

Viral Hepatitis Policy in Asia 2016 Survey



The Chinese University of Hong Kong
Centre for Global Health
全球衛生中心



CEVHAP

Coalition to Eradicate Viral Hepatitis in Asia Pacific



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Disclaimer:

This report reflects the situation of various jurisdictions at a specific point in time. The research relied on the intelligence and insights provided by trusted experts. The geographic scope of the research was partly limited by the availability of these experts. The conclusions therefore may not reflect stakeholder opinion and needs across the board.

The report makes generic references to countries, regions and national policies in Asia. In some cases, the jurisdictions concerned are not sovereign states but have autonomy to set public health policies for their populations.

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ABBREVIATIONS

APAC	Asia Pacific countries
BD	Birth Dose Hepatitis B vaccine
CEVHAP	Coalition to Eradicate Viral Hepatitis in Asia Pacific
CUHK	Chinese University of Hong Kong
DAAAs	Direct Acting Antivirals
DALYs	Disability Adjusted Life Years
ETV	Entecavir
GBD	Global Burden of Disease
HBiG	Hepatitis immunoglobulin
HBV	Hepatitis B Virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C Virus
MMT	Methadone maintenance treatment
NAs	Nucleoside analogues
NGO	Non-Government Organisation
PWID	People who inject drugs
SDG	Sustainable Development Goal
TDF	Tenofovir
WHA	World Hepatitis Alliance
WHO	World Health Organization

FOREWORD

Viral hepatitis infection has only recently received its much deserved attention as a major threat to global public health. The highest burden of disease from chronic viral hepatitis is found in the Asia-Pacific Region, with deaths increasing due to liver damage, cirrhosis and/or cancer associated with chronic hepatitis B and hepatitis C infection. These terrible consequences appear decades after infection in people often unaware that they are infected. However, viral hepatitis is preventable and effective antiviral drugs are now available to treat chronic hepatitis B and can even cure chronic hepatitis C.

A safe and effective vaccine against hepatitis B has been available since the 1980's. In 1984, as a clinician and public health practitioner, I was privileged to lead the scientific studies, and subsequently to oversee the implementation of hepatitis B vaccine for all newborns as part of the immunization schedule in Hong Kong in 1986. Most governments in the region have included hepatitis B immunization including a birth dose, as part of the Extended Program for Immunization (EPI), a major achievement in hepatitis prevention efforts. Epidemiological evidence demonstrates a decline in the incidence of chronic hepatitis B among young adults. Meanwhile, the Western Pacific Region of WHO achieved the 2017 target of <1% children with hepatitis B infection ahead of schedule. Older adults, born before the vaccination era, and vulnerable groups of people however, may unknowingly be chronically infected with, or be susceptible to acquiring hepatitis B or hepatitis C and remain at risk for developing cirrhosis or liver cancer.

In order to reduce mortality related to chronic viral hepatitis, an enabling political environment with sufficient resources allocated in all countries will be needed to facilitate reaching the hepatitis elimination goals set for 2030. Increased efforts to improve public awareness and listen to the voices of those affected by viral hepatitis will also be important in the effort to reduce stigma and discrimination.

I wish to congratulate our research team, led by Prof Tammy Meyers at the CUHK Centre for Global Health and our project collaborator, Coalition to Eradicate Viral Hepatitis in the Asia Pacific (CEVHAP), for bringing this

much needed topic to attention, and hope this report will serve as a basis for further research, policy and practice towards preventing the unnecessary suffering and deaths of those infected with chronic viral hepatitis.



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EXECUTIVE SUMMARY

While significant strides have been made in reducing the incidence and mortality from major global diseases such as HIV, tuberculosis and malaria, deaths from cirrhosis and liver cancer related to chronic hepatitis B and hepatitis C have risen since 1990. Increased attention is being drawn to viral hepatitis and a target to combat these infections has now been set for 2030 in the United Nations Sustainable Development Goals (SDGs). Focusing on chronic viral hepatitis is particularly important for countries in the Asia Pacific region, where 63% of viral hepatitis related deaths occur globally. Following the successful introduction of hepatitis B vaccine since the 1980's and the subsequent development of more potent and durable antivirals for hepatitis B, plus Direct Acting Antivirals (DAAs) which can cure hepatitis C, the call from the World Health Assembly to eliminate viral hepatitis by the 2030 has become ever more compelling.

This report contains responses from key hepatitis specialists in selected Asian countries to a survey conducted on behalf of the Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP) by a team at the Centre for Global Health of the Jockey Club School of Public Health The Chinese University of Hong Kong (CUHK). The survey was conducted between July and August 2016 and aimed to provide an update on the status of national hepatitis programmes among selected countries in the Asian region. The goal was to determine the policy climate in these countries towards implementing plans to prevent and control chronic viral hepatitis, identify infrastructural gaps and provide a benchmark for progress in the coming years.

The results highlight the extent to which governments in the Asia Pacific generally recognise the threat that chronic viral hepatitis poses to population health. Most governments in the region have supported the WHO elimination targets by developing national strategies. However, not all countries had allocated a dedicated budget for implementation including the diagnosis and treatment of chronic viral hepatitis. The study demonstrates the need for increased investment into surveillance, needle and syringe programs, and the implementation of birth-dose vaccination, which is still not universally available in all countries. The financial

cost of diagnosis and treatment was largely an out of pocket expense for people at risk of hepatitis in most jurisdictions.

Surveillance and data availability was suboptimal in almost all countries for both hepatitis B and hepatitis C. A few countries had policies in place to conduct surveillance in high-risk populations, while Japan and Taiwan provide for the screening of people over 40 who were never vaccinated. The study also highlighted the lack of a legal framework in most countries to protect patients from discrimination in the workplace and educational system.

In an era of elimination targets, and the availability of a cure for hepatitis C, there is a need to diversify the range of physicians able to provide treatment. The focus of the provision of clinical management through specialist services is a key barrier to increasing the numbers of people accessing treatment, particularly people living in non-urban centers. This can only occur with the professional development of generalist medical practitioners, who in most countries, were insufficiently trained to manage patients with chronic viral hepatitis.

Comparison of policies in the region provides an opportunity to benchmark progress towards the development and implementation of policies focused on eliminating chronic viral hepatitis in Asia Pacific. Sustained strategic action needs to occur if targets are to be met.

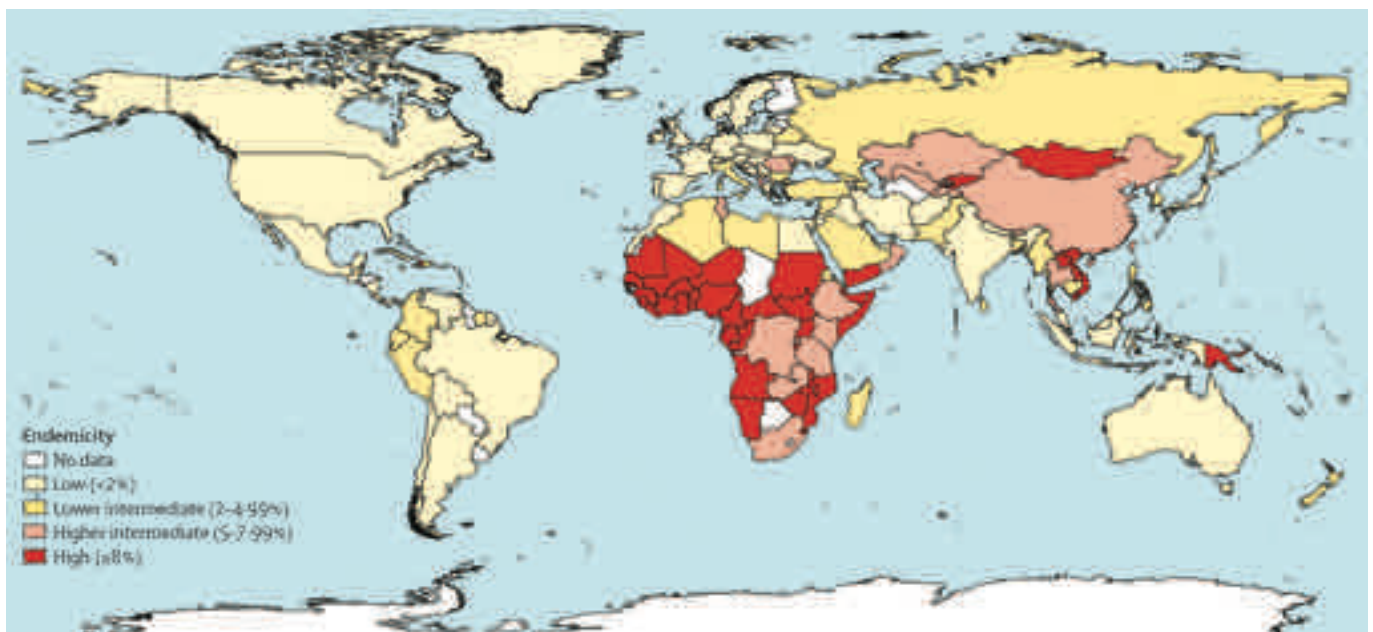
BACKGROUND

Burden of Chronic Hepatitis

Whilst reductions in incidence and mortality have been reported for major global diseases such as HIV, tuberculosis and malaria, the disease burden resulting from viral hepatitis increased over the period 1990-2013.¹ An estimated 250 million people live with chronic hepatitis B² and 70 million³ live with chronic hepatitis C. Viral hepatitis has been cited as the 7th highest cause of mortality in the Global Burden of Disease (GBD) Study using most recent data available (2013). Hepatitis-related liver cancer and cirrhosis caused by chronic hepatitis B and hepatitis C together accounted for 96% of hepatitis-related deaths and 91% of viral hepatitis-related disability adjusted life years (DALYs) in 2013.¹

The Asia Pacific region carries most of the global disease burden caused by chronic hepatitis B (Figure 1) and hepatitis C (Figure 2). With the Asia Pacific region being at the global epicentre for these diseases, a more focussed public health response requires a unified global health strategy supported by national and local policies to reduce the disease burden at local levels.

Figure 1. Global HBsAg endemicity 1957-2013.²

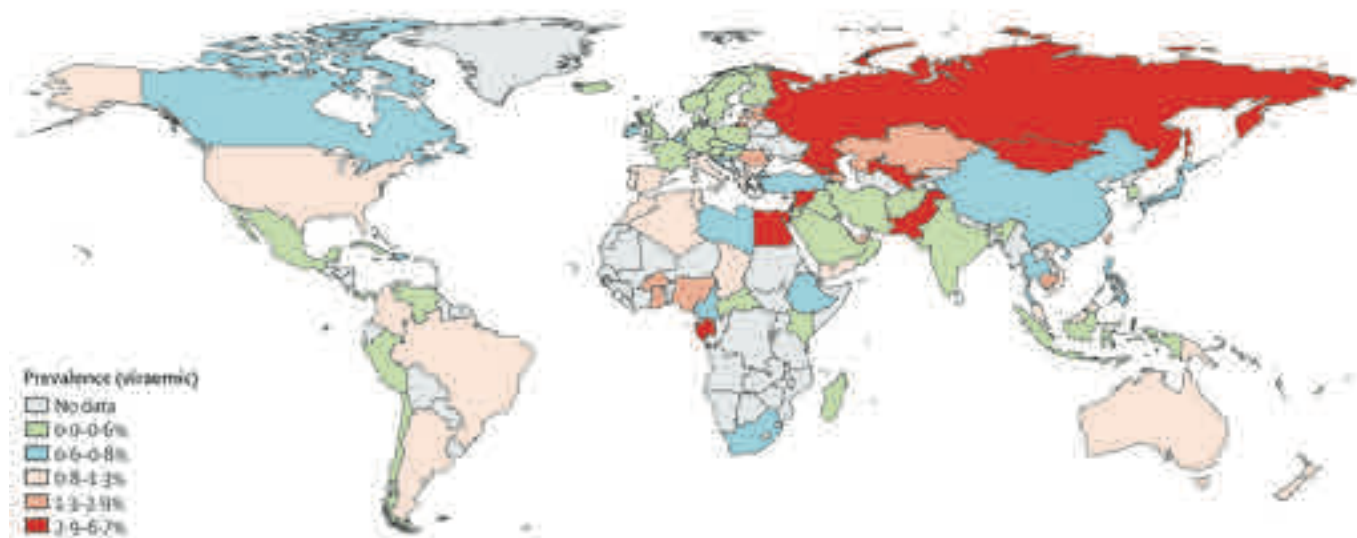


¹ Stanaway JD et al. The global burden of viral hepatitis from 1990 to 2013: findings from the Global Burden of Disease Study 2013. Lancet July 2016

² Schweitzer A, Horn J, Mikolajczyk RT, Krause G, Ott JJ. Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013. Lancet. 2015 Oct 17;386(10003):1546-55.

³ Blach S et al. Global prevalence and genotype distribution of hepatitis C virus infection in 2015: a modelling study Lancet Gastroenterol Hepatol 2017; 2: 161-76.

Figure 2. 2015 viraemic prevalence in territories with approved or estimated models.³



Global and Regional Policy Developments

Until recently, the impact of chronic viral hepatitis on public health has largely been ignored, with the exception of the implementation of the hepatitis B vaccination programme. In recent years the profile of viral hepatitis has been elevated and there is now a call for specific action to reduce the burden of disease from these infections, among other major infectious diseases, in the third Sustainable Development Goal (SDG3), which addresses health-related targets.⁴

The World Health Organization (WHO) has supported national governments in recognising viral hepatitis as a critical public health challenge and in developing a strategic, coordinated and integrated public health response to deal with chronic viral hepatitis. In 2010, the World Health Assembly passed resolution WHA63.18 requiring Member States to adopt a comprehensive approach to hepatitis prevention and control.⁵ The 2010 World Health Assembly resolution designated 28 July as World Hepatitis Day to encourage governments,

international organisations, and civil society groups worldwide to promote awareness about viral hepatitis and call for preventative and control measures to be implemented. WHO developed a Global Health Sector Strategy on Viral Hepatitis 2016-2021, which was ratified at the 69th World Health Assembly in May 2016.⁶

Responding to the global call to action, the WHO Western Pacific Regional Action Plan for Viral Hepatitis was developed and ratified in October 2015.⁷ The WHO South East Asia Region has also developed a Regional Strategy for viral hepatitis.⁸

Chronic viral hepatitis is a silent disease, making elimination challenging. Chronically infected patients are usually asymptomatic and, only after decades, when the disease becomes significantly advanced, do signs of liver damage become apparent. By this time there are limited treatment opportunities. Insufficient awareness is evident amongst both general health care workers, and the public about hepatitis and its management. Poor surveillance systems restrict governments from developing evidence-based policies.

⁴ <http://www.un.org/sustainabledevelopment/health/>

⁵ WHA. Sixty-third World Health Assembly, Resolution WHA 63.18 Viral Hepatitis 2010; http://apps.who.int/gb/ebwha/pdf_files/WHA63/A63_R18-en.pdf

⁶ Global Health Sector Strategy (GHSS) for Viral Hepatitis 2016-2021; <http://apps.who.int/iris/bitstream/10665/246177/1/WHO-HIV-2016.06-eng.pdf?ua=1>

⁷ Regional action plan for viral hepatitis in the Western Pacific 2016-2020: a priority action plan for awareness, surveillance, prevention and treatment of viral hepatitis in the Western Pacific Region; http://iris.wpro.who.int/bitstream/handle/10665.1/13141/97892906177617_eng.pdf

⁸ Regional strategy for the prevention and control of viral hepatitis (2013); http://apps.searo.who.int/PDS_DOCS/B5051.pdf

Advances in Chronic Viral Hepatitis Control

Prevention interventions for both hepatitis B and hepatitis C include safe management of blood products, improved injection practices in health care and community settings, harm reduction programmes, and promotion of safe sex.

Hepatitis B infection is also vaccine-preventable while chronic infection can be largely controlled with antiviral drug therapy. Vaccination programmes, including a birth dose of the vaccine and 3 booster doses during infancy, as well as hepatitis immunoglobulin (HBIg) given to infants of women known to be chronically infected themselves, can effectively prevent hepatitis B infection at birth, resulting in durable immunity. Since implementing infant hepatitis B vaccination programmes as part of the Extended Programme for Immunisation (EPI) in 2003, the Western Pacific Region as a whole achieved the goal of less than 1% prevalence among children 5 years of age in advance of the agreed target for 2017.⁹

While vaccination has effectively reduced hepatitis B prevalence, older people who did not receive the vaccination and who were exposed to hepatitis B in infancy or childhood may be chronically infected and at risk of cirrhosis or liver cancer. Hepatitis B can be effectively controlled with antiviral medication such as nucleos(t)ide analogues (NAs) including entecavir (ETV) and tenofovir (TDF), which have been found to be the most potent and safe for controlling viral replication, reducing liver disease progression, and both have a high barrier for drug resistance.¹⁰ However, treatment access is limited by lack of public awareness, high out-of-pocket expenses required in some countries, and poor detection of those who may be in need of therapy. Treatment for hepatitis B does not result in a cure and most patients will require life-long therapy. TDF has also been shown to be effective in further reducing mother-to-child transmission of hepatitis B infection when given to highly viraemic mothers in China (VL>200.000IU/ml), when combined with HBIg for the infant.¹¹

No vaccine is available to prevent hepatitis C infection. However, with the recent entry into the market of Direct Acting Antivirals (DAAs), this disease is curable; treatment duration has been shortened (usually 12 weeks), and the drugs are far more tolerable than previous treatment regimes.¹² The purchase price of DAAs remains very high in many countries, although several governments have negotiated price reductions for the drugs.

Effective prevention and treatment of hepatitis B and curative treatment for hepatitis C means that elimination of chronic viral hepatitis infection, as a global health threat, is now feasible.

In partnership with CEVHAP, the Centre for Global Health of the Jockey Club School of Public Health and Primary Care at the Chinese University of Hong Kong (CUHK) embarked on a survey to understand the challenges and enablers in developing a national public health response to viral hepatitis in selected Asian countries. Understanding the obstacles and gaps encountered in actions to eliminate chronic hepatitis B and hepatitis C in different countries allows strategic formulation of precise and effective approaches in order to eliminate hepatitis B and hepatitis C at a local level.

⁹ Wiesen, E., Diorditsa, S. and Li, X., 2016. Progress towards hepatitis B prevention through vaccination in the Western Pacific, 1990–2014. *Vaccine*,34(25), pp.2855-2862.

¹⁰ Woo G, Tomlinson G, Nishikawa Y, et al. Tenofovir and entecavir are the most effective antiviral agents for chronic hepatitis B: a systematic review and Bayesian meta-analyses. *Gastroenterology*. 2010;139(4):1218-1229.

¹¹ Pan CQ, Han G, Wang Y. Prevention of Peripartum Hepatitis B Transmission. *N Engl J Med*. 2016 Oct 13;375(15):1497-1498.

¹² Suwanthawornkul T, Anothaisintawee T, Sobhonslidsuk A, Thakkinstian A, Teerawattananon Y. Efficacy of Second Generation Direct-Acting Antiviral Agents for Treatment Naïve Hepatitis C Genotype 1: A Systematic Review and Network Meta-Analysis. *PLoS One*. 2015 Dec 31;10(12):e0145953.

OBJECTIVE AND METHODS

This report has four main objectives:

- To provide an update on the status of national viral hepatitis programmes in selected Asian countries on:
 1. Development and implementation of national strategic plans to address the prevention, diagnosis, treatment and care of chronic viral hepatitis;
 2. Surveillance systems available to monitor those chronically infected with viral hepatitis, and of the number of deaths related to hepatitis B and hepatitis C;
 3. Healthcare infrastructure for prevention, diagnosis and clinical management of chronic viral hepatitis.
- To identify gaps, by jurisdiction, in the control of hepatitis B and hepatitis C.
- To benchmark the progress of national programmes towards control of chronic viral hepatitis from 2016 to 2021, the period set by WHO's Global Health Sector Strategy on Viral Hepatitis.
- To provide the groundwork to assist CEVHAP to conduct more comprehensive, in-depth situational analyses in individual countries within the region.

Countries selected for the survey were all located in Asia and represented a diverse range in viral hepatitis disease burden, as well as resources. Countries were also included according to where CEVHAP members were located. The following countries were included: Australia, Bangladesh, China, Indonesia, Japan, Malaysia, Myanmar, Pakistan, Philippines, Taiwan, Thailand and Vietnam. Experts in each jurisdiction were identified and individual, structured telephone interviews were conducted in July and August 2016. The interviewees were requested to answer questions (Appendix 1) related to progress in the control of chronic viral hepatitis in their respective countries. The information was then collated into a series of figures demonstrating policy achievements and gaps for these selected countries.

LIMITATIONS

Information collected for this report was limited by the fact that one specialist per jurisdiction was interviewed. Furthermore, with increased global focus on hepatitis elimination, international and jurisdiction responses are rapidly shifting, as are the development and accessibility of diagnostics and treatment. By the time of release of the report it is likely the situation may have changed in some countries. The survey focussed on policy development and it was not possible to evaluate the extent to which the policies had been implemented.

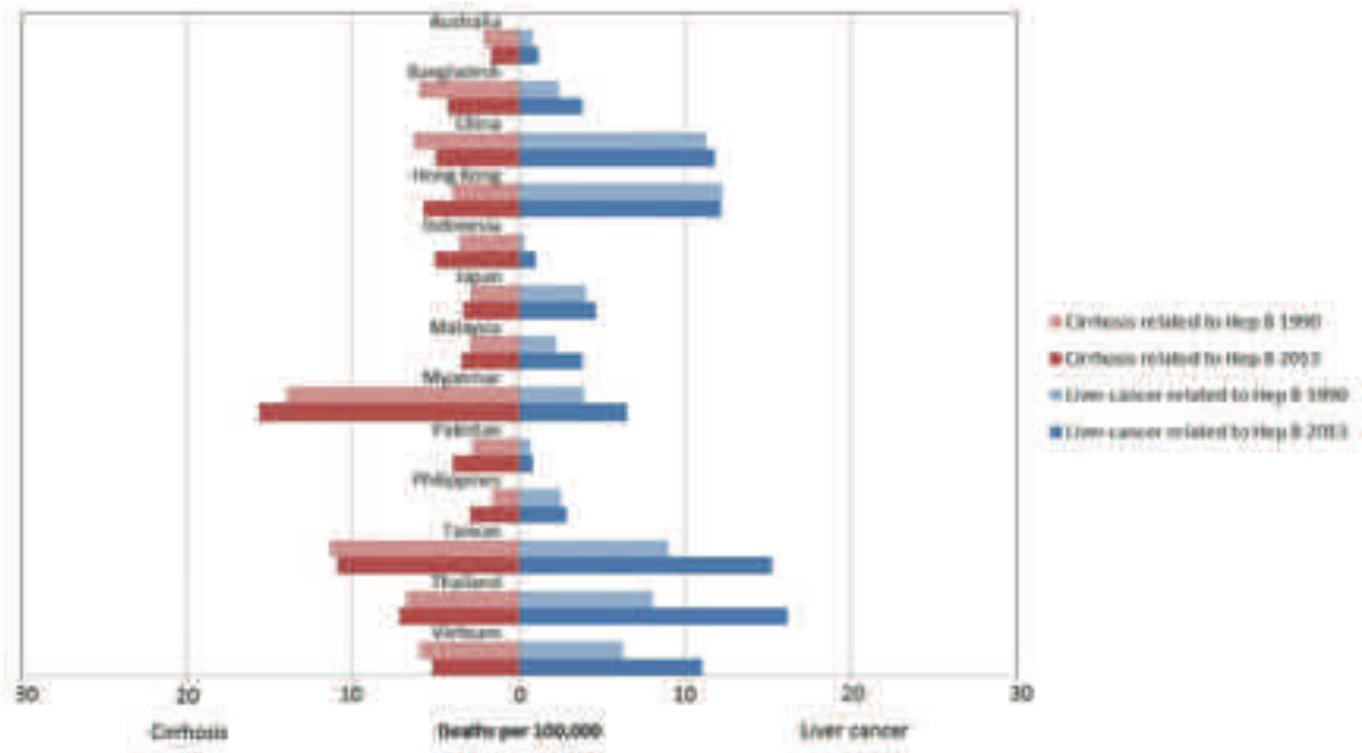
RESULTS

Deaths from Chronic Viral Hepatitis Related Liver Cancer and Cirrhosis 1990-2013

Using Global Burden of Disease (GBD) data, we compared deaths related to liver disease in selected countries between 1990 and 2013. Deaths from liver cancer associated with hepatitis B increased from 1990 to 2013 in most of the selected countries and increased substantially in several countries including Myanmar, Taiwan, Vietnam and particularly Thailand. It should be noted that there were increases in liver cancer in all countries, with the exception of Hong Kong, which remained unchanged, possibly due to stable cancer reporting and the early introduction of hepatitis B vaccination.

There were smaller increases in deaths due to hepatitis B-related cirrhosis in some countries, and Australia, Bangladesh, China, Singapore and Vietnam reported declining hepatitis B-related cirrhosis deaths. The reasons for apparent improvements in cirrhosis deaths are unclear; however, cancer registries may more reliably report on liver cancer than the reporting mechanisms for diseases, such as cirrhosis. Several interviewees reported a dearth of official data, and inconsistencies in information reporting may account for apparent improvements in cirrhosis (Figure 3).

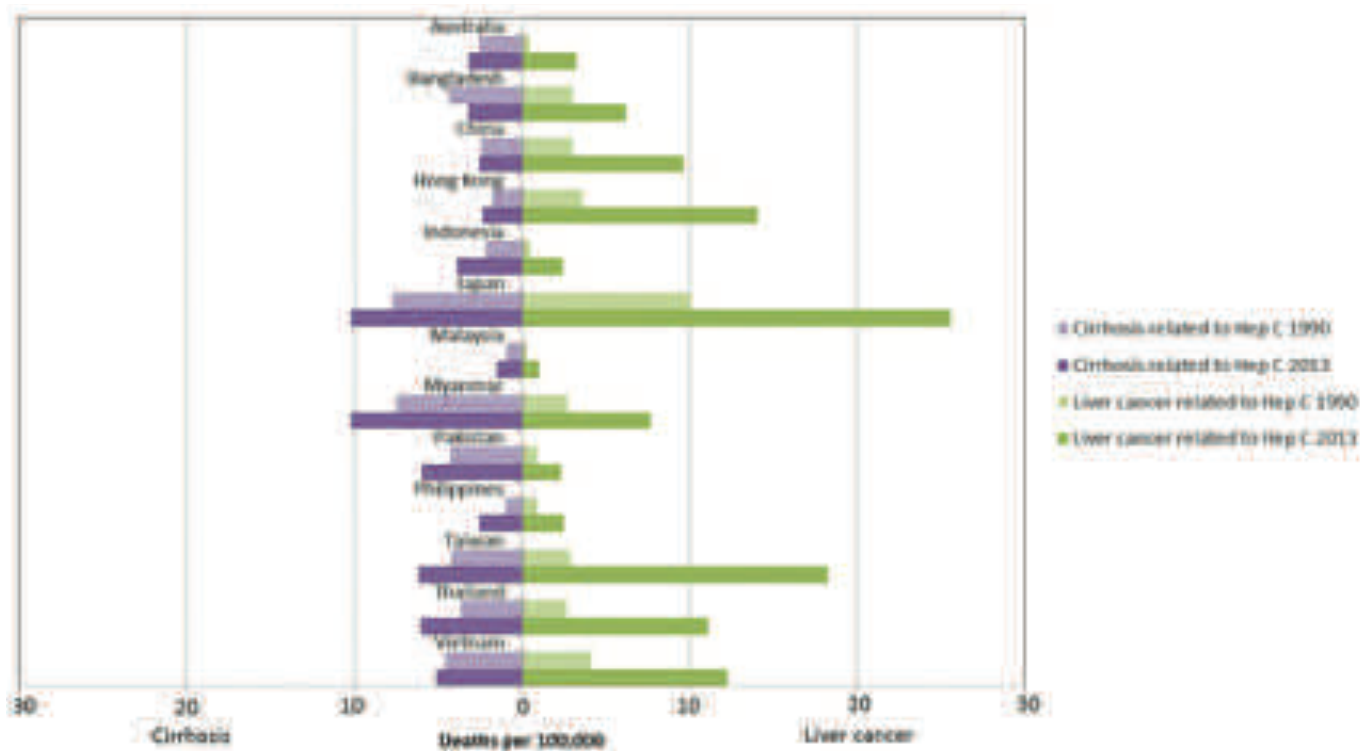
Figure 3. Deaths related to liver cancer and cirrhosis associated with hepatitis B infection in selected territories, both sexes, all ages 1990 vs 2013.



Substantial increases were reported in mortality from liver cancer and cirrhosis associated with hepatitis C in the selected countries in 2013 as compared to 1990 (Figure 4).

Again, the apparent reduction in deaths from cirrhosis, in Bangladesh and Singapore in 2013 compared to 1990 may be due to inconsistencies in reporting.

Figure 4. Deaths related to liver cancer and cirrhosis associated with hepatitis C infection in selected territories, both sexes, all ages 1990 vs 2013.



Responses to Survey

(See Appendix 1 for questions that were asked in the survey)

National Government Policies Towards Eliminating Viral Hepatitis

Table 1 depicts the policy environment among the selected countries supporting the WHO targets for hepatitis elimination. Most countries had national strategic plans seeking to eliminate viral hepatitis; Hong Kong has yet to develop a national plan. Multidisciplinary advisory hepatitis working groups commissioned by governments were in place, in some form, apart from Bangladesh, where this was still being proposed.

Governments in all but China, Myanmar and the Philippines sponsored community awareness programmes in the form of World Hepatitis Day activities, although in Vietnam these events were not centrally implemented. This was complemented by activities conducted by non-governmental organisations in some of the countries surveyed.

Investment case analyses to support the implementation of antiviral programmes had not been conducted in Bangladesh, Hong Kong, Indonesia, and Malaysia, but were being planned in the Philippines. Official data with accurate estimates of people living with, and dying as a result of viral hepatitis were unavailable for hepatitis B in four countries, although in Bangladesh, Hong Kong, Japan and Malaysia, surveillance data were available from sources external to government. Official data for hepatitis C were available in 6 compared with 9 countries for hepatitis B.

Table 1. Policies and procedures for achieving elimination of chronic viral hepatitis per territory.

					Official data for chronic viral hepatitis	
	Strategic Plan to Address Hepatitis	Hepatitis Working Group	Government-funded World Hepatitis Day events	Economic Evaluation for Antivirals	People Living with chronic viral hepatitis	Deaths from chronic viral hepatitis
Australia	✓	✓	✓	✓	✓	✓
Bangladesh	✓	✗⊙	✓	✗	✗❖	✗❖
China	ID	✓	✗	✓	✓	✓
Hong Kong	✗	✓	✓	✗	✗❖	✗
Indonesia	✓	✓	✓	✗	✓#	✓#
Japan	✓	✓	✓	✓	✗❖	✗❖
Malaysia	ID	✓	✓	✗	✗❖	✗
Myanmar	✓	✓	✗	✓	✓	✗
Pakistan	ID	✓	✓	✓	✓	✗
Philippines	✗	✓	✗	✗‡	✓	✓
Taiwan	✓	✓	✓	✓	✓	✓
Thailand	ID	✓	✓	✓	✓	✓
Vietnam	ID	✓	✓*	✓	✓	✗

- ✓ Yes
- ✗ No
- ID In development
- ⊙ Formation of the working group is proposed
- * The programmes are not implemented at national level
- ‡ The economic evaluation is planned
- ❖ Data obtained from sources external to government
- # Data for Indonesia not available for all parts of the country

Barriers to Care, and Protection Against Discrimination

In most countries there were no specific legal barriers to accessing hepatitis diagnosis, treatment and care services. Nevertheless, lack of public awareness and cost of diagnosis and treatment were mentioned as the biggest reason for failure of timely treatment. Apart from Australia, no jurisdiction had a specific legal framework protecting citizens against discriminatory practices such as the refusal of employment or education resulting from viral hepatitis infection. Japan has a Basic Act on Measures against Hepatitis, which describes how to protect people with chronic viral hepatitis from discrimination. Taiwan and Hong Kong have general laws pertaining to discrimination under which citizens with hepatitis were protected. In Pakistan legal action against discriminatory practices was ongoing which could lead to a regulatory shift. In China, while regulations previously limited access of people with viral hepatitis to employment and educational institutions, these were repealed in 2008.

Hepatitis Prevention Policies

Policies promoting the prevention of hepatitis infection are shown in Table 2. Most of the interviewees responded that routine screening of pregnant women for hepatitis B as part of the antenatal screening package was recommended apart from in Indonesia, Malaysia and Vietnam. Far fewer said that routine antenatal screening for hepatitis C was conducted, and in China and Myanmar this was available only in urban areas.

WHO recommends hepatitis B birth dose vaccination for all infants regardless of their exposure status; this has been shown to be very effective in reducing the risk of hepatitis B transmission to infants. Birth dose hepatitis B vaccine was recommended in all countries except Bangladesh, Japan and Pakistan.

Preventive measures to screen health care workers and provide a booster vaccine dose in those with absent antibodies following testing were not in place in Bangladesh, China, Indonesia, Japan and Myanmar, and in Pakistan such preventive measures were only

available in urban areas. Australia, Myanmar, Philippines and Taiwan offered free hepatitis B vaccination to high risk populations, and in Pakistan some but not all high risk populations were able to access free hepatitis B vaccination.

The Japanese government covered screening for hepatitis in people over 40 years of age, and Taiwan had a plan to offer free vaccination to the population of 45 year olds; no other countries discussed screening and vaccinating adult populations who had never previously been immunised as infants (data not shown).

Respondents reported that people who inject drugs had varying levels of access to needle and syringe programmes, although data were found highlighting inconsistencies in this. Needle and syringe programmes were available in all but Hong Kong¹³ despite some of the interviewees apparently being unaware of these programmes in several countries. China has had a needle and syringe program in place since 2000, and by 2010, programmes had been established providing services to over 36,000 people in 20 provinces. Pilot methadone maintenance treatment (MMT) programmes in China were launched in 2004 to cover 344,254 drug users by the end of 2011.¹⁴ Malaysia has had an official needle and syringe programme since 2006.¹⁵

All countries reported screening of donor blood and tissue products, although this screening was not universally available in Pakistan, particularly from the private sector (data not shown).

¹³ The Global state of harm reduction 2014; <https://www.hri.global/files/2015/02/16/GSHR2014.pdf>

¹⁴ Wallace, J., Pitts, M., Liu, C., Lin, V., Wei, L., Hajarizadeh, B., Richmond, J., Locarnini, S., Needs Assessment of Viral Hepatitis - China. (ARCSHS Monograph Series No. 105), Melbourne: Australian Research Centre in Sex, Health and Society, La Trobe University. ISBN: 9781921915734 The Summary Report and Full Report are available at <http://www.latrobe.edu.au/arcshs/publications>

¹⁵ <http://www.mac.org.my/v3/what-we-do/programme/nsep/>

Table 2. Policies in place for prevention of chronic viral hepatitis by territory

	Routine screening of pregnant women		Vaccination provided free of charge				Access to needle-exchange programmes
	Hepatitis B	Hepatitis C	Birth dose	Infants	Health workers	High risk populations	
Australia	✓	✓	✓	✓	✓	✓	✓
Bangladesh	✓	✓	✗	✓	✗	✗	✗
China	✓	✓*	✓	✓	✗	✗	✓
Hong Kong	✓	✗	✓	✓	✓	✗	✗
Indonesia	✗	✗	✓	✓	✗	✗	✓
Japan	✓	✗	✓	✓	✗	✗	✓
Malaysia	✗	✗	✓	✓	✓	✗	✗
Myanmar	✓*	✓*	✓	✓	✗	✓	✗
Pakistan	✓	✗	✗	✓	✓*	✓#	✗^
Philippines	✓	✓	✓	✓	✓	✓	✓
Taiwan	✓	✗	✓	✓	✓	✓	✓
Thailand	✓	✗	✓	✓	✓	✗	✗
Vietnam	✗	✗	✓	✓	✓	✗	✓

- ✓ Yes
- ✗ No
- * Available in urban but not rural areas
- # Not all high risk populations
- ^ Proposed

Care and Treatment Policies and Programmes for Chronic Hepatitis B and Hepatitis C

Clinical guidelines for care and treatment of chronic viral hepatitis were in place in the countries surveyed, apart from Bangladesh, Hong Kong and Malaysia. It is not known whether these were aligned with WHO recommendations or to what extent guidelines are implemented in the countries. Pathways for referral between diagnosis to counselling and care were not clearly in place in almost half of the countries, including Bangladesh, Hong Kong, Malaysia, Myanmar, Pakistan and Vietnam, with only 20% of patients being appropriately referred for counselling services in the Philippines. Australia, China, Japan and Taiwan were the only countries that reportedly had training programmes in place for generalist health care workers, implying that in most countries, people with viral hepatitis could receive care only from specialists, further limiting access to care.

While antiviral drugs were available for hepatitis B and DAA's for hepatitis C across most countries surveyed, accessibility was limited for various reasons, namely: cost, lack of public awareness, poor access to services in rural areas, and availability only in specialist centres. The Indonesian government sponsored hepatitis B treatment for a period of two years, while Taiwan supported treatment for a period of three years with potential for further treatment when clinically required. DAAs were available in most countries, apart from China and Vietnam. Only five countries, Indonesia, Myanmar, Pakistan, Philippines and Thailand have obtained cheaper prices for DAAs than those quoted in the USA, however, the cost of treatment in these countries is not covered by the government, therefore expenses remain unaffordable for most households (Table 3). In Bangladesh, generic DAAs are produced for local use and for export (see country fact sheet from Bangladesh; Appendix 2).

Table 3. Policies for improving access to counselling, care and antiviral treatment for chronic viral hepatitis by territory.

	Local clinical guidelines for disease management	Referral pathways from diagnosis to care	Generalists trained in management of CVH	Antivirals available for treatment of CVH	
				Hepatitis B (TDF/ETV)	Hepatitis C (DAA's)
Australia	✓	✓	✓	✓‡	✓
Bangladesh	✗	✗	✗	✓	✓
China	✓	✓	✓	✗	✗
Hong Kong	✗	✗	✗	✓	✓^
Indonesia	✓	✓	✗	✓^	✓#
Japan	✓	✓	✓	✓	✓
Malaysia	✗	✗	✗	✓♦	✓♦#
Myanmar	✓	✗	✗	✓‡	✓
Pakistan	✓	✗	✗	✓	✓#
Philippines	✓	✓*	✗	✓	✓#
Taiwan	✓	✓	✓	✓	✓
Thailand	✓	✓	✗	✓	✓#
Vietnam	✓	✗	✗	✗	✗

- ✓ Yes
- ✗ No
- * Only 20% of patients can be referred to appropriate counselling in public hospitals
- ‡ Accessibility to treatment is limited in rural areas
- ♦ Antiviral treatment can only be prescribed by specialists and hepatologists in certain hospitals
- ^ Limited availability or period of treatment covered
- # Available through access programmes of pharmaceutical companies but patients have to cover the cost

Costs of Hepatitis Diagnosis and Treatment

For most of the selected jurisdictions, out-of-pocket expenditure was the norm for both diagnosis and treatment with newer generation NAs for hepatitis B and DAAs for hepatitis C (Table 4). Only the governments of Australia, Hong Kong and Taiwan covered the cost of diagnosis, which is partially covered by the governments in Japan and Pakistan. As for the remainder of jurisdictions surveyed, patients themselves were expected to fund the cost of their diagnosis.

The cost for hepatitis B NAs was covered by governments in Australia, Hong Kong, Taiwan (3 years) and, in a very limited way, in Pakistan (1 year only).

In Japan, the government and health insurance also covered NAs. In most other jurisdictions, however, patients covered the cost of drugs themselves. Only in Australia and Taiwan do the government cover the cost of new DAAs; Hong Kong offered limited funding to cover the cost of DAAs whilst Japan partially sponsored DAAs, together with health insurance companies, with out-of-pocket expenses being generally low.

As discussed above, jurisdictions that have obtained access pricing for DAAs still require patients to cover the cost of medication themselves. The Thai government will likely cover the cost of antivirals, including DAAs, pending an investment case analysis.

Table 4. Who covers the cost for diagnosis and treatment of chronic viral hepatitis in each territory?

	Diagnosis	Treatment
Australia	Government	Government
Bangladesh	Out of pocket	Out of pocket
China	Health insurance/Out of pocket	Health insurance/Out of pocket
Hong Kong	Government (those admitted with abnormal liver function)	Government (Limited funding for DAA's)
Indonesia	Out of pocket	CHB: Out of pocket/Government (Civil servants) CHC: Out of pocket (Access price)
Japan	Health insurance/Government funded screening > 40 years	Health Insurance/Government
Malaysia	Out of pocket	Out of pocket/Government (50%)
Myanmar	Out of pocket	Out of pocket (Access price for hepatitis C)
Pakistan	Out of pocket/Government (very limited number of patients)	CHB: Out of pocket/Government (Limited number for 1 year) CHC: Out of pocket/Government in 2 regions ~50,000 people (Access price)
Philippines	Out of pocket	Out of pocket (Access price)
Taiwan	Government (National insurance)	Government (National insurance)
Thailand	Out of pocket	Government/Out of pocket (Access price for hepatitis C)
Vietnam	Out of pocket	Out of pocket

CHB = Chronic hepatitis B

CHC = Chronic hepatitis C

Access price refers to concessional pricing arrangements for specific drugs afforded by the original manufacturer which result in cheaper prices for the end user.

CONCLUSIONS

Respondents noted that a clear commitment has been shown by many governments in surveyed jurisdictions, demonstrated by the development of strategic policies towards eliminating the morbidity and mortality associated with viral hepatitis. There were, however, several areas identified as requiring attention in order to achieve the WHO targets for controlling chronic viral hepatitis by 2030:

- Although many jurisdictions had, or were developing a strategic plan, budget allocation for implementing this plan has been slow to follow, hampering efforts to implement these plans.
- In many territories poor surveillance systems have resulted in low quality data describing the true disease burden associated with viral hepatitis, making it difficult to plan services and interventions.
- Few jurisdictions had conducted investment case analyses to guide decision-making on the most effective and potent antiviral treatments, and to serve as a bargaining tool in the quest for reduced treatment costs.
- Clinical guidelines have been developed in most territories, but the quality and alignment with current WHO guidelines was unknown, as was the implementation of these recommendations.
- In most territories, general health care workers were inadequately trained to identify, counsel and provide appropriate care or referral for those with chronic viral hepatitis.
- Community education and awareness programmes for chronic viral hepatitis were limited, and in some cases funded by organisations outside of government.
- Free screening and vaccination for health care workers and other high-risk populations was not consistently available within jurisdictions, and only 2 territories (Japan and Taiwan) have considered routine screening of adults who were not vaccinated in infancy.
- Referral pathways for people identified with chronic viral hepatitis were not clear in some of the territories surveyed.
- Equity of access to care was limited for rural compared to urban dwellers.
- Widespread introduction of infant hepatitis B vaccination programmes has successfully reduced the burden of infection in many jurisdictions. But not all territories offered routine screening of pregnant women for hepatitis B and, even fewer screening for hepatitis C.
- Access to birth dose hepatitis B vaccination was not universal within the region.
- In many territories there was no legislated protection against discrimination for people with chronic viral hepatitis.
- The cost of diagnosis and treatment for hepatitis B and hepatitis C infection was covered by patients themselves in the majority of jurisdictions, including in all that had obtained access pricing for DAAs. Despite a reduction in prices in these territories, paying for this treatment remains a challenge for many poorer households.

RECOMMENDATIONS

Policy

- All territories should develop or finalise comprehensive strategic plans aiming to eliminate chronic viral hepatitis.
- Greater priority should be given to implementation of hepatitis strategy in health budgets.
- Government organised technical advisory multidisciplinary groups, including representation from civil society and people with chronic viral hepatitis should be established in each jurisdiction.
- Public awareness campaigns to identify people at risk of viral hepatitis need to be supported by governments, including the annual World Hepatitis Day events held on July 28th.

Data

- Serosurveillance studies are needed to determine hepatitis B and hepatitis C prevalence with attention focused on identifying and screening high risk populations in all territories.
 - » Consideration should be given to routine screening of adults who missed vaccination as infants.
- Mechanisms for routinely notifying viral hepatitis-related cirrhosis should be improved.
- Cancer registries should be instituted where not available, including in particular liver cancers related to hepatitis B or hepatitis C.

Prevention

- Harm reduction programmes including needle supply should be supported by governments in all territories.
- Free screening and diagnosis of all pregnant women for hepatitis B and hepatitis C should be integrated into existing HIV/syphilis elimination strategies.
- Free screening plus primary and booster vaccinations should be offered to all high-risk individuals and people over 40 who were not previously vaccinated.
- All infants should receive free hepatitis B vaccination, including birth dose plus booster vaccination, and HBIG for babies whose mothers are at increased risk of transmission where available. Where HIV DNA is available and highly viraemic mothers (HBV DNA >200,000IU/ml) detected, women should be considered for treatment with TDF in addition to

their babies receiving birth dose hepatitis B vaccine and HBIG.

Clinical Management

- All territories need to develop locally applicable clinical guidelines, and improve pathways to care after diagnosis.
- In high burden jurisdictions, all general frontline healthcare workers should be aware of the need to diagnose, counsel and provide basic clinical management for people with chronic viral hepatitis.
- Laws should be instituted to protect people with chronic viral hepatitis from discrimination, especially with regards to educational institutions and the work place.
- Community awareness about the risks of liver damage from hepatitis B and C and how to prevent or treat these is essential.
- Governments and NGOs are urged to work on programmes encouraging high risk or unvaccinated individuals in high-burden jurisdictions to be tested.

Cost and Availability of Diagnosis and Treatment

- All governments should fund the cost of diagnostic tests and antiviral treatment to minimize out-of-pocket costs to patients and increase access to treatment
- NGOs, international governmental organisations, and other organisations should advocate for standardising prices of treatment and diagnosis.
- Governments are urged to decrease the disparity in access to care for urban and rural populations, as well as for minority or marginalised groups.

APPENDIX 1: QUESTIONNAIRE

Government Responses

1. Has your government developed a national plan that addresses viral hepatitis prevention, diagnosis, treatment and care?
 - a. Does the plan have targets and indicators?
 - b. Is there funding dedicated to the plan?
2. Does your national government have a multidisciplinary/technical advisory/Ministry of Health working group for viral hepatitis?
3. Did your government stage or fund events or awareness campaigns for World Hepatitis Day 2015?
4. Has an economic evaluation been planned or conducted for the management of chronic viral hepatitis with the most effective antivirals?

Data

5. Has your government identified or estimated how many people living with chronic viral hepatitis are in your country?
6. Does your government know the number of people dying as a result of viral hepatitis, liver disease and/or liver cancer each year?
 - a. If Yes, do you know the numbers of people living with chronic hepatitis B and C in your country and the numbers of people with liver disease and liver cancer associated with chronic viral hepatitis?

Infrastructure

7. Are generalist health care workers trained/educated about viral hepatitis?
 - a. Are there core competencies for people in the health workforce about viral hepatitis?
8. Are there any legal, regulatory or policy barriers that stop people accessing any hepatitis services (screening/treatment)?
9. Are there any laws to protect people against discrimination based on their hepatitis B or hepatitis C?

Prevention

10. Are all blood, tissue and organ donations in your country screened for hepatitis B and hepatitis C?
11. Who within the community can access hepatitis B vaccination free of charge?
 - a. If there is an infant vaccination programme, ask specifically about recommendation for birth dose of vaccine and HBIg for exposed infants
 - b. High risk populations
 - c. Healthcare workers (screening and booster vaccination)
12. Are there any restrictions on people who inject drugs accessing needle and syringe programmes?

Screening and Diagnosis

13. Have pathways been developed to ensure that people diagnosed with chronic hepatitis B or hepatitis C are referred to appropriate information, counselling and care?
 - a. Do these pathways work?
14. Are pregnant women in your country routinely screened for hepatitis B and hepatitis C?
15. Are test results for hepatitis B and hepatitis C kept confidential?
16. Who pays for the diagnosis of hepatitis B and hepatitis C?

Clinical Management

17. Can hepatitis B or hepatitis C treatment be obtained in all parts of your country?
18. Does your country have national clinical guidelines for hepatitis B and hepatitis C management?
19. What are the barriers to prescribing direct-acting antiviral drugs to patients with hepatitis C?
20. Who pays for the costs of treatment of hepatitis B and hepatitis C?
 - a. What is the out of pocket expenditure?

APPENDIX 2: COUNTRY/TERRITORY FACT SHEETS

Australia

Strategic Plan

- Australia has a national plan developed by the government addressing viral hepatitis with quantitative indicators for the period from 2014 to 2019, however, no funding has been specifically dedicated to its implementation.
- A multidisciplinary working group has been established to provide expertise to the Minister for Health and is known as the Ministerial Advisory Committee on Blood Borne Viruses and Sexually Transmitted Infections.

Government Funding

- The government funded events for World Hepatitis Day 2015.

Descriptive Data

- There are 450,000 people living with viral hepatitis in Australia, similarly divided between hepatitis B and hepatitis C.
- There is official data on the number of deaths from liver disease and liver cancer related to viral hepatitis each year.
- An economic evaluation for treatment of viral hepatitis with antivirals has been conducted.

Barriers to Treatment

- No legal, regulatory or policy barriers prevent access to hepatitis services.
- Laws protecting people with chronic viral hepatitis from discrimination are in place in Australia.
- There are significant information and knowledge gaps among general healthcare workers on viral hepatitis.

Prevention

- All blood, tissue and organ donations in Australia are screened for hepatitis B and hepatitis C.
- Hepatitis B vaccine is available for infants, including birth dose, and high risk populations including; PWID, MSM and Indigenous people free of charge.
- Harm reduction programmes are in place.

Screening and Diagnosis

- Guidelines are in place to ensure that people with chronic hepatitis B or C are referred for appropriate information, counselling and care in Australia.
- Pregnant women are routinely screened for hepatitis B and hepatitis C.
- The government pays for the diagnosis of hepatitis B and hepatitis C through the national health system.
 - » Test results for hepatitis B and hepatitis C are kept confidential.

Clinical Management

- National clinical guidelines have been developed for hepatitis B and C management.
- Hepatitis B treatment is available in specialist hospitals mainly located in the big cities while access to the treatment in country areas is limited.
- Hepatitis C treatment can be obtained in all parts of the country.
- The Australian government funds DAAs for hepatitis C patients. There is a national health system which funds all patients in managing hepatitis B.
- Patients' lack of knowledge about the availability of treatment for chronic viral hepatitis is the main barrier to managing hepatitis.

Bangladesh

Strategic Plan

- Bangladesh has a national plan developed by the government for addressing viral hepatitis which requires approval for implementation.
- No funding has been allocated to the implementation of this plan.
- There is a proposed inter-disciplinary working group established for viral hepatitis awaiting government approval.

Government Funding

- Awareness campaigns were funded by government for World Hepatitis Day 2015 and 2016.

Descriptive Data

- Studies have been conducted by academic institutions, to identify the number of people living with chronic viral hepatitis.
- The rate of hepatitis B and C infection in Bangladesh is estimated to be 5.4% and 0.8% respectively.
- No plans exist to conduct an economic evaluation of antivirals for viral hepatitis, although economists are working with clinicians on the issue.

Barriers to Treatment

- There are no legal, regulatory or policy barriers preventing people from accessing hepatitis services.
- Currently no specific laws are in place to protect people with chronic viral hepatitis from discrimination in Bangladesh.
- Generalist healthcare workers in Bangladesh are going to be trained on prevention, care and management of viral hepatitis.

Prevention

- All blood, tissue and organ donations in Bangladesh are screened for hepatitis B and hepatitis C.
- Free hepatitis B vaccination is administered to infants.
- There is no harm reduction programme in place.

Screening and Diagnosis

- Systems to ensure that people diagnosed with chronic hepatitis B or C are referred to appropriate information, counselling and care in Bangladesh have not yet been developed.
- Pregnant women in the country are routinely screened for hepatitis B and hepatitis C.

Clinical Management

- No national clinical guidelines have been developed for hepatitis B and C management.
- Hepatitis B or hepatitis C treatment can be obtained in the rural areas of Bangladesh. Generic DAAs are available in Bangladesh.
- Bangladesh is exporting generic DAAs to many countries.

China

Strategic Plan

- China is developing a national treatment and prevention plan.
- There is an interdisciplinary working group in China, targeting major infectious diseases including hepatitis.

Government Funding

- NGO's and the medical community of various major cities organised world Hepatitis Day events in 2015.
- Funding for the implementation of a national strategic plan has not yet been allocated.

Official Data

- An estimated 70-90 million people are living with chronic hepatitis B infection, which includes 20-30 million with active liver disease, 1 million with cirrhosis, and 200,000-300,000 with HCC. Approximately 10 million people live with HCV.
- About 263,000 people die from HBV-related HCC or cirrhosis, accounting for 37%-50% of HBV-related deaths worldwide.
- An economic evaluation was conducted in 2015.

Barriers to Treatment

- Health insurance or out-of-pocket payment is required for hepatitis clinical services.
- Mandatory checking of hepatitis status for entry to schools and employment has been prohibited since 2010.
- Generalist healthcare workers in China are trained on prevention, care and management of viral hepatitis.

Prevention

- All blood, tissue and organ donations are screened for HBV and HCV, and as of 2015 PCR testing is done to identify those in the window period.
- All new-borns nationwide receive free hepatitis B vaccination including birth dose. Free catch up vaccination is given to those who missed the birth dose.
- Harm reduction programmes are established but it is uncertain whether PWID access these services.

Screening and Diagnosis

- Pathways for care have been developed to ensure that people diagnosed with chronic hepatitis B or C are referred to appropriate services.
- Pregnant women are routinely screened for HBV. HCV screening is conducted in urban areas, but less so in poorer or rural areas.
- Patients pay for the diagnosis of HBV and HCV or use health insurance.
 - » Test results for hepatitis B and hepatitis C are kept confidential during the collective health check.

Clinical Management

- National clinical guidelines for HBV and HCV management are available.
- HBV and HCV treatment cannot be obtained in all parts of the country.
- DAAs for HCV infected patients have not been approved by the government.
- Patients or insurance companies pay for the cost of treatment for CHB and CHC.

Hong Kong

Strategic Plan

- The Hong Kong government has not developed a strategic plan addressing viral hepatitis.
- A working group for viral hepatitis is established within the government.

Government Funding

- The government holds public awareness campaigns every World Hepatitis Day.
- Funding has been allocated for treatment for viral hepatitis but does not account for costs involved in newly developed DAAs for hepatitis C patients.

Official Data

- The government reports estimates of patients suffering from viral hepatitis.
 - » Data collection is mainly conducted by academic sectors and NGOs.
- The prevalence rates of chronic hepatitis B and C in Hong Kong are estimated to be 7%-8% and 0.5% respectively. 80%-90% of hepatocellular carcinoma (HCC) cases are associated with chronic viral hepatitis.
- The government has not conducted an economic evaluation on effective anti-viral therapy for viral hepatitis.

Barriers to Treatment

- There are no legal, regulatory or policy barriers that prevent access to hepatitis services.
- No programme is in place for population screening to identify those in need of treatment and/or education.
- No specific laws protect people with chronic viral hepatitis from discrimination in Hong Kong.
- Generalist healthcare workers in Hong Kong are not specifically trained on prevention, care, and management of viral hepatitis.

Prevention

- All blood, tissue and organ donations in Hong Kong are screened for hepatitis B and C.
- All new-borns and infants under age 6 have received free vaccinations since 1988.
- Healthcare workers under the Hospital Authority are also screened and re-immunised.
- Harm reduction programmes are available for PWID with no restrictions.

Screening and Diagnosis

- There is no clinical pathway developed for referral of patients with chronic hepatitis B or C for counselling and care.
- All pregnant women are routinely tested for hepatitis B, but not hepatitis C.
- Testing for viral hepatitis is only free-of-charge in public hospitals as a follow-up investigation for an admitted patient with abnormal liver function
 - » Test results for hepatitis B and C are kept confidential.

Clinical Management

- Hong Kong does not have national clinical guidelines but follows the Asia-Pacific regional guidelines for hepatitis management.
- Treatment for hepatitis B and C can be obtained in all parts of Hong Kong.
- The government covers the costs of treatment for hepatitis B and C, but has only limited funding for DAAs.

Indonesia

Strategic Plan

- Indonesia has a national and funded plan for addressing viral hepatitis
- Since 2012, there is an agency within the Ministry of Health, the Subdirector of Hepatitis, addressing and coordinating the national hepatitis programme.
- 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.

Government Funding

- The Indonesian government stages and funds events for World Hepatitis Day every year since 2010 in almost all provinces, with peak ceremonies held in different province capitals each year.

Official Data

- Indonesia did not have nationwide data until 2007.
- Efforts to obtain national-level data were made in 2007 through a National Surveillance project (Basic Health Survey [Riskesmas]) to collect samples from 21 of 33 existing provinces, which were mostly located in the western and middle part of the Indonesian archipelago. Samples could not be collected from north Sulawesi, central Sulawesi, southeast Sulawesi, Moluccas, west Irian, and Papua, due to the geographical barriers. The prevalence of HBsAg, anti-HBc, and anti-HBs was 9.4% (of 10,391 samples), 32.8% (of 18,867 samples), and 30.6% (of 16,904 samples), respectively. For HCV infection, the prevalence of anti-HCV was 0.82% (of 11,762 samples).
- Again, a nationwide study was conducted in 2013 covering 33 provinces. The data is being prepared for publication.
- No economic evaluation has been conducted for managing hepatitis B and C with the most effective antivirals.

Barriers to Treatment

- There are no laws protecting people against discrimination based on hepatitis B and C.
- Generalist healthcare workers in Indonesia are not sufficiently trained on prevention, care and management of viral hepatitis. Treatments for hepatitis B and C are mainly done by certified liver experts, of whom there are around 200 - mostly affiliated to medical schools in capitals of provinces. An effort to train specialist physicians (specialists in internal medicine) in cities of regency levels in each province is being prepared.

Prevention

- Since 1992, screening of blood donors to prevent HBV, HCV, and HIV has been conducted by the Indonesian Red Cross (PMI).
- Infant hepatitis B vaccination has been provided as part of a national health programme since 1997, while the birth dose vaccination programme was started in 2000; infant vaccinations are given free of charge.
- So far, there is no special vaccination programme for high-risk groups, especially for those who have blood contact, transfusion, tattooing, STDs or are IV drug users.
- Harm reduction programmes are being put in place.

Screening and Diagnosis

- Pathways have been developed to ensure that people diagnosed with chronic hepatitis B or C are referred to appropriate information, counselling and care in Indonesia.
- Pregnant women in the country are not routinely screened for hepatitis B and hepatitis C.
- Patients pay for the diagnosis of hepatitis B and hepatitis C out-of-pocket.
 - » Test results for hepatitis B and hepatitis C are kept confidential.

Clinical Management

- National clinical guidelines were developed for hepatitis B and C management by the clinical society of hepatology, and were revised in September 2016 following the availability of the newly approved oral treatment for hepatitis C. A guideline for public health is now being developed.
- Hepatitis B or hepatitis C treatment is limited to some parts of the country.
- The government provides free treatment for hepatitis B for 2 years (telbivudine and tenofovir) to members of a government-owned medical insurance that covers civil servants. Wider communities can access treatment through the National Health-care Security, which is a national insurance-based Medicare system since January 2015, which started in big cities that have certified liver experts, and has gradually expanded to more places in parallel with the addition of more experts and trained physicians.
- Indonesia receives a special price for DAAs provided by the Gilead system, which was recently approved by the Indonesia National Agency of Drug and Food Control, although the expense for this is out of pocket for patients.

Japan

Strategic Plan

- Japan has a national plan for addressing viral hepatitis called Basic Act on Measures against Hepatitis, established in 2009 (Act No.97 of the year 2009). There are set targets and the government has allocated funding for the plan. The government covers the cost for screening of hepatitis virus to all residents at the nearest health center and also provides the medical expenses for the first detail examination if positive result after screening.
- The Ministry of Health, Labour and Welfare (MHLW) has appointed research groups for viral hepatitis, including epidemiologists and clinical researchers.
- According to the Basic Act on Measures against Hepatitis, every prefecture and government selects the "regional core centres for liver disease" along with achieving cooperation of medical institutions. Equal Accessibility of Hepatitis-Related Medical Care is assumed so that there is no bias by region, and care will be equally improved in each region.
- "Consultation Centre for Liver diseases" has been installed in all of the "core centre hospitals for liver disease" corresponding to the consultation from the patient or their family.
- "The Hepatitis Information Centre in NCGM" was established in November 2008. Part of its role is the support of information sharing between hospitals, the medical personnel training and the provision of up-to-date information about hepatitis.

Government Funding

- Events for World Hepatitis Day 2015 were sponsored by the government.

Official Data

- In 2000, 3 to 3.7 million citizens had hepatitis B and C; by 2012 the number of HBV and HCV infected persons was 2 million (unofficial data reported by research groups under MHLW).
- Research groups from the universities are verifying an economic evaluation of antivirals for viral hepatitis.

Barriers to Treatment

- No legal, regulatory or policy barriers exist, preventing access to hepatitis services.
- Basic Act on Measures against Hepatitis describes how to protect people with chronic viral hepatitis from discrimination.
- Educational seminars are announced and

recommended for all healthcare workers. There are also training sessions for doctors and nurses. Training is part of the mission of "the Hepatitis Information Centre in NCGM "

Prevention

- All blood, tissue and organ donations in Japan are screened for HBV and HCV.
- From October 2016, birth dose hepatitis B vaccination to new-born babies will be available free of charge.
- From January 1986, hepatitis B vaccination with HBIG to babies born to HBV carrier mother have been available free of charge and since April 1995, health insurance covers this as well.
- High risk populations are not eligible for free vaccination but some health care workers receive screening and vaccination depending on the employer.
- There are various harm reduction programmes for PWID in Japan according to guidelines.

Screening and Diagnosis

- In every prefecture, the government has a specialised hospital suitable for hepatitis treatment, providing information, counselling and care.
- Pregnant women in the country are routinely screened for HBsAg since 1986.
- The cost of diagnosis is included in the health insurance programme.
- Government pays screening costs for Hepatitis B and Hepatitis C and has two pathways for hepatitis virus screening. One is for those over 40 years by "Project of Health Promotion Service" and the other is for all residents irrespective of age by "Project of screening for Specific infectious diseases by respective Prefecture".
 - » Test results for hepatitis B and hepatitis C are notifiable and those who are diagnosed with hepatitis are encouraged to visit medical institutions and to register for follow-up in some prefectures.

Clinical Management

- The Japanese Society of Hepatology has developed guidelines for clinical treatment for hepatitis B and C, and the government has research groups which also provide guidelines.
- Hepatitis treatment can be obtained in all parts of Japan.

- There are no barriers to prescribing antiviral drugs or direct-acting antiviral drugs (DAAs) to patients with hepatitis C with the health insurance and the government together covering the amount in excess of 100-200 USD (ten or twenty thousand yen) of the cost of treatment (depending on the amount of tax payment). As for the government covering the cost, the patient must submit an application to the prefecture office with the doctor's recommendation. For Hepatitis B treatment, the cost of drugs will also be covered as for Hepatitis C.

Malaysia

Strategic Plan

- Malaysia drafted a national plan in 2014, which has yet to be completed. Targets and indicators particularly in addressing chronic viral hepatitis in Malaysia have yet to be developed, but will be aligned to the WHO Western Pacific Regional Action Plan for Viral Hepatitis.

Government Funding

- Since 2013, the government has funded and organised World Hepatitis Day activities annually in conjunction with NGOs.

Official Data

- A major source of estimated population figures related to chronic viral hepatitis are independent studies conducted by external organizations.
- There is no official data provided by the Malaysian government at this stage for both prevalence and mortality rates of chronic viral hepatitis (only on notified cases to MoH).
- Economic evaluations for treatment and support of chronic viral hepatitis are being conducted by researchers (not government).

Barriers to Treatment

- There is a lack of education and training of healthcare workers in Malaysia.
- Lack of funding for DAAs.

Prevention

- All blood, tissue and organ donations in Malaysia are screened for HBV and HCV.
- Hepatitis B vaccinations are provided free for all infants (including birth dose). HBIG remains outside the free vaccine policy.
- Healthcare workers are screened and provided a booster dose of vaccination if needed.
- High risk groups are not routinely vaccinated.
- Harm reduction programmes exist.

Screening and Diagnosis

- There are no official guidelines and policies in Malaysia for screening and diagnosis of hepatitis.
- Pregnant women are not routinely screened for HBV and HCV.
- Only government healthcare workers have the right to obtain free diagnostic test for viral hepatitis but this does not apply to other high risk populations.

Clinical Management

- National clinical guidelines have not been developed for hepatitis B and C management.
- Antiviral treatment for both HBV and HCV can only be prescribed from specialists and hepatologists in Malaysia.
- Treatment for chronic viral hepatitis is provided free in Ministry of Health hospitals but about 50% are paid for out-of-pocket by the general public.

Myanmar

Strategic Plan

- The Myanmar Ministry of Health has developed a national plan addressing viral hepatitis, including tracking key indicators such as the HBV and HCV prevalence, and hepatocellular carcinoma prevalence. Funding has not been allocated to the plan.
- A technical advisory group for viral hepatitis has been set up to advise government, but it is not multidisciplinary.

Government Funding

- World Hepatitis Day activities are conducted by the Myanmar Gastrointestinal and Liver Society (MGLS) but not the government.

Official Data

- Around 10-12% of the population has hepatitis B, while hepatitis C prevalence is around 4-6% (this varies by region).
- The government has no data on the number of people dying as a result of viral hepatitis, liver disease and/or liver cancer.
- An economic evaluation has been conducted for viral hepatitis antivirals.

Barriers to Treatment

- Everyone in Myanmar can access hepatitis B testing and treatment programmes with no barriers.
- There is no law protecting those with chronic viral hepatitis from discriminatory practices.
- There are significant information and knowledge gaps among the healthcare workers about viral hepatitis.

Prevention

- All blood, tissue and organ donations are screened for HBV and HCV.
- Infant hepatitis B vaccination, including birth dose, is available free of charge.
- No needle exchange programmes are in place in Myanmar.

Screening and Diagnosis

- Myanmar has no national guidelines for referral of patient with viral hepatitis for care and treatment.
- Only pregnant woman in cities are screened for hepatitis B and C, and approximately 40% of the population lives in cities and 60% live in rural areas, with no facilities for screening.
- Diagnosis requires out of pocket expense from patients.
 - » Test results for HBV and HCV are not kept confidential.

Clinical Management

- The MGLS has guidelines for treating patients with prescription drugs.
- Viral Hepatitis treatment can be obtained in cities but not rural areas.
- DAAs are relatively inexpensive because Gilead has provided the licence to seven companies in Myanmar with a technical legal trust. The situation is the same for Hepatitis B.
- All treatment costs are out-of pocket expenses.

Pakistan

Strategic Plan

- The government national plan is due for release by 2017.
- The Federal Ministry of Health Regulation and Services has established a technical advisory group for establishing the national plan and conducting economic evaluations for viral hepatitis.

Government Funding

- The government has organised a few events in capital cities for past World Hepatitis Days, but most awareness campaigns are coordinated by NGOs.
- While overseas funding has supported the development of the national plan, provincial governments will be responsible for financing its implementation.

Official Data

- A 2007-2008 national survey reported an estimated 5 million people infected with hepatitis B (2.5%) and 10 million people with hepatitis C (5%).
- There is an increasing trend in hospital admissions of liver cancer associated with hepatitis C. However, an updated national survey will be necessary to review these statistics and correlations.

Barriers to Treatment

- Currently there are no laws to protect people against discrimination based on their hepatitis status. A law against discrimination in employment has been proposed to the government.
- Minimal efforts have been made nationwide to train healthcare workers in managing chronic viral hepatitis.

Prevention

- Blood and other tissue donations are screened for chronic viral hepatitis in public facilities.
- The EPI programme provides hepatitis B vaccines for infants from ≥ 6 weeks, achieving coverage of up to 70%. BD vaccination although HBIG for exposed infants is government-funded in limited amounts.
- Some healthcare workers in large hospitals receive screening and booster vaccinations free-of-charge. Some high risk groups are also immunised.
- A needle exchange programme has been proposed to the government, although implementation will be very challenging.

Screening and Diagnosis

- There is currently no identified clinical pathway for patients with chronic hepatitis B or C.
- All pregnant women are routinely tested for hepatitis B and occasionally hepatitis C in both public and private sectors.
- Testing for HBV and HCV is free-of-charge in the public sector, but this is inconsistent. Screening by private practitioners is paid for by patients.
 - » Test results for hepatitis B and C are kept confidential.

Clinical Management

- Clinical guidelines for hepatitis management have been developed by professional societies; National Treatment Guidelines for HCV have recently been released.
- Treatment for HBV and HCV is increasingly accessible throughout Pakistan.
- Costs for hepatitis B treatment is covered by the government but only limited to around 10,000 people and then only covered up to 1 year, DAAs have become available in the Punjab and Sindh government programmes for approximately 50,000 patients. However the large majority of patients currently pay for treatment themselves.

Philippines

Strategic Plan

- A national plan for addressing viral hepatitis in the Philippines has been developed and is awaiting approval for further implementation.
- A designated working group was recently constituted for viral hepatitis prevention and control.

Government Funding

- Funding of the national plan has not yet been allocated by the government but is expected to be allocated on approval of the plan.
- World Hepatitis Day events were held by NGO's in 2015 and planned in 2016.

Official Data

- An estimated 17% of the population live with HBV and 0.9% with HCV respectively.
- No economic evaluation has been conducted within the country.

Barriers to Treatment

- There is no viral hepatitis training curriculum in the Philippines and no comprehensive education is provided for healthcare workers.
- Direct-acting antiviral drugs for hepatitis C are costly.
- Patients are usually reluctant to receive treatment due to fear of stigma.

Prevention

- All blood, tissue and organ donations in Philippines are screened for hepatitis B and C.
- Hepatitis vaccination programme is free for the entire population.
- The country is currently adapting the WHO guidelines to recommend birth dose of hepatitis vaccine, but about 40% of deliveries take place at home. The government does not support the cost of HBIG.

Screening and Diagnosis

- Referral systems from counselling and information of viral hepatitis to government hospitals with specialists and private sectors are available but the majority (80%) do not have access to these.
- Pregnant women are provided with free access to hepatitis B and C screening.
- People in the Philippines have to pay out-of-pocket for viral hepatitis diagnostic tests.

Clinical Management

- Hepatitis treatment can be obtained in all parts of Philippines.
- Designated clinical guidelines for hepatitis B and C management are established nationally.

Taiwan

Strategic Plan

- Taiwan has had a goal to control viral hepatitis for 35 years, initially targeting vaccination against Hepatitis B, and later shifting to the treatment of chronic Hepatitis B and C. Funding has been allocated to the plan.
- The government has set up a working group for viral hepatitis, and NGOs and all the liver associations work closely with the Ministry of Health and Welfare.

Government Funding

- World Hepatitis Day events on July 28th are government endorsed.

Official Data

- Taiwan has approximately 2.3 million people living with chronic hepatitis B and 0.6 million people with hepatitis C.
- The government has reliable data on the number of people dying as a result of viral hepatitis, liver disease and/or liver cancer.
- An economic evaluation for viral hepatitis antivirals is underway.

Barriers to Treatment

- Discrimination against people with chronic viral hepatitis has improved in Taiwan compared to 30 years ago and is no longer a big societal issue, although no specific laws protect people from discrimination if they have chronic viral hepatitis.
- Educational programmes about viral hepatitis are actively provided to healthcare workers although these have not been evaluated.

Prevention

- All blood, tissue and organ donations are screened for HBV and HCV.
- Infant hepatitis B vaccination, including birth dose, and vaccination for catch up vaccination are available free of charge.
- Harm reduction programmes are established and successful in Taiwan.

Screening and Diagnosis

- There are pathways to ensure that people diagnosed with chronic hepatitis B or C are referred to appropriate information, counselling and care in Taiwan.
- Pregnant women are screened only for hepatitis B but not C.
- Diagnosis of hepatitis B and hepatitis C is covered by the government insurance programme, but it is the clinician's decision whether the person should be tested. Programmes are afoot to screen all 45 year olds.
 - » Test results for hepatitis B and hepatitis C are kept confidential.

Clinical Management

- Clinical guidelines have been developed for hepatitis B and C management, and clear referral pathways are in place.
- Hepatitis treatment can be obtained in all parts of Taiwan, even in remote areas.
- The treatment of hepatitis B and C is covered by government insurance in Taiwan, but for entecavir or tenofovir, this is only covered up to 36 months. Another 36 months of treatment is allowed in case there is a flare after discontinuation of the anti-viral treatment. However, for cirrhotic patients with active HBV infection, the hepatitis B antiviral can be given lifelong.
- Cost is the main barrier to prescribing direct-acting antiviral drugs (DAAs) for patients with chronic hepatitis C, who currently must await reimbursement by the government insurance programme.

Thailand

Strategic Plan

- A national plan was developed mid 2016 after the formation of a national viral hepatitis working group which could be effective by 2017.
- The national working group currently being established will be responsible organising larger-scale campaigns for upcoming World Hepatitis Days.

Government Funding

- Past World Hepatitis Day events were organised by NGOs, but for 2016 the government supported awareness initiatives.

Official Data

- The government estimates that prevalence of chronic hepatitis B and C is around 3% and 1% respectively.
- Liver cancer is among the top cancers in Thailand, contributing to nearly 50,000 deaths per year.
- Economic evaluations conducted by the government have found DAAs for HCV are more cost-effective than currently recommended treatment.

Barriers to Treatment

- No laws are in place to protect people against discrimination based on their hepatitis status.
 - » Some affected individuals who have been screened for hepatitis when applying for insurance face discrimination in employment.
- Generalist healthcare workers in Thailand have not received training on managing viral hepatitis.

Prevention

- All blood, tissue and organ donations in public sectors are screened for hepatitis B and hepatitis C.
- The Ministry of Public Health provides free vaccinations for every infant born in Thailand, as part of the WHO EPI programme including birth dose. Since 1992, infection rates have dropped below 0.7% for children and young adults.
- Most hospital policies include screening for hepatitis B and C and providing hepatitis B vaccination for healthcare workers.
- Hepatitis B vaccine is not available free to high risk populations.
- Needle exchange programmes are not in place and PWID are criminalised.

Screening and Diagnosis

- Clinical guidelines recommend hepatitis B and C screening for high-risk groups e.g. healthcare providers.
- The majority of the population has not been screened for hepatitis B and C.
- Pregnant women receive free routine screening for HBV not HCV.
 - » Test results are kept confidential.

Clinical Management

- National guidelines for clinical management of hepatitis B and C have been available since 2008, updated annually recommending treatment for HBV and HCV which has been accessible throughout Thailand.
- Recommended treatment for patients with HBV and HCV is government-funded, but payment is out-of-pocket for new drugs such as the DAAs. This is likely to change soon based on results of the economic analysis.

Vietnam

Strategic Plan

- Vietnam has an endorsed national plan for addressing viral hepatitis, aligned with the WHO regional plan. The plan has targets but little or no funding dedicated to it.
- There is a working group for viral hepatitis within the government composed of all associated departments.

Government Funding

- There were activities for World Hepatitis Day 2015 held by the Department of Health at provincial and district level.

Official Data

- A mathematical model developed by CDA estimates the number of people living with chronic viral hepatitis in Vietnam to be close to 10 million; those with hepatitis B are estimated to be 8.7 million, while approximately 1.0 million people have hepatitis C.
- The government has no data on the number of people dying as a result of viral hepatitis, liver disease and/or liver cancer.
- Economic evaluations of antivirals for viral hepatitis have been conducted but these have been restricted to old treatments, such as interferon.

Barriers to Treatment

- There are no legal, regulatory or policy barriers that prevent people accessing hepatitis services, but there are also currently no specific laws protecting people with chronic viral hepatitis from discrimination in Vietnam.
- Generalist healthcare workers in Vietnam are not trained on prevention, care and management of viral hepatitis.

Prevention

- All blood, tissue and organ donations in Vietnam are screened for hepatitis B and hepatitis C.
- Infant hepatitis B vaccination, including birth dose, are available free of charge.
 - » There are no restrictions on people who inject drugs from accessing needle exchange programmes.

Screening and Diagnosis

- No pathways have been developed to ensure that people diagnosed with chronic hepatitis B or C are referred to appropriate information, counselling and care in Vietnam.
- Pregnant women in the country are not routinely screened for hepatitis B and hepatitis C.
- Patients pay for the diagnosis of hepatitis B and hepatitis C out-of-pocket.
 - » Test results for hepatitis B and hepatitis C are kept confidential.

Clinical Management

- National clinical guidelines have been developed for hepatitis B and C management.
- HBV and HCV treatment cannot be obtained in all parts of the country.

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