

Meeting Report

First Meeting of Hepatitis Programme Focal Points from High-Burden Countries in Asia



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WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

MEETING REPORT

FIRST MEETING OF HEPATITIS PROGRAMME FOCAL POINTS
FROM HIGH-BURDEN COUNTRIES IN ASIA

Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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NOTE

The views expressed in this report are those of the participants of the First Meeting of Hepatitis Programme Focal Points from High-burden Countries in Asia and do not necessarily reflect the policies of the conveners.

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This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the First Meeting of Hepatitis Programme Focal Points from High-burden Countries in Asia in Hong Kong SAR (China) from 22 to 24 June 2016.

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Keywords:

/ Hepatitis, Viral, Human—epidemiology / Hepatitis B / Hepatitis C / Regional health planning

ABBREVIATIONS

AEFIs	adverse events following immunization
CDA	Center for Disease Analytics
DAA	direct-acting antivirals
DALY	disability-adjusted life year
DBS	dried blood spots
DHS	Demographic and Health Surveys
EPI	Expanded Programme on Immunization
ERP	Expert Resource Panel
FDA	Food and Drug Administration
GDP	gross domestic product
HBIG	hepatitis B immunoglobulin
HBV	hepatitis B virus
HCC	hepatocellular carcinoma
HCV	hepatitis C virus
MCH	Maternal and Child Health
MOHFP	Ministry of Health and Family Planning, China
PMTCT	prevention of mother-to-child transmission
PRP	platelet-rich plasma
STAC	Strategic Technical Advisory Committee for Viral Hepatitis
US CDC	United States Centers for Disease Control and Prevention
VHAC	Viral Hepatitis Action Coalition
WHA	World Health Assembly
WHO	World Health Organization

SUMMARY

The high burden of viral hepatitis in the Western Pacific Region has led the World Health Organization (WHO) and Member States to take public health action to reduce new infections and deaths due to viral hepatitis. In 2015, the WHO Regional Committee for the Western Pacific endorsed the *Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020*. The vision of the Regional Action Plan is a region free of new hepatitis infections, where people with chronic hepatitis have access to care and affordable and effective treatment.

Significant progress has been made in the Western Pacific Region. Member States have achieved the 2017 goal of less than 1% prevalence among 5-year-olds ahead of schedule, and over 7 million hepatitis B-related deaths and ~37 million new infections have been averted in the Region since 1990 due to childhood immunizations. With the development of new direct-acting antivirals (DAAs), true elimination of hepatitis C may be within reach.

Countries and areas in the Western Pacific Region have begun to take steps to attain the global and regional milestones and targets of elimination and reduction in mortality from chronic infections. The purpose of the First Meeting of Hepatitis Programme Focal Points from High-burden Countries in Asia, which was held in Hong Kong SAR (China) from 22 to 24 June 2016, was to identify priority actions to attain milestones and targets outlined in the Regional Action Plan.

Hepatitis focal points from eight countries and areas (Cambodia, China, Hong Kong SAR [China], Japan, Malaysia, Mongolia, the Philippines, the Republic of Korea and Viet Nam) attended the meeting. Members of the Regional Hepatitis B Expert Resource Panel (ERP) and Hepatitis Strategic and Technical Advisory Group also attended the meeting.

Meeting participants made detailed operational recommendations to specify actions as outlined in the Regional Action Plan. These recommendations will serve as an operational plan for Member States, and WHO and partners and will inform planning of support needs. The recommendations for operational planning focussed on five technical areas: advocacy, policy, strategic information, stopping transmission and treatment. WHO and partners will work with Member States to implement the operational recommendations that are detailed in the final section of the report.

1. INTRODUCTION

1.1 Meeting organization

The First Meeting of Hepatitis Programme Focal Points from High-burden Countries in Asia was held in Hong Kong SAR (China) from 22 to 24 June 2016. The meeting was organized by the WHO Regional Office for the Western Pacific in collaboration with the Hong Kong Department of Health and the ZeShan Foundation. The meeting was attended by hepatitis focal points from eight high-burden countries in the Western Pacific Region (Cambodia, China, Hong Kong SAR [China], Japan, Malaysia, Mongolia, the Philippines, the Republic of Korea and Viet Nam); temporary advisers to governments; representatives from civil society, academia, the Division of Viral Hepatitis at the United States Centers for Disease Control and Prevention (US CDC) and the Hong Kong Department of Health; and members of the WHO Secretariat from the Regional Office and headquarters. The meeting spanned three days, with the first two days devoted to presentations and the third day to country working groups. The list of participants is available in Annex 1 and the meeting agenda in Annex 2.

1.2 Meeting objectives

The objectives of the meeting were:

- 1) to review national progress and identify priority actions to attain milestones and targets of the *Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020*;
- 2) to plan adoption and initial roll-out of WHO guidelines for surveillance and treatment;
- 3) to discuss challenges and identify technical support needs; and
- 4) to review collaboration among WHO, US CDC and the ZeShan Foundation.

2. PROCEEDINGS

2.1 Opening session

Dr Ko Wing-man, Secretary for Food and Health, Government of Hong Kong, opened the meeting by welcoming participants and calling for greater collaboration in the Western Pacific Region to combat viral hepatitis. He noted the high burden of hepatitis in the Region and detailed the Hong Kong Government's multi-pronged approach in the prevention and control of viral hepatitis, including community-based vaccination, surveillance, public awareness programmes, infection control measures, harm reduction and antiviral treatment programmes. He highlighted the progress that Hong Kong SAR (China) has made in the control of both acute and chronic hepatitis B infection, with downward trends observed for both, due to universal neonatal immunization coverage instated in 1988 and less than 1% prevalence among 5-year-olds verified by the WHO Regional Office for the Western Pacific in 2011. He concluded his remarks by wishing the participants useful experience-sharing and enlightened discussion.

The WHO Regional Director for the Western Pacific, Dr Shin Young-soo, echoed Dr Ko's remarks on the high burden of disease in this Region and spoke of the growing consensus that the time has come

to address the terrible burden of disease caused by viral hepatitis. He lauded Member States for achieving the 2017 goal of less than 1% prevalence among 5-year-olds ahead of schedule and noted that over 7 million hepatitis B-related deaths and ~37 million new infections have been averted in the Region due to childhood immunizations since 1990. He noted that with the development of new DAAs, true elimination of hepatitis C virus may indeed be within reach. He urged countries to work together to take steps towards achieving the targets of elimination – 90% reduction in new infections and 65% reduction in mortality – as put forth in the *Global Health Sector Strategy on Viral Hepatitis, 2016–2021*. He detailed achievements in various countries in the Region, including high vaccination coverage in China, high numbers of Mongolians already treated with DAAs, the inclusion of all viral hepatitis treatment costs in national health insurance in Japan and Australia, and the drastic price reduction in hepatitis B immunization in Viet Nam. Dr Shin concluded with the mention of joint efforts of the ZeShan Foundation, US CDC and WHO to create a catalytic fund to support the elimination of viral hepatitis.

Dr Ying-Ru Lo, Coordinator, HIV, Hepatitis and STI, WHO Regional Office for the Western Pacific, stated the objectives of the meeting (see 1.2 above) and noted that the goal of the meeting was to begin articulation of a set of recommendations to operationalize the [Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020](#). She concluded by appointing Dr Wai-chi Lin and Dr Samuel So as chairpersons for the morning session. Dr Steven Locarnini was appointed as rapporteur for the meeting, and Dr Katherine Meyers wrote the report.

2.2 Objective 1: To review national progress and identify priority actions to attain milestones and targets of the Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2010

2.2.1 Recommendations from the Second Strategic Technical Advisory Committee for Viral Hepatitis in the Western Pacific and Fourth Hepatitis B Expert Resource Panel Consultation

Dr Henry Lik Yuen CHAN, Faculty of Medicine, The Chinese University of Hong Kong

Dr Youngmee Jee, Director, Center for Immunology and Pathology, Korea Centers for Disease Control and Prevention, Seoul, Republic of Korea

Dr Henry Lik Yuen Chan and Dr Youngmee Jee presented recommendations generated at the Strategic Technical Advisory Committee for Viral Hepatitis (STAC) and Hepatitis B ERP meetings in January 2016.

Dr Chan presented recommendations from the second STAC meeting: 1) identify mechanisms to disseminate the Regional Action Plan and monitor its implementation; 2) work with members to identify country-specific economic models to inform national plans; 3) provide technical support to countries to improve access to the best choice of quality diagnostics and medicines; and 4) assist Member States to develop and implement strategies for national surveillance based on the WHO viral hepatitis surveillance guidelines. Dr Chan concluded with country-specific recommendations for China, Mongolia and Viet Nam.

Dr Jee presented recommendations from the [fourth ERP consultation](#). These included the following: 1) develop communication plans to deploy to the public and media in the event of vaccine-related adverse events; 2) develop national policy for screening of health-care workers; 3) develop communication strategies that highlight the link between birth-dose vaccination and prevention of viral hepatitis, liver cirrhosis and liver cancer; 4) ERP and STAC to recommend strategies to further bring down vertical transmission rates for countries that have already reached the regional birth-dose and immunization coverage targets; 5) identify opportunities within existing programmes and

serostudies to monitor birth-dose vaccination more effectively, including through programmes that increase facility-based delivery and by strengthening coordination between Expanded Programme on Immunization (EPI) and Maternal and Child Health (MCH) departments; and 6) have vaccine in controlled temperature chain to enable birth-dose coverage for home-based deliveries.

2.2.2 Global Health Sector Strategy on Viral Hepatitis, 2016–2021

Dr Gottfried Hirnschall, Director, Department of HIV/AIDS, WHO Headquarters, Geneva

Dr Gottfried Hirnschall opened his presentation by stating that this was the first regional meeting since the Sixty-ninth World Health Assembly (WHA) endorsement of the [*Global Health Sector Strategy on Viral Hepatitis, 2016–2021*](#). He expressed his appreciation for the leadership shown by the WHO Western Pacific Regional Office, and thanked the Asian countries that have been speaking in favour of the strategy. The strategy proposes ambitious prevention and treatment targets, with the ultimate goal of eliminating hepatitis as a public health threat by 2030 (defined as a 90% reduction in incidence of chronic hepatitis B and C infections and a 65% reduction in hepatitis-related mortality). These targets are to be achieved by scaling up hepatitis B vaccination including birth dose, assuring safe health-care practices including sterile injections in health-care settings and among people who inject drugs, and testing and treating people with chronic hepatitis B and C infection. The strategy has five strategic directions that are aligned with the principles of universal health coverage. Achieving the goal of the strategy will require dramatic increases in financial resources and commitment. It will also require a move from a tertiary care approach to a public health approach with simplification, integration, decentralization and equitable access.

Dr Hirnschall urged participants to think strategically about how to interject hepatitis into the broader health and development conversation in their national contexts and noted that action is what ultimately matters. He noted that action begins with a costed national plan that details not only what needs to be done but also how it will be financed.

2.2.3 Regional Action Plan for Viral Hepatitis in the Western Pacific and progress report

Dr Ying-Ru Lo, Coordinator, HIV, Hepatitis and STI, WHO Regional Office for the Western Pacific

Dr Lo provided more details on the Regional Action Plan and the direction we will be going based on recommendations from the STAC meeting in Hanoi earlier this year.

Viral hepatitis is the seventh-leading cause of mortality globally, responsible for 1.45 million deaths in 2013. One quarter of the world's population lives in the Western Pacific, but the Region bears 40% of the world's deaths caused by hepatitis. Hepatitis kills more than 1500 people every day in the Region. The *Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020*, approved by Member States at the sixty-sixth session of the WHO Regional Committee in 2015, provides a systematic approach to five priority areas for action (advocacy, policy, data, prevention and treatment) by countries to reduce the impact of viral hepatitis, with a focus on chronic hepatitis B, beyond immunization, and hepatitis C. The Regional Action Plan is an important step towards eliminating viral hepatitis as a public health threat by 2030, and sets clear milestones and targets for the Western Pacific. Dr Lo also highlighted the tremendous achievements made by WHO in the Western Pacific Region in systematically pursuing high-level advocacy activities with the leadership of the Regional Director, generating data for action such as disease burden and economic analyses and supporting the development and roll-out of global hepatitis treatment and surveillance guidelines.

2.2.4 Regional milestones and targets: moving from investment case to financing

Dr Nick Walsh, Focal Point for Viral Hepatitis, WHO Regional Office for the Western Pacific

The Regional Action Plan contains a number of milestones and targets arranged by priority areas for action. One of the important milestones is to obtain baseline data for national hepatitis screening, care and treatment cascade by 2017 to support 28 million people being diagnosed and 5 million treated for hepatitis B, and 5 million people being diagnosed and 1 million people treated for hepatitis C. In the absence of external funding mechanisms, domestic financing strategies are key to achieving these goals.

Dr Walsh presented, as a case example, work supported by WHO that estimated the total cost of hepatitis C elimination in Mongolia by 2030 and the current gap in funding. Mongolia has a high prevalence of hepatitis C (6.8% of the adult population) and hepatitis B (11.8% of the adult population). With such a high burden of hepatitis C and related liver disease, families in Mongolia are resorting to traditional therapies in place of expensive but effective treatments. A seven-step process was undertaken in Mongolia: 1) disease burden estimation; 2) population-level intervention scenarios; 3) cost estimation; 4) cost-effectiveness analysis; 5) budget impact analysis; 6) financing strategies (across individuals, health insurance and the government); and 7) cost-sensitivity analysis. The agreed population-level intervention scenario was five years of treating those with advanced liver disease, followed by 10 years of unrestricted treatment to reach 2030 elimination goals. Cost estimation revealed that the total cost of antiviral medicines over the 15-year period would be large – a key driver of overall cost. Lower drug prices (generics vs originator) would increase the return on investment to society from 2.5 times to 5 times over the 15-year period. Diagnostic costs would be reduced by adhering to new WHO hepatitis C treatment guidance, which requires only two viral loads per treatment course. Analysis predicted a cost spike in the mid-2020s, when a reduced pool of infected individuals would increase the costs for finding new diagnoses, indicating that testing strategies would have to be modified as the epidemic is progressively addressed. Cost-effectiveness analysis revealed that cost over the 15-year period to 2030 would be less than 5% of gross domestic product (GDP)/per capita/disability-adjusted life year (DALY) averted – therefore, highly cost effective. The impact on the health insurance budget was analysed from several different points of view including full individual copayment, partial copayment, 80% health insurance subsidy and progressively increasing health insurance coverage from 40% to 80% over a number of years. Finally, the funding gap was established between current expenditure and the total cost of hepatitis C elimination, assuming an 80% health insurance subsidy. The gap was estimated, for Mongolia, at US\$ 70 million over 15 years.

Finally, the importance of lowering prices for antiviral medicines was emphasized. There is extremely large variation in pricing, especially for hepatitis C medicines currently. WHO is working to improve access to hepatitis medicines through new strategies to reduce prices where possible.

2.2.5 Prevention through vaccination: achieving the 2017 regional goal of 1% prevalence among children

Dr Joseph Woodring, Technical Officer, Expanded Programme on Immunization, WHO Regional Office for the Western Pacific

Dr Joseph Woodring discussed the history of hepatitis B control in the Western Pacific Region. In 2003, hepatitis B vaccination was introduced into the national immunization programmes of all Member States. Four years later, the hepatitis B ERP was created to advise on the status of and issues

related to hepatitis B control in Member States. ERP serves on the verification panel to confirm if a Member State has achieved hepatitis B control milestones. In 2013, the Regional Committee for the Western Pacific set 2017 as the target year to reach the regional goal of less than 1% prevalence in children 5 years old.

Dr Woodring referred to a peer-reviewed publication that confirmed the Region as a whole has achieved the 2017 goal of less than 1% prevalence among children 5 years of age.¹ As of June 2016, 13 countries and areas have been verified by ERP as having met this goal. An additional 11 countries and areas have evidence – through nationally representative serosurveys – of having reached the 1% goal, but they have not been verified by ERP to date. This study estimates that as a result of national immunization programmes, over 37 million chronic cases and over 7 million hepatitis B-related deaths were averted among children born each year between 1990 and 2014. Despite this remarkable public health achievement, additional work remains, including vaccine vigilance to maintain high coverage with the hepatitis B birth dose and third dose (HepB3) and to avoid costly long-term care and treatment. This work includes proactive and coordinated responses after adverse events following immunization (AEFIs); assisting countries and areas to assess root causes for and amelioration of persisting low birth-dose coverage; and researching and developing perinatal hepatitis B treatment guidelines to prevent breakthrough vertical transmission. Equity and commitment is needed to ensure all countries and areas in the Region are able to reach the 2017 goal.

2.2.6 Discussion

Dr Razia Pendse, Regional Adviser, HIV, STI and Hepatitis, WHO Regional Office for South-East Asia, was invited to provide an update on the development of a regional action plan for the South-East Asia Region, another WHO region with high burden of disease. She noted that out of 11 Member States, only two have national action plans and three are currently developing them. The South-East Asia Regional Office has identified five priority areas: advocacy (engaging with the community and addressing stigma using multisectoral approaches including education and employment sector) and political commitment; optimizing and simplifying diagnostics including improved laboratory capacity; treatment (innovative service delivery, task-shifting to nonspecialists, price reductions and financing of medicines); strengthening monitoring and surveillance for better data capture and use; and innovations for impact.

Participants praised the Regional Action Plan for recognizing the multisectoral response that will be required to respond to viral hepatitis, in particular the central role that employment and education sectors will play with regards to reducing stigma and discrimination, and applauded the plan's scope of action that extends beyond the health sector. The importance of political will to address viral hepatitis was highlighted, particularly when considering the need for government negotiations with pharmaceutical companies and identifying financing mechanisms for treatment-related costs. The Government of Pakistan, which was lauded for proactively engaging with generic pharmaceutical companies and diagnostics, reported that it takes only US\$ 280 to cure an individual of hepatitis C in Pakistan.

Questions were raised about the role WHO could play in supporting countries in their negotiations with pharmaceutical companies. Five distinct areas in which WHO is already facilitating work related to access to treatment were shared: 1) WHO has expanded the HIV drug pricing database to include pricing for hepatitis-related medicines, creating some pricing transparency that should help countries

¹ Wiesen E, Diorditsa S and Li X. Progress towards hepatitis B prevention through vaccination in the Western Pacific, 1990–2014. *Vaccine*. 2016;34(25):2855–62.

in their negotiations with the pharmaceutical industry; 2) the WHO Essential Medicines and Health Products Department in Geneva is conducting a patent landscape analysis to see what countries have patents for what drugs and their expiration; 3) the WHO team working on intellectual property has the capacity to advise countries on what means they have available to them to seek exceptions to patents, for example in the case of public health emergencies; 4) WHO has a prequalification system that verifies the quality of generics coming onto the market (but manufacturers need to come to WHO to seek prequalification); and 5) WHO has supported pooled procurement for HIV-related drugs in other regions. Similar efforts could be explored in the Western Pacific Region for hepatitis medicines.

Finally there was an animated discussion on the use of antivirals to eliminate residual vertical transmission of hepatitis B virus. While there was admission that elimination of vertical transmission was possible with appropriate use of antivirals for prevention of mother-to-child transmission (PMTCT) among women with very high viral loads, many questions remain unanswered, chief among them the identification of a threshold viral load above which antivirals would be indicated. There was consensus that more data were needed to inform comprehensive guidelines, but that in the interim, WHO would review the evidence to prepare recommendations for PMTCT of hepatitis B virus.

2.3 Country reports

The afternoon session began with the appointment of Dr Narangerel Dorj, Head of Communicable Diseases Division, Ministry of Health, Mongolia and Dr Hok Sirany, Vice Chief of Non-Communicable Disease Office, Preventive Medicine Department, Ministry of Health Cambodia as co-chairpersons.

2.3.1 What can we learn from hepatitis B and hepatitis C control in China

Dr Cui Fuqiang, Professor and Deputy Director National Immunization Programme, Chinese Center for Disease Control and Prevention

Dr Fuqiang Cui provided participants with an overview of hepatitis B virus (HBV) and hepatitis C virus (HCV) epidemics in China and the response to date. In 1992, 60% of the population had a history of HBV infection and 9.8% were chronically infected with HBV nationwide. Furthermore, 3.2% of the population were anti-HCV positive. Currently, an estimated 90 million people are living with chronic hepatitis B and up to 10 million people are living with chronic hepatitis C in China. Each year, an estimated 263 000 persons die from HBV-related hepatocellular carcinoma (HCC) or cirrhosis, accounting for 37–50% of HBV-related deaths worldwide. Strategies for controlling hepatitis B include universal neonatal hepatitis B vaccination, especially focused on timeliness of the birth dose. Other strategies include blood donor screening and safe blood management, hospital infection control, and harm reduction interventions for people who inject drugs. Current challenges to further address hepatitis B include the need to strengthen timely birth dose, the need for post-vaccination serologic testing for HBV-exposed infants, consideration of antivirals during pregnancy to further reduce vertical transmission, catch-up vaccination campaigns for high-risk populations including health-care workers, and case management and treatment for people with chronic hepatitis B. Challenges of HCV prevention and treatment include the low proportion of HCV-infected patients who have been diagnosed, limited laboratory and treatment capacity in the health sector for testing and treatment, huge unmet demand for treatment with DAAs which are currently unavailable in the majority of countries. Recommendations include strengthening leadership and advocacy on HCV, strengthening HCV public education and offering a package of comprehensive interventions, and strengthening HCV testing, diagnosis and treating.

2.3.2 Hepatitis epidemiology and response in Hong Kong SAR (China)

Dr Wai-chi Lin, Senior Medical and Health Officer, The Government of Hong Kong Special Administrative Region Department of Health

Dr Lin presented the multipronged approach of the Government of Hong Kong SAR (China) in response to viral hepatitis. This includes 1) surveillance efforts to characterize the local epidemic of acute and chronic hepatitis in order to inform the health sector response; 2) community-based hepatitis B vaccination programme that has provided universal neonatal immunization coverage including hepatitis B immunoglobulin (HBIG) since 1988, supplementary vaccination programme for school-age children, and targeted vaccination programmes for health-care workers and methadone clinic attendees; 3) prevention in health-care settings through use of disposable needles and sharps, strong blood safety control, universal precautions and infection control, and infrastructure for post-exposure management; 4) harm reduction programmes, specifically methadone treatment clinics available since the mid-1970s, which cover more than 60% of local people who inject drugs; 5) public awareness campaigns including a hepatitis hotline and advocacy for World Hepatitis Day; and 6) antiviral treatment that is subsidized in the public sector by the Health Authority. Dr Lin concluded by highlighting challenges such as more rigorous estimation of the disease burden, questions around the use of antivirals during pregnancy, limitations in access to virological assays in some health-care settings, financing of antivirals to increase equity of access, and the creation of an HCC surveillance programme.

2.3.3 Hepatitis disease burden and analysis and access to treatment in Viet Nam

Dr Tran Dai Quang, Hepatitis Focal Point, General Department of Preventive Medicine

Dr Tran Dai Quang described the high burden of viral hepatitis in Viet Nam, noting that it is the fourth leading cause of death. Prevalence in the general population ranges from 6–22% for HBV and from 0.17–4% for HCV, with significantly higher prevalence in key populations for the latter disease. He noted that the Viet Nam *National Action Plan for Viral Hepatitis (2015–2019)*, which is in line with the Regional Action Plan, seeks to reduce transmission of viral hepatitis and increase access to prevention and treatment through policy development and social mobilization, professional and technical assistance, human resource development, investment, and scientific research.

The National Technical Working Group has collaborated with the Center for Disease Analytics (CDA) since 2015 to develop consensus on assumptions for inputs into a mathematical model to estimate burden of disease, trajectory of epidemics under scenarios or no action, treatment for all HCV-infected people, and additional scenarios to reach regional and global targets. Dr Tran detailed challenges in the response to viral hepatitis: 1) absence of a national viral hepatitis programme; 2) surveillance and reporting systems not well developed leading to limited national epidemiological data; and 3) limited availability of diagnostics and access to treatment for both hepatitis B and C due to high cost of viral load testing and treatment, and no registration of DAAs. He suggested ways forward, including investing in strategic information through improved surveillance, instituting a hepatitis case reporting system and making viral hepatitis a notifiable disease. He highlighted the need for increased access to treatment through advocacy efforts to make DAAs available, decentralization of treatment service delivery, and harmonization of medicine lists related to hepatitis.

2.3.4 Planning for elimination of hepatitis C in Mongolia

Dr Narangerel Dorj, Head of Communicable Diseases Division, Ministry of Health, Mongolia

Dr Dorj presented Mongolia's strategy for achieving elimination of hepatitis C. She began by presenting the burden of viral hepatitis in Mongolia, noting that in a country with a population of 3 million there are about 200 000 cases each of hepatitis B and hepatitis C with over 50 000 requiring treatment for each disease. A Mongolia Programme for Prevention of Viral Hepatitis, Reducing Liver Disease and the Mortality Rate,² which was approved by the Government at the end of 2015, aims to prevent viral hepatitis, detect infection early and reduce transmission and mortality due to liver diseases including chronic hepatitis, cirrhosis and primary liver cancer. After presenting an overview of the plan, Dr Dorj detailed significant progress over the last two years. Since approval of the national hepatitis C screening, care and treatment guidelines by the Health Minister in May 2015, the National Center for Communicable Disease was designated as the first treatment provider, and 10 facilities were authorized to perform HCV viral load. Negotiations with Gilead and a generic drug company have resulted in the lowering of drug prices to US\$ 750–1200 per 12-week course, depending on the regimen, and the lower costs have translated into 3700 patients being enrolled in treatment by June 2016. As in other countries, economic impact analyses conducted with support from WHO and CDA are ongoing and are being used as advocacy tools in discussions with the Ministries of Finance and Health to explore options for covering drug costs in health insurance funds and to devise innovative health financing approaches. Remaining challenges include a weak surveillance and information system for chronic viral hepatitis, the high cost of hepatitis diagnosis and treatment on families, and ongoing transmission in the health sector, including in private and para-health facilities. Moving forward, priorities include updating the current electronic system for viral hepatitis; updating national hepatitis C screening, care and treatment guidelines based on 2016 WHO guidelines; developing national surveillance guidelines; devising innovative financing options for the viral hepatitis programme, such as tobacco and alcohol tax; advocating the new government to improve its commitment to fund the programme; devising innovative approaches for capacity-building for health-care workers.

2.3.5 Situation and response to viral hepatitis in Malaysia

Dr Jahis Rohani, Head, Vaccine Preventable Disease Control and Food and Water-borne Disease Control Sector, Disease Control Division, Ministry of Health Malaysia

Dr Jahis Rohani noted that Malaysia has a system of mandatory reporting for viral hepatitis and that the majority of cases are identified through screening programmes for population subgroups such as blood donors, people on dialysis, people enrolled in harm reduction programmes, health-care workers, and foreign workers and students. The WHO hepatitis B immunization goal of less than 1% prevalence among school-age children has been achieved and surpassed since 2011. Epidemiological data presented from 2009 indicate that an anti-HCV positivity of 1.9% translates to about 7.5% rate of diagnosis among HCV-infected patients, suggesting the need for more investment in screening. Recognizing the relationship between HCV and HIV, including high rates of coinfection, the Government has recently transferred responsibility for HCV from the Food and Water-borne Diseases Division to the HIV/STI Division. The Ministry of Health plans to update its national action plan in 2016 to be in line with WHO's *Global Health Sector Strategies for HIV, Viral Hepatitis, STIs* (2016–2021), with increased focus on HCV treatment, to achieve a high cure rate, stop transmission and integrate into other public health interventions. Issues of affordability and accessibility and questions around the efficiency of current regimens for different genotypes remain. Through modelling studies done in collaboration with CDA, an elimination strategy that sought a 90% reduction in new cases and

² Programme for Prevention of Viral Hepatitis, Reducing Liver Disease and the Mortality Rate (Annex 1 of the Government Resolution number 448 dated in 2015, available on request from WHO Mongolia).

90% reduction in morbidity and mortality would cost less than base strategies in 11–14 years' time. Such a strategy would require more patients to be treated with DAAs between 2016 and 2026, increased screening to keep up with treatment, expanded treatment eligibility from F1 to F0, increased coverage and quality of harm reduction programmes to reduce new infections, and raising the eligible age of treatment to 69 by 2025.

2.3.6 Discussion

Common themes emerged from the discussions following country presentations. These included the absence of dedicated hepatitis focal persons and technical staff working on viral hepatitis in the ministries of health, the limited role of civil society in the hepatitis response (particularly when compared to the more robust civil society role in the HIV response), and the issue of persistent stigma and discrimination, even when policies protecting against discrimination are in place. A comparison of affected populations by country revealed several differences. For example, in Malaysia and Viet Nam, the majority of people living with hepatitis C are people who inject drugs; whereas in countries such as China, Japan and Mongolia, the majority of HCV infections occur in the general population. In Malaysia, two large associations support advocacy and enrolment in hepatitis treatment. In Hong Kong SAR (China), the most engaged sector of civil society response are medical doctors from medical associations.

The lack of integration of the public sector response to prevention and treatment for hepatitis B and C in China was identified as a major issue, with participants noting that while vaccination, surveillance, and public education are the domains of various agencies within the China Ministry of Health and Family Planning (MOHFP), treatment is more complex, involving not only MOHFP but also the Ministry of Finance, Ministry of Human Resources and Social Security, the China Food and Drug Administration (FDA), and the National Health Report Commission. Conversations are ongoing to identify strategies to create systematic coordination among the various government departments; however, oversight and regulation of private sector health facilities remains a separate, unresolved issue. Other countries reported that similar issues existed in their countries.

Mongolia was congratulated for proactively negotiating low-priced generics regimen for HCV treatment. The steps taken included several meetings with generics company that included public sector and private sector representatives; workshops and advocacy activities to bring alive the experiences of HCV-infected patients; and the establishment of government and NGO partnerships. Weak surveillance and information systems for chronic viral hepatitis remain a challenge.

Participants discussed the reluctance of higher-middle-income countries, like Malaysia and China, to consider compulsory licensing to get access to lower drug costs and noted the incredible price discrepancy of getting treated in Mongolia (<US\$ 1000) compared to Malaysia (>US\$ 10 000). Participants asked whether WHO could advocate for compulsory licensing.

2.4 Objective 2: To plan adoption and initial roll-out of new WHO guidelines on hepatitis surveillance and treatment

Dr Tatsuya Kanto, Director-General, The Research Center for Hepatitis and Immunology, National Center for Global Health and Medicine, Tokyo and Vincent Wai Sun Wong, Queen Mary Hospital, Hong Kong SAR (China) were appointed as chairpersons for the morning sessions.

2.4.1 WHO guidelines for the screening, care and treatment of persons with chronic hepatitis B and C infection

Dr Stefan Wiktor, Team Leader, Global Hepatitis Programme Department of HIV, WHO Headquarters

Dr Stefan Wiktor presented key features of WHO's [guidelines](#) for the screening, care and treatment of persons with chronic hepatitis C infection³ and hepatitis B infection⁴ and soon-to-be published hepatitis screening guidelines, highlighting the ways in which WHO guidelines are unique: the target audience is national programme managers in low- and middle-income countries with variable access to laboratory testing and strong consideration given to balancing the strength of evidence with resource availability. WHO guidelines seek to provide simplified and standardized approaches to ensure the widest possible access to high-quality services at the population level, striking a balance between implementing the best-proven standard of care and what is feasible on a large scale in resource-limited settings. They are based on a public health approach that emphasize the promotion of human rights and health equity so that expanded access is fair and equitable, priority for treatment is given to those most in need, and treatment is delivered in environments free of stigma and discrimination.

Dr Wiktor reported that DAAs facilitate implementation of HCV treatment due to shorter duration and less monitoring requirements, but he also noted that variable pricing and registration barriers remain. In addition, in the absence of a single, all-DAA, pan-genotypic treatment regimen, genotyping is still needed. He referred participants to the 2015 HBV guidelines,³ which recommend the use of non-invasive tests, lay out first-line treatment, treatment failure and discontinuation, and monitoring for treatment response and HCC. The draft testing guidelines make suggestions on how to test, whom to test and where to test. Finally he spoke of the need for WHO to provide additional guidelines in the following areas: service delivery models; PMTCT; end-stage liver disease; acute infection; and updated HCV treatment.

2.4.2 Panel discussion (civil society): How can civil society help to roll out WHO guidelines

Mr Jack Wallace, Research Fellow, Australian Research Centre in Sex, Health and Society, La Trobe University, Melbourne, Australia

Mr Jack Wallace moderated a panel of three people living with hepatitis who talked about the role of civil society in viral hepatitis in Australia (Mr Jack Wallace), Malaysia (Ms Haryati Jonet) and Cambodia (Mr Sok Chamreun Choub). Mr Wallace described the Australian Government's partnership approach to HCV. Since the mid-1990s, the Government has funded Hepatitis Australia, a nongovernmental organization with the mission to represent people living with hepatitis at the policy level. Hepatitis Australia provides a forum for people living with hepatitis to engage with clinicians and bureaucrats and to have a voice in policy-making, ensuring that the social implications of viral hepatitis and its attendant stigma are addressed at the policy level. The situation is very different in Malaysia and Cambodia, where civil society does not have a seat at the policy-making table. Ms Haryati Jonet noted that the Malaysian AIDS Council does not have consolidated data on hepatitis B or C but is taking steps towards creating such a report. The Malaysian AIDS Council sees a role for

³ Guidelines for the screening, care and treatment of persons with chronic hepatitis C infection. Geneva: World Health Organization; 2016 (<http://www.who.int/hepatitis/publications/hepatitis-c-guidelines-2016/en/>, accessed 22 July 2016).

⁴ Guidelines for the prevention, care and treatment of persons with chronic hepatitis B infection. Geneva: World Health Organization, 2015 (<http://www.who.int/hepatitis/publications/hepatitis-b-guidelines/en/>, accessed on 22 July 2016).

itself in advocating for compulsory licensing through Drugs for Neglected Diseases Initiative, a public-private partnership. Finally Ms Jonet called attention to the need to simplify diagnostic processes and suggested HCV treatment to be rolled out through methadone clinics.

Mr Choub noted that Cambodia is in the very early stages of its response to viral hepatitis, in comparison to its more mature response to HIV, from which valuable lessons could be learnt. He listed the following barriers: no surveillance programme and hence limited data about viral hepatitis; high stigma; no focal point for viral hepatitis in government; no recognition of viral hepatitis as a social condition beyond a disease; and high price of drugs. While he is committed to positioning his organization to apply the lessons learnt from HIV to the hepatitis response, Mr Choub stated that at this point it is unclear what specific role civil society can have in Cambodia.

2.4.3 Panel discussion: Clinician perspectives on implementing WHO treatment guidelines, issues, and challenges

Dr Henry Lik Yuen CHAN, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR (China)

Dr Henry Chan moderated a panel of clinicians including Dr Sung Wong Lee from the Republic of Korea and Dr Janus Ong from the Philippines, and offered his own insights on the situation in Hong Kong SAR (China). The national guideline that is being developed in the Philippines references both WHO guidelines and professional guidelines. In the Republic of Korea, the national guideline development process was halted due to the outbreak of Middle East respiratory syndrome coronavirus last year but is supposed to be initiated again later this year. Panellists recognized the value of the “public health approach” of the WHO guidelines, which contrast their countries’ professional guidelines that are more clinical, and maintained that adapted implementation of the WHO guidelines would maximize optimal outcomes in each setting. Challenges for implementing national guidelines include the high cost of drugs, fibrosan availability, and screening prioritization to efficiently identify patients. Pilot projects are not available in the Philippines, the Republic of Korea or Hong Kong SAR (China).

In the Republic of Korea, there is universal health insurance that covers hepatitis B and C treatment; however, patients pay 30% of treatment costs, which in the case of DAAs is a substantial burden. In the Philippines, there is no coverage of screening, confirmatory testing or treatment for hepatitis B or C. In Hong Kong SAR (China), there is no population-based insurance system, and while the Hospital Authority covers hepatitis B and C treatment through the Government, eligibility is restricted, particularly for hepatitis C due to the high cost of the antivirals. While there is a recognition of the role that decentralization to primary care physicians could play in the delivery of treatment, the lack of training and knowledge of family doctors remains a barrier in all three settings.

2.4.4 Discussion

Multiple participants identified national regulatory approval as the biggest challenge to moving forward. Requirements vary by country and examples were given of discussions under way to facilitate and accelerate this process. For example, in China, discussions are ongoing around waiving the requirement for a local trial to approve DAAs and recognizing regulatory approvals from other settings. India has already waived the requirement of having two years of stability data in the case of Harvoni and two other drugs. Participants also raised the limited capacity within national regulatory bodies to review applications – in essence a human resource constraint that limits the speed by which applications are reviewed and drugs can be approved and made available to infected individuals.

Low level of public awareness around hepatitis and its links to liver cirrhosis and liver cancer was cited as a major barrier to identifying infected individuals and linking them to care. Participants noted that there is very little government investment in awareness raising and that this is an area where government and civil society could both be actively working independently and in partnership.

Low coverage of testing was discussed at length. Reasons included testing kits not available at local health centres, no government policy to encourage testing, and no national guidelines on how to test. As an example, the role of dried blood spots (DBS) was discussed as a way to increase access to testing. However, the lack of validation of DBS and reference laboratories which are using DBS was raised as an issue that required a resolution before DBS can be widely promoted. Others spoke of the role of DBS as restricted to surveillance instead of being used as a screening test.

Loss to follow-up at all points after initial diagnosis is a major problem in all settings. The important role of the community (rather than and/or in addition to clinicians) in linking people to testing and subsequently to treatment was highlighted. Diabetes care was mentioned as an example of successful referral and retention in care in both Hong Kong SAR (China) and India.

Finally, the sale of alternative therapies, particularly in China, the Philippines and Viet Nam, was cited as problematic as such therapies give a false sense of security to the patient and constitute a significant cost burden on patients and their families. Participants asked how these suboptimal therapies could be regulated.

2.4.5 Hepatitis surveillance and programme monitoring tools

Dr Stefan Wiktor, Team Leader, Global Hepatitis Programme, WHO Headquarters

Dr Wiktor presented the new WHO guidelines on hepatitis surveillance and programme monitoring. The three components that make up strategic information, one of the five pillars of the Global Hepatitis Strategy, are surveillance, monitoring and evaluation. To support countries in their surveillance, monitoring and evaluation efforts, WHO has published two new technical reports: [*Technical Considerations and Case Definitions in Viral Hepatitis*](#)⁵ and [*Monitoring and Evaluation for Hepatitis B and C*](#).⁶ Dr. Wiktor presented both documents, noting their utility to national health systems to measure the impact of prevention by monitoring the burden of disease. He expressed hope that countries would adopt the case definitions to ensure consistency across countries and to facilitate the measurement of progress towards global elimination targets. Finally Dr Wiktor noted that by 2018, WHO hopes to develop a consolidated strategic information guidance document that integrates these two documents and provides support to countries not just on what to do, but how to do it.

2.4.6 Hepatitis C outbreak investigation in the Republic of Korea

Dr Youngmee Jee, Director, Center for Immunology and Pathology, Korea Centers for Disease Control and Prevention, Seoul, Republic of Korea

⁵ Technical considerations and case definitions to improve surveillance for viral hepatitis. Geneva: World Health Organization; 2016 (<http://www.who.int/hepatitis/publications/hep-surveillance-guide-pub/en/>, accessed 25 July 2016).

⁶ Monitoring and evaluation for viral hepatitis B and C: recommended indicators and framework. Geneva: World Health Organization; 2016 (<http://www.who.int/hepatitis/publications/hep-b-c-monitoring-evaluation/en/>, accessed on 25 July 2016).

After reviewing the basic HCV epidemiology in the Republic of Korea (~1% general population prevalence based on sentinel surveillance since 2000 and 0.78% seroprevalence based on a nationwide, large-scale seroepidemiology survey of people over 20 years old in 2009). Dr Youngmee Jee presented two cases of HCV outbreak investigations at two clinics in 2015.

The first outbreak at a clinic in Seoul resulted in the testing of 2266 persons for HCV, HBV, HIV, human T-cell lymphotropic virus, malaria and syphilis. Of the 99 persons found to be anti-HCV positive, 57 were genotyped as 1a. In addition, among 53 environmental samples collected from the clinic and tested for HCV, genotype 1a HCV strains were detected. Since 1a genotype HCV strains are uncommon in the Republic of Korea, the review committee concluded that this outbreak in the clinic was caused by the reuse of syringes and closed the clinic.

The second outbreak was linked to inadequate routine screening of blood plasma before the injection of plasma during a platelet-rich plasma (PRP) procedure at an orthopaedic clinic. It was noted that anti-HCV was much higher among the PRP group than non-PRP group. Among 8862 persons tested for anti-HCV, 436 were anti-HCV positive, and among them, 351 were treated by PRP. As a result of these investigations, hepatitis C was changed to a national notifiable disease and efforts are under way to fast-track registration for DAAs. Also under discussion are: the development of a national plan on hepatitis C elimination and a national hepatitis control plan; plans for increased coordination of hepatitis-related programmes within the Korean CDC, National Cancer Center, and government/academic sectors; and the possibility of establishing an HCV patient registry that would be linked with HCV cohort studies. The Korean Association of Liver Study has proposed the introduction of HCV testing at 40 and 66 years of age. Finally, through further collaboration with the WHO Regional Office for the Western Pacific, there are plans to invest in the strengthening of the national hepatitis laboratory at the Korea CDC.

2.4.7 Polaris Observatory and regional estimates of hepatitis B, C and D disease burden

Dr Homie Razavi, Center for Disease Analysis, Colorado

Dr Homie Razavi presented the role of Polaris Observatory in providing free data analytic services to countries to support development of costed national plans. In order to drive informed decision-making, data need to be converted into key insights. The role of a good data analytics process is to simplify complex (and sometimes conflicting) data, improve the quality of information, identify key trends, and highlight key insights that can drive or change decisions. Modelling of HCV disease burden has shown that although the total number of infections is declining in most countries, mortality and morbidity (HCC and cirrhosis) are increasing. Economic impact analyses highlighted that the increasing disease burden will also lead to an increase in health-care costs over time and most health-care systems will spend more if pursuing the current standard of care (as compared to adopting WHO recommendations) in the next 10–20 years. These analyses have shown that prevention, screening and treatment of HCV will save money and will result in a positive return on investment over the next 20 years; however, they will require upfront investment. Robust data analytics have allowed the identification of key drivers of value over time (reduction in disease burden) while highlighting the importance of simplifying testing and diagnostics. National strategies must reflect government priorities. Some countries focus on total disease burden, while others developed goals for reduction in liver-related deaths. Finally, there is always a need for better data, but insights drive informed decision-making. Strategic partnerships and collaboration among different stakeholders are needed to support quality decisions.

The disease burden estimates for the Western Pacific Region generated in consultation with country stakeholders and WHO were presented.

- Hepatitis B: ~109 million chronic hepatitis B infections, ~5.9% prevalence.
- Hepatitis C: ~14 million viraemic infections, ~0.8% prevalence, ~147 000 people with chronic hepatitis C infection being treated.

Participants were invited to visit the Polaris Observatory website (www.polarisobservatory.com) to view estimated disease burdens by country for hepatitis B and C.

2.4.8 Discussion points

Participants expressed appreciation for the new surveillance and monitoring guidance documents created by WHO headquarters, which are meant to be used as tools to evaluate progress in implementation of the Global Hepatitis Strategy. However, the take-home message was that there is a tremendous amount of missing information pertaining to the hepatitis B and C burden in both the general population and key populations, and while there are many ways to collect this information, this will take significant resources and effort. One way would be to link surveillance and programmatic response, for example establishing a confidential HCV registry and linking patients on the registry to treatment. Participants noted that one missing datapoint that could be useful for advocacy and awareness-raising purposes would be the fraction of liver cancer and cirrhosis attributable to viral hepatitis, since the current global burden of disease estimate that ranks hepatitis as the seventh leading cause of mortality, does not include deaths attributed to liver cancer and cirrhosis. Other participants asked whether WHO will require country and/or regional offices to report according to the indicators presented (answer: not yet), noting that such a requirement would be an effective mechanism by which to put pressure on national ministries of health to prioritize such data collection efforts.

The presentation about outbreak investigation in the Republic of Korea yielded animated discussion around the importance of early reporting of HCV outbreaks and the recognition that just because a country has not reported an outbreak does not suggest that no outbreaks have occurred, rather that many countries have not set up a surveillance system to detect such outbreaks. Outbreak investigations are lengthy and resource intensive, as well as politically sensitive, as may often be when linked to litigation. It is difficult to establish a surveillance system that can reliably detect HCV outbreaks. Detection continues to depend on astute health-care workers. Therefore, education of health-care workers, local health department and communities remains paramount.

2.5 Objective 3: To discuss challenges and identify technical support needs

Dr Stephen Locarnini and Dr Youngmee Jee were appointed as chairpersons for the afternoon sessions.

2.5.1 Access to medicines: what is going on in the private sector

Mr Giten Khwairakpam, TREAT ASIA

Mr Giten Khwairakpam detailed access to medicines in several countries in the Western Pacific Region. Government programmes at national, provincial or state level using Pegylated interferon have been in existence for some years. Some larger programmes, notably that of the state of Punjab in India, have moved to the provision of DAAs for all patients irrespective of fibrosis and history. The programme will use sofosbuvir, ledipasvir and daclatasvir with or without ribavirin. The procurement price has been reported as US\$ 280 for sofosbuvir and daclatasvir and US\$ 320 for sofosbuvir and

ledipasvir for a 12-week course. In other countries (Indonesia, Myanmar and Viet Nam), DAAs are imported through special import permits as allowed by national regulatory processes. Patients are also purchasing medications through private clinicians and buyers' clubs. The formal drug registration process is slow, and special imports cannot meet national drug procurement needs. Broader access will require national regulators to fast-track registration of DAAs and relax/waive regulatory requirements. Importantly, pricing still needs to drop if national programmes in lower- and lower-middle-income countries are to adopt large-scale treatment programmes.

2.5.2 Financing access to services and medicines: an overview

Dr Chen Wen, School of Public Health, Fudan University, Shanghai

Dr Chen Wen laid out three functions of health financing: revenue collection, risk pooling and purchasing. Out-of-pocket payment usually reduces utilization of health services, particularly for poorer population groups. General revenue financing can provide comprehensive coverage, can raise revenue, is a simple mode of governance and has the potential for administrative efficiency and cost control. Social health insurance can mobilize more resources to health, is less dependent on budget negotiation than general revenue financing, has better redistribution effects, and is strongly supported by the population because of providing the covered population with access to a broad package of services. Within socioeconomic, fiscal capacity and political constraints, a mix of different financial approaches can be adapted to national and local situations. Mobilizing more resources for health, raising efficiency in resource utilization through pooling, payment, and contracting arrangements are big challenges in most Western Pacific Region countries. Instruments like health technology assessment or economic evaluation can be used to build evidence to help decision-makers prioritize health needs and access to services and medicines covered by public health programmes.

2.5.3 Benefits package decisions for hepatitis treatments

Dr Soonman Kwon, Chief of Health Sector Group, Asian Development Bank

Dr Soonman Kwon urged participants to consider a set of criteria for decision-making around prioritization for benefit coverage that went beyond disease burden, noting that prioritization is always a value-laden process. Criteria included severity (death, disability); equity and social solidarity; economic burden on patients; budget impact and financial sustainability; and individual responsibility. The importance of equity, transparency, consensus-building and citizen participation in value judgments for benefit decisions was highlighted. After a review of the burden of HCV in the Region, potential health financing mechanisms were presented. Several approaches were detailed, such as: financial resource generation through taxes, social health insurance, private insurance and out-of-pocket payments; resource-pooling; increasing the bargaining power of the purchaser through large population coverage or cross-country pooling. Donor financing and micro-financing were presented as unsustainable options.

2.5.4 Panel: Financing hepatitis treatment in Australia, Japan and Viet Nam

Moderator, Dr Soonman Kwon, Chief of Health Sector Group, Asian Development Bank

Representatives from Australia, Japan and Viet Nam detailed strategies used to finance hepatitis treatment in their three countries. Dr Stephen Locarnini presented the Australian case of negotiating access to DAAs, noting that the Government was entrepreneurial and hard-nosed in negotiations with the pharmaceutical industry and the result was precedent-setting. The Australian Government's treatment-based financing scheme has allocated AUS\$ 200 million per year in new money for five years to include DAAs in the pharmaceutical benefits scheme. The pharmaceutical companies will have to pay more than AUS\$ 1 billion over five years, incentivizing treatment for as many people as

possible. In the first two months of the programme, 16 000 people have started treatment, at a cost to the patient of AUS\$ 10/month. The programme includes all costs of diagnostics and has no exclusion criteria for adults age 18 or older. Two critical components of the agreement were 1) it relies on primary care doctors who work in consultation with specialists through phone, email or fax to prescribe; and 2) it included Ministry of Health, Ministry of Finance and people living with hepatitis in the negotiations.

Dr Tatsuya Yamashita detailed access to treatment in Japan. The Government heavily subsidizes public health insurance for HCV treatment (which covers 70% of treatment costs) and a special budget (US\$ 200 million) that covers 28–29% of treatment costs. Together these two mechanisms fund 98–99% of treatment costs, while patients contribute between US\$ 300 and US\$ 600 (depending on income level) for laboratory testing, imaging and drug cost. About 140 000 persons have been treated in recent years.

Dr Tran Dai Quang noted that DAAs are in very limited supply in Viet Nam given their very high price (~US\$ 7000 per 12-week course) and are only available at five hospitals. About 70% of the population has health insurance, and health insurance typically covers 80% of drug costs. However, since HCV treatment with DAAs is still in the pilot phase, the drugs are not yet covered (though a request to include them in insurance plans has been made). Furthermore, key populations infected with HCV typically have much lower health insurance coverage, so inclusions on insurance plans will have limited impact for most vulnerable populations. The current financing of treatment relies heavily on individual out-of-pocket expenditures.

2.5.5 Discussion points

The discussion centred around how to get cheap drugs into the countries in the Region as quickly as possible. Discussion points included: 1) advocacy of relaxed national regulatory requirements by physicians, infectious disease societies and WHO; 2) public sharing of reference pricing for drugs in different countries; 3) promotion of competition and competitive pricing by countries to attract multiple companies to vie for their national market; 4) compulsory licensing with support from the WHO; and 5) facilitating companies' application for WHO prequalification.

When making decisions about health resource allocation, countries may want to compare health financing situations for different disease categories, addressing both prevention and treatment. Such comparative analysis could inform decision-makers on what to finance and how.

Participants discussed several approaches to financing hepatitis medication. Nontraditional approaches mentioned included pooling resources, negotiating price volume with industry to increase bargaining power, and engaging the population in decision-making. For communicable disease control, direct government expenditure is considered as the best option.

It was noted that while governments might be concerned about the large, upfront costs of treating hepatitis C, government spending will be short-term since the elimination goal has been articulated and is within reach. Australia made the decision to do this. How can other national governments be persuaded to do the same?

2.6 Objective 4: To review three-year collaboration between WHO, US CDC and the ZeShan Foundation

2.6.1 Innovative private and public partnership to fund viral hepatitis and philanthropy in Asia

Dr John Ward, Director, Division of Viral Hepatitis, US CDC, Atlanta

Dr John Ward introduced the Viral Hepatitis Action Coalition (VHAC) as an example of a public-private partnership to accelerate the US CDC's efforts to prevent, control and ultimately eliminate viral hepatitis transmission and disease. VHAC invests in education programmes for health providers and the public; demonstration projects that evaluate hepatitis C and hepatitis B testing and linkage to care; health information technology that improves quality of hepatitis care; research on the quality of care for persons living with HBV and HCV infection; and supporting Global Hepatitis Technical Assistance. On a global level, the Division of Viral Hepatitis provides technical assistance in national planning, serological survey design, laboratory quality assessment, programme evaluation, global fellowship programme, and meeting support. Dr Ward introduced The Fund for the Elimination of Viral Hepatitis as a concept and laid out next steps, including establishing goals and governance structures, developing communication and marketing plans, and identifying potential partners.

2.6.2 WHO Collaborating Centre for Viral Hepatitis in Melbourne

Dr Stephen Locarnini, Head of Research and Molecular Development, Doherty Institute, Victorian Infectious Diseases Reference Laboratory, Melbourne

Dr Stephen Locarnini presented the activities of the WHO Collaborating Centre for Viral Hepatitis in Melbourne on behalf of the centre's director, Dr Ben Cowie. The centre works on a range of activities including surveillance, treatment and prevention initiatives. It is involved in staff training and regional capacity-building activities. One of its new activities is to assist WHO in implementing the recently endorsed *Global Health Sector Strategy for Viral Hepatitis, 2016–2021*. The Regional Reference Laboratory for Hepatitis B provides reference testing of samples from national serosurveys in the Western Pacific Region. The RRL is also facilitating the establishment of a hepatitis laboratory network that will work to ensure the accuracy of test results for hepatitis surveillance, serosurveys, diagnostics and in treatment monitoring. This will be done through interactions with national reference laboratories in the Region.

2.6.3 WHO Collaborating Centre for Viral Hepatitis in Atlanta

Dr Francisco Averhoff, Associate Director for Global Health, Division of Viral Hepatitis, US CDC, Atlanta

Dr Francisco Averhoff detailed the terms of reference of the Division of Viral Hepatitis, US CDC, as a WHO Collaborating Centre for Viral Hepatitis. The division has been tasked to support implementation of the WHO Global Hepatitis Strategy priority areas, to serve as a regional reference laboratory, and to provide technical assistance in the development of global guidance. In addition, the division provides support to ministries of health to carry out the following activities: development of national strategy; understanding of disease burden and risk factors through serosurveys, modelling, and analysis of morbidity/mortality data; evaluations of vaccination and care and treatment programmes, and laboratories; special studies and research; training and study tours; and private-public partnership development. The division prioritizes countries that have a high burden of disease, have a motivated government, have a US CDC platform in the country, and have requested technical assistance. Detailed examples from Egypt, Georgia and Pakistan were presented.

2.7 Country working groups

On Friday, 24 June country representatives were divided into groups and rotated through facilitated discussions on the four topics listed below. Countries and areas were grouped as follows: China, Hong

Kong SAR (China) and Mongolia; Cambodia and the Philippines; Malaysia and Viet Nam; and Japan and the Republic of Korea.

- 1) Data for action: hepatitis surveillance and outbreak investigation
- 2) Treatment cascade: WHO screening, diagnosis and treatment guidelines
- 3) Increasing access: financing of services and medicines
- 4) Strengthening of laboratory systems: hepatitis testing and treatment monitoring

Dr Janus Ong and Dr Sung Won Lee were appointed co-chairs for the afternoon session.

Facilitators of each topic reported key points garnered from discussion with each group of countries. Recommendations are included in Section 3.2 below.

2.8 Closing

The meeting concluded with remarks by Dr Mark Jabobs, Director, Communicable Diseases, WHO Regional Office for the Western Pacific. Dr Jabobs thanked the Hong Kong Department of Health for hosting the meeting and Dr Wai-chi Lin specifically for superb organization of the meeting. Thanks were given to the ZeShan Foundation, Kanazawa University, and the US CDC Division of Viral Hepatitis for their support to WHO. Dr Jacobs closed with an affirmation that the world is poised to meet the 2030 elimination targets and stated his belief that the Western Pacific Region will lead the way to this achievement.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

Significant progress has been made in the Western Pacific Region. Member States have achieved the 2017 goal of less than 1% prevalence among 5-year-olds ahead of schedule, and over 7 million HBV-related deaths and ~37 million new infections have been averted in the Region due to childhood immunizations since 1990. With the new DAAs to cure hepatitis C, true elimination of hepatitis C may be within reach. The countries represented in the meeting have taken the first steps to attain the global and regional milestones and targets of elimination and reduction in mortality from chronic infections.

3.2 Recommendations

Given the goal of the meeting, that is, to develop recommendations for the operationalization of the *Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020*, the full list of recommendations is included in the body of the report, as these represent the most critical recommendations for Member States, WHO and partners to achieve the milestones and targets set out in the Regional Action Plan. The recommendations are organized into five action areas to align with the Regional Action Plan.

3.2.1 Advocacy

Recommendation to Member States:

- 1) Countries are strongly encouraged to commit to the development of a hepatitis awareness-raising campaign and to observe World Hepatitis Day and other potential national observances (e.g. National Hepatitis Testing Day). This may involve identifying well-respected and visible spokespersons for the cause of viral hepatitis elimination.
- 2) Countries should further recognize the central role of civil society and people living with hepatitis in responding to viral hepatitis and actively engage them in advocacy efforts and awareness-raising campaigns, including combatting hepatitis-related stigma impeding affected communities from seeking care and other services.

Recommendations to WHO and partners:

- 1) Work with Member States to further engage civil society, and in particular affected communities, in all aspects of the hepatitis response. This includes encouraging governments to provide funding support for hepatitis-related nongovernmental organizations for education and screening activities.
- 2) Support Member States to raise awareness among the general public. Support strengthening of hepatitis-specific education to front-line health workers through the design of simple and easy-to-understand curricula to prevent use of suboptimal therapies.

3.2.2 Policy

National Action Plan

Recommendation to Member States:

- 1) Countries that have not yet developed a national hepatitis action plan are encouraged to work towards the development of a costed plan. Countries with action plans should seek to keep plans current, comprehensive and relevant for policy-makers.
- 2) Ministries of Health and civil society should work with WHO country offices and other relevant stakeholders to initiate and complete viral hepatitis actions that have been agreed upon as global or regional resolutions and strategies.
- 3) Countries are encouraged to involve civil society and particularly members of affected populations in the development of their national action plans, guideline developments, and implementation plans. Soliciting feedback from hepatitis-affected communities and members should be seen as one strategy to combat stigma and discrimination.

Recommendation to WHO and partners:

- 1) Reinforce country commitments to and support implementation of global resolutions and strategies through the Regional Action Plan.

- 2) Provide assistance in the development and implementation of national action plans, with specific attention to the need for a coordinated infrastructure for screening, prevention, diagnosis and treatment of viral hepatitis.
- 3) Explore mechanisms by which WHO can engage with government agencies outside of the Ministry of Health (to include Ministry of Finance, Ministry of Social Affairs and State-level bodies) to facilitate viral hepatitis programming and activities.

Financing

Recommendations to Member States:

- 1) Countries should estimate the transmission, disease and mortality burden of hepatitis B and C, the cost of inaction (e.g. use of suboptimal therapies), and model the economic consequences of investing in hepatitis projects to support the case for a costed national plan. These may be complemented by case studies describing individual countries' health financing position to inform the range of options for financing.
- 2) Countries should explore measures to increase access to hepatitis medicines by reducing price. This may include consolidation of demand and demand forecasting, and streamlining procurement mechanisms.
- 3) Countries should progressively expand services from highest priority groups to lower as resources become available.

Recommendations to WHO and partners:

- 1) Support the completion of disease burden and economic analyses to inform development of costed national action plans.
- 2) Make available information on availability, pricing, regulatory status of medicines across the Region, aided by initiatives such as the Global Price Reporting Mechanism for hepatitis medicines.
- 3) Support development of case studies on health financing situation and options for hepatitis.
- 4) Help identify strategies to progressively expand services for highest priority groups. In some countries, this will need to include support on how to prioritize screening and treatment among different population groups.

Box 1. Broader health system recommendations

The response to viral hepatitis, particularly in the area of strategic information, requires collaboration with and inputs from the broader health system. Listed below are a couple recommendations to Member States that fall outside the purview of the viral hepatitis response, but are critical to the generation of hepatitis-related strategic information.

- Strengthen vital registration to allow monitoring trends in hepatitis-related mortality data.
- Encourage the use of unique identifiers to prepare for data capture from multiple systems, when available.

3.2.3 Data

Strategic information

Recommendations to Members States:

- 1) Conduct repeat viral hepatitis serosurveys to inform hepatitis B and C incidence and prevalence estimates, particularly in at-risk populations. These could be incorporated into planned or future surveys such as STEP-wise approach to surveillance (STEPS), Demographic and Health Surveys (DHS), and routine immunization surveillance or antenatal clinic screening.
- 2) Undertake hepatitis data linkage initiatives within national health sectors. These could be coordinated by a designated data focal point and should be ongoing.
- 3) Develop early warning data systems to identify possible outbreaks and medical/iatrogenic transmission. These may include sentinel surveillance among patient groups with frequent contact with the health system (dialysis, thalassemia and haemophilia centres).
- 4) Consider developing alternate methods to assess cirrhosis and cancer incidence, such as hospital-based sentinel surveillance. Where divergent, merge offices and surveillance efforts for hepatitis B and C.
- 5) Hepatitis surveillance should also report type of hepatitis virus. Cancer registries should record type of hepatitis virus for hepatocellular carcinoma.
- 6) For countries with well-developed surveillance systems, encourage development of country cascades of hepatitis care to determine gaps.
- 7) Recognize the role of stigma and discrimination in underreporting of patients seeking screening or care and make mandatory reporting of hepatitis in public (where not yet recommended) and private health facilities.

Recommendations to WHO and partners:

- 1) Assist countries with triangulation/linking of multiple data sources outside ministries of health. WHO to help systematically aggregate data systems and better coordinate viral hepatitis to other registries currently outside ministry of health. This includes assisting countries to utilize laboratory, health facility, population-based and national insurance data for surveillance.
- 2) WHO to assist adaption of global surveillance guidelines to allow comparison between countries.
- 3) Engage WHO country representatives to advocate the minister of health to develop viral hepatitis indicators and metrics to DHS and other national surveys, including developing methods to estimate acute and chronic HCV in low resource areas that may lack the ability to conduct household surveys.

Laboratory

Recommendations to Member States:

- 1) Countries should support the the roll-out of a regional laboratory network by designating at least one national reference laboratory, with terms of reference consistent with recommendations in the soon-to-be-released 2016 WHO testing guidelines.
- 2) Countries will need to focus on capacity-building of laboratory networks, with a quality management system as outlined in the 2016 WHO testing guidelines.

- 3) Countries are recommended to streamline oversight of blood-borne virus testing within their ministry of health, through the implementation of a technical advisory group.
- 4) Ministries of health should work with national FDAs to harmonize the regulatory process for nationally manufactured and imported diagnostic kits.
- 5) Countries should provide sample banks and serum panels for evaluation.

Recommendations to WHO and partners:

- 1) Support countries in establishing mechanisms for oversight of blood-borne virus testing.
- 2) Support countries in establishing a national reference laboratory, with terms of reference consistent with recommendations in the soon-to-be-released 2016 WHO testing guidelines.
- 3) Support national reference laboratories in capacity-building of laboratory networks, with a quality management system as outlined in the 2016 WHO testing guidelines.
- 4) Support ministries of health in their work with national FDAs to harmonize the regulatory process for diagnostic kits.
- 5) Support countries in establishing sample banks and serum panels for evaluation.
- 6) Provide reference laboratory standards for viral hepatitis.
- 7) Support the development of a domestic inventory of hepatitis tests and support performance evaluation of commonly used tests in this inventory.

3.2.4. Stopping transmission

Prevention of nosocomial transmission

Recommendations to Member States

- 1) Member States should identify and address hepatitis C transmission within the health sector, including private and para-health services. This should include strengthening overseeing bodies for infection prevention and control.
- 2) Develop mandatory hepatitis B vaccination policies for health-care workers.

Recommendation to WHO and partners:

- 1) Support Member States to identify nosocomial hepatitis C transmission and oversight by infection prevention and control agencies.

Prevention of vertical transmission

Hepatitis B birth dose and three-dose hepatitis B series are the foundation for effective hepatitis B prevention programmes.

Recommendation to Member States:

- 1) To protect children from hepatitis B, countries should consider integrating antenatal hepatitis B testing into a triple-elimination approach (HIV, syphilis, HBV).

- 2) Countries should identify challenges in achieving WHO goals for timely birth dose and work with MCH and other stakeholders to improve birth dose and three-dose series coverage.

Recommendation to WHO and partners:

- 1) Reconvene the Hepatitis Guideline Development Group to review new evidence around prevention of vertical transmission of HBV in order to provide countries with guidance on effective therapies aimed at further preventing perinatal transmission, including maternal screening recommendations, the use of HBIG and other prophylactic therapies such as antivirals.
- 2) The Global Hepatitis Strategy calls for a 90% reduction in incidence by 2030. Given that the Western Pacific Region has already reached less than 1% regional prevalence among children 5 years of age, the WHO Regional Office may wish to consider alternative targets more appropriate for the Region beyond 2017.
- 3) Engage country representatives to advocate the minister of health to develop and monitor metrics which capture birth-dose coverage and viral hepatitis prevalence of all health facilities, including private hospitals.
- 4) Resources and guidelines already developed by the WHO Regional Office should be shared with other regions, including hepatitis B control strategies, field guidelines to conduct serosurveys and the tools to verify global or regional targets.
- 5) Monitor reports of vaccine-related adverse events, support timely investigation of those events, and develop effective communication around those events in order to maintain public and health-care provider confidence in the public health system and hepatitis B vaccines.

Outbreak investigations

Recommendations to Member States:

- 1) National health systems have existing infrastructure and methods to investigate outbreaks of communicable diseases. Consider investigating blood-borne viral hepatitis outbreaks to identify possible iatrogenic/medical transmission or lapses in infection control.
- 2) The health work force should be trained and empowered to recognize and report hepatitis outbreaks. A prerequisite for this will be availability of hepatitis testing at all health facilities.

Recommendation to WHO and partners:

- 1) Support countries in planning and conducting outbreak investigations, including potentially providing staff or other direct assistance on an emergency basis and developing timely communication materials.

3.2.5 Treatment

Implementation of treatment guidelines

Recommendations to Member States:

- 1) Identify hepatitis focal points to work with the ministry of health to convene multisectoral Technical Guideline Development Groups to update existing treatment guidelines to incorporate new WHO hepatitis screening and testing guidelines. Multisectoral Technical

Guideline Development Groups should include medical associations, researchers, front line health workers, and people living with hepatitis.

Recommendations to WHO and partners:

- 1) Continue providing technical assistance to update national hepatitis screening, diagnosis and treatment guidelines. Track the status of guideline development, complemented by periodic monitoring and evaluation as part of hepatitis programme reviews.

Access to diagnostics and medicines

Recommendations to Member States:

- 1) Countries are encouraged to work with regulatory authorities to accelerate access to life-saving drugs, including identification of precedents where exceptions to regulatory requirements have been made in other disease areas.
- 2) Once prequalification has been obtained, countries should take advantage of the WHO collaborative process of registration of prequalified diagnostics and medicines.
- 3) Consider options of exercising TRIPS flexibilities to ensure access to life-saving viral hepatitis medications for specific countries where prices remain unaffordable to governments.
- 4) Conduct investigations into the scope and scale of black market and online sale of drugs to develop strategies to regulate this market.
- 5) In specific countries, assess the extent of the use of suboptimal therapies for hepatitis treatment.

Recommendation to WHO and partners:

- 1) Convene a working group to scope drug access in Member States.
 - a) Areas of review might include sharing information on regulatory status and drug pricing in countries across the Region, summarizing experience in member countries' negotiation with pharmaceutical countries, describing examples of precedents when regulatory exceptions have been made to simplify registration procedures.
 - b) In the case of HBV (tenofovir and entecavir), consider conducting a scoping exercise to ascertain registration status and price of tenofovir for HIV vs. HBV, to include patent status and distribution rights.
- 2) Identify partners who have the capacity to support generic manufacturers to file for prequalification of drugs.
- 3) Provide technical assistance to countries to consider options for improving access to life-saving medicines, including exercising TRIPS flexibilities.
- 4) Support countries in the investigation of the scope and scale of black market and online sale of hepatitis drugs.

ANNEXES

AGENDA

Day 1 – Wednesday, 22 June 2016

Time	Topic	Presenter
08:00-08:45	<i>Registration</i>	
08:45-09:15	<i>Opening ceremony and introduction</i> Opening Remarks	Dr Ko Wing-man, Secretary for Food and Health, Government of Hong Kong Dr Shin Young-soo, Regional Director, WPRO ⁷
09:15-10:00	Objectives, expected outcomes Introduction of participants Administrative announcements Group photo	Lo Ying-Ru, HSI ⁸ , WPRO ⁷
10:00-10:30	<i>Coffee/tea break</i>	
Objective 1: To review national progress and identify priority actions to attain milestones and targets of Regional Action Plan for Viral Hepatitis in the Western Pacific 2016-2020		
10:30-10:45	Recommendations from the second Western Pacific Regional Strategic Advisory Committee for Viral Hepatitis and fourth meeting of Expert Resource Panel to WHO	Henry Lik Yuen Chan, Chinese University of Hong Kong, China and Jee Youngmee, Korean CDC ⁹ , Republic of Korea
10:45-11:00	Global Health Sector Strategy for Viral Hepatitis, 2016–2021	Gottfried Hirschall, Department of HIV/AIDS and Global Hepatitis Programme, WHO HQ ¹⁰
11:00-11:15	Regional Action Plan for Viral Hepatitis in the Western Pacific and progress report	Lo Ying-Ru, HSI ⁸ , WPRO ⁷
11:15-11:30	Regional milestones and targets – Moving from investment cases to financing	Nick Walsh, HSI ⁸ , WPRO ⁷
11:30-11:45	Prevention through vaccination – achieving the 2017	Joseph Woodring, Hepatitis B Focal

⁷ WPRO is WHO Regional Office for the Western Pacific

⁸ HSI is HIV, Hepatitis and STI unit, Division of Communicable Diseases

⁹ CDC is Centers for Disease Control and Prevention

¹⁰ HQ is Headquarters

Time	Topic	Presenter
	1% Regional goal among children	Point, Expanded Programme on Immunization, WPRO ⁷
11:45-12:15	<i>Discussions</i>	
12:15-13:30	<i>Lunch</i>	
13:30-14:00	What can we learn from hepatitis B and C control in China, current progress and future considerations	Cui Fuqiang, Professor and Director, National Immunization Programme Chinese Center for Disease Control and Prevention, China
14:00-14:30	Hepatitis epidemiology and response in Hong Kong SAR (China)	Wai-Chi Lin, Senior Medical and Health Officer, Government of Hong Kong Special Administrative Region Department of Health, Hong Kong SAR (China)
14:30-14:45	<i>Coffee/tea break</i>	
14:45-15:15	Hepatitis disease burden analysis and access to treatment in Viet Nam	Tran Dai Quang, General Department of Preventive Medicine, Viet Nam
15:15-15:45	Planning for elimination of hepatitis C in Mongolia	Narangerel Dorj, Senior Officer for Communicable Diseases, Ministry of Health, Mongolia
15:45-16:15	Situation and response on viral hepatitis in Malaysia	Jahis ROHANI, Head for Vaccine Preventable Disease, Disease Control Division, Ministry of Health, Malaysia
16:15-17:00	<i>Discussions and wrap-up</i>	
18:00-	<i>Welcome reception</i>	

Day 2 –Thursday, 23 June 2016

Objective 2: To plan adoption and initial roll-out of new WHO guidelines on hepatitis surveillance and treatment		
08:30-09:00	Consolidated WHO treatment guidelines	Stefan Wiktor, Team Lead of WHO's Global Hepatitis Programme, WHO HQ ¹⁰
09:00-09:30	Panel discussion (Civil society perspective) How can civil society help to roll out WHO guidelines?	Moderator: Jack Wallace, CEVHAP ¹¹ Haryati Jonet, Malaysian AIDS Council, Malaysia and Sok Chamreun Choub, KHANA, Cambodia
09:30-10:00	Panel discussion 2 (Clinicians perspective) Implementing WHO treatment guidelines, issues and challenges – Country panel	Moderator: Henry Chan, Hong Kong SAR (China) Janus Ong, the Philippines and Sung Won Lee, Republic of Korea
10:00-10:30	<i>Discussions</i>	
10:30-10:45 <i>Coffee/tea break</i>		
10:45-11:15	Hepatitis surveillance and programme monitoring tools	Stefan Wiktor, Team Lead of WHO's Global Hepatitis Programme, WHO HQ ¹⁰
11:15-11:45	Hepatitis C outbreak investigation in the Republic of Korea	Jee Youngmee, Korean CDC ⁹
11:45-12:15	Polaris Observatory and regional estimates of hepatitis B C and D disease burden	Homie Razavi, Managing Director at the Center for Disease Analysis, USA
12:15-12:30	<i>Discussions</i>	
12:30-13:30 <i>Lunch</i>		
Objective 3: To discuss challenges and identify technical support needs		
13:30-14:00	Access to medicines – what is going on in the private sector?	Giten Khawirakpam, TREAT Asia
14:00-14:30	Financing access to services and medicines: an overview	Chen Wen, Fudan University, Shanghai, China

¹¹ CEVHAP is Coalition to Eradicate Viral Hepatitis in Asia Pacific

14:30-15:00	Health technology assessments and benefit package: How to include hepatitis treatment	Kwon Soonman, Chief of Health Sector Group, Sustainable Dev & Climate Change Dept, ADB ¹² , Philippines
15:00-15:15	<i>Coffee/tea break</i>	
15:15-15:45	Panel: Financing hepatitis treatment in Australia, Viet Nam, Japan and Republic of Korea (No slides)	Moderator: Kwon Soonman
15:45-16:00	<i>Discussions</i>	
Objective 4: To review three-year collaboration between WHO, the US Centers for Disease Control and Prevention and the ZeShan Foundation		
16:00-16:15	Innovative private and public partnership to fund viral hepatitis and philanthropy in Asia	John Ward, Director, Division of Viral Hepatitis, US CDC ⁹ , Atlanta, USA
16:15-16:30	WHO Collaborating Centre for Viral Hepatitis in Melbourne – next steps	Stephen Locarnini, Victorian Infectious Diseases Laboratory, Doherty Institute, WHO Collaborating Centre for Viral Hepatitis, Melbourne, Australia
16:30-16:45	Division of Viral Hepatitis, US Centers for Disease Control and Prevention, WHO Collaborating Centre for Viral Hepatitis – technical assistance	Francisco Averhoff, Division of Viral Hepatitis, US CDC ⁹ , Atlanta, USA
16:45-17:00	<i>Wrap-up and introduction to group work</i>	

¹² ADB is Asian Development Bank

Day 3 – Friday, 24 June 2016

Time	Topic	Presenter
Objective 3 (continued): To discuss challenges and identify technical support needs		
8:30-12:30	<p><i>Group work on technical support needs</i></p> <ol style="list-style-type: none"> 1. Data for action – Hepatitis surveillance and outbreak investigation 2. What will it take to introduce WHO screening, diagnosis and treatment guidelines? 3. Increasing access – Financing of services and medicines 4. Strengthening of laboratory systems for hepatitis testing and treatment monitoring 	Musical chair – four country groups
12:30-14:00	<i>Lunch</i>	
14:00-15:00	Group work presentations	
15:00-15:15	<i>Coffee/tea break</i>	
15:15-16:45	Conclusions and recommendations	Lo Ying-Ru, HSI ⁸ , WPRO ⁷
16:45-17:00	Closing remarks	Mark Jacobs, Director, Communicable Diseases, WPRO ⁷

LIST OF PARTICIPANTS**CAMBODIA**

Dr Hok SIRANY, Vice Chief of Non-Communicable Disease Office, Preventive Medicine Department, Ministry of Health, #80 Avenue Samdach Pen Nuth, Phnom Penh, Tel: +855 12 884 307, Fax: +855 23 426 034, Email: hoksirany@yahoo.com

Mr Sok Chamreun CHOUB, Executive Director, Chief of Party HIV/AIDS Flagship Project KHANA, #33 Street 71, Phnom Penh, Tel: +855 23 211505, Fax: +855 23 214049, Email: csokchamreun@khana.org.kh.

CHINA

Dr LU Ming, Director, EPI Division Bureau of Disease Control and Prevention, National Health and Family Planning Commission, Beijing, 100044, Tel: +8610 68791810, Fax: +8610 68791794, Email: luming@nhfpc.gov.cn

Dr CUI Fuqiang, Professor and Deputy Director National Immunization Programme, Chinese Center for Disease Control and Prevention, Nanwei Road 27, Xicheng District, Beijing, Tel/Fax: +8610 63022040, Email: cuifuq@126.com

Dr WANG Yafei, Physician Hebei Province, Center for Disease Control and Prevention, Huai'an East Road 97, Shijashuang, Tel: +86 15 175990677, Email: yaer1311@163.com

HONG KONG SAR (CHINA)

Dr Wai Chi LIN, Senior Medical and Health Officer, The Government of Hong Kong Special Administrative Region, Department of Health, 9/F Kai Yan Road Kowloon Bay, Hong Kong, Tel: +852 21162903, Fax: +852 21170812, Email: adalinwc@dh.gov.hk

Dr Vincent Wai Sun WONG, Professor, Department of Medicine and Therapeutics, 9/F Clinical Sciences Bldg, Prince of Wales Hospital, 30-32 Ngan Shing Street, Shatin, Hong Kong, Tel: +852 26323942, Fax: +852 26373852, Email: wongv@cuhk.edu.hk

JAPAN

Dr Tatsuya YAMASHITA, Lecturer Department of Gastroenterology, Kanazawa University Hospital, 13-1 Takara-Machi, Kanazawa, Ishikawa, 9208641, Tel: +81 76 265 2247, Fax: +81 76 234 4250, Email: ytatsuya@m-kanazawa.jp

REPUBLIC OF KOREA

Dr Hyerim LEE, Field Epidemiologist, 187 Osongsaengmyeoung 2-ro Heungdeok-gu, Cheongju-si Chungcheongbuk-do, Tel: +82 0437197127, Fax: +82 0437197139, Email: upsups1234@naver.com

Dr Sung Won LEE, Clinical Assistant Professor, WHO Collaborating Center for Viral Hepatitis, 505 Banpodong, Seocho-gu, Seoul, Tel: +82 10 87439422, Email: swleehepa@gmail.com

MALAYSIA

Dr Jahis ROHANI, Head for Vaccine Preventable Disease Control and Food Water Borne Disease Control Sector, Disease Control Division, Ministry of Health Malaysia, Level 3, Block E 10, Parcel E Federal Government Administrative Centre, 62590 Putrajaya, Tel: +603 8883 4411, Fax: +603 8889 1013, Email: rohbj@moh.gov.my

Ms Haryati JONET, Executive, Programme Division Global Fund Project Management Unit, Malaysian AIDS Council, No 12, Jalan 13/48A, The Boulevard Shop Office Off Jalan Sentul, 51000 Kuala Lumpur, Tel: +601 2437 8689, Fax: +603 4047 4210, Email: haryati@mac.org.my

MONGOLIA

Dr Narangerel DORJ, Head of Communicable Diseases Division, Ministry of Health, Government Building VIII, Olympic Street 2, Sukhbaatar district, Ulaanbaatar 51, Tel: +976 99164451, Fax: +976 11263631, Email: naraa61us@yahoo.com

Dr Gankhuu TSEEKHUU, Head of Soum Doctor's Association Bayangol district, 18r horoo, 43 Enebish Street, Ulaanbaatar, Tel: +976 99116690, Email: ts_gankhuu99@yahoo.com

PHILIPPINES

Dr Arthur Dessi ROMAN, Medical Specialist III, Research Institute for Tropical Medicine, 9002 Research Drive, Filinvest Corporate City Alabang, Muntinlupa City, Tel: +632 561 4024, Fax: +632 807 9603, Email: gonnabedess@yahoo.com

Dr Janus P. ONG, Clinical Associate Professor, University of the Philippines College of Medicine, Section of Gastroenterology, Department of Medicine Philippine General Hospital, Taft Avenue, Manila, Tel: +632 6356789, loc 6506, Fax: +632 6356789, loc 6507, Email: Janong@mac.com

VIET NAM

Professor Vu Bang DINH, Director of the HoaBinh, Private Polyclinic, 30 Hoang Van Thai Str, Khuong Mai Thanh Xuan District, Hanoi, Tel: +84 9 8855 655, Fax: +84 566 5667, Email: vubangdinhhoabinh@gmail.com

Dr TRAN Dai Quang, General Department of Preventive Medicine, 135/1 Nui Truc St., Ba Dinh District, Hanoi, Tel: +84 9 3229 9677, Email: trandaiquang1984@gmail.com

2. TEMPORARY ADVISERS

Dr Henry Lik Yuen CHAN, Professor, Department of Medicine and Therapeutics Head, Division of Gastroenterology and Hepatology Director, Institute of Digestive Disease Director, Center for Liver Health Assistant Dean (External Affairs), Faculty of Medicine The Chinese University of Hong Kong Hong Kong, Tel: +852 2632 3593 Fax: +852 2647 3852 Email: hlychan@cuhk.edu.hk

Dr CHEN Wen, Professor of Health Economics, School of Public Health, Dean, School of Public Health, Fudan University, Shanghai, China, Tel: +86 21 64038931, Email: wenchen@fudan.edu.cn

Dr Youngmee JEE, Director Center for Immunology and Pathology, Korea Centers for Disease Control and Prevention, Osong, Chungcheongbuk-do, Republic of Korea, Tel: +82 43 719 8400, Email: jeey62@korea.kr

Dr Tatsuya KANTO, Director-General, The Research Center for Hepatitis and Immunology, National Center for Global Health and Medicine, 1-7-1 Kohnodai Ichikawa, Tokyo, Japan, Tel: +81 47 372 3801, Fax: +81 47 375 4766, Email: kantotatsuya@gmail.com

Dr Stephen LOCARNINI, Head of Research and Molecular Development, Doherty Institute, Victorian Infectious Diseases Reference Laboratory Level 2, 792 Elizabeth Street, Melbourne, Victoria 3000, Australia, Tel: +613 9342 9637, Email: Stephen.Locarnini@mh.org.au

3. OBSERVERS

ASIAN DEVELOPMENT BANK

Dr Soonman KWON, Chief of Health Sector Group, Asian Development Bank, 6 ADB Avenue, Mandaluyong, Metro Manila, The Philippines, Tel: +632 632 6404, Email: skwon@adb.org

ASIAHEP HONG KONG LIMITED

Dr Nancy Wai Yee LEUNG, Founding Chair, Suite 1501 15 F Melbourne Plaza, 33 Queen's Road Centre, Hong Kong SAR (China), Email: dr.nancyleung1501@gmail.com

ASIAN LIVER CENTER

Professor Samuel SO, Stanford University School of Medicine, Asian Liver Center, 780 Welch Rd, CJ130 Palo Alto, California 94304, United States of America, Fax: +1 650 736 8001, Email: samso@stanford.edu

CENTER FOR DISEASE ANALYSIS

Dr Homie RAZAVI, Center for Disease Analysis, Louisville 1120, South Boulder Rd Suite 102, Lafayette, Colorado 80026, United States of America, Fax: +1 720 890 3817, Email: homie.razavi@centerforda.com

DEPARTMENT OF HEALTH HONG KONG SAR, CHINA

Dr Janice LO, Head Public Health Laboratory Services Branch, Public Health Laboratory Centre, Centre for Health Protection, 382 Nam Cheong Street, Kowloon, Hong Kong, Email: janicelo@dh.gov.hk

Dr Henry NG, Head Programme Management and Professional Development Branch Centre for Health Protection, 4/F, 147C Argyle Street, Kowloon, Hong Kong, Email: henry_cc_ng@dh.gov.hk

Dr Bonnie WONG, Medical and Health Officer, Special Preventive Programme, Centre for Health Protection, 9/F Kowloon Bay Health Centre 9 Kai Yan Road, Kowloon Bay, Hong Kong, Email: bonnie_ck_wong@dh.gov.hk

Dr Zenith WU, Medical and Health Officer, Surveillance and Epidemiology Branch, Centre for Health Protection, 4/F 147 C Argyle Street, Kowloon, Hong Kong, Email: mo_evbd01@dh.gov.hk

Ms Anna On Kei WONG, Scientific Officer, Surveillance and Epidemiology Branch, Centre for Health Protection, 4/F 147C Argyle Street, Kowloon, Hong Kong, Email: so_m_vpdo2@dh.gov.hk

Dr Chester Chiu Yin TSANG, Senior Medical & Health Officer, Special Health Services Narcotics and Drug Administration, Unit 8/F, Southorn Centre 130 Hennessy Road, Wan Chai, Hong Kong, Email: smonda_nt@dh.gov.hk

CHINESE UNIVERSITY OF HONG KONG, HONG KONG SAR, CHINA

Dr Tammy MEYERS, Assistant Professor and Head of International Exchange Centre for Global Health, Jockey Club of Public Health, Tel: +852 2252 8416, mob: +852 59939117, Email: tammymeyers@cuhk.edu .hk

COALITION FOR THE ERADICATION OF VIRAL HEPATITIS IN ASIA PACIFIC

Mr Jack WALLACE Research Fellow Australian Research Centre in Sex, Health and Society La Trobe University 215 Franklin Street, Melbourne Victoria 3000, Australia Tel: +613 9479 8736, Email: J.wallace@Latrobe.edu.au

HOSPITAL AUTHORITY, HONG KONG SAR, CHINA

Dr LAO Wai Cheung, Chief of Service Department of Medicine, Pamela Youde Nethersole Eastern Hospital, 3 Lok Man Road Chai Wan, Hong Kong, Email: laowc@ha.org.hk

Dr Owen Tak Yin TSANG, Medical Director Infectious Disease Centre Princess Margaret Hospital 2-10, Princess Margaret Hospital Road, Lai Chi-Kok, Kowloon, Hong Kong, Email: tsangty@ha.org.hk

MEDECINS SAN FRONTIERES

3rd Floor, Forecast Waseda First 1-1 Babashitacho, Shinjuku-ku, Tokyo 162-0045

Dr Isaac CHIKWANHA, Deputy Program Manager Medecins Sans Frontieres, Tokyo Cell Cambodia, Papua New Guinea, Philippines Tel: +81 03 5286 6175, Email: i.chikwanha@tokyo.msf.org

Mr Brian DAVIES, Head of East Asia Access Campaign Medecins Sans Frontieres, Tel: +813 5286 6123, Email: b.davies@tokyo.mfs.org

Mr Christophe BITEAU, Head of Mission Medecins Sans Frontieres, #94, Street 430 Khan Chamkarmorn, Phnom Penh, P.O. Box 845, Cambodia, Tel: +855 92 326 159, Email: msff-kh-hom@paris.msf.org

NAVAL HEALTH RESEARCH CENTER

Dr Marc BULTERYS, Associate Director for Science, Department of Defense, HIV/AIDS Prevention Program San Diego, California United States of America, Email: zbe2@cdc.gov

Mr Giten KHWAIRAKPAM, TREAT ASIA, Exchange Tower, 388 Sukhumvit Road, Suite 2104 Klongtoey, Bangkok 10110, Thailand, Tel: +66 2 663 7561, Fax: +66 2 663 7562, Email: giten.khwairakpam@treatasia.org

UNITED STATES NATIONAL CANCER INSTITUTE

Dr Ann CHAO, Director Cancer Research Programs, East Asia Center for Global Health National Cancer Institute Bethesda, Maryland 20892, Email: ann.chao@nih.gov

ZESHAN FOUNDATION

ZeShan Foundation, 26/F Bank of East Asia Harbour View Centre, 56 Gloucester Road, Wanchai, Hong Kong.

Mr Wangsheng LI, President, Tel: +852 2877 8988, Email: wangshengli@zeshanfoundation.org

Ms Yan CHAN, Programme Director, Tel: +852 2877 8988 Email: yanchan@zeshanfoundation.org

Dr ZHANG LAN, Contractor, ZeShan, Email: zhanglannette@qq.com

Ms Fiona KEE, Programme Officer, Tel: +852 9432 1720 Email: fionakee@zeshanfoundation.org

4. SECRETARIAT

WHO REGIONAL OFFICE FOR THE WESTERN PACIFIC

Division of Communicable Diseases, P.O. Box 2932, 1000 Manila, The Philippines

Dr Mark JACOBS, Director, Division of Communicable Diseases, Tel: (632) 528 9701, Fax: (632) 521 1036, Email: jacobsma@who.int

Dr Ying-Ru LO, Coordinator HIV, Hepatitis and STI, Tel: (632) 528 9714 Fax: (632) 521 1036, Email: loy@who.int

Dr Nick WALSH, Medical Officer Viral Hepatitis, Tel: +632 528 9750, Fax: +632 521 1036, E-mail: walshn@who.int

Dr Joseph WOODRING, Technical Officer Expanded Programme on Immunization, Tel: +632 5289037, Fax: +632 521 1036, Email: woodringj@who.int

Dr Masaaki KITAHARA, HSI Volunteer, Email: mkitahara2007@gmail.com

WHO REGIONAL OFFICE FOR SOUTH-EAST ASIA

World Health House Indraprastha Estate, Mahatma Gandhi Road New Delhi 110002, India

Dr Razia PENDSE Regional Adviser, HIV/STI/HEP, Tel: +91 11 43040122
Email: pendsera@who.int

WHO COUNTRY OFFICES

WHO/CHINA

Dr Po-Lin CHAN, Senior Adviser, Hepatitis/HIV/STI, Office of the WHO Representative in the People's Republic of China, 401, Dongwai Diplomatic Office Building 23, Dongzhimenwai Dajie,

Chaoyang District, Beijing 1000600, Tel: +8610 6532 7190, Fax: +8610 6532 2359,
Email: chanpo@who.int

WHO/VIET NAM

Dr Masaya KATO, Communicable Diseases Group Coordinator, HIV Team Leader, Office of the WHO Representative in Viet Nam, 304 Kim Ma Street, Ba Dinh District, Hanoi, Tel: +844 3850 0299, Fax: +844 3726 5519, Email: katom@who.int

WHO HEADQUARTERS

Department of HIV, Avenue Appia 20, 1211 Geneva 27

Dr Gottfried HIRNSCHALL, Director, Tel: +4122 791 2796 Email: hirnschallg@who.int

Dr Stefan WIKTOR, Team Leader, Global Hepatitis Programme, Tel: +4122 7913485,
Email: wiktors@who.int

UNITED STATES CENTERS FOR DISEASE CONTROL AND PREVENTION

Atlanta, Georgia United States of America

Dr Francisco AVERHOFF, Associate Director for Global Health, Division of Viral Hepatitis,
Tel: +1404 718-8501, Fax: : +1404 718-8588, Email: fma0@cdc.gov

Dr John WARD, Director Division of Viral Hepatitis, Tel: +1 404 718 8523, Fax: +1 404 471 8706,
Email: jww4@cdc.gov.

5. RAPPORTEUR

Dr Kathrine MEYERS, Aaron Diamond AIDS Research Center, 455 First Avenue, Floor 7 New York, NY 10016, United States of America, Tel: +1 212 448 5087, Fax: +1 212 725 1126,
Email: kmeyers@adarc.org

www.wpro.who.int