Training workshop on screening, diagnosis and treatment of hepatitis B and C
Session 1C

Viral hepatitis in the Western Pacific region
Learning objectives

At the end of this session, participants will be able

• to demonstrate improved knowledge of regional epidemiology of viral hepatitis
• to understand the regional response and strategies to combat hepatitis
Elimination of Viral Hepatitis in the Western Pacific Region

January 2020
Outline

• Overview: current situation

• Implementing towards elimination: progress

• Future directions
Of the 325 million people living with HBV or HCV globally, 40% live in the Western Pacific Region.

Source: Global Hepatitis Progress Report, WHO 2017
There is large diversity of the burden of hepatitis B in the Western Pacific Region. Many of the countries in the Pacific region (small island states) bear a high burden of hepatitis B (where prevalence of HBV is > 5%)
The Hepatitis C prevalence is variable across countries in the Region, and also within countries. The main drivers for hepatitis C are unsafe injections, injecting drugs use, and from unsafe blood (previously). Mother to child transmission is also a route of transmission but at low levels.
### HBV and HCV estimates, Western Pacific Region

<table>
<thead>
<tr>
<th>Country</th>
<th>HBV Rate (%)</th>
<th>HCV Rate (%)</th>
<th>Source: WPRO hepatitis data and statistics, see <a href="http://www.who.int/westernpacific/health-topics/hepatitis/regional-hepatitis-data">http://www.who.int/westernpacific/health-topics/hepatitis/regional-hepatitis-data</a></th>
</tr>
</thead>
</table>

High burden in populous countries, e.g. China, Viet Nam, Philippines, Mongolia

**However,**

HBV epidemic:
high prevalence in Pacific Island States

&

HCV epidemic:
diverse across the Region

In the Western Pacific Region, HBV is endemic in several countries such as China, Papua New Guinea, Republic of Korea, Mongolia and Lao People’s Democratic Republic.

HCV is endemic in Mongolia.
As compared to HCV, HBV is much more common in WPR countries.
WPR has the highest burden of liver cancer globally, accounting for 60.3% of new cases of liver cancer and 60% of liver cancer deaths worldwide.

Most liver cancer is related to chronic hepatitis B or C.
Let’s look further in the impact of chronic hepatitis infection to health in the Region:
- We see that cirrhosis and liver cancer is already an issue from ages 30 years and above
- We know that the risk of cancer increases with age and this is evident as liver cancer is within the top 10 leading causes of death in the region
- Overall in WPR, liver cancer is the 6th top cause of deaths

These deaths, including related morbidity, is preventable. Earlier Treatment can prevent liver cancer
- Liver cancer is the 6th most common cancer worldwide; 5th in the Western Pacific region
- Liver cancer in the Western Pacific Region countries are mostly due to chronic hepatitis B or C infection, and can be prevented by treatment of those infected with hepatitis.
- Hepatitis C can be cured with effective direct acting antiviral combinations, while Hepatitis B can be effective treated with use of highly effective antivirals drugs.
Estimated number of deaths from liver cancer, attributable to HBV and HCV, Western Pacific, by country, 2016

This shows the number of death from liver cancer, attributable to HBV and HCV in the Western Pacific Region, 2016, by country.

In term of numbers, China has the largest numbers because of the large population size.

The Western Pacific Region has led the combat on hepatitis since the start with immunisation, moving EPI targets to achieve, and in 2015 – countries endorsed a comprehensive approach to elimination of hepatitis as public health threats, including prevention care and treatment.

In 2017, building on the progress achieved in the region, the framework for triple elimination of mother to child transmission of HIV, hepatitis B and syphilis was endorsed.

Note: immunization targets are for reduction of HBsAg prevalence among children 5 years of age.
Regional Framework for Triple Elimination of Mother-to-Child Transmission (EMTCT) of HIV, hepatitis B and syphilis in Asia and the Pacific, 2018–2030

The triple elimination framework has a clear vision, goals and targets to be achieved. This framework piggybacks on the existing dual elimination, with HBV elimination added on. The ultimate target for HBV is 0.1% prevalence among children by 2030.
Towards elimination of MTCT of HBV: Incremental approach to prevention of HBV infection at birth and in the first years of life

The interventions at the base of the pyramid benefit the largest number and are necessary for those at the top of the pyramid to be effective.

Taking the incremental approach, and building from the foundation of the immunization programme, working upwards through improving access to testing, linkage to care and follow up, and antiviral drug use for some women who have high viral load – so as to work towards an “almost zero infection”.
Shown here are the Global Health Sector Strategy for Viral Hepatitis (GHSS) 2016-2021 service and impact targets. Targets for 2020 include getting 3 dose hep B vaccine coverage to 90% and hep B birth dose coverage to 50%. Also, GHSS looks to reduce the incidence to 1% in children by 2020 and to 0.1% by 2030. The Western Pacific Region has met the prevention targets for the region and for global level. However, the main gap is in harm reduction, testing and treatment.

Note:
Mortality rate: highest in the WPRO region (24.1 deaths per 100,000) followed by SEAR region (21.2 per 100,000). The global average death rate is 18.3 per 100,000.

Source:
HBV vaccination: WHO Global and regional immunization profile (data as of 01 Dec 2019) Link: https://www.who.int/immunization/monitoring_surveillance/data/gs_wprprofile.pdf?ua=1
Safe injections:
Safe injections as defined as “use of an unopen syringe or needle”. Unsafe injections per person per year in WPRO = 0.019

Harm reduction among people who inject drugs: https://aidsinfo.unaids.org/
Indicator: Number of needles per person who inject drugs
Note – in 2018, there was no data estimated for the region, but data is available in several countries:

Testing and Treatment: Modelling estimates 2016 from WHO/CDA Foundation
PROGRESS
Successful Infant Vaccination Programme

2017 Regional target of <1% HBsAg prevalence among children achieved

Regional HBsAg prevalence among children 5 years of age = 0.93%

- Verified (21)
- Programme improvements required (6)
- Serosurvey with <1% but not submitted (2)
- Serosurvey planned (2)
- Verification under review (1)
- Serosurvey completed, results pending (1)
As more countries achieve the target of <1% HBsAg among children under 5 years of age, there is new interventions to further reduce the risk of mother to child transmission particularly among infants born to HBV-infected pregnant women. The Framework for triple elimination of HIV, syphilis and hepatitis B calls for coordinated delivery of integrated services for preventing mother to child transmission. Interventions consists of antenatal testing for HBV, antiviral prophylaxis for prevention of MTCT of hepatitis B among pregnant women who need it. The WHO guidelines for use of antiviral drugs among pregnant women infected with hepatitis B and the criteria to start is under development, and will be released in 2020.

Among HBV exposed infants, providing the timely birth dose of HBV vaccines within 24 hours is essential. HBIG use is recommended as part of current standard guidelines, but may not be available or affordable in many low and income countries.

The table provides an overview of national guidelines or interventions delivered for HBV EMTCT in WPRO, as of December 2019.
Beyond vaccination for hepatitis B as the prevention, to get towards hepatitis elimination by 2030, it is important to have national comprehensive strategic or action plans, which include both prevention and treatment. National Plans articulate the vision, goals and set targets to be achieved and funded for the country.

In the Western Pacific Region, which consists of 37 countries and territories, more and more countries are development their national plans for prevention and treatment.
WHO recommends tenofovir or entecavir to treat hepatitis B (2015)

Both tenofovir and entecavir are off-patent

**Tenofovir**  US$ 30 per person-year (median price)

**Entecavir**  US$ 36 per person-year (minimum estimated price)


Hepatitis B medicines (tenofovir and entecavir) are available in all countries, in generic and originator options. Tenofovir and entecavir are off-patent

The median prices for tenofovir globally is US$ 30 per person-year

For entecavir: this is estimated at US$ 36 per person year

The prices of both medicines are approaching similar prices as countries list both into their essential medicines list, and promote generic options for both.

As an example, China’s prices are US$ 10 per person-year for both tenofovir and entecavir, using generically manufactured medicines, and central procurement
**HCV medicines registration status in selected countries, Western Pacific Region, January 2020**

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Countries where the medicine is registered by the national regulatory authority</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis C direct acting antivirals (DAA)</strong></td>
<td></td>
</tr>
<tr>
<td>Sofosbuvir</td>
<td>AUS, CHN, HOK, JPN, KHM, KOR, LAO, MNG, MYS, NZL, PHIL, PYF, SGP, VNM</td>
</tr>
<tr>
<td>Ledipasvir + sofosbuvir</td>
<td>AUS, CHN, HOK, JPN, KHM, KOR, LAO, MNG, MYS, NZL, PHIL, PYF, SGP, VNM</td>
</tr>
<tr>
<td>Simeprevir</td>
<td>CHN, JPN, PYF, SGP</td>
</tr>
<tr>
<td>Daclatasvir</td>
<td>AUS, CHN, HOK, JPN, KHM, KOR, LAO, MNG, NPL, PHIL, SGP, VNM</td>
</tr>
<tr>
<td>Dasabuvir/ombitasvir + paritaprevir + ritonavir</td>
<td>AUS, BRN, CHN, HOK, JPN, KOR, MYS, NZL, PHIL, SGP</td>
</tr>
<tr>
<td>Ribavirin</td>
<td>AUS, BRN, CHN, HOK, KHM, KOR, LAO, MNG, MYS, NZL, PHIL, PRC, PYF, SGP, VNM</td>
</tr>
<tr>
<td>Velpatasvir + sofosbuvir</td>
<td>AUS, CHN, KHM, HOK, LAO, MNG, MYS, NZL, PYF, SGP</td>
</tr>
<tr>
<td>Elbasvir + grazoprevir</td>
<td>AUS, CHN, KHM, MYS, NZL, PYF, SGP</td>
</tr>
<tr>
<td>Glecaprevir + pibrentasvir*</td>
<td>AUS, CHN, HOK, JPN, NZL, KOR, SGP</td>
</tr>
<tr>
<td>Sofosbuvir + velpatasvir + voxilaprevir*</td>
<td>AUS, CHN, NZL, SGP</td>
</tr>
<tr>
<td><strong>HBV and HCV</strong></td>
<td></td>
</tr>
<tr>
<td>Pegylated interferon alfa (2a or 2b)</td>
<td>AUS, BRN, CHN, HOK, JPN, KHM, KOR, LAO, MNG, MYS, NZL, PHIL, PYF, SGP, VNM</td>
</tr>
</tbody>
</table>

* Pangenotypic DAA combinations are: sofosbuvir/daclatasvir, glecaprevir/pibrentasvir, and sofosbuvir/velpatasvir/voxilaprevir

Hepatitis C direct acting antiviral drugs (DAAs) are increasingly being registered in countries.

New pangenotypic combination DAAs such as glecaprevir/pibrentasvir & sofosbuvir/velpatasvir/voxilaprevir is being registered in some countries but mainly high income.

Sofobuvir/daclastavir is registered in most countries, and is the most widely used pangenotypic regimen currently (as of Jan 2020).
Access to Hepatitis Care: affordability and sustainable financing of HBV and HCV-DAA treatment is essential, January 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>HBV</th>
<th>HCV-DAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Brunei Darussalam</td>
<td>Financed</td>
<td>Financed*</td>
</tr>
<tr>
<td>Cambodia</td>
<td>OOP</td>
<td>OOP</td>
</tr>
<tr>
<td>China</td>
<td>Financed</td>
<td>Financed**</td>
</tr>
<tr>
<td>Hong Kong (China)</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Japan</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>OOP</td>
<td>OOP</td>
</tr>
<tr>
<td>Macao (China)</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Financed</td>
<td>Financed</td>
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<tr>
<td>Mongolia</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>OOP*</td>
<td>OOP</td>
</tr>
<tr>
<td>Philippines</td>
<td>OOP*</td>
<td>OOP</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Singapore</td>
<td>Financed</td>
<td>Financed</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Financed</td>
<td>Financed</td>
</tr>
</tbody>
</table>

* Brunei: using PEG-INF. DAA planned to be used
** China: DAA under health reimbursements from Jan 2020
OOP: Out-of-pocket

Access to medicines for HBV and HCV has seen improvements. In general, most countries have drugs for hepatitis B registered, and most countries do have registration of DAA completed or in progress. However, registration of drugs does not mean access to most of the people who need it.

In several countries, hepatitis C drugs are now under universal health coverage (taken here as being financed under health insurance and thus, accessible to most of the population).

High costs for HCV DAAs remain challenging in the region even among countries which have the drug registered, and/or covered through health insurance. Affordability of tests and treatment remains an issue in many countries. Thus more work is needed for price reductions of tests and medicines.

UHC: covered by health insurance and/or government financed OOP: out of pocket
However, there is a large gap in care. Of those who are infected, only a minority know their status and are accessing treatment.

HBV cascade: not all people infected with HBV need treatment according to their disease staging.

Thus, much more needs to be done to scale up service delivery
TOWARDS ELIMINATION
The learning from countries is that national comprehensive action is a coordinated response of many programmes and technical areas and is country-specific to the health systems, financing systems, current health reforms, approaches to access medicines, civil society, delivery systems etc.

All these programs/areas already exists.

The actions are to deliver integrated services, optimizing delivery of services, and synergizing common outcomes that programmes share:

Example 1: for the hepatitis B prevention of mother to child transmission – this requires at minimum the roles of immunization programmes, maternal child health to deliver prevention of mother to child transmission interventions and clinical services (physicians) to care for mother and child

Example 2: Treating chronic hepatitis B and C will reduce the risk of developing liver cancer. Thus, treating hepatitis early prevents liver cancer, and more can be done to advocate and communicate to the public in this area. Linking reporting of viral hepatitis and the cancer registry will help improve information
### Eliminating Viral Hepatitis in Western Pacific Region by 2030

**We have achieved,**
- ✔ Successful hepatitis B vaccination programme
- ✔ National action plans / guidelines developed
- ✔ Increased availability and affordability of hepatitis medicines

**Challenges remain,**
- ✗ Lack of political commitment and resources
- ✗ Lack of data at national/subnational levels
- ✗ Low coverage of harm reduction
- ✗ Limited access to testing and treatment

In the journey to elimination of hepatitis,
Delivering at scale

*using the public health approach to hepatitis elimination*

- **Scale-up and decentralize** testing and treatment services to primary health care
- **Accelerate** HBV elimination of mother to child transmission through integrated antenatal and follow-up services
- **Enhance** integrated service delivery and task-sharing delivered by non-specialists and non-physicians
- **Integrate hepatitis reporting** and monitoring into existing surveillance and health information systems
- **Sustain hepatitis services** as part of universal health coverage
- **Engage community and peer support** to promote access and linkages
Summary

- Hepatitis is a major public health burden
- Prevention needs to be scaled up and sustained
- Chronic hepatitis B and C cause substantial health and related costs (economic burden, human suffering...)
  - Highly effective drugs available and high price still barrier in some countries
  - Treatment prevents progression of disease, lowers risk of developing liver cancer
  - HCV treatment (with new DAAs) : CURE
- Countries are overcoming barriers – much progress, but more needs to be done
Thank You

HEPATITIS.
TIME TO TEST.
TIME TO TREAT.
TIME TO CURE.

325 MILLION PEOPLE ARE LIVING WITH CHRONIC VIRAL HEPATITIS B AND C INFECTIONS WORLDWIDE.

#TestTreatHepatitis
#WorldHepatitisDay