



Hepatitis B and hepatitis C in southeast and southern Asia: challenges for governments

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In 2015, the Coalition to Eradicate Viral Hepatitis in Asia Pacific gathered leading hepatitis experts from Bangladesh, India, Indonesia, Malaysia, Pakistan, the Philippines, and Thailand to discuss common challenges to the burden posed by hepatitis B virus (HBV) and hepatitis C virus (HCV), to learn from each other's experience, and identify sustainable approaches. In this report, we summarise these discussions. Countries differ in their policy responses to HBV and HCV; however, substantial systemic, cultural, and financial barriers to achievement of elimination of these infections persist in all countries. Common challenges to elimination include limited availability of reliable epidemiological data; insufficient public awareness of risk factors and modes of transmission, leading to underdiagnosis; high rates of transmission through infected blood products, including in medical settings; limited access to care for people who inject drugs; prevailing stigma and discrimination against people infected with viral hepatitis; and financial barriers to treatment and care. Despite these challenges, promising examples of effective programmes, public–private initiatives, and other innovative approaches are evident in all countries we studied in Asia Pacific. The draft WHO Global Health Sector Strategy on Viral Hepatitis 2016–21 provides a solid framework upon which governments can build their local strategies towards viral hepatitis. However, greater recognition by national governments and the international community of the urgency to comprehensively tackle both HBV and HCV are still needed. In all countries, strategic plans and policy goals need to be translated into resources and concrete actions, with national governments at the helm, to enable a sustainable response to the rising burden of hepatitis B and C in all countries.

Introduction

In 2015, building on two World Health Assembly resolutions in 2010 and 2014, WHO issued a draft Global Health Sector Strategy on Viral Hepatitis 2016–21, calling on all countries to aim to reach concrete targets towards the elimination of viral hepatitis.¹

The case for the elimination of viral hepatitis, and specifically hepatitis B virus (HBV) and hepatitis C virus (HCV), is a compelling one. Prevention of transmission of HBV and HCV is entirely achievable; HBV is treatable and HCV is now curable with existing treatments. For chronic diseases, elimination is a rare opportunity.² The public health urgency is self-evident: despite decreasing incidence in many countries, morbidity and mortality caused by cirrhosis, advanced liver disease, and liver cancer related to HBV and HCV infections continue to increase because of a reservoir of chronically infected individuals,³ and global deaths from viral hepatitis have now overtaken those caused by malaria, tuberculosis, and HIV.⁴ However, the policy response to viral hepatitis until now has been inadequate, and considerable resources are needed to provide appropriate prevention, screening, and care, particularly in low-income and middle-income countries, which bear most of the hepatitis burden.

The Asia Pacific region has the largest share of HBV and HCV in the world, and 74% of global deaths from liver cancer occur in Asia.⁵ In 2015, the Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP) gathered leading hepatitis experts from Bangladesh, India, Indonesia, Malaysia, Pakistan, the Philippines, and Thailand to discuss common challenges to the burden posed by HBV and HCV in these countries, to

learn from each other's experiences, and identify sustainable approaches. Based on these discussions, we highlight common issues these countries face in development of comprehensive responses to HBV and HCV. This report is intended as a starting point for a more in-depth situational analysis to be conducted by CEVHAP in selected countries in the region. This situational analysis will aim to identify country-specific priorities to implement the Global Health Sector Strategy on Viral Hepatitis 2016–21 within the specific context of each country. This report follows on from previous policy reports led by CEVHAP in other countries from the Asia-Pacific region.⁶

Epidemiological overview

In Bangladesh, information about the prevalence of HBV and HCV is lacking for the general population.⁶ HBsAg prevalence is estimated to range between 2% and 7% in selected at-risk groups of people (eg, people who inject drugs or prisoners).⁷ However, most studies are done in young people with risk factors, such as blood donors (voluntary or paid), people who inject drugs, sex workers, or hospital inpatients. HBsAg prevalence in pregnant women is estimated to be 0·4% in the rural population and 3·5% in urban regions.⁸ HCV prevalence varies considerably, from 0·8% among truck drivers to 24·8% among people who inject drugs.⁷

12–18 million people (0·96–1·4% of the population) are thought to be infected with HCV in India,⁹ and more than 37 million people (2·55% of the population) have chronic HBV infection¹⁰—with the highest prevalence in specific areas or among tribal populations.¹⁰ In the past

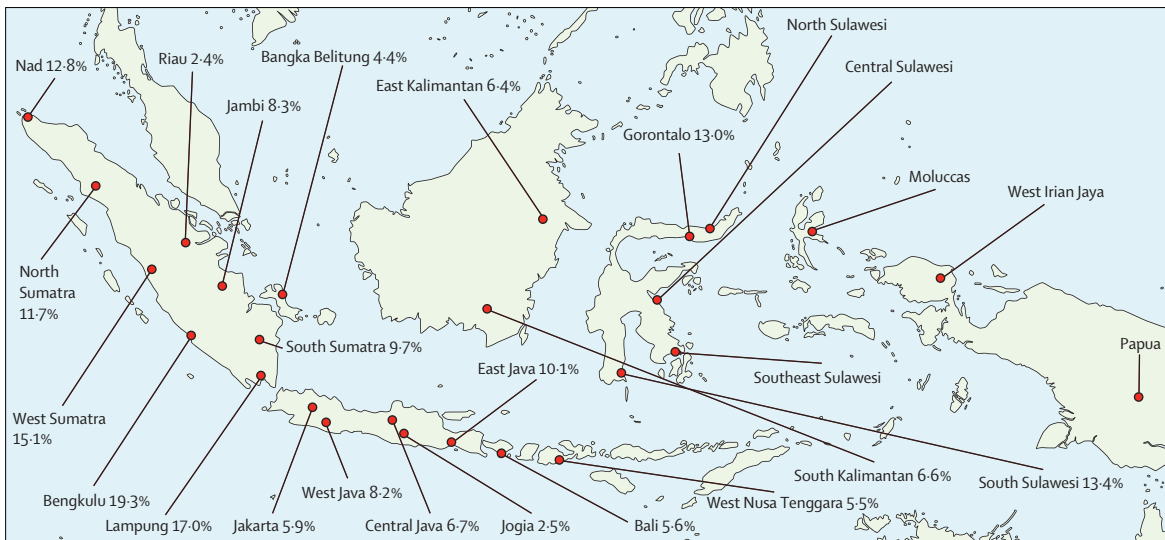


Figure: Geographical distribution of HBsAg in Indonesia

Data are not known for North Sulawesi, Central Sulawesi, Moluccas, West Irian Jaya, Papua, and Southeast Sulawesi.

15 years, incidence of HBV infection has decreased in pregnant women in India, which might be related, in part, to the introduction of population-wide HBV vaccination in 2011.¹¹ However, the burden of HBV and HCV in India is not well characterised and population-based studies are scarce,⁹ with most available data based on blood bank screening.¹²

Efforts to collect national-level data for HBV and HCV prevalence in Indonesia have been made within the National Health Survey in 2007 and again in 2013 (figure). Published data from 2010 and 2015 showed that HBsAg prevalence is as high as 9.4% in some regions.^{13,14} Indonesia consists of about 13 466 islands, which supports the emergence of new HBV subtypes as well as unique HBV variants.^{15,16} HCV antibody prevalence is estimated to be 0.8%.¹⁷ Indonesia is a good example of a country that has overcome geographical barriers to successfully collect epidemiological data (panel 1).

In Malaysia, prevalence of HCV is estimated to be 2.9% for Malays, 1.1% for Chinese people, and 0.6% for Indians or people from other ethnic groups, with an overall prevalence of 2.5% (743 000 people).²⁰ Prevalence by ethnic group is disproportionate to the total population, and is probably affected by the prevalence of injection drug use within each of these subpopulations. Modelling studies predict that rates of cirrhosis, end-stage liver disease, and death due to chronic HCV infection are likely to increase rapidly over the next 25 years.³ Data on HBV infection are absent.

Pakistan has the second largest number of people infected with HCV after China; an estimated 13 million people have been infected with HBV and HCV.²¹ Overall prevalence of HBV is 2.5% (4.55 million people), HCV prevalence is 4.8% (8.74 million people),²² and 2.9% of pregnant women in Pakistan are infected with HBV.⁸

Approximately 7.3 million people (16.7% of the

population) in the Philippines are chronically infected with HBV—more than double the average prevalence of HBV in the western Pacific region. These rates have remained unchanged over the past two decades.^{23,24} Results of a small-scale study²³ suggested that up to 1% of Filipinos (around 1 million people) are infected with HCV. Infection rates tend to be highest in low-income populations and in rural areas.²⁴

HBV infects about 2 million people (3% of population) in Thailand, and about 600 000 people (1%) are infected with HCV. Epidemiological studies of HCV in Thailand provide inconsistent data owing to the selection of the studied population and areas,²⁵ and data are particularly inconsistent for southern Thailand. A seroprevalence study²⁴ of randomly selected individuals from four geographically distinct provinces showed approximately 2.2% were infected with HCV. High-risk groups such as people who inject drugs had 70–90% seroprevalence.

Panel 1: National level epidemiological data collection in Indonesia

Indonesia has 13 466 islands and is home to a population of about 248 million people.^{15,18} Two issues are relevant to hepatitis B virus (HBV) and hepatitis C virus (HCV) data collection:

- 1) Inadequate disease surveillance systems, with a high likelihood of under-reporting of both acute and chronic infections, leading to insufficient understanding of the magnitude of the public health problems associated with HBV and HCV.
- 2) Limited testing facilities for detection of chronic HBV or HCV, leading to a large proportion of people remaining undiagnosed.¹⁹

Despite these limitations, efforts were made to obtain epidemiological samples across the territory for HBV and HCV, with the help of the National Surveillance project (Basic Health Survey [Riskesdas]) to reach distant islands. The data obtained showed that HBV and HCV infection varied widely by locality (figure 1). The study was funded by the Indonesian Ministry of Health and data collected were used to inform action plans on hepatitis.

	Bangladesh	India	Indonesia	Malaysia	Pakistan	Philippines	Thailand
Policy							
National plan/strategy	No ²⁶	Yes ²⁶	Yes ^{26,27}	No (being drafted)	Yes (to be launched in 2016)	No	No ²⁶
Data availability							
Reliable national epidemiological data	No	No ²⁶	No	No	No	No ²³	No
Estimate of economic burden of HBV and HCV	No	No	No	No	No	No	No
Prevention of nosocomial transmission							
Mandatory screening of donated blood for HBV or HCV	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Single-needle policy implemented (even if law exists)	Yes	Yes ²⁶	Yes ²⁶	Yes ²⁶	Single-needle policy exists, but not well applied ²⁷	Yes	Yes ²⁶
Harm reduction strategies among people who inject drugs							
Needle exchange programmes in practice ²⁸	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Opioid substitution programmes in practice ²⁸	Yes	Yes	Yes	Yes	No	No	Yes
HBV vaccination							
Uptake of HBV vaccination (%)	89-4% in 2010	Overall uptake unknown, despite national vaccination programme since 2011 ¹⁰	94% of infants aged 1 year received three doses of HBV vaccine ²⁶	91-13% of newborn infants receive the first dose of HBV; 97-37% of infants aged 1 year receive three doses of HBV vaccine ²⁶	56% of infants aged 1 year receive three doses of HBV vaccine ²⁶	44% (2013) ²⁹	99% of newborn infants receive the first dose of HBV vaccine within 24 h; 98% of infants aged 1 year receive three doses of HBV vaccine ²⁶
Vaccination programmes for health-care workers	No ²⁶	Yes ²⁶	No ²⁶	Yes ²⁶	Yes ²⁶	Yes	A national strategy for vaccination exists, but not all are vaccinated before starting work ²⁶
Screening and treatment							
Publicly funded screening programmes	No ²⁶	Limited to some states	No ²⁶	Only for health-care workers and blood donors ²⁶	No ²⁶	No ²³	Only for pregnant women, blood donors, and civil servants ²⁶
HBV treatments on national essential medicines list or subsidised by the government	Interferon alfa, pegylated interferon, lamivudine, adefovir dipivoxil, entecavir, telbivudine, and tenofovir ²⁶	Lamivudine ²⁶	Pegylated interferon, lamivudine, adefovir dipivoxil, and tenofovir ²⁶	Interferon alfa, pegylated interferon, lamivudine, adefovir dipivoxil, entecavir, telbivudine, and tenofovir ²⁶	Interferon alfa, pegylated interferon, lamivudine, and tenofovir ²⁶	No data found	Lamivudine and tenofovir ²⁶
HCV treatments on national essential medicines list or subsidised by the government	Interferon alfa, pegylated interferon, ribavirin, boceprevir, and telaprevir ²⁶	Interferon alfa, pegylated interferon, and ribavirin ²⁶	Pegylated interferon and ribavirin ²⁶ ; sobosbuvir generic will be available soon in government-funded programmes	Interferon alfa, pegylated interferon, and ribavirin ²⁶	Interferon alfa, pegylated interferon, and ribavirin ²⁶ ; sobosbuvir generic will be available soon in government-funded programmes	No data found	Pegylated interferon and ribavirin

HBV=hepatitis B virus. HCV=hepatitis C virus.

Table 1: Overview of individual country responses to HBV and HCV

Common challenges to elimination

Identified policy responses to HBV and HCV vary considerably (table 1). Despite heterogeneity in the epidemiology, routes of transmission, and responses of individual countries to HBV and HCV, many common challenges exist. These challenges include insufficient political engagement on viral hepatitis, limited reliable data to guide policy, low awareness and barriers to early diagnosis, implementation issues of HBV vaccination

programmes, transmission through infected blood products, unsafe injections and nosocomial transmission, limited access to care among people who inject drugs and insufficient harm reduction strategies for this population, limited access to treatment, and stigma and discrimination.

Development of a national plan is often regarded as the first indicator of political commitment towards viral hepatitis. However, such plans exist only in India, Indonesia, Malaysia, and Pakistan, and often cover only

one aspect (eg, vaccination and prevention), but fail to address the entire spectrum of prevention, diagnosis, and care.

Political engagement

Political commitment to address hepatitis has been difficult to secure in Asia generally,⁶ although there are promising examples of commitment in some countries. For example, in 2015, the Indonesian Minister of Health issued a Ministerial Decree on the National Control of Viral Hepatitis, which is supported by a national budget.²⁷

The urgency ascribed to the big three infectious diseases (tuberculosis, malaria, and HIV), largely due to their inclusion in the Millennium Development Goals (MDGs), has not yet translated to viral hepatitis.³⁰ Hepatitis was specifically noted in the Sustainable Development Goals (SDGs) issued in 2015. However, less priority continues to be given to hepatitis, reflected in the SDG text, which speaks of the need to combat viral hepatitis but not to eliminate the disease, as is the undertaking for HIV/AIDS.

Limited political engagement on HBV and HCV could be due to several factors, including poor understanding by government officials of the natural history of viral hepatitis, and its ultimate economic impact. In some cases, because of the need for a multisectoral approach to prevention, diagnosis, and care, it might not be clear which government department should take responsibility for viral hepatitis.³¹

Lack of reliable epidemiological data is also a critical issue in all countries studied. Economic data are also rare, although efforts to collect such data are ongoing in Malaysia and other countries. These data will be crucial to improve understanding of the resource implications of different strategies, and to help governments to make the most of limited resources.

Awareness

Insufficient public awareness of HBV and HCV remains a huge barrier to appropriate diagnosis. Globally, less than 5% of people with chronic hepatitis infection are aware of their status.¹ Often, simple and effective testing tools are lacking and laboratory capacity is low. The problem is compounded by hard to reach populations and low levels of knowledge in healthcare workers.^{1,19} Moreover, lack of confidentiality of test results remains a concern in many countries.

HBV vaccination

HBV vaccination programmes for infants have been implemented in all countries studied, although universal vaccination did not commence in the Philippines and India until 2011.¹⁰ Administration of the birth dose of HBV vaccine is still inadequate in many countries,³² particularly in poor and rural settings, where a substantial proportion of women still give birth at home (40% in the Philippines).²³ The fact that Gavi, the vaccine alliance,

discontinued funding of the monovalent HBV vaccine in favour of the pentavalent vaccine (against HBV, pertussis, diphtheria, tetanus, and *Haemophilus influenzae* type B), given 6 weeks after birth, has contributed to limited uptake of the birth dose.³² Furthermore, point-of-care screening for HBV positivity in pregnant women is not widely available, making identification of women at risk of maternal-to-child transmission of HBV difficult.³²

Many infants do not receive the full three recommended doses of vaccine, owing to poor management of vaccine stocks, lack of staff training, and poor record keeping.¹⁰ Adolescents and young adults who were born before initiation of universal infant immunisation are at high risk of HBV exposure because many could have acquired the disease in early childhood and are at risk of development of advanced chronic disease later in life.^{14,16}

Transmission

Despite global recommendations on the screening of blood and blood products for both HBV and HCV, systematic screening is not done in all countries (table 1). For example, in India, screening is poorly regulated and contaminated blood products remain the main route of transmission of HBV and HCV.¹² Transmission through contaminated blood is also a serious problem in Pakistan,^{33,34} as well as other countries.

Reuse of contaminated needles and syringes is endemic in many of the countries studied.¹² For example, 1.89 billion of 3 billion injections administered annually in India are considered unsafe because of inadequate sterilisation and poor waste disposal.¹² Overuse of injections is pervasive in many Asian cultures because they are wrongly perceived as being more effective than orally administered medication. For example, in Pakistan, each person receives an average of 13 injections per year,³⁵ many of which are unnecessary, and 75% of which are unsafe.³³

Harm reduction strategies

About 300 000 people who inject drugs in Asia are infected with HBV and 2.6 million with HCV,³⁶ substantially more than are infected with HIV (table 2). Co-infection with HIV is a key issue, with 60–90% of people who inject drugs with HIV infection estimated to also be infected with HCV.⁴⁹

Despite these figures, harm reduction strategies targeting people who inject drugs, including appropriate access to opioid substitution therapy and sterile drug injecting equipment, are limited in most countries. Harm reduction strategies are also limited for prisoners. Access to testing and treatment for these populations is also low, despite evidence that HCV treatment for people who inject drugs is effective and helps to reduce overall prevalence.⁵⁰ Malaysia has integrated HCV prevention into harm reduction strategies targeting people who inject drugs (panel 2).

	Number of PWID	Hepatitis C (anti-HCV) prevalence in PWID (%)	Hepatitis B (anti-HBsAg) prevalence in PWID (%)	HIV prevalence (%) in PWID
Bangladesh	21 800–23 800*	39.6%†	9.4% ³⁶	1.1% ³⁷
India	177 000–180 000‡	41%§	10% ³⁶	7.14% ⁴⁰
Indonesia	74 326 (61 901–88 320) ⁴¹	77.3% ³⁶	2.9% ³⁶	36.4% ⁴²
Malaysia	170 000 ⁴³	67.1% ³⁶	5.0%	18.9% ⁴³
Pakistan	91 000–423 000¶	85.0% (75.0–92.9%)	6.8% (6.0–7.5%) ³⁶	27.2% ⁴⁴
Philippines	12 304–16 607**	70% ³⁶	No data available	41.6% ⁴⁷
Thailand	40 300 ³⁸	89.8%††	No data available	25.2% ⁴⁸

PWID=people who inject drugs. HBV=hepatitis B. HCV=hepatitis C. *Data from 2009,³⁷ and only for men who inject drugs. †Based on data from Dhaka, Bangladesh.³⁸ ‡Data from 2008,³⁹ with civil society organisations believing the actual figure to be much higher. §HCV prevalence varies greatly across the region, from 90% in Manipur to 1% in Bihar, but no national data are collected.³⁶ ¶91 000 figure based on a mapping methodology in 2009⁴¹ in hotspots where people inject drugs; 423 000 figure was derived from an epidemiological survey;⁴⁵ civil society recommended a range between both figures. ||Data from 2003.³⁶ **Data relate to adult men only.⁴⁶ ††Data from 2000.³⁶

Table 2: Prevalence of HBV, HCV, and HIV in people who inject drugs

Panel 2: Integrating HCV prevention into harm reduction strategies targeting people who inject drugs in Malaysia

Malaysia has been one of the pioneering countries in the region to adopt a rights-based approach to people who inject drugs,²⁸ in line with the “Support, don’t punish” global campaign led by the International Drug Policy Consortium.⁵¹ Its national harm reduction strategy, initiated in 2005, has enabled 35 000 people to register for methadone maintenance therapy services at Ministry of Health-funded hospitals, clinics, prisons, and National Anti-Drug Agency service centres; 30 000 people who inject drugs to access methadone maintenance treatment at primary care clinics; and 73 000 people who inject drugs to access opioid substitution therapy services. Eight compulsory detention centres have been transformed into voluntary care centres and clinics, and opioid substitution therapy was offered in 18 prisons in 2014.^{28,52}

	Bangladesh	India	Indonesia	Malaysia	Pakistan	Philippines	Thailand
Urban areas	<1%	10–20%	5%	70%	No data	15%	30%
Rural areas	1%	<5%	2%	70%	No data	15%	15–20%

Data from Lim and colleagues.⁵³

Table 3: Proportion of patients eligible for reimbursement for hepatitis B treatment

Access to treatment

A key barrier to reducing the burden of HBV and HCV in Asia is the lack of available treatment options. High costs of drugs—particularly the new direct-acting antivirals for HCV—are a huge factor limiting uptake of treatment. The costs of HCV drugs are often not covered by governments⁵³ or health insurance providers, leaving many patients paying large out-of-pocket expenses.⁹ Lack of reimbursement for HBV treatment is also an issue in several countries (table 3).

However, cost is not the only barrier to uptake of treatment for HBV or HCV. Health professionals often do not know that effective treatments exist, and links between testing and treatment are poor, contributing to low treatment rates. A study⁵⁴ of HBV treatment found that decisions about whether a patient is eligible for

reimbursement for treatment are often not guided by official policies, but left instead to the discretion of the treating physician.

Stigma surrounding viral hepatitis is a prevailing issue in many cultures, and is thought to be one of the reasons for low uptake of screening for both HBV and HCV. Discrimination against people infected with viral hepatitis in the workplace, or exclusion from employment for migrant workers with viral hepatitis occurs consistently across southeast and southern Asia, despite the existence of anti-discrimination laws in several countries. For example, screening test results from HBV and HCV are not always kept confidential, and employees might be declared unfit for work solely on the basis of their infection status.^{23,55}

Reflections and recommendations

In this report, we have focused on seven countries in Asia that face a considerable burden of HBV, HCV, or both. These countries vary in terms of local epidemiology, population, cultural factors, and level of implementation of different policies. Experts from these countries have identified common issues and areas for change that might be applicable across these countries.

We do not attempt to look beyond the seven countries studied and we do not claim that our findings are representative of the entire Asian or southeast Asian region. Each country will need to develop its own targeted approach, taking local contextual factors into account, such as existing programmes, public–private initiatives, research capacity, and health-care infrastructure, as well as available resources for implementation. Additionally, models to draw from should not be confined to the south Asian or southeast Asian region: examples include the experience of HBV vaccination in Taiwan;^{56,57} the comprehensive response to HCV in Georgia, covering advocacy, surveillance, prevention, and treatment;⁵⁸ and increased access to combination HCV treatment in Egypt, promising improved cure rates at a substantially reduced cost.⁵⁹ These country experiences present many elements that could be emulated by Asian countries looking to build effective policy responses.

With these limitations in mind, we propose several common areas for policy change (panel 3). However, prioritisation of these proposals will depend on the particular context in each country. Greater political engagement and government commitment of resources to tackle HBV and HCV is undoubtedly a top priority in all countries. An important lesson learnt from the experience with HIV/AIDS is that building a strong, locally driven, multistakeholder advocacy base, which includes people living with the condition, is critical to mobilise policy change.³¹ Promising examples of such multi-stakeholder engagement can be seen in Pakistan with Hepatitis Education, Prevention, Advocacy, Information, Diagnosis (HEPAID), which is the awareness and patient advocacy

arm of the Pakistan Association for the Study of Liver Diseases that was created in 2014 to bring together the leading non-governmental organisations and government representatives working on hepatitis in a single platform; in the Philippines, the Yellow Warriors are a community-based hepatitis patient group who have worked closely with other stakeholders, including the private sector, to advance legislation and policies aimed at improving the lives of people with hepatitis in the Philippines; and in Indonesia, the government launched a comprehensive 5-year plan to target viral hepatitis.

Injecting drug use remains an important route of transmission for viral hepatitis, particularly HCV, in many countries. Investment in appropriate harm reduction strategies targeting people who inject drugs and prisoners, as well as improved access to testing and treatment for these populations, will be crucial. The cultural shift achieved in Malaysia from a punitive to a human rights preventive approach for drug users is one to be emulated elsewhere.⁶⁰ Harm reduction strategies are a perfect example of efforts aimed initially at reducing transmission of HIV that could be leveraged to reduce transmission of HBV and HCV.⁶⁰ However, efforts to target HBV and HCV should not be limited to co-infected populations, and improved access to testing and treatment for HBV and HCV should be recognised as goals in themselves. Reduction of nosocomial infections due to unsafe injection practices remains a top priority in many countries, and strict implementation and regulation of the WHO single-needle policy might help. For example, a study³⁵ from Pakistan suggested that 2.7% of HBV and 6% of HCV infections could be prevented by avoiding reuse of contaminated syringes.

Investment in the primary care infrastructure to deliver effective vaccination against HBV and ensure greater links between screening and care will also be important. Inclusion of HBV training in antenatal care could provide a key opportunity to increase HBV testing in mothers and provide vaccination to infants.³² For example, in parts of Pakistan, the role of lady health workers (ie, women who work in antenatal and postnatal care) now includes work on HBV. In Bangladesh, a training module on viral hepatitis has been developed, and more than 30 workshops have been organised nationwide to provide training to government physicians.

Possibly the most pressing need in southeast and southern Asia is to improve access to diagnosis for both HBV-infected and HCV-infected individuals, coupled with strong links to treatment and care. Data for treatment uptake suggest very few people infected with HBV receive treatment, putting them at greater risk of cirrhosis, liver cancer, and death.

New, interferon-free direct-acting antivirals regimens offer the opportunity to cure HCV with as little as 3 months of treatment in nearly 100% of people treated.² However, the costs of these agents remain prohibitive to lower-income and middle-income countries, such as

Panel 3: Areas for improvement in the prevention and control of HBV and HCV

Policy and advocacy

- Elevate viral hepatitis to the ranks of other infectious diseases—move from the so-called big three to the big four³²
- Galvanise a multistakeholder advocacy base, including civil society, people living with HBV and HCV infections, and professional societies

Reliable data to guide policy

- Invest in improved surveillance for both HBV and HCV infection, targeting all age groups and including high-risk populations
- Conduct local studies on the economic impact of different strategies

Harm reduction strategies aimed at prisoners and people who inject drugs

- Leverage existing programmes aimed at HIV to extend to HBV and HCV prevention in prisoners and people who inject drugs
- Demonstrate to governments the impact of adopting a “Support, don’t blame” approach to drug use

HBV vaccination

- Train primary and secondary care workforces to incorporate HBV education and vaccination into prenatal care and improve three-dose coverage, including the birth dose

Prevention of nosocomial transmission

- Monitor the implementation of the WHO single-needle policy across all health-care settings
- Institute regulated, quality-assured screening for HBV and HCV of all blood donations and blood products
- Create professional training and public awareness campaigns to help reduce the use of unnecessary injections

Access to treatment and care

- Ensure professional education of primary-care workers to improve awareness of existing treatments and improve links between screening and clinical management
- Galvanise public-private partnerships, with international and national donors, to implement sustainable funding for HBV and HCV treatment and care

HBV=hepatitis B virus. HCV=hepatitis C virus.

those discussed in this report. Barriers to access are not limited to costs alone—they are also cultural and structural. Efforts to improve access to treatment will never work in isolation, and should be incorporated into cohesive strategies that cover the spectrum of public education and awareness, prevention of transmission, screening, treatment, and long-term care for those infected with HBV or HCV. For example, an estimated 90% reduction in total HCV infections in Pakistan could be achieved by 2030 through a coordinated and aggressive approach to prevention, screening, and treatment.⁶¹

Conclusion

The Global Health Sector Strategy on Viral Hepatitis 2016–21 calls for the elimination of viral hepatitis. Yet, as seen in the countries studied in this report, substantial systemic, cultural, and financial barriers to elimination persist. WHO, the World Hepatitis Alliance, and the 2015 Global Summit on Viral Hepatitis have provided an

Search strategy and selection criteria

We searched English language peer-reviewed publications using PubMed and Embase and grey literature (web-based sources) published between January, 1995, and June, 2016, using the keywords “hepatitis B”, “hepatitis C”, “Asia”, “policy”, and “epidemiology”.

important direction and a solid framework on which governments can build their local strategies towards HBV and HCV elimination. This framework now needs to be translated into resources and concrete actions, with national governments at the helm. Also, as is demonstrated in the SDGs, efforts are still needed to convince national governments and the international community of the urgency to tackle HBV and HCV comprehensively. This paper draws from the experience in seven Asian countries to identify common challenges and possible avenues for policy advancement. Policy makers should also learn from the experience of other countries in Asia and elsewhere, to emulate successful models and policies. What is clear is that in all countries, solutions should engage all sectors to build momentum and work with governments to develop, resource, and implement measures that work towards elimination of viral hepatitis by 2030.

Contributors

This manuscript was developed on the basis of discussions of all co-authors at an informal workshop held in Istanbul, Turkey, on March 14, 2015. On the basis of these discussions and additional literature searches, SW and EK developed a first draft of the manuscript and submitted it to the other co-authors for comments. DHM provided the figure. The other co-authors (SH, DHM, JS, RM, SS, M-A-M, ZA, JJ, TT, and JW) provided comments on this and subsequent drafts of the paper, and also provided additional national level data to complete the manuscript. All authors approved the final manuscript.

Declaration of interests

We declare no competing interests.

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