

# Liver cancer inequalities in Europe and the role of viral hepatitis



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## HIGHLIGHTS

- Primary liver cancer<sup>1</sup> is the sixth most common cause of cancer-related deaths in Europe, with deaths from liver cancer due to hepatitis B and C increasing.
- Differences in the burden of liver cancer between countries is due to variation in prevalence of underlying risk factors, including hepatitis B and C infections.
- The prevalence of hepatitis B and C is highest among vulnerable population groups including some migrant populations, people who inject drugs and people in prison.
- Inequalities around liver cancer and hepatitis B and C highlight a need to scale up prevention, testing and treatment services, with a focus on the population groups most affected through a multi-sectoral approach targeted to their needs.

## CHALLENGES

The main risk factors for primary liver cancer include chronic hepatitis, caused by hepatitis B and C virus infections, as well as liver disease resulting from heavy alcohol use and metabolic issues. This factsheet focuses on the inequalities related to liver cancer and specifically on the role of hepatitis B and C as the main risk factors.

### Liver cancer burden

Primary liver cancer, is the sixth leading cause of cancer-related deaths in Europe\* accounting for 62,650 new cases and 54,624 deaths in 2022 (Figure 1). Most deaths (77%) occur among persons aged 65 years or older, affecting men (with 67% of deaths) twice as often as women. The number of liver cancers has been increasing and it is projected that by 2040, unless prevention and control strategies are scaled up, the number of liver cancers in Europe will increase by 22% due to population ageing.

Figure 1 - Estimated burden of primary liver cancer in Europe\*, 2022

**62,650**  
new cases

**54,624**  
deaths

- ▶ 67% of deaths among males
- ▶ 77% of deaths among persons aged 65 years or older

Source: ECIS - European Cancer information System

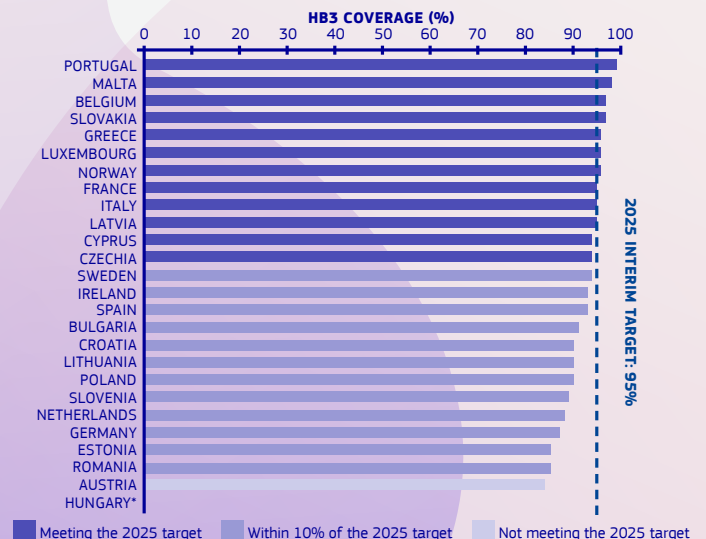
<sup>1</sup> Primary liver cancer is a malignant tumour that originates in the liver

## GEOGRAPHICAL INEQUALITIES

### Inequalities in coverage of hepatitis B and C vaccination

Whilst hepatitis B vaccination is widespread across Europe, coverage is inconsistent and in some countries has fallen in recent years. Less than half of EU countries have reached the 2025 elimination coverage target (Figure 2) and many children have missed or delayed vaccinations, hindering effective hepatitis B prevention (1). Delayed, incomplete or low vaccination uptake occurs among some migrant populations and is also associated with low levels of education or income (2).

Figure 2 - Coverage (%) of three doses of hepatitis B vaccine (HB3) in countries that implement universal HBV vaccination, 2022



\* Country did not provide data. NB. Denmark, Finland and Iceland do not have a national policy for universal childhood vaccination against hepatitis B and Hungary has a universal vaccination programme targeting school-aged children.

Source: WHO/UNICEF coverage estimates (3)

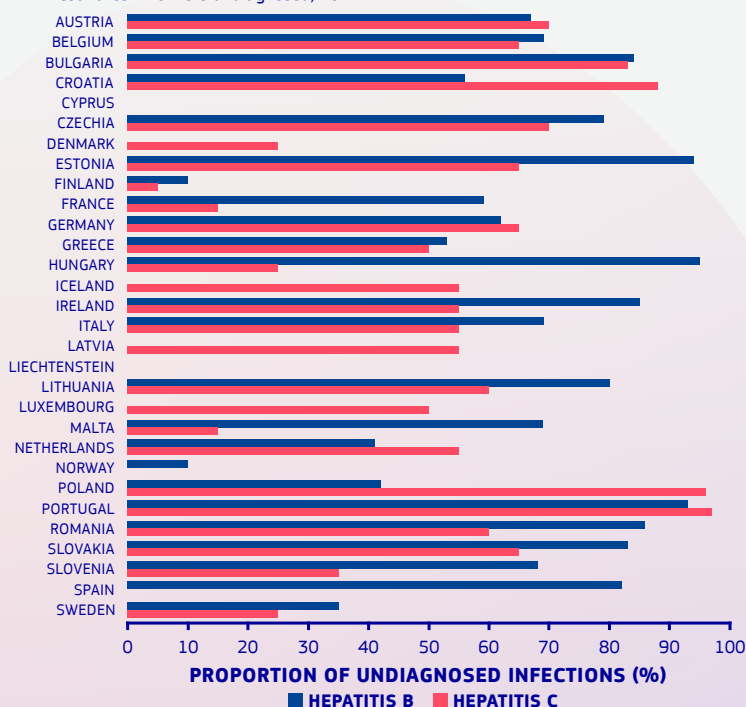
\* In this factsheet "Europe" and "EU countries" refer to EU-27+Iceland+Norway, if not otherwise stated

## Inequalities in hepatitis prevalence and diagnosis

It is estimated that around 1.0% of the population in the 30 countries of the European Union and European Economic Area (EU27/EEA) are living with chronic hepatitis B infection, with prevalence estimates ranging from 0.1% in Ireland to 4.5% in Romania (4, 5). The average prevalence of chronic hepatitis C infection in EU countries is estimated to be 0.5%, ranging from less than 0.1% in the Netherlands and Slovenia to 2.3% in Romania (6). However, the World Health Organisation estimates that globally 87% of hepatitis B and 64% of hepatitis C infections are undiagnosed (7). Modelled data indicate that in EU27/EEA countries the proportion of undiagnosed hepatitis B cases ranges from 0% in Denmark to 95% in Hungary and the proportion of undiagnosed hepatitis C cases ranges from 0% in Spain and Norway to 97% in Portugal, with most of the countries that have a higher disease burden having the highest proportion undiagnosed (Figure 3).

The impact of under-diagnosis can be seen in the number of people who already have liver cirrhosis or cancer at the time of their hepatitis B and C diagnosis: in EU27/EEA countries, around 8% of hepatitis B cases and 6% of hepatitis C cases have advanced liver disease when first diagnosed and, in some countries, up to one in six individuals are diagnosed late (8).

**Figure 3** - Proportion of individuals with a hepatitis B and C infection in EU27/EEA countries who were undiagnosed, 2022



Source: [Polaris Observatory – CDA Foundation](#)

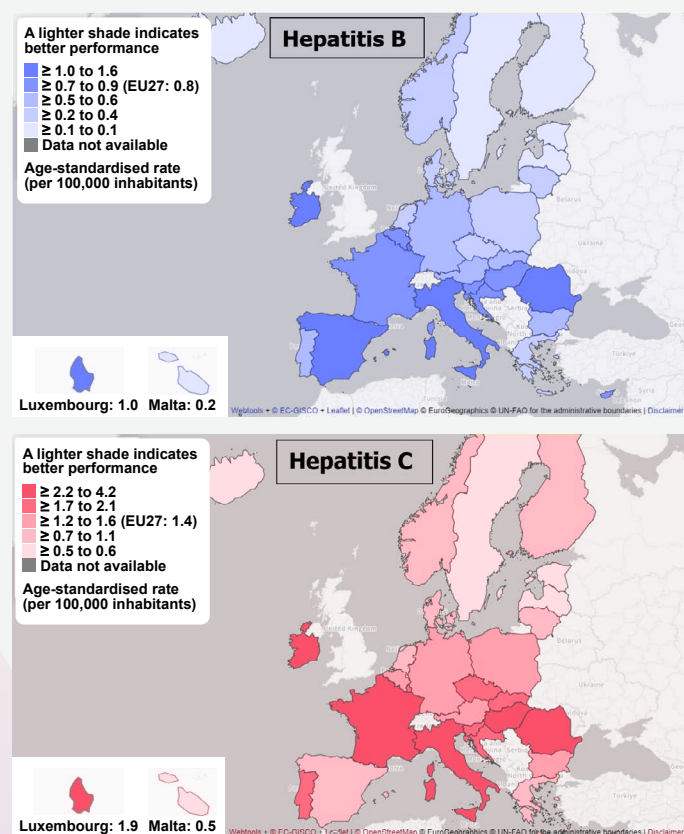
## Inequalities in liver cancer burden due to hepatitis B and C infection

Hepatitis B and C infections account for 12% and 41% of primary-liver-cancer-related deaths in Europe (9). Incidence and mortality from liver cancer due to hepatitis B and C have increased over the past two decades, with liver cancer incidence due to hepatitis B increasing from 0.86 per 100,000 in 1990 to 1.2 in 2019, and liver cancer incidence due to hepatitis C increasing from 2.1 to 3.8 per 100,000. There has however been a reduction in the contribution of hepatitis B and C as causes of liver cancer, due to increased availability of effective prevention and control

programmes, including hepatitis B vaccination and anti-viral treatments (10).

The burden of liver cancer varies by geographical area due to differences in exposure to risk factors including hepatitis B and C and alcohol, as well as variation in access to screening programmes and treatment (11, 12). Liver cancer incidence rates across Europe in 2022 range from 7.3 per 100,000 in Poland to 19.6 per 100,000 in Romania (13). Geographical trends in the incidence of cancers attributed to hepatitis B and C, which are mostly liver cancers, suggest they are lower among Northern countries compared to those in the Southern and Eastern region, which is similar to the underlying epidemiology of these infections (Figure 4).

**Figure 4** - Incidence of cancers attributable to hepatitis B and C in Europe \*, 2018



Source: [ECIR- European Cancer Inequalities Registry](#)

## INEQUALITIES BY SEX

The prevalence of hepatitis B and C in most countries is greater among males. Differences also exist in the liver cancer burden, with a higher incidence and mortality among males (Figure 5). These differences can be attributed to various factors that differ between the sexes including the underlying burden of hepatitis B and C, alcohol consumption and other lifestyle factors.

## INEQUALITIES BY AGE

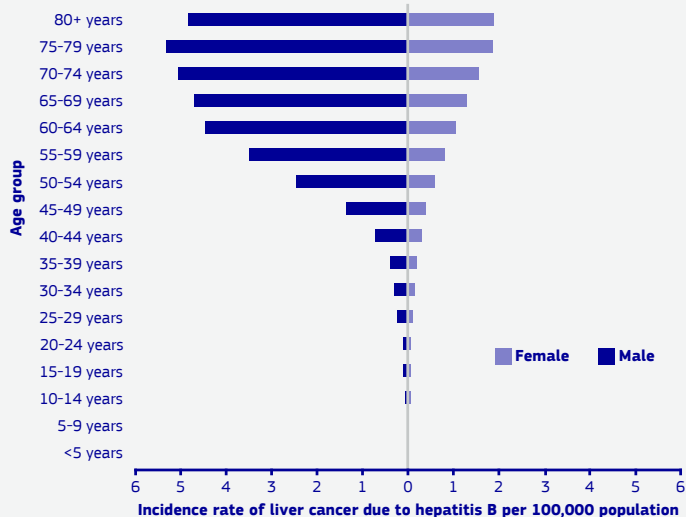
Most chronic infections with hepatitis B and C are among middle aged and older age groups. The burden of liver cancer is highest among the older age groups, especially those above 60 years of age (Figure 5).

This can be explained by the time lag between development of liver cancer following infection with hepatitis B and C, and by the compounding effects of different risk factors that accumulate over time, including alcohol.

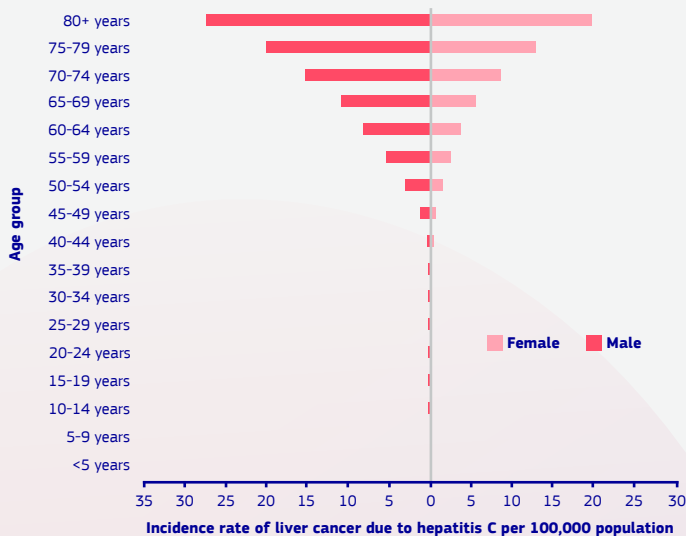
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**Figure 5** - Liver cancer incidence rates by age and sex for EU27 countries, 2019

**a. Hepatitis B**



**b. Hepatitis C**



Source: Global Burden of Disease Study 2019 (<https://ghdx.healthdata.org/gbd-2019>)

**INEQUALITIES BY SOCIOECONOMIC STATUS**

**Vulnerable groups most affected by hepatitis B and C**

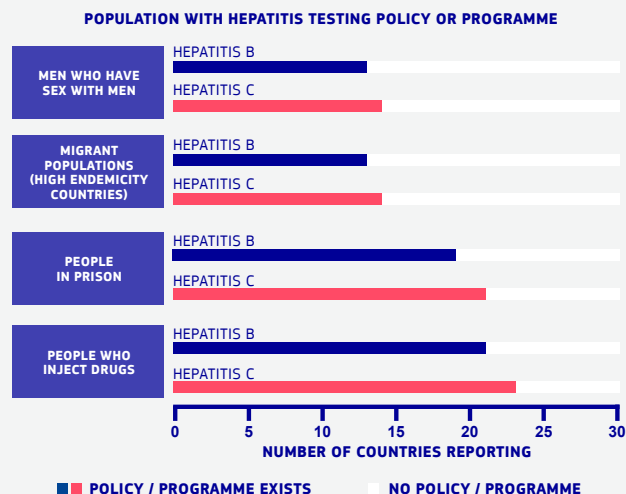
In Europe, the prevalence of hepatitis B and C infection is highest among vulnerable groups including some migrant populations, people who inject drugs, men who have sex with men, people in prison and sex workers (15, 16).

Around 32% of chronic hepatitis B cases in EU27/EEA countries are among migrant populations, with over 75% of all chronic infections in Cyprus, Iceland, Liechtenstein, Luxembourg, Netherlands, Norway and Sweden among migrant populations (17). For hepatitis C, 36% of chronic hepatitis C infections in Europe are among people who inject drugs, with over 75% of cases in Austria, Denmark, Estonia, Finland, Iceland, Latvia, Malta, Norway, Slovakia and Slovenia among this population group (6).

**INEQUALITIES BY POPULATION GROUP**

In Europe there are gaps in the availability of testing policies or programmes for hepatitis B virus for key groups including migrant populations, men who have sex with men and people in prison (8) (Figure 6). Similar gaps exist in specific policies for hepatitis C virus testing, with fewer than half of countries reporting programmes targeting any migrant population or men who have sex with men.

**Figure 6** - Existence of hepatitis B and C testing policies or programmes for key populations in countries in the EU27/EEA, 2023

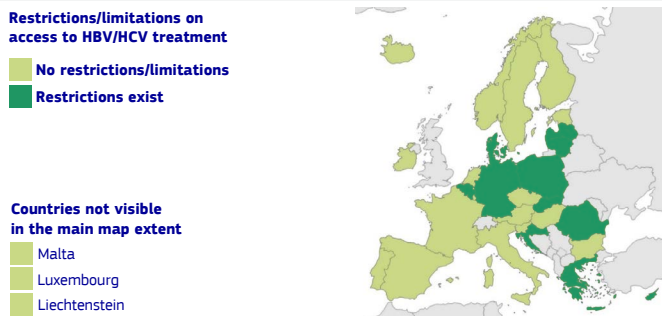


Source: European Centre for Disease Prevention and Control. Monitoring of responses to the hepatitis B and C epidemics in EU/EEA countries – 2022 data. Stockholm: ECDC, 2024 (8)

**Inequalities in access to hepatitis B and C treatment**

Restrictions around which population groups are eligible for treatment still exist. 11 countries in the EU27/EEA report these restrictions, with most of them related to undocumented migrants, and in one country there remains a restriction around provision of treatment for current/former people who inject drugs (Figure 7).

**Figure 7** - Existence of restrictions on access to HBV/HCV treatment in EU27/EEA countries, 2023



Source: European Centre for Disease Prevention and Control. Monitoring of responses to the hepatitis B and C epidemics in EU/EEA countries – 2022 data. Stockholm: ECDC, 2024 (8)

**CLOSING THE GAP**

**Reducing inequalities and reaching vulnerable groups**

The increasing burden and inequalities around liver cancer and hepatitis B and C in Europe highlight a need for action to scale up prevention and response, with a focus on vulnerable populations. These groups have a greater risk of being exposed to these infections and experience disease complications exacerbated by low socioeconomic status and other risk factors such as high alcohol consumption (18). People with hepatitis B and C often face significant disadvantage due to limited access to healthcare resources and low health literacy and also have poorer health outcomes from cancer (18).

It is critical that governments and public health authorities establish an appropriate mix of interventions adapted to the local context. A successful approach requires a combination of primary prevention, screening and treatment measures, including:

- Hepatitis B vaccination and harm reduction strategies, such as access to clean needles, syringes and opioid substitution therapy for people who inject drugs and people in prison;
- Targeted screening and diagnostic services for hepatitis B and C infection, as well as liver cancer, tailored to the needs of populations most affected;

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- Some vulnerable populations, such as some migrant populations, also have a higher prevalence of co-morbidities which can result in a poorer prognosis from hepatitis B or C, and are likely to benefit from a comprehensive, integrated approach to their care (19). Provision of outreach services and peer-to-peer programs can increase uptake of prevention and diagnostic services and optimise engagement with health services;
- Access to hepatitis B and C treatment free of charge and with increased coverage in a range of locations.

### European Commission's tools supporting the Member States

[Europe's Beating Cancer Plan](#) supports Member States in reducing the burden of cancer by improving prevention, screening and early detection and treatment. Through the Cancer Plan and dedicated funding, the Commission will help to ensure access to Hepatitis B vaccination and treatments to prevent liver cancer associated with hepatitis. Moreover, the Cancer Mission supports the optimisation and improvement of access to existing screening programmes and integration of non-invasive cancer screening methods into current programmes.

The [European Cancer Information System \(ECIS\)](#) and the [European Cancer Inequalities Registry \(ECIR\)](#) support systematic monitoring of the burden of cancer and report on observed disparities.

The [new Council Recommendation on vaccine-preventable cancers \(2024\)](#) aims to support Member States in reducing the burden from cancers caused by infection with Human Papillomaviruses and Hepatitis B virus, with a focus on increasing vaccination coverage of hepatitis B.

The [European Code against Cancer \(ECAC\)](#) informs individuals on how to reduce their risk of cancer, including how to protect children against hepatitis B through vaccination.

## FOR MORE INFORMATION

- The European Cancer Inequalities Registry provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions.
- The European Cancer Information System (ECIS) is the reference point for monitoring and projecting the burden of cancer in Europe.
- The World Health Assembly endorsed the first [Global Health Sector Strategy for viral hepatitis](#) in 2016, with the goal of eliminating viral hepatitis as a major threat to public health by 2030. The concept of elimination based on the global targets set by the World Health Organization for reducing the incidence of chronic infections by 90% and the attributable mortality by 65% by 2030.
- European Centre for Disease Prevention and Control (ECDC) supports EU27/EEA countries in monitoring progress towards the elimination targets and produces regular

reports based on the [overall results](#) and on the [data related to prevention](#).

- European Centre for Disease Prevention and Control (ECDC) conducts routine surveillance of newly diagnosed cases of acute and chronic hepatitis B and C infections and publishes [annual epidemiological reports](#) based on the data.
- Data on prevalence of hepatitis B and C infections among the general population and among key risk groups are collated by European Centre for Disease Prevention and Control (ECDC) and published in an interactive online [prevalence database](#).

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## CONTACT INFORMATION



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