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A 2024 global report on national policy, programmes, and progress towards hepatitis B elimination: findings from 33 hepatitis elimination profiles

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LH-S and JWW conceptualised the project and developed the project method. LH-S, JM, and JWW collected data for the analysis. RAT, MB, LAK, CWS, NP-S, JVL, and IW, along with all the contributors from the National Hepatitis Elimination Profile collaborator group, reviewed and validated the data collected. LH-S, JM, and VT analysed data for manuscript preparation. LH-S wrote the draft of the Health Policy, with initial review from JWW. LH-S, JM, and VT prepared data tables and figures. RAT, MB, LAK, WS, NP-S, JVL, and IW provided critical and substantial feedback on the draft manuscript. LH-S and JM reviewed feedback from coauthors. LH-S and JWW revised the manuscript. All authors had full access to all the data in the study (if they wished) and had final responsibility for the decision to submit for publication.

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Abstract

The Coalition for Global Hepatitis Elimination's National Hepatitis Elimination Profiles assess the status of national data, policy, and programme development the elimination of viral hepatitis. Profiles from 33 countries and territories show progress, towards elimination of hepatitis B with 24 (73%) of them meeting the 2025 WHO interim target of 0.5% or less HBsAg prevalence in children younger than 5 years. 22 (67%) of countries and territories profiled have policies for universal hepatitis B birth-dose vaccination of newborns. Access to hepatitis B testing and treatment, including removing HBsAg screening and hepatitis B treatment patient co-payments and simplifying treatment algorithms, remains suboptimal, especially in low-income and middle-income countries and territories. Of the seven profiled countries and territories meeting the 60% WHO 2025 diagnosis coverage target, all but one (Rwanda) is a high-income country or territory. No country or territory has met the WHO 2025 treatment target of at least 50% of people living with hepatitis B receiving treatment. The profiles guide national planning and identify priorities for resource mobilisation to further accelerate hepatitis B elimination.

Introduction

In 2022, WHO estimated that 254 million people were living with hepatitis B worldwide, with 1.1 million hepatitis B-related deaths and 1.2 million new hepatitis B virus (HBV) infections.¹ In 2016, the World Health Assembly unanimously adopted the resolution that HBV and hepatitis C virus infections should be eliminated as global health threats by 2030. In response, WHO published the Global Health Sector Strategy in 2016, defining hepatitis B and hepatitis C elimination as a 90% reduction in incidence and a 65% reduction in mortality from 2015 to 2030.² In 2023, WHO finalised a guidance framework for countries and other stakeholders seeking validation of elimination of hepatitis B and hepatitis C. The guidance recommends the use of absolute rates of incidence and mortality as health outcome goals to validate elimination at the national level (instead of, but still equivalent to, the relative reduction targets originally defined in the 2016 Global Health Sector Strategy), in combination with a set of programmatic targets for coverage with hepatitis B testing, treatment, vaccination, and other prevention measures.^{3,4} To further support monitoring of

progress towards the 2030 goals, WHO set 2025 interim targets for incidence and mortality and coverage of key interventions, including hepatitis B vaccination, prevention of vertical transmission, injection safety, blood safety, harm reduction, testing, and treatment.⁵ As a complementary goal, the UN Sustainable Development Goals included hepatitis B incidence per 100 000 population as an indicator for target 3.3, which was aligned to reducing HBsAg prevalence among children younger than 5 years to less than 1% by 2020, and less than 0.1% by 2030.^{2,6}

To assess the status of national data, policy, and programme development for hepatitis B elimination, the Coalition for Global Hepatitis Elimination (CGHE) began to develop hepatitis elimination profiles in 2021. This Health Policy brings together data from the profiles for 33 countries and territories regarding the burden of hepatitis B, status of policy and programme development, and progress towards the WHO elimination goals as of 2024.

Methods

Process for developing a National Hepatitis Elimination Profile

CGHE staff (LH-S and JWW), in consultation with the CGHE Technical Advisory Board, developed a standard data template (appendix p 2) to collect data on key epidemiological and service delivery indicators and 22 hepatitis B-related policies (panel 1; appendix pp 2–6). Indicators were compiled from a review of a WHO checklist (unpublished) for alignment of national hepatitis plans with the Global Health Sector Strategy on viral hepatitis 2016–2021, the 2019 Lancet Gastroenterology & Hepatology Commission on viral hepatitis elimination,⁸ the World Hepatitis Alliance's Viral Hepatitis: Global Policy report,⁹ and a Pan American Health Organization spotlight on hepatitis B and C.¹⁰ Select policies from the published profiles were excluded from our analysis to help focus the discussion, for clarity, and for length considerations.

Data templates for each country and territory were completed by CGHE staff based on a review of publicly available literature published from Jan 1, 2010, to the date of the profile release. Sources of publicly available data reviewed included government action plans, programme progress reports, surveillance reports, and peer-reviewed literature across all languages identified in PubMed and Google search engine reports (appendix p 7). Additional sources of data included WHO and UNICEF immunisation dashboards;¹¹ WHO Global Health Observatory data dashboards;¹² Institute of Health Metrics and Evaluation Global Burden of Disease study for 2019 and 2021;¹³ regional reports, such as those from the Pan American Health Organization and European Centre for Disease Prevention and Control;^{14–16} the Georgetown HIV Policy Lab; Clinton Health Access Initiative Market Reports; and the Center for Disease Analysis Foundation dashboards. When data were available for multiple years, data for the most recent year were used. Data sources in all languages were included, where possible, and translated into English by CGHE staff who were fluent in the original language or used Google Translate. To minimise subjectivity, definitions for policy indicators were provided.

The data collection template was shared via email and virtual interviews with at least three stakeholders, when possible, from the country or territory for feedback on the accuracy

and completeness of the data. Local stakeholders included ministry of health officials, clinicians, and members of civil society organisations. All stakeholders had professional roles related to hepatitis prevention, testing, or treatment or had lived experience (appendix pp 8–18). Stakeholders were identified through CGHE’s network of partners, including recommendations from global health organisations (eg, WHO and the Pan American Health Organization), liver disease professional associations (eg, the American Association for the Study of Liver Diseases, the European Association for the Study of the Liver, the Asian Pacific Association for the Study of the Liver, and the Latin American Association for the Study of the Liver), and global patient organisations (eg, the World Hepatitis Alliance and the European Liver Patients’ Association). National ministries of health of each country and territory were also invited to propose clinicians and representatives from civil society organisations as local collaborators. First drafts of National Hepatitis Elimination Profiles were developed by a graphic designer using the revised data templates after feedback from the local stakeholders. Stakeholders for each country and territory then provided further feedback on the overall draft profile; multiple rounds of revisions were coordinated between CGHE and the stakeholders until consensus was reached, which was confirmed via a written sign-off by stakeholders. In all but three profiled countries (the Philippines, Senegal, and Switzerland), profile data were reviewed by officials in national ministries of health or their designated partners. To resolve differences in opinion across partners, the preferences of the health ministry (the data deemed most representative of the jurisdiction) were prioritised. In cases where there were no ministry officials, consensus was reached between the other stakeholders by either showing a range of quantitative data or providing additional context on the policy status that represents the viewpoint of both stakeholders. The final profiles include citations for presented data.

The first four profiles were published on July 28, 2021, and five to ten new profiles have been published each year subsequently. Beginning on July 1, 2024, until Sept 30, 2024, elimination profiles were updated with new local data (eg, government reports, websites, or unpublished data shared with CGHE) or peer-reviewed publications published since the profile’s initial release, and data from the 2024 WHO Global Hepatitis Report,¹ as available.

Selection and classification of countries and territories

Profiles were prioritised for countries and territories with the highest hepatitis B and C burden, considered together, in the six WHO regions. The list was adjusted to align with The Lancet Gastroenterology & Hepatology Commission on accelerating the elimination of viral hepatitis country list,¹⁷ which included the 20 countries and territories most heavily burdened by viral hepatitis. Profiles for the Commission countries of Democratic Republic of Congo, India, and Russia were not completed in time for inclusion in this analysis.⁸ Additional country profiles were developed based on requests from ministries of health and other partners. CGHE, in collaboration with partners, have developed hepatitis elimination profiles for 33 countries and territories, representing an estimated 65% of people living with hepatitis B globally (figure 1).¹²

Based on World Bank income criteria for the 2025 fiscal year, countries and territories were grouped into three income categories: high-income countries and territories (HICs),

upper-middle-income countries and territories (UMICs), and low-income and lower-middle-income countries and territories (LLMICs).¹⁸ HICs (n=11) comprise Australia, Canada, England (assumed from the UK classification), Italy, Japan, Portugal, South Korea, Spain, Switzerland, Taiwan, and the USA. UMICs (n=11) comprise Argentina, Brazil, China, Colombia, Georgia, Indonesia, Mexico, Peru, South Africa, Thailand, and Ukraine. LLMICs (n=11) comprise Bangladesh, Egypt, Ethiopia (low income), Ghana, Myanmar, Nigeria, Pakistan, the Philippines, Rwanda (low income), Senegal, and Viet Nam.

Analysis of policy data

The proportion of countries and territories adopting key policies is described across seven categories: hepatitis B national planning, hepatitis B strategic information, prevention of hepatitis B vertical transmission, access to hepatitis B screening, access to hepatitis B treatment, equity in access to hepatitis B prevention and care services among disproportionately affected populations, and hepatitis B financing (panel 1; appendix pp 2–6). The significance of differences in policy adoption across country income levels was assessed at the 95% confidence level for each policy with Pearson's χ^2 test. When assessing significant differences, a composite variable of any expanded screening policy, including age-based, birth-cohort, or other special group or a universal screening policy was compared to no expanded policy. p values less than 0.05 were considered significant.

Across the policies (panel 1), countries and territories were given a score of 0 for no policy, 0.5 for a partially adopted policy, and 1 for an adopted policy. Definitions of adopted, partially adopted, and not adopted for each policy indicator can be found in the appendix (pp 2–6). For example, for the indicator of expanded screening guidelines, countries were given a score of 1 if they adopted an age-based, birth cohort, or a universal screening policy, a score of 0.5 for such a policy having been developed but not yet implemented, and a score of 0 if there were no other screening recommendations beyond risk-based screening. The policy on whether funds from The Global Fund to Fight AIDS, Tuberculosis and Malaria were used to support hepatitis B initiatives was excluded from the scoring as not all countries and territories are eligible for funding. Therefore, the maximum possible policy score was 21. For individual policy categories and the overall policy score, means and standard deviation across the three income classifications were reported and tests of mean differences performed. Policy scores for each category and overall total score were first assessed for normality with the Shapiro–Wilk test. For policy categories with an estimated normal distribution, ANOVA was used. For policy categories with estimated non-parametric distributions, including national planning, prevention of vertical transmission, access to treatment, equity, financing, and the total score, the non-parametric Kruskal–Wallis test was used. Significance testing was estimated at the 95% confidence level.

Recommendations for priority next steps suggested by profile stakeholders are highlighted at the end of each profile. To examine associations between country and territory income level and types of recommendations prioritised, Pearson's χ^2 tests were performed at the 95% confidence level.

Assessment of progress towards hepatitis B elimination

Based on epidemiological and programme data from the profiles, progress towards the WHO 2025 (interim) and 2030 (final) targets for hepatitis B elimination was assessed (panel 2).⁵ For this analysis, rates of hepatitis B vaccination, and diagnosis, treatment, and related deaths were evaluated; incidence, blood safety, and injection safety targets were not evaluated. Achievement of the combined hepatitis B and hepatitis C mortality 2030 target was not assessed, as this was not a standard profile indicator collected, and there was no available global data source. The significance of differences in achievement of WHO 2025 targets across country income levels was assessed at the 95% confidence level using Pearson's χ^2 test.

For validation of hepatitis B elimination of vertical transmission, countries and territories with universal hepatitis B birth-dose (HepB-BD) vaccination must meet an impact target of a HBsAg prevalence of 0·1% or less among children 5 years and younger and an intervention target of 90% coverage of both HepB-BD vaccination and three-dose hepatitis B vaccination for 2 years consecutively. Data on additional indicators, including a HBV vertical transmission rate of 2% or less, 90% antenatal screening coverage, and 90% antiviral prophylaxis coverage, were not available to assess potential eligibility for full elimination of vertical transmission among countries without universal HepB-BD vaccination.

In addition, countries and territories were compared with the criteria for validation of full elimination and the gold, silver, and bronze tiers of WHO's path to elimination of both vertical transmission and hepatitis B as a public health problem (panel 2).⁴ Only countries with a high burden of hepatitis B, defined by a general population HBsAg prevalence greater than 5% or a prevalence of more than 1% in children 5 years or younger, are eligible for the vertical transmission path to elimination criteria.⁴ Antenatal hepatitis B screening coverage data were not available; thus, the gold tier indications are suggestive, pending confirmation of this data. WHO have a formal process for countries to apply to be validated for elimination or to reach any tier. Our estimations are only suggestive based on available data.

Results

All 33 hepatitis elimination profiles are available at the CGHE website.

Hepatitis B national planning

As of July 1, 2024, of the 33 countries and territories, 25 (76%) have national action plans that include hepatitis B. 26 (79%) countries and territories have set goals for hepatitis B elimination and 23 (70%) have set goals for elimination of hepatitis B vertical transmission (table 1; appendix pp 16–18).

Hepatitis B strategic information to guide policy development

Mortality and incidence: Rates of hepatitis B-related mortality varied widely from 0·07 deaths per 100 000 people in Argentina in 2018 to 41·96 deaths per 100 000 people in Ghana

in 2022 (table 2). 12 (36%) countries and territories reported official surveillance systems collecting data to monitor hepatitis B-related mortality. 18 (55%) countries and territories reported official systems to estimate the number of incident hepatitis B cases (table 1; appendix pp 16–18).

Prevalence: To monitor HBsAg prevalence, 17 (52%) of 33 countries and territories had data from a serological survey or other empirical estimation from the past 5 years (table 1). Across countries and territories, the prevalence of HBsAg ranged from 0.09% in Mexico in 2022 to 9.00% in Ghana in 2022 and Taiwan in 2016, with 15 countries and territories reporting a general population HBsAg prevalence of greater than 2% (table 2).

Testing and treatment registries: Nine (27%) countries and territories reported having a registry system to track trends in hepatitis B testing and treatment, and 15 (45%) countries and territories reported being in the process of developing a hepatitis B testing and treatment registry (table 1; appendix pp 16–18). Of the nine countries and territories with registries, four (44%) reported HBV testing data and seven (78%) reported HBV treatment data prior to the availability of the WHO Global Hepatitis Report. Following the release of WHO's 2024 Global Hepatitis Report, only two of the full 33 countries and territories (Bangladesh and Spain) did not have hepatitis B diagnosis data and four did not have treatment data (Bangladesh, England, Italy, and Spain; appendix pp 25–29).^{1,12}

Prevention of hepatitis B vertical transmission

For prevention of hepatitis B vertical transmission, 22 (67%) of 33 countries and territories have policies for universal HepB-BD vaccination (table 1; appendix pp 16–18). Six (18%) countries and territories have a policy for hepatitis B vaccination of infants known to have been born to HBsAg-positive mothers or other selective criteria and are labelled as partially adopted for their HepB-BD policy. Not all provinces in Canada and Pakistan have implemented HepB-BD vaccination, so these countries are considered as partially adopted, as well. Ethiopia, categorised as having a partially adopted policy, piloted HepB-BD vaccination in certain regions in 2021 with plans for national scale-up. Ghana (not adopted) and South Africa (not adopted) have expressed initial political commitment to HepB-BD vaccinations, but national implementation is pending. 30 (91%) of 33 countries and territories screen for HBV infection in pregnancy (table 1; appendix pp 16–18).

Access to hepatitis B screening and treatment

To guide non-maternal hepatitis B screening, 28 (85%) of 33 countries and territories recommend screening for key populations at risk. Overall, 13 (39%) countries and territories have expanded or are in the process of expanding hepatitis B screening policies beyond risk-based screening. Five (15%) countries and territories (ie, Argentina, Japan, Rwanda, Taiwan, and the USA) have expanded recommendations for hepatitis B screening to include all adolescents and adults (table 1; appendix pp 19–21). Egypt (partially adopted) has integrated hepatitis B screening into its national hepatitis C screening programme. Nigeria (partially adopted) and the Philippines (partially adopted) are in the process of implementing universal hepatitis B screening policies. Five (15%) countries (Brazil, Canada, South Korea, Thailand, and Viet Nam) have policies for birth cohort-based or age cohort-based hepatitis

B screening. 16 (48%) countries and territories have approved HBV point-of-care DNA testing (table 1; appendix pp 19–21). To promote equitable access to hepatitis B screening, 15 (45%) countries and territories provide HBsAg testing at no cost to all patients and nine (27%) countries and territories provide HBsAg testing at no cost to some patients based on income and other factors.

Of the 33 countries and territories, 27 (82%) have national guidelines for treatment of HBV infection. However, only 13 (39%) have guidelines or policies for delivery of hepatitis B care services by primary care providers. 14 (42%) countries and territories have removed patient co-payments for hepatitis B treatment for all patients, and eight (24%) have removed patient co-payments for hepatitis B treatment for some patient populations (table 1; appendix pp 19–21). Ten (67%) of the 15 countries and territories without patient co-payments for HBsAg screening also have no co-payments for hepatitis B treatment.

Across all profiled countries and territories, hepatitis B diagnosis coverage of HBsAg-positive people ranged from 1% or less (Ghana, Myanmar, Nigeria, Portugal, and Senegal) to 95% (Japan; appendix pp 25–26). Reported hepatitis B treatment coverage among those diagnosed and eligible for treatment ranged from less than 1% (Ethiopia, South Africa, and Ukraine) to 83% (Japan; appendix pp 27–29). Hepatitis B treatment coverage among all those living with hepatitis B who are eligible for treatment ranged from 1% or less (Colombia, Ethiopia, Georgia, Ghana, Indonesia, Mexico, Myanmar, Nigeria, Peru, the Philippines, Portugal, Thailand, Senegal, South Africa, Ukraine, and Viet Nam) to 21% (South Korea; appendix pp 27–29).

Equity in access to hepatitis B prevention and care services among vulnerable populations

The national plans of 29 (88%) of 33 countries and territories prioritise strategies for populations at increased risk for hepatitis B, including migrants, people who inject drugs, men who have sex with men, people living with HIV, and people on dialysis. Nine (27%) countries and territories have national anti-discrimination laws to protect people living with hepatitis B. For 20 (61%) countries and territories, hepatitis B vaccination is recommended for adults and adolescents at risk of hepatitis B. For 11 (33%) countries and territories, adult hepatitis B vaccination policies are either in development or available at the subnational level (table 1; appendix pp 22–24).

Financing of hepatitis B testing and treatment

Of the 33 profiled countries and territories, 22 (67%) report having a national budget supporting hepatitis B prevention, testing, or treatment, or a combination thereof. Among the 18 eligible countries, 11 (61%) have applied for support from The Global Fund for treatment of patients with HIV and HBV co-infections, HBsAg screening of pregnant women, or interventions to prevent HBV transmission among people who inject drugs (table 1; appendix pp 22–24).⁴⁸

Policy scores

The mean overall hepatitis B policy score for all countries and territories was 14.2 (SD 3.3; figure 2), of a maximum of 21. Rwanda had the highest overall policy score of 20.5, whereas Bangladesh had the lowest score of 7.5 (figure 2; appendix pp 42–43). The mean policy score was highest for HICs (16.0 [SD 2.8]), followed by UMICs (14.1 [SD 2.6]), and LLMICs (12.5 [SD 3.7]; $p=0.036$; figure 2; appendix p 44).

Achievement of WHO 2025 and 2030 targets and tiers on the path to elimination

For HepB-BD vaccination, 14 (42%) of the 33 countries and territories appear to have met the WHO interim target for 2025 of at least 70% coverage and six (18%) countries and territories appear to have met the WHO target for 2030 of 90% coverage. 18 (55%) countries and territories have met the WHO 2025 and 2030 target of 90% coverage of three-dose hepatitis B vaccination among infants (appendix pp 30–31). Combined, ten countries and territories (30%) have met both 2025 targets for Hep-BD and three-dose hepatitis B vaccination. 24 (73%) countries and territories have met the 2025 interim WHO goal of less than 0.5% HBsAg prevalence among children 5 years and younger, and 13 (39%) have met the 2030 goal of less than 0.1% (appendix pp 32–35). Seven (21%) countries and territories reported diagnosis coverage of at least 60%, which meets the WHO 2025 interim target—all but one (Rwanda) of these countries and territories is an HIC. Only Japan has met the WHO 2030 diagnosis target of at least 90% (appendix pp 25–26). No country or territory has achieved the WHO 2025 target of at least 50% of eligible people with hepatitis B receiving appropriate treatment or the 2030 target of 80% of eligible people with hepatitis B receiving appropriate treatment (appendix pp 27–29). 20 (61%) countries and territories have hepatitis B-related mortality rates falling below the WHO 2025 target (≤ 7 deaths per 100 000 people), and 16 (48%) countries have rates below the original 2030 target (≤ 4 deaths per 100 000 people; table 2).

Georgia, Portugal, and South Korea could be eligible for validation of full elimination of hepatitis B vertical transmission (appendix pp 36–38). For the vertical transmission path to elimination, only China appears to meet the gold tier among eligible countries (appendix p 3).⁴ For overall hepatitis B elimination as a public health problem, based on the path to elimination criteria, no country appears to have met any tier (appendix pp 39–41).

Achievement of WHO 2025 targets across country income levels can be found in the appendix (pp 45–46). Briefly, there were no significant differences across income levels for meeting the targets for three-dose hepatitis B vaccination coverage, HepB-BD vaccination coverage, and treatment coverage. There were significant differences across income levels for meeting the 0.5% HBsAg prevalence target in children younger than 5 years (11 [100%] HICs met the target *vs* nine [82%] UMICs *vs* four [36%] LLMICs; $p=0.003$), for meeting the 2025 mortality targets (nine [82%] HICs *vs* eight [73%] UMICs *vs* three [27%] LLMIC; $p=0.020$), and for meeting the 60% diagnosis coverage target (six [55%] HICs *vs* zero UMICs *vs* one [1%] LLMIC [Rwanda]; $p=0.011$; appendix pp 45–46).

Recommendations to accelerate hepatitis B elimination

27 (82%) of the 33 countries and territories recommended next steps related to improvements in hepatitis B strategic information and hepatitis B diagnosis and treatment. Recommendations related to equity (and expanding access for vulnerable populations) and financing were the least common recommendations (appendix p 47). No statistically significant difference in the types of recommendations prioritised were identified across income classifications.

Discussion

The National Hepatitis Elimination Profiles provide a comprehensive analysis of hepatitis B planning, strategic information, and prevention and care policies for the 33 countries and territories assessed. Developed in collaboration with health officials, clinicians, and civil society representatives, the profiles reveal the progress and remaining challenges in reaching goals for hepatitis B elimination. All profiled countries and territories have taken actions in planning and policy development. Nearly 80% of the countries and territories have national action plans for hepatitis B prevention and care. Most plans are accompanied by goals for hepatitis B elimination of vertical transmission and strategies to reach populations at increased risk of HBV infection. Around two-thirds of the countries have policies for universal HepB-BD vaccination of newborns within 24 h of birth. To reduce hepatitis B-related mortality, 97% of the countries and territories profiled have adopted or will soon adopt at least risk-based recommendations for hepatitis B screening, and 82% of countries and territories have national hepatitis B treatment guidelines.

Supported by global initiatives starting in the early 1990s, the profiled countries and territories are furthest along in approaching the coverage targets for hepatitis B vaccination of newborns and infants out of the elimination targets. Around three-quarters of countries and territories with profiles have met the WHO 2025 interim target of 0.5% or less HBsAg prevalence in children younger than 5 years. In 2020, the world achieved the Sustainable Development Goal target of less than 1.0% HBsAg prevalence among children younger than 5 years.⁴⁹ The progress towards the elimination of hepatitis B vertical transmission shows what can be achieved when evidence-based guidelines stimulate national commitments to the delivery of HepB-BD vaccination and related prevention services.

Building on the actions plans and recommendations developed to date, and early progress in expanding access to hepatitis B vaccination, steps must be taken to implement and further scale up hepatitis B services to reach goals for reductions in incidence of new chronic HBV infections and hepatitis B-related mortality. Only ten profiled countries and territories met the WHO 2025 coverage targets for both infant and newborn hepatitis B vaccination coverage. Four of the six African countries (Ethiopia, Ghana, Rwanda, and South Africa) have not fully adopted universal HepB-BD policies. For eligible countries, the recent availability of Gavi, the Vaccine Alliance, funding can spur implementation of timely HepB-BD vaccination.⁵⁰ As an added prevention measure, most profiled countries and territories screen pregnant women for HBsAg. This screening, potentially linked with maternal HIV and syphilis screening (ie, triple elimination), creates opportunities to assure

that HBV-exposed newborns receive hepatitis B vaccines and HBsAg-positive mothers receive, as appropriate, antiviral prophylaxis.

Importantly, the profiles reveal the poor access to hepatitis B testing and treatment, particularly in LLMICs. No country appears eligible for the path to elimination tiers based on data in the profiles. Only seven countries and territories have reached the 2025 60% diagnosis target for people with hepatitis B; all but one of these (Rwanda) is a HIC. Although most countries and territories recommend only risk-based screening for hepatitis B, a promising finding is the move of 13 countries towards recommending universal hepatitis B screening of adults or hepatitis B screening for certain age or birth cohorts. For example, as noted in the profile, Thailand recently recommended HBsAg screening for all people born before 1992, the year the country began routine infant and newborn hepatitis B vaccination.

Antiviral therapies are available at low cost in most LLMICs with the Global Fund-negotiated price at US\$31.60 per year.¹⁸ 73% of profiled countries and territories have fully or partially removed co-payments for HBsAg testing and 67% have done so for treatment. However, no country or territory has reached the WHO 2025 interim target of treating 50% of eligible people with hepatitis B.

The profiles highlight several reasons for the gaps in the scale-up of hepatitis B prevention and care services. Most profiled countries and territories have not simplified treatment and monitoring algorithms for primary care providers. The recent WHO guidelines for simplifying hepatitis B care can encourage revisions of national policies for treatment of HBV infection.^{51,52} The requirements for patient co-payments remain most prevalent in LLMICs, where the affordability of hepatitis B testing and treatment presents barriers to care and treatment.¹

Patient access is limited by the capacity of the health system to deliver hepatitis B testing and treatment services. Although nearly 70% of countries and territories reported having budgets in place, stakeholders often noted when reviewing profile data on budget policies that these budgets are insufficient to adequately deliver the services needed to prevent and treat hepatitis B. Governments can commit domestic funding, such as supporting hepatitis B care through insurance schemes for universal health coverage. In the most resource-constrained settings, international partners must support hepatitis B elimination. For example, The Global Fund now accepts requests for funding hepatitis B screening of pregnant women and key populations, harm reduction services, and integration of hepatitis B and C treatment into HIV treatment platforms.⁵³

The scarce availability of strategic information can impact national commitments to hepatitis B elimination. Only around a third of profiled countries and territories have systems for measuring hepatitis B-related mortality. The absence or incompleteness of crucial records further complicates efforts to understand HBV-related mortality and the attributable fraction of deaths caused by HBV infection. WHO has provided includes guidance for estimating the attributable fraction of deaths in people with sequelae of hepatitis B through data abstraction of routine clinical records at fixed sentinel sites in healthcare facilities caring for

people with chronic liver diseases or liver cancer or in cancer registries.⁵⁴ We found that only around half of profiled countries and territories have systems for measuring incident HBV cases, with the greatest gaps in UMICs and LMICs. The profiles include a standard indicator to collect data on incident cases from countries and territories, but the quality of this information varied substantially, warranting an in-depth quality assessment to suggest recommendations for strengthening incidence data collection systems globally. The absence of data extends to diagnosis and treatment registries, with only around one in four countries and territories having robust systems for tracking the number of people diagnosed and treated for hepatitis B. Integrating hepatitis B surveillance with other strategic information systems presents another option for improving data. For example, certain African countries have integrated hepatitis B and C serological survey testing within planned HIV serological surveys.

The profile data thereof have several limitations, particularly related to the analysis of policy information. The development of a global policy framework must respond to a range of epidemiological and health system contexts. At the national level, some policies might be more important than others. Reported policies can vary by the time period they are applied in, and policy development is consistently evolving within countries. To assure the accuracy of the data for this Health Policy, all profile stakeholders were asked to review and update their country's or territory's profile between July and September, 2024. However, updates to the reported data are expected. Going forward, profiles will be updated upon request from local contributors and routinely every 2 years; this schedule is expected to keep profiles as current as possible. Interpretation can also vary depending on an individual contributor's personal assessment of policy development and implementation. To minimise subjectivity, definitions for policy indicators were provided and, when possible, multiple stakeholders from each country were asked to review the profile's policy data. In all but three profiled countries, profile data were reviewed by officials in national ministries of health or their designated partners. To resolve differences in the selection and interpretation of data among local partners, the data deemed most representative of the jurisdiction by ministries of health were used. The inclusion of diverse perspectives helped to reduce the chance of bias of more positive or negative responses from one specific stakeholder. This analysis did not include an assessment of progress towards the WHO 2025 interim and WHO 2030 final targets for incidence or certain path to elimination criteria. The profiles did not assess progress towards the new WHO elimination criterion of a combined hepatitis B and hepatitis C mortality rate of no more than six deaths per 100 000 people, given its recent introduction in 2023.⁵ It was not possible to combine available individual rates for hepatitis B and C mortality, as in some cases the rates were from different sources and years; therefore, new data sources for this indicator are needed. Data on blood and injection safety were also not collected as part of the profiles, although the majority of profiled countries have met the blood and injection safety criteria WHO targets.⁵⁵

Looking forward, the profiles will evolve to monitor the responses to the policy gaps revealed in this Health Policy and new developments in technologies and strategies. Tracking progress toward hepatitis B elimination of vertical transmission remains a priority, and more information is needed regarding maternal hepatitis B screening coverage and antiviral prophylaxis for HBsAg-positive women. Updates of profile data are essential to

monitor hepatitis B testing criteria, treatment eligibility, simplified models of care, and access to new diagnostics and therapies.⁵² With the recent licensing of antiviral therapies, assessing access to hepatitis D virus (also known as hepatitis delta virus) testing and treatment takes on increased importance as hepatitis D virus and HBV co-infection is the most severe form of chronic viral hepatitis due to more rapid progression towards hepatocellular carcinoma and liver-related death.⁵⁶ CGHE will continue to develop profiles for additional countries; at the time of this publication, profiles for ten additional countries were underway.

National Hepatitis Elimination Profiles are assets in guiding national planning and promoting advocacy for resource mobilisation. The profile data informed the report of the 2024 Lancet Gastroenterology & Hepatology Commission on viral hepatitis elimination.⁸ The qualitative and quantitative data from the profiles supplement the data reported by member states to the WHO Global Hepatitis Reporting System.^{1,12} In turn, the profiles, as appropriate, are updated with data reported by WHO. Efforts are underway through the WHO Hepatitis Data Collaborative to further align this information.

The need for policy change is urgent. Globally, deaths from hepatitis B exceed the number of deaths from HIV or malaria annually.⁵⁷ Even modest progress towards hepatitis B elimination will result in profound improvements in health. Compared with the status quo, improving hepatitis B treatment coverage to 40% will avert an estimated 9·7 million disability-adjusted life-years in low-income and middle-income countries by 2030.⁵⁸ Achievement of all goals for hepatitis B elimination by 2030 will avert 48·2 million disability-adjusted life-years and provide an economic benefit to the global economy of US\$240·36 billion in averted productivity losses.⁵⁹

Through the process of developing a profile, contributors share lessons learned from their collective experience in hepatitis B information systems, financing, service delivery, and community mobilisation. Based on the information presented in the profiles, local stakeholders can prioritise action for their epidemiological and programme delivery context. The continued commitment of local coalitions to developing accurate and timely profiles to meet evolving information needs will accelerate improvements in hepatitis B prevention and care and the achievement of goals for hepatitis B elimination, ultimately averting additional liver disease and deaths.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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those of the authors and do not necessarily represent the official position of the US Centers for Disease Control and Prevention.

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Panel 1:**Hepatitis B indicators for hepatitis elimination profiles****Hepatitis B national planning (three policies)**

- National action plan that includes hepatitis B
- Hepatitis B elimination goal
- Elimination of hepatitis B vertical transmission goal

Hepatitis B strategic information (five policies)

- Routine official reports to monitor hepatitis B mortality
- Routine official reports to monitor hepatitis B incidence
- Routine official reports to monitor hepatitis B prevalence
- Estimates of hepatitis B economic burden
- Monitoring hepatitis B diagnosis and treatment

Prevention of hepatitis B vertical transmission (two policies)

- Universal hepatitis B birth-dose vaccination policy
- Universal antenatal hepatitis B screening recommendations

Access to hepatitis B screening (four policies)

- Risk-based hepatitis B screening recommendations
- Expanded hepatitis B screening recommendations: birth cohort, age cohort, other special group, or universal
- No patient co-payments for HBsAg screening
- Approval of point-of-care PCR testing to detect hepatitis B virus (HBV)

Access to hepatitis B treatment (three policies)

- National hepatitis B treatment guidelines
- Simplified care: simplified treatment and monitoring algorithm for primary care providers
- Simplified care: no patient treatment co-payments

Equity in access to hepatitis B prevention and care services among disproportionately affected populations (three policies)*

- National strategy addresses disproportionately affected populations (eg, people who inject drugs, Indigenous people, men who have sex with men, or people with coinfections)
- Laws preventing discrimination against people living with hepatitis B
- National hepatitis B vaccination policy for adults

Hepatitis B financing (two policies)

- Public budget line for hepatitis B prevention, testing, or treatment
- Funds from The Global Fund To Fight AIDS, Tuberculosis and Malaria used to support hepatitis B prevention, screening, and treatment for pregnant women or patients with co-infections or harm-reduction services, as relevant

* Additional policies from the profiles related to harm reduction and equity in access to prevention and care services for people who inject drugs are reported in Hiebert-Suwondo and colleagues.⁷

Panel 2:**WHO goals for hepatitis B elimination as a public health problem and path to elimination tiers****WHO goals for full hepatitis B elimination as a public health problem****2025 goals**

- Impact targets: HBsAg prevalence of 0.5% or less in children 5 years or younger; no more than seven hepatitis B-related deaths per 100 000 people; and no more than 11 new hepatitis B virus (HBV) infections per 100 000 people
- Programmatic targets: universal, timely hepatitis B birth-dose vaccine (HepB-BD) coverage of 70% or more; three-dose hepatitis B vaccine coverage of 90% or more in infants; at least 60% of people with chronic hepatitis B diagnosed; at least 50% of people with hepatitis B on treatment of those eligible; 100% blood safety; and 100% injection safety⁵

2030 goals

- Impact targets: HBsAg prevalence of 0.1% or less in children 5 years or younger; no more than six hepatitis B-related or hepatitis C-related deaths per 100 000 people (combined target introduced in 2023; originally ≤ 4 deaths per 100 000 people for hepatitis B); and no more than two new HBV infections per 100 000 people
- Programmatic targets: universal, timely HepB-BD coverage of 90% or more; three-dose hepatitis B vaccine coverage of 90% or more in infants; at least 90% of people with chronic hepatitis B diagnosed; at least 80% of people with hepatitis B on treatment of those eligible; 100% blood safety; and 100% infection safety^{2,4,5}

WHO goals for elimination of hepatitis B vertical transmission**2030 goals**

- Impact targets: HBsAg prevalence of 0.1% or less in children 5 years or younger
- Programmatic targets: universal, timely HepB-BD coverage of 90% or more and three-dose hepatitis B vaccine coverage of 90% or more in infants (programme targets should be achieved for 2 years)

WHO elimination Tiers For hepatitis B elimination as a public health problem

- Bronze: at least 95% blood safety coverage; at least 95% injection safety coverage; universal, timely HepB-BD vaccine policy adopted; three-dose hepatitis B vaccine coverage of at least 90%; at least 60% of people with chronic hepatitis B diagnosed; and at least 50% of people with chronic hepatitis B on treatment of those diagnosed and eligible

- Silver: 100% blood safety coverage; 100% injection safety coverage; universal, timely HepB-BD vaccine coverage of at least 50%; three-dose hepatitis B vaccine coverage of at least 90%; antenatal hepatitis B screening policy adopted; at least 70% of people with chronic hepatitis B diagnosed; and at least 60% of people with hepatitis B on treatment of those diagnosed and eligible
- Gold: 100% blood safety coverage; 100% injection safety coverage; universal, timely HepB-BD vaccine coverage of at least 90%; three-dose hepatitis B vaccine coverage of at least 90%; antenatal hepatitis B screening coverage of at least 30%; at least 80% of people with chronic hepatitis B diagnosed; at least 70% of people with hepatitis B on treatment of those diagnosed and eligible; and establishment of a sentinel surveillance programme for sequelae of hepatitis

WHO elimination tiers for elimination of hepatitis B vertical transmission

- Bronze: universal, timely HepB-BD vaccine policy adopted and three-dose hepatitis B vaccine coverage of at least 90%
- Silver: universal, timely HepB-BD vaccine coverage of at least 50%; three-dose hepatitis B vaccine coverage of at least 90%; and antenatal hepatitis B screening policy adopted
- Gold: universal, timely HepB-BD vaccine coverage of at least 90%; three-dose hepatitis B vaccine coverage of at least 90%; and antenatal hepatitis B screening coverage of at least 30%

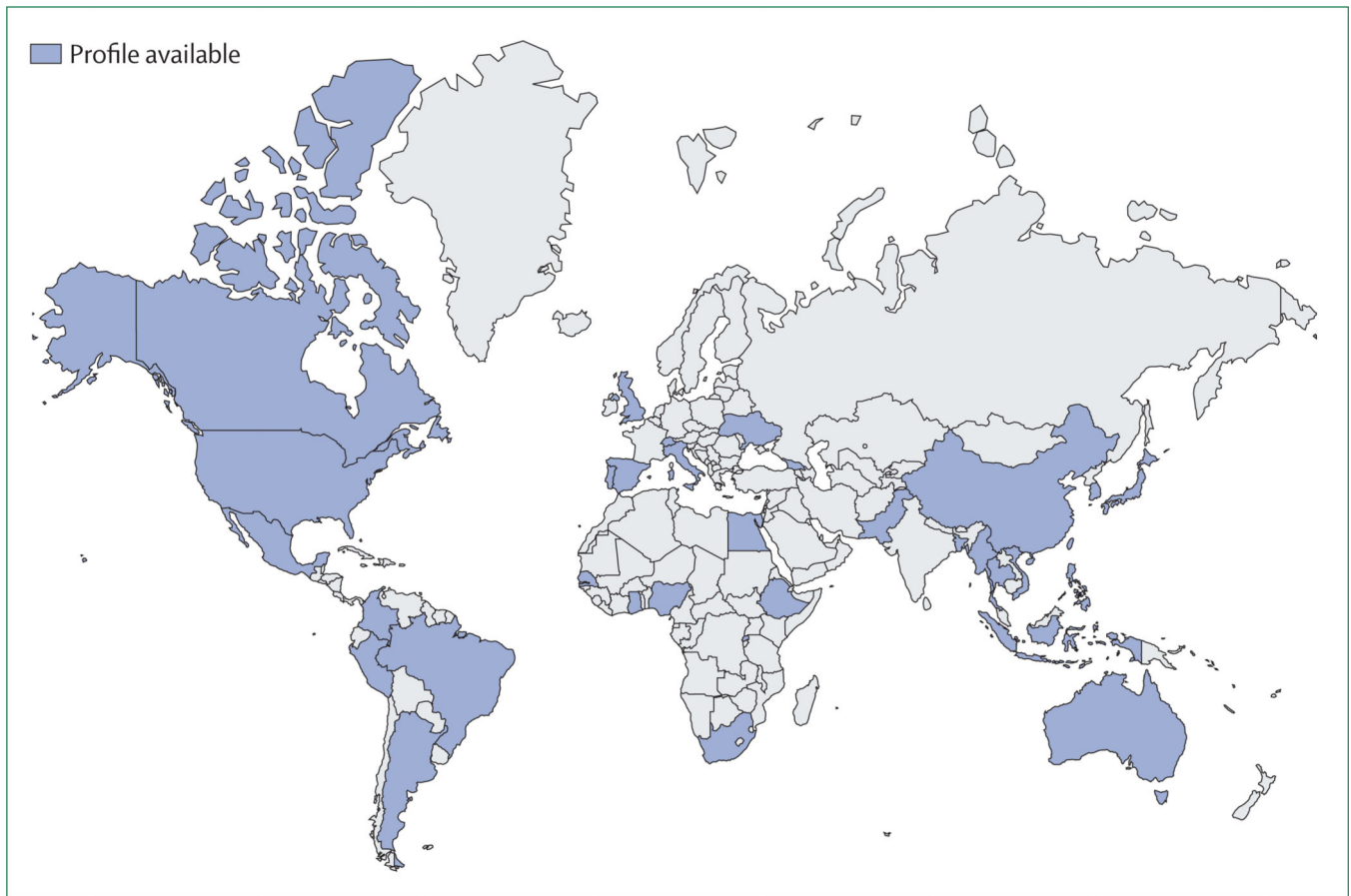


Figure 1: Map of countries and territories with National Hepatitis Elimination Profiles

African region: Ethiopia, Ghana, Nigeria, Rwanda, Senegal, and South Africa. Region of the Americas: Argentina, Brazil, Canada, Colombia, Mexico, Peru, and the USA. Eastern Mediterranean region: Egypt and Pakistan. European region: England, Georgia, Italy, Portugal, Spain, Switzerland, and Ukraine. South-East Asia region: Bangladesh, Indonesia, Myanmar, and Thailand. Western Pacific region: Australia, China, Japan, South Korea, the Philippines, Taiwan, and Viet Nam.

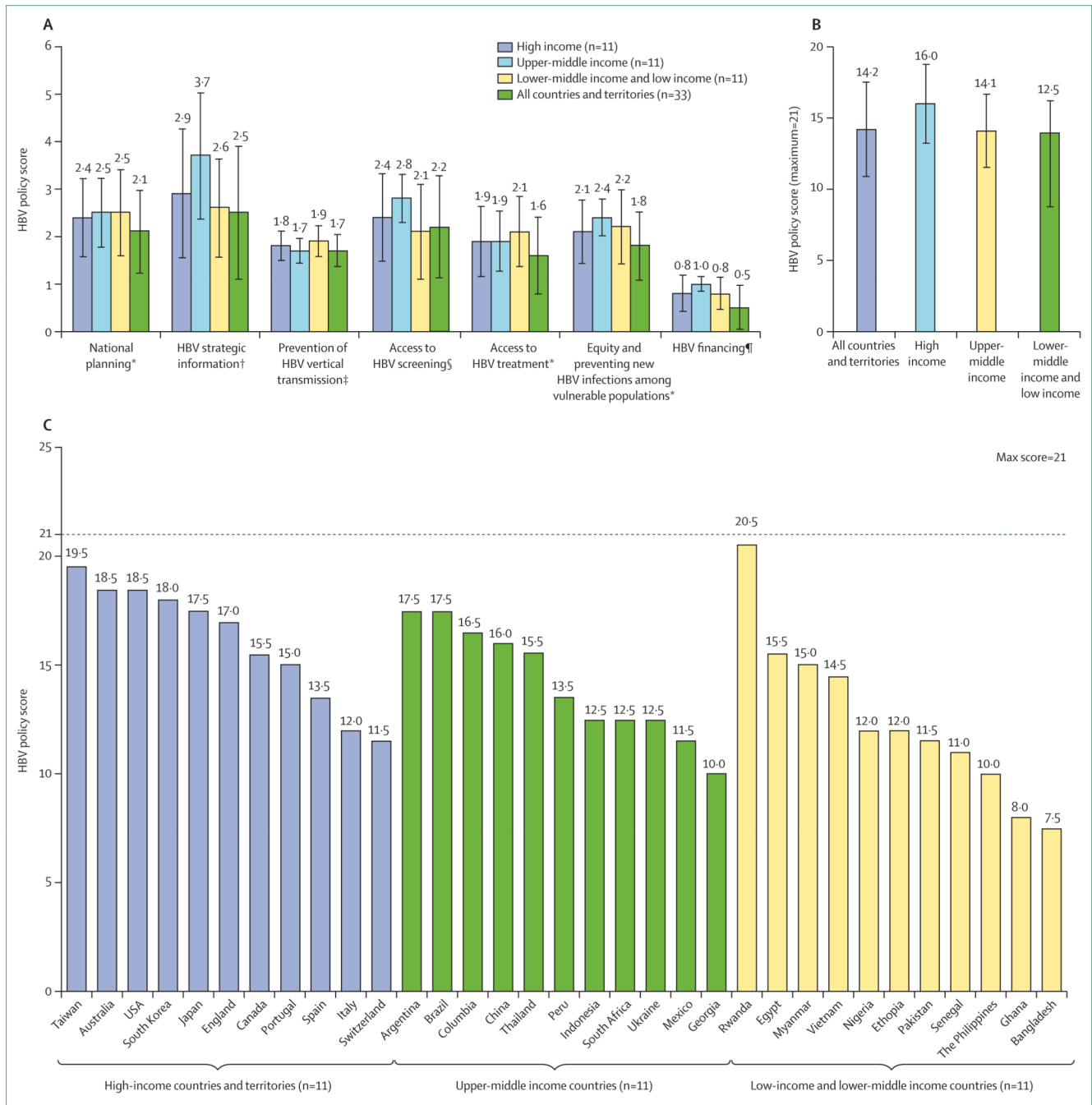


Figure 2: Hepatitis B policy scores

(A) Hepatitis B mean policy scores across country and territory income classifications. (B) Mean total hepatitis B policy scores by country income classification. (C) Country and territory hepatitis B policy scores, by income classification. HBV=hepatitis B virus. *Three policies. †Five policies. ‡Two policies. §Four policies. ¶One policy.

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essential hepatitis B policies for hepatitis elimination by country and territory income classification

Table 1:

	High income (n=11)					Upper-middle income (n=11)					Low income and lower-middle income (n=11)					All countries and territories (n=33)					p value
	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	
3 national planning	9 (82%)	0 (9%)	1 (9%)	..	..	8 (73%)	2 (18%)	1 (9%)	..	..	8 (73%)	3 (27%)	..	..	..	25 (76%)	6 (18%)	2 (6%)	..	..	0.72
	10 (91%)	0 (9%)	..	..	..	8 (73%)	1 (9%)	2 (18%)	..	..	8 (73%)	0	3 (27%)	..	..	26 (79%)	2 (6%)	5 (15%)	..	..	0.33
	8 (73%)	0	3 (27%)	..	..	9 (82%)	1 (9%)	1 (9%)	..	..	6 (55%)	0	2 (18%)	3 (27%)	..	23 (70%)	1 (3%)	6 (18%)	3 (9%)	..	0.14
3 strategic information	6 (55%)	1 (18%)	3 (27%)	..	..	4 (36%)	5 (45%)	2 (18%)	..	..	2 (18%)	4 (36%)	5 (45%)	..	..	12 (36%)	11 (33%)	10 (30%)	..	..	0.32
	11 (100%)	0	0	..	..	4 (36%)	3 (27%)	4 (36%)	..	..	3 (27%)	4 (36%)	4 (36%)	..	..	18 (55%)	7 (21%)	8 (24%)	..	..	0.007
	8 (73%)	0 (9%)	2 (18%)	..	..	3 (27%)	7 (64%)	1 (9%)	..	..	6 (55%)	3 (27%)	2 (18%)	..	..	17 (52%)	11 (33%)	5 (15%)	..	..	0.10
of hepatitis B vertical transmission	8 (73%)	0	3 (27%)	..	..	4 (36%)	2 (18%)	5 (45%)	..	..	5 (45%)	1 (9%)	5 (45%)	..	..	17 (52%)	3 (9%)	13 (39%)	..	..	0.39
	4 (36%)	5 (45%)	2 (18%)	..	..	3 (27%)	4 (36%)	4 (36%)	..	..	2 (18%)	6 (55%)	3 (27%)	..	..	9 (27%)	15 (45%)	9 (27%)	..	..	0.79
	5 (45%)	6 (55%)	0	..	..	10 (91%)	0	1 (9%)	..	..	7 (64%)	3 (27%)	1 (9%)	..	..	22 (67%)	9 (27%)	2 (6%)	..	..	0.068
of hepatitis B vertical transmission	11 (100%)	0	0	..	..	10 (91%)	1 (9%)	0	..	..	9 (82%)	2 (18%)	0	..	..	30 (91%)	3 (9%)	0	..	..	0.33

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	High income (n=11)					Upper-middle income (n=11)					Low income and lower-middle income (n=11)					All countries and territories (n=33)					p value
	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	Adopted	Partially adopted	Not adopted	No data*	NA	
relations																					
hepatitis B screening																					
of	5 (45%)	(9%)	5 (45%)	..	..	5 (45%)	1 (9%)	4 (36%)	1 (9%)	1 (9%)	6 (55%)	2 (18%)	3 (27%)	..	..	16 (48%)	4 (12%)	12 (36%)	1 (3%)	1 (3%)	0.79
re																					
to																					
10 (91%)																					
relations																					
or																					
t	2 (18%)	0	6 (55%)	..	3 (27%)	2 (18%)	0	8 (73%)	0	1 (9%)	1 (9%)	0	6 (55%)	..	4 (36%)	5 (15%)	0	20 (61%)	..	8 (24%)	..
relations																					
social																					
	3 (27%)	0	7 (64%)	..	1 (9%)	1 (9%)	0	8 (73%)	0	2 (18%)	1 (9%)	3 (27%)	6 (55%)	..	1 (9%)	5 (15%)	3 (9%)	21 (64%)	..	4 (12%)	..
relations																					
	5 (45%)	..	6 (55%)	..	..	3 (27%)	..	8 (73%)	..	..	2 (18%)	3 (27%)	6 (55%)	..	..	10 (30%)	3 (9%)	20 (61%)	..	..	0.099
relations:																					
t, age																					
er																					
up, or																					
is for	9 (82%)	1 (18%)	0	..	..	3 (27%)	4 (36%)	3 (27%)	1 (9%)	..	3 (27%)	3 (27%)	5 (45%)	..	..	15 (45%)	9 (27%)	8 (24%)	1 (3%)	..	0.057
ing																					
hepatitis B treatment																					
	7 (64%)	2 (18%)	1 (9%)	1 (9%)	..	11 (100%)	0	0	0	..	9 (82%)	1 (9%)	1 (9%)	..	..	27 (82%)	3 (9%)	2 (6%)	1 (3%)	..	0.44
for																					
care:	4 (36%)	1 (9%)	5 (45%)	1 (9%)	..	4 (36%)	3 (27%)	4 (36%)	..	..	5 (45%)	2 (18%)	4 (36%)	..	..	13 (39%)	6 (18%)	13 (39%)	1 (3%)	..	0.85
nd																					
or																					

Table 2:
Burden of hepatitis B by county or territory

	Income category	HBsAg prevalence (year) *	Hepatitis B-related deaths annually (year)	Hepatitis B-related mortality rate per 100 000 people (year)
Argentina	UMIC	0·19% (2021) ¹⁹	945 (2021) ¹⁹	0·07 (2018) ²⁰
Australia	HIC	0·78% (2021) ²¹	453 (2021) ²¹	1·76 (2021) ²¹
Bangladesh	LMIC	4·00% (2020) ²²	11 887 (2022) ²²	7·22 (2022) ²²
Brazil	UMIC	0·48% (2022) ¹²	343 (2022) ²³	0·2 (2022) ²³
Canada	HIC	..	445 (2022) ¹²	1·15 (2022) ^{12,24 †}
China	UMIC	5·90% (2020) ²⁵	218 550 (174 557–271 626; 2021) ²⁶	15·36 (12·27–19·09; 2021) ²⁶
Colombia	UMIC	0·59% (2022) ¹²	54 (2022) ¹²	0·10 (2022) ^{12,24 †}
Egypt	LMIC	1·00% (2022) ¹²	1407 (2022) ¹²	1·30 (2021) ²⁷
England	HIC	0·58% (2022) ²⁸	84 (2022) ²⁸	0·15 (2022) ²⁸
Ethiopia	LLIC	6·21% (2022) ¹²	33 867 (2022) ¹²	27·01 (2022) ^{12,24 †}
Georgia	UMIC	2·70% (2021) ²⁹	265 (2022) ¹²	6·98 (2022) ^{12,24 †}
Ghana	LMIC	9·00% (2022) ¹²	13 910 (2022) ¹²	41·96 (2022) ^{12,24 †}
Indonesia	UMIC	2·40% (2023) ³⁰	60 535 (2022) ¹²	21·71 (2022) ^{12,24 †}
Italy	HIC	1·00% (2020) ³¹	1564 (1340–1785; 2021) ²⁶	2·61 (2·24–2·98; 2021) ²⁶
Japan	HIC	0·72% (2020) ^{32, ‡}	4430 (2022) ³³	3·60 (2020) ³³
Mexico	UMIC	0·09% (2022) ¹²	3927 (2022) ¹²	3·05 (2022) ^{12,24 †}
Myanmar	LMIC	6·51% (2015) ³⁴	5757 (3846–7955; 2021) ²⁶	10·20 (6·82–14·10; 2021) ²⁶
Nigeria	LMIC	8·10% (2018) ³⁵	46 144 (2022) ¹²	20·68 (2022) ^{12,24 †}
Pakistan	LMIC	1·10% (2019) ^{36,37 §}	10 620 (2022) ¹²	4·21 (2022) ^{12,24 †}
Peru	UMIC	0·43% (2022) ¹²	365 (2022) ¹²	1·10 (2022) ^{12,24 †}
Philippines	LMIC	4·90% (2022) ¹²	18 583 (2022) ¹²	16·31 (2022) ^{12,24 †}
Portugal	HIC	0·40% (2022) ¹²	267 (202–345; 2021) ²⁶	2·52 (1·91–3·25; 2021) ²⁶
Rwanda	LLIC	1·60% (2023) ³⁸	706 (2022) ¹²	5·17 (2022) ^{12,24 †}
South Korea	HIC	2·30% (2022) ³⁹	7225 (2022) ¹²	18·10 (2021) ⁴⁰
Senegal	LMIC	5·30% (2022) ¹²	4755 (2022) ¹²	26·94 (2022) ^{12,24 †}
South Africa	UMIC	4·58% (2022) ¹²	3267 (2864–3675; 2021) ²⁶	5·75 (5·04–6·46; 2021) ²⁶
Spain	HIC	0·22% (2018) ⁴¹	794 (589–1051; 2021) ²⁶	1·74 (1·29–2·31; 2021) ²⁶
Switzerland	HIC	0·71% (2022) ¹²	265 (2022) ¹²	0·50 (2014) ⁴²
Taiwan	HIC	9·00% (2016) ⁴³	5186 (2020) ⁴⁴	22·00 (2020) ⁴⁴
Thailand	UMIC	2·56% (2022) ¹²	12 958 (2022) ¹²	18·06 (2022) ^{12,24 †}
Ukraine	UMIC	1·50% (2020) ⁴⁵	1344 (947–1813; 2021) ²⁶	3·12 (2·20–4·21; 2021) ²⁶
USA	HIC	0·20% (0·1–0·3; 2020) ⁴⁶	1797 (2022) ⁴⁷	0·44 (0·42–0·46; 2022) ⁴⁷
Viet Nam	LMIC	7·20% (2022) ¹²	26 725 (2022) ¹²	14·46 (10·05–19·11; 2021) ²⁶

Data are reported according to the most recent year for which data are available. 95% CIs are shown when available. HIC=high-income country or territory. LMIC=lower-middle-income country or territory. UMIC=upper-middle-income country or territory.

* Prevalence of HBsAg among the total population.

[†] Death rate per 100 000 calculated based on deaths as reported by the WHO Global Health Observatory¹² and UN total population estimates.²⁴

[‡] Value reported by stakeholders as 0·71–0·72%.

[§] Sero-survey in Sindh province estimated a HBsAg prevalence of 1·1% in 2019 while a sero-survey in Punjab province estimated a HBsAg prevalence of 2·2% in 2018.

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