



# COMBATING HEPATITIS B AND C TO REACH ELIMINATION BY 2030

MAY 2016

ADVOCACY BRIEF



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## EXECUTIVE SUMMARY

### Hepatitis B and C: a heavy burden of mortality that is increasing

In 2013, viral hepatitis was a leading cause of death worldwide (1.46 million deaths, a toll higher than that from HIV, tuberculosis or malaria, and on the increase since 1990) (1). More than 90% of this burden is due to the sequelae of infections with the hepatitis B virus (HBV) and hepatitis C virus (HCV) (1). Prevention can reduce the rate of new infections, but the number of those already infected would remain high for a generation. In the absence of additional efforts, 19 million hepatitis-related deaths are anticipated from 2015 to 2030 (2). Treatment now can prevent deaths in the short- and medium term.

### Combining prevention and treatment to combat hepatitis makes elimination feasible

#### Prevention needs to reach the unreached

Prevention of HBV and HCV infections relies on (i) three-dose hepatitis B vaccine for infants, (ii) prevention of mother-to-child transmission of HBV with birth-dose vaccine and other approaches in the near future, such as routine testing and treatment of pregnant women, (iii) blood, injection and surgical safety, and (iv) harm reduction for people who inject drugs. Prevention works and is documented as being cost-effective.

#### New medicines make it possible to launch a major testing and treatment initiative

There is a new generation of highly effective medicines for treating chronic HBV and HCV infections. Lifelong treatment can suppress HBV replication; 12–24 weeks of treatment can cure chronic HCV infection. Economic analyses in Mongolia and Egypt (HCV), in Senegal and the Gambia (HBV), and China (HBV and HCV) indicate that population-based approaches to test and treat would also be cost-effective.

#### Reaching five service coverage targets can eliminate hepatitis as a public health threat

The 2014 World Health Assembly requested the World Health Organization (WHO) to examine the feasibility of eliminating hepatitis B and C, and the 2015 Agenda for Sustainable Development commits to combating viral hepatitis (Target 3.3). WHO modelled options (2). The results of the analysis suggest that if the viral hepatitis response reaches five prevention and treatment service coverage targets (see Table 1), hepatitis B and C could be eliminated as a public health threat (i.e. 90% reduction in new chronic infections, 65% reduction in mortality compared with a scenario in which interventions would continue at the current level). Reducing infections and deaths would require a comprehensive health sector approach. The Global Health Sector Strategy (GHSS) on Hepatitis provides a roadmap towards the elimination of viral hepatitis. Implementation of the five priority prevention and treatment interventions will strengthen health systems within the context of the universal health coverage framework, which is the overarching target for Sustainable Development Goal 3 on health.

### Eliminating hepatitis B and C by 2030 would avert 7.1 million deaths (2)

As high-income countries would finance their own response, WHO estimated the cost of implementing the strategy in low- and middle-income countries.\* For 2016–2021, the total cost of implementing the five key interventions would be US\$ 11.9 billion, with a peak at US\$ 4.1 billion for the year 2021. The principal drivers of cost are testing and treatment for hepatitis B and C. Implementation of the Global Health Sector Strategy would prevent 7.1 million deaths between 2015 and 2030.

\* Costing estimate includes the full cost of intervention in low- and lower-middle-income countries and 25% of the costs of upper-middle-income countries under the assumption that in upper-middle-income countries, intervention costs would be partially or fully offset by savings on treatment of advanced disease and on alternative, less effective treatments (based on an unpublished WHO economic analysis conducted in China).

## Major progress in pricing of HCV medicines

Despite high prices, many high-income countries have announced decisions to provide treatment for all persons infected with HCV, with minimal co-payments. Some middle-income countries that want to test and treat large proportions of their populations have negotiated substantial price reductions that have enabled treatment plans previously thought impossible. Low-income countries can benefit from various price-reduction strategies such as voluntary licensing agreements. Generic versions of new HCV medicines are available for under US\$ 500/patient in some countries. However, a combination of two direct-acting antivirals could be produced for approximately US\$ 200/patient (3). Hence, further price reductions could be achieved and will be needed to increase the number of patients treated.

**TABLE 1** Service coverage targets that would eliminate HBV and HCV as public health threats, 2015–2030

Target areas		Baseline 2015	2020 target	2030 target		
Service coverage	Prevention	① Three-dose hepatitis B vaccine for infants (coverage %)	82%	90%	90%	
		② Prevention of mother-to-child transmission of HBV: hepatitis B birth-dose vaccination or other approaches (coverage %)	38%	50%	90%	
		③ Blood and injection safety (coverage %)	Blood safety: donations screened with quality assurance	89%	95%	100%
			Injection safety: use of engineered devices	5%	50%	90%
	④ Harm reduction (sterile syringe/needle set distributed per person per year for people who inject drugs [PWID])	20	200	300		
	⑤ Treatment	5a. Diagnosis of HBV and HCV (coverage %)	<5%	30%	90%	
5b. Treatment of HBV and HCV (coverage %)		<1%	5 million (HBV) 3 million (HCV)	80% eligible treated		
Impact leading to elimination	Incidence of chronic HBV and HCV infections	6–10 million	30% reduction	90% reduction		
	Mortality from chronic HBV and HCV infections	1.46 million	10% reduction	65% reduction		

**① Three doses of hepatitis B vaccine protect infants for life; 90% of infants need to receive it.**

By the end of 2014, 82% of children worldwide received three doses of hepatitis B-containing vaccine (4). The vaccine is highly effective, inexpensive, available as a combination with other vaccines in the Expanded Programme on Immunization (EPI), and documented as being highly cost-effective.

**② Timely hepatitis B birth-dose vaccination and other approaches can eliminate perinatal transmission; 90% of newborns need to be covered.**

In 2014, 96 countries had introduced hepatitis B birth-dose vaccination, with global coverage at 38% (4), but further progress is needed to prevent chronic, lifelong infections.

**③ Encouraging advances have been made in blood and injection safety, but more progress is needed.**

In 2010, in low- and middle-income countries, the proportion of injection devices that were reused without sterilization had dropped to 5.5% (5). With respect to blood safety, in 2011, among 97 countries that reported data, 89% were screening all blood donations in a quality-assured manner (6). As per the principle of “first, do no harm”, health-care services should not lead to infections.

**④ Harm reduction is still an unmet need.**

In 2014, an estimated 20 sterile syringe/needle sets were distributed per person who injects drugs (PWID) (7). A minimum of 300 sets/PWID/year would be needed for effective harm reduction.

**⑤ Effective medicines that can save the lives of patients infected with HBV and HCV are available today.**

Chronic infections with HBV and HCV can both be treated with highly effective oral medicines. In the case of HBV, lifelong treatment leads to viral suppression in 70–80% of patients. In the case of HCV, a 12–24-week course results in cure for more than 90% of patients. The service coverage targets proposed in the strategy would have a major impact on mortality.

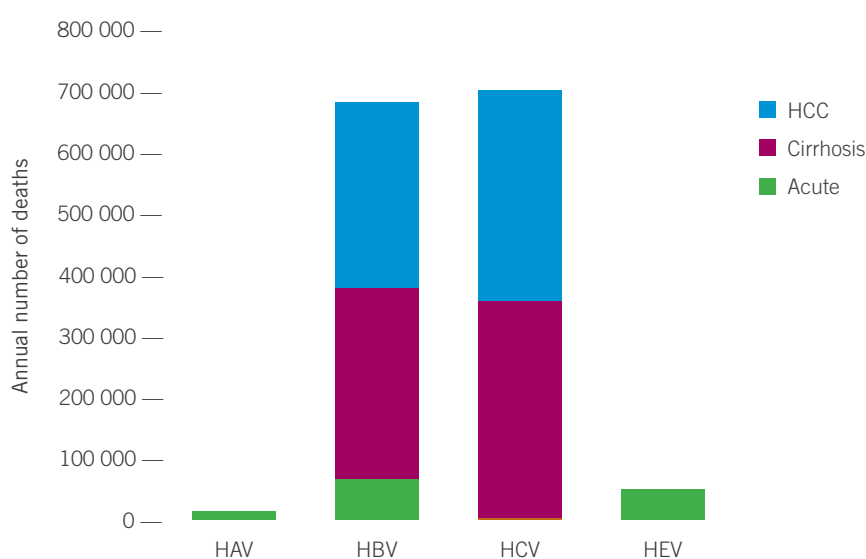
## A. MORTALITY FROM VIRAL HEPATITIS IS ON THE INCREASE BECAUSE OF POOR ACCESS TO TREATMENT

**Viral hepatitis is a leading cause of death worldwide.** The Global Burden of Disease and other studies provide an increasingly precise description of the burden of viral hepatitis, which has been increasing since 1990. With 1.46 million deaths in 2013, viral hepatitis was a leading cause of death, a toll comparable to that of HIV (1.3 million deaths), tuberculosis (1.2 million deaths) and malaria (0.5 million deaths) (8). Yet, viral hepatitis has not received the same attention as these three diseases. In 2010 and 2014, however, two World Health Assembly resolutions (WHA63.18 (9) and WHA67.6 (10)) focused on viral hepatitis. Hepatitis is specifically mentioned in the Sustainable Development Goals (SDGs) (11): Target 3.3 includes “combating hepatitis” alongside elimination of the HIV, tuberculosis and malaria epidemics. In view of the different routes of transmission and affected groups, reducing hepatitis infections and deaths requires a broad, health-systems approach that is well aligned with the universal health coverage framework, which is the linchpin of the SDGs.

**Cirrhosis and hepatocellular carcinoma, which are sequelae of chronic infections with HBV and HCV, account for most of the burden of disease due to viral hepatitis.** These accounted for more than 90% of all deaths from viral hepatitis in 2013 (Fig. 1). Deaths from cirrhosis and hepatocellular carcinoma are secondary to HBV and HCV infections acquired decades earlier. Hepatitis A and E cause fewer deaths, almost exclusively from acute hepatitis.

**Mortality from HBV- and HCV-associated cirrhosis and hepatocellular carcinoma is increasing because of poor access to treatment.** Systematic reviews of the literature suggest that approximately 240 million persons live with chronic hepatitis B (12), and that 130–150 million live with chronic hepatitis C (13). HBV and HCV are distributed worldwide, but Asia and Africa have the highest prevalence of infections (12,13). In the absence

**FIGURE 1** Deaths from viral hepatitis, by virus and type of sequelae, 2013 (1)



HAV: hepatitis A virus; HBV: hepatitis B virus; HCC: hepatocellular carcinoma; HCV: hepatitis C virus; HEV: hepatitis E virus.



of treatment, 20–30% of HBV- and HCV-infected persons will develop hepatocellular carcinoma or cirrhosis, leading to an estimated 19 million deaths between 2015 and 2030 (11.8 million from HBV and 7.2 million from HCV) (2).

**Effective medicines that can save the lives of patients infected with HBV and HCV are available today.**

Chronic infections with HBV and HCV can both be treated with highly effective oral medicines. In the case of HBV, treatment usually needs to be taken for life and leads to viral suppression in 70–80% of patients. In the case of HCV, a short course (usually 12 weeks) of medicines results in cure for more than 90% of patients, regardless of genotype. Hepatitis treatment reduces the risk of developing cirrhosis and hepatocellular carcinoma at a later stage.

**Scaling up treatment can build on major progress made in prevention.**

*Universal immunization has already prevented many new HBV infections in children.* By the end of 2014, 184 countries had introduced universal hepatitis B vaccination for infants. Approximately 82% of children worldwide (92% in the Western Pacific Region) received three doses of hepatitis B vaccine, and are thus protected from HBV infection for life. In the same year, 96 countries had introduced hepatitis B birth-dose vaccination, with global coverage at 38% (4).

*The incidence of HBV and HCV infections decreased because of progress in injection safety and blood safety, but harm reduction remains under-implemented.* Between 2000 and 2010, in low- and middle-income countries, the proportion of injection devices that were reused without sterilization dropped from 39.8% to 5.5% (5), leading to a reduction of 91% and 83% of HBV and HCV infections transmitted through health-care injections, respectively (14). With respect to blood safety, among the 97 countries that reported data in 2011, 89% were screening all blood donations in a quality-assured manner (6). The need for harm reduction interventions remains unmet, with an estimated 20 sterile syringe/needle sets distributed per person who injects drugs (PWID) in 2014 (instead of the recommended minimum of 300/PWID/year) (7).

**1.46** MILLION DEATHS  
IN 2013, MOST OF WHICH FROM  
SEQUELAE OF CHRONIC  
HEPATITIS B AND C.



## B. COMBINING TREATMENT WITH PREVENTION COULD ELIMINATE VIRAL HEPATITIS AS A PUBLIC HEALTH PROBLEM BY 2030

**A request from the World Health Assembly.** In 2014, the World Health Assembly requested the WHO secretariat to examine the feasibility of and strategies needed for the elimination of hepatitis B and hepatitis C, with a view to potentially setting global targets (WHA67.6) (10). Prevention alone would reduce the rate of new infections (incidence), but the number of people already infected (prevalence) would remain high for a generation, and mortality would remain at a high level. Treating those already infected can prevent deaths in the short- and medium term.

**Reaching five prevention and treatment service coverage targets would eliminate hepatitis B and C as public health threats** (2). WHO has identified five key service coverage targets: 90% coverage of hepatitis B childhood vaccination, 90% coverage of birth-dose vaccination or other means to prevent mother-to-child transmission, 100% of blood donations screened in a quality-assured manner, 90% of injections given with safety-engineered devices, and distribution of at least 300 sterile needles and syringes/PWID/year (see Table 1, page 3). Reaching these five service coverage targets by 2030 would reduce the incidence of chronic infections by 90% and mortality by 65% (as compared to 2015 levels), which would eliminate hepatitis B and C as public health threats.

**Elimination will strengthen health systems.** Prevention of HBV and HCV infections is a health-system intervention that requires well-functioning immunization, reproductive health and infection control services, including injection safety and blood safety. Hence, improving these services to eliminate hepatitis will strengthen health systems. The momentum to drive the response to viral hepatitis is building. As of February 2016, 36 countries had developed national plans and 33 others were preparing them. As more WHO Member States join this initiative, the progress towards elimination will be faster.



## C. PREVENTION IS EFFECTIVE AND COST-EFFECTIVE, BUT NEEDS TO REACH THE UNREACHED

WHO will provide an in-country costing tool that will help countries plan how to reach their coverage targets on the basis of their baseline situation in 2015.

- **Universal hepatitis B immunization of infants: reach 90% coverage.** We are about to reap the reward of hepatitis B immunization as a highly cost-effective, long-term investment. In highly endemic countries that initiated universal immunization more than 20 years ago, individuals who were vaccinated no longer constitute a reservoir of infection. These countries are already documenting reductions in the incidence of hepatocellular carcinoma. Three WHO regions (Africa, the Western Pacific and the Eastern Mediterranean) have already adopted resolutions that set time-bound targets to bring down the prevalence of chronic hepatitis B infection through immunization. Immunization is also indicated for adults at increased risk of infection, such as health-care workers.
- **Birth dose of hepatitis B vaccine and other methods to prevent mother-to-child transmission of HBV: reach 90% coverage.** WHO currently recommends administration of hepatitis B vaccine within 24 hours of birth (called timely birth dose) to prevent mother-to-child transmission of HBV, but achievements vary by region. In 2014, while the Western Pacific Region had made substantial progress in timely birth-dose coverage (80% coverage), coverage in the African Region remained low (10%). Progress is needed to address logistical barriers and deliver the first dose of hepatitis B vaccine within 24 hours of birth. Ultimately, newer methods to prevent mother-to-child transmission of HBV, such as the administration of antivirals to pregnant women, will be needed to achieve the proposed targets. Recent research indicates the effectiveness of this approach (15).
- **Injection safety and blood safety: reach 90% coverage.** A 2003 WHO analysis indicated that national policies for the safe and appropriate use of injections are highly cost-effective (16). To prevent injection-associated infections, WHO now relies on scaling up access to devices that prevent reuse, particularly for injections given outside of the formal health-care setting. With respect to blood safety, additional progress is needed to reach 100% screening of all blood units with quality assurance to prevent transmission of HCV and HBV worldwide.
- **Harm reduction: scaling up prevention.** In 2009, WHO, the United Nations Office on Drugs and Crime (UNODC) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) defined a package of nine interventions for PWID that was endorsed by the United Nations General Assembly and major donor agencies such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). Provision of sterile injecting equipment is known to be effective in preventing HIV infection in PWID, and is even more crucial for HCV prevention because HCV is transmitted more readily than HIV. In Australia, a study estimated that the investment in harm reduction will be entirely recovered in health-care cost savings by 2032 (future return on investment: A\$ 1.3–5.5 for every A\$ 1 invested) (17). In addition, opioid substitution therapy reduces injecting behaviour, thereby reducing transmission of bloodborne pathogens for those people dependent on opioids. Yet, in some countries, there is political resistance to implementation; thus, accessibility and coverage remain low. Increasing access to clean injecting equipment and opioid substitution therapy is crucial to curbing the spread of viral hepatitis, particularly because it also prevents reinfection after treatment.



## D. THERE IS NOW A SOLID CASE TO SCALE UP TESTING AND TREATMENT: TREATMENT WORKS AND CAN SAVE LIVES WITHIN A SHORT TIME HORIZON

**New WHO evidence-based guidelines now recommend testing and treatment.** Historically, treatment for viral hepatitis was considered too expensive and not sufficiently effective for low- and middle-income countries. The development of safe and effective therapies in the past few years has changed this dynamic. However, most persons with chronic hepatitis infections are unaware of their status. Therefore, a dramatic scaling up of testing with linkage to care and treatment is needed.

### BOX 2 The battle against the largest\* hepatitis C epidemic in the world has started in Egypt

In Egypt, the prevalence of hepatitis C infection is among the highest in the world. Direct health-care costs for hepatitis already consume 4% of the total health expenditure. As indirect costs represent twice the direct costs, the total costs amount to 1.4% of the gross national product. An economic analysis, however, indicates that treating 328 000 persons with hepatitis C infection annually by 2018 with direct-acting antivirals could reduce the prevalence of infection by 94% and liver-related deaths by 75% by 2030. Treatment is highly cost-effective (incremental cost-effectiveness ratios ranging from US\$ 372 per disability-adjusted life year [DALY] in the absence of fibrosis to less than US\$ 100 per DALY for patients with cirrhosis). When indirect costs are taken into account, the intervention is cost saving (US\$ –10 670 to –11 640 per DALY). In 2015, estimates suggested that 22% of the 5.76 million persons with HCV infection were aware of their infection in Egypt. Since 2015, treatment has been based on direct-acting antivirals, and 560 000 persons have already received treatment. Egypt now plans to treat more than 4.5 million persons with hepatitis C infection by 2030.

Source: Estes C, Abdel-Kareem M, Abdel-Razek W, Abdel Sameea E, Abuzeid M, Gomaa A et al. Economic burden of hepatitis C in Egypt: the future impact of highly effective therapies. *Aliment Pharmacol Ther.* 2015;42(5):696–706. doi:10.1111/apt.13316

\*In terms of proportion of the population affected

**500 000** PERSONS  
ALREADY TREATED IN EGYPT  
AND 4.5 MILLION TO BE TREATED  
BY 2030

**Major progress in pricing of medicines.** Despite high prices, many high-income countries (e.g. France, Scotland and Australia) announced decisions to provide treatment for all persons infected with HCV, with minimal co-payments. Some middle-income countries that want to test and treat large proportions of their populations have negotiated substantial price reductions that triggered plans previously thought impossible. Low-income countries can benefit from voluntary licensing agreements through which generic versions of new HCV medicines can be provided for under US\$ 500/patient. As a study estimated that a combination of two direct-acting antivirals could be produced for approximately US\$ 200/patient (3), further reduction in the price of HCV medicines will be needed to allow most countries to envisage large-scale increases in treatment numbers.

### **BOX 3 Appraising options to maximize the impact of treatment scale-up in Mongolia**

In Mongolia, 6.8% of the population is chronically infected with HCV. While the incidence of new infections is declining, Mongolia has the highest rate of liver cancer in the world because of the large number of persons with chronic hepatitis. In response to public demand and the availability of new, highly effective medicines, the Mongolian Ministry of Health and Sports negotiated one of the lowest global prices of combination sofosbuvir/ledipasvir medication. With the support of WHO, it proceeded to examine options to address the hepatitis C epidemic. Options considered included (a) focusing on reducing mortality by treating patients with advanced liver disease, (b) eliminating HCV infection by treating all those infected, and (c) a combination strategy, beginning with a mortality reduction objective and transitioning to elimination after 5 years. The net cost of the combination strategy would result in a 50% cost saving to Mongolian society in 2015–2030 compared to doing nothing. However, an initial investment is required from the health sector. Using co-payments that would remain below the ceiling of catastrophic health-care expenses, expenditure would peak to 18% of the health insurance budget in 2018. In November 2015, the Government of Mongolia and the National Parliament approved this combination strategy to eliminate HCV from Mongolia by 2030, and the country is now examining financing strategies to make this possible.

*Source:* WHO/Centre for Disease Analysis. Public health and economic impact of a population-based approach to HCV treatment in Mongolia. Unpublished report to the Ministry of Health, 2015.



**Progress in hepatitis B treatment in Asia and Africa.** In China (Box 4), testing and treatment is the logical next step after major progress in the field of immunization.

#### **BOX 4 In China, use of highly effective medicines for hepatitis B could be cost saving**

In 2012, WHO verified that China had reached the hepatitis B control goal of the WHO Western Pacific Region for 2017 (prevalence of infection less than 1% in children five years of age) through timely vaccination of newborns and infants. This public health approach made prevention of HBV infection a reality for almost all newborns. Now, nearly all Chinese children are free from HBV infection for life. However, most adults were born prior to the ready availability of hepatitis B vaccine, and nearly 90 million adults who were infected as infants are now living with chronic HBV infection. The 2014 national serological survey indicated that the prevalence of chronic HBV infection was 4.4% among persons aged 15–29 years. Chronically infected adults are at high risk of developing cirrhosis and hepatocellular carcinoma, a burden that will increase as individuals with chronic HBV infection age. Currently, access to appropriate treatment is limited and often unaffordable. Treatment is characterized by widespread use of suboptimal and ineffective medicines. Use of highly effective medicines that are recommended by WHO (tenofovir or entecavir) would generate greater health gains, which in turn would reduce the costs of hepatitis-related health care. Effective medicines could be made available for large-scale treatment of chronic HBV infection. For example, annual treatment with branded tenofovir costs US\$ 2920 per year when purchased by patients for hepatitis B, but costs only US\$ 360 when purchased for HIV treatment in government programmes. In addition to the reduction in human suffering, cost-effectiveness analyses indicated that at the lower price for tenofovir, hepatitis B treatment would be cost saving, with a return on investment of approximately US\$ 1.3 for every dollar invested.

*Sources:* Centre for Health Policy Evaluation and Technology Assessment, China National Health Development Research Centre, WHO. Chronic hepatitis B: investment case and economic analysis. (Unpublished report) and Toy M, Hutton DW, So SK. Cost-effectiveness and cost thresholds of generic and brand drugs in a national chronic hepatitis B treatment program in China. PLoS One. 2015 Nov 4;10(10):e0139876.



Sub-Saharan Africa is also examining ways to test and treat in order to address its burden of hepatitis B (Box 5).

### **BOX 5 West Africa initiates community-based testing and treatment for HBV**

Chronic HBV infection remains highly prevalent in Senegal and the Gambia, West Africa (11.7% and 8.5%, prevalence, respectively) despite early introduction of infant vaccination (in 1986 in the Gambia and 2004 in Senegal). In these two countries, the PROLIFICA (Prevention of Liver Fibrosis and Cancer in Africa) research study provides data on the feasibility and cost-effectiveness of population-level screening and treatment for HBV infection. Over 10 000 people have been screened in both countries. In the Gambia, community screening was cost-effective (incremental cost-effectiveness ratio: US\$ 704/life-year saved). However, country-level scale up of testing and treatment will require further negotiations on pricing and improvement in the supply chain. In Senegal, work is under way to evaluate the returns on investment of a countrywide scale up of combined prevention and treatment interventions, including with a timely birth dose of hepatitis B vaccine and a programme to test and treat.

*Source:* PROLIFICA - West African Treatment Cohort for Hepatitis B. <https://clinicaltrials.gov/ct2/show/NCT02129829>.



## E. TREATING HBV AND HCV COINFECTION AMONG HIV-INFECTED PERSONS HELPS SECURE THE HEALTH GAINS FROM HIV TREATMENT

About 2.3 million people living with HIV are coinfecting with HCV (18) and 2.6 million with HBV (19). International partnerships, such as the Global Fund, invest a large amount of resources in HIV treatment. However, regimens that do not cover coinfection expose these patients to progression of their chronic liver disease, which can be fatal. HIV/HBV and HIV/HCV coinfections must be managed appropriately to secure the health gain acquired through HIV treatment. This requires testing services that can ensure linkage with care.

## F. ECONOMIC ANALYSIS (2)

### Cost

As high-income countries would finance their own response, WHO estimated the cost of implementing the strategy in low- and middle-income countries.\* The total cost for fully implementing the five key interventions in 2016–2021 would be US\$ 11.9 billion, with a peak at US\$ 4.1 billion in 2021 (Fig. 2). After 2021, annual costs will continue to grow and peak in 2026 at US\$ 5.2 billion. Costs will then decline to US\$ 3.5 billion per year in 2030. The principal drivers of cost are testing and treatment for hepatitis B and C. Costs will decline in the future, initially because of the reduced need for hepatitis B testing and fewer chronic HBV infections, and later due to the reduction in the number of persons with chronic HCV infection because of treatment.

For the four prevention-oriented targets, WHO will assist countries so that they can estimate the cost of increasing service coverage in the context of the cost structure of their health systems. The baseline coverage will influence the incremental cost of the scale-up needed to achieve elimination.

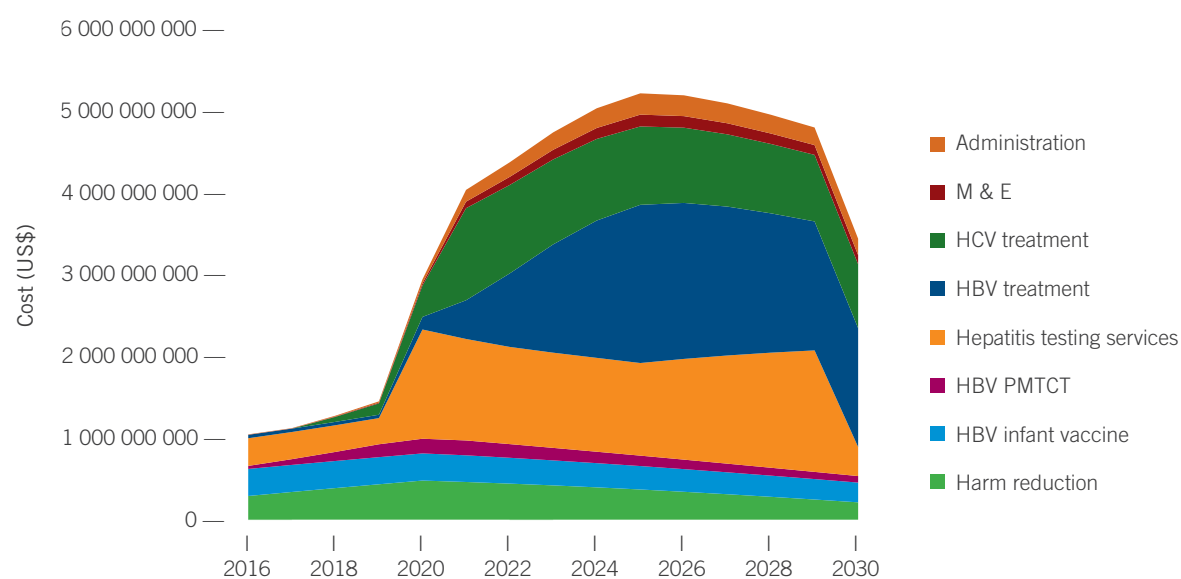
\* Costing estimate includes the full cost of intervention in low- and lower-middle-income countries and 25% of the costs of upper-middle-income countries under the assumption that in upper-middle-income countries, intervention costs would be partially or fully offset by savings on treatment of advanced disease and on alternative, less effective treatments (based on an unpublished WHO economic analysis conducted in China).



## BOX 6 Main assumption used by WHO to cost the elimination strategy

- Cost of treatment for hepatitis B: US\$ 60/year (current price for tenofovir in public-sector HIV programmes)
- Cost of treatment for hepatitis C: US\$ 500/treatment course in low- and middle-income countries

**FIGURE 2** Estimation of the cost of the strategy to eliminate viral hepatitis B and C as public health problems by 2030 in low-income and middle-income countries (2)



HBV: hepatitis B virus; HCV: hepatitis C virus; M&E: monitoring and evaluation; PMTCT: prevention of mother-to-child transmission.

### Health gain from implementing the strategy

From 2015 to 2030, implementation of the Global Health Sector Strategy will prevent 7.1 million deaths. This reduction is a result of prevention efforts leading to fewer infections and subsequent deaths, as well as treatment efforts resulting in longer survival.

**TABLE 2** Deaths prevented as a result of implementation of the Global Health Sector Strategy for Viral Hepatitis, 2015–2030

Deaths prevented	Upper-income countries	Middle-income countries		Lower-income countries	Total
		Upper	Lower		
HBV-associated	520 000	2 680 000	1 390 000	420 000	5 000 000
HCV-associated	590 000	750 000	660 000	100 000	2 100 000
Total	1 110 000	3 430 000	2 050 000	520 000	7 100 000

## G. WHO'S ROLE

WHO's Global Hepatitis Programme in the HIV Department and regional and country offices will assist global advocacy efforts to eliminate hepatitis B and C as public health problems through further developing its activities in the field of (a) strategic information that generates data for decision-making, (b) development of guidelines and other technical documents, (c) assistance in national planning, and (d) technical assistance to Member States. Table 3 summarizes provisional budget estimates for 2016–2021, separately for WHO headquarters and for the six WHO regions. The distribution of the WHO budget estimates along the five strategic directions differs from the distribution proposed for the global costing, as WHO needs to contribute proportionally more in selected work areas (e.g. strategic information). Further discussions with partners and regional offices will refine these estimates for each biennium, starting with 2016–2017.

**TABLE 3** Total budget for the WHO secretariat to support the global efforts to eliminate hepatitis B and C as public health problems by 2030 (US\$ millions, 2016–2021)

Strategic directions of the Global Health Sector Strategy on Viral Hepatitis		WHO regions	Headquarters	Total
1	Strategic information for focus	17.9	8.6	26.5
2	Interventions for impact	25.0	12.1	37.1
3	Delivering for equity	17.9	8.6	26.5
4	Financing for sustainability	3.6	1.7	5.3
5	Innovation for acceleration	7.2	3.5	10.6
Total		71.6	34.5	106.1



Since 2011, WHO's Global Hepatitis Programme has been functioning on start-up resources (biennium budget of US\$ 1.5 million during the 2014–15 biennium at headquarters). However, with the engagement of regional and country offices, progress has been rapid, with delivery of key normative products and country plans (Box 7).

## **BOX 7 Key achievements of WHO in the field of viral hepatitis 2011–2015**

### ADVOCACY

- Observance of the World Hepatitis Day on 28 July each year
- Viral Hepatitis Summit in Glasgow, 2015: over 90 countries represented, leading to the Glasgow Declaration

### NORMATIVE WORK

- *Guidelines for the treatment of hepatitis C* (2014, updated April 2016)
- *Guidelines for the treatment of hepatitis B* (2015)
- *Guide for the preparation of national viral hepatitis plans* (2015)
- *Hepatitis E outbreak manual* (2014)
- *Technical considerations and case definitions for viral hepatitis surveillance* (early 2016)
- *Monitoring and evaluation framework* (early 2016)

### COUNTRY PROGRESS

- 36 countries with national plans for combating hepatitis
- 33 countries formulating national plans



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