitis C viruses in Sub-Saharan Africa. *J Clin Virol* 61, 20–33.
6. Vermeulen, M., Swanevelder, R., Van Zyl, G., Lelie, N., Murphy, E.L., 2021. An assessment of hepatitis B virus prevalence in South African young blood donors born after the implementation of the infant hepatitis B virus immunization program: Implications for transfusion safety. *Transfusion* 61, 2688–2700.
7. Moonsamy, S., Suchard, M., Pillay, P., Prabdial-Sing, N., 2022. Prevalence and incidence rates of laboratory-confirmed hepatitis B infection in South Africa, 2015 to 2019. *BMC Public Health* 22, 29.
8. Gibbs, N., Angus, C., Dixon, S., Parry, C., Meier, P., 2021. Effects of minimum unit pricing for alcohol in South Africa across different drinker groups and wealth quintiles: a modelling study. *BMJ Open 11*, e052879.
9. Institute for Health Metrics and Evaluation (IHME). Findings from the Global Burden of Disease Study 2017. Seattle, WA: IHME, 2018.
10. Mak, D., Sengayi, M., Chen, W.C., Babb de Villiers, C., Singh, E., Kramvis, A., 2018. Liver cancer mortality trends in South Africa: 1999–2015. *BMC Cancer* 18, 798.
11. Home | Organ Donation South Africa. https://odf.org.za/ Accessed September 26, 2022.
12. Song, E., Fabian, J., Boshoff, P.E., Maher, H., Gaylard, P., Bentley, A., Hale, M.J., Ngwenya, S.P., Etheredge, H., Mahomed, A., Bobat, B., Strobele, B., Loveland, J., Britz, R., Botha, J.F., 2018. Adult liver transplantation in Johannesburg, South Africa (2004 - 2016): Balancing good outcomes, constrained resources and limited donors. *S Afr Med J* 108, 929–936.

UGANDA

1. Nsibirwa SK, Aizire J, Thomas DL, Ocama P, Kirk GD. Rapid progression to death after hepatocellular carcinoma diagnosis particularly among persons with advanced HIV disease in Kampala, Uganda. medRxiv. Published online June 27, 2022. doi:10.1101/2022.06.24.22276850
2. Ministry of Health, Uganda. Uganda Guidelines for Prevention, Testing, Care and Treatment of Hepatitis B and C Virus Infection. Kampala: Ministry of Health; May 2019. Accessed June 14, 2025.Accessed June 14, 2025. https://library.health.go.ug/file-download/download/public/513
3. World Health Organization: WHO. Uganda elevates health for all as the population accesses free hepatitis testing, treatment and vaccines. Published July 28, 2023. Accessed June 14, 2025. https://www.who.int/news-room/feature-stories/detail/uganda-elevates-health-for-all-as-the-population-accesses-free-hepatitis-testing--treatment-and-vaccines#:~:text=Hepatitis%20B%20is%20a%20major,with%20technical%20support%20from%20WHO
4. Admin, Admin. Policy brief: The hepatitis B vaccine birth dose should be part of Uganda's routine immunization schedule - UNIPH. UNIPH - Uganda National Institute of Public Health. Published April 13, 2022. Accessed June 14, 2025. https://uniph.go.ug/policy-brief-the-hepatitis-b-vaccine-birth-dose-should-be-part-of-ugandas-routine-immunization-schedule/#:~:text=Hepatitis%20B%20remains%20a%20public,infection%20from%20mother%20to%20child
5. Seremba E, Ssekitoleko R, Ocanit A, et al. Management of chronic hepatitis B in Uganda: a five-year experience following the initiation of a national sensitization and care campaign. J Virus Erad. Published online March 1, 2025:100588. doi:10.1016/j.jve.2025.100588
6. Kanyike AM, Kakuba F, Mayambala P, et al. Prevalence trends of transfusion-transmitted infections at a tertiary private hospital blood bank in Uganda: a retrospective 6-year review (2017–2022). BMC Infectious Diseases. 2025;25(1). doi:10.1186/s12879-025-10882-x
7. Loarec A, Carnimeo V, Molfino L, et al. Extremely low hepatitis C prevalence among HIV co-infected individuals in four countries in sub-Saharan Africa. AIDS. 2018;33(2):353-355. doi:10.1097/qad.0000000000002070
8. Uganda hosts Inaugural African Hepatitis Summit | WHO | Regional Office for Africa. WHO | Regional Office for Africa. Published July 14, 2025. Accessed June 14, 2025. https://www.afro.who.int/news/uganda-hosts-inaugural-african-hepatitis-summit#:~:text=Kampala%2C%2019th%20June%202019%3A%20Uganda,the%20fight%20against%20Viral%20Hepatitis
9. National Cancer Institute. Aflatoxins—cancer-causing substances. National Cancer Institute. Accessed June 14, 2025. https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/aflatoxins
10. Parliament Watch Uganda. Ministry of Health raises alarm on aflatoxin danger in Uganda. Parliament Watch Uganda. Published October 31, 2023. https://parliamentwatch.ug/news-amp-updates/ministry-of-health-raises-alarm-on-

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

aflatoxin-danger-in-uganda/

11. The Cooperator News. MPs demand mass education on mycotoxins contamination. The Cooperator News. Published April 4, 2024. Accessed June 14, 2025.. https://thecooperator.news/mps-demand-mass-education-on-mycotoxins-contamination/
12. Moses A, Adriko M, Kibwika B, Tukahebwa EM, Faust CL, Lamberton PHL. Residence Time, Water Contact, and Age-driven Schistosoma mansoni Infection in Hotspot Communities in Uganda. Am J Trop Med Hyg. 2021;105(6):1772-1781. doi:10.4269/ajtmh.21-0391
13. Unlimit Health. Schistosomiasis in Uganda. Unlimit Health. Accessed June 14, 2025. https://unlimithealth.org/where-we-work/uganda/
14. Paruk IM, Pirie FJ, Motala AA. Non-alcoholic fatty liver disease in Africa: a hidden danger. Glob Health. 2019;4. doi:10.1017/gheg.2019.2
15. Liver Health Foundation Uganda. Statistics on liver disease in Uganda. Liver Health Foundation Uganda. Accessed June 14, 2025. https://liverhealthuganda.org/about-us/media-center/statistics
16. Kusolo R, Mutungi GN, Mbuliro M, et al. Changes in the prevalence of the common risk factors for non-communicable diseases in Uganda between 2014 and 2023: Informed by nationally representative cross-sectional surveys. PLOS Glob. Public Health. 2025;5(4):e0003755. doi:10.1371/journal.pgph.0003755
17. Bahendeka S, Guwatudde D, Mutungi G, et al. Report on Non-Communicable Disease Risk Factors STEPS Survey 2023. Ministry of Health; 2023. Accessed June 14, 2025. https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/uganda/steps-survey-2023-moh-report.pdf
18. Ministry of Health, Museveni YK. Healthy Eating and Healthy Lifestyle.; 2017. Accessed June 14, 2025. https://www.health.go.ug/wp-content/uploads/2019/11/Presidential-Initiative.pdf#:~:text=consumption%2C%20tobacco%20use%2C%20physical%20inactivity,NCDs%20have%20developmental%20and%20economic
19. National NCD Programme WDF06-222. Accessed June 14, 2025. https://www.worlddiabetesfoundation.org/what-we-do/projects/wdf06-0222/#:~:text=The%20WDF%20funded%20project%20WDF05,implement%20a%20National%20Diabetes%2FNCD%20Programme
20. Uganda renews Commitment to diabetes control on World Diabetes Day | WHO | Regional Office for Africa. WHO | Regional Office for Africa. Published November 14, 2024. Accessed June 14, 2025. https://www.afro.who.int/countries/uganda/news/uganda-renews-commitment-diabetes-control-world-diabetes-day#:~:text=Representing%20the%20Ministry%20of%20Health%2C,diabetes%20care%20nationwide%2C%E2%80%9D%20he%20explained
21. Bahendeka S, Wesonga R, Mutungi G, Muwonge J, Neema S, Guwatudde D. Prevalence and correlates of diabetes mellitus in Uganda: a population-based national survey. Trop Med Int Health. 2016;21(3):405-416. doi:10.1111/tmi.12663
22. World Health Organization (WHO). Alcohol, unrecorded per capita (15+) consumption (in litres of pure alcohol), with 95% CI. WHO Global Health Observatory. Accessed June 14, 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/alcohol-unrecorded-per-capita-(15-)-consumption-(in-litres-of-pure-alcohol)-with-95-ci
23. World Health Organization. Alcohol per Capita (15+) Consumption (in Litres of Pure Alcohol).; 2018. Accessed June 14, 2025. https://cdn.who.int/media/docs/default-source/country-profiles/substances-abuse/uga.pdf?sfvrsn=57219de6_3&download=true#:~:text=,7
24. Opio CK, Seremba E, Ocama P, Lalitha R, Kagimu M, Lee WM. Diagnosis of alcohol misuse and alcoholic liver disease among patients in the medical emergency admission service of a large urban hospital in Subsaharan Africa ; a cross sectional study. Pan Afr Med J. 2013;15. doi:10.11604/pamj.2013.15.23.2040
25. Niu X, Zhu L, Xu Y, et al. Global prevalence, incidence, and outcomes of alcohol related liver diseases: a systematic review and meta-analysis. BMC Public Health. 2023;23(1). doi:10.1186/s12889-023-15749-x
26. Uganda bans alcohol packed in sachets. CGTN Africa. Published June 16, 2023. Accessed June 14, 2025. https://africa.cgtn.com/uganda-bans-alcohol-packed-in-sachets/#:~:text=Uganda%20bans%20alcohol%20packed%20in,outlets%2C%20sachet%20alcohol%20was
27. Parliament of Uganda: Bill Tracker. Accessed June 14, 2025. https://bills.parliament.ug/user_bill_stage.php?billid=472#:~:text=The%20object%20of%20the%20Bill,the%20sale%20of%20alcoholic
28. House declines to proceed with Alcohol Control Bill Primary tabs | Parliament of Uganda. Published July 8, 2025. Accessed June 14, 2025. https://www.parliament.go.ug/news/2995/house-declines-proceed-alcohol-control-bill-primary-tabs
29. Jatho A, Tran BT, Cambia JM, Nanyingi M, Mugisha NM. Cancer risk studies and priority areas for cancer risk appraisal in Uganda. Ann Glob Health. 2020;86(1). doi:10.5334/aogh.2873
30. Okongo F, Amuge C, Jatho A, Niyonzima N, Ogwang DM, Orem J. The regional cancer spectrum in Uganda: a population-based cancer survey by sub-regions (2017–2020). Ecancermedicalscience. 2024;18. doi:10.3332/ecancer.2024.1782
31. Nabachwa FN. Palliative care needs and outcomes of patients with hepatocellular carcinoma: the case of Uganda cancer institute and Mulago national referral hospital. Published 2022. https://open.uct.ac.za/handle/11427/36516#:~:text=Cape%20Town%20and%20Uganda%20Cancer,Abdominal%20fullness%20and%20early%20satiety
32. Abet T. Ugandan doctors to conduct first liver transplant. Daily Monitor. Published July 13, 2024. Accessed June 14, 2025. https://www.monitor.co.ug/uganda/news/national/ugandan-doctors-to-conduct-first-liver-transplant-4559606
33. Bethany Women's and Family Hospital. Uganda passes the Human Organ Donation and Transplant Law. Bethany Women's and Family Hospital. Published May 30, 2023. Accessed June 14, 2025. https://bethanywomenhospital.org/news/uganda-passes-the-human-organ-donation-and-transplant-law/
34. Atuhaire BP. Uganda's transplant revolution brings hope to thousands. BBC News. Published September 15, 2022. Accessed June 14, 2025. https://www.bbc.com/news/world-africa-62916880

ASIA

1. Kazuhiko Koike M.D., Ph.D.,W. Ray Kim M.D. Introduction: Liver Disease in Asia. *Clinical Liver Disease* vol 16, Issue 6, p223-226 Dec 2020 https://doi.org/10.1002/cld.1081
2. 2015 Global Health Estimates (GHE). World Health Organization. https://www.who.int/data/global-health-estimates
3. Liu Q, Liu M, Liu J. Burden and Trends of Acute Viral Hepatitis in Asia from 1990 to 2019. *Viruses.* 2022;14(6):1180. Published 2022 May 28. doi:10.3390/v14061180
4. Farrell GC, Wong VW, Chitturi S. NAFLD in Asia--as common and important as in the West. *Nat Rev Gastroenterol Hepatol.* 2013 May;10(5):307-18. doi: 10.1038/nrgastro.2013.34. Epub 2013 Mar 5. PMID: 23458891.
5. Estes C, Chan HLY, Chien RN, et al. Modelling NAFLD disease burden in four Asian regions-2019-2030. *Aliment Pharmacol Ther*. 2020;51(8):801-811. doi:10.1111/apt.15673
6. Eslam, M., Sarin, S.K., Wong, V.WS. et al. The Asian Pacific Association for the Study of the Liver clinical practice guidelines for the diagnosis and management of metabolic associated fatty liver disease. Hepatol Int 14, 889–919 (2020). https://doi.org/10.1007/s12072-020-10094-2

CHINA

1. Xiao J, Wang F, Wong NK, et al. Global liver disease burdens and research trends: Analysis from a Chinese perspective. J Hepatol. 2019;71(1):212-221. doi:10.1016/j.jhep.2019.03.004
2. Su S, Wong WC, Zou Z, et al. Cost-effectiveness of universal screening for chronic hepatitis B virus infection in China: an economic evaluation. Lancet Glob Health. 2022;10(2):e278-e287. doi:10.1016/s2214-109x(21)00517-9
3. Sun N, He F, Sun J, Zhu G. Viral hepatitis in China during 2002–2021: epidemiology and influence factors through a country-level modeling study. BMC Public Health. 2024;24(1). doi:10.1186/s12889-024-19318-8
4. World Health Organization. Global Progress Report on HIV, Viral Hepatitis and Sexually Transmitted Infections, 2021.; 2021. https://iris.who.int/bitstream/handle/10665/341412/9789240027077-eng.pdf.
5. Chen S, Mao W, Guo L, Zhang J, Tang S. Combating hepatitis B and C by 2030: achievements, gaps, and options for actions in China. BMJ Glob Health. 2020;5(6):e002306. doi:10.1136/bmjgh-2020-002306enge faced by Chinese children and adolescents. J Glob Health. 2023;13. doi:10.7189/jogh.13.03036

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

6. Peng W, Zhang J, Zhou H, et al. Obesity intervention efforts in China and the 2022 World Obesity Day. Glob Health J. 2022;6(3):118-121. doi:10.1016/j.glohj.2022.07.007
7. Guo B, Guo Y, Nima Q, et al. Exposure to air pollution is associated with an increased risk of metabolic dysfunction-associated fatty liver disease. J Hepatol. 2022;76(3):518-525. doi:10.1016/j.jhep.2021.10.016
8. Improving service delivery for hepatitis. World Health Organization. Accessed September 21, 2024. https://www.who.int/china/activities/improving-service-delivery-for-hepatitis.
9. Li J, Pang L, Liu Z. Interpretation of the National Action Plan for Eliminating Hepatitis C as a Public Health Threat (2021-2030). PubMed. 2022;4(29):627-630. doi:10.46234/ccdcw2022.139
10. Mei X, Lu H. Prevalence, diagnosis, and treatment of hepatitis C in Mainland China. Glob Health Med. 2021;3(5):270-275. doi:10.35772/ghm.2021.01080
11. Zhou H, Yan M, Che D, Wu B. Universal screening for hepatitis C virus infection in China: an effectiveness and cost-effectiveness analysis. JHEP Rep. 2024;6(4):101000. doi:10.1016/j.jhepr.2024.101000
12. Cui Y, Moriyama M, Rahman MM. Analysis of the Incidence of Hepatitis B and Hepatitis C and Association with Socio-Economic Factors in Various Regions in China. Health. 2018;10(09):1210-1220. doi:10.4236/health.2018.109093
13. Lu R, Liu Y, Hong T. Epidemiological characteristics and management of non-alcoholic fatty liver disease/nonalcoholic steatohepatitis in China: A narrative review. Diabetes Obes Metab. 2023;25(S1):13-26. doi:10.1111/dom.15014
14. Li Q, Cao M, Lei L, et al. Burden of liver cancer: From epidemiology to prevention. Chin J Cancer Res. 2022;34(3):554-566. doi:10.21147/j.issn.1000-9604.2022.06.02
15. Zhu Z, Yin P. Overweight and obesity: The serious chall pollution is associated with an increased risk of metabolic dysfunction-associated fatty liver disease. J Hepatol. 2021;76(3):518-525. doi:10.1016/j.jhep.2021.10.016
16. Lu X, Zhang S, Xing J, et al. Progress of air pollution control in China and its challenges and opportunities in the ecological civilization era. Eng. 2020;6(12):1423-1431. doi:10.1016/j.eng.2020.03.014
17. Wang F, Fan J, Zhang Z, Gao B, Wang H. The global burden of liver disease: The major impact of China. Hepatology. 2014;60(6):2099-2108. doi:10.1002/hep.27406
18. Tang Z, Ding Y, Zhang W, et al. Epidemiological characteristics of alcohol-related liver disease in China: a systematic review and meta-analysis. BMC Public Health. 2023;23(1). doi:10.1186/s12889-023-15645-4
19. Wang WJ, Xiao P, Xu HQ, Niu JQ, Gao YH. Growing burden of alcoholic liver disease in China: A review. World J Gastroenterol. 2019;25(12):1445-1456. doi:10.3748/wjg.v25.i12.1445
20. Qin Y, Tang C, Li J, Gong J. Liver cancer in China: the analysis of mortality and burden of disease trends from 2008 to 2021. BMC Cancer. 2024;24(1). doi:10.1186/s12885-024-12334-2
21. Mi S, Jin Z, Qiu G, Xie Q, Hou Z, Huang J. Liver transplantation in China: Achievements over the past 30 years and prospects for the future. Biosci Trends. 2022;16(3):212-220. doi:10.5582/bst.2022.01121
22. Ling S, Jiang G, Que Q, Xu S, Chen J, Xu X. Liver transplantation in patients with liver failure: Twenty years of experience from China. Liver Int. 2022;42(9):2110-2116. doi:10.1111/liv.15288

INDIA

1. Mondal, D., Das, K., Chowdhury, A., 2022. Epidemiology of Liver Diseases in India. *Clin Liver Dis* (Hoboken) 19, 114–117.
2. Dhawan, A. 2015 health care outlook India. Deloitte. https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-2015-health-care-outlook-india.pdf. Accessed September 13, 2022.
3. Thuluvath, P.J., Saraya, A., Rela, M., 2021. An Introduction to Liver Disease in India. *Clin Liver Dis* (Hoboken) 18, 105–107.
4. Singh, S., Kuftinec, G.N., Sarkar, S., 2017. Non-alcoholic Fatty Liver Disease in South Asians: A Review of the Literature. *Journal of Clinical and Translational Hepatology* 5, 76–81.
5. Shalimar, Elhence, A., Bansal, B., Gupta, H., Anand, A., Singh, T.P., Goel, A., 2022. Prevalence of Non-alcoholic Fatty Liver Disease in India: A Systematic Review and Meta-analysis. *Journal of Clinical and Experimental Hepatology* 12, 818–829.
6. *Hepatitis B.* World Health Organization, Country Office for India. July 2016. Accessed September 14, 2022. https://www.who.int/docs/default-source/searo/india/health-topic-pdf/factsheet-b-hepatitisday2016.pdf?sfvrsn=-da61ef0_2#:~:text=In%20India%2C%20the%20prevalence%20of,of%20hepatitis%20B%20related%20complications
7. Kishanrao, S., Kishanrao, S., 2020. Viral Hepatitis in India. *Archives of Hepatitis Research* 6, 003–006.
8. Dhiman, R.K., Satsangi, S., Grover, G.S., Puri, P., 2016. Tackling the Hepatitis C Disease Burden in Punjab, India. *Journal of Clinical and Experimental Hepatology* 6, 224–232.
9. Chandra, N.S., Sharma, A., Rai, R.R., Malhotra, B., 2012. Contribution of hepatitis E virus in acute sporadic hepatitis in north western India. *Indian J Med Res* 136, 477–482.
10. Mitra, S., De, A., Chowdhury, A., 2020. Epidemiology of non-alcoholic and alcoholic fatty liver diseases. *Translational Gastroenterology and Hepatology* 5.
11. Ray, G., Manjubhargav, P., 2019. Clinical Presentation and Mortality Determinants of Alcohol-Related Liver Disease: A Single-Center Experience of the Rising Menace from Eastern India. *IID* 4, 104–114.
12. Acharya, S.K., 2014. Epidemiology of hepatocellular carcinoma in India. *J Clin Exp Hepatol* 4, S27-33.

INDONESIA

1. Yano Y, Utsumi T, Lusida MI, Hayashi Y. Hepatitis B virus infection in Indonesia. World J Gastroenterol 2015;21(38):10714–10720.
2. Mulyanto. Viral Hepatitis in Indonesia: Past, Present, and Future. Euroasian J Hepatogastroenterol. 2016 Jan-Jun;6(1):65-69. doi: 10.5005/jp-journals-10018-1171. Epub 2016 Jul 9. PMID: 29201730; PMCID: PMC5578564.
3. Budiman B. Current Management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). Indonesian Journal of Gastroenterology, Hepatology & Digestive Endoscopy, 2024,25:63–9. doi: 10.24871/251202463-70
4. Pramukti, H., Yunihastuti, E., Gani, R. A., Rinaldi, I., Hasan, I., & Maria, S. Non-alcoholic fatty liver disease among people living with HIV on long-term antiretroviral therapy in Indonesia: Prevalence and related factors. SAGE Open Medicine, 2024, 12: 20503121241292678. doi:10.1177/20503121241292678.
5. Muljono DH. Epidemiology of Hepatitis B and C in Republic of Indonesia. Euroasian J Hepatogastroenterol. 2017 Jan-Jun;7(1):55-59. doi: 10.5005/jp-journals-l0018-1212. Epub 2017 May 5. PMID: 29201773; PMCID: PMC5663775.
6. Ministry of Health Republic of Indonesia / National Institute of Health Research and Development. National report on basic health research (RISKESDAS) 2013. Jakarta: NIHRD; 2014.
7. Scrutton J, Wallace J, Wait S on behalf of CEVHAP. Situation analysis of viral hepatitis in Indonesia: A policy report. London: The Health Policy Partnership; 2018.
8. Wijayadi T, Sjahril R, Turyadi, Ie SI, Wahyuni R, Pattelongi I, Massi MN, Yusuf I, Muljono DH. Seroepidemiology of HBV infection among health-care workers in South Sulawesi, Indonesia. BMC Infectious Diseases. 2018; 18:279. doi:10.1186/s12879-018-3190-x.
9. Sihardo L, Lalisang ANL, Syaiful RA, Putra AB, Mazni Y, Putranto AS, Lalisang TJM. Seizing tumor factors for mortality and survival outcomes following liver resection in Indonesia's hepatocellular carcinoma patients. Ann Hepatobiliary Pancreat Surg 2025; 29:11–20. doi:10.14701/ahbps.24-179.
10. Jasirwan COM, Hasan I, Sulaiman AS, Lesmana CRA, Kurniawan J, Kalista KF, Nababan SH, Gani RA. Risk factors of mortality in the patients with hepatocellular carcinoma: A multicenter study in Indonesia. Curr Probl Cancer 2020;44:100480. doi:10.1016/j.currproblcancer.2019.05.003.
11. Supardjo, T. Challenges of operation as a curative action in handling liver cancer. EMC Healthcare. 2021. Available at: https://www.emc.id/en/care-plus/challenges-of-operation-as-a-curative-action-in-handling-liver-cancer (Accessed: 30 March 2026).
12. Kristina SA, Endarti D, Aditama H, Salsabila NN. The medical cost of liver cancer in a referral hospital in Indonesia during 2020. Journal of Applied Pharmaceutical Science. 2021;11(12):135–138. doi:10.7324/JAPS.2021.1101212.
13. Lalisang ANL, Putra AB, Zacharia NJ, Marbun VMG, Sihardo L, Syaiful RA, Ibrahim F. Jeo WS, Mazni Y, Putranto AS, and Lalisang TJM. Characteristics of living liver donors in a national referral hospital in Indonesia: a 13-year experience with living donor liver transplantation. Korean Journal of Trans-

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

plantation. 2023; 37:179–188. doi:10.4285/kjt.23.0030.
14. Bali International Hospital. Hepatitis vaccination and prevention strategies in Indonesia. 2025. Available at: https://bih.id/articles/hepatitis-vaccination-and-prevention-strategies-in-indonesia.
15. Husaema, A., Widjaja, F. F., Santoso, W. D., Siregar, G. A., Lesmana, C. R. A., Hasan, I., and Gani, R. A. Occupational and lifestyle risk factors associated with metabolic fatty liver disease among university staff in Indonesia. Front Public Health 2025;13:1739931. doi:10.3389/fpubh.2025.1739931.
16. Nababan, Saut Horas H., Mansjoer, Arif, Fauzi, Achmad, and Gani, Rino A. Predictive scoring systems for in-hospital mortality due to acutely decompensated liver cirrhosis in Indonesia. BMC Gastroenterology. 2021; 21:392. doi:10.1186/s12876-021-01972-6.
17. Arfines PP, Rachmalina R, Mubasyiroh R, Puspita T, Arfines FAR. Prevalence of Indonesia's alcohol consumption, risk factors, and its cluster mapping: An analysis of Indonesia Basic Health Survey 2018. Gizi Indonesia (Journal of the Indonesian Nutrition Association). 2022;45(2):183–196. doi:10.36457/gizindo.v45i2.742.
18. Djuma, Agustina W., Yudhaswara, Novian A., and Dardeau, Suzanne Patricia. Relation between Alcohol Consumption and Impaired Liver Function. Jurnal Info Kesehatan. 2020;18(2):163–170. doi:10.31965/infokes.Vol18Iss2.474.

JAPAN

1. Nishikawa H, Fukunishi S, Asai A, Nishiguchi S, Higuchi K. Obesity and liver cancer in Japan: A comprehensive review. Cancer Diagn Progn. 2021;41(5):2227-2237. doi:10.21873/anticanres.14999
2. Tobari M, Hashimoto E, Taniai M, et al. The characteristics and risk factors of hepatocellular carcinoma in nonalcoholic fatty liver disease without cirrhosis. J Transl Gastroenterol. 2020;35(5):862-869. doi:10.1111/jgh.14867
3. Enomoto H, Ueno Y, Hiasa Y, et al. Transition in the etiology of liver cirrhosis in Japan: a nationwide survey. J Gastroenterol. 2020;55(3):353-362. doi:10.1007/s00535-019-01645-y
4. Wu, Yixuan. Nomikai in Japanese Universities and Companies: a cultural analysis. Cmu.edu. https://www.cmu.edu/dietrich/lcal/academics/student-organizations/polyglot/s2023/media-society/yixuan-wu.html#:~:text=Nomikai%20is%20prevalent%20in%20Japanese
5. Alcohol D and AB. Global status report on alcohol and health 2018. Available at: https://www.who.int/publications/i/item/9789241565639. Accessed: July 01, 2024
6. Itoshima H, Shin JH, Takada D, Morishita T, Kunisawa S, Imanaka Y. The impact of the COVID-19 epidemic on hospital admissions for alcohol-related liver disease and pancreatitis in Japan. Sci. Rep. 2021;11(1). doi:10.1038/s41598-021-92612-2
7. Nishioji K, Sumida Y, Kamaguchi M, et al. Prevalence of and risk factors for non-alcoholic fatty liver disease in a non-obese Japanese population, 2011–2012. J. Gastroenterol.. 2014;50(1):95-108. doi:10.1007/s00535-014-0948-9
8. Ito T, Ishigami M, Zou B, et al. The epidemiology of NAFLD and lean NAFLD in Japan: a meta-analysis with individual and forecasting analysis, 1995–2040. Hepatol. Int. 2021;15(2):366-379. doi:10.1007/s12072-021-10143-4
9. Haward V. Impact of Japan's aging population on healthcare costs and the Long-Term Care insurance system. JSSSH. 2024;3(2):39-44. doi:10.56397/sssh.2024.02.06
10. Global Action to End Smoking. Japan | Tobacco and Health around the World | Global Action to End Smoking. Global Action to End Smoking. https://globalactiontoendsmoking.org/research/tobacco-around-the-world/japan/. August 12, 2024.
11. GBD compare. Institute for Health Metrics and Evaluation. https://vizhub.healthdata.org/gbd-compare/
12. Inoue-Choi M, Freedman ND, Saito E, et al. Low-intensity cigarette smoking and mortality risks: A pooled analysis of prospective cohort studies in Japan. Int. J. Epidemiol. 2021;51(4):1276-1290. doi:10.1093/ije/dyab224
13. Onouchi, Y., Kurahashi, H., Tajiri, H. et al. Genetic alterations in the JAG1 gene in Japanese patients with Alagille syndrome. J Hum Genet 44, 235–239 (1999). https://doi.org/10.1007/s100380050150
14. Kudo M. Surveillance, diagnosis, treatment, and outcome of liver cancer in Japan. Liver Cancer. 2015;4(1):39-50. doi:10.1159/000367727
15. Shimakami T, Setoyama H, Oza N, et al. Development of performance indicators for hepatitis countermeasures as a tool for the assessment and promotion of liver cancer prevention in Japan. J. Gastroenterol. 2023;58(3):257-267. doi:10.1007/s00535-023-01956-1
16. Takeuchi Y, Ohara M, Kanto T. Nationwide awareness-raising program for viral hepatitis in Japan: the "Shitte kan-en" project. Glob Health Med. 2021;3(5):301-307. doi:10.35772/ghm.2021.01063.
17. Kudo M. Current therapeutic strategies for hepatocellular carcinoma in Japan. Liver Cancer. 2023;12(6):497-509. doi:10.1159/000534304
18. Yamashiki N, Sugawara Y, Tamura S, et al. Outcomes after living donor liver transplantation for acute liver failure in Japan: Results of a nationwide survey. J Liver Transpl. 2012;18(9):1069-1077. doi:10.1002/lt.23469
19. Terrault NA, Francoz C, Berenguer M, Charlton M, Heimbach J. Liver Transplantation 2023: Status Report, current and future challenges. J Clin Gastroenterol Hepatol. 2023;21(8):2150-2166. doi:10.1016/j.cgh.2023.04.005
20. Soyama A, Eguchi S, Egawa H. Liver transplantation in Japan. J Liver Transpl. 2016;22(10):1401-1407. doi:10.1002/lt.24502

PAKISTAN

1. Ashraf S, Imnan S, Mumtaz S, Shabbir A, Khalid A, Ijaz A. Burden and Demographic Profile of Liver Diseases in District Gujrat, Pakistan: A Hospital-Based Cross-Sectional Study. J Health Wellness Community Res. 2025;3(15). doi: https://doi.org/10.61919/t0307d93.
2. Bhatti TK, Kamani L. Fatty Liver Disease in Pakistan: An Underestimated Threat. World Gastroenterology Organisation e-WGN Expert Point of View. 2024;29(3). https://www.worldgastroenterology.org/publications/e-wgn/e-wgn-expert-point-of-view-articles-collection/fatty-liver-disease-in-pakistan-an-underestimated-threat.
3. Butt AS. Epidemiology of Viral Hepatitis and Liver Diseases in Pakistan. Euroasian J Hepatogastroenterol. 2015;5(1):43-48. doi:10.5005/jp-journals-10018-1129.
4. Coalition for Global Hepatitis Elimination. Pakistan Can Eliminate Hepatitis: National Hepatitis Elimination Profile. Updated June 9, 2025.
5. Gazder DP, Parvez SS, Gazder NP, Muqtadir J. Health-Related Quality of Life Assessment for Liver Cirrhosis Patients at a Tertiary Care Hospital in Karachi, Pakistan. Cureus. 2024;16(2):e53766. doi:10.7759/cureus.53766.
6. Ghani RA, Saqlain M, Zafar MM, Jabeen S, Naqvi SMS, Raja GK. Identification of Metabolic risk phenotypes predisposing to Non-Alcoholic Fatty Liver Disease in a Pakistani Cohort. Pak J Med Sci. 2017 Jan-Feb;33(1):121-126. doi: 10.12669/pjms.331.11445. PMID: 28367184; PMCID: PMC5368291.
7. Hassan, F., Farman, M., Khan, K.A., Awais M., and Akhtar S. Prevalence of nonalcoholic fatty liver disease in Pakistan: a systematic review and meta-analysis. Sci Rep 14, 19573 (2024). https://doi.org/10.1038/s41598-024-70481-9.
8. Khan SJ, Asif M, Aslam S, Khan WJ, Hamza SA. Pakistan's healthcare system: a review of major challenges and the first comprehensive universal health coverage initiative. Cureus. 2023 Sep 4;15(9):e44641. doi: 10.7759/cureus.44641. PMID: 37799252; PMCID: PMC10548490.
9. Lal A, Amjad A, Zaidi S, Parkash O. Changing epidemiology (etiology, complications) and projections of liver cirrhosis in Pakistan and beyond – A Review. J Pak Med Assoc. 2026;76(2):233-242. doi:10.47391/JPMA.22515
10. Salim A, Farooq MO, Saleem S, Malik K. Financial burden and social implications of chronic liver disease in a patient population group in Pakistan. Pak J Med Sci. 2024;40(7):1503-1508. doi:10.12669/pjms.40.7.7976.
11. World Health Organization. Pakistan tackles high rates of hepatitis from many angles. July 11, 2017. https://www.who.int/news-room/feature-stories/detail/pakistan-tackles-high-rates-of-hepatitis-from-many-angles.
12. World Health Organization Regional Office for the Eastern Mediterranean. Pakistan and WHO aim to intensify hepatitis C prevention to avert 850,000 deaths and 1 million new infections. August 3, 2025. https://www.emro.who.int/pak/pakistan-news/pakistan-and-who-aim-to-intensify-hepatitis-c-prevention-to-avert-850-000-deaths-and-1-million-new-infections.html.
13. Bhatti ABH, Dar FS. Living donor liver transplantation in Pakistan. Transplantation. 2017;101(7):1507–1508. doi:10.1097/TP.0000000000001737. .
14. Samjo SA, Abbas Z, Asim M, Tahir K. The Pattern of Alcohol Consumption and the Severity of Alcohol-related Liver Disease in Patients Visiting the Liver Clinic. Cureus. 2020;12(3):e7251. doi:10.7759/cureus.7251.
15. Arshad A, Shaikh MA, Zaheer AB, Joher I, Hussain A. Demographic Profile and Clinical Spectrum of Alcoholic Liver Disease among Males in Pakistan. Pakistan Journal of Medical & Health Sciences. 2021;15(12):3470-3472. doi:10.53350/pjmhs2115123470.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

PHILIPINES

1. Wong, S.N., Ong, J.P., Labio, M.E.D., Cabahug, O.T., Daez, M.L.O., Valdellon, E.V., Sollano Jr, J.D., Arguillas, M.O., 2013. Hepatitis B infection among adults in the philippines: A national seroprevalence study. *World J Hepatol* 5, 214–219.
2. World Health Organization. Philippines, Source: Globocan 2020. International Agency for Research on Cancer. Published October 2020. Accessed September 27, 2022. https://gco.iarc.fr/today/data/factsheets/populations/608-philippines-fact-sheets.pdf
3. Wong, S.N., Ong, J.P., Labio, M.E.D., Cabahug, O.T., Daez, M.L.O., Valdellon, E.V., Sollano Jr, J.D., Arguillas, M.O., 2013. Hepatitis B infection among adults in the philippines: A national seroprevalence study. World J Hepatol 5, 214–219.
4. Everybody Needs to Act to Curb Obesity. UNICEF. Published March 4, 2022. Accessed September 26, 2022. https://www.unicef.org/philippines/press-releases/everybody-needs-act-curb-obesity
5. De Lusong, M.A.A., Labio, E., Daez, L., Gloria, V., 2008. Non-alcoholic fatty liver disease in the Philippines: comparable with other nations? *World J Gastroenterol* 14, 913–917.
6. Navarroza, A.M.C., Wong, S.N., 2021. Comparison of clinical and metabolic profiles of lean versus non-lean nonalcoholic fatty liver disease. *Indian J Gastroenterol* 40, 380–388.
7. Eslam, M., Chen, F., George, J., 2020. NAFLD in Lean Asians. *Clinical Liver Disease* 16, 240–243.
8. Kumar, A., Acharya, S.K., Singh, S.P., Saraswat, V.A., Arora, A., Duseja, A., Goenka, M.K., Jain, D., Kar, P., Kumar, M., Kumaran, V., Mohandas, K.M., Panda, D., Paul, S.B., Ramachandran, J., Ramesh, H., Rao, P.N., Shah, S.R., Sharma, H., Thandassery, R.B., 2014. The Indian National Association for Study of the Liver (INASL) Consensus on Prevention, Diagnosis and Management of Hepatocellular Carcinoma in India: The Puri Recommendations. *J Clin Exp Hepatol* 4, S3–S26.
9. *Global status report on alcohol and health* 2018. World Health Organization; 2018. https://www.who.int/publications/i/item/9789241565639
10. Transplanting Life for Patients with Liver Disease in the Philippines. *The Medical City.* Published March 14, 2019. https://www.themedicalcity.com/news/transplanting-life-for-patients-with-liver-disease-in-the-philippines Accessed September 26, 2022.
11. Affordable liver transplant soon in PH. *Philippine News Agency.* Published January 24, 2020. https://www.pna.gov.ph/articles/1091811 Accessed September 23, 2022.
12. Liver Center. Accessed September 23, 2022. https://nkti.gov.ph/index.php/liver-center

SINGAPORE

1. Liver Disease in Singapore. World Life Expectancy. https://www.worldlifeexpectancy.com/singapore-liver-disease
2. Health data overview for the Republic of Singapore. World Health Organization. https://data.who.int/countries/702
3. Hepatitis B. National University Hospital. https://www.nuh.com.sg/Health-Information/Diseases-Conditions/Pages/Hepatitis-B.aspx
4. Sarin SK, Kumar M, Lau GK, et al. Asian-Pacific clinical practice guidelines on the management of hepatitis B: a 2015 update. *Hepatol Int.* 2016;10(1):1-98. doi:10.1007/s12072-015-9675-4
5. Hepatitis. National Centre for Infectious Diseases. https://www.ncid.sg/Health-Professionals/Diseases-and-Conditions/Pages/Hepatitis.aspx
6. Liver Cirrhosis. National University Hospital. https://www.nuh.com.sg/Health-Information/Diseases-Conditions/Pages/Liver-Cirrhosis.aspx
7. Pharmaceutical Society of Singapore. Hepatitis B Vaccine: Vaccine Information Leaflet. Ministry of Health Singapore. https://www.healthhub.sg/a-z/medications/hepatitis-b-vaccine
8. Obesity in Singapore. Jaga-Me. https://jaga-me.com/thecareissue/obesity-in-singapore/
9. Estes C, Chan HLY, Chien RN, et al. Modelling NAFLD disease burden in four Asian regions-2019-2030. *Aliment Pharmacol Ther*. 2020;51(8):801-811. doi:10.1111/apt.15673
10. Goh GB, Kwan C, Lim SY, et al. Perceptions of non-alcoholic fatty liver disease - an Asian community-based study. *Gastroenterol Rep* (Oxf). May 2016;4(2):131-5. doi:10.1093/gastro/gov047
11. Choo BP, Goh GBB, Chia SY, et al. Non-alcoholic fatty liver disease screening in type 2 diabetes mellitus: A cost-effectiveness and price threshold analysis. *Ann Acad Med Singap.* Nov 2022;51(11):686-694. doi:10.47102/annals-acadmedsg.2022284
12. Statista Research Department. Per capita alcohol consumption in Singapore from 2000 to 2019. Statista. https://www.statista.com/statistics/691362/singapore-per-capita-alcohol-consumption/
13. Chang PE, Wong GW, Li JW, Lui HF, Chow WC, Tan CK. Epidemiology and Clinical Evolution of Liver Cirrhosis in Singapore. *Ann Acad Med Singap.* 2015;44(6):218-225.
14. Yap I, Wee A, Tay HH, Guan R, Kang JY. Primary biliary cirrhosis--an uncommon disease in Singapore. *Singapore Med J.* 1996;37(1):48-50.
15. Lee YM, Teo EK, Ng TM, Khor C, Fock KM. Autoimmune hepatitis in Singapore: a rare syndrome affecting middle-aged women. *J Gastroenterol Hepatol.* 2001;16(12):1384-1389. doi:10.1046/j.1440-1746.2001.02646.x
16. Ang TL, Fock KM, Ng TM, Teo EK, Chua TS, Tan JY. Clinical profile of primary sclerosing cholangitis in Singapore. *J Gastroenterol Hepatol.* 2002;17(8):908-913. doi:10.1046/j.1440-1746.2002.02835.x
17. Liver cancer difficult to treat due to huge tumour variations. Singapore Clinical Research Institute. https://www.scri.edu.sg/liver-cancer-difficult-to-treat-due-to-huge-tumour-variations/
18. Poon D. A Singapore Success Story: The Fight Against Liver Cancer. Dr. D.Y.H Poon & Associates. Updated 2019-10-09. https://dyhpoon.com/a-singapore-success-story-the-fight-against-liver-cancer/
19. Yeow M, Bonney GK, Kow WCA, Wee P, Madhavan K, Iyer SG. Liver Transplantation in Singapore: Challenges and Strategies of Low- to Mid-volume Centers. *Transplantation.* 2022;106(5)

SOUTH KOREA

1. Kwon JW, Tchoe HJ, Lee J, Suh JK, Lee JH, Shin S. The Impact of National Surveillance for Liver Cancer: Results from Real-World Setting in Korea. Gut And Liver. 2020;14(1):108-116. doi:10.5009/gnl18522
2. Medical Korea. Available: https://www.medicalkorea.or.kr/en/Transplantation#:~:text=22.9%20patients%20out%20of%20million,World%20countries%20(IRODaT%202019). Accessed: July 01, 2024
3. Yoon JH, Cho SH, Kim DY, Yu SJ, Han KH. Epidemiological and clinical history of viral hepatitis in Korea. Infect Chemother. 2021;53(1):159. doi:10.3947/ic.2021.0300
4. Cho EJ, World Health Organization, Lee C, et al. Elimination of viral hepatitis: How far are we? J. Hepatol. 2024;Volume 56:Pages 112-129. https://www.e-cmh.org/upload/pdf/cmh-2024-0557.pdf.
5. Jee Y. Inclusion of hepatitis C virus testing in National Health Screening to accelerate HCV elimination in South Korea. J. glob. health med. 2021;3(5):288-292. doi:10.35772/ghm.2021.01057
6. Alcohol D and AB. Global status report on alcohol and health 2018. Avaliable: https://www.who.int/publications/i/item/9789241565639. Accessed: July 01, 2024
7. Yoo JJ, Lee DH, Chang Y, et al. Trends in alcohol use and alcoholic liver disease in South Korea: a nationwide cohort study. BMC Public Health. 2024;24(1). doi:10.1186/s12889-024-19321-z
8. Park S, Sung E, Gittelsohn J. Understanding how organizational environments affect food intake among employees in South Korea. J Nutr Health. 2019;52(6):593. doi:10.4163/jnh.2019.52.6.593
9. Park S, Sung E, Choi Y, Ryu S, Chang Y, Gittelsohn J. Sociocultural factors influencing eating practices among office workers in urban South Korea. J Nutr Educ Behav 2017;49(6):466-474.e1. doi:10.1016/j.jneb.2017.02.005
10. South Korea population (2024) - Worldometer. Available: https://www.worldometers.info/world-population/south-korea-population/#:~:text=82.1%20%25%20of%20the%20population%20is,South%20Korea%20is%20 45.1%20years. Accessed: July 01, 2024
11. International Monetary Fund. Real GDP growth. International Monetary Fund. Available:https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD?year=2024.Accessed: July 01, 2024
12. Im HJ, Ahn YC, Wang JH, Lee MM, Son CG. Systematic review on the prevalence of nonalcoholic fatty liver disease in South Korea. Clin Res Hepatol

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

Gastroenterol. 2021;45(4):101526. doi:10.1016/j.clinre.2020.06.022
13. Han MAT, Yu Q, Tafesh Z, Pyrsopoulos N. Diversity in NAFLD: A review of manifestations of nonalcoholic fatty liver disease in different ethnicities globally. J Clin Transl Hepatol. 2020;000(000):1-10. doi:10.14218/jcth.2020.00082
14. Chung GE, Youn J, Kim YS, et al. Dietary patterns are associated with the prevalence of nonalcoholic fatty liver disease in Korean adults. Nutrition. 2019;62:32-38. doi:10.1016/j.nut.2018.11.021
15. Park KS, Lee YS, Park HW, et al. Factors Associated or Related to with Pathological Severity of Nonalcoholic Fatty Liver Disease. Korean J Intern Med. 2004;19(1):19-26. doi:10.3904/kjim.2004.19.1.19
16. Jang SY, Rou WS, Kim SH, Lee BS, Eun HS. Association between new-onset liver cirrhosis and suicide risk in South Korea: A nationwide cohort study. Clin Mol Hepatol. 2021;27(2):283-294. doi:10.3350/cmh.2020.0227
17. Son M, Kim HR, Choe SA, et al. Social inequities in the survival of liver Cancer: a nationwide cohort study in Korea, 2007–2017. J Korean Med Sci. 2024;39(12). doi:10.3346/jkms.2024.39.e130
18. Oh CM. Bridging the Gap between Evidence and Real-World Practice for Liver Cancer Screening in South Korea. Gut and Liver. 2020;14(1):5-6. doi:10.5009/gnl19388
19. Suh B, Yun JM, Park S, et al. Prediction of future hepatocellular carcinoma incidence in moderate to heavy alcohol drinkers with the FIB-4 liver fibrosis index. Cancer. 2015;121(21):3818-3825. doi:10.1002/cncr.29577
20. 대한간학회. https://www.kasl.org/bbs/index.html?code=guide&category=&gubun=&idx=&page=1&number=48&mode=view&order=&sort=&keyfield=&key=.
21. Kim BH, Park JW. Epidemiology of liver cancer in South Korea. Clin Mol Hepatol. 2018;24(1):1-9. doi:10.3350/cmh.2017.0112
22. Kim JM, Kim DG, Kim J, et al. Outcomes after liver transplantation in Korea: Incidence and risk factors from Korean transplantation registry. Clin Mol Hepatol. 2021;27(3):451-462. doi:10.3350/cmh.2020.0292
23. Choi HJ. Current status and outcome of liver transplantation in South Korea. Clin Mol Hepatol. 2022;28(1):117-119. doi:10.3350/cmh.2021.0381
24. Min SI, Kim SY, Park YJ, et al. Trends in deceased organ donation and utilization in Korea: 2000-2009. J Korean Med Sci. 2010;25(8):1122. doi:10.3346/jkms.2010.25.8.1122
25. Cho WH. Status of organ donation and solution of organ shortage in Korea. Korean J Transplant. 2018;32(3):38-48. doi:10.4285/jkstn.2018.32.3.38

THAILAND

1. Bumrungrad International Hospital. FibroScan: A New Option for Checking Liver Health. Bumrungrad International Hospital website. Published June 2020. Accessed March 1, 2025. https://www.bumrungrad.com/en/health-blog/june-2020/fibroscan-liver-health
2. Perakanya P, Ungcharoen R, Worrabannakorn S, et al. Prevalence and Risk Factors of Opisthorchis viverrini Infection in Sakon Nakhon Province, Thailand. Trop Med Infect Dis. 2022;7(10):313. doi:10.3390/tropicalmed7100313
3. Sripa B, Tangkawattana S, Sangnikul M. Integrated opisthorchiasis control through the EcoHealth/one health approach: 15 years of success and experiences with the Lawa model. One Health. February 2025:101006. doi:10.1016/j.onehlt.2025.101006
4. World Health Organization. Thailand uses integrated ecosystems health approach to beat cancer-causing disease. Published December 14, 2017. Accessed March 1, 2025. https://www.who.int/news/item/14-12-2017-thailand-uses-integrated-ecosystems-health-approach-to-beat-cancer-causing-disease
5. World Health Organization. Hepatitis B in Thailand: From 'hyper-endemic' to national control. Published August 14, 2019. Accessed March 1, 2025. https://www.who.int/southeastasia/news/feature-stories/detail/hepatitis-b-in-thailand-from-hyper-endemic-to-national-control
6. Salvadori N, Gauthier L, Guy M, et al. Hepatitis B prevalence and associated factors in adults presenting for infection screening in northern Thailand. J Virus Erad. 2023;9(4):100356. doi:10.1016/j.jve.2023.100356
7. Wasitthankasem R, Posuwan N, Vichaiwattana P, et al. Decreasing Hepatitis C Virus Infection in Thailand in the Past Decade: Evidence from the 2014 National Survey. PLoS ONE. 2016;11(2):e0149362. doi:10.1371/journal.pone.0149362
8. 8. Posuwan N, Wanlapakorn N, Sintusek P, et al. Towards the elimination of viral hepatitis in Thailand by the year 2030. J Virus Erad. 2020;6(3):100003. doi:10.1016/j.jve.2020.100003
9. 9. Wasitthankasem R, Pimsingh N, Treesun K, et al. Prevalence of Hepatitis C Virus in an Endemic Area of Thailand: Burden Assessment toward HCV Elimination. Am J Trop Med Hyg. 2020;103(1):175-182. doi:10.4269/ajtmh.19-0817
10. 10. Make Medicines Affordable. Hurdles and opportunities for Hepatitis C treatment in Thailand. Published April 10, 2023. Accessed March 1, 2025. https://makemedicinesaffordable.org/hurdles-and-opportunities-for-hepatitis-c-treatment-in-thailand
11. 11. National Health Security Office (NHSO). NHSO added new hepatitis C medication to scheme. Published February 9, 2021. Accessed March 1, 2025. https://eng.nhso.go.th/view/1/DescriptionNews/NHSO-added-new-hepatitis-C-medication-to-scheme/279/EN-US
12. 12. DHepatitis C (HCV) treatment access: spotlight on Thailand/Asia | HTB | HIV i-Base. Accessed March 20, 2025. https://i-base.info/htb/16978.
13. 13. hepCoalition. World Hepatitis Day 2013 - Actions Worldwide – HEPCoalition. hepCoalition. Accessed March 20, 2025. https://www.hepcoalition.org/en/news/partner-news/article/world-hepatitis-day-2013-actions-worldwide.
14. 14. Dietrich CG, Rau M, Geier A. Screening for nonalcoholic fatty liver disease-when, who and how? World J Gastroenterol. 2021;27(35):5803-5821. doi:10.3748/wjg.v27.i35.5803
15. 15. Ashtari S. Non-alcohol fatty liver disease in Asia: Prevention and planning. World J Hep. 2015;7(13):1788. doi:10.4254/wjh.v7.i13.1788
16. 16. Phisalprapa P, Prasitwarachot R, Kositamongkol C, et al. Economic burden of non-alcoholic steatohepatitis with significant fibrosis in Thailand. BMC Gastroenterol. 2021;21(1). doi:10.1186/s12876-021-01720-w
17. 17. Nasueb S, Kosiyaporn H, Cetthakrikul N, et al. Associations of work characteristics with obesity, behavioral risk factors and NCDs in Bangkok, Thailand. PLOS Glob Public Health. 2024;4(12):e0004000. doi:10.1371/journal.pgph.0004000
18. 18. Phulkerd S, Thongcharoenchupong N, Chamratrithirong A, Pattaravanich U, Sacks G, Prasertsom P. Influence of sociodemographic and lifestyle factors on taxed sugar-sweetened beverage consumption in Thailand. Food Policy. 2022;109:102256. doi:10.1016/j.foodpol.2022.102256
19. 19. Global Food Research Program. Sugary drink taxes around the world. Published May 2022. Accessed March 1, 2025. https://www.globalfoodresearchprogram.org/wp-content/uploads/2022/05/Sugary_Drink_Tax_maps_upload.pdf
20. 20. World Bank. World Development Indicators. Accessed March 1, 2025. https://databank.worldbank.org/source/world-development-indicators
21. 21. Poovorawan K, Treeprasertsuk S, Thepsuthammarat K, Wilairatana P, Kitsahawong B, Phaosawasdi K. The burden of cirrhosis and impact of universal coverage public health care system in Thailand: Nationwide study. Ann Hepatol. 2015;14(6):862-868. doi:10.5604/16652681.1171773
22. 22. Nontarak J, Geater AF, Assanangkornchai S, Aekplakorn W. Expected years of life lost due to alcohol consumption in Thai adults: A 16-Year Follow-Up Cohort of National Health Examination Survey 2004–2019. Alcohol Alcohol. 2021;57(4):490-499. doi:10.1093/alcalc/agab075
23. 23. Puranabhandu O. Thailand Bans Online Sale of Alcoholic Beverages. USDA Foreign Agricultural Service. Published October 9, 2020. Accessed March 1, 2025. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Thailand%20Bans%20Online%20Sale%20of%20Alcoholic%20Beverages%20_Bangkok_Thailand_10-08-2020
24. 24. World Cancer Research Fund. Liver cancer statistics. Accessed March 1, 2025. https://www.wcrf.org/preventing-cancer/cancer-statistics/liver-cancer-statistics/
25. 25. Chitapanarux T, Phornphutkul K. Risk factors for the development of hepatocellular carcinoma in Thailand. J Clin Transl Hepatol. 2015;3(3):182-188. doi:10.14218/jcth.2015.00025
26. 26. Srivatanakul P. Epidemiology of liver cancer in Thailand. PubMed. 2001;2(2):117-121. https://pubmed.ncbi.nlm.nih.gov/12718642.
27. 27. Anchalee N, Thinkhamrop K, Suwannatrai A, Titapun A, Loilome W, Kelly M. Spatio-Temporal Analysis of cholangiocarcinoma in a high prevalence area of northeastern Thailand: a 10-Year Large Scale Screening Program. Asian

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

Pac J Cancer Prev. 2024;25(2):537-546. doi:10.31557/apjcp.2024.25.2.537

28. 28. Chitapanarux T, Phornphutkul K. Risk factors for the development of hepatocellular carcinoma in Thailand. J Clin Transl Hepatol. 2015;3(3):182-188. doi:10.14218/jcth.2015.00025
29. 29. Kitiyakara T, Leerapun A, Sutthivana C, et al. Regional differences in admissions and treatment outcomes for hepatocellular carcinoma patients in Thailand. Asian Pac J Cancer Prev. 2022;23(11):3701-3715. doi:10.31557/apjcp.2022.23.11.3701
30. 30. Nivatvongs S, Sirichindakul B, Nontasuti B, Kongkam P, Rerknimitr R, Kullavanijaya P. Result of orthotopic liver transplantation at King Chulalongkorn Memorial Hospital: the first series from Thailand. PubMed. 2003;86 Suppl 2:S445-50. https://pubmed.ncbi.nlm.nih.gov/12930023.
31. 31. Cowie S, Choy SH, Shah DM, Gomez MP, Yoong BK, Koong JK. Healthcare system impact on deceased organ donation and transplantation: A comparison between the top 10 organ donor countries with 4 countries in Southeast Asia. Transpl Int. 2023;36. doi:10.3389/ti.2023.11233
32. 32. Chulalongkorn University. Thai Red Cross Society's organ donation: A merit for givers and new lives for recipients. Published August 30, 2022. Accessed March 1, 2025. https://www.chula.ac.th/en/news/36135/
33. 33. Marek J, Sribhibhadh T, Phanthong T, Lozonschi L, Komaenthammasophon C, Assawaworrarit P. Factors influencing low organ donor registration rates in Bangkok, Thailand are not religious in nature. Korean J. Transplant. 2022;36(1):S223. doi:10.4285/atw2022.f-3591
34. 34. The Barriers of organ donation from brain death patients in ... : Transplantation. LWW. https://journals.lww.com/transplantjournal/fulltext/2014/07151/the_barriers_of_organ_donation_from_brain_death.842.aspx.

VIETNAM

1. Ha L, Tran A, Bui L, et al. Proportion and number of cancer cases and deaths attributable to behavioral risk factors in Vietnam. *Int J Cancer.* 2023;153(3):524-538. doi:10.1002/ijc.34549
2. Ngoan LT, Lua NT, Hang LTM. Cancer Mortality Pattern in Viet Nam. *Asian Pac J Cancer Prev.* 2007;8(4):535-538.
3. Nguyen VT, Law MG, Dore GJ. An enormous hepatitis B virus-related liver disease burden projected in Vietnam by 2025. *Liver Int*. 2008;28(4):525-531. doi:10.1111/j.1478-3231.2007.01646.x
4. Statista Research Team. Prevalence of obesity among adults in Vietnam from 2010 to 2016. Statista. https://www.statista.com/statistics/1095803/vietnam-prevalence-of-obesity/
5. Pham T, Bui L, Giovannucci E, et al. Prevalence of obesity and abdominal obesity and their association with metabolic-related conditions in Vietnamese adults: an analysis of Vietnam STEPS survey 2009 and 2015. *Lancet Reg Health West Pac*. 2023;39:100859. Published 2023 Jul 28. doi:10.1016/j.lanwpc.2023.100859
6. Tuong TTK, Tran DK, Phu PQT, Hong TND, Dinh TC, Chu DT. Non-Alcoholic Fatty Liver Disease in Patients with Type 2 Diabetes: Evaluation of Hepatic Fibrosis and Steatosis Using Fibroscan. *Diagnostics (Basel)*. 2020;10(3):159. Published 2020 Mar 14. doi:10.3390/diagnostics10030159
7. VietnamPlus. Alcohol consumption increasing at alarming rate. VietnamPlus; 2022. Accessed 2022-07-08. https://en.vietnamplus.vn/alcohol-consumption-increasing-at-alarming-rate/232387.vnp
8. Gish RG, Bui TD, Nguyen CTK, et al. Liver disease in Viet Nam: Screening, surveillance, management and education: A 5-year plan and call to action. *Journal of Gastroenterology and Hepatology.* 2012;27(2):238-247. doi:https://doi.org/10.1111/j.1440-1746.2011.06974.x
9. Blessmann J, Van Linh P, Nu PA, et al. Epidemiology of amebiasis in a region of high incidence of amebic liver abscess in central Vietnam. *Am J Trop Med Hyg.* 2002;66(5):578-583. doi:10.4269/ajtmh.2002.66.578
10. Nguyen VT. Hepatitis B infection in Vietnam: current issues and future challenges. *Asia Pac J Public Health.* Mar 2012;24(2):361-73. doi:10.1177/1010539510385220
11. Nguyen VT. Hepatitis B infection in Vietnam: current issues and future challenges. *Asia Pac J Public Health.* 2012;24(2):361-373. doi:10.1177/1010539510385220
12. Berto A, Day J, Van Vinh Chau N, et al. Current challenges and possible solutions to improve access to care and treatment for hepatitis C infection in Vietnam: a systematic review. *BMC Infect Dis.* 2017;17(1):260. Published 2017 Apr 11. doi:10.1186/s12879-017-2360-6
13. Smith P. Johns Hopkins Physicians Take on Hepatitis B Epidemic in Vietnam. Johns Hopkins Medicine. https://www.hopkinsmedicine.org/news/articles/2020/06/johns-hopkins-physicians-take-on-hepatitis-b-epidemic-in-vietnam
14. Boeke CE, Adesigbin C, Agwuocha C, et al. Initial success from a public health approach to hepatitis C testing, treatment and cure in seven countries: the road to elimination. *BMJ Glob Health.* 2020;5(12):e003767. doi:10.1136/bmjgh-2020-003767
15. Liver cancer statistics. World Cancer Research Fund International. https://www.wcrf.org/cancer-trends/liver-cancer-statistics/
16. Nguyen-Dinh SH, Do A, Pham TND, Dao DY, Nguy TN, Chen MS Jr. High burden of hepatocellular carcinoma and viral hepatitis in Southern and Central Vietnam: Experience of a large tertiary referral center, 2010 to 2016. *World J Hepatol*. 2018;10(1):116-123. doi:10.4254/wjh.v10.i1.116
17. Gish RG, Bui TD, Nguyen CT, et al. Liver disease in Viet Nam: screening, surveillance, management and education: a 5-year plan and call to action. *J Gastroenterol Hepatol*. 2012;27(2):238-247. doi:10.1111/j.1440-1746.2011.06974.x
18. Ha MV. Some peculiarities of hepatobiliary diseases in Vietnam. *J Gastroenterol Hepatol.* 1997;12(5):S15-S18. doi:10.1111/j.1440-1746.1997.tb00438.x
19. Hoàng TH, Phạm TN, Nguyễn GK, Lê QH. A rare variant of α 1 antitrypsin mutations detected in Vietnamese children with liver disease. *Ann Clin Biochem*. 2013;50(Pt 4):339-344. doi:10.1177/0004563212473443
20. Improving Outcomes for the Rare Liver Disease Biliary Atresia with a Cancer Drug in Vietnam. Cures Within Reach. Updated 2021-04-16. https://www.cureswithinreach.org/2021/04/16/improving-outcomes-for-the-rare-liver-disease-biliary-atresia-with-a-cancer-drug-in-vietnam/
21. Tran HTM; Vo HTDT, AD; Nguyen, TT. P0261 LIVER DISEASE IN VIETNAMESE CHILDREN. Journal of Pediatric Gastroenterology and Nutrition. 2004;39(1)
22. Nguyen TC, Robert A, Nguyen PV, et al. Current status and actual need for pediatric liver transplantation in Southern Vietnam. *Pediatr Transplant.* 2016;20(2):215-221. doi:10.1111/petr.12660
23. Nguyen TK, Trinh HS, Luong TH, et al. Technical characteristics and quality of grafts in liver procurement from brain-dead donors: A single-center study in Vietnamese population. *Ann Med Surg (Lond)*. 2021;69:102654. Published 2021 Jul 31. doi:10.1016/j.amsu.2021.102654
24. Bàng LVT, Vũ Văn Q, Nguyễn Mạnh D, et al. Evaluation of results of living donor liver transplantation for hepatocellular carcinoma. *Journal of 108-Clinical Medicine and Pharmacy.* 2022-07-21 2022;17(7)doi:https://tcydls108.benhvien108.vn/index.php/YDLS/article/view/1257

EUROPE

1. Karlsen, T.H., Sheron, N., Zelber-Sagi et al The EASL–Lancet Liver Commission: protecting the next generation of Europeans against liver disease complications and premature mortality. *The Lancet* 399, 61–116.
2. WHO European Regional Obesity: Report 2022, 2022. World Health Organization, Regional Office for Europe, Copenhagen.
3. Alcohol use. World Health Organization. https://www.who.int/europe/news-room/fact-sheets/item/alcohol-use. Published August 17, 2016. Accessed 2022.
4. Blachier M, Leleu H, Peck-Radosavljevic M, Valla DC, Roudot-Thoraval F. The burden of liver disease in Europe: a review of available epidemiological data. *J Hepatol*. 2013;58(3):593-608. doi:10.1016/j.jhep.2012.12.005
5. Systematic review on hepatitis B and C prevalence in the EU/EEA, 2016. European Centre for Disease Prevention and Control. https://www.ecdc.europa.eu/en/publications-data/systematic-review-hepatitis-b-and-c-prevalence-eueea

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

BELGIUM

1. Furquim d'Almeida A, Ho E, Schüttler C, Beutels P, Hens N, Dudareva S, Van Damme P, Theeten H, Vanwolleghem T. Combined HBsAg and anti-HBc testing is required to estimate hepatitis B virus seroprevalence in a low-endemic country: findings from a nationwide population-based serosurvey, Belgium, 2020. Euro Surveill. 2026;31(6): pii=2500533. https://doi.org/10.2807/1560-7917.ES.2026.31.6.2500533.
2. Beutels M, Van Damme P, Aelvoet W, Desmyter J, Dondeyne F, Goilav C, et al. Prevalence of hepatitis A, B and C in the Flemish population. Eur J Epidemiol. 1997;13(3):275–80. https://doi.org/10.1023/A:1007393405966.
3. Bielen R, Koc ÖM, Busschots D, Robaeys G, Aertgeerts B, Vaes B, Mamouris P, Mathei C, Goderis G, Nevens F. Assessing testing rates for viral hepatitis B and C by general practitioners in Flanders, Belgium: a registry-based study. BMJ Open. 2019;9: e026464. https://doi.org/10.1136/bmjopen-2018-026464.
4. Litzroth A, Suin V, Wyndham-Thomas C, Quoilin S, Muyldermans G, Vanwolleghem T, et al. Low hepatitis C prevalence in Belgium: implications for treatment reimbursement and scale up. BMC Public Health. 2019; 19:39. https://doi.org/10.1186/s12889-018-6347-z.
5. Busschots D, Ho E, Blach S, Nevens F, Razavi H, Van Damme B, Vanwolleghem T, Robaeys G. Ten years countdown to hepatitis C elimination in Belgium: a mathematical modeling approach. BMC Infect Dis. 2022;22: 397. https://doi.org/10.1186/s12879-022-07378-3.
6. Lazarus JV, Safreed-Harmon K, Stumo SR, et al. The 2016 Hep-CORE Report: monitoring the implementation of hepatitis B and C policy recommendations in Europe. Brussels: European Liver Patients Association; 2017.
7. De Vroey B, Moreno C, Laleman W, van Gossum M, Colle I, de Galocsy C, et al. Hepatitis B virus and hepatitis C virus infections in Belgium: similarities and differences in epidemics and initial management. Eur J Gastroenterol Hepatol. 2013;25(5):613–619. https://doi.org/10.1097/MEG.0b013e32835d83a2.
8. De Brier N, Koc ÖM, De Buck E, Muylaert A, Nevens F, Vanbrabant M, et al. Hepatitis B virus prevalence in first-time blood donors in Flanders, Belgium: Impact of universal vaccination and migration. Transfusion. 2021;61(7):2125–2136. https://doi.org/10.1111/trf.16431.
9. Heyens LJM, Innocenti F, Van Steenkiste C, Struyve M, Francque SM, Koek GH, Robaeys G, on behalf of the MASLD Research Group. Prevalence and Risk Factors of MASLD in Prediabetes and Type 2 Diabetes Mellitus in Belgium and The Netherlands. Biomedicines. 2025; 13:2821. https://doi.org/10.3390/biomedicines13112821.
10. Belgian Cancer Registry. Liver cancer: incidence, survival and trends, Belgium 2022. Brussels: Belgian Cancer Registry; 2022.
11. Van Vlierberghe H, Borbath I, Delwaide J, Henrion J, Michielsen P, Verslype C; BASL HCC working group. BASL guidelines for the surveillance, diagnosis and treatment of hepatocellular carcinoma. Acta Gastroenterol Belg. 2004;67(1):1–12.
12. De Wilde N, Vonghia L, Francque S, De Somer T, Bagdadi A, Staub E, Lambrechts J, Bucalau AM, Verset G, Van Steenkiste C. Real-life multi-center retrospective analysis on nivolumab in difficult-to-treat patients with advanced hepatocellular carcinoma. World J Hepatol. 2022;14(8):1608–1620. https://doi.org/10.4254/wjh.v14.i8.1608.
13. Onghena L, Geerts A, Berrevoet F, Pirenne J, Verbeek J, Bonaccorsi-Riani E, Dahlqvist G, Vonghia L, Detry O, Delwaide J, Lefere S, van Nieuwenhove Y. Bariatric surgery post-liver transplantation: A Belgian nationwide study. Liver Transpl. 2024; 30:1050–1057. https://doi.org/10.1097/LVT.0000000000000372.
14. Kaze E, Descamps OS, Henrion J. The changing pattern of cirrhosis in Belgium: a study based on two cohorts prospectively collected 15 years apart. Acta Gastroenterol Belg. 2020;83(4):559–563. ISSN 1784-3227.
15. Sciensano. Burden of disease: Risk factor attributable burden – Alcohol attributable burden. Health Status Report. Brussels: Sciensano; 30 January 2025. Available from: https://www.healthybelgium.be/en/health-status/burden-of-disease/risk-factor-attributable-burden/burden-of-alcohol-use.
16. Hôpital Universitaire de Bruxelles (H.U.B.). Alcohol-related liver disease: an issue of public health and social equity. Brussels: H.U.B.; 22 August 2025. Available from: https://www.hubruxelles.be/en/news/alcohol-related-liver-disease-an-issue-of-public-health-and-social-equity.
17. Verhaeghe N, Lievens D, Annemans L, Vander Laenen F, Putman K. The health-related social costs of alcohol in Belgium. BMC Public Health. 2017;17:958. https://doi.org/10.1186/s12889-017-4974-4.

BULGARIA

1. Country Nutrition Profiles - Bulgaria. Global Nutrition Report. https://globalnutritionreport.org/resources/nutrition-profiles/europe/eastern-europe/bulgaria/. Accessed October 31, 2022.
2. Perumpail, B., Khan, M.A., Yoo, E., Cholankeril, G., Kim, D., Ahmed, A., 2017. Clinical epidemiology and disease burden of nonalcoholic fatty liver disease. *World Journal of Gastroenterology* 23, 8263–8276.
3. OECD, *Preventing Harmful Alcohol Use,* OECD Health Policy Studies, OECD Publishing, Paris, https://doi.org/10.1787/6e4b4ffb-en. https://www.oecd.org/countries/bulgaria/Preventing-Harmful-Alcohol-Use-Key-Findings-BULGARIA.pdf. Published 2021. Accessed October 31, 2022.
4. Bulgaria: Liver Cancer. World Health Rankings. https://www.worldlifeexpectancy.com/bulgaria-liver-cancer
5. Countries Dashboard – CDA Foundation. https://cdafound.org/polaris-countries-dashboard/
6. Organ transplantation activity in Bulgaria in 2020. Statista. https://www.statista.com/statistics/537946/organ-transplantation-activity-in-bulgaria/ Published September 28, 2022.
7. OECD/European Observatory on Health Systems and Policies. *Bulgaria: Country Health Profile* 2021, State of Health in the EU, OECD Publishing, Paris, https://doi.org/10.1787/c1a721b0-en.

CZECH REPUBLIC

1. Flisiak R, Frankova S, Jindal S, et al. Towards elimination of viral hepatitis in the Czech Republic, Hungary, Poland and Slovakia: insights from the Viral Hepatitis Prevention Board (VHPB). Clin Exp Hepatol 2026; 12, 1: 1–10. https://doi.org/10.5114/ceh.2026.158833
2. Bendlova I, Simka V, Ryzhova E, Schovankova T, Holy O. Epidemiology of hepatitis B and C among risk groups in Czechia. BMC Public Health 2025; 25: 1866. https://doi.org/10.1186/s12889-025-23014-6.
3. Chlibek R, Smetana J, Sosovickova R, et al. Prevalence of hepatitis C virus in adult population in the Czech Republic – time for birth cohort screening. PLoS ONE 2017; 12(4): e0175525. https://doi.org/10.1371/journal.pone.0175525.
4. Frankova S, Uzlova N, Merta D, Pitova V, Sperl J. Predictors of significant liver fibrosis in people with chronic hepatitis C who inject drugs in the Czech Republic. Life 2023; 13: 932. https://doi.org/10.3390/life13040932.
5. Frankova S, Uzlova N, Merta D, Pitova V, Sperl J. Predictors of significant liver fibrosis in people with chronic hepatitis C who inject drugs in the Czech Republic. Life 2023; 13: 932. https://doi.org/10.3390/life13040932.
6. Dvorak K, Hainer R, Petrtyl J, et al. The prevalence of nonalcoholic liver steatosis in patients with type 2 diabetes mellitus in the Czech Republic. Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub 2015; 159(3): 442–448. http://dx.doi.org/10.5507/bp.2014.033
7. Dusilová T, Kovář J, Laňková I, et al. Semaglutide treatment effects on liver fat content in obese subjects with metabolic-associated steatotic liver disease (MASLD). J Clin Med 2024; 13: 6100. https://doi.org/10.3390/jcm13206100.
8. Lazarus JV, White TM, Agirre-Garrido L, et al. Chronic liver disease in Europe: assessing Europe's policy readiness to confront the MASLD/MASH public health threat. Lancet Reg Health Eur 2026; 65: 101713. https://doi.org/10.1016/j.lanepe.2026.101713
9. Lazarus JV, Ekstedt M, Marchesini G, et al. A cross-sectional study of the public health response to non-alcoholic fatty liver disease in Europe. J Hepatol 2020; 72: 14–24. https://doi.org/10.1016/j.jhep.2019.08.027.
10. Hříbek P, Klasová J, Tůma T, Kupsa T, Urbánek P. Etiopathogenetic factors of hepatocellular carcinoma, overall survival, and their evolution over time — Czech tertiary center overview. Medicina 2022; 58: 1099. https://doi.org/10.3390/medicina58081099.
11. Viklicky O, Fronek J, Trunecka P, Pirk J, Lischke R. Organ transplantation in the Czech Republic. Transplantation 2017; 101: 2259–2261. https://doi.org/10.1097/TP.0000000000001871.
12. Fronek J, Chlupac J. Transplantation Surgery Department at IKEM Hospital,

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

Prague, Czech Republic: increasing volume and improving outcomes through innovative clinical strategies and technical approaches. Transplantation 2023; 107: 2285–2289. https://doi.org/10.1097/TP.0000000000004633.

13. Hejlova I, Honsova E, Sticova E, et al. Prevalence and risk factors of steatosis after liver transplantation and patient outcomes. Liver Transplantation 2016; 22: 644–655. https://doi.org/10.1002/lt.24393.
14. Mravčík V, Chomynová P, Nechanská B, Černíková T, Csémy L. Alcohol use and its consequences in the Czech Republic. Cent Eur J Public Health 2019; 27 (Suppl): S15–S28. https://doi.org/10.21101/cejph.a5728.
15. Office of the Government of the Czech Republic, Drug Policy Department, National Monitoring Centre for Drugs and Addiction. Report on Alcohol in the Czech Republic 2023. Prague: Office of the Government of the Czech Republic; 2023. Available from: https://www.drogy-info.cz/en/.
16. Ehrmann J, Urban O, Dvoran P. Alcohol-related liver diseases. Cent Eur J Public Health 2019; 27 (Suppl): S10–S14. https://doi.org/10.21101/cejph.a5999.
17. Pechholdová M, Jasilionis D. Contrasts in alcohol-related mortality in Czechia and Lithuania: analysis of time trends and educational differences. Drug Alcohol Rev 2020; 39: 846–856. https://doi.org/10.1111/dar.13157.

DENMARK

1. Generelt. Leverforeningen. Updated 2023. Accessed September 01, 2031. https://leverforeningen.dk/.
2. Dalby Hansen C, Krag A, Hansen T, et al. Prevalence of non-alcoholic fatty liver disease and assessment of a low-carbohydrate high-fat diet as a dietary treatment option.Syddansk Universitet, Det sundhedsvidenskabelige Fakultet .2023. doi:10.21996/vskc-gd33
3. Danes' Health - The National Health Profile: Mid-term survey 2023. The National Board of Health; 2024. Accessed October 16, 2024. https://www.sst.dk/-/media/Udgivelser/2024/Sundhedsprofil/WEB_Sundhedsprofilen_2023_KORT-a.ashx?sc_lang=da&hash=690D866CEA150C9C9010161FB322DB12.
4. Spruk R, Kovac M. Does a ban on trans fats improve public health: synthetic control evidence from Denmark. Schweiz Z Volkswirtsch Stat. 2020;156(1). doi:10.1186/s41937-019-0048-0
5. Hansen ABG, Hvidtfeldt UA, Grønbæk M, Becker U, Nielsen AS, Tolstrup JS. The number of persons with alcohol problems in the Danish population. Scand J Public Health Suppl. 2011;39(2):128-136. doi:10.1177/1403494810393556
6. Sørensen HT, Friis S, Olsen JH, et al. Risk of liver and other types of cancer in patients with cirrhosis: A nationwide cohort study in Denmark. Hepatology. 1998;28(4):921-925. doi:10.1002/hep.510280404
7. DENMARK | NAPR. NAPR. https://www.nordicalcohol.org/denmark.
8. Kraglund F, Deleuran T, Askgaard G, Fleming KM, Jepsen P. Decreasing incidence of Alcohol-Related Liver Disease in Denmark: A 25-Year nationwide study. J. Intern. Med.. 2021;Volume 13:1-11. doi:10.2147/clep.s287870
9. Alcohol Culture in Denmark – A brand new anthology | PopNAD. PopNAD. https://nordicwelfare.org/popnad/en/artiklar/alcohol-culture-in-denmark-a-brand-new-anthology/. Published April 5, 2023.
10. Kjeld SG, Lund L, Madsen KR, Damsgaard MT, Bast LS. Trends in Use of Alcohol and Cigarettes among Danish Adolescents, 2002–2018: Exclusive and Dual Use. Int J Environ Res Public Health. 2022;19(6):3490. doi:10.3390/ijerph19063490
11. Askgaard G, Fleming KM, Crooks C, et al. Socioeconomic inequalities in the incidence of alcohol-related liver disease: A nationwide Danish study. Lancet Reg. Health Eur. 2021;8:100172. doi:10.1016/j.lanepe.2021.100172
12. Bollerup S, Wessman M, Hansen JF, et al. Increasing prevalence of chronic hepatitis B virus infection and low linkage to care in Denmark on 31 December 2016 – an update based on nationwide registers. Infect Dis (Lond). 2022;55(1):17-26. doi:10.1080/23744235.2022.2125065
13. Dröse S, Øvrehus ALH, Holm DK, et al. A multi-level intervention to eliminate hepatitis C from the Region of Southern Denmark: the C-Free-South project. BMC Infect Dis. 2022;22(1). doi:10.1186/s12879-022-07196-7
14. Christensen PB, Debrabant B, Cowan S, Debrabant K, Øvrehus A, Duberg AS. Hepatitis C time trends in reported cases and estimates of the hidden population born before 1965, Denmark and Sweden, 1990 to 2020. Eurosurveillance. 2022;27(50). doi:10.2807/1560-7917.es.2022.27.50.2200243
15. Nielsen S, Hansen JF, Hay G, et al. Hepatitis C prevalence in Denmark in 2016—An updated estimate using multiple national registers. PLoS ONE. 2020;15(9):e0238203. doi:10.1371/journal.pone.0238203
16. Hemminki K, Försti A, Hemminki O, Liska V, Hemminki A. Long-term survival trends for primary liver and pancreatic cancers in the Nordic countries. JHEP Reports. 2022;4(12):100602. doi:10.1016/j.jhepr.2022.100602
17. Montomoli J, Erichsen R, Nørgaard M, Høyer M, Hansen JB, Jacobsen JB. Survival of patients with primary liver cancer in central and northern Denmark, 1998-2009. Clin Epidemiol. 2011;3 Suppl 1(Suppl 1):3-10. doi:10.2147/CLEP.S20623
18. Rutherford MJ, Arnold M, Bardot A, et al. Comparison of liver cancer incidence and survival by subtypes across seven high-income countries. Int J Cancer. 2021;149(12):2020-2031. doi:10.1002/ijc.33767
19. Tybjerg, A.J., Friis, S., Brown, K. et al. Updated fraction of cancer attributable to lifestyle and environmental factors in Denmark in 2018. Sci Rep 12, 549 (2022). https://doi.org/10.1038/s41598-021-04564-2
20. So R, Chen J, Mehta AJ, et al. Long-term exposure to air pollution and liver cancer incidence in six European cohorts. Int J Cancer. 2021;149(11):1887-1897. doi:10.1002/ijc.33743
21. Bjerregaard JK, Mortensen MB, Pfeiffer P; Academy of Geriatric Cancer Research (AgeCare). Trends in cancer of the liver, gall bladder, bile duct, and pancreas in elderly in Denmark, 1980-2012. Acta Oncol. 2016;55 Suppl 1:40-45. doi:10.3109/0284186X.2015.1114675
22. Nissen TN, Rechnitzer C, Albertsen BK, et al. Epidemiological study of malignant paediatric liver tumours in Denmark 1985–2020. Cancers. 2023;15(13):3355. doi:10.3390/cancers15133355
23. About Scandiatransplant — site. https://www.scandiatransplant.org/about-scandiatransplant/organisation/about-scandiatransplant.
24. Scandiatransplant. Transplantation and Donation Figures 2023.; 2024. https://www.scandiatransplant.org/data/sctp_figures_2023_4Q.pdf.
25. Thomsen MT, Høgh J, Knudsen AD, et al. The Danish comorbidity in liver transplant recipients study (DACOLT): a non-interventional prospective observational cohort study. BMC Gastroenterol. 2021;21(1). doi:10.1186/s12876-021-01733-5

FRANCE

1. French Ills Of the Liver Held a Myth. *New York Times*. 1976-06-13. https://www.nytimes.com/1976/06/13/archives/french-ills-of-the-liver-held-a-myth.html
2. Liver Disease in France. World Life Expectancy. https://www.worldlifeexpectancy.com/france-liver-disease
3. Blachier M, Leleu H, Peck-Radosavljevic M, Valla DC, Roudot T. The burden of liver disease in Europe: a review of available epidemiological data. *Journal of hepatology.* 2013 Mar 2013;58(3)doi:10.1016/j.jhep.2012.12.005
4. Jewell J, Sheron N. Trends in European liver death rates: implications for alcohol policy. *Clinical medicine (London, England)*. 2010 Jun 2010;10(3) doi:10.7861/clinmedicine.10-3-259
5. Nguyen-Khac E, Anty R, Orban T, et al. Management of alcohol-related liver disease: the French Association for the Study of the Liver and the French Alcohol Society clinical guidelines. *Liver international : official journal of the International Association for the Study of the Liver.* 2022 Jun 2022;42(6) doi:10.1111/liv.15221
6. Statista Research Department. Alcohol consumption in France - Statistics & Facts. Statista. https://www.statista.com/topics/7384/alcohol-consumption-in-france/#topicOverview
7. Nabi O, Lacombe K, Boursier J, Mathurin P, Zins M, Serfaty. Prevalence and Risk Factors of Nonalcoholic Fatty Liver Disease and Advanced Fibrosis in General Population: the French Nationwide NASH-CO Study. *Gastroenterology*. 2020 Aug 2020;159(2)doi:10.1053/j.gastro.2020.04.048
8. Fontbonne a, Currie A, Tounian P, et al. Prevalence of Overweight and Obesity in France: The 2020 Obepi-Roche Study by the "Ligue Contre l'Obésité". *Journal of clinical medicine.* 01/25/2023 2023;12(3)doi:10.3390/jcm12030925
9. Chevreul K, Berg Brigham K, Bouché. The burden and treatment of diabetes in France. *Globalization and health.* 02/20/2014 2014;10doi:10.1186/1744-8603-10-6
10. Michas F. Infections with the hepatitis A virus in France 2007-2019. Statista. https://www.statista.com/statistics/766830/number-infections-hepati-

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

tis-at-la-france/

11. Cappy P, Boizeau L, Candotti D, et al. Insights on 21 Years of HBV Surveillance in Blood Donors in France. *Viruses*. 11/12/2022 2022;14(11) doi:10.3390/v14112507
12. European Centre for Disease Prevention and Control. *Hepatitis B. In: ECDC Annual epidemiological report for* 2018. 2020. https://www.ecdc.europa.eu/sites/default/files/documents/HEPB_AER_2018_Report.pdf
13. Noiriel N, Williams J. Early cost-utility analysis of hepatitis C virus testing for emergency department attendees in France. *PLOS global public health*. 02/23/2023 2023;3(2)doi:10.1371/journal.pgph.0001559
14. Brouard C, Pillonel J, Boussac M, et al. French hepatitis C care cascade: substantial impact of direct-acting antivirals, but the road to elimination is still long. OriginalPaper. *BMC Infectious Diseases.* 2020-10-15 2020;20(1):1-10. doi:doi:10.1186/s12879-020-05478-6
15. Servant-Delmas A, Le Gal F, Gallian P, Gordien, E, Laperche. Increasing prevalence of HDV/HBV infection over 15 years in France. *Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology.* 2014 Feb 2014;59(2)doi:10.1016/j.jcv.2013.11.016
16. Mansuy JM, Gallian P, Dimeglio C, et al. A nationwide survey of hepatitis E viral infection in French blood donors. *Hepatology (Baltimore, Md)*. 2016 Apr 2016;63(4)doi:10.1002/hep.28436
17. Denis F, Levy B. Mass vaccination against hepatitis B: the French example. *Current topics in microbiology and immunology.* 2006 2006;304doi:10.1007/3-540-36583-4_7
18. Denis F, Cohen R, Martinot A, et al. Evolution of hepatitis B vaccine coverage rates in France between 2008 and 2011. *Medecine et maladies infectieuses*. 2013 Jul 2013;43(7)doi:10.1016/j.medmal.2013.06.016
19. France: Recommended vaccinations, Vaccine Scheduler. European Centre for Disease Prevention and Control. https://vaccine-schedule.ecdc.europa.eu/Scheduler/ByCountry?SelectedCountryId=76&IncludeChildAgeGroup=true&IncludeChildAgeGroup=false&IncludeAdultAgeGroup=true&IncludeAdultAgeGroup=false
20. Liver cancer. COS Paris Healthcare. https://www.cos-eu.com/en/find-cancer-france-cos/cancer-du-foie/
21. Jean-Claude B, Yves-Edouard H. Prospective Cohort of Patients With Hepatocellular Carcinoma in France (CHIEF). ClinicalTrials.gov identifier: NCT04348838. Updated March 22, 2023. Accessed November 30, 2023. https://classic.clinicaltrials.gov/ct2/show/NCT04348838
22. Boutron MC, Faivre J, Milan C, Bedenne L, Hillon P, Klepping. Primary liver cancer in Côte d'Or (France). *International journal of epidemiology*. 1988 Mar 1988;17(1)doi:10.1093/ije/17.1.21
23. Bousquet PJ, Lefeuvre D, Tuppin P, et al. Cancer care and public health policy evaluations in France: Usefulness of the national cancer cohort. PloS one. 10/31/2018 2018;13(10)doi:10.1371/journal.pone.0206448
24. What are rare liver diseases? FILFOIE: French Network for Rare Liver Diseases. https://en.filfoie.com/rare-liver-diseases/rare-liver-diseases/
25. What is Filfoie? FILFOIE: French Network for Rare Liver Diseases. https://en.filfoie.com/filfoie-network/what-is-filfoie/
26. Dahlqvist G, Gaouar F, Carrat F, et al. Large-scale characterization study of patients with antimitochondrial antibodies but nonestablished primary biliary cholangitis. *Hepatology (Baltimore, Md).* 2017 Jan 2017;65(1)doi:10.1002/hep.28859
27. Corpechot C, Chazouillères O, Rousseau A, et al. A Placebo-Controlled Trial of Bezafibrate in Primary Biliary Cholangitis. *The New England journal of medicine*. 06/07/2018 2018;378(23)doi:10.1056/NEJMoa1714519
28. Garioud A, Seksik P, Chrétien Y, et al. Characteristics and clinical course of primary sclerosing cholangitis in France: a prospective cohort study. *European journal of gastroenterology & hepatology*. 2010 Jul 2010;22(7)doi:10.1097/MEG.0b013e328331c2b7
29. Durand F, Antoine C, Soubrane. Liver Transplantation in France. *Liver transplantation : official publication of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society*. 2019 May 2019;25(5)doi:10.1002/lt.25419
30. Stewart C. Rate of liver transplant procedures per million population in Europe in 2020 and 2021, by country. Statista. https://www.statista.com/statistics/537940/liver-transplant-rate-in-europe/

GERMANY

1. Hospital admission with liver cirrhosis: highest mortality rate of all chronic diseases. Aktuelles aus der Goethe-Universität Frankfurt. Updated 2022-02-11. https://aktuelles.uni-frankfurt.de/english/hospital-admission-with-liver-cirrhosis-highest-mortality-rate-of-all-chronic-diseases/
2. Liver Disease in Germany. World Life Expectancy. https://www.worldlifeexpectancy.com/germany-liver-disease
3. Wenyi G, wenyi.gu@kgu.de, Department of Internal Medicine I UHFGUFFaMG, et al. Trends and the course of liver cirrhosis and its complications in Germany: Nationwide population-based study (2005 to 2018). *The Lancet Regional Health – Europe.* 2022/01/01 2022;12doi:10.1016/j.lanepe.2021.100240
4. Causes and Treatment of Non-alcoholic Fatty Liver Disease (NAFLD). Deutsches Zentrum für Diabetesforschung. https://www.dzd-ev.de/en/research/non-alcoholic-fatty-liver-disease/index.html
5. M. YZ, Blissett D, Blissett R, et al. The economic and clinical burden of nonalcoholic fatty liver disease in the United States and Europe. *Hepatology (Baltimore, Md)*. 2016 Nov 2016;64(5)doi:10.1002/hep.28785
6. Gbm, A. S, Kuhnert R, Blume M, Mensink. Overweight and obesity among adults in Germany - Results from GEDA 2019/2020-EHIS. *Journal of health monitoring*. 09/14/2022 2022;7(3)doi:10.25646/10293
7. C. G, Kastaun S, Brown J, Kotz. Alcohol consumption and associations with sociodemographic and health-related characteristics in Germany: A population survey. Addictive behaviors. 2022 Feb 2022;125doi:10.1016/j.addbeh.2021.107159
8. G. S, Sperle I, Harder T, et al. Hepatitis B vaccination coverage in Germany: systematic review. *BMC infectious diseases*. 08/14/2021 2021;21(1) doi:10.1186/s12879-021-06400-4
9. C. R, Faber M, Werber D, et al. Resurgence of an international hepatitis A outbreak linked to imported frozen strawberries, Germany, 2018 to 2020. *Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin*. 2020 Sep 2020;25(37)doi:10.2807/1560-7917.ES.2020.25.37.1900670
10. Ma, C. S, Boesecke C, et al. Hepatitis C virus: Current steps toward elimination in Germany and barriers to reaching the 2030 goal. *Health science reports*. 06/04/2021 2021;4(2)doi:10.1002/hsr2.290
11. S. P, Behrendt P, Bock CT, Jilg W, Manns MP, Wedemeyer. Hepatitis E in Germany--an under-reported infectious disease. *Deutsches Arzteblatt international.* 09/01/2014 2014;111(35-36)doi:10.3238/arztebl.2014.0577
12. Hepatitis D – Cure. German Center for Infection Research. https://www.dzif.de/en/hepatitis-d-cure
13. M. S, Kloppenburg A, Aigner A, Lohse AW, Schramm C, Linder. Population-based study of autoimmune hepatitis and primary biliary cholangitis in Germany: rising prevalences based on ICD codes, yet deficits in medical treatment. *Zeitschrift fur Gastroenterologie.* 2020 May 2020;58(5) doi:10.1055/a-1135-9306
14. Jw, H. L, Trautwein C, Tischendorf. Primary sclerosing cholangitis: diagnosis and treatment. *Deutsches Arzteblatt international.* 12/23/2013 2013;110(51-52)doi:10.3238/arztebl.2013.0867
15. Robert Kock Institute. *Cancer in Germany 2017/2018*. 2022:52-55. https://www.krebsdaten.de/Krebs/EN/Content/Publications/Cancer_in_Germany/cancer_chapters_2017_2018/cancer_germany_2017_2018.pdf?__blob=publicationFile
16. Holovina A. Where to Treat Cancer Abroad and How Much Does It Cost. MediGlobus. https://mediglobus.com/cost-of-cancer-treatments-abroad/
17. Burden and cost of cancer. Deutsches Krebsforschungzentrum in der Helmholtz-Gemeinschaft. https://www.dkfz.de/en/gesundheitsoekonomie/burden-of-disease-studies.html
18. Up, F. T, Kroy DC, Barreiros AP, Neumann. *Liver transplantation in Germany. Liver transplantation : official publication of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society.* 2016 Aug 2016;22(8)doi:10.1002/lt.24461

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

IRELAND

1. Foley C. Liver Disease in Ireland – An Update. Hospital Professional News. Published March 18, 2025. Accessed June 18, 2025. https://hospitalprofessionalnews.ie/2025/03/18/liver-disease-in-ireland-an-update/
2. How alcohol affects the liver. Health Service Executive. Published September 20, 2022. Accessed June 18, 2025. https://www2.hse.ie/living-well/alcohol/health/effects-on-your-body/the-liver/
3. Murray CJL, Aravkin AY, Zheng P, et al. Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396(10258):1223-1249. doi:10.1016/s0140-6736(20)30752-2
4. World Health Organization (WHO). Alcohol, recorded per capita (15+) consumption (in litres of pure alcohol), three-year average with 95% CI. WHO Global Health Observatory. Accessed June 18, 2025. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/alcohol-recorded-per-capita-(15-)-consumption-(in-litres-of-pure-alcohol)-3-year-average-with-95-ci[1].
5. Armstrong PR, Ring É, MacNicholas R. A decade of rising alcoholic liver disease hospital admissions and deaths in Irish hospitals, 2007–2016: a retrospective cross-sectional analysis. Eur J Gastroenterol Hepatol. 2022;34(6):671-677. doi:10.1097/meg.0000000000002339
6. Irish Liver Foundation. Alcohol related liver disease (ALD). Irish Liver Foundation. Accessed June 18, 2025. https://www.liverfoundation.ie/alcohol-related-liver-disease-ald
7. Doyle A. Alcohol consumption, alcohol-related harm, and alcohol policy in Ireland. Drugnet Ireland. 2021;78:1-8. Accessed June 18, 2025. https://www.drugsandalcohol.ie/34737/
8. Hartmann C. EASL welcomes Ireland's landmark alcohol labelling policy as a crucial step in reducing alcohol-related harms. EASL-The Home of Hepatology. January 29, 2025. Accessed June 18, 2025. https://easl.eu/news/press-release-ireland-alcohol/
9. Drinks Ireland. Public Health (Alcohol) Act 2018. Drinks Ireland. Accessed June 18, 2025. https://www.ibec.ie/drinksireland/alcohol-in-society/public-health-alcohol-act
10. Leal-Lassalle H, Estévez-Vázquez O, Cubero FJ, Nevzorova YA. Metabolic and alcohol-associated liver disease (MetALD): a representation of duality. Npj Gut Liver. 2025;2(1). doi:10.1038/s44355-024-00014-8
11. Health Service Executive (HSE). Obesity. HSE.ie. Accessed June 18, 2025. https://www.hse.ie/eng/about/who/cspd/ncps/obesity/
12. Heslin AM, O'Donnell A, Kehoe L, et al. Adolescent overweight and obesity in Ireland—Trends and sociodemographic associations between 1990 and 2020. Pediatr. Obes. 2022;18(2). doi:10.1111/ijpo.12988
13. Jordan A. Obesity in Ireland: current rate and causes. Health Hero. Published December 20, 2024. Accessed June 18, 2025. https://www.healthhero.ie/blog/ireland-obesity-rate
14. Cholongitas E. Epidemiology of nonalcoholic fatty liver disease in Europe: a systematic review and meta-analysis. Ann. Gastroenterol.. Published online January 1, 2021. doi:10.20524/aog.2021.0604
15. Norris S. The silent epidemic of NAFLD in Ireland. Health News. Published February 18, 2020. Accessed June 18, 2025. https://www.healthnews.ie/diabetes/the-silent-epidemic-of-nafld-in-ireland/
16. Department of Health. A Healthy Weight for Ireland: Obesity Policy and Action Plan 2016–2025. Dublin: Government Publications; 2016. Accessed June 18, 2025. https://www.gov.ie/pdf/?file=https://assets.gov.ie/10073/ccbd6325268b48da80b8a9e5421a9eae.pdf
17. Mayo Clinic Staff. Hemochromatosis: Symptoms and causes. Mayo Clinic. Published January 9, 2025. Accessed June 18, 2025. https://www.mayoclinic.org/diseases-conditions/hemochromatosis/symptoms-causes/syc-20351443
18. Walsh G. Haemochromatosis: it's known as the 'Celtic gene' for good reason. The Irish Times. July 5, 2022. Accessed June 18, 2025. https://www.irishtimes.com/health/your-wellness/2022/07/05/haemochromatosis-you-dont-have-to-make-drastic-changes-but-be-conscious-of-high-iron-foods-such-as-steak-and-of-course-guinness/
19. Health Protection Surveillance Centre (HPSC). Epidemiology of hepatitis B in Ireland: Trends up to Q1 2024. Dublin: HPSC; April 2024. Accessed June 18, 2025. https://www.hpsc.ie/a-z/hepatitis/hepatitisb/Epidemiology%20of%20Hepatitis%20B%20in%20Ireland%20-April%202024_20240702.pdf
20. Health Protection Surveillance Centre (HPSC). Hepatitis B: Surveillance reports. HPSC. Accessed June 18, 2025. https://www.hpsc.ie/a-z/hepatitis/hepatitisb/surveillancereports/
21. Belzak S. Scandals in past and contemporary politics. Parliam. Aff. 2007;61(1):226-231. doi:10.1093/pa/gsm059
22. Mindo. Working towards the elimination of hepatitis C in Ireland. Medical Independent. Published December 4, 2018. Accessed June 18, 2025. https://www.medicalindependent.ie/clinical-news/feature/working-towards-the-elimination-of-hepatitis-c-in-ireland/#:~:text=The%20current%20estimate%20of%20HCV,a%20notifiable%20disease%20in%202004
23. Health Protection Surveillance Centre (HPSC). Epidemiology of hepatitis C in Ireland: Trends from 2004 to Q1 2024. Dublin: Health Service Executive; June 2024. Accessed June 18, 2025. https://www.hpsc.ie/a-z/hepatitis/hepatitisc/Epidemiology%20of%20Hepatitis%20C%20in%20Ireland%20-June%202024.pdf
24. Norton, D. Liver cancer in Ireland. Hospital Professional News. Published November 1, 2023. Accessed June 18, 2025. https://hospitalprofessionalnews.ie/2023/11/01/liver-cancer-in-ireland/
25. Worrying trends in hepatocellular carcinoma in Ireland. Medical Independent. Published February 16, 2022. Accessed June 18, 2025. https://www.medicalindependent.ie/clinical-news/feature/worrying-trends-in-hepatocellular-carcinoma-in-ireland/
26. Sopena Falco J, McCormick PA. Three decades of the Irish National Liver Transplant Program. Hospital Professional News. January 2022:22-24. Accessed June 18, 2025. https://hospitalprofessionalnews.ie/wp-content/uploads/2022/01/22-23-24-HPN-January-2022-Digital.pdf
27. Iqbal M, Elrayah EA, Traynor O, McCormick PA. Liver transplantation in Ireland. Liver Transplant. 2016;22(7):1014-1018. doi:10.1002/lt.24456
28. Griffin N. 'An incredible gift': 263 organ transplants took place in Ireland this year. Irish Examiner. Published January 2, 2024. Accessed June 18, 2025. https://www.irishexaminer.com/news/arid-41543869.html#:~:text=Last%20year%2C%20across%20the%20three,four%20pancreas%20transplants%20were%20completed.
29. Organ Donation and Transplant Ireland (ODTI). Organ Donation and Transplant Ireland Annual Report 2021. Dublin: Health Service Executive; 2022. Accessed June 18, 2025. https://www.hse.ie/eng/about/who/acute-hospitals-division/organ-donation-transplant-ireland/publications/organ%20donation%20and%20transplant%20ireland%20annual%20report%202021.pdf
30. Liver Ireland Support Network (LISN). Transplant history. LISN. Accessed June 18, 2025. https://lisn.ie/transplant-history

ITALY

1. Liver Cancer Death Rate by Country. World Life Expectancy. https://www.worldlifeexpectancy.com/cause-of-death/liver-cancer/by-country/
2. Liver Disease in Italy. World Life Expectancy. https://www.worldlifeexpectancy.com/italy-liver-disease
3. Non-alcoholic fatty liver disease in adults 2021: A clinical practice guideline of the Italian Association for the Study of the Liver (AISF), the Italian Society of Diabetology (SID) and the Italian Society of Obesity (SIO). *Eating and weight disorders : EWD. 2022* Jun 2022;27(5)doi:10.1007/s40519-021-01287-1
4. De Pergola G, Giannelli G, Panza F, et al. Liver Health and Dementia in an Italian Older Population: Findings From the Salus in Apulia Study. *Frontiers in aging neuroscience.* 12/08/2021 2021;13doi:10.3389/fnagi.2021.748888
5. Obesity and the Economics of Prevention: Fit not Fat - Italy Key Facts. Organisation for Economic Co-operation and Development. https://www.oecd.org/els/health-systems/obesityandtheeconomicsofpreventionfitnotfat-italykeyfacts.htm
6. Preventing Harmful Alcohol Use: Italy. 2021. https://www.oecd.org/italy/Preventing-Harmful-Alcohol-Use-Key-Findings-ITALY.pdf
7. Use of alcohol in Italy. Istituto Nazionale di Statistica; 2017-04-12, 2017. https://www.istat.it/en/archivio/198907
8. Pl, T. S, Sagnelli E, et al. Characteristics and Changes over Time of Alcohol-Related Chronic Liver Diseases in Italy. *Canadian journal of gastroenterology & hepatology.* 09/23/2018 2018;2018doi:10.1155/2018/9151820
9. Ciccozzi M, Lo Presti A, Ciccaglione AR, Zehender G, Ciotti M. Phylogeny and phylodinamic of Hepatitis C in Italy. ReviewPaper. *BMC Infectious Diseases.* 2012-11-12 2012;12(2):1-6. doi:doi:10.1186/1471-2334-12-S2-S5

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

10. C. S, Sica A, Creta M, Calogero A, Ciccozzi M, Sagnelli. Epidemiological and clinical aspects of hepatitis B virus infection in Italy over the last 50 years. *World journal of gastroenterology.* 07/14/2022 2022;28(26)doi:10.3748/wjg.v28.i26.3081
11. P. CG, Martini S, Ciancio A, et al. The hepatitis D virus in Italy. A vanishing infection, not yet a vanished disease. *Journal of advanced research*. 03/02/2021 2021;33doi:10.1016/j.jare.2021.02.009
12. P. M, Granito A, Quarneti C, et al. Autoimmune hepatitis in Italy: the Bologna experience. *Journal of hepatology.* 2009 Jun 2009;50(6)doi:10.1016/j.jhep.2009.01.020
13. M. M, Bassanelli C, Ripellino C, Urbinati D, Alvaro. Epidemiology of primary biliary cholangitis in Italy: Evidence from a real-world database. *Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver.* 2019 May 2019;51(5)doi:10.1016/j.dld.2018.11.008
14. M. C, Kodra Y, Rocchetti A, et al. Primary Sclerosing Cholangitis: Burden of Disease and Mortality Using Data from the National Rare Diseases Registry in Italy. *International journal of environmental research and public health.* 04/29/2020 2020;17(9)doi:10.3390/ijerph17093095
15. Mazzoleni G, Seghini P, Ferretti S, et al. Trends in Liver Cancer Incidence and Survival in Italy by Histologic Type, 2003-2017. Cancers. 12/14/2022 2022;14(24)doi:10.3390/cancers14246162
16. Z. L, Jiang Y, Yuan H, et al. The trends in incidence of primary liver cancer caused by specific etiologies: Results from the Global Burden of Disease Study 2016 and implications for liver cancer prevention. *Journal of hepatology.* 2019 Apr 2019;70(4)doi:10.1016/j.jhep.2018.12.001
17. Number of living and deceased liver transplants in Italy from 2007 to 2022. Statista. https://www.statista.com/statistics/584975/living-and-deceased-liver-transplants-in-italy/
18. De Carlis L, De Simone P, Di Benedetto F, et al. Temporal trends of waitlistings for liver transplantation in Italy: The ECALITA (Evolution of IndiCAtion in Liver transplantation in Italy) registry study. *Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver.* 2022 Dec 2022;54(12)doi:10.1016/j.dld.2022.08.033

NETHERLANDS

1. Koopsen J, van Steenbergen JE, Richardus JH, Prins M, Op de Coul ELM, Croes EA, Heil J, Zuure FR, Veldhuijzen IK. Chronic hepatitis B and C infections in the Netherlands: estimated prevalence in risk groups and the general population. Epidemiology and Infection. 2019;147: e147. https://doi.org/10.1017/S0950268819000359.
2. Brakenhoff SM, de Man RA, de Knegt RJ, Bindels PJE, de Schepper EIT. Epidemiology and management of hepatitis B and C in primary care in the Netherlands: data from the Rijnmond Primary Care database. Family Practice. 2023; 40:83–90. https://doi.org/10.1093/fampra/cmac070.
3. Kracht PAM, Arends JE, van Erpecum KJ, Urbanus A, Willemse JA, Hoepelman AIM, Croes EA. Strategies for achieving viral hepatitis C micro-elimination in the Netherlands. Hepatology, Medicine and Policy. 2018; 3:12. https://doi.org/10.1186/s41124-018-0040-9.
4. Zuure FR, Bil J, Visser M, Snijder M, Boyd A, Blom P, Sonder G, Schinkel J, Prins M. Hepatitis B and C screening needs among different ethnic groups: a population-based study in Amsterdam, the Netherlands. JHEP Reports. 2019; 1:71–80. https://doi.org/10.1016/j.jhepr.2019.04.003.
5. van Dijk M, Brakenhoff SM, Isfordink CJ, Cheng WH, Blokzijl H, Boland G, Dofferhoff ASM, van Hoek B, van Nieuwkoop C, Sonneveld MJ, van der Valk M, Drenth JPH, de Knegt RJ. The Netherlands is on track to meet the World Health Organization hepatitis C elimination targets by 2030. Journal of Clinical Medicine. 2021; 10:4562. https://doi.org/10.3390/jcm10194562.
6. van den Berg EH, Amini M, Schreuder TCMA, Dullaart RPF, Faber KN, Alizadeh BZ, Blokzijl H. Prevalence and determinants of non-alcoholic fatty liver disease in lifelines: a large Dutch population cohort. PLOS ONE. 2017;12(2):e0171502. https://doi.org/10.1371/journal.pone.0171502.
7. Alblas G, Lamb HJ, Rosendaal FR, van Hoek B, Coenraad MJ, de Mutsert R. Prevalence of non-alcoholic fatty liver in the general Dutch population and in groups at increased risk. Nutrition, Metabolism & Cardiovascular Diseases. 2023; 33:2497–2507. https://doi.org/10.1016/j.numecd.2023.08.008.
8. Theel W, Brouwer WP, van Rossum E, Apers J, ter Borg S, Noordermeer T, Castro Cabezas M. Evaluation of the prevalence of MASLD, MASH and liver fibrosis in a Dutch bariatric cohort. PLOS ONE. 2025;20(6): e0324813. https://doi.org/10.1371/journal.pone.0324813.
9. Verhoef C, Visser O, de Man RA, de Wilt JHW, IJzermans JNM, Janssen-Heijnen MLG. Hepatocellular carcinoma in the Netherlands: incidence, treatment and survival patterns. European Journal of Cancer. 2004; 40:1530–1538. https://doi.org/10.1016/j.ejca.2004.03.013.
10. van der Geest LG, van der Mark M, Verheij J, Farina Sarasqueta A, de Vos-Geelen J, Besselink MG, de Meijer VE, de Hingh IHJT, Bonsing BA, de Reuver PR, Willemssen FEJA, Vissers PAJ, Visser O. Increased incidence, survival, and registration quality of primary hepato-pancreato-biliary cancers in the Netherlands Cancer Registry. International Journal of Cancer. 2026;158(5):1237–1249. https://doi.org/10.1002/ijc.70145.
11. van Meer S, van Erpecum KJ, Sprengers D, Coenraad MJ, Klümpen HJ, Jansen PLM, IJzermans JNM, Verheij J, van Nieuwkerk CMJ, Siersema PD, de Man RA. Hepatocellular carcinoma in cirrhotic versus noncirrhotic livers: results from a large cohort in the Netherlands. European Journal of Gastroenterology & Hepatology. 2016; 28:352–359. https://doi.org/10.1097/MEG.0000000000000527.
12. 't Lam-Boer J, van der Stok EP, Huiskens J, Verhoeven RHA, Punt CJA, Elferink MAG, de Wilt JH, Verhoef C. Regional and inter-hospital differences in the utilisation of liver surgery for patients with synchronous colorectal liver metastases in the Netherlands. European Journal of Cancer. 2017; 71:109–116. https://doi.org/10.1016/j.ejca.2016.10.026.
13. Görgec B, Zwart M, Nota CL, Bijlstra OD, Bosscha K, de Boer MT, de Wilde RF, Draaisma WA, Gerhards MF, Liem MS, Lips DJ, Marsman HA, Mieog JSD, Molenaar QI, Nijkamp M, Te Riele WW, Terkivatan T, Vahrmeijer AL, Besselink MG, Swijnenburg RJ, Hagendoorn J. Implementation and outcome of robotic liver surgery in the Netherlands: a nationwide analysis. Annals of Surgery. 2023;277: e1269–e1277. https://doi.org/10.1097/SLA.0000000000005600.
14. de Wit K, van Doorn DJ, Masclee GMC, Coenraad MJ, van Soest H, Cuperus FJC, Kramer M, Maan R, Takkenberg RB, Lantinga MA. Increase in prevalence and costs of cirrhosis in the Netherlands: a nationwide hospital diagnosis data analysis. European Journal of Gastroenterology & Hepatology. 2025; 37:350–357. https://doi.org/10.1097/MEG.0000000000002905.
15. van Santen DK, Schim van der Loeff MF, Cartier van Dissel J, Martens JPD, van der Valk M, Prins M. High proportions of liver fibrosis and cirrhosis in an ageing population of people who use drugs in Amsterdam, The Netherlands. European Journal of Gastroenterology & Hepatology. 2018; 30:1168–1176. https://doi.org/10.1097/MEG.0000000000001213.

POLAND

1. Liver Disease in Poland. World Life Expectancy. https://www.worldlifeexpectancy.com/poland-liver-disease
2. Sowada C, Sagan A, Kowalska-Bobko I, eds. *Poland: health system summary. 2022.* https://eurohealthobservatory.who.int/publications/i/poland-health-system-summary
3. I. C-M, Szczepanek M, Tobiasz-Adamczyk B, Mach. Non-alcoholic fatty liver disease in Poland: how and at what stage is diagnosed, and how is treated. A survey study. *Przeglad gastroenterologiczny*. 2019 2019;14(3)doi:10.5114/pg.2019.88165
4. Jędrzejak P. Child obesity in Poland has reached epidemic levels - Emerging Europe. 2022-03-30. https://emerging-europe.com/news/child-obesity-in-poland-has-reached-epidemic-levels/
5. K. S, Rychlik E, Woźniak A, et al. Prevalence and Sociodemographic Factors Associated with Overweight and Obesity among Adults in Poland: A 2019/2020 Nationwide Cross-Sectional Survey. *International journal of environmental research and public health.* 01/28/2022 2022;19(3)doi:10.3390/ijerph19031502
6. Poland: Consumption of alcoholic drinks per capita. Statista. 2023. https://www.statista.com/statistics/1095148/poland-consumption-of-alcoholic-products-per-capita/
7. Witold AZ, wazatonski@promocjazdrowia.pl, European Observatory of Health Inequalities CUKP, et al. Alcohol-related liver cirrhosis in Poland: the reservoir effect. *The Lancet Gastroenterology & Hepatology.* 2020/12/01 2020;5(12):1035. doi:10.1016/S2468-1253(20)30329-0

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

8. Poland - Traveler view. U.S. Centers for Disease Control and Prevention. https://wwwnc.cdc.gov/travel/destinations/traveler/none/poland
9. Galimska. The expanded programme on immunization calendar in Poland. *Vaccine.* 02/18/2000 2000;18 Suppl 1doi:10.1016/s0264-410x(99)00461-2
10. Poland: Recommended vaccinations, Vaccine Scheduler. European Center for Disease Prevention and Control. https://vaccine-schedule.ecdc.europa.eu/Scheduler/ByCountry?SelectedCountryId=166&IncludeChildAgeGroup=true&IncludeChildAgeGroup=false&IncludeAdultAgeGroup=true&IncludeAdultAgeGroup=false/
11. Vaccination of children in Poland: where to get vaccinated? *VisitUkraineToday* blog. 2022. https://visitukraine.today/blog/593/vaccination-of-children-in-poland-where-to-get-vaccinated
12. Zm, M. PJ, Golabi P, Younossi Y, Mishra A, Younossi. Changes in the Global Burden of Chronic Liver Diseases From 2012 to 2017: The Growing Impact of NAFLD. *Hepatology (Baltimore, Md)*. 2020 Nov 2020;72(5)doi:10.1002/hep.31173
13. J. R-W, Wunsch E, Krawczyk M, et al. Assessment of health related quality of life in polish patients with primary biliary cirrhosis. *Clinics and research in hepatology and gastroenterology.* 2016 Sep 2016;40(4)doi:10.1016/j.clinre.2015.10.006
14. Woynarowski M, Wozniak M, Pawlowska M, et al. Autoimmune hepatitis in Polish children: Healthcare facilities, epidemiology, and standards of care assessed by a pediatric autoimmune hepatitis group. *Experimental and Clinical Hepatology.* 06/01 2008;4:66-70.
15. K. GM, Zwolińska-Wcisło M, Frączek P, et al. Clinical course of primary sclerosing cholangitis and concomitant ulcerative colitis - a preliminary report of retrospective study among patients from Southern Poland. *Folia medica Cracoviensia.* 2015 2015;55(2)
16. D. W, Pliszczyński J, Łągiewska B, et al. The epidemiology of hepatocellular cancer in Poland. *Clinical and experimental hepatology.* 2018 Mar 2018;4(1)doi:10.5114/ceh.2018.73669
17. J. C, Lewandowska D, Małkowski P, Danielewicz. Liver Donation and Transplantation in Poland: Numbers, Indicators, and Trends. *Transplantation proceedings.* 2016 Jun 2016;48(5)doi:10.1016/j.transproceed.2016.01.058

ROMANIA

1. Liver disease in Romania. World Life Expectancy. Accessed February 18, 2025. https://www.worldlifeexpectancy.com/romania-liver-disease#:~:text=According%20to%20the%20latest%20WHO,choose%20the%20full%20health%20profile.
2. Globalliverforum. Accessed February 19, 2025. https://www.globalliverforum.com/dam/jcr:27ab646c-7a92-4eaa-9af2-a5ad80c536ba/GLHF_Prof%20Younossi_final-slide.pdf.
3. Romania. World Health Organization. Accessed February 18, 2025. https://data.who.int/countries/642.
4. Stoica V, Gardan DA, Constantinescu I, Gardan IP, Calenic B, Diculescu M. Transgenerational effects of traumatic historical events on the incidence of metabolic syndrome/ nonalcoholic fatty liver disease in the Romanian population. Journal of medicine and life. 2020. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7803300/.
5. Constantin CV, Streba CT, Rogoveanu I, Nita-Stefanescu L, Ionescu AG. Cirrhosis and chronic viral hepatitis as risk factors for hepatocellular carcinoma: Romanian single-clinic experience. Maedica. December 2010. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC3152834/#:~:text=Cirrhosis%20and%20Chronic%20Viral%20Hepatitis,Romanian%20Single%2Dclinic%20Experience%20%2D%20PMC.
6. Gheorghe L, Iacob S, Csiki IE, et al. Unveiling prevalence, risk factors, and outcomes of hepatitis D among vulnerable communities in Romania. Viruses. December 31, 2024. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC11769301/.
7. Huiban L, Stanciu C, Muzica CM, et al. Hepatitis C virus prevalence and risk factors in a village in northeastern Romania-a population-based screening-the first step to viral micro-elimination. MDPI. May 31, 2021. Accessed February 18, 2025. https://www.mdpi.com/2227-9032/9/6/651#:~:text=In%20Central%20and%20Eastern%20Europe,of%20HCV%20infection%20%5B7%5D.
8. Universal access to testing and treatment is key to eliminating viral hepatitis. World Health Organization. Accessed February 18, 2025. https://www.who.int/europe/news-room/26-07-2018-universal-access-to-testing-and-treatment-is-key-to-eliminating-viral-hepatitis.
9. World Health Organization Regional Office for Europe. Romania. CGHE. January 1, 1970. Accessed February 18, 2025. https://www.globalhep.org/data-profiles/countries/romania.
10. Popa S;Moţa M;Popa A;Moţa E;Serafinceanu C;Guja C;Catrinoiu D;Hâncu N;Lichiardopol R;Bala C;Popa A;Roman G;Radulian G;Timar R;Mihai B; Prevalence of overweight/obesity, abdominal obesity and metabolic syndrome and atypical cardiometabolic phenotypes in the adult Romanian population: Predatorr study. Journal of endocrinological investigation. Accessed February 18, 2025. https://pubmed.ncbi.nlm.nih.gov/27126310/.
11. 1. Mota M;Popa SG;Mota E;Mitrea A;Catrinoiu D;Cheta DM;Guja C;Hancu N;Ionescu-Tirgoviste C;Lichiardopol R;Mihai BM;Popa AR;Zetu C;Bala CG;Roman G;Serafinceanu C;Serban V;Timar R;Veresiu IA;Vlad AR; Prevalence of diabetes mellitus and prediabetes in the adult Romanian population: Predatorr study. Journal of diabetes. Accessed February 18, 2025. https://pubmed.ncbi.nlm.nih.gov/25850521/#:~:text=Impaired%20glucose%20regulation%20(prediabetes%2C%20known%20and%20unknown,was%20higher%20in%20men%20than%20in%20women.
12. Pop TL, Miu N, Cornean RE, Domnariu G, Cainap S, Pirvan A. Non-alcoholic fatty liver disease in obese children in north-western Romania. Archives of Disease in Childhood. November 1, 2008. Accessed February 18, 2025. https://adc.bmj.com/content/93/Suppl_2/pw570.
13. Trifan A, Muzica C-M, Nastasa R, et al. High prevalence of liver fibrosis among general population: A Romanian population-based study. Hepatology communications. January 18, 2023. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC9851682/.
14. Emergency clinical hospital for children cluj-napoca, Romania. rare. Accessed February 18, 2025. https://rare-liver.eu/about/members-partners/emergency-clinical-hospital-for-children-cluj-napoca-romania/#:~:text=Particular%20rare%20liver%20disease%20expertise,neonatal%20hepatitis.
15. Grama A, Aldea CO, Burac L, et al. Etiology and outcome of acute liver failure in children-the experience of a single tertiary care hospital from Romania. Children (Basel, Switzerland). December 9, 2020. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7763257/.
16. Liver cancer in Romania. World Life Expectancy. Accessed February 18, 2025. https://www.worldlifeexpectancy.com/romania-liver-cancer.
17. Crăciun R;Ştefănescu H;Sporea I;Săndulescu LD;Gheorghe L;Trifan A;Spârchez Z;Dănilă M;Rogoveanu I;Cerban R;Cojocariu C;Procopeț B;Șirli R;Urhuț CM;Crișan D;Burciu C;Al-Hajjar N;Grigorescu M; The staging of newly diagnosed hepatocellular carcinoma in Romania. A national multicentric study. Journal of gastrointestinal and liver diseases : JGLD. Accessed February 18, 2025. https://pubmed.ncbi.nlm.nih.gov/38944873/.
18. Bacuşcă AE, Tinică G, Enache M, et al. Organ transplantation in Romania: Challenges and perspectives. Medicine and pharmacy reports. July 2023. Accessed February 18, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC10419689/.

SPAIN

1. Muñoz-Gámez JA, Salmerón J. Prevalence of hepatitis B and C in Spain: further data are needed. Rev Esp Enferm Dig. 2013;105(5):245-248. doi:10.4321/s1130-01082013000500001
2. Bivegete S, McNaughton AL, Trickey A, et al. Estimates of hepatitis B virus prevalence among general population and key risk groups in EU/EEA/UK countries: a systematic review. Euro Surveill. 2023;28(30). doi:10.2807/1560-7917.es.2023.28.30.2200738
3. Stanford Medicine. Global Hepatitis B Vaccination Coverage: Spain. Accessed February 1, 2025. https://med.stanford.edu/content/dam/sm/liver/documents/research/GlobalHepatitisBVaccinationCoverage/EURO/Spain.pdf.
4. Gómez AE, Gil SJ, Limia A, et al. Prevalence and undiagnosed fraction of hepatitis C infection in 2018 in Spain: results from a national population-based survey. Eur J Public Health. 2021;31(6):1117-1122. doi:10.1093/eurpub/ckab069
5. Spain National Strategic Plan for Controlling Hepatitis C in the National Health System | CGHE. CGHE. Accessed February 1, 2025. https://

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

www.globalhep.org/tools-resources/action-plans/spain-national-strategic-plan-controlling-hepatitis-c-national-health.

6. REED - Revista Española de Enfermedades Digestivas. Accessed February 1, 2025. https://www.reed.es/screening-guide-for-hepatitis-c-virus-infection-in-spain5750.
7. ZonaIT. Targeting non-alcoholic fatty liver disease - Biotech Spain. Accessed February 1, 2025. https://biotech-spain.com/en/articles/targeting-non-alcoholic-fatty-liver-disease/.
8. Cuenca AMC, Escalada J. Prevalencia de obesidad y diabetes en España. Evolución en los últimos 10 años. Aten Primaria. 2024;57(3):102992. doi:10.1016/j.aprim.2024.102992
9. Ciardullo S, Vergani M, Perseghin G. Nonalcoholic Fatty Liver Disease in Patients with Type 2 Diabetes: Screening, Diagnosis, and Treatment. J Clin Med. 2023;12(17):5597. doi:10.3390/jcm12175597
10. Feijoo L, Rey-Brandariz J, Guerra-Tort C, et al. Prevalence of obesity in Spain and its autonomous communities, 1987-2020. Rev Esp Cardiol (Eng Ed). 2024;77(10):809-818. doi:10.1016/j.rec.2023.12.018
11. Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). Cleveland Clinic. Accessed February 1, 2025. https://my.clevelandclinic.org/health/diseases/22437-non-alcoholic-fatty-liver-disease.
12. World Health Organisation (WHO). Commercial Determinants of Noncommunicable Diseases in the WHO European Region.; Accessed February 1, 2025. . https://iris.who.int/handle/10665/376957.
13. Eurostat. Alcohol consumption statistics. European Commission. Accessed February 1, 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Alcohol_consumption_statistics
14. Statista. Chronic alcohol abuse cases in Spain 2011-2022. Statista. Accessed February 1, 2025. https://www.statista.com/statistics/1192868/number-of-cases-of-chronic-alcohol-abuse-spain/.
15. Liangpunsakul S, Haber P, McCaughan GW. Alcoholic liver disease in Asia, Europe, and North America. Gastr. 2016;150(8):1786-1797. doi:10.1053/j.gastro.2016.02.043
16. MINISTERIO DE SANIDAD, SECRETARIA DE ESTADO DE SANIDAD, DELEGACIÓN DEL GOBIERNO PARA EL PLAN NACIONAL SOBRE DROGAS. Spanish Alcohol Report 2021: Consumption and Consequences.; 2021. https://pnsd.sanidad.gob.es/profesionales/publicaciones/catalogo/catalogoPNSD/publicaciones/pdf/2021_Summary_Report_ALCOHOL_2021_SPAIN.pdf.
17. Álvarez P, Álvarez P, Álvarez P. Spanish foundation launches campaign on dangers of teen drinking. EL PAÍS Eng. https://english.elpais.com/elpais/2016/12/22/inenglish/1482401093_460058.html.
18. Duch M, Gervilla E, Juan M, et al. Effectiveness of a Community-Based Intervention to Increase Supermarket Vendors' Compliance with Age Restrictions for Alcohol Sales in Spain: A Pilot Study. Int J Environ Res Public Health. 2020;17(16):5991. doi:10.3390/ijerph17165991
19. Calvet X, Bruix J, Brú C, et al. Natural history of hepatocellular carcinoma in Spain. J Hep. 1990;10(3):311-317. doi:10.1016/0168-8278(90)90138-h
20. International Agency for Research on Cancer. Global Cancer Observatory: Cancer Today – Heatmap. World Health Organization. Accessed February 1, 2025. https://gco.iarc.who.int/today/en/dataviz/maps-heatmap?mode=population&key=crude_rate&cancers=11&zoom=5&types=1
21. Guinea-Castañares J, Iriso JMI, Pinillos INE, Iniesta GM. Comparison between Liver Cancer Mortality Rates in China and Spain. J Clin Transpl Hepat. 2024;000(000):000. doi:10.14218/jcth.2024.00219
22. Stefanini B, Ielasi L, Pallotta DP, Penazza S, Marseglia M, Piscaglia F. Intermediate-stage hepatocellular carcinoma: refining substaging or shifting paradigm? J Liver Cancer. 2024;24(1):23-32. doi:10.17998/jlc.2024.02.21
23. Beishon M, Beishon M. Liver cancer: how Europe can halt the rising death toll | Cancerworld Magazine. Cancerworld Magazine |. November 2021. https://cancerworld.net/liver-cancer-how-europe-can-halt-the-rising-death-toll/.
24. De La Rosa G, Fondevila C, Navasa M. Liver transplantation in Spain. Liver Transpl. 2016;22(9):1259-1264. doi:10.1002/lt.24484
25. Streit S, Johnston-Webber C, Mah J, et al. Ten lessons from the Spanish model of organ donation and transplantation. Transpl Int. 2023;36. doi:10.3389/ti.2023.11009
26. Lancet N. Organ donation: lessons from the Spanish model. The Lancet. 2024;404(10459):1171. doi:10.1016/s0140-6736(24)02128-7
27. Government of Spain. Spain has been the world leader in organ donation for 27 years. La Moncloa. Accessed February 1, 2025. https://www.lamoncloa.gob.es/lang/en/gobierno/news/Paginas/2019/190121transplant.aspx
28. Rodríguez-Perálvarez M, Gómez-Bravo MÁ, Sánchez-Antolín G, De La Rosa G, Bilbao I, Colmenero J. Expanding Indications of liver transplantation in Spain: Consensus Statement and recommendations by the Spanish Society of Liver Transplantation. Transplantation. 2020;105(3):602-607. doi:10.1097/tp.0000000000003281

UNITED KINGDOM

1. British Liver Trust, The alarming impact of liver disease in the UK. https://www.britishlivertrust.org.uk/wp-content/uploads/The-alarming-impact-of-liver-disease-FINAL-June-2019.pdf. Published June 2019.
2. Agha, M., Agha, R., 2017. The rising prevalence of obesity: part A: impact on public health. *Int J Surg Oncol* (N Y) 2, e17.
3. OECD. *Health at a Glance 2017: OECD Indicators.* Organisation for Economic Co-operation and Development, Paris: OECD Publishing; 2017.
4. Morgan, A., Hartmanis, S., Tsochatzis, E., Newsome, P.N., Ryder, S.D., Elliott, R., Floros, L., Hall, R., Higgins, V., Stanley, G., Cure, S., Vasudevan, S., Pezzullo, L., 2021. Disease burden and economic impact of diagnosed non-alcoholic steatohepatitis (NASH) in the United Kingdom (UK) in 2018. *Eur J Health Econ* 22, 505–518.
5. Lee, Y., Cho, Y., Lee, B.-W., Park, C.-Y., Lee, D.H., Cha, B.-S., Rhee, E.-J., 2019. Nonalcoholic Fatty Liver Disease in Diabetes. Part I: Epidemiology and Diagnosis. *Diabetes Metab J* 43, 31–45.
6. Liver disease profiles, January 2022 update. GOV.UIK https://www.gov.uk/government/statistics/liver-disease-profiles-january-2022-update/liver-disease-profiles-january-2022-update. Updated March 1, 2022
7. Hepatitis E: symptoms, transmission, treatment and prevention. GOV.UK. https://www.gov.uk/government/publications/hepatitis-e-symptoms-transmission-prevention-treatment/hepatitis-e-symptoms-transmission-treatment-and-prevention. Updated May 14, 2022
8. Prevalence | Background information | Hepatitis B | CKS | NICE. https://cks.nice.org.uk/topics/hepatitis-b/background-information/prevalence/.
9. Hepatitis C in England 2022: accessible text for infographics. GOV.UK. https://www.gov.uk/government/publications/hepatitis-c-in-the-uk/hepatitis-c-in-england-2022-accessible-text-for-infographics. Updated April 6, 2022.
10. Liver cancer incidence statistics. Cancer Research UK. https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/liver-cancer/incidence. Accessed September 2022.
11. Hazell, C. 'Burden of cancer' increasing as UK trails behind Europe in diagnosis, treatment and survival. British Liver Trust. https://britishlivertrust.org.uk/burden-cancer-increasing-uk-trails-behind-europe-diagnosis-treatment-survival/. Published July 18, 2017. Accessed September 10, 2022.
12. PBC Foundation. https://www.pbcfoundation.org.uk/ Accessed October 2022.

LATIN AMERICA

1. Arab JP, Díaz LA, Dirchwolf M, et al. NAFLD: Challenges and opportunities to address the public health problem in Latin America. *Ann Hepatol.* 2021;24:100359. doi:10.1016/j.aohep.2021.100359
2. Díaz, L.A., Ayares, G., Arnold, J. et al. Liver Diseases in Latin America: Current Status, Unmet Needs, and Opportunities for Improvement. *Curr Treat Options Gastro* (2022). https://doi.org/10.1007/s11938-022-00382-1
3. Gomez-Cuevas, R. Valenzuela, A. II Consenso Latinoamericanode Obesidad 2017. http://www.administracion.usmp.edu.pe/institutoconsumo/wp-content/uploads/LIBRO-II-CONSENSO-LATINOAMERICANO-DE-OBESIDAD-2017.pdf. Published 2017. Accessed 9.27.22.
4. Palacios C, Magnus M, Arrieta A, Gallardo H, Tapia R, Espinal C. Obesity in Latin America, a scoping review of public health prevention strategies and an overview of their impact on obesity prevention. *Public Health Nutr.* 2021;24(15):5142-5155. doi:10.1017/S1368980021001403
5. Rojas YAO, Cuellar CLV, Barrón KMA, Arab JP, Miranda AL. Non-alcoholic fatty liver disease prevalence in Latin America: A systematic review and meta-analysis [published online ahead of print, 2022 Apr 13]. *Ann Hepatol.* 2022;100706. doi:10.1016/j.aohep.2022.100706
6. Díez-Padrisa N, Castellanos LG, PAHO Viral Hepatitis Working Group. Viral

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

hepatitis in Latin America and the Caribbean: a public health challenge. *Rev Panam Salud Publica*. 2013;34(4):275–81.

7. Roblero JP, Arab JP, Mezzano G, Mendizabal M. Hepatitis C Virus Infection: What Are We Currently Doing in Latin America About WHO's Proposals for 2030?. *Clin Liver Dis (Hoboken)*. 2021;18(2):72-75. Published 2021 Sep 19. doi:10.1002/cld.1084
8. Szabo, S.M., Bibby, M., Yuan, Y., Donato, B.M.K., Jiménez-Mendez, R., Castañeda-Hernández, G., Rodríguez-Torres, M., Levy, A.R., 2012. The epidemiologic burden of hepatitis C virus infection in Latin America. *Ann Hepatol* 11, 623–635. https://doi.org/10.1016/S1665-2681(19)31435-8)
9. CDA Foundation's Polaris Observatory; 2022. Available at: https://cdafound.org/polaris/ Published April 17, 2020.
10. Tanaka J. Hepatitis B epidemiology in Latin America. *Vaccine.* 2000;18 Suppl 1:S17-S19. doi:10.1016/s0264-410x(99)00455-7
11. Carrilho, F.J., Paranaguá-Vezozzo, D.C., Chagas, A.L., Alencar, R.S. de S.M., da Fonseca, L.G., 2020. Epidemiology of Liver Cancer in Latin America: Current and Future Trends. *Semin Liver Dis* 40, 101–110. https://doi.org/10.1055/s-0039-3399561
12. Piñero F, Poniachik J, Ridruejo E, Silva M. Hepatocellular carcinoma in Latin America: Diagnosis and treatment challenges. *World J Gastroenterol.* 2018;24:4224–9.
13. Poznyak V, Rekve D. *Global Status Report on Alcohol and Health 2018*. License: CC BY-NC-SA 3.0 IGO. Geneva: World Health Organization; 2018.
14. Salvalaggio, P.R., Caicedo, J.C., de Albuquerque, L.C., Contreras, A., Garcia, V.D., Felga, G.E., Maurette, R.J., Medina-Pestana, J.O., Niño-Murcia, A., Pacheco-Moreira, L.F., Rocca, J., Rodriguez-Davalos, M., Ruf, A., Rusca, L.A.C., Vilatoba, M., 2014. Liver transplantation in Latin America: the state-of-the-art and future trends. *Transplantation* 98, 241–246.

ARGENTINA

1. Díaz LA, Ayares G, Arnold J, et al. Liver Diseases in Latin America: Current Status, Unmet Needs, and Opportunities for Improvement. *Curr Treat Options Gastroenterol.* 2022;20(3):261-278. doi:10.1007/s11938-022-00382-
2. Ministerio de Salud, Argentina. *Boletín No 2 Hepatitis virales en la Argentina Año II - Diciembre 2020*. Argentina. https://bancos.salud.gob.ar/sites/default/files/2021-01/boletin-n2-hepatitis-virales-en-la-argentina-2020.pdf
3. Roblero, J.P., Arab, J.P., Mezzano, G., Mendizabal, M., 2021. Hepatitis C Virus Infection: What Are We Currently Doing in Latin America About WHO's Proposals for 2030? *Clin Liver Dis (Hoboken).* 18, 72–75.
4. Argentina. https://www.globalhep.org/country-progress/argentina. Published September 19, 2022. Accessed October 31, 2022.
5. Country Nutrition Profiles - Argentina. https://globalnutritionreport.org/resources/nutrition-profiles/latin-america-and-caribbean/south-america/argentina/. Accessed September 2022.
6. Gallardo-Rincón, H., Cantoral, A., Arrieta, A., Espinal, C., Magnus, M.H., Palacios, C., Tapia-Conyer, R., 2021. Review: Type 2 diabetes in Latin America and the Caribbean: Regional and country comparison on prevalence, trends, costs and expanded prevention. *Prim Care Diabetes* 15, 352–359.
7. Piñero, F., Pages, J., Marciano, S., Fernández, N., Silva, J., Anders, M., Zerega, A., Ridruejo, E., Ameigeiras, B., D'Amico, C., Gaite, L., Bermúdez, C., Cobos, M., Rosales, C., Romero, G., McCormack, L., Reggiardo, V., Colombato, L., Gadano, A., Silva, M., 2018. Fatty liver disease, an emerging etiology of hepatocellular carcinoma in Argentina. *World J Hepatol* 10, 41–50.
8. F.A.T.H :: Fundación Argentina de Transplante Hepático.https://www.fath.org.ar/.

BRAZIL

1. Díaz, L.A., Ayares, G., Arnold, J., Idalsoaga, F., Corsi, O., Arrese, M., Arab, J.P., 2022. Liver Diseases in Latin America: Current Status, Unmet Needs, and Opportunities for Improvement. *Curr Treat Options Gastroenterol* 1–18.
2. Cirrhosis and other chronic liver diseases due to other causes - level 4 cause. Institute for Health Metrics and Evaluation. https://www.healthdata.org/results/gbd_summaries/2019/cirrhosis-and-other-chronic-liver-diseases-due-to-other-causes-level-4-cause. Published October 15, 2020. Accessed October 31, 2022.
3. Sitnik, R., Maluf, M.M., Oliveira, K.G., Siqueira, R.A., Ferreira, C.E. dos S., Mangueira, C.L.P., Azevedo, R.S., Ferraz, M.L.C.G., Correa, M.C.J.M., Ferreira, P.R.A., Pereira, G.F.M., Souza, F.M.A. de, Pimenta, C., Pinho, J.R.R., 2021. Study protocol: epidemiological and clinical characteristics of acute viral hepatitis in Brazilian health services. *BMJ Open 11*, e045852.
4. Roblero, J.P., Arab, J.P., Mezzano, G., Mendizabal, M., 2021. Hepatitis C Virus Infection: What Are We Currently Doing in Latin America About WHO's Proposals for 2030? *Clin Liver Dis (Hoboken).* 2021;18(2), 72–75.
5. Cruz, L.J. do N., Barile, K.A. dos santos, Amaral, C.E. de M., 2022. Correlation of serological and molecular markers in the screening for hepatitis B virus in blood bank in northern Brazil. Hematology, Transfusion and Cell Therapy. https://doi.org/10.1016/j.htct.2022.07.003
6. Guimarães, L.C. da C., Brunini, S., Guimarães, R.A., Galdino-Júnior, H., Minamisava, R., da Cunha, V.E., Santos, J.R.S., Silveira- Lacerda, E. de P., Souza, C.M., de Oliveira, V.L.B., Albernaz, G.C., de Menezes, T.G., Rezza, G., 2019. Epidemiology of hepatitis B virus infection in people living in poverty in the central-west region of Brazil. *BMC Public Health* 19, 443.
7. Felisbino-Mendes, M.S., Cousin, E., Malta, D.C., Machado, Í.E., Ribeiro, A.L.P., Duncan, B.B., Schmidt, M.I., Silva, D.A.S., Glenn, S., Afshin, A., Velasquez-Melendez, G., 2020. The burden of non-communicable diseases attributable to high BMI in Brazil, 1990–2017: findings from the Global Burden of Disease Study. *Population Health Metrics* 18, 18.
8. OECD, 2021. OECD Reviews of Health Systems: Brazil 2021, OECD Reviews of Health Systems. OECD.
9. Chagas AL, Mattos AA, Diniz MA, et al. Impact of Brazilian expanded criteria for liver transplantation in patients with hepatocellular carcinoma: a multicenter study. *Ann Hepatol*. 2021;22:100294. doi:10.1016/j.aohep.2020.100294

CHILE

1. Díaz LA, López M, Sin P, et al. Situación actual del trasplante hepático pediátrico por hepatopatías crónicas en Chile: Inequidades asociadas a la priorización por sistema MELD/PELD. Rev Méd Chile. 2020;148(9):1261-1270. doi:10.4067/s0034-98872020000901261
2. Barahona HA, Pinto MA, Valenzuela JP, et al. P-93 DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF PATIENTS WITH CHRONIC HEPATITIS B VIRUS INFECTION IN a PUBLIC HOSPITAL IN CHILE BETWEEN YEARS 2015 AND 2022. Ann Hepatol. 2024;29:101707. doi:10.1016/j.aohep.2024.101707
3. González R, Soza A, Hernández V, et al. Incidence and prevalence of hepatitis C virus infection in Chile. Ann. Hepatol. 2005;4(2):127-130. PMID: 16010246.
4. Coalition for Global Hepatitis Elimination (CGHE). Chile | CGHE. CGHE. Published January 25, 2021. Accessed July 26, 2025. https://www.globalhep.org/data-profiles/countries/chile
5. M EZ. Epidemiología de la hepatitis B en Chile y esquemas de vacunación en Latinoamérica. Rev Chil Infectol. 2002;19(3). doi:10.4067/s0716-10182002000300002
6. González C. Programa nacional de inmunizacion en Chile, pasado, presente y futuro. Rev Méd Clín Las Condes. 2020;31(3):225-232. doi:10.1016/j.rmclc.2020.04.005
7. Gonzalez Larraguibel T. Manejo de la infección por virus de la Hepatitis C (VHC) – Síntesis de Conocimientos. Published July 24, 2016. Accessed July 26, 2025. https://sintesis.med.uchile.cl/guias-ges/enfermedades-cronicas/12882-manejo-de-la-infeccion-por-virus-de-la-hepatitis-c-vhc
8. Global Nutrition Report | Country Nutrition Profiles - Global Nutrition Report. Accessed July 26, 2025. https://globalnutritionreport.org/resources/nutrition-profiles/latin-america-and-caribbean/south-america/chile/
9. Pettinelli P, Fernández T, Aguirre C, Barrera F, Riquelme A, Fernández-Verdejo R. Prevalence of non-alcoholic fatty liver disease and its association with lifestyle habits in adults in Chile: a cross-sectional study from the National Health Survey 2016–2017. Br J Nutr. 2023;130(6):1036-1046. doi:10.1017/s0007114523000028
10. Kolker C. A decade after its pioneering food law, where does Chile's obesity crisis stand? The Examination. Published March 13, 2024. Accessed July 26, 2025. https://www.theexamination.org/articles/a-decade-after-its-pioneering-food-law-where-does-chile-s-obesity-crisis-stand
11. Osiac LR, Cofré C, Pizarro T, et al. Using evidence-informed policies to tackle overweight and obesity in Chile. Rev Panam Salud Pública. Published online January 1, 2017:1-5. doi:10.26633/rpsp.2017.156

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

12. Spencer-Sandino M, Godoy F, Huidobro L, et al. New steatotic liver disease criteria diagnostic performance in an agricultural population in Chile. Ann Hepatol. Published online May 1, 2025:101919. doi:10.1016/j.aohep.2025.101919
13. Díaz LA, Villota-Rivas M, Barrera F, Lazarus JV, Arrese M. The burden of liver disease in Latin America. Ann Hepatol. 2023;29(3):101175. doi:10.1016/j.aohep.2023.101175
14. Taillie LS, Reyes M, Colchero MA, Popkin B, Corvalán C. An evaluation of Chile's Law of Food Labeling and Advertising on sugar-sweetened beverage purchases from 2015 to 2017: A before-and-after study. PLoS Med. 2020;17(2):e1003015. doi:10.1371/journal.pmed.1003015
15. Carcamo-Oyarzun J, Rivera-Gutierrez C, Henriquez-Alvear L, et al. Development of a physical literacy consensus statement for Chile: study protocol. Front Public Health. 2025;13. doi:10.3389/fpubh.2025.1554070
16. World Health Organization (WHO). WHO Chile: Alcohol consumption—levels and patterns. 2016. Accessed July 9, 2025. https://cdn.who.int/media/docs/default-source/country-profiles/substances-abuse/chl.pdf?sfvrsn=4eb63f3b_3
17. World Health Organization (WHO). 152 CHILE Fact Sheet. 2024. Accessed July 9, 2025. https://gco.iarc.who.int/media/globocan/factsheets/populations/152-chile-fact-sheet.pdf
18. Organisation for Economic Co-operation and Development (OECD). OECD reviews of public health: Chile. Paris: OECD Publishing; 2019. doi:10.1787/9789264309593-en
19. Vacarezza C, Araneda J, Gonzalez P, et al. A snapshot of cancer in Chile II: an update on research, strategies and analytical frameworks for equity, innovation and national development. Biol Res. 2024;57(1). doi:10.1186/s40659-024-00574-2
20. EducaGIST. Plataforma educativa sobre cánceres gastrointestinales: Cáncer de hígado. EducaGIST. Accessed July 26, 2025. https://educagist.cl/pages/cancer-gastrointestinal/5
21. Benítez C, Wolff R. Current status and future challenges of liver transplantation programs in Chile. Liver Trans. 2018;24(12):1757-1761. doi:10.1002/lt.25332
22. Uribe M, González G, Paravic N. Transplante Hepático en Chile: Pasado, Presente y Futuro. Rev Cir. 2020;72(5). doi:10.35687/s2452-45492020005821
23. Díaz LA, Norero B, Lara B, et al. Prioritization for liver transplantation using the MELD score in Chile: Inequities generated by MELD exceptions. Ann Hepatol. 2019;18(2):325-330. doi:10.1016/j.aohep.2018.11.001
24. Castro PP, Muñoz D, González MT, Vera M, Muñoz AM. Disparities affecting organ donation rates in Chile. Transplantation. 2024;108(3):579-582. doi:10.1097/tp.0000000000004898
25. Lang, M.. The debate in Chile on organ donation revisited. Medwave. Published August 29, 2016. Accessed July 26, 2025. https://www.medwave.cl/enfoques/probsp/6525.html?lang=en
26. Buckel E, Uribe M, Brahm J, et al. Outcomes of orthotopic liver transplantation in Chile. Transplantation Proceedings. 2003;35(7):2509-2510. doi:10.1016/j.transproceed.2003.09.024

COLOMBIA

1. Gomez-Aldana AJ, Tapias M, Rosselli D. Colombian experience in the management of hepatitis C. Liver Int. 2020;40(12):3143. doi:10.1111/liv.14582
2. Colombia | CGHE. CGHE. Published July 28, 2022. Accessed October 7, 2024. https://www.globalhep.org/data-profiles/countries/colombia.
3. Cardona-Arias JA, Correa JCC, Higuita-Gutiérrez LF. Prevalence of hepatitis B/C viruses and associated factors in key groups attending a health services institution in Colombia, 2019. PLoS ONE. 2020;15(9):e0238655. doi:10.1371/journal.pone.0238655
4. Borda JP, Friedman HL, Castaño GA, Rodríguez HA, Muñoz CF, Tofighi B. Barriers to HIV and Hepatitis C care for people who inject drugs in Colombia. AIDS Care. 2021;34(5):633-638. doi:10.1080/09540121.2021.1889952
5. Ledezma-Morales M, Amariles P, Salazar-Ospina A, et al. Effect of strategic purchasing of antiviral drugs and the clinical pathway for the treatment of Chronic Hepatitis C in Colombia (hepC-STRATEGY): study protocol for a quasi-experimental study. J Pharm Health Serv Res. 2021;12(2):173-180. doi:10.1093/jphsr/rmaa032
6. Ramírez DFB, Gutiérrez GC, Ramírez AP, Torres AV. Prevalence of liver disease in Colombia between 2009 and 2016. JGH Open. 2020;4(4):603-610. doi:10.1002/jgh3.12300
7. Díaz LA, Ayares G, Arnold J, et al. Liver diseases in Latin America: current status, unmet needs, and opportunities for improvement. Curr Treat Options Gastroenterol. 2022;20(3):261-278. doi:10.1007/s11938-022-00382-1
8. Aguirre JDV, Guillén LHL, De Jesús Yepes Barreto I. La esteatohepatitis no alcohólica: una causa emergente de cirrosis en Colombia. Rev Colomb Gastroenterol. 2022;37(2):136-144. doi:10.22516/25007440.783
9. Global Nutrition Report | Country Nutrition Profiles - Global Nutrition Report. Accessed October 8, 2024. https://globalnutritionreport.org/resources/nutrition-profiles/latin-america-and-caribbean/south-america/colombia/.
10. Cuéllar-Rodríguez V, Pérez-Londoño A, Guatibonza-García V, Betancourt-Villamizar C, Mendivil CO. Progression of obesity and abdominal obesity after the COVID-19 pandemic in Colombia: A comparison of two Cross-Sectional Population-Based studies. The Lancet. 2024. doi:10.2139/ssrn.4687135
11. Colombia Country profile. International Society of Substance Use Professionals. Accessed October 8, 2024. https://www.issup.net/national-chapters/issup-colombia/country-profile
12. Díaz LA, Roblero JP, Bataller R, Arab JP. Alcohol-Related Liver Disease in Latin America: local solutions for a global problem. Clin Liver Dis. 2020;16(5):187-190. doi:10.1002/cld.1025
13. Andrade V, Mosos JD, Pacheco B, Polania MJ, Yucumá D, Roselli D. Venta de alcohol y tasa de enfermedad hepática alcohólica por departamentos en Colombia. Rev Colomb Gastroenterol. 2016;30(4):407. doi:10.22516/25007440.4
14. Brassiolo P, Fagre E, Arturo HR, Peñaloza-Pacheco L. Preventing underage alcohol use through changes in norms and risk perception: A randomized evaluation of two school-based prevention programs in Colombia. Published December 28, 2023. Accessed October 8, 2024. https://scioteca.caf.com/handle/123456789/2213.
15. Velásquez CLA, Cañas JAO, Echeverri MTB. Social determination of alcohol consumption among Indigenous peoples in Colombia: a qualitative meta-synthesis. BMC Public Health. 2023;23(1). doi:10.1186/s12889-023-15233-6
16. Vargas S, Chávez AMM, Gómez-Restrepo C, et al. Addressing harmful alcohol use in primary care in Colombia: Understanding the sociocultural context. Rev Colomb Psiquiatr (Engl Ed). 2021;50:73-82. doi:10.1016/j.rcpeng.2020.11.004
17. Varón A, Pérez JL, Torres C, et al. P-118 HEPATOCELLULAR CARCINOMA. AN EXPERIENCE IN a TRANSPLANT CENTER IN COLOMBIA. Ann Hepatol. 2023;28:101002. doi:10.1016/j.aohep.2023.101002
18. Bavaria. Nuestro Aporte Informe De Desarrollo Sostenible 2013.; 2014. Published 2013. Accessed October 7, 2024. https://www.ab-inbev.com/content/dam/universaltemplate/ab-inbev/investors/sabmiller/reports/local-sustainable-development-reports/bavaria_informe-de-desarrollo-sostenible-2013.pdf
19. International Alliance for Responsible Drinking (IARD). Communication on Engagement.; 2016. Published 2016. Accessed October 7, 2024. https://ungc-production.s3.us-west-2.amazonaws.com/attachments/cop_2016/324961/original/IARD_CoE_October_2016_Final.pdf?1476392258.
20. International Agency for Research on Cancer. World Health Organization. Global Cancer Observatory. Columbia. 2024. https://gco.iarc.who.int/media/globocan/factsheets/populations/170-colombia-fact-sheet.pdf
21. Gomez-Aldana A, Rosselli D. Hepatocellular carcinoma in Colombia 2017 – 2021. Ann Hepatol. 2023;28(2):100902. doi:10.1016/j.aohep.2023.100902
22. Nova MS, Meneses ÁR, Gutierrez JR. Liver transplant in Colombia. Liver Transpl. 2019;25(4):658-663. doi:10.1002/lt.25427
23. Rendón LGT, Arenas CPF, Palacios-Barahona U. Costs associated with early vascular and biliary complications in Liver-Transplanted patients in a hospital in Antioquia, Colombia 2019: A case series. Value Health Reg Issues. 2020;23:131-136. doi:10.1016/j.vhri.2020.06.004
24. Santos Ó, Muñoz O, Marín JI, Restrepo JC. Trasplante hepático en un centro de Colombia: comparación de dos períodos. Rev. Colomb. Gastroenterol;34(2): 117-124, Abr.-jun. 2019. Tab, Graf | LILACS. Published 2019. Accessed October 7, 2024. https://search.bvsalud.org/gim/resource/en/biblio-1013927.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

MEXICO

1. Mexico. Institute for Health Metrics and Evaluation. https://www.healthdata.org/mexico. Published October 6, 2016. Updated 2020. Accessed September 2022.
2. Díaz LA, Ayares G, Arnold J, et al. Liver Diseases in Latin America: Current Status, Unmet Needs, and Opportunities for Improvement [published online ahead of print, 2022 Jun 16]. *Curr Treat Options Gastroenterol.* 2022;1-18.
3. Méndez-Sánchez N, Zamarripa-Dorsey F, Panduro A, et al. Current trends of liver cirrhosis in Mexico: Similitudes and differences with other world regions. *World J Clin Cases.* 2018;6(15):922-930. doi:10.12998/wjcc.v6.i15.922
4. Gurría, A. Launch of the Study: "The Heavy Burden of Obesity: The Economics of Prevention" - OECD. https://www.oecd.org/about/secretary-general/heavy-burden-of-obesity-mexico-january-2020.htm. Published January 8, 2020.
5. Barquera S, Hernández-Barrera L, Trejo-Valdivia B, Shamah T, Campos-Nonato I, Rivera-Dommarco J. Obesidad en México, prevalencia y tendencias en adultos. Ensanut 2018-19 [Obesity in Mexico, prevalence and trends in adults. Ensanut 2018-19]. *Salud Publica Mex*. 2020;62(6):682-692. doi:10.21149/11630
6. Méndez-Sánchez, N., Villa, A.R., Chávez-Tapia, N.C., Ponciano-Rodriguez, G., Almeda-Valdés, P., González, D., Uribe, M., 2005. Trends in liver disease prevalence in Mexico from 2005 to 2050 through mortality data. *Ann Hepatol*. 2005;4(1), 52–55.
7. Higuera-de-la-Tijera, F., Castro-Narro, G.E., Velarde-Ruiz Velasco, et al 2021. Asociación Mexicana de Hepatología A.C. Clinical guideline on hepatitis B. Revista de Gastroenterología de México (English Edition) 86, 403–432.
8. Alcohol Consumption by Country 2022. World Population Review. https://worldpopulationreview.com/country-rankings/alcohol-consumption-by-country. Published 2022.
9. Cisneros Garza LE, Aiza Haddad I. Hepatocellular Carcinoma in Mexico. *Clin Liver Dis (Hoboken)*. 2022;19(2):73-77. Published 2022 Mar 10. doi:10.1002/cld.1196
10. Servin-Rojas, M., Olivas-Martinez, A., Toapanta-Yanchapaxi, L., García-Juárez, I., 2022. Liver Transplantation in Mexico. *Clin Liver Dis* 19, 53–58.

PERU

1. Liver disease in Peru. World Life Expectancy. Accessed June 18, 2025. https://www.worldlifeexpectancy.com/peru-liver-disease#:~:text=According%20to%20the%20latest%20WHO%20data%20published,below%20or%20choose%20the%20full%20health%20profile.
2. Díaz LA, Villota-Rivas M, Barrera F, Lazarus JV, Arrese M. The burden of liver disease in Latin America. Annals of Hepatology. 2024;29(3):101175. doi:10.1016/j.aohep.2023.101175
3. Rojas-Acuña D, Polo-Samillan N, Vasquez-Chavesta AZ, Escalante-Arias C, Rios-Perez CJ, Toro-Huamanchumo CJ. Morbimortality Associated with Liver Cirrhosis in Peru: An Ecological Analysis for the Period of 2004–2016. International Journal of Environmental Research and Public Health. 2022; 19(15):9036. https://doi.org/10.3390/ijerph19159036
4. Global burden of nafld and Nash: Trends, predictions, risk factors and prevention. Natational AIDS Treatment Advocacy Project. Accessed June 18, 2025. https://www.natap.org/2018/fattyLiver/fatty_24.htm.
5. Mendoza J. Overweight and obesity: Prevalence by gender Peru 2010-2022. Statista. June 12, 2025. Accessed June 18, 2025. https://www.statista.com/statistics/1470274/overweight-obesity-prevalence-gender-peru/#:~:text=Overweight%20and%20obesity%20prevalence%20in%20Peru%202010%2D2022&text=Between%202010%20and%202022%2C%20the,suffered%20from%20overweight%20or%20obesity.
6. Woolcott OO, Gutierrez C, Castillo OA, Elashoff RM, Stefanovski D, Bergman RN. Inverse association between altitude and obesity: A prevalence study among andean and low-altitude adult individuals of Peru. Obesity (Silver Spring). 2016;24(4):929-937. doi:10.1002/oby.21401
7. Villena JE. Diabetes mellitus in Peru. Annals of Global Health. 2015;81(6):765-775. doi:10.1016/j.aogh.2015.12.018
8. Seclen SN, Rosas ME, Arias AJ, Huayta E, Medina CA. Prevalence of diabetes and impaired fasting glucose in Peru: Report from Perudiab, a national urban population-based Longitudinal Study. BMJ Open Diabetes Research & Care. 2015;3(1). doi:10.1136/bmjdrc-2015-000110
9. Diabetes testing and treatment helps patients in Peru. Partners In Health. Accessed June 18, 2025. https://www.pih.org/article/diabetes-testing-and-treatment-helps-patients-peru.
10. Caira-Chuquineyra B, Fernandez-Guzman D, Quispe-Vicuña C, Gutierrez-Rodriguez R, Valencia PD. Factors associated with alcohol abuse in the Peruvian population: analysis of a national health survey 2019. J Public Health (Oxf). 2023 Jun 14;45(2):e204-e214. doi: 10.1093/pubmed/fdac116. PMID: 36316959.
11. Díaz LA, Idalsoaga F, Fuentes-López E, et al. Impact of public health policies on Alcohol-associated liver disease in Latin America: An ecological multinational study. Hepatology. 2021;74(5):2478-2490. doi:10.1002/hep.32016
12. Cabezas C, Trujillo O, Gonzales-Vivanco, A´, Benites Villafane CM, Balbuena J, Borda-Olivas, AO, et al. (2020) Seroepidemiology of hepatitis A, B, C, D and E virus infections in the general population of Peru: A cross-sectional study. PLoS ONE 15(6): e0234273. https://doi.org/10.1371/journal.pone.0234273
13. Marchio A, Cerapio JP, Ruiz E, et al. Early-onset liver cancer in South America associates with low hepatitis B virus DNA burden. Scientific Reports. 2018;8(1). doi:10.1038/s41598-018-30229-8
14. Liver transplantation in Latin America: Reality and challenges - The Lancet Regional Health – Americas. Accessed June 18, 2025. https://www.thelancet.com/journals/lanam/article/PIIS2667-193X(23)00207-7/fulltext.
15. Andraus W. Barriers and Limitations to Access to Liver Transplantation in Latin America. Clin Liver Dis (Hoboken). 2019;13(2):36-38. Published 2019 Mar 4. doi:10.1002/cld.763

MIDDLE EAST

1. Fayadh, M.H., 2016. 40 years observation in liver diseases in the Middle East. *J Liver.*
2. Sanai, F.M., Abaalkhail, F., Hasan, F., Farooqi, M.H., Nahdi, N.A., Younossi, Z.M., 2020. Management of nonalcoholic fatty liver disease in the Middle East. *World J Gastroenterol* 26, 3528–3541.
3. Habibzadeh, F.H., 2014. Viral Hepatitis in the Middle East. *The Lancet*, 384.
4. Poustchi, H., Sepanlou, S., Esmaili, S., Mehrabi, N., Ansarymoghadam, A., 2010. Hepatocellular Carcinoma in the World and the Middle East. *Middle East J Dig Dis* 2, 31–41.
5. Lankarani, K.B., Hosseini, S.A.M., 2019. The Status of Liver Transplantation in the Middle East. *Clinical Liver Disease* 14, 215–218.

IRAQ

1. Aziz HA, Khorsheed MK, Ridha SAM. Understanding the impact of liver disease on the quality of life of Iraqi patients. Sarc J Med Sci. 2025;4(8):47–52. doi: 10.5281/zenodo.16988201.
2. Tarky AM, Akram W, Al-Naaimi AS, Omer AR. Epidemiology of viral hepatitis B and C in Iraq: a national survey 2005–2006. Zanco J Med Sci. 2013;17(1):370–380. doi: 10.15218/zjms.2013.0017.
3. Jalal MA, Etemad K, Karami M, Namdari M, Lami F, Taher TMJ. Ten-year analysis of hepatitis B incidence in Iraq. East Mediterr Health J. 2025;31(8):486–493. doi: 10.26719/2025.31.8.486.
4. Naqid IA, Mahmood AJ, Mosa AA, et al. Hepatitis B and C virus infection among couples undergoing premarital screening in Iraqi Kurdistan. IJID Regions. 2025;14:100492. doi: 10.1016/j.ijregi.2024.100492.
5. Hamied L, Abdullah RM, Abdullah AM. Seroprevalence of hepatitis B and C virus infection in Iraq. New Iraqi J Med. 2010;6(3):69–73.
6. Abid RM. Exploring the connection: fatty liver disease and abnormal liver function in Iraq. Sarcouncil J Intern Med Public Health. 2025;4(4):1–6. doi: 10.5281/zenodo.15922459.
7. Badri AH, Hadi SS, Mahmood AZ, Mohsen AK, Kareem MA. Prevalence of non-alcoholic fatty liver disease in Iraq population. University of Baghdad Al-Kindy College of Medicine Scientific Research. 2024.
8. Shaker AM, Nuaman BN. The metabolic and hepatic impact of central obesity in MASLD patients: evidence from an Iraqi cross-sectional cohort. Al-Iraqia Med Coll J (AIMCJ). 2025;2(3):54–64. doi: 10.58564/AIMCJ2.3.2025.234.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

9. Dhaher SA, Hilfi NZ, Abdullah MA. Non-alcoholic fatty liver disease among Iraqi patients with psoriasis: a case-control study. Cureus. 2024;16(4):e57487. doi: 10.7759/cureus.57487.
10. Hussain AM, Lafta RK. Cancer trends in Iraq 2000–2016. Oman Med J. 2021;36(1):e219. doi: 10.5001/omj.2021.18.
11. Pan Z, Al Hassani A, Ismail MH, et al. Changing profile and burden of hepatocellular carcinoma in Arab countries. Ann Hepatol. 2025. doi: 10.1016/j.aohep.2025.101842.
12. Iraqi Ministry of Health / Nada Al Alwan Medical Research Study on Cancer. Cited in: UK Home Office Country Policy and Information Note: Medical and Healthcare Issues, Iraq. August 2024.
13. Thejeal RF, Bahlol AR, Noori RJ. The need for liver transplant in a sample of Iraqi children with chronic liver disease. Zenodo. 2021. doi: 10.5281/zenodo.5812273.
14. Faruk Medical City. Faruk Medical City and Aster Healthcare: Introducing Liver Transplant Surgery in Kurdistan and Iraq for the First Time. September 2, 2023. Available at: https://www.farukmedicalcity.com/news/faruk-medical-city-and-aster-healthcare-introducing-liver-transplant-surgery-in-kurdistan-and-iraq-for-the-first-time/
15. Al-Khazraji K, Hashim M, Abdulla M, Khudhair I, Abbas W. Etiologies of liver cirrhosis and their clinical presentation among inpatients in Medical City Complex — Baghdad Teaching Hospital. Glob J Health Sci. 2021;13(5):64. doi: 10.5539/gjhs.v13n5p64.
16. Mohammed NS, Ali ZQ, Mohamed AS, Mirza SA. The impact of methamphetamine on liver injury in Iraqi male addicts. Toxicol Rep. 2024;13:101806. doi: 10.1016/j.toxrep.2024.101806.

JORDAN

1. Signs your liver needs help & essential liver function tests in Jordan. Unilabs Jordan. November 4, 2024. Accessed April 4, 2025. https://unilabs.jo/liver-function-test-lft-and-liver-health-in-jordan/#:~:text=Why%20Liver%20Health%20is%20Vital,awareness%20and%20regular%20testing%20essential.
2. Nusair M, Rayyan Y, Hammoudeh W, et al. Hepatitis B care pathway in Jordan: Current situation, gaps and recommended actions. Journal of Virus Eradication. 2020;6(1):1-6. doi:10.1016/s2055-6640(20)30004-2
3. Abu-Dayyeh I, Chemaitelly H, Ghunaim M, Hasan T, Abdelnour A, Abu-Raddad LJ. Patterns and trends of hepatitis C virus infection in Jordan: An observational study. Frontiers in Public Health. 2023;11. doi:10.3389/fpubh.2023.1280427
4. Almahmoud MH, Al Khawaja NM, Alkinani A, Khader Y, Ajlouni KM. Prevalence of fatty liver disease and its associated factors among Jordanian patients with type 2 diabetes mellitus: A cross-sectional study. Annals of Medicine & Surgery. 2021;68. doi:10.1016/j.amsu.2021.102677
5. Shaaban Abdelgalil M, El-Farargy SH, Dowidar MA, Abd-ElGawad M. Exploring socio-demographic determinants of obesity in Jordanian women of reproductive age: Insights from a nationwide survey. BMC Public Health. 2025;25(1). doi:10.1186/s12889-025-21431-1
6. Alqudah O, Alshahwan HF, Alsamhouri J, et al. Metabolic dysfunction-associated steatotic liver disease MASLD: Jordan's perspective based on knowledge and attitude determinants. Risk Management and Healthcare Policy. 2024;Volume 17:2483-2491. doi:10.2147/rmhp.s481401
7. Aslam A, Kwo PY. Epidemiology and disease burden of alcohol associated liver disease. Journal of Clinical and Experimental Hepatology. 2023;13(1):88-102. doi:10.1016/j.jceh.2022.09.001
8. Stigma: Overcoming a pervasive barrier to Optimal Care. National Institute on Alcohol Abuse and Alcoholism. Accessed April 4, 2025. https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol/stigma-overcoming-pervasive-barrier-optimal-care#:~:text=Stigma%20refers%20to%20negative%20beliefs,4%2C7%E2%80%939.
9. Poustchi H, Sepanlou S, Esmaili S, Mehrabi N, Ansarymoghadam A. Hepatocellular carcinoma in the world and the middle East. Middle East J Dig Dis. 2010;2(1):31-41.
10. 1. Jordan Cancer Registry Cancer Incidence in Jordan – 2018. Scribd. Accessed April 4, 2025. https://moh.gov.jo/ebv4.0/root_storage/ar/eb_list_page/%D8%A7%D9%84%D8%AA%D9%82%D8%B1%D9%8A%D8%B1_%D8%A7%D9%84%D8%B3%D9%86%D9%88%D9%8A_%D9%84%D8%A7%D8%B5%D8%A7%D8%A8%D8%A7%D8%AA_%D8%A7%D9%84%D8%B3%D8%B1%D8%B7%D8%A7%D9%86_%D8%A7%D9%84%D9%85%D8%B3%D8%AC%D9%84%D8%A9_%D9%81%D9%8A_%D8%A7%D9%84%D8%A7%D8%B1%D8%AF%D9%86_%D9%84%D8%B9%D8%A7%D9%85_2018.pdf.
11. Abdel-Razeq H, Al-Ibraheem A, Al-Rabi K, Shamiah O, Al-Husaini M, Mansour A. Cancer care in resource-limited countries: Jordan as an example. JCO Global Oncology. 2024;(10). doi:10.1200/go.24.00237
12. Mansour R, Abdel-Razeq H, Al-Hussaini M, Shamieh O, Al-Ibraheem A, Al-Omari A, Mansour AH. Systemic Barriers to Optimal Cancer Care in Resource-Limited Countries: Jordanian Healthcare as an Example. Cancers. 2024; 16(6):1117. doi:10.3390/cancers16061117
13. Cost of liver transplant in Jordan. Yapita Health. Accessed April 4, 2025. https://yapitahealth.com/en/treatments/cost-of-liver-transplant-in-jordan.
14. Organ transplant. The Private Hospitals Association (PHA). Accessed April 4, 2025. https://phajordan.org/EN-article-3878-.
15. Al-Qerem W, Carter N, Ling J. Attitudes to organ donation and transplantation: An insight from Jordan. Experimental and Clinical Transplantation. 2022;20(6):602-608. doi:10.6002/ect.2021.0419

LEBANON

1. Sawaf, B., Ali, A.H., Jaafar, R.F., Kanso, M., Mukherji, D., Khalife, M.J., Faraj, W., 2020. Spectrum of liver diseases in patients referred for Fibroscan: A single center experience in the Middle East. *Ann Med Surg* (Lond) 57, 166–170.
2. Abou Rached, A., Abou Kheir, S., Saba, J., Ammar, W., 2016. Epidemiology of hepatitis B and hepatitis C in Lebanon. *Arab Journal of Gastroenterology* 17, 29–33.
3. Mahmasani, L.A., 2022. Hepatitis B and C: Neglected Infectious Diseases among Syrian Refugees in Lebanon. *Journal of Infectious Diseases and Epidemiology* 8, 261.
4. Sayegh, N.F., Heraoui, G.N.H.A., Younes, H., Sayegh, L.N., Boulos, C., Sayegh, R., 2022. Relation of Dietary Patterns and Nutritional Profile to Hepatic Fibrosis in a Sample of Lebanese Non-Alcoholic Fatty Liver Disease Patients. *Nutrients* 14, 2554.
5. Fakhoury-Sayegh, N., Younes, H., Heraoui, G.N.H.A., Sayegh, R., 2017. Nutritional Profile and Dietary Patterns of Lebanese Non-Alcoholic Fatty Liver Disease Patients: A Case-Control Study. *Nutrients* 9, 1245.
6. Country Nutrition Profiles - Lebanon. Global Nutrition Report. https://globalnutritionreport.org/resources/nutrition-profiles/asia/western-asia/lebanon/. Accessed August 17, 2022.
7. Faraj W, Haydar A, Nounou GE, et al. Update on liver transplants in Lebanon. *Prog Transplant.* 2015;25(3):271-275. doi:10.7182/pit2015810

QATAR

i. Introduced under Law No. 22 of 2021.
ii. Formalised under Law No. 12 of 2020.

1. Al Awaidy S, Abu-Elyazeed R, Al Hosani H, et al. Sero-epidemiology of hepatitis B infection in pregnant women in Oman, Qatar and the United Arab Emirates. J Infect. 2006;52(2):202–206. doi:10.1016/j.jinf.2005.05.006.
2. Bener A, Al-Kaabi S, Derbala M, Al-Marri A, Rikabi A. The epidemiology of viral hepatitis in Qatar. Saudi J Kidney Dis Transpl. 2009 Mar;20(2):300-6. PMID: 19237827.
3. Al Romaihi HE, Ganesan N, Farag EA, et al. Demographics and epidemiology of hepatitis B in the State of Qatar: A five-year surveillance-based incidence study. Pathogens. 2019;8(2):68. doi:10.3390/pathogens8020068.
4. Rikabi A, Bener A, Al-Marri A, Al-Thani S. Hepatitis B and C viral infections in chronic liver disease: a population based study in Qatar. East Mediterr Health J. 2009 Jul-Aug;15(4):778-84. PMID: 20187528.
5. Al-Romaihi HE, El-Khoury R, Himatt S, et al. Prevalence of hepatitis C virus infection in Qatar's resident population based on a national screening campaign. Sci Rep. 2025;15:13481. https://doi.org/10.1038/s41598-025-96722-z.
6. Nasrallah GK, Chemaitelly H, Ismail AIA, Nizamuddin PB, Al-Sadeq DW, Shurrab FM, Amanullah FH, Al-Hamad TH, Mohammad KN, Alabdulmalek MA, Al Kahlout RA, Al-Shaar I, Elshaikh MA, Abouassali MN, Karimeh IW, Ali MM, Ayoub HH, Abdeen S, Abdelkarim A, Daraan F, Ismail AIHE, Mostafa N, Sahl M, Suliman J, Abu-Raddad LJ. Prevalence of hepatitis B and C viruses

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

among migrant workers in Qatar. Scientific Reports. 2024;14:11275. https://doi.org/10.1038/s41598-024-61725-9.

7. Alalwani J, Derbala M, Tayyem R, Bassil M. Metabolic associated steatotic liver disease in Qatar: Analysis of dietary patterns and nutrient intake. World J Hepatol. 2025;17(11):111995. doi:10.4254/wjh.v17.i11.111995.
8. Abougazia AS, Alnuaimi AS, Mahran AS, Ali TF, Khedr AA, Mowafy TM. Prevalence and risk factors of non-alcoholic fatty liver disease in primary health care centers among subjects examined by abdominal ultrasound in Qatar: A case-control study. World Fam Med. 2020;18(9):34–44. doi:10.5742/MEWFM.2020.93852.
9. Almohannadi M, Chandra P, Varughese B, et al. Non-alcoholic fatty liver disease among patients with inflammatory bowel disease in Qatar: Prevalence and risk factors. J Crohns Colitis. 2020;14(Suppl 1):S621. doi:10.1093/ecco-jcc/jjz203.0786.
10. Rasul KI, Al-Azawi SH, Chandra P. Hepatocellular carcinoma in qatar. Gulf J Oncolog. 2013 Jul;1(14):70-5. PMID: 23996870.
11. Khalaf H, Derballa M, Elmasry M, et al. First liver transplant in Qatar: an evolving program facing many challenges. Exp Clin Transplant. 2013;11(5):423–425. doi:10.6002/ect.2013.0194.
12. Nair AP, Sasi S, Al-Maslamani MS, et al. Epidemiological characteristics of de novo hepatitis B infection in liver transplant recipients — An experience from a tertiary care centre in Qatar. Transpl Infect Dis. 2020;22:e13444. doi:10.1111/tid.13444.
13. Khan YF, Abbas MT, El Mudathir M, Errayes M, El Hiday AH. Clinical pattern of cirrhotic ascites in the State of Qatar. Qatar Med J. 2008;17(1):46–50.
14. Abdelnaby M, Abdalla T, Al-Kahtani H, et al. Demographics and clinical characteristics of alcohol-related admissions in a tertiary care hospital in Qatar: Does age matter? Qatar Med J. 2021;2021:36. doi:10.5339/qmj.2021.36.

SAUDI ARABIA

1. Alqahtani SA, Abaalkhail F, Alghamdi S, et al. The burden of metabolic dysfunction-associated steatotic liver disease and viral hepatitis in Saudi Arabia. Saudi J Gastroenterol. June 2024. doi:10.4103/sjg.sjg_62_24
2. Sanai FM, Khathlan AA, Fadhli AA, et al. Clinical and economic burden of nonalcoholic steatohepatitis in Saudi Arabia, United Arab Emirates and Kuwait. Hepatol Int. 2021;15(4):912-921. doi:10.1007/s12072-021-10182-x
3. Aljarbou AN. The Emergent Concern of Hepatitis B Globally with Special Attention to Kingdom of Saudi Arabia. Int J Health Sci. 2013;7(3):333-340. doi:10.12816/0006062
4. Al-Faleh FZ. Changing pattern of hepatitis viral infection in Saudi Arabia in the last two decades. Anns Saudi Med. 2003;23(6):367-371. doi:10.5144/0256-4947.2003.367
5. Sanai F, Alkhatry M, Alzanbagi A, Kumar S. Hepatitis B virus infection in Saudi Arabia and the UAE: Public health challenges and their remedial measures. J Infect Public Health. 2023;16(9):1410-1417. doi:10.1016/j.jiph.2023.07.008
6. Alghamdi I, Alghamdi R, Alghamdi M, et al. Epidemiology of Hepatitis B in Saudi Arabia from 2006 to 2021. Hepat Med. 2023;Volume 15:233-247. doi:10.2147/hmer.s438099
7. Alshabanat, A.A., Albacker, R.B., Basalama, A.A., Salamah, A.A., & SalehAlfrayh, A. Profile of viral hepatitis in Saudi Arabia. Biomed Res. 2014; Volume 8:8. https://faculty.ksu.edu.sa/sites/default/files/profile_of_viral_hepatitis_in_saudi_arabia_0.pdf
8. Sanai F, Alghamdi H, Alswat K, et al. Greater prevalence of comorbidities with increasing age: Cross-sectional analysis of chronic hepatitis B patients in Saudi Arabia. Saudi J Gastroenterol. 2019;25(3):194. doi:10.4103/sjg.sjg_447_18
9. Muallem Y. Epidemiology of HCV in Saudi Arabia and its Burden on the Health Care System. IMed Pub. 2022;8. doi:10.36648/2471-8041.8.12.257
10. Abdo AA. Health-related quality of life of Saudi hepatitis B and C patients. Ann Saudi Med. 2012;32(4):397-403. doi:10.5144/0256-4947.2012.397
11. Alzahrani MS, Aldeen AA, Almalki RS, et al. Knowledge of and Testing Rate for Hepatitis C Infection among the General Public of Saudi Arabia: A Cross-Sectional Study. Int J Environ Res Public Health. 2023;20(3):2080. doi:10.3390/ijerph20032080
12. Thomasbeard. Saudi Arabia takes first step towards relaxing alcohol laws - Economist Intelligence Unit. Economist Intelligence Unit. Published February 29, 2024. Accessed October 4, 2024. https://www.eiu.com/n/saudi-arabia-takes-first-step-towards-relaxing-alcohol-laws/.
13. World Health Organization. Saudi Arabia: Alcohol consumption - level-Published May 12, 2023.s and patterns. Country Profile on Substance Use. Published 2018. Accessed October 4, 2024. https://cdn.who.int/media/docs/default-source/country-profiles/substances-abuse/sau.pdf?s-fvrsn=45294e2b_3&download=true
14. Alghamdi A, Alghamdi M, Sanai F, et al. SASLT guidelines: Update in treatment of Hepatitis C virus infection. Saudi J Gastroenterol. 2016;22(8):25. doi:10.4103/1319-3767.188067
15. Alarifi SS, El-Sorogy AS, Al-Kahtany K, Alotaibi M. Contamination and environmental risk assessment of potentially toxic elements in soils of palm farms in northwest Riyadh, Saudi Arabia. Sustainability. 2022;14(22):15402. doi:10.3390/su142215402
16. Mohamed ZA, Hashem M, Alamri S, Mostafa Y. Cyanotoxins and their environmental health risk in marine and freshwaters of Saudi Arabia. Arab. J. Geosci.. 2020;13(7). doi:10.1007/s12517-020-5238-7
17. Alqahtani SA, Broering DC, Alghamdi SA, et al. Changing trends in liver transplantation indications in Saudi Arabia: from hepatitis C virus infection to nonalcoholic fatty liver disease. BMC Gastroenterol. 2021;21(1). doi:10.1186/s12876-021-01828-z
18. Banany M, Gebel K, Sibbritt D. An examination of the predictors of change in BMI among 38 026 school students in Makkah, Saudi Arabia. Intl Health. 2024;16(4):463-467. doi:10.1093/inthealth/ihae029
19. Sanai FM, Alghamdi M, Dugan E, et al. A tool to measure the economic impact of Hepatitis B elimination: A case study in Saudi Arabia. J Infect Public Health. 2020;13(11):1715-1723. doi:10.1016/j.jiph.2020.09.004
20. Hassanain M, Liu Y, Hussain W, et al. Genomic landscape in Saudi patients with hepatocellular carcinoma using whole-genome sequencing: a pilot study. Front. Gastroenterol.. 2023;2. doi:10.3389/fgstr.2023.1205415
21. Alolyan A, Alshammari K, Arabi M, et al. Treatment patterns and recommendations for improving the management of hepatocellular carcinoma in Saudi Arabia. J Hepatocell Carcinoma. 2024;Volume 11:349-362. doi:10.2147/jhc.s442842
22. Abdo AA, Hassanain M, AlJumah A, et al. Saudi Guidelines for the Diagnosis and Management of Hepatocellular Carcinoma: Technical Review and Practice Guidelines. Ann Saudi Med. 2012;32(2):174-199. doi:10.5144/0256-4947.2012.174
23. Abaalkhail FA, Sebayel MIA, Shagrani MA, et al. Clinical practice guidelines for liver transplantation in Saudi Arabia. Saudi Med JI. 2021;42(9):927-968. doi:10.15537/smj.2021.42.9.20210126
24. DTI Foundation. The Kingdom of Saudi Arabia and DTI Foundation Keep Cooperating in the Framework of the Implementation of a Quality Management System on Organ Donation. Published 2024. Accessed October 4, 2024. https://dtifoundation.com/the-kingdom-of-saudi-arabia-and-dti-foundation-keep-cooperating-in-the-framework-of-the-implementation-of-a-quality-management-system-on-organ-donation/

TÜRKIYE

1. Kaya, E., Yılmaz, Y., 2019. Non-alcoholic fatty liver disease: A growing public health problem in Turkey. *Turk J Gastroenterol* 30, 865–871.
2. Değertekin, B., Tozun, N., Demir, F., Söylemez, G., Parkan, Ş., Gürtay, E., Mutlu, D., Toraman, M., Seymenoğlu, T.H., 2021. The Changing Prevalence of Non-Alcoholic Fatty Liver Disease (NAFLD) in Turkey in the Last Decade. *Turk J Gastroenterol* 32, 302–312.
3. Yılmaz, Y., Kanı, H.T., Demirtaş, C.Ö., Kaya, E., Sapmaz, A.F., Qutranji, L., Alkayyali, T., Batun, K.D., Batman, M., Toy, B., Çiftaslan, A., 2019. Growing burden of nonalcoholic fatty liver disease in Turkey: A single-center experience. *Turk J Gastroenterol* 30, 892–898.
4. Uzunalimoğlu, O., Yurdaydin, C., Cetinkaya, H., Bozkaya, H., Sahin, T., Colakoğlu, S., Tankurt, E., Sarioğlu, M., Ozenirler, S., Akkiz, H., Tözün, N., Değertekin, H., Okten, A., 2001. Risk factors for hepatocellular carcinoma in Turkey. Dig Dis Sci 46, 1022–1028.
5. *Turkish Viral Hepatitis Prevention and Control Program.* Ankara, Turkiye: Republic of Turkey – Ministry of Health; 2019. https://www.globalhep.org/sites/default/files/content/programs/files/2020-02/Turkish%20Viral%20Hepatitis%20Prevention%20and%20Control%20Program%202018-2023.pdf. Accessed September 28, 22.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

6. Özkan H. Epidemiology of Chronic Hepatitis B in Turkey. *Euroasian J Hepatogastroenterol.* 2018;8(1):73-74. doi:10.5005/jp-journals-10018-1264
7. Idilman, R., Razavi, H., Robbins-Scott, S., Akarca, U.S., Örmeci, N., Kaymakoglu, S., Aygen, B., Tozun, N., Güner, R., Bodur, H., Lazarus, J.V., 2020. A micro-elimination approach to addressing hepatitis C in Turkey. *BMC Health Services Research* 20, 249.
8. Thomas, D.L., Mahley, R.W., Badur, S., Palaoglu, E., Quinn, T.C., 1994. The epidemiology of hepatitis C in Turkey. *Infection* 22, 411–414.
9. Candan, F., Alagözlü, H., Poyraz, O., Sümer, H., 2002. Prevalence of hepatitis B and C virus infection in barbers in the Sivas region of Turkey. *Occup Med* (Lond) 52, 31–34.
10. Akarsu, M., 2018. Liver transplantation in Turkey: The importance of experience. *Turk J Gastroenterol* 29, 629–630.
11. Liver Transplant in Turkey: Costs, Top Doctors, Hospitals and Appointments. *MediGence.* https://medigence.com/hospitals/transplants/liver-transplant/turkey. Accessed September 28, 2022.

TÜRKIYE

1. Blair I, Sharif AA. Population structure and the burden of disease in the United Arab Emirates. Journal of epidemiology and global health. June 2012. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7320375/#:~:text=The%20UAE%20census%20that%20had,quoted%20in%20the%20local%20media.
2. Alswat K;Aljumah AA;Sanai FM;Abaalkhail F;Alghamdi M;Al Hamoudi WK;Al Khathlan A;Al Quraishi H;Al Rifai A;Al Zaabi M;Babatin MA;Estes C;Hashim A;Razavi H; Nonalcoholic fatty liver disease burden - Saudi Arabia and United Arab Emirates, 2017-2030. Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association. Accessed June 17, 2025. https://pubmed.ncbi.nlm.nih.gov/29956688/#:~:text=Materials%20and%20methods:%20Models%20were,to%20reduce%20liver%20disease%20burden.
3. Sanai FM, Abaalkhail F, Hasan F, Farooqi MH, Nahdi NA, Younossi ZM. Management of nonalcoholic fatty liver disease in the Middle East. World journal of gastroenterology. July 7, 2020. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7366060/#:~:text=This%20model%20also%20predicts%20that,%25%20in%20UAE%5B9%5D.
4. Weqaya: A population-wide cardiovascular screening ... Accessed June 18, 2025. https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2011.300290.
5. The epidemiology and economic burden of obesity and related cardiometabolic disorders in the United Arab Emirates: A systematic review and qualitative synthesis - radwan - 2018 - journal of Obesity - Wiley Online Library. Accessed June 18, 2025. https://onlinelibrary.wiley.com/doi/10.1155/2018/2185942.
6. Sulaiman N;Albadawi S;Abusnana S;Mairghani M;Hussein A;Al Awadi F;Madani A;Zimmet P;Shaw J; High prevalence of diabetes among migrants in the United Arab Emirates using a cross-sectional survey. Scientific reports. Accessed June 17, 2025. https://pubmed.ncbi.nlm.nih.gov/29717208/#:~:text=This%20study%20assessed%20diabetes%20prevalence,for%20the%20entire%20UAE%20population.
7. Beat diabetes: Home. Beat diabetes | Home. Accessed June 17, 2025. https://www.beatdiabetes.me/ae/en#about-beat-diabetics.
8. Ministry of Health Organizes 2nd Workshop of National Program to Combat Obesity. Ministry of Health and Prevention - UAE. Accessed June 17, 2025. https://mohap.gov.ae/en/w/ministry-of-health-organizes-2nd-workshop-of-national-program-to-combat-obesity-1#:~:text=The%20UAE%20Council%20of%20Ministers%20aims%20reduce,for%20future%20generations.%20In%20this%20context%2C%20Dr.
9. Fouché A, Albrithen A, AlNuaimi M, et al. Alcohol and substance dependence in the United Arab Emirates: A scoping review protocol. BMJ open. May 9, 2023. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC10174018/.
10. Admin. Alcohol charges in the UAE: Punishment and fines. Al Riyami Advocates. March 31, 2024. Accessed June 17, 2025. https://alriyamiadvocates.com/articles/alcohol-charges-in-the-uae/#:~:text=Federal%20Law%20No.,-bars%2C%20clubs%2C%20and%20restaurants.
11. Abu Dhabi eases alcohol policies. The Columbian. May 25, 2024. Accessed June 17, 2025. https://www.columbian.com/news/2024/may/25/abu-dhabi-eases-alcohol-policies/.
12. Faisal Sanai, et al. Hepatitis B virus infection in Saudi Arabia and the UAE: Public health challenges and their remedial measures. Journal of Infection and Public Health. July 20, 2023. Accessed June 17, 2025. https://www.sciencedirect.com/science/article/pii/S1876034123002423#:~:text=Introduction,Systematic%20Observatory%20Liver%20Disease%20registry.
13. Hepatitis B care pathway in the United Arab Emirates. Accessed June 18, 2025. https://www.emjreviews.com/wp-content/uploads/2019/11/Bassil-FINAL-2.pdf.
14. Mohamoud YA, Riome S, Abu-Raddad LJ. Epidemiology of hepatitis C virus in the Arabian Gulf countries: Systematic review and meta-analysis of prevalence. International Journal of Infectious Diseases. 2016;46:116-125. doi:10.1016/j.ijid.2016.03.012
15. The Emirates Gastroenterology and Hepatology Society and Ministry of Health and Prevention Launch Health Awareness Campaign about hepatitis C virus. Ministry of Health and Prevention - UAE. Accessed June 17, 2025. https://mohap.gov.ae/en/w/the-emirates-gastroenterology-and-hepatology-society-and-ministry-of-health-and-prevention-launch-health-awareness-campaign-about-hepatitis-c-virus.
16. Srayaldeen SW, Elkhalifa MA. Hepatocellular carcinoma (HCC) in the UAE. Cancer Care in the United Arab Emirates. Published online 2024:491-534. doi:10.1007/978-981-99-6794-0_30
17. Albarrak J, Al-Shamsi H. Current Status of Management of Hepatocellular Carcinoma in The Gulf Region: Challenges and Recommendations. Cancers (Basel). 2023;15(7):2001. Published 2023 Mar 28. doi:10.3390/cancers15072001
18. Liver transplant program. Liver Transplantation Hospital in Abu Dhabi: Liver Transplant Surgery. Accessed June 17, 2025. https://www.clevelandclinicabudhabi.ae/en/institutes-and-specialties/digestive-disease/liver-transplant-program.
19. Organ donation and Transplant: The Official Portal of the UAE government. Organ donation and transplant | The Official Portal of the UAE Government. Accessed June 17, 2025. https://u.ae/en/information-and-services/health-and-fitness/organ-donation-and-transplant#:~:text=The%20UAE%20allows%20transplantation%20of,%2C%20PDF%2C%203.74%20MB).
20. Maskari MS, Al Senaidi MS. Optimizing solid organ donation in the United Arab Emirates: Launching donation after death programs. Transplantation. 2020;104(S3). doi:10.1097/01.tp.0000699612.60322.ad
21. Kumar, Shiva1; Sankari, Bashir R.1; Pinna, Antonio D.1; Miller, Charles M.2; Obaidli, Ali Abdul Kareem Al3; Guzman, Jorge A.1; Attallah, Nizar1; Bajwa, Gurjyot1; Bader, Feras1; Hamed, Fadi1; Souilamas, Redha1; Kumar, Arun1; Abdulbaki, Ammar1; Siddique, Haamid1; Kroh, Matthew D.1; Hajj, Sandra El1; Blooshi, Abeer Al1; Suri, Rakesh M.1. ESTABLISHMENT OF SOLID ORGAN TRANSPLANTATION IN THE UNITED ARAB EMIRATES. Transplantation 104(S3):p S281, September 2020. | DOI: 10.1097/01.tp.0000699912.84290.84
22. www.ETHealthworld.com. Indian-origin doctor performs UAE's first living donor pediatric liver transplant - et healthworld. ETHealthworld.com. July 11, 2024. Accessed June 17, 2025. https://health.economictimes.indiatimes.com/news/industry/indian-origin-doctor-performs-uaes-first-living-donor-pediatric-liver-transplant/111655135.
23. Digital T. Dubai Health Authority announces first successful liver transplant surgery in the Emirate. Government of Dubai Media Office. Accessed June 17, 2025. https://www.mediaoffice.ae/en/news/2023/december/20-12/dubai-health-authority-announces-first-successful-liver-transplant-surgery-in-the-emirate#:~:text=The%20Health%20Regulation%20Sector%20at%20DHA%20approved%20the%20liver%20transplant,healthcare%20governance%2C%20integration%20and%20organisation.
24. 1. Increasing global access to organ transplants. Accessed June 18, 2025. https://unos.org/wp-content/uploads/Increasing-Global-Access-to-Organ-Transplants-in-the-United-Arab-Emirates.pdf.

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

UNITED ARAB EMIRATES

1. Blair I, Sharif AA. Population structure and the burden of disease in the United Arab Emirates. Journal of epidemiology and global health. June 2012. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7320375/#:~:text=The%20UAE%20census%20that%20had,quoted%20in%20the%20local%20media.
2. Alswat K;Aljumah AA;Sanai FM;Abaalkhail F;Alghamdi M;Al Hamoudi WK;Al Khathlan A;Al Quraishi H;Al Rifai A;Al Zaabi M;Babatin MA;Estes C;Hashim A;Razavi H; Nonalcoholic fatty liver disease burden - Saudi Arabia and United Arab Emirates, 2017-2030. Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association. Accessed June 17, 2025. https://pubmed.ncbi.nlm.nih.gov/29956688/#:~:text=Materials%20and%20methods:%20Models%20were,to%20reduce%20liver%20disease%20burden.
3. Sanai FM, Abaalkhail F, Hasan F, Farooqi MH, Nahdi NA, Younossi ZM. Management of nonalcoholic fatty liver disease in the Middle East. World journal of gastroenterology. July 7, 2020. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC7366060/#:~:text=This%20model%20also%20predicts%20that,%25%20in%20UAE%5B9%5D.
4. Weqaya: A population-wide cardiovascular screening ... Accessed June 18, 2025. https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2011.300290.
5. The epidemiology and economic burden of obesity and related cardiometabolic disorders in the United Arab Emirates: A systematic review and qualitative synthesis - radwan - 2018 - journal of Obesity - Wiley Online Library. Accessed June 18, 2025. https://onlinelibrary.wiley.com/doi/10.1155/2018/2185942.
6. Sulaiman N;Albadawi S;Abusnana S;Mairghani M;Hussein A;Al Awadi F;Madani A;Zimmet P;Shaw J; High prevalence of diabetes among migrants in the United Arab Emirates using a cross-sectional survey. Scientific reports. Accessed June 17, 2025. https://pubmed.ncbi.nlm.nih.gov/29717208/#:~:text=This%20study%20assessed%20diabetes%20prevalence,for%20the%20entire%20UAE%20population.
7. Beat diabetes: Home. Beat diabetes | Home. Accessed June 17, 2025. https://www.beatdiabetes.me/ae/en#about-beat-diabetics.
8. Ministry of Health Organizes 2nd Workshop of National Program to Combat Obesity. Ministry of Health and Prevention - UAE. Accessed June 17, 2025. https://mohap.gov.ae/en/w/ministry-of-health-organizes-2nd-workshop-of-national-program-to-combat-obesity-1#:~:text=The%20UAE%20Council%20of%20Ministers%20aims%20reduce,for%20future%20generations.%20In%20this%20context%2C%20Dr.
9. Fouché A, Albrithen A, AlNuaimi M, et al. Alcohol and substance dependence in the United Arab Emirates: A scoping review protocol. BMJ open. May 9, 2023. Accessed June 17, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC10174018/.
10. Admin. Alcohol charges in the UAE: Punishment and fines. Al Riyami Advocates. March 31, 2024. Accessed June 17, 2025. https://alriyamiadvocates.com/articles/alcohol-charges-in-the-uae/#:~:text=Federal%20Law%20No.,-bars%2C%20clubs%2C%20and%20restaurants.
11. Abu Dhabi eases alcohol policies. The Columbian. May 25, 2024. Accessed June 17, 2025. https://www.columbian.com/news/2024/may/25/abu-dhabi-eases-alcohol-policies/.....
12. Faisal Sanai, et al. Hepatitis B virus infection in Saudi Arabia and the UAE: Public health challenges and their remedial measures. Journal of Infection and Public Health. July 20, 2023. Accessed June 17, 2025. https://www.sciencedirect.com/science/article/pii/S1876034123002423#:~:text=Introduction,Systematic%20Observatory%20Liver%20Disease%20registry.
13. Hepatitis B care pathway in the United Arab Emirates. Accessed June 18, 2025. https://www.emjreviews.com/wp-content/uploads/2019/11/Bassil-FINAL-2.pdf.
14. Mohamoud YA, Riome S, Abu-Raddad LJ. Epidemiology of hepatitis C virus in the Arabian Gulf countries: Systematic review and meta-analysis of prevalence. International Journal of Infectious Diseases. 2016;46:116-125. doi:10.1016/j.ijid.2016.03.012
15. The Emirates Gastroenterology and Hepatology Society and Ministry of Health and Prevention Launch Health Awareness Campaign about hepatitis C virus. Ministry of Health and Prevention - UAE. Accessed June 17, 2025. https://mohap.gov.ae/en/w/the-emirates-gastroenterology-and-hepatology-society-and-ministry-of-health-and-prevention-launch-health-awareness-campaign-about-hepatitis-c-virus.
16. Srayaldeen SW, Elkhalifa MA. Hepatocellular carcinoma (HCC) in the UAE. Cancer Care in the United Arab Emirates. Published online 2024:491-534. doi:10.1007/978-981-99-6794-0_30
17. Albarrak J, Al-Shamsi H. Current Status of Management of Hepatocellular Carcinoma in The Gulf Region: Challenges and Recommendations. Cancers (Basel). 2023;15(7):2001. Published 2023 Mar 28. doi:10.3390/cancers15072001
18. Liver transplant program. Liver Transplantation Hospital in Abu Dhabi: Liver Transplant Surgery. Accessed June 17, 2025. https://www.clevelandclinicabudhabi.ae/en/institutes-and-specialties/digestive-disease/liver-transplant-program.
19. Organ donation and Transplant: The Official Portal of the UAE government. Organ donation and transplant | The Official Portal of the UAE Government. Accessed June 17, 2025. https://u.ae/en/information-and-services/health-and-fitness/organ-donation-and-transplant#:~:text=The%20UAE%20allows%20transplantation%20of,%2C%20PDF%2C%203.74%20MB).
20. Maskari MS, Al Senaidi MS. Optimizing solid organ donation in the United Arab Emirates: Launching donation after death programs. Transplantation. 2020;104(S3). doi:10.1097/01.tp.0000699612.60322.ad
21. Kumar, Shiva1; Sankari, Bashir R.1; Pinna, Antonio D.1; Miller, Charles M.2; Obaidli, Ali Abdul Kareem Al3; Guzman, Jorge A.1; Attallah, Nizar1; Bajwa, Gurjyot1; Bader, Feras1; Hamed, Fadi1; Souilamas, Redha1; Kumar, Arun1; Abdulbaki, Ammar1; Siddique, Haamid1; Kroh, Matthew D.1; Hajj, Sandra El1; Blooshi, Abeer Al1; Suri, Rakesh M.1. ESTABLISHMENT OF SOLID ORGAN TRANSPLANTATION IN THE UNITED ARAB EMIRATES. Transplantation 104(S3):p S281, September 2020. | DOI: 10.1097/01.tp.0000699912.84290.84
22. www.ETHealthworld.com. Indian-origin doctor performs UAE's first living donor pediatric liver transplant - et healthworld. ETHealthworld.com. July 11, 2024. Accessed June 17, 2025. https://health.economictimes.indiatimes.com/news/industry/indian-origin-doctor-performs-uaes-first-living-donor-pediatric-liver-transplant/111655135.
23. Digital T. Dubai Health Authority announces first successful liver transplant surgery in the Emirate. Government of Dubai Media Office. Accessed June 17, 2025. https://www.mediaoffice.ae/en/news/2023/december/20-12/dubai-health-authority-announces-first-successful-liver-transplant-surgery-in-the-emirate#:~:text=The%20Health%20Regulation%20Sector%20at%20DHA%20approved%20the%20liver%20transplant,healthcare%20governance%2C%20integration%20and%20organisation.
24. 1. Increasing global access to organ transplants. Accessed June 18, 2025. https://unos.org/wp-content/uploads/Increasing-Global-Access-to-Organ-Transplants-in-the-United-Arab-Emirates.pdf.

NORTH AMERICA

CANADA

1. Chronic liver disease cirrhosis death rate Canada 2000-2020. Statista. URL https://www.statista.com/statistics/434495/death-rate-for-chronic-liver-disease-and-cirrhosis-in-canada/. Published March 3, 2022. Accessed September 26, 2022.
2. Canadian Liver Foundation. *Liver Disease in Canada: A Crisis in the Making* https://www.liver.ca/wp-content/uploads/2017/09/Liver-Disease-in-Canada-E-3.pdf Published March 2013. Accessed September 26, 2022.
3. Wong, W.W., Woo, G., Heathcote, E.J., Krahn, M., 2013. Disease burden of chronic hepatitis B among immigrants in Canada. *Can J Gastroenterol* 27, 137–147.
4. Our Asks. Action Hepatitis Canada. https://www.actionhepatitiscanada.ca/progressreport.html (accessed 9.26.22).
5. Canada, P.H.A. of, 2022. Report On Hepatitis B and C Surveillance in Canada: 2019 [WWW Document]. URL https://www.canada.ca/en/public-health/services/publications/diseases-conditions/report-hepatitis-b-c-canada-2019.html (accessed 9.26.22).
6. Canada, P.H.A. of, 2016. For health professionals: Hepatitis C [WWW Document]. URL https://www.canada.ca/en/public-health/services/diseases/hepatitis-c/health-professionals-hepatitis-c.html. Published May 2021. Accessed

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

September 26, 2022.

7. Ivanics, T., Shwaartz, C., Claasen, M.P.A.W., Patel, M.S., Yoon, P., Raschzok, N., Wallace, D., Muaddi, H., Murillo Perez, C.F., Hansen, B.E., Selzner, N., Sapisochin, G., 2021. Trends in indications and outcomes of liver transplantation in Canada: A multicenter retrospective study. *Transplant International* 34, 1444–1454.
8. *Canadian Risk Factor Atlas (CRFA), 2020 edition.* Public Health Agency of Canada. https://health-infobase.canada.ca/crfa/
9. Swain, M.G., Ramji, A., Patel, K., Sebastiani, G., Shaheen, A.A., Tam, E., Marotta, P., Elkhashab, M., Bajaj, H.S., Estes, C., Razavi, H., 2020. Burden of nonalcoholic fatty liver disease in Canada, 2019–2030: a modelling study. *CMAJ Open 8*, E429–E436.
10. Flemming JA, Djerboua M, Groome PA, Booth CM, Terrault NA. NAFLD and alcohol-associated liver disease will be responsible for almost all new diagnoses of cirrhosis in Canada by 2040. *Hepatology.* 2021 Dec;74(6):3330-44.
11. Canadian Liver Foundation. Liver Cancer and Tumors. https://www.liver.ca/patients-caregivers/liver-diseases/liver-cancer/. Accessed September 26, 2022.
12. Brenner DR, Poirier A, Woods RR, Ellison LF, Billette JM, Demers AA, Zhang SX, Yao C, Finley C, Fitzgerald N, Saint-Jacques N. Projected estimates of cancer in Canada in 2022. *CMAJ*. 2022 May 2;194(17):E601-7.
13. Yoshida EM, Mason A, Peltekian KM, et al. Epidemiology and liver transplantation burden of primary biliary cholangitis: a retrospective cohort study. *CMAJ Open.* 2018;6(4):E664-E670. Published 2018 Dec 21.
14. Zhang, C., Hussaini, T., Yoshida, E.M., 2019. Review of pharmacotherapeutic treatments for primary sclerosing cholangitis. *Canadian Liver Journal* 2, 58–70.
15. Shaheen AA, Riazi K, Medellin A, Bhayana D, Kaplan GG, Jiang J, Park R, Schaufert W, Burak KW, Sargious M, Swain MG. Risk stratification of patients with nonalcoholic fatty liver disease using a case identification pathway in primary care: a cross-sectional study. *CMAJ Open.* 2020 May 15;8(2):E370-E376. doi: 10.9778/cmajo.20200009. PMID: 32414883; PMCID: PMC7239637.

UNITED STATES OF AMERICA

1. FastStats [WWW Document], 2022. URL https://www.cdc.gov/nchs/fastats/liver-disease.htm. Updated September 6, 2022. Accessed September 27, 2022.
2. Estes, C., Razavi, H., Loomba, R., Younossi, Z., Sanyal, A.J., 2018. Modeling the epidemic of nonalcoholic fatty liver disease demonstrates an exponential increase in burden of disease. *Hepatology* 67, 123–133.
3. Warren, M., Beck, S., Delgado, D. The State of Obesity 2020: Better Policies for a Healthier America. Trust for America's Health. https://www.tfah.org/report-details/state-of-obesity-2020/. Accessed September 27, 2022.
4. *Liver Health Annual Trends Report: Perspectives on the Changing Face of Chronic Liver Disease, First Edition.* https://cat02.cc-tools.online/liver-health-annual-trends-report-first-edition/page/1 Published 2021. Accessed September 27, 2022.
5. Younossi, Z.M., Blissett, D., Blissett, R., Henry, L., Stepanova, M., Younossi, Y., Racila, A., Hunt, S., Beckerman, R., 2016. The economic and clinical burden of nonalcoholic fatty liver disease in the United States and Europe. *Hepatology* 64, 1577–1586.
6. Surveillance Report #118: LIVER CIRRHOSIS MORTALITY IN THE UNITED STATES: NATIONAL, STATE, AND REGIONAL TRENDS, 2000-2019, n.d. 92.
7. Alcohol Facts and Statistics | National Institute on Alcohol Abuse and Alcoholism (NIAAA). https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/alcohol-facts-and-statistics. Updated March 2022. Accessed September 27, 2022.
8. Kwong, A.J., Kim, W.R., Lake, J.R., Smith, J.M., Schladt, D.P., Skeans, M.A., Noreen, S.M., Foutz, J., Booker, S.E., Cafarella, M., Snyder, J.J., Israni, A.K., Kasiske, B.L., 2021. OPTN/SRTR 2019 Annual Data Report: Liver. *American Journal of Transplantation* 21, 208–315.
9. Viral Hepatitis Surveillance Report: United States 2019. Division of Viral Hepatitis: CDC. https://www.cdc.gov/hepatitis/statistics/2019surveillance/pdfs/2019HepSurveillanceRpt.pdf. Published May 2021. Accessed September 27, 2022.
10. Moriarty S., 2020. The most active living donor liver transplant programs. UNOS. https://unos.org/news/improvement/most-active-living-donor-liver-transplant-programs/ Published February 3, 2020. Accessed September 27, 2022.

OCEANIA

1. Liver Disease Death Rate by Country. World Life Expectancy. https://www.worldlifeexpectancy.com/cause-of-death/liver-disease/by-country/
2. Liver fact sheet. The Global Cancer Observatory. World Health Organization. 2020.
3. Horwood PF, Tarantola A, Goarant C, et al. Health Challenges of the Pacific Region: Insights From History, Geography, Social Determinants, Genetics, and the Microbiome. *Front Immunol.* 2019;10:2184. Published 2019 Sep 13. doi:10.3389/fimmu.2019.02184
4. Obesity Rates by Country 2023. World Population Review. https://worldpopulationreview.com/country-rankings/obesity-rates-by-country
5. Hartmann P, Zhang X, Loomba R, Schnabl B. Global and national prevalence of nonalcoholic fatty liver disease in adolescents: An analysis of the global burden of disease study 2019. *Hepatology.* 2023;78(4)
6. Calzadilla-Bertot L, Jeffrey GP, Jacques B, et al. Increasing Incidence of Non-alcoholic Steatohepatitis as an Indication for Liver Transplantation in Australia and New Zealand. *Liver Transpl*. 2019;25(1):25-34. doi:10.1002/lt.25361
7. Howell J, Pedrana A, Cowie BC, et al. Aiming for the elimination of viral hepatitis in Australia, New Zealand, and the Pacific Islands and Territories: Where are we now and barriers to meeting World Health Organization targets by 2030. *J Gastroenterol Hepatol.* Jan 2019;34(1):40-48. doi:10.1111/jgh.14457

AUSTRAILIA

1. Wood, E. Liver disease skyrockets thanks to alcohol, Hep C and obesity. *The Senior.* 2019-04-09. https://www.thesenior.com.au/story/6011618/australia-faces-liver-disease-epidemic/
2. Leading cause of premature mortality in Australia fact sheet: liver disease (2015). Australian Institute of Health and Welfare. https://www.aihw.gov.au/getmedia/a088f80f-fcdb-4c5d-aa00-ca776bd7f792/phe199-liver.pdf
3. Cirrhosis of the liver. BetterHealth Channel. Updated May 23, 2020. https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/cirrhosis-of-the-liver
4. D. HT, Behary J, Zekry. Non-alcoholic fatty liver disease: a review of epidemiology, risk factors, diagnosis and management. *Internal medicine journal.* 2020 Sep 2020;50(9)doi:10.1111/imj.14709
5. Overweight and obesity, Summary. Australian Institute of Health and Welfare. https://www.aihw.gov.au/reports/overweight-obesity/overweight-and-obesity/contents/overweight-and-obesity
6. A. AL, Roberts SK, Strasser SI, et al. Nonalcoholic fatty liver disease burden: Australia, 2019-2030. *Journal of gastroenterology and hepatology.* 2020 Sep 2020;35(9)doi:10.1111/jgh.15009
7. Alcohol, tobacco & other drugs in Australia, Alcohol. Australian Institute of Health and Welfare. https://www.aihw.gov.au/reports/alcohol/alcohol-tobacco-other-drugs-australia/contents/drug-types/alcohol
8. Romero N, McCulloch K, Allard N, MacLachlan J, Cowie B. *National Surveillance for Hepatitis B Indicators: Measuring the progress towards the targets of the National Hepatitis B Strategy – Annual Report 2019.* 2020. https://www.doherty.edu.au/uploads/content_doc/National_Surveillance_for_Hepatitis_B_Indicators_2019_final.pdf
9. Romero N, McCulloch K, Allard N, MacLachlan J, Cowie B. *National Surveillance for Hepatitis B Indicators: Measuring the progress towards the targets of the National Hepatitis B Strategy – Annual Report 2019.* 2020. https://www.doherty.edu.au/uploads/content_doc/National_Surveillance_for_Hepatitis_B_Indicators_2019_final.pdf
10. Australia falling behind in its goal to eliminate hepatitis C and save lives, new report shows. Kirby Institute; 2022. https://www.kirby.unsw.edu.au/news/australia-falling-behind-its-goal-eliminate-hepatitis-c-and-save-lives-new-report-shows
11. Hepatitis A fact sheet. New South Wales Ministry of Health. https://www.health.nsw.gov.au/Infectious/factsheets/Pages/hepatitis_a.aspx
12. Hepatitis A fact sheet. New South Wales Ministry of Health. https://www.health.nsw.gov.au/Infectious/factsheets/Pages/hepatitis_a.aspx

© 2026 by Global Liver Institute. All rights reserved

REFERENCES

13. Hepatitis E fact sheet. New South Wales Ministry of Health. https://www.health.nsw.gov.au/Infectious/factsheets/Pages/hepatitis_e.aspx
14. Hepatitis B vaccine. Australian Government Department of Health and Aged Care. Updated 2023-12-01T02:57+11:00. https://www.health.gov.au/topics/immunisation/immunisation-services/hepatitis-b-immunisation-service-0
15. Hepatitis B in Australia (2018). Australian Institute of Health and Welfare. https://www.aihw.gov.au/getmedia/ebf8dae8-6a4b-4cc3-9776-50e4c9df793f/aihw-phe-236_hepb.pdf.aspx
16. Pj, J. F, van der Mei I, et al. Increasing prevalence of primary biliary cholangitis in Victoria, Australia. *Journal of gastroenterology and hepatology.* 2020 Apr 2020;35(4)doi:10.1111/jgh.14924
17. S. HA, Kaye G, Thomson. Autoimmune hepatitis in a demographically isolated area of Australia. Internal medicine journal. 2010 Apr 2010;40(4) doi:10.1111/j.1445-5994.2009.02041.x
18. What is PSC? PSC Support Australia. https://pscsupport.org.au/what-is-psc/
19. Estimating the cost of cancer to Australia's health services. Cancer Council NSW. https://www.cancercouncil.com.au/research-pt/estimating-the-cost-of-cancer-to-australias-health-services/
20. Cancer Australia releases latest cancer research funding report | Cancer Australia. Cancer Australia, Australian Government. https://www.canceraustralia.gov.au/about-us/news/cancer-australia-releases-latest-cancer-research-funding-report
21. Swannell C. Surveillance needed to raise liver cancer survival. *The Medical Journal of Australia*. 2023:1.
22. Liver cancer in Australia statistics. Cancer Australia. https://www.canceraustralia.gov.au/cancer-types/liver-cancer/statistics
23. Sr, W. MG, Munn. Liver transplantation in Australia and New Zealand. *Liver transplantation : official publication of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society.* 2016 Jun 2016;22(6)doi:10.1002/lt.24446
24. Liver Transplant. Liver Foundation. https://liver.org.au/your-liver/liver-failure/liver-transplant/

NEW ZEALAND

i. This was established under the Pae Ora (Healthy Futures) Act 2022.

1. Horsfall E, Gane E, Anwar A, Moyes C, Lampen-Smith A, Hay S, Cunningham C. Chronic hepatitis B infection—an unmet medical need in New Zealand 35 years after universal neonatal vaccination. N Z Med J. 2020;133(1519):70–80. PMID: 32777797.
2. Weir RP, Brunton CR, Blakely TA. Chronic liver disease mortality attributable to hepatitis B and C in New Zealand. J Gastroenterol Hepatol. 2002;17(5):582–588. https://doi.org/10.1046/j.1440-1746.2002.02743.x.
3. Waitemata District Health Board. Hepatitis B and C – Maternal and Neonatal Care. Clinical Guideline 0125-08-004. Maternity Clinical Governance Forum. Issued July 2019.
4. Tiong HT, Upton A, Lockie A, Moore K, Stedman CAM. Hepatitis C virus seroprevalence in defined populations in New Zealand: data from a general practice–based screening programme. N Z Med J. 2025;138(1610). https://doi.org/10.26635/6965.6596.
5. Coppell KJ, Miller JC, Gray AR, Schultz M, Mann JI, Parnell WR. Obesity and the extent of liver damage among adult New Zealanders: findings from a national survey. Obes Sci Pract. 2015;1(2):67–77. https://doi.org/10.1002/osp4.13.
6. Collins H, Beban G, Windsor J, Ram R, Orr D, Evennett N, Loveday B. Safety and utility of liver biopsy during bariatric surgery in the New Zealand setting. Obes Surg. 2020;30(1):313–318. https://doi.org/10.1007/s11695-019-04161-3.
7. Calzadilla-Bertot L, Jeffrey GP, Jacques B, McCaughan G, Crawford M, Angus P, Jones R, Gane E, Munn S, Macdonald G, Fawcett J, Wigg A, Chen J, Fink M, Adams LA. Increasing incidence of nonalcoholic steatohepatitis as an indication for liver transplantation in Australia and New Zealand. Liver Transpl. 2019;25(1):25–34. https://doi.org/10.1002/lt.25361.
8. Clough S, Cleverley T, Kerrison C, Harwood M, Koea J, Gurney JK. The past, present and future of liver cancer control for Māori. N Z Med J. 2022;135(1567):91–104. doi: 10.26635/6965.5852. PMID: 36521088.
9. Chamberlain J, Sarfati D, Cunningham R, Koea J, Gurney J, Blakely T. Incidence and management of hepatocellular carcinoma among Māori and non-Māori New Zealanders. Aust N Z J Public Health. 2013;37(6):520–526. https://doi.org/10.1111/1753-6405.12108.
10. Meredith I, Sarfati D, Ikeda T, Blakely T. Cancer in Pacific people in New Zealand. Cancer Causes Control. 2012;23(7):1173–1184. https://doi.org/10.1007/s10552-012-9986-x.
11. Gurney J, Whitehead J, Kerrison C, Stanley J, Sarfati D, Koea J. Equity of travel required to access first definitive surgery for liver or stomach cancer in New Zealand. PLoS ONE. 2022;17(8):e0269593. https://doi.org/10.1371/journal.pone.0269593.
12. Mules T, Gane E, Lithgow O, Bartlett A, McCall J. Hepatitis B virus-related hepatocellular carcinoma presenting at an advanced stage: is it preventable? N Z Med J. 2018;131(1486):27–35.
13. McCaughan GW, Munn SR. Liver transplantation in Australia and New Zealand. Liver Transpl. 2016;22(6):830–838. https://doi.org/10.1002/lt.24446.
14. Howell J, Balderson G, Hellard M, et al. The increasing burden of potentially preventable liver disease among adult liver transplant recipients: a comparative analysis of liver transplant indication by era in Australia and New Zealand. J Gastroenterol Hepatol. 2016;31(2):434–441. https://doi.org/10.1111/jgh.13082.
15. Ministry of Health New Zealand. About the alcohol harm reduction programme. Available at: https://www.health.govt.nz/strategies-initiatives/programmes-and-initiatives/alcohol-harm-reduction-programme/about-the-programme. Last updated 9 December 2025.

© 2026 by Global Liver Institute. All rights reserved

Global Liver Institute (GLI) is a 501(c)3 nonprofit organization founded in the belief that liver health must take its place on the global public health agenda commensurate with the prevalence and impact of liver illness. GLI promotes innovation, encourages collaboration, and supports the scaling of optimal approaches to help eradicate liver diseases. Operating globally, GLI is committed to solving the problems that matter to liver patients and equipping advocates to improve the lives of individuals and families impacted by liver disease. GLI holds Platinum Transparency with Candid/GuideStar, is a member of the National Health Council and NORD, and serves as a Healthy People 2030 Champion. Follow GLI on Facebook, Instagram, LinkedIn, and YouTube or visit www.globalliver.org

Learn More:

globalliver.org

info@globalliver.org

@globalliverinstitute

Global Liver Institute

Platinum Transparency 2026 Candid.

PUTTING PATIENTS FIRST® NATIONAL HEALTH COUNCIL

HP2030 HEALTHY PEOPLE 2030 CHAMPION

NORD® · 2026 MEMBER · PLATINUM





GLI GLOBAL™ LIVER INSTITUTE

This initiative is made possible thanks to the support of Boehringer Ingelheim, Madrigal Pharmaceuticals, Novo Nordisk, Sanofi/Opella and Salix Pharmaceuticals.