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Hepatitis B vaccination policies, practices and challenges to achieving hepatitis elimination in the European Union and European Economic Area

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Abbreviations

EEA	European Economic Area
EU	European Union
GHSS	Global Health Sector Strategy
HBV	Hepatitis B Virus
HBsAg	Hepatitis B Surface Antigen
HCC	Hepatocellular Carcinoma
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Executive summary

This report provides an overview of current information on hepatitis B virus (HBV) vaccination among European Union (EU) and European Economic Area (EEA) countries. It highlights progress towards the 2025 interim targets related to vaccination that are defined in the World Health Organization (WHO) Regional action plans on ending AIDS and the epidemics of viral hepatitis and sexually transmitted infections (STIs) 2022–2030.

There are an estimated 3.2 million people living with chronic HBV infection across the EU/EEA. The prevalence of HBV infection has been falling globally due to the impact of vaccination and is now below 1% in most EU/EEA countries, but still exceeds 2% in a few countries. The prevalence of infection also remains high among some populations at increased risk of infection, including people in prison, people who inject drugs, men who have sex with men and some migrant populations. Another result of vaccination has been the steady fall over time in reported cases of acute hepatitis B infection, with very few cases now reported across countries which suggests that current transmission levels are low. However, recent data highlight an increase in reports of acute hepatitis B across the region, which may be related to factors such as changes in reporting and testing, but may also relate to an increase in local transmission.

Hepatitis B vaccination is recommended by all countries, but there is considerable variation in whether itis recommended as part of the childhood schedule, whether a birth dose of the vaccine is provided universally to all babies, or whether it is targeted to the babies of mothers with HBV infection. A total of 27 EU/EEA countries recommend universal hepatitis B vaccination as part of their routine childhood schedule, with most of these programmes established decades ago. However, of these countries, under half of them with available data were achieving the 2025 WHO interim target of 95% coverage with three doses of the childhood HBV vaccination. Additionally, in some countries, vaccination coverage has fallen in recent years. Five countries in the EU/EEA have implemented a universal birth dose of the HBV vaccine, with all of them reporting over 90% coverage with timely birth dose vaccination and meeting the WHO 2025 interim target. Countries had differing policies regarding vaccination of groups at higher risk of infection, with more countries having policies targeting healthcare workers and less with policies tailored to men who have sex with men, people who inject drugs, people in prison and certain migrant populations. Very limited data on vaccination coverage were reported for these groups and, where available, the coverage was low.

All countries across the region have programmes to prevent mother-to-child transmission. These include universal antenatal screening and several interventions for the mother and baby such as post-exposure prophylaxis to babies born to mothers with an HBV infection, including provision of a birth dose of the hepatitis B vaccine and hepatitis B immunoglobulin if indicated. Data collected from countries that provide a targeted birth dose of hepatitis B vaccine indicates high coverage, with three quarters of reporting countries reporting 100% coverage of the targeted birth dose.The prevalence of HBV infection among women screened antenatally is low and programmatic and surveillance data together suggest that current levels of mother-to-child transmission across countries in the region is very low.

Current priorities around HBV prevention include maintaining high coverage in HBV vaccination programmes and comprehensive programmes targeting the prevention of mother-to-child transmission, to minimise the number of infections occurring in infants. Achieving the WHO elimination targets related to HBV vaccination among children and the prevention of mother-to-child transmission are therefore important priorities for countries in their efforts to prevent and control hepatitis B. Efforts to understand what the gaps are in vaccination programmes in order to increase vaccination coverage are critical to ensure the population is well protected and future infections are prevented. This is especially important in light of the suspected increase in transmission of hepatitis B infection across the region. In countries with suboptimal vaccination coverage, it is important to assess factors that underlie low coverage, such as public perception toward vaccinations in order to develop tailored communication strategies and to identify any barriers to vaccination in the community such as restricted access or costs to the individual. Whilst current transmission of HBV is at a low level across the EU, there remain individuals who are increased risk of infection who are unvaccinated and a life-long approach to vaccination should be adopted using local epidemiological data to identify groups that should be prioritised for vaccination.

Introduction

Hepatitis B virus (HBV) is a global public health challenge, and chronic infection with the virus is a major cause of chronic liver disease, cirrhosis, and liver cancer. The latest estimates suggest that 254 million people worldwide are living with chronic HBV infection [1]. Globally, the estimated number of deaths from viral hepatitis increased from 1.1 million in 2019 to 1.3 million in 2022, and 83% of these were attributable to hepatitis B [1]. Across countries in the European Union (EU) and European Economic Area (EEA), latest estimates indicate that approximately 3.2 million people are living with a chronic HBV infection [2]. Action is required to improve efforts related to the prevention and control of hepatitis B and get the region on track to reach United Nations Sustainable Development Goal 3.3, combatting viral hepatitis.

Hepatitis B and its sequelae of liver cirrhosis and hepatocellular carcinoma (HCC) are preventable through the HBV vaccine, a highly cost effective vaccine that provides lifelong protection which was first developed in the 1970s [3]. Early vaccination against hepatitis B from the time of birth is vital as not only does the age of infection determine the likelihood of developing chronic infection (up to 90% children infected within the first 12 months of life develop chronic infection compared to only 5% of adults [4]), but also determines the risk of HCC development, with the highest risk associated with early acquisition of infection [5]. HBV vaccination of infants, especially if given within 24 hours of birth, is highly effective in preventing infection with HBV if followed by at least two other doses, and provides long term protection with no evidence of the need for booster doses in immunocompetent individuals [6].

In 2016, the 69th World Health Assembly endorsed the first Global Health Sector Strategy (GHSS) for viral hepatitis, with the goal of eliminating viral hepatitis as a threat to public health by 2030 [7]. Elimination is defined as a 65% reduction in hepatitis-related deaths and a 90% reduction in new chronic HBV and HCV infections compared to the 2015 baseline. The first viral hepatitis action plan for WHO European Region, published in 2017, adapts the GHSS for the region, taking epidemiological, political, and social factors into account and identifying a strategic framework [7]. The GHSS and action plan includes targets related to HBV vaccination.

In the second WHO European Regional Action Plan for ending AIDS and the epidemics of viral hepatitis and sexually transmitted infections 2022–2030 [9], there are several 2025 interim targets and actions related to HBV vaccination.

2025 interim targets and actions from the WHO European Regional Action Plan related to HBV vaccination [9]

- HBsAg prevalence in vaccinated cohorts of <0.5%.
- 95% coverage (3rd dose) of childhood HBV vaccination.
- 90% coverage with timely (within 24 hours of birth) HBV birth dose vaccination.
- Prevention of vertical transmission of HBV including through the screening of 90% of pregnant women and those intending to become pregnant for HBsAg; providing treatment, if indicated; the timely administration of HBV birth-dose vaccine to infants born in and outside of health facilities; and ensuring hepatitis B immunoglobulin is administered to exposed infants.
- HBV vaccination among high-risk adults.

In June 2024, the European Commission adopted the Council Recommendation on vaccine-preventable cancers [10], aligning with Europe's Beating Cancer Plan that was launched in 2021 [11]. The recommendations aim to support EU Member States in increasing vaccination coverage and in improving the monitoring of vaccination strategies, as well as to strengthen efforts to achieve the WHO's 2030 targets for Europe of 95% HBV vaccination coverage for children and newborns and 95% screening rate for pregnant women.

Recommendations around hepatitis B vaccination in the Council Recommendations [10]

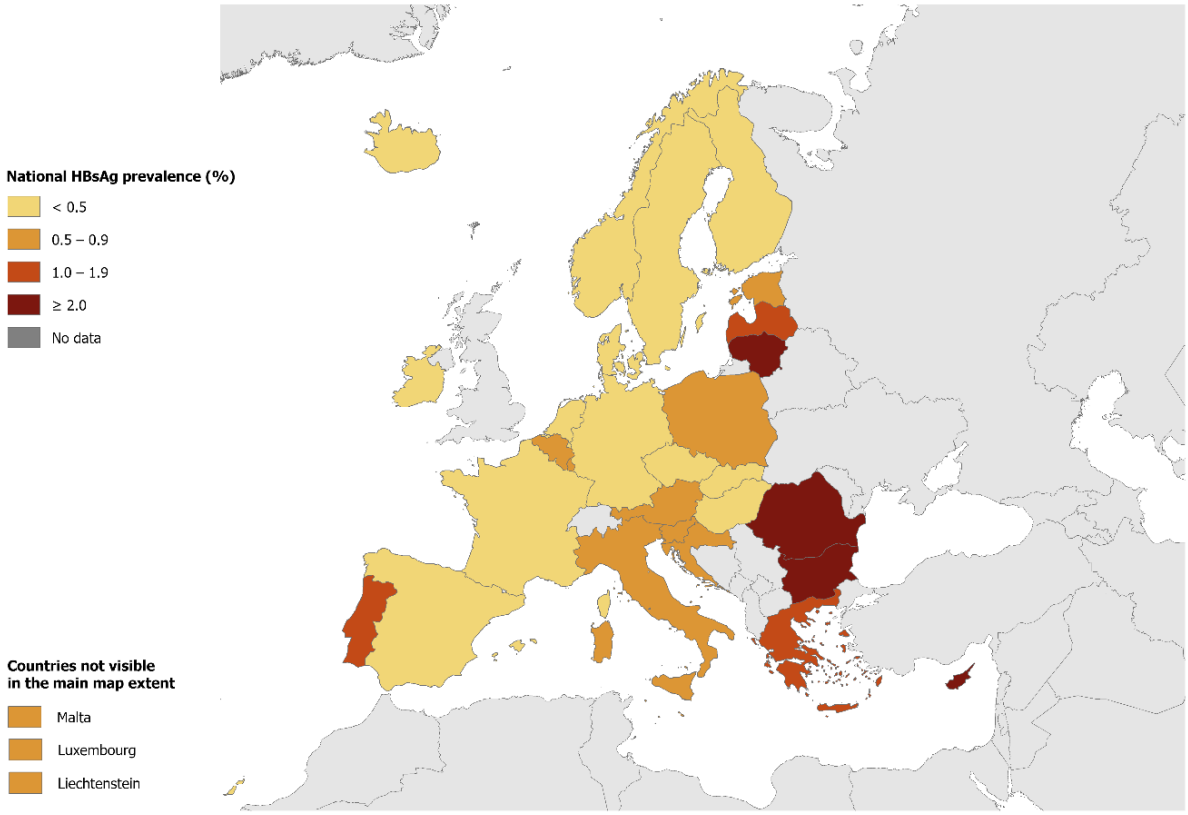
- Ensuring easy access to vaccination, with a particular focus on key populations and people at high risk of infection.
- Increasing public confidence in vaccines by monitoring and addressing misinformation.
- Improving monitoring of vaccination coverage rates to better inform interventions; and sharing of best practice.

The objective of this report is to provide a baseline assessment of HBV vaccination among the EU/EEA and to consider current progress towards the 2025 interim targets of the WHO Regional Action Plans for ending AIDS and the epidemics of viral hepatitis and sexually transmitted infections 2022–2030 [9].

Burden of hepatitis B virus

The burden of chronic HBV infection remains substantial across the region with an estimated 0.7% of the EU/EEA population—or 3 226 000 individuals living with HBV in 2022 [2]. The burden of HBV varies across the EU/EEA with national HBV prevalence ranging from 0.1% to 3.1% (Figure 1). There is geographical variation in HBV prevalence across the region with prevalence estimates mostly highest among countries in the eastern and southern parts of the region with many of these cases among older age cohorts. Prevalence is lowest among western and northern countries, where a high proportion of the cases are among migrant populations from countries of intermediate/high endemicity [2].

Figure 1. National estimates of hepatitis B surface antigen (HBsAg) prevalence (based on the Workbook methodology), EU/EEA, 2022



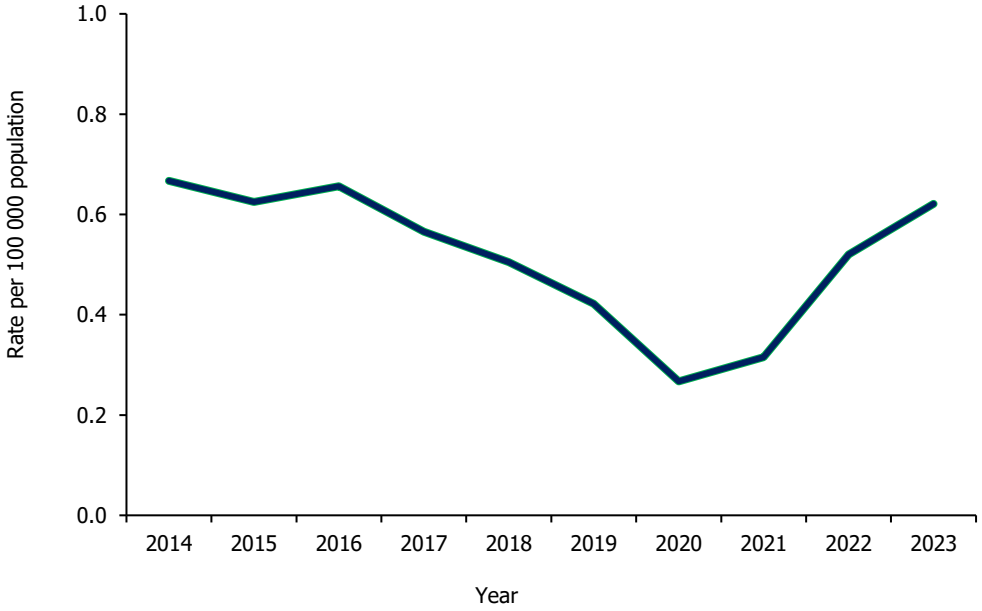
Source: Canabarro et al. [2].

Although the overall HBV prevalence among many countries in the EU/EEA is low, the burden of infection is high among various population groups, particularly among some migrant populations and people in prison [12]. A recent systematic review of studies across the EU/EEA reported estimates of prevalence among the following population groups: migrant populations 0.9–31.7%; men who have sex with men 2.3–4.3%; and people in prison 0.3–8.3%. HBV infection is less common than HCV infection among people who inject drugs, but is still much higher than in the general population, and the latest estimates of prevalence from the European Union Drug Agency range from 0.4% to 16.9% [13].

Acute hepatitis B notifications

For 2023, 30 EU/EEA Member States reported 37 766 newly diagnosed cases of HBV infection, of which 2 392 (6.3%) were classified as acute [14]. Among the 23 countries that consistently reported case surveillance data from 2014 to 2023, the notification rate for acute hepatitis B was stable between 2014 and 2016 and then decreased to the lowest notification rate of 0.3 cases per 100 000 in 2020 within this time period (Figure 2). This general downward trend in cases is in line with global trends and is likely related to the impact of widespread vaccination across EU/EEA countries. The steep decline observed in 2020 may be the result of a combination of changes in healthcare seeking behaviors and testing practices during the COVID-19 pandemic [14]. From 2020 to 2023, the notification rate increased for the first time since 2013. This rise in notifications could be attributed to the lifting of restrictions imposed during the pandemic, improved access to testing services, reporting factors, changes in migration and possibly higher transmission rates [14].

Figure 2. Acute hepatitis B notification rates per 100 000 population by year in EU/EEA countries with consistent reporting, 2014–2023



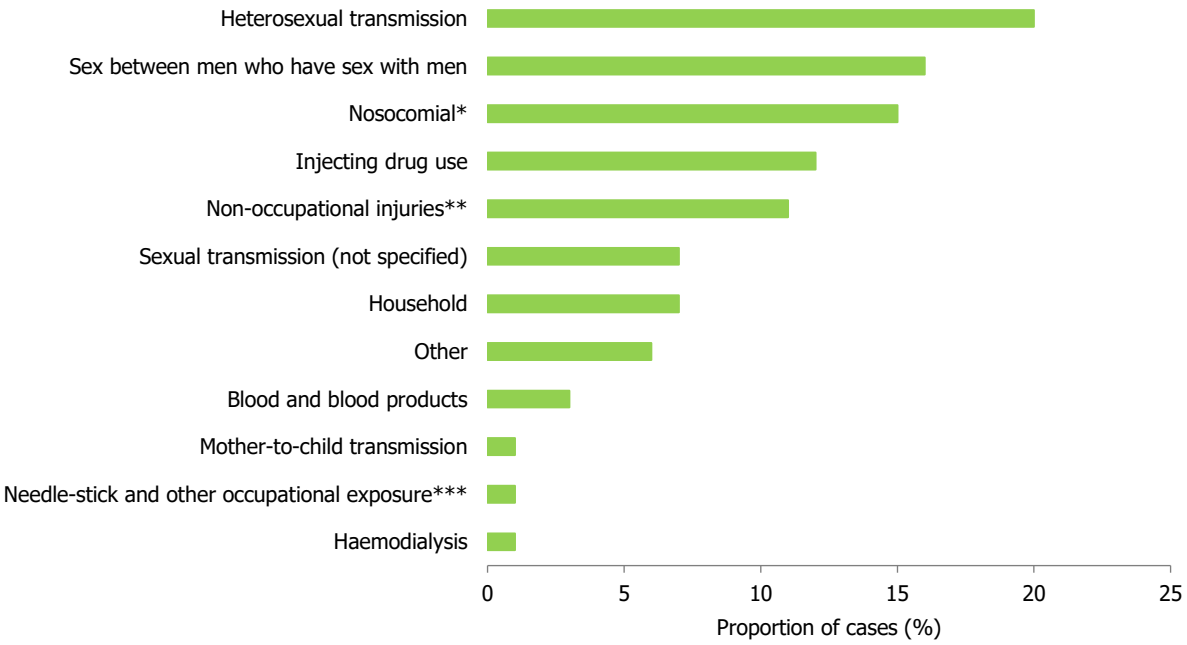
Source: ECDC, 2025 [14].

Route of transmission

HBV has multiple routes of transmission, including sexual transmission, mother-to-child transmission, nosocomial transmission and transmission through injecting drug use.

It is important to know the most common current routes of transmission and which populations are at high risk of infection, to understand where to focus interventions to prevent future transmission. In 2023, data on the transmission routes of acute HBV were only available for 24% of cases (567) across 21 countries, making interpreting the data challenging [14]. The most reported transmission routes included heterosexual contact (18.0%), followed by nosocomial transmission (16.0%), transmission via injecting drug use (15.0%), and transmission among men who have sex with men (14.7%) (Figure 3).

Figure 3. Transmission category of acute HBV and proportion of cases reported with known transmission route in the EU/EEA, 2023 (n=21)



** 'Nosocomial transmission' includes hospitals, nursing homes, psychiatric institutions and dental services. This category refers mainly to patients exposed through healthcare settings.*
*** 'Non-occupational injuries' include needle sticks that occur outside a healthcare setting, bites, tattoos and piercings.*
**** 'Needle-stick and other occupational exposure' refers to occupational injuries.*
Source: ECDC, 2025 [14].

Mother-to-child transmission was rare for acute cases (1%), but still significant for chronic cases (41%) [12]. The vast majority (91%) of these mother-to-child transmission cases were imported from outside the reporting country, although data on importation status are incomplete.

2025 Interim target:
95% coverage (3rd dose) of childhood hepatitis B vaccination.

HBV vaccination

National vaccination policy

In the EU/EEA, 27 countries recommend universal childhood vaccination against hepatitis B and three countries do not provide universal HBV vaccination (Denmark, Finland and Iceland) (Table 1) [15].

WHO recommends that infants should receive their first dose of hepatitis B vaccine as soon as possible after birth, preferably within 24 hours [6]. However, within the EU/EEA, most countries have implemented different vaccination strategies around the birth dose to reduce the risk of mother-to-child transmission, including universal birth vaccination or antenatal screening combined with post-exposure prophylaxis that includes targeted HBV vaccination for infants born to mothers with an HBV infection. Currently, only five countries in Europe provide a universal birth dose of the HBV vaccine (Bulgaria, Lithuania, Poland, Portugal and Romania).

Table 1. National immunisation schedules related to hepatitis B for EU/EEA countries, 2025

Country	Universal birth dose of HBV vaccine (delivered to babies within 24 hours of birth)	Targeted birth dose of HBV vaccine (babies born to HBV positive mothers)	Universal HBV vaccination (delivered to infants)	Universal HBV vaccination (delivered to adolescents)
Austria				
Belgium				
Bulgaria				
Croatia				
Cyprus				
Czechia				
Denmark				
Estonia				
Finland				
France				
Germany				
Greece				
Hungary				
Iceland				
Ireland				
Italy				
Latvia				
Liechtenstein				
Lithuania				
Luxembourg				
Malta				
Netherlands				
Norway				
Poland				
Portugal				
Romania				
Slovakia				
Slovenia				
Spain				
Sweden				

Vaccine included in national schedule

Vaccine not included in national schedule

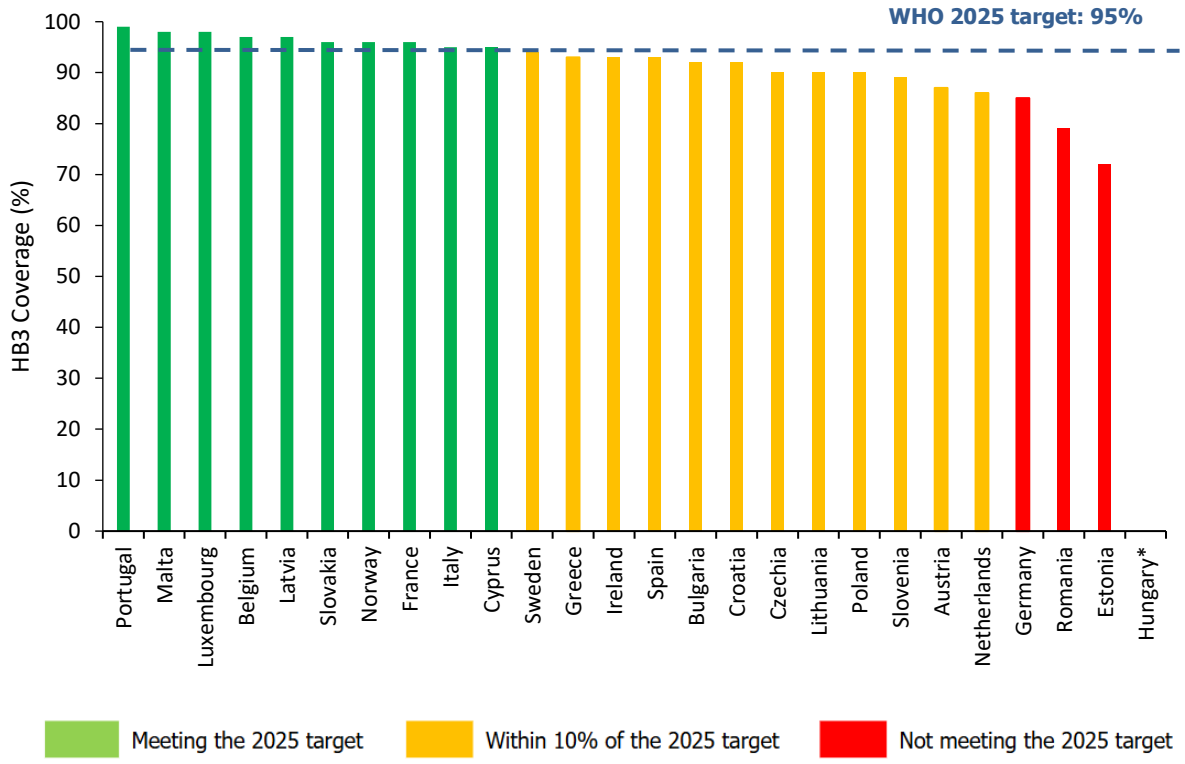
Source: ECDC Vaccine Scheduler [15].

National childhood vaccination

Coverage of three doses of HBV vaccine in children

Data on three-dose hepatitis B vaccination coverage in 2023 were available for 25 countries from WHO[16]. Coverage ranged from 72% in Estonia to 99% in Portugal (Figure 4). Among the 25 countries, 10 countries (40%) are currently meeting the 2025 interim target of 95% coverage and 12 countries (48%) are within 10% of the target. Three countries (12%) reported coverage at/below 85%.

Figure 4. Coverage (%) of three doses of hepatitis B vaccine in EU/EEA countries that implement universal childhood HBV vaccination, 2023†.



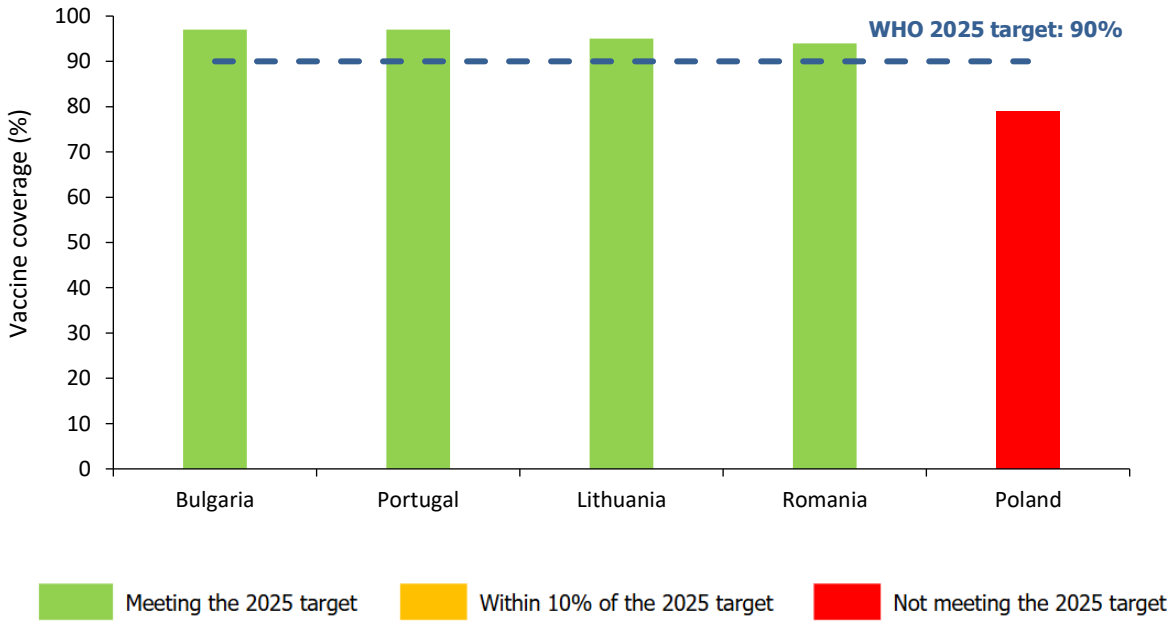
†Denmark, Iceland and Finland do not implement universal HBV vaccination.
** Hungary has a universal vaccination programme targeting school-aged children and WHO/UNICEF data on coverage for the three doses of the vaccine are not available.*
Source: WHO coverage estimates - official source used where available (as of 06.02.2026) [16].

When comparing vaccination coverage data from 2023 with data from previous years, some countries reported a decline in coverage of the three doses of HBV vaccine given during infancy between 2019 to 2023. Two countries, (Estonia and Romania) saw major falls in coverage over this period. Estonia's coverage dropped from 91% in 2019 to 72% in 2023. In Romania coverage fell from 90% to 79% over the same period. A smaller decline in coverage from 92% to 86% was seen in the Netherlands. Some of this fall in coverage could be an after-effect from the COVID-19 pandemic, where reductions in vaccination coverage were reported for many pathogens from several European countries due to disruptions in services [17]. However, increased parental hesitancy due to vaccine misinformation may also have further negatively impacted vaccination rates in recent years [17].

Coverage of timely provision of HBV vaccine at birth

Among the five countries in the EU/EEA that have implemented a universal birth dose of the HBV vaccine, reported coverage for the birth dose given within 24 hours from these countries in 2023 ranged from 93% in Poland to 97% in Bulgaria and Portugal, with all countries reporting over 90% coverage and meeting the WHO 2025 interim target (Figure 5).

Figure 5. Coverage of birth dose vaccine in EU/EEA countries that implement universal newborn vaccination, 2022



Source: WHO coverage estimates (as of 06.02.2026) [16].

Vaccination of key populations

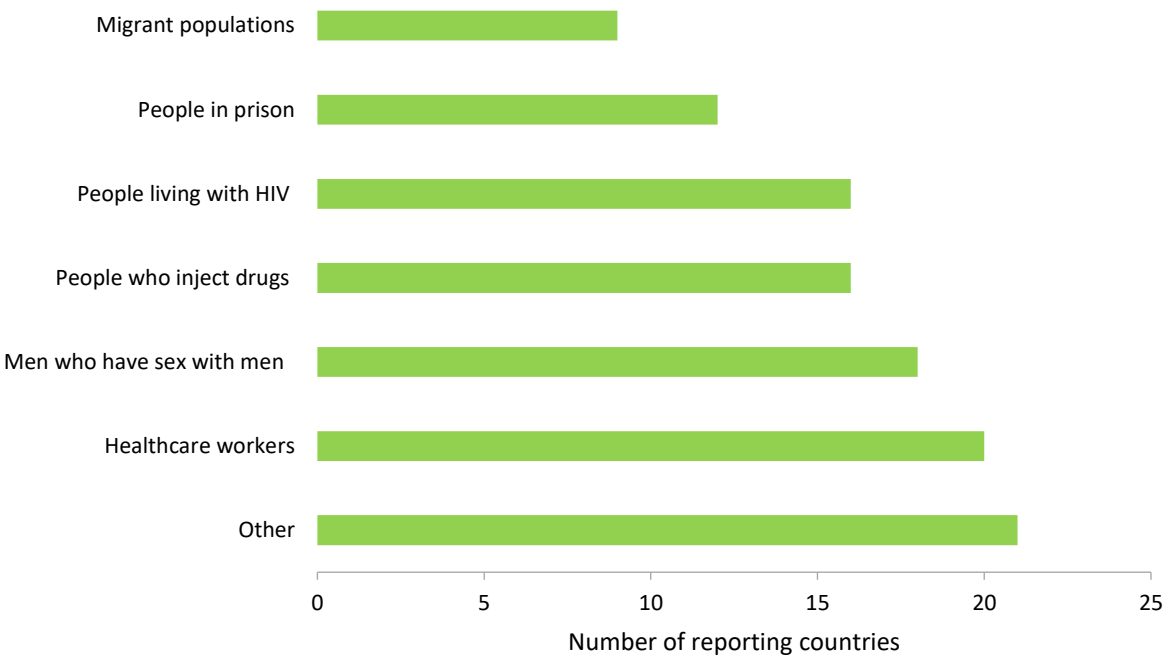
In most European countries, the prevalence of HBV infection is high among certain populations, including people who inject drugs, individuals in prison, men who have sex with men, and in some migrant populations [2, 18].

WHO recommends targeting specific groups for vaccination to reduce the disease burden from HBV disease and improve vaccination coverage among these groups [6, 19]. Recommendations to improve vaccination coverage among groups at high risk of infection are also specified by the Council Recommendations on vaccine-preventable cancers recently adopted by the European Commission [10].

In the 2023 data collection, 29 countries provided information to ECDC on targeted vaccination policies for groups at high risk of infection [19]. Twenty countries (69%) have policies targeting healthcare workers, 18 countries (62%) for men who have sex with men, and 16 countries (55%) for people who inject drugs (Figure 6). Of the reporting countries, 12 countries (41%) had vaccination policies for people in prisons and only nine countries (31%) had policies for vaccinating migrant populations. However, three countries that did not list 'migrants' as a key population group mentioned in the 'other' category that migrants from high endemicity areas were included.

Twenty-one countries reported 'other' and most frequently mentioned were: people who live in a household with a person with HBV infection (seven countries), people receiving haemodialysis or other medical indications, including infection with HCV (eight countries) and sex workers (four countries).

Figure 6. Number of countries with a national policy for HBV vaccination for key populations, EU/EEA (n=29*)

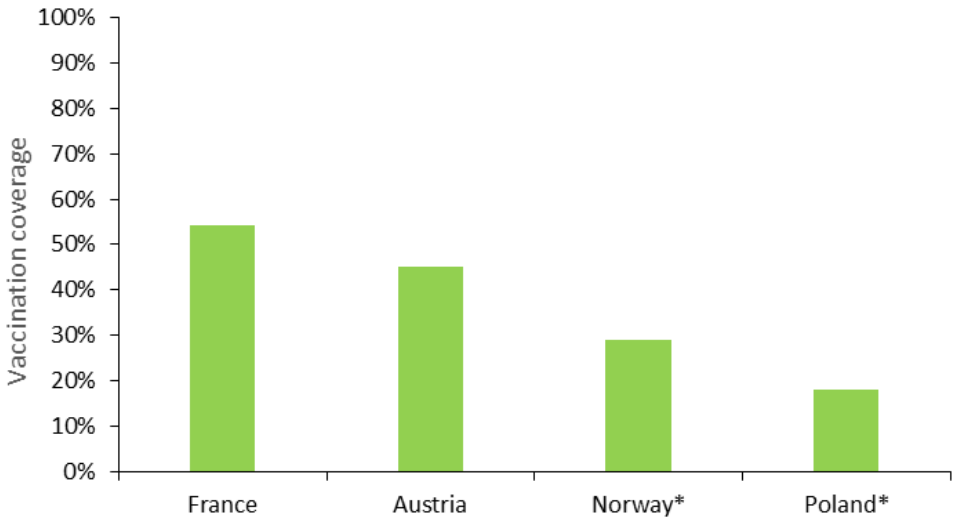


** No data reported from Portugal*
Data for healthcare workers includes countries who reported vaccination mandatory/offered to all healthcare workers
Source: ECDC, 2024 [18].

HBV vaccination of people who inject drugs

HBV vaccination is recommended as part of a comprehensive package of harm reduction services for all people who inject drugs [9, 20]. Only four countries were able to provide data to ECDC during the last monitoring data collection on HBV vaccination coverage among this group (Figure 7). The reported data mostly came from small self-reported surveys, with coverage rates ranging from 54% in France to 18% in Poland.

Figure 7. HBV vaccination coverage for people who inject drugs, EU/EEA, 2023 (n=4)



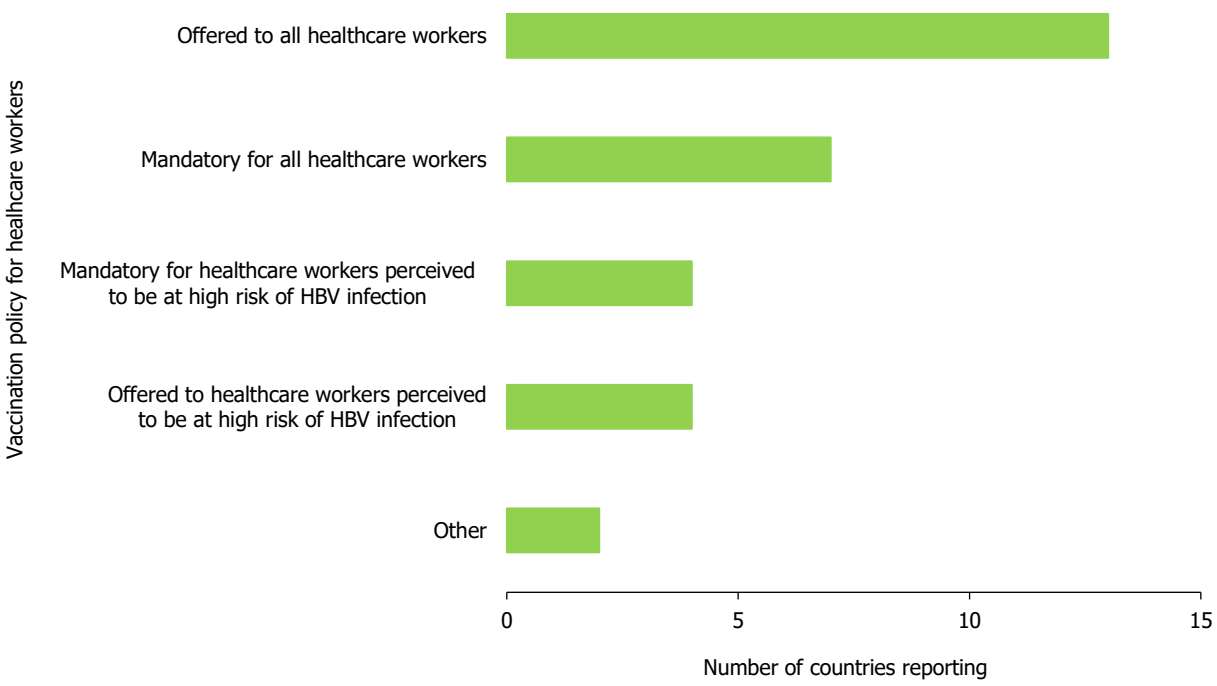
** City-level data (Norway – Oslo; Poland - Chorzów, Warszawa and Wrocław relating to people who inject drugs born prior to the implementation of the national childhood vaccination programme in 1986).*
Source: ECDC, 2024 [18].

HBV vaccination of healthcare workers

Healthcare workers in specific healthcare areas may be at high risk of exposure to some infections, including hepatitis B and C. Vaccinating healthcare workers is critical for protecting them against infection and preventing future transmission of infections. Furthermore, healthcare workers who are vaccinated are more likely to understand and promote vaccination, which can boost public confidence and vaccination rates. Indeed, studies show that recommendations from healthcare workers can significantly increase vaccination uptake [21].

Of the 29 countries that reported information around vaccination of healthcare workers to ECDC in 2023, all reported that they have some kind of HBV vaccination policy that include healthcare workers. Whilst 13 countries reported HBV vaccination was offered to all healthcare workers, only seven countries reported that the vaccine was mandatory for all, with four countries reporting that vaccination was only mandatory for healthcare workers who were considered to be at high risk of contracting HBV (Figure 8).

Figure 8. HBV vaccination policy for healthcare workers (n=29*)



** No data reported form Portugal*
NB. Categories are mutually exclusive. Countries were asked to indicate if the vaccination policy was for all healthcare workers or just those considered to be at high risk and whether vaccination was offered or whether it was mandatory.
Source: ECDC, 2024 [18].

Five countries (Czechia, Germany, Greece, Romania and Slovenia) reported national estimates of hepatitis B vaccination coverage among eligible healthcare workers, which ranged from 20%–100% [18].

HBV vaccination of men who have sex with men

Data on HBV vaccination among men who have sex with men are collected through the European Men who have sex with men Internet Survey (EMIS) [22]. The last survey was conducted in 2024 and data on coverage are available by country and disaggregated by age group (all ages, under 25 years, 25 years and older). For all ages, coverage varied across countries from 18% to 70%. Vaccine coverage of respondents under 25 years of age was lower than coverage for older age groups.

HBV vaccination related to the prevention of mother-to-child transmission of HBV

To prevent mother-to-child transmission, WHO recommends comprehensive programmes including universal antenatal screening combined with several interventions for the mother and baby. These include timely newborn vaccination and post-exposure prophylaxis if indicated (hepatitis B immunoglobulin). Programmes preventing mother-to-child transmission of HBV infection and scaling-up vaccination coverage worldwide have been shown to correspond to a decline in HBV prevalence [23].

All countries in the region provide antenatal screening for HBV among pregnant women. The burden of HBV among pregnant women screened in EU/EEA countries is low based on data reported to ECDC. In 2023, data from 10 countries showed estimates of Hepatitis B Surface Antigen (HBsAg) ranging from 0.07% (Slovakia) to 0.9% (Poland) [18]. Based on cases of acute infection reported to ECDC with information on route of transmission, mother-to-child transmission is rarely reported as a possible transmission route, accounting for less than 1% of acute infections in 2023 [14]. Whilst data are incomplete, based on available data mother-to-child transmission continues to be one of the most common routes of transmission reported for newly diagnosed chronic infections in the EU/EEA, accounting for 41% in 2023. However, of the chronic cases attributed to mother-to-child transmission, over 90% were classified as being imported indicating transmission occurred outside the reporting country.

Data availability in the EU/EEA on the estimated rate of mother-to-child transmission of HBV infections are very limited. Only five countries who reported data in 2023 were able to provide national-level data from within the last five years and the rates reported were low, with national mother-to-child transmission rates ranging from 0–1.8% (Table 2).

Table 2. National rates of vertical transmission of hepatitis B virus in five countries in the EU/EEA

Country	Rate of vertical HBV transmission (%)	Year of data collection
Denmark	0	2022
Greece	0	2022
Hungary	0	2022
Netherlands	0	2020-2021
Slovakia	1.8	2021

Source: ECDC, 2024 [18].

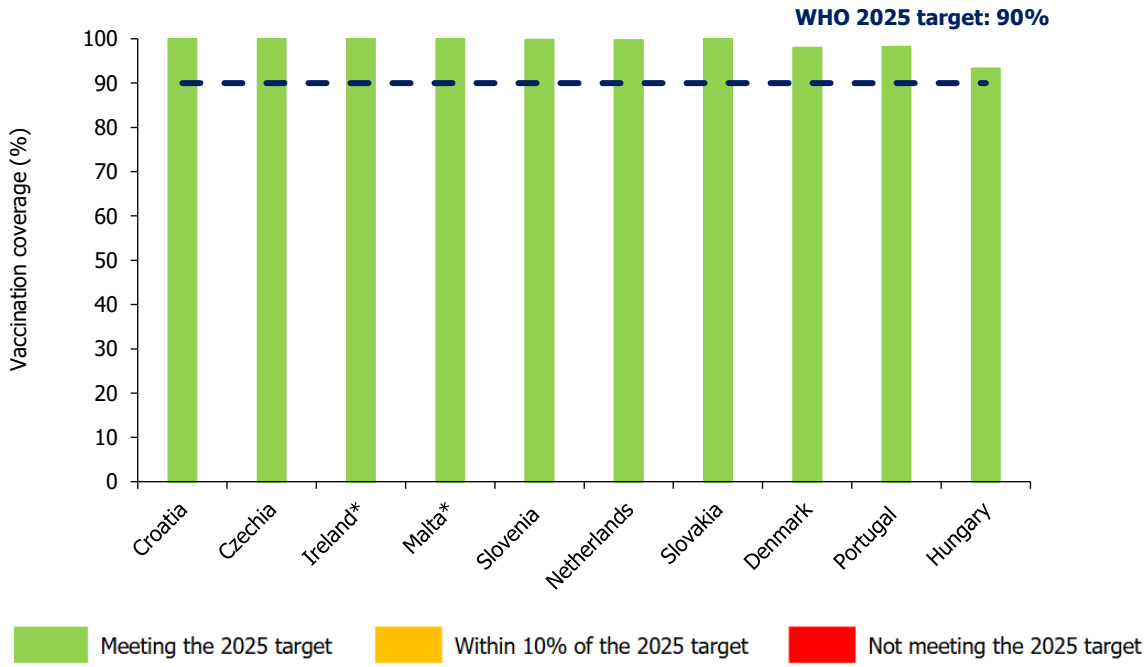
Whilst the burden of HBV infection among pregnant women is low and data suggests mother-to-child transmission in the region occurs infrequently, robust implementation of measures to prevent mother-to-child transmission remains essential as infants who become infected are at high risk of developing chronic HBV.

2025 Interim target:
90% coverage with timely (within 24 hours of birth) HBV birth dose vaccination

In 2023, all countries reported that there was a policy on post-exposure prophylaxis for children born to mothers who have HBV [18]. Of the 30 EU/EEA countries, all reported that their policies for children born to mothers who were positive for HBV included a birth dose of the hepatitis B vaccine, followed by two to three doses, as per the childhood vaccination schedule. Twenty-nine of the 30 countries (97%) reported a policy for hepatitis B immunoglobulin and 23 (77%) reported an antiviral treatment policy for mothers identified with an HBV infection.

While all countries reported policies on post-exposure prophylaxis for infants born to mothers who have HBV, only ten were able to provide data on targeted birth dose vaccination coverage (Figure 9). Seven of the ten countries reported 100% coverage, while the other three countries reported 93% (Hungary) and 98% (Denmark and Portugal).

Figure 9. Coverage of birth dose vaccine for infants born to mothers who have HBV in EU/EEA countries, 2022



**Clinic-level data.*
Source: ECDC, 2024 [18].

Conclusions and recommendations

Key conclusions

Vaccination is a critical component of prevention efforts for hepatitis B, and the inclusion of HBV vaccination within national immunisation programmes is important for preventing future disease caused by chronic HBV infection, including liver cancer [9]. Countries across the region have implemented a range of vaccination programmes over several decades and a major outcome of these programmes has been the steady reduction in transmission of hepatitis B infection within EU/EEA countries to low levels based on data on acute hepatitis B notifications. However, the recent increase in reported cases of acute hepatitis B infection is concerning, and whilst the true cause of this increase remains undetermined, this reversal of previous trends highlights the importance of countries maintaining immunisation programmes and ensuring high vaccination coverage.

Most European countries have adopted a universal HBV vaccination programme, although there are national differences in the schedules used. Whilst these programmes have now been in place for decades in many countries, in 2023, less than half of the reporting countries in the EU/EEA met the WHO interim target for 2025 of having 95% coverage with three doses of the childhood hepatitis B vaccine. A few countries have experienced declining vaccination coverage in recent years, which could be an impact of the COVID-19 pandemic that resulted in disruption to many services and rising levels of vaccine hesitancy. Countries with low coverage should develop tailored strategies driven by a careful multi-stakeholder assessment of the local situation that takes into consideration any barriers to vaccination and the needs of the local population to strengthen vaccination programmes and increase coverage.

For HBV vaccination of populations at high risk of infection, including people who inject drugs, men who have sex with men and people in prison, the lack of data is a challenge to understanding gaps in coverage. Nevertheless, the results suggest that most countries in the EU/EEA are not managing to adequately vaccinate these populations. Indeed, just over a half of all countries reported policies for vaccinating people who inject drugs and whilst data are lacking, HBV vaccination coverage among people who inject drugs appears to be sub-optimal, indicating missed opportunities for vaccination and highlighting the need for strengthening vaccination strategies to better protect this population. This is a priority given that people who inject drugs are also affected by other factors including coinfections with HIV and HCV, together with alcohol use, and these co-factors may increase their risk of disease progression and the risk of developing HCC if they are infected with HBV [24]. Although vaccination of people in prison is recommended by WHO as a prevention measure against hepatitis B, many countries do not have policies for vaccinating this population and coverage data are lacking to monitor the situation. ECDC and the European Union Drugs Agency (EUDA) recently published an online toolkit to support countries in their efforts to scale up services in prison settings in relation to hepatitis elimination. The toolkit includes practical information and a model of care related to scaling up vaccination and includes information on implementation barriers and solutions.

All countries across the region have programmes to prevent mother-to-child transmission, including universal antenatal screening and a number of interventions for the mother and baby, including timely newborn vaccination and post-exposure prophylaxis if indicated. Data from antenatal screening programmes indicate a low burden of infection among women who have been screened, and programmatic and surveillance data show that mother-to-child transmission across countries in the region is low. Of the 30 EU/EEA countries, all reported that their policies included universal or targeted birth dose of the hepatitis B vaccine for children born to mothers who are positive for HBV, followed by two to three doses, as per the childhood vaccination schedule. All but one country reported a policy for hepatitis B immunoglobulin and around three-quarters of the countries with data reported 100% coverage with targeted birth dose.

Recommendations

General

- HBV vaccination programmes and programmes targeting prevention of mother-to-child transmission of HBV to minimise the number of infections occurring in infants are key elements for HBV prevention efforts in countries. A focus on achievement of the WHO elimination targets related to HBV vaccination among children and the prevention of mother-to-child transmission are therefore important priorities for countries in their efforts to prevent and control hepatitis B.
- Countries with sub-optimal vaccination coverage in the general population or within specific population groups should explore data in depth and assess the factors that may affect this low coverage, such as public perception toward vaccination, local vaccination policies and costs to the individual. These data should be used to develop tailored communication and vaccination strategies.
- Although current transmission of HBV is at a low level across the EU as a result of vaccination programmes, recent data indicate an increase in reported cases of acute HBV infection which may reflect increasing

transmission. However, there remain individuals who are unvaccinated and who may be at high risk of infection, and countries should consider adopting a life-long approach to vaccination and explore local epidemiological data to identify which groups should be prioritised for vaccination. Issues of data availability persist, especially around vaccination coverage of key priority groups, and there is a need for countries to invest in improvements to immunisation information systems that can effectively monitor vaccination programmes and are able to identify the people who are not vaccinated. With continued and sustained migrant flows and ongoing transmission in EU countries among key population groups including people who inject drugs, people in prison and men who have sex with men, targeted HBV vaccination among vulnerable populations will remain a public health challenge and necessity in the coming years.

- Adapting vaccination services to the needs of different population groups means continuous efforts to understand their needs and identify any barriers that may impede uptake e.g. discrimination, financial costs or administrative issues.
- There is a wealth of valuable tools and information that have been collated across the region related to vaccination e.g. the ECDC EUDA prison toolkit and materials from the RISE-VACC project related to vaccination in prisons, that can be used and adapted at the local level to support work to improve vaccination coverage.

Improve data for monitoring

- Ongoing monitoring of progress towards the elimination targets remains important at the national and regional level for tracking progress and ensuring stakeholders have the necessary information to guide public health actions. ECDC encourages countries to submit the necessary information for monitoring hepatitis B targets. ECDC remains available to work with partners, including WHO, to support EU/EEA countries in their data collection and reporting.
- National work around monitoring and validation of progress towards elimination needs to involve a range of stakeholders and this collaboration is important to help align activities and bring additional momentum towards achieving the elimination targets.
- Many countries still lack comprehensive data collection systems and this should be addressed for countries to assess intervention coverage and gaps, and inform effective planning of vaccination programs, including those targeting key populations.

Communications

- HBV vaccines are provided to a range of population groups and it is important that different approaches are used to communicate messages effectively [10].
- People's confidence in vaccination decreased during the pandemic and it was difficult to differentiate between accurate and false information [25]. An evidence-based approach towards communication is needed, to strengthen efforts to address vaccine hesitancy through tailored strategies addressing any barriers, strong community engagement and active communication and education campaigns to address misinformation [25].

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