THE HEPATITIS FUND

FINANCING HEPATITIS B ELIMINATION

> "The cost of inaction is higher than the cost of action."

COVER PHOTO:
A nurse working at a hepatitis B clinic in Zambia.
Photo credit: Michael Vinikoor

SUMMARY

Viral hepatitis (VH) is the seventh leading cause of mortality worldwide. Globally, it affects more than 350 million people – more than HIV, tuberculosis and malaria combined (1). The World Health Organization (WHO) estimates that in 2019, 296 million people were living with the chronic hepatitis B virus (HBV) in the world, resulting in an estimated 820,000 deaths from subsequent cirrhosis and liver cancer each year. This "pandemic of the poor"is growing fast, with an estimated 1.5 million new acquisitions per year mostly driven by vertical transmission during birth and delivery (1).

HBV is preventable by a safe, effective and inexpensive vaccine. In addition, although no cure currently exists for chronic HBV, cost-effective therapies to control viral replication and minimize vertical transmission make elimination of HBV feasible. Such tools, however, are not scaled up in regions where they are most needed and where resources are limited (2).

Despite the significant burden it places on communities across all global regions, governments and policymakers have largely ignored VH as a health and development priority until recently. Most importantly, no major global health funder or international donor has committed to the goal of HBV elimination despite compelling evidence from modelling studies that scaling up prevention, testing and treatment would potentially **avert 7.3 million HBV-related deaths globally by 2030** (3).

While major barriers prevent countries from addressing HBV elimination, new opportunities have emerged to support programmes. This paper offers examples of successful models that countries have piloted to get started with HBV programming by focusing on prevention first, integrating HBV with existing programmes and service delivery systems, identifying efficiencies and cost savings, and finding creative ways of financing programmes. Ultimately, the time and need for increased investments in HBV elimination is now so we hope that other countries can build upon this momentum.

BACKGROUND

HBV is a silent epidemic because the vast majority of people living with HBV are unaware of their status, show no symptoms of the disease early on and, therefore, do not seek treatment (1). It is most commonly acquired through vertical transmission immediately before or after birth or through horizontal transmission, in early childhood from children with HBV, or sexually through contact with contaminated blood or other body fluids, unsafe injections or exposure to sharp instruments (4). The risk of developing chronic HBV is strongly linked to the age at exposure and remains high until after five years of age. About 90% of HBV acquired before the first year of life result in lifelong (chronic) infection that could lead to cirrhosis and liver cancer, accounting for considerable morbidity and mortality. People with chronic HBV have up to a 25% risk of dying prematurely from HBV-related causes than the general population.

HBV disproportionally affects low- and middle-income countries (LMICs). The African and Western Pacific Regions have the highest estimated burden of HBV infections (82 and 116 million respectively), accounting for 67% of those living with HBV globally, followed by the South-East Asia Region (60 million) (see Figure 1) (1). About 2.7 million people living with HBV are also living with HIV. (4) HIV/HBV co-infection also doubles the risk of vertical transmission of VH (5).

Burden of chronic HBV infection by WHO regions, 2019

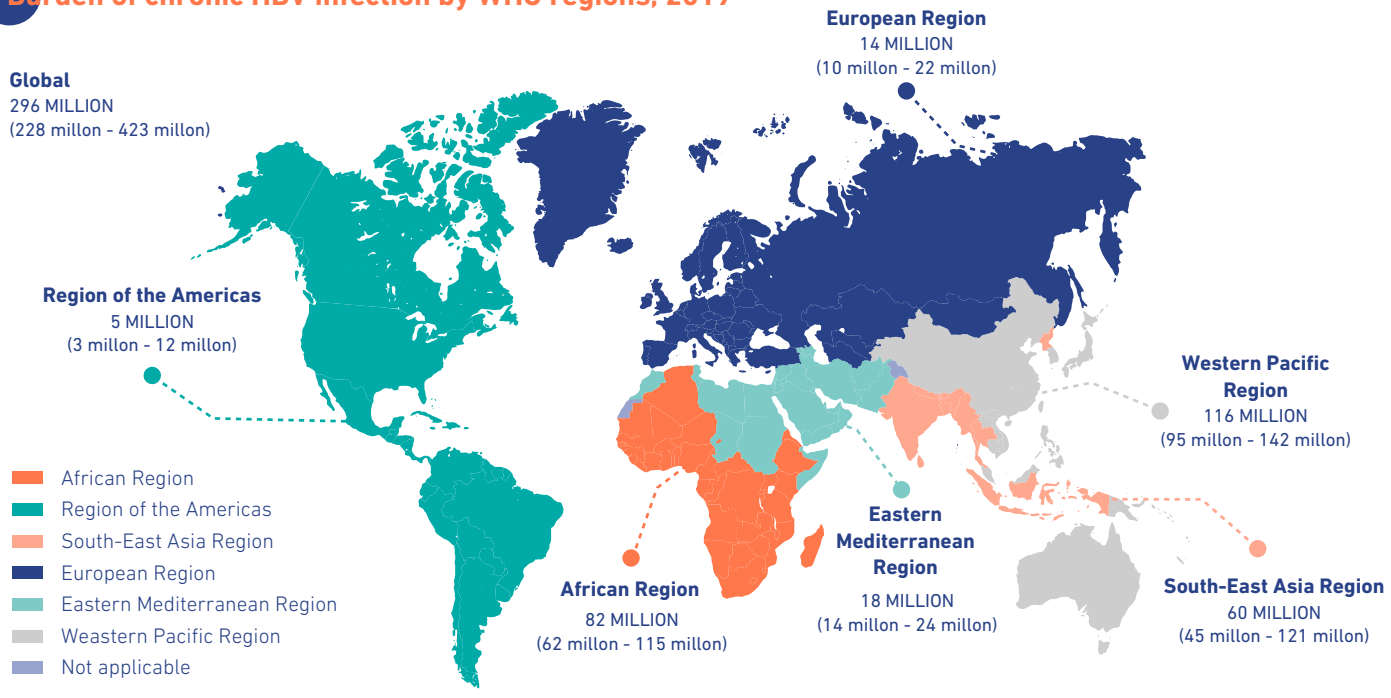

Figure 1. Burden of chronic hepatitis B infection (HBsAg positivity) by WHO regions, 2019.
Source: WHO Interim guidance for country validation of viral hepatitis elimination, June 2021

HBV prevention toolkit

- Screening
- Prophylaxis for pregnant women
- HBV vaccination (timely birth-dose, children and vulnerable population vaccination)
- Antiviral treatment to reduce morbidity, mortality and transmission

Source: CHAI 2022 and WHO triple elimination initiative

Who HBV Elimination targets by 2030

- 90% reduction in new cases (equivalent to 0.1% prevalence for HBsAg among children under five years)
- 65% reduction in deaths
- 90% coverage of HBV vaccine (third dose) by 2020
- 90% coverage of prevention of vertical transmission of HBV
- 90% of individuals living with HBV diagnosed
- 80% of eligible HBV population treated

Source: WHO, Global Health Sector Strategy 2016-2021 and 2022-2030

Fortunately, three safe and effective interventions are available to address HBV vertical transmission: HBV birth-dose vaccine (HBV-BD), hepatitis B immunoglobulin (HBIg) and antiviral prophylaxis for mothers with high HBV viral load in the final trimester of pregnancy. High coverage of the timely HBV-BD vaccination within 24 hours, as recommended by WHO since 2004, and completion of the infant three-dose vaccination series (HepB3) in the first year of life, as recommended since 1992, leads to immunological protection and prevention of acquisition in >95% of children; these are the most important interventions to reduce vertical and horizontal transmission and achieve the HBV elimination goals (6) (7).

Thanks to a recent change in the global health policy environment, in 2016, VH was included in the 2030 Agenda for Sustainable Development (SDG 3.3.) adopted by the UN General Assembly calling for its elimination by 2030 (8) and the 69th World Health Assembly (WHA) declared it a public health threat (9). In 2022, the 75th WHA approved the second Global HIV, Hepatitis and STIs Programmes (GHSS) 2022–2030, which reaffirmed the targets for VH elimination set forth by the first GHSS. These included a 90% reduction in new chronic infections and a 65% reduction in mortality as per the 2020 baseline; it recommended shared and disease-specific country actions. (10)

If people are diagnosed and treated sufficiently early, they can avoid transmission to others and have a reduced risk of progression to liver cirrhosis and liver cancer. Yet, as of 2019, only 10% of people living with HBV are aware of their status and only 2.2% (6.6 million) people are receiving treatment, far below the GHSS targets of diagnosing 90% of people living with HBV and treating 80% of those eligible for treatment (1).

To achieve the goals of the GHSS by 2030, new HBV acquisitions must be reduced from around 1.5 million in 2020 to 170,000 by 2030, and deaths from HBV from 820,000 to 310,000 (Figure 2). However, this requires significant scale up, simplification and decentralization of hepatitis prevention, diagnosis and treatment services, including point-of-care tests and integrated testing platforms for multiple diseases with appropriate linkage to care (10).

HBV incidence and mortality trends 2015- 2030

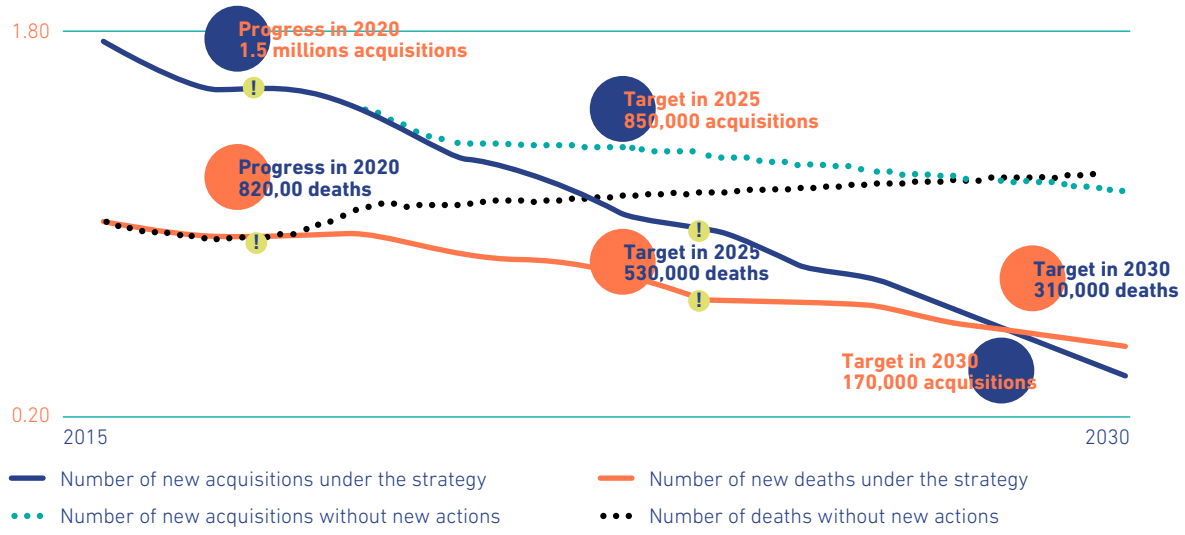

Figure 2. HBV incidence and mortality trends from new actions implemented under new strategy versus no actions, 2020-2030. Source: WHO Global Health Sector Strategies on HIV, viral hepatitis and sexually transmitted Infections 2022-2030.

There has been significant progress against HBV based on increasing immunization rates. The global target of the SDGs and the GHSS to reduce hepatitis B surface antigen (HBsAg) prevalence below 1% among children younger than five years by 2020 has been met (1). **This is one of the few SDGs targets that has been achieved.** However, despite this progress, major gaps remain in resources limited settings (6). Moreover, progress in reducing the prevalence of HBV among children younger than five years is not matched with equal progress in addressing hepatitis B and C among adults (1). Maintaining high childhood vaccination coverage rates remains crucial to all elimination plans.

[1] HBIg prophylaxis given with HBV vaccination may add benefits for newborn infants whose mothers are HBsAg positive (especially if HBeAg positive or with high HBV DNA). HBIg is a blood product that has to be screened for infectious diseases. The costs are high, a cold chain is required, and HBIg can be in short supply. In low- and middle-income setting, it may be available only when purchased by individuals.

Key facts on the hepatitis B vaccine (2019)

- USD 2.60 cost of a 10-dose vial of birth-dose vaccine
- 85% HepB3 vaccine coverage globally
- 43% birth-dose vaccine coverage globally
- 17% birth-dose vaccine coverage in Africa

Source: UNICEF and WHO Global Progress Report 2021

The hepatitis B vaccine for infants has been introduced countrywide in 190 WHO Member States. Global coverage of three doses of HB infant vaccination is estimated at 85% in 2019, up from only 30% in 2000. However, access to a timely birth dose within 24 hours of delivery remains low, especially where antenatal care coverage is low (1). Global coverage of timely HBV-BD is 43% and as high as 78% in the WHO Western Pacific Region, while it is estimated at only 17% in the WHO African Region (Figure 3) (1). Lack of financial support to introduce HBV-BD, coupled with difficulties reaching children within 24 hours of birth, especially in areas where births tend to occur at home contributes to low coverage (11).

Global and regional hepatitis B birth-dose coverage 2000-2019

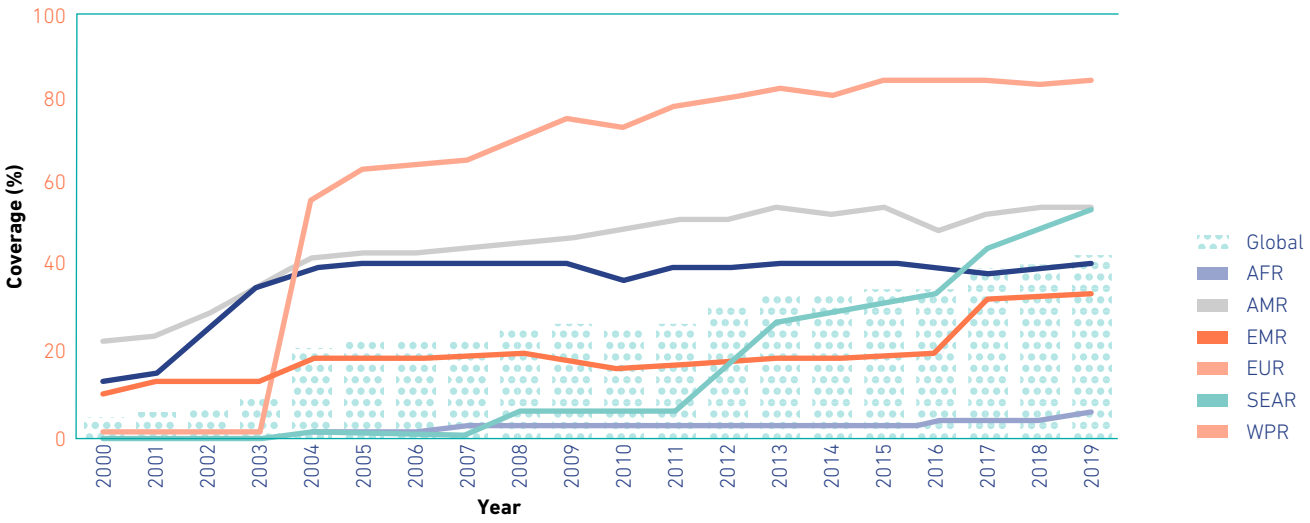

Figure 3. Global and regional HBV birth-dose coverage 2000-2019

Delays for HBV birth-dose programmes: The Gavi factor

Gavi, the Vaccine Alliance, is ideally placed to scale up HBV prevention through vaccination. Under its 2021-2025 Vaccine Investment Strategy (VIS), the board of Gavi formally approved catalytic support for the introduction of HBV-BD in 38 eligible countries from 2021, estimating that it could avert 0.3-1.2 million perinatal infection-related deaths and 1.2-1.5 million cases from 2021 to 2035 (12). This decision was encouraging for the scale up of vaccination coverage in LMICs. However, since then, the Gavi board decided to put on hold the implementation of the HBV-BD programme due to the outbreak of COVID-19. This delay has had a significant adverse effect, resulting in Gavi-supported countries making less progress than non-supported countries in reducing HBV among infants. (13) Gavi's suspension of the VIS programme is leading to up to an estimated 70,000 early deaths from a preventable disease per year of delay (13). In addition, disruptions in vaccination efforts in 2020 due to COVID-19 will result in an increase in HBV-related deaths in the 2020 birth cohort (14)

KEY BARRIERS

Several barriers keep countries from properly addressing HBV elimination:

FUNDING

Financial investments in HBV programmes reduce the significant disease burden on people and health systems, and fuel socio-economic gains as we move towards elimination. However, these investments remain limited at national levels due to shrinking budgets and competing public health priorities.

Donors have failed to adequately address the funding needs to implement and scale up VH prevention and control programmes despite strong cost-saving and cost-benefit arguments. In the absence of adequate domestic financing, potential non-traditional funders and new funding mechanisms must be urgently identified and secured for HBV elimination (15)

Overall, funding for HBV research and development (R&D) was only USD 16 million in 2021, falling by more than 8% since 2020, putting progress toward control and elimination at serious risk. Alongside the fall in research funding, the number of HBV funders fell sharply from a peak of 22 organizations in 2020 to a record low of 12 in 2021. Three funders were responsible for more than 80% of funding in 2021 (16). Increased investments in R&D to obtain a cure for HBV are required to achieve the 2030 strategy targets.

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ACCESS TO CARE

Testing, treatment and linkage to care are limited in many LMICs. Access to diagnostic and treatment services, as well as preventive care, may be limited due to awareness efforts about HBV not reaching the target population, stigma and discrimination associated with HBV, inadequate healthcare infrastructure and lack of integrated testing platforms with existing health programmes, including antenatal, infectious diseases and chronic non-communicable diseases programmes.

DRUG PRICES

Affordability of treatment is a major barrier to scaling up elimination programmes. The preferred drug for HBV treatment in LMICs is tenofovir (TDF), which is broadly available from multiple generic manufacturers. The price of TDF has been driven down over the past two decades due to its wide use in HIV treatment. Yet, while some countries are successfully accessing TDF at low prices, in many LMICs, the price accessed by HBV programmes is higher – in some cases 12 times higher – than the benchmark price of USD 32 negotiated by The Global Fund to Fight AIDS, Tuberculosis and Malaria for HIV programmes. This may be due to fragmented demand, small order sizes and lack of a centralized procurement system (17).

Lack of leadership and political will in setting up and implementing national VH elimination programmes or even guidelines is often the cause of the barriers of funding, access to care and drug prices. This is despite the evidence for positive returns on investment, including direct and indirect health, social and economic benefits (18).

INVESTMENT CASE

Investing in HBV prevention and high-quality treatment will have a positive impact on morbidity and mortality, as well as on future direct costs to health systems by reducing cases of liver cancer and cirrhosis and, consequently, avoiding hospitalization, liver transplants or other costly treatments. It will also bring long-term indirect socio-economic benefits from increased workforce participation and productivity, financial security and fundamental improvement of the quality of life for individuals and their families. However, the wide social and economic impact of HBV is often overlooked in fiscal decision-making by governments and international funders of health programmes due to the long-term development of the disease.

Since LMICs are constrained by limited health budgets and have multiple competing health priorities, an investment case approach is needed to convince governments that investment in HBV elimination is cost-effective and cost-saving. The Centre for Disease Analysis Foundation (CDAF) has provided an estimated timeframe to break even with national investment in HBV elimination, beyond which investment becomes cost saving. For example, investment in HBV elimination is estimated to provide cost savings in the Philippines by 2024 and in Vietnam by 2027. By 2035, for every dollar spent on HBV elimination activities, there would be an estimated return of USD 2.23 in the Philippines and USD 1.70 in Vietnam (19).

A global model was developed in 2016 to estimate the costs of global elimination of HBV and the impact of scaling up public health interventions for its elimination (3). In this model, by increasing infant vaccination coverage to 90% of infants, 4.3 million new acquisitions could be averted and by increasing birth-dose vaccination to 80% of neonates together with the use of peripartum antivirals, 19 millions new acquisitions could be averted between 2015 and 2030.

None of these prevention strategies would reduce the prevalence or mortality in the short term, but additional population-wide testing and treatment (to 80% of eligible people) would **avert** an estimated **7.3 million deaths between 2015 and 2030, including 1.5 million cancer deaths.** The annual cost for elimination would peak at USD 7.5 billion worldwide (USD 3.4 billion in LMICs) but decrease rapidly to USD 4.7 billion per year in 2030 because of the impact of prevention interventions (3).

OPPORTUNITIES FOR ACCESS

Various mechanisms can be used to improve implementation of HBV national elimination programmes. Some ways in which HBV programmes can access TDF at affordable prices are centralizing pooled procurement, using tender mechanisms to get competitive pricing, and leveraging international pricing benchmarks for procurement (17).

Costs are expected to also decline thanks to cost-sharing and cross-cutting strategy actions with other diseases programmes, especially in relation to diagnostics and prevention of vertical transmission tools for key populations across HIV, VH and sexually transmitted infections and health systems strengthening actions, as recommended by the new GHSS and the triple elimination agenda (10).

Within the current limited funding landscape and weak global response, catalytic investment has been important to set up and implement VH elimination services within the universal health coverage (UHC) delivery streams and optimize procurement of commodities (20).

The Global Fund has seen its HIV policy scope for supporting countries to deliver hepatitis programming evolve over time to recognize the importance and need to address hepatitis co-infection. Under its 2023-2028 funding strategy, it enables integrating viral hepatitis prevention, diagnosis and treatment into multiple service settings, including for people living with HIV, key populations and pregnant women, as a part of the triple elimination approach (21).

Although Global Fund ressources cannot be used for the scale-up of national hepatitis elimination services or enable the introduction of hepatitis programmes, there is now a critical opportunity for funding to complement existing hepatitis services for the first time while using existing service delivery platforms. These include screening, diagnosis and treatment of HBV and vaccination for HBV within HIV harm reduction, sexual reproductive and antenatal services. BD for newborns is not covered by the Global Fund, but a case for resources to support programmatic delivery can be made (21,22).

Advocacy efforts are ongoing to encourage the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to clarify its funding policy for hepatitis and evolve its scope, similar to the Global Fund, by integrating VH prevention and treatment for people who use drugs and key populations in PEPFAR Country Operational Plans and funding streams (23)

SUCCESS STORIES

In the absence of a donor fund for viral hepatitis, many countries that have established a national viral hepatitis programme have leveraged domestic resources in the form of either direct government budgetary allocations to national programmes or through external catalytic funding (1).

Some countries have demonstrated models to get started with HBV programming by integrating existing health system infrastructure, identifying efficiencies and cost savings within existing strategies or other disease programmes, such as HIV and STIs, and finding creative ways of financing programming, as illustrated in the following country examples.

Antenatal care and an integrated approach with HIV and syphilis services in Rwanda, Mozambique and the Democratic Republic of Congo, as recommended by the WHO triple elimination initiative, showcase a key opportunity for prevention of vertical transmission of HBV.

> **"Preventing mother-to-child transmission of hepatitis B is the most important strategy for controlling the disease and saving lives."**
>
> **Dr Tedros Adhanom Ghebreyesus**
> WHO Director-General (World Hepatitis Day, 28 July 2020)

RWANDA: INTEGRATION OF HBV INTO HIV PREVENTION OF VERTICAL TRANSMISSION PROGRAMMES

In Rwanda, the integration of Rwanda's viral hepatitis programme within its robust HIV programme spurred momentum that led to Rwanda's political commitment in 2018 to eliminate HCV within five years. The programme is supported by the Global Fund with technical assistance from the Clinton Health Access Initiative (CHAI). The catalytic impact of Global Fund investments contributed to Rwanda's success in HCV elimination, which included the screening of over 6 million Rwandans and treatment of over 60,000 people (24). Rwanda has extended investments in HCV elimination to also increase HBV screening, optimizing domestic resources by integrating HBV testing and treatment services into the existing HIV response infrastructure, platforms and package of essential primary healthcare services covered by its health insurance scheme.

As Rwanda approaches HCV elimination, further effort and resources are needed for the elimination of HBV as part of an integrated approach for triple elimination of HIV, syphilis and HBV. The Hepatitis Fund and the Canton of Geneva are currently co-financing a project to eliminate HBV vertical transmission supported by CHAI, using the established HIV programme as a platform for maternal HBsAg testing and administration of HepB-BD to infants born to mothers living with HBV.

MOZAMBIQUE: INTEGRATION OF HBV INTO ANTENATAL CARE AND MATERNITY SERVICES

In **Mozambique**, during 2017-2019, Médecins Sans Frontières (MSF) and the Ministry of Health piloted the integration of prevention of vertical transmission of HBV into existing antenatal care and maternity services and screening programmes for HIV and syphilis for pregnant women at their first consultation. The aim was to reduce the prevalence of HBV in newborns in Maputo, as well as achieve triple elimination targets (25). The positive outcome of this nurse-led intervention led to integration of HBV care and prevention in the new national hepatitis and triple elimination guidelines.

It is estimated that the additional cost of integrating the HBV intervention into the existing flow would be limited since women living with both HIV and HBV are already enrolled in an HIV programme. The Global Fund included procurement for HBV screening tests in 2020 and for tenofovir in the 2021-2023 grant to implement the triple elimination strategy. For HIV-negative women, health ministry nurses and midwives included prevention of vertical transmission of HBV and vaccination in their routine practice (25).

DEMOCRATIC REPUBLIC OF THE CONGO (DRC): FEASIBILITY OF TRIPLE ELIMINATION

In DRC, HBV prevention of vertical transmission measures are not part of routine maternal and child health care. Also, the HBV first dose is not administered until six weeks of life, which is too late for prevention of vertical transmission. In 2021, a study carried out in two maternity centres in Kinshasa showed feasibility and acceptability of integration of HBV testing and treatment of pregnant women, as well as BD vaccination of HBV-exposed infants into the existing prevention of vertical transmission of HIV programme infrastructure and within the current Expanded Programme on Immunization (EPI). Implementation challenges in providing timely BD vaccination remain (26).

CAMEROON: INTEGRATION OF HBV BIRTH-DOSE VACCINATIONS INTO MATERNITY AND NEWBORN CARE

In **Cameroon**, infants are currently not vaccinated against HBV until they are six weeks old. This is problematic given the high prevalence of HBV among pregnant women in the country. In anticipation of the planned HBV-BD introduction in 2024, CHAI carried out a study to demonstrate models to improve coverage of HBV infant vaccination, including HBV-BD. CHAI supported the EPI to assess the feasibility of integrating two birth-dose vaccines (tuberculosis and polio) into maternity and newborn care, administered within 24 hours of birth, as will be required for HBV-BD. The pilot successfully demonstrated that coverage and timeliness of administration of birth-dose vaccines can be improved in different settings and facility types and across different levels of the Cameroon health system if facility-specific interventions geared towards integrating immunization into maternal and newborn services are encouraged. The study results were leveraged to develop key recommendations to guide the introduction of the HBV-BD vaccine in Cameroon (27).

UZBEKISTAN: CATALYTIC FUNDING AS A WAY TO KICK-START DOMESTIC PROGRAMMES

In 2019, Uzbekistan initiated a pilot elimination project to analyse VH disease burden on the general population and its economic impact and to develop national strategies to achieve VH elimination by using decentralized and simplified testing and treatment protocols. It used a catalytic funding mechanism developed by CDAF (28,29), which covered upfront costs for purchasing the first round of diagnostic tests and medications. The government was convinced that it was possible to establish a national VH elimination programme that is simple to implement and cost-effective. As a result, the government decided to fully fund and scale up a new four-year programme starting in 2023. By then, screening for HBV and HCV in all regions (1 million per year), PCR tests (15,000 per year) and treatment for HBV and HCV will be free, and a national registry will be created (30).

CHINA: POLITICAL WILL AND PARTNERSHIPS ARE KEY TO SCALING UP FINANCING FOR PROGRAMMES

China provides another model that has shown success in achieving substantial progress towards HBV elimination. A project co-funded with Gavi in China featured strong political will coupled with increasing domestic healthcare spending and external funding from development agencies or major international donors (see Box 1) (31).

The infant vaccination and prevention of vertical transmission strategies implemented in China's HBV immunization programme over the past 20 years have been highly successful and increasingly effective, resulting in reducing the prevalence of HBsAg in children younger than five years from 9.7% in 1992 to 0.3% in 2014 (32).

A recent modelling analysis in China (33) estimated that if current levels of prevention interventions are maintained, China will achieve the elimination target by 2029. By modelling various intervention scenarios, this can be brought forward to 2025 by increasing coverage of birth-dose vaccination from 95.9% to 99%, or to 2024 by the administration of tenofovir to pregnant women who are positive for HBeAg. The former scenario would avert 54,000 new chronic infections and the latter would avert up to a further 67,000 new chronic infections.

THE HEPATITIS FUND TO CATALYSE ELIMINATION PROGRAMMES

There is a need for countries to take advantage of the Global Fund's new funding opportunity, as well as of catalytic funding provided by new actors, such as The Hepatitis Fund (THF), to introduce and/or strengthen national VH programmes.

THF is the only grant-making organization dedicated exclusively to the mission of VH elimination to fill the gap left by major global health donors. THF helps partners overcome barriers and thus achieve VH elimination goals by funding highly effective activities that increase awareness of VH among the general population, affected groups and policymakers, and that accelerate prevention, diagnosis and treatment interventions, as done in Vietnam, Pakistan and Uganda since 2020.

Vietnam is still among countries with a high burden of VH, accounting for more than seven million HBV infections. VH is the third cause of death in the country, with more than 25,000 deaths in 2016 (34). With financial and technical support from UN organizations (WHO, UNICEF and UNAIDS), the Ministry of Health issued a national action plan to eliminate HIV, hepatitis B and syphilis transmission from mother to child (2018-2030) to achieve triple elimination goals by 2030. To accelerate HBV testing, diagnosis and linkage to care of key populations, THF supported the Heplink programme from PATH by providing free HBV testing, treatment and counselling services to 20,000 vulnerable individuals in Ho Chi Minh City and Hanoi, health facilities and HIV outpatients clinics (35). Decentralization of VH testing, diagnosis and treatment to the primary care level and integration with HIV and harm

reduction services in the public and private sector yielded a cost-effective model and provided evidence for scaling up and resource mobilization interventions that are fundamental for achieving the elimination goals by 2030. The programme led to catalytic improvements in the cascade of care (36)

In Nghe An, Vietnam's largest province, THF is currently funding, with the City of Geneva, a three-year pilot project to prevent vertical transmission of HBV and promote newborn HBV-BD vaccination. The aim of the project is to demonstrate the impact of introducing screening and treatment of HBV in pregnant women within the maternal and child healthcare system as part of meeting Vietnam's 2030 triple elimination goals (37).

Among other catalytic outcomes, THF work also led to the adoption of targeted BD vaccination in Uganda in 2022, the treatment of 10,745 people and the reduction of out-of-pocket testing costs for HCV in Pakistan, and the opening of the first HBV clinics within Zambia's HIV programme. It also enabled the design and costing of seven national plans in Peru, Nigeria, Sudan Uganda, Bangladesh, Vanuatu and Ivory Coast.

CASE STUDY - HBV vaccine as game changer in China, the key role of Gavi

Control of hepatitis B was a major health concern in China, which was once home to one-third of all people living with HBV in the world.

The Government of the People's Republic of China (GOC) and Gavi, the Vaccine Alliance, undertook a co-funded five-year USD 76 million project in June 2002 to expand HBV vaccination. Savings from the first roll-out meant the project could be extended until 2011.

GOC co-financed 50% of project costs from inception and adopted a policy to fully integrate HBV vaccination into the EPI in 2002, making the HBV vaccine available for free nationwide.

The provision of free vaccines removed a serious financial barrier. Parents still paid service fees for each injection but caps were placed on user fees to ensure affordability.

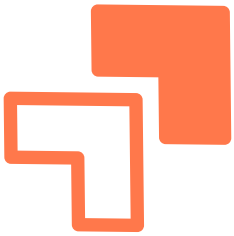
- HepB3 coverage rates reached over 95% in all provinces by 2009
- Timely BD coverage across the western provinces was 84% in 2009 (a 27% increase from 2004) and 90% in 2011, with only one province not reaching the 75% coverage goal.

The project has since surpassed its stated objectives of increasing HepB3 coverage to over 85% and timely birth-dose coverage to over 75% at both the national and provincial level except for one province.

The project contributed to a decrease in HBsAg prevalence in children under five years by securing full integration of HBV vaccination into the EPI programme for children nationwide.

CONCLUSION

Although no cure exists for HBV infection yet, cost-effective therapies to control viral replication and minimize vertical transmission, as well as a safe and effective vaccine, make elimination of HBV feasible. Yet, despite the high prevalence globally and the high impact on health and social costs, HBV still significantly lacks national and international attention, bold political will and adequate resources to implement and scale up national VH programmes in LMICs.



Financing continues to be a major barrier to the introduction and growth of HBV programmes globally. LMICs are constrained by limited health budgets and have multiple competing health priorities. For many countries, affordability, rather than cost-effectiveness, is a major barrier. A significant increase in the current levels of domestic financing and financial commitment of global health funders and international donors in HBV elimination programmes is needed to achieve disease elimination targets. UNITAID's next grant cycle, the Global Fund's next funding round and The Hepatitis Fund donor mobilization efforts are critical opportunities for LMICs to apply for funds to introduce and/or strengthen VH national programmes.

Funding efforts should now urgently focus on scaling up prevention of vertical transmission of HBV interventions, particularly some African countries where timely HBV-BD coverage is low and population-level testing and treatment to increase case finding and linkage to care must be increased. Universal birth-dose vaccination is cheap and accessible, and it is crucial to avert HBV transmission in early childhood. While countries will have to finance the HBV-BD vaccine doses themselves through their national health systems, Gavi must meet its commitment to provide catalytic support for the introduction of HBV-BD without any further delay.

VH prevention and treatment must be integrated into UHC and at the level of primary healthcare. Therefore, country support should be designed to encourage and incentivize increased and sustainable budget allocations for prevention of vertical transmission and screening and treatment programmes. Each country's capacity should be assessed individually, rather than applying a standardized approach.

Eliminating hepatitis will also require adopting a public health approach using simplified service delivery protocols. This includes decentralization and integration of testing and treatment to lower-level health facilities. This applies particularly to existing primary and maternal healthcare, ideally with the delivery of testing and treatment at the same site to promote linkage, and delivery of care and treatment by non-specialists, including primary care physicians and nurses (10).

Eliminating HBV as a public health threat by 2030 is achievable provided there are further investments in R&D to find a cure, stronger political will and increased funding commitment of donors and global health funders to support LMICs in scaling up their HBV national elimination strategies.

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ACKNOWLEDGEMENTS

We would like to thank Homie Razavi (CDA Foundation) and Oriel Fernandez (Clinton Health Access Initiative), as well as Capucine Pénicaud, Francesca Da Ros and Maria-Carolina Salazar from The Hepatitis Fund for co-designing this white paper and Janette Bennett for editing it.

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