World Health Organization

COMBATING HEPATITIS B AND C TO REACH ELIMINATION BY 2030

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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	❶ Three-dose hepatitis B vaccine for infants (coverage %)		82%	90%	90%
		❷ Prevention of mother-to-child transmission of HBV: hepatitis B birth-dose vaccination or other approaches (coverage %)		38%	50%	90%
		❸ Blood and injection safety (coverage %)	Blood safety: donations screened with quality assurance	89%	95%	100%
			Injection safety: use of engineered devices	5%	50%	90%
		❹ Harm reduction (sterile syringe/needle set distributed per person per year for people who inject drugs [PWID])		20	200	300
	❺ 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

❶ **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.

❷ **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.

❸ **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.

❹ **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.

❺ **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)*

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