

THIRD BI-REGIONAL CROSS-BORDER MEETING
ON MEASLES, RUBELLA, POLIO AND OTHER
VACCINE-PREVENTABLE DISEASES

Jakarta, Indonesia, 18-20 September 2017



THIRD BI-REGIONAL CROSS-BORDER MEETING ON MEASLES, RUBELLA, POLIO AND OTHER VACCINE-PREVENTABLE DISEASES (SEA/Immun/118)

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Acronyms

ADS	Anti-diphtheria serum
AFP	Acute Flaccid Paralysis
ASEAN	Association of South East Asian Nations
ASEAN-ECO	ASEAN Economic Cooperation Organization
DPR	Democratic People's Republic
DQA	data quality assessment
EPI	Expanded Program on Immunization
HQ	Head Quarter
IHR	International health Regulation
IVD	Immunization and vaccines Development
MBDS	Mekong Basin Disease Surveillance
MeaNS	measles nucleotide surveillance
MOH	Ministry of Health
MOU	Memorandum of Understanding
MR	measles rubella
NIP	National Immunization Program
PDR	Peoples' Democratic Republic
PHEIC	Public Health Emergency of International Concern
RRT	Rapid Response Team
SAARC	South Asian Association for Regional Cooperation
SEARO	South-East Asia Regional Office
SIA	Supplementary Immunization Activities
SOPs	Standard Operating Procedures

TAG	Technical Advisory Group
UNICEF	United Nations' Children fund
US CDC	United States Centre for Disease Control
VPD	Vaccine Preventable Diseases
WHA	World Health Assembly
WHO	World Health Organization
WPRO	Western Pacific Regional Office
WR	WHO Representative
YF	Yellow Fever

Executive Summary

In line with the Global Vaccine Action Plan and the Regional goals on eradication, elimination and control of vaccine preventable diseases, WHO Regions of South-East Asia and Western Pacific have regularly conducted bi-regional cross-border workshops/meetings on measles, polio and other vaccine-preventable diseases (VPDs) that are alternately hosted by each Region every two years. The second meeting was hosted by the WHO Regional Office for Western Pacific from 12–14 May 2015 in Vientiane, Lao People’s Democratic Republic. The third bi-regional cross-border meeting on measles, rubella, polio and other VPDs, was hosted by WHO Regional Office for South-East Asia in Jakarta, Indonesia, from 18–20 September 2017.

The general objective of the meeting was to strengthen regional capacity to collaborate, coordinate and share information about cases of measles, rubella, polio and other VPDs as part of the VPD surveillance program and ensure early and comprehensive response to outbreaks that extend or threaten to extend across national borders and Regions.

The specific objectives of the meeting were:

- (1) to identify high-risk border areas and populations and define activities to mitigate risks, focusing on measles, rubella and other VPDs;
- (2) to assess and further strengthen outbreak notification and information sharing mechanisms across borders for measles and rubella ;
- (3) to strengthen the coordination mechanism for regular sharing of surveillance data for measles, rubella, acute flaccid paralysis and other VPDs;
- (4) to review that status of implementation of the recommendations made at the second bi-regional cross-border meeting on measles, rubella, polio and other VPDs that was conducted in Lao PDR in 2015; and
- (5) to make recommendations to further strengthen cross-border measles-rubella surveillance and elimination/control efforts.

The meeting shifted the focus from polio, as during the previous meeting, to measles elimination and rubella/congenital rubella syndrome control. Presentations were made by all 16 countries that participated in the meeting with focus on core review of capacities to tackle cross border issues as per the International Health Regulations (IHR). Progress towards meeting the recommendations made in the previous meeting was reviewed and

participants developed action plans for the next two years following an intense group work. The action points are listed in the respective sections.

1. Introduction

In line with the Global Vaccine Action Plan and the Regional goals on eradication, elimination and control of vaccine-preventable diseases (VPDs), WHO Regions of South-East Asia and Western Pacific have regularly conducted bi-regional cross-border meeting on measles, rubella, polio and other VPDs that are alternately hosted by each Region every two years. The second meeting was hosted by the WHO Regional Office for Western Pacific from 12–14 May 2015 in Vientiane, Lao People's Democratic Republic. The third bi-regional cross-border meeting on measles, rubella, polio and other VPDs, was hosted by WHO Regional Office for South-East Asia in Jakarta, Indonesia, from 18–20 September 2017.

The meeting was attended by participants from 16 countries (nine from South-East Asia Region and seven from Western Pacific Region), three partner organizations (UNICEF, US CDC and Mekong Basin Disease Surveillance Program), WHO staff from HQ, regional and country offices of the Western Pacific and South-East Asia Regions.

2. Objectives of the meeting

The general objective of the meeting was to strengthen Regional capacity to collaborate, coordinate and share information about cases of measles, rubella, polio and other VPDs as part of the VPD surveillance program and ensure early and comprehensive response to outbreaks that extend or threaten to extend across national borders and Regions.

The specific objectives of the meeting were:

- (1) to identify high-risk border areas and populations and define activities to mitigate risks, focusing on measles, rubella and other VPDs;
- (2) to assess and further strengthen outbreak notification and information sharing mechanisms across borders for measles and rubella ;
- (3) to strengthen the coordination mechanism for regular sharing of surveillance data for measles, rubella, acute flaccid paralysis (AFP) and other VPDs;
- (4) to review that status of implementation of the recommendations made at the second bi-regional cross-border meeting on measles, rubella, polio and other VPDs that was conducted in Lao PDR in 2015; and
- (5) to make recommendations to further strengthen cross-border measles-rubella surveillance and elimination/control efforts.

3. Organization of the meeting

The meeting was inaugurated by Dr Jane Seopardi, Director of Surveillance and Quarantine Health from the Ministry of Health of the Republic of Indonesia followed by remarks from the Regional Director, SEARO and from the representative from WPRO.

The first half of day 1 of the meeting was dedicated to global and regional updates on the status of measles, rubella, polio and other vaccine preventable diseases and key actions that have been taken at global and regional level.

The second half of day 1 and the entire second day focused on country presentations and the discussions on key surveillance updates from countries, progress made towards implementing recommendations made in the second bi-regional cross-border meeting, core International Health Regulations (IHR) capacities for cross-border collaboration on VPDs and linkage with IHR network, key issues, challenges, lessons learnt and ways forward on cross border collaboration to report, and respond to VPDs outbreak across the Regions.

The agenda for the meeting is available as Annex 1 and the list of participants as Annex 3. Secretarial support was provided by WHO-SEARO. All the sessions of the meeting were web-cast live through WebEx; the links were shared with all relevant partners and stakeholders in advance of the meeting.

4. Key highlights

The following are the key highlights of the discussions during the meeting. The detailed presentations and the abstracts are available as Annex 2.

- 1) All countries that participated have identified and documented their high risk populations, high-risk border areas for measles rubella and other VPDs and emphasized the need for sharing of this information across borders.
- 2) Most countries have well-functioning, stand-alone VPD surveillance systems for measles, rubella, and AFP while some countries conduct surveillance for these and other diseases as part of Integrated Diseases Surveillance. A variety of event-based and community/rumor-based surveillance systems contribute to the VPD surveillance in many countries. The existence and extent of surveillance for diphtheria, pertussis and other invasive bacterial diseases vary by country.
- 3) Countries reported progress towards implementing the recommendations from the second bi-regional cross-border meeting and most countries noted challenges with

implementing some recommendations, especially the recommendation to develop and implement Memoranda Of Understanding (MOUs) with neighboring countries for reporting on disease cases and outbreaks occurring near or extending across borders. Countries shared experience on use of MOUs for cross border activities, and identified the risk that such MOUs may be in silo and countries may not be interested on only VPDs but on a wider MOU across other health issues.

- 4) All countries are party and committed to IHR. All countries have self-assessed or had a Joint External Evaluation of their core IHR capacities. These assessments have in general revealed that the core capacities for coordination of reporting of surveillance data, response and preparedness across borders are at various levels and in need of strengthening.
- 5) Countries identified the need to reach out to IHR networks and to enhance cross-border reporting of cases. WHO could facilitate process to include the EPI program on such mailing list from IHR focal points on cross-border/cross-regional diseases notifications.
- 6) Sub-regional bilateral and multi-lateral MOUs and mechanisms exist across countries for cross-reporting of cases but these have not been utilized optimally by EPI programs (MBDS, ASPED, ASEAN-ECO etc.) – currently, they are mostly used to report Public Health Emergencies of International Concern (PHEICs). Countries identified the need to better utilize such MOUs and other mechanisms for reporting VPDs across borders as well as to review lessons learned from such mechanisms which might be replicates in other settings as applicable within the Regions.
- 7) Experiences from VPD outbreaks that cross international borders have shown that:
 - High-level political commitment is generally required for information sharing;
 - Well-defined mechanisms for cross-border communication and coordination exist for polio (through IHR as well as VPD surveillance program) but they do not for measles, rubella and other VPDs;
 - There is need for regular better coordination at local levels and ability to “cut the red tape”;
 - Mutually agreed upon standard operating procedures (SOPs) will be helpful to have better coordination for cross-border meetings and for responding to outbreaks as well as synchronize responses;
 - Developing cross-border meetings contacts and enhancing communication across borders is important – countries could use forums like this meeting to this end;

- The epidemiology of diseases varies by country and different countries have different requirements that determine their VPD surveillance and outbreak response. For example, for Bhutan, which has certified that it has eliminated endemic measles, it may be important to screen all travelers entering the country for measles and rubella vaccine; whereas for India, which borders Bhutan and still has endemic measles, screening all travelers entering the country may not be a priority. These countries have different definitions for outbreaks; different response mechanisms and thus local discussion at local borders are helpful.
- 8) The meeting identified the need to have supplemental immunization activity (SIA) calendars on measles and rubella (similar to that for Polio SIA) for the Regions that are shared widely across Regions to help better plan synchronization of SIAs.
 - 9) There is a need to stockpile anti-diphtheria serum (ADS) at Regional levels and make it accessible to countries in the event of outbreaks to help intervene early and provide effective case management.
 - 10) There is a need to escalate consideration of the agenda on cross-border collaboration for VPDs up to a higher level:
 - WHO should include consideration of the agenda at the WHO Representatives' (WR) meeting and at the Immunization Technical Advisory Group (TAG) meetings in the two Regions;
 - Member States should include consideration of the agenda at Regional Committee Meetings to consider as a World Health Assembly (WHA) agenda.

5. Way forward

Following an intense group discussion, participants came up with a number of action points to be completed in the next two years.

On legal/strategic framework

For Member States

- National VPD focal points to conduct an assessment on the need for establishment of a working cross-border collaboration platform for VPDs. Where applicable countries may develop bilateral MOUs between bordering countries – national or subnational as deemed necessary by the VPD focal points.

For WHO

- WHO Country offices along with respective IHR teams in country offices to support the assessment of borders that require MOUs in respective countries and in collaboration with Regional Office provide samples of MOU to facilitate the process.
- WHO Regional offices to explore possibilities to better utilize the ASEAN and SAARC forum to strengthen regional information/data sharing and action for VPD outbreaks.

On Coordination mechanism

For Member States

- Countries to use existing/established mechanism where possible to foster cross-border collaborations in coordination with IHR focal points. Respective National VPD focal points to ensure that VPD is an agenda between cross-border meeting of administrators/law enforcement agencies and also explore and utilize informal data sharing opportunities with cross-border counterparts to obtain timely and actionable information that can be further pursued using formal means.
- National VPD surveillance focal points to involve the IHR focal points during in-country VPD reviews as well as coordinate with IOM and other agencies to map mobile population across borders.
- Countries to take all possible opportunities to synchronize SIAs across international boundaries – ensuring susceptible cohorts do not develop over time – time period for synchronization of measles and rubella SIA activity could be within a time-period of a year across international borders.

For WHO

- WHO to facilitate synchronized cross-border outbreak response by developing and sharing Regional SIA calendar for measles, rubella and other VPDs as applicable.
- WHO Country offices to provide technical support in developing SOPs for cross-border VPD surveillance reporting and response in coordination with the IHR focal points.
- IHR-DON (Disease Outbreak Notification) email lists to be expanded to include EPI medical/program officers in WPRO and SEARO. WHO SEARO/WPRO to facilitate this process. WHO country offices to encourage countries and EPI program to access WHO Immunization website for surveillance and coverage data

On Surveillance and Immunization activities

For Member States

- Respective National VPD surveillance focal point to ensure that the new Regional VPD surveillance guidelines are adopted/adapted by the country and includes specific actions on cross-reporting of VPDs.
- Timor-Leste - Indonesia: first cross-border meeting to be convened during the 2nd week of December 2017 by respective Ministry of Health.

For WHO

- WHO SEARO and WPRO to exchange surveillance information on measles, rubella and other VPDs on a weekly basis and share with respective countries through respective country offices.

On Response mechanism

For Member States

- Respective National VPD surveillance focal point to ensure that national/subnational outbreak preparedness and response plan include specific risk analysis of cross-border risks, and provide outbreak response immunization targeting population along the border areas regardless of national origin. Such plan to have provision to deploy Rapid Response Teams (RRTs) that are well oriented on measles, rubella and other VPDs.

For WHO

- Provide technical support to outbreak preparedness and response plan and facilitate orientation of the RRTs.

Others

For Member States

- Human resource: Ensure that vacant positions in high risk border areas are filled up on a priority basis (MOH).
- Laboratory support
 - Genotypes of Measles and Rubella viruses to be shared to Global Nucleotide Surveillance systems for each chain of transmission (MR labs and WHO) and shared

timely with countries – need to be systematically provide feedback to programs regularly.

- VPD laboratory network capacity is enhanced on a regular basis, including strengthening of case investigation and classification, capacity building, and ensuring the availability of diagnostic kits and reagents are available (ongoing activity - Resp. MOH, WHO, US CDC).
- Countries to share mid-term progress report on the action points to WCO/Regional Offices by October 2018.

WHO

- WHO Regional Offices have a Stockpile of Anti-Diphtheria Serum and are accessible to countries during the times of outbreaks.
- Respective Regional Offices have a session on cross-border VPD activities in the next Regional TAG meeting.
- Support the countries in following up on communicating and implementing recommendations and action points of this bi-regional meeting.
- To facilitate the fourth meeting that is proposed to be held during second quarter of 2019 in China and include the representatives of IHR focal points, from countries and WHO ROs/COs, part of future bi-regional meetings (WHO).

Annex 1-Agenda of the meeting

Day 1	Remarks
<p>Opening session</p> <ul style="list-style-type: none"> - Opening remarks by Regional Director, SEARO - Remarks by representative of WPRO - Welcome remarks and inauguration of the meeting by Ministry of Health (MOH) Indonesia - Objectives of meeting and housekeeping announcement 	WHO SEARO
<p>Presentations on the status of measles, rubella and other priority VPDs</p> <ul style="list-style-type: none"> • Global update (20 min) • South-East Asia Region (20 min) • Western Pacific Region (20 min) • MR laboratory network in SEARO and WPRO 	<p>WHO HQ WHO SEARO WHO WPRO WHO HQ</p>
<p>Status of cross-border capacities on VPD surveillance and response to outbreaks with focus on measles and rubella</p> <p>A. SEARO (20 min) B. WPRO (20 min)</p>	<p>WHO SEARO WHO WPRO</p>
<p>Cross-border issues (surveillance and outbreak response) on Measles, Rubella and other VPDs in South-East Asia and Western Pacific regions (Country presentations – 20 min each)</p> <p>- Bangladesh, Bhutan, Cambodia and China</p>	Respective MOHs
Day 2	Remarks
<p>Country presentation and discussion on: Cross-border issues (surveillance and outbreak response) on Measles, Rubella and other VPDs in South-East Asia and Western Pacific regions (Country presentations – 20 min each followed by discussions)</p> <p>- DPR Korea, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Papua New Guinea, Philippines, Thailand, Timor-Leste and Viet Nam</p>	Respective MOHs
Day 3	
<p>Experience from Bangladesh and Philippines on the use of sub-national risk assessment tool on measles and rubella (20 min)</p>	Respective MOH
<p>Group Work session: Cross-border collaboration in preparedness and response to outbreaks of measles,</p>	All

rubella and other vaccine-preventable diseases and action plan for next two years Group A: China, Cambodia, Lao PDR, DPR Korea, Myanmar, Thailand and Viet Nam Group B: Bangladesh, Bhutan, China, India, Myanmar and Nepal Group C: Indonesia, Malaysia, Papua New Guinea, Philippines and Timor-Leste	
Closing Session - Conclusions and Recommendations - Remarks by UNICEF, US CDC, WPRO and SEARO - Closing by MOH Indonesia	

Annex 2- Abstracts of Presentations

All presentations made in the meeting are available in the following link in the order of presentations made as per the agenda.

<http://www.searo.who.int/entity/immunization/meetings/crossborder2017/en/>

1. Username - cb2017_user1
Password - cb2017@123

OR

2. Username - cb2017_user2
Password - cb2017@123

The abstracts of presentations as provided by the respective presenters are included herewith:

1. Global Update

The measles rubella global update talk was presented by Mr Mulders Miguel, from WHO HQ. Among the key highlights were the updated 2016 figures for global MCV1, MCV2 and RCV coverage (85%, 64%, and 46%, respectively) and general discussion of progress toward the WHA 2010 measles targets and 2012 GVAP Regional goals. Overall, only the Region of the Americas had achieved elimination goals, having eliminated rubella in 2015 and measles in 2016. The European Region is next with 21 and 20 countries achieving measles and rubella elimination, respectively. The SE Asian Region has maintained MCV1 coverage firmly above 80% for the past 6 years and has seen a rapid rise in MCV2 coverage. The Regional Verification Commission had its first meeting in August of this year and next year may be ready to verify Bhutan and the Maldives free of endemic measles. The big challenge is to further improve routine coverage and surveillance performance in three largest countries (India and Indonesia). The presenter also discussed developments in the SEAR of potential interest to WPR countries, including phased MR introductions in both India and Indonesia in 2017 and 2018. Other global developments discussed included, polio transition and its possible impact on MR elimination, the findings of the midterm review of the M&RI strategic plan 2012-2020.

2. Update from SEARO

Dr Sunil Bahl from WHO SEARO presented on the achievement on the eight goals of the South-East Asia Regional Vaccine Action Plan with focus on measles elimination and rubella/CRS control which is a flagship priority for the Region. The Region has adopted the goal of measles elimination and rubella/CRS control by 2020 and significant progress has been made with 5/11 countries achieving 95% coverage for MCV1 and MCV2, all countries, except one, introducing Rubella vaccine in Routine immunization and case-based surveillance for measles and rubella instituted in all eleven countries. Two countries, Bhutan and Maldives were verified as having eliminated measles in 2017.

3. Update from WPRO

The WHO Regional Committee for the Western Pacific first endorsed measles elimination as a goal in 2003 and set a target year for elimination of 2012 in 2005. In 2014, the Regional Committee endorsed a regional framework for implementation of the Global Vaccine Action Plan, which includes goals for five of six WHO

regions to achieve measles and rubella elimination by 2020. The lowest incidence of reported measles cases in WPRO occurred in 2012, but since that time, a relative resurgence of measles occurred in 2013 and peaked in 2014. The majority of the cases in 2015 occurred in children less than 2 years of age who were not yet eligible to receive two doses of measles-containing vaccine. Reported vaccine coverage with both MCV1 and MCV2 is approaching 95%, which is largely driven by high reported coverage from countries with large populations. All countries and areas of the Region now include rubella in their routine immunization schedule, but surveillance for congenital rubella syndrome is not systematic across the Region. The recent resurgence highlighted several challenges for the Region: immunity gaps among infants too young to vaccinate, older adolescents and young adults – persons who are not ordinarily targeted during routine or supplemental immunization; large population size and density of some affected countries; nosocomial spread within healthcare settings; subnational heterogeneity in epidemiology; and frequent virus importation due to ongoing endemic transmission among neighboring countries and areas in the region and nearby regions.

The Western Pacific Region has remained polio-free since certification in 2000. However, there are still countries/areas with immunity gaps due to sub-optimal coverage with polio vaccines, and AFP surveillance performance varies notably among the countries/areas. The regional polio laboratory network (RPLN) plays a crucial role in monitoring the presence of poliovirus (including WPV, VDPV and Sabin virus), confirmation of results of AFP cases and non AFP cases, and documentation of the elimination of type 2 polio viruses following the switch. No type 2 any polio isolates were detected from AFP cases and ES samples since September 2016. Implementation of polio laboratory containment (GAP III) is ongoing in the Region, but with some operational impediments. The polio Post-Certification Strategy (PCS) is a strategy being developed to establish the high level technical standards that are needed to sustain a polio-free world after global certification of polio eradication.

4. Status of cross border capacities on VPD surveillance in SEARO

Dr Sudhir Khanal presented on the status of the eight core capacities as identified by IHR in SEAR and highlighted that preparedness, surveillance and cross-border activities are areas that need additional effort as shown by both country self-assessments as well as through Joint external Evaluation. Dr Sudhir also shared the experience in SEAR and across regions on what worked well and what are lessons learnt for cross-border collaborations and the need to reach out to IHR network for cross-border collaboration.

5. Status of cross border capacities on VPD surveillance in WPRO

Dr James Heffelfinger presented on routine on non-routine EPI data collected by WPRO, WPRO's EPI Surveillance and Data Management Team activities and surveillance systems and data collected from countries in the region using the WHO-UNICEF Joint Reporting Form. He also discussed particular issues and challenges with measles, polio and Japanese encephalitis surveillance and immunization activities and response to outbreaks. He also presented the findings of the 2017 VPDs surveillance survey in the Western Pacific Region. The objectives of this survey were to better understand VPD surveillance systems in all countries in the region (with particular focus on measles and rubella), support development of strategies to strengthen VPDs surveillance system, and identify countries with surveillance systems that monitor diseases potentially targeted by newer vaccines. Findings from the survey indicated that all countries in the Western Pacific Region except one Pacific Island country have national surveillance systems, 11 of the 26 countries with national surveillance

systems reported having an integrated surveillance system for all or most VPDs and 5 countries have a syndromic surveillance system. The survey did identify some challenges, including fragmentation of surveillance systems for various VPDs, duplication of systems for some VPDs, and varying sensitivity and representativeness of surveillance for some VPDs. Lastly, Dr Heffelfinger discussed International Health Regulations (IHR) and IHR core capacities in the Western Pacific Region.

6. Country presentation-Bangladesh

Mr Saiful Hassan Badal presented that Bangladesh has 22 land crossing points, 3 international airports and 2 sea ports. Bangladesh shares >95% land crossing points with India and rest with Myanmar. The border with India is mainly with the state of West Bengal and Assam. This geographical situation has implications in cross-border transmission of measles, rubella, polio and other VPDs.

Bangladesh has a strong national VPDs surveillance system with addressing immediately reportable for polio, AFP, measles, CRS, NT and AES cases including weekly zero reporting and laboratory confirmation system. Since November 2006, Bangladesh has successfully been maintaining polio free status. In response to two cases of cVDPV type-2 were reported in the Rakhine state of Myanmar, Bangladesh in 2015 conducted two-round 'OPV mop up vaccination campaign' in three sub-districts, vaccinated children up to 10 years who had crossed Bangladesh-Myanmar border and strengthened VPDs surveillance. Bangladesh provides OPV regularly to under-5 year old children at points of entries.

From the last decade until now, undocumented Myanmar national (UMN) from northern Rakhine state have been entering into adjacent border sub-districts of Bangladesh. These unofficial movements across the border have consequences for public health. In response to this, Government of Bangladesh has planned to vaccinate 1 dose MR vaccine to all children from 6m to <15 y, 2-dose OPV for <5y including distribution of Vitamin-A among children. Increased cross-border movement of population, unofficial movement of people across the border sub-districts, low immunization or incomplete vaccination coverage among the UMNs and absence of information sharing between health authorities of bordering states/districts are identified as major challenges for cross-border VPDs surveillance.

WHO Bangladesh has been coordinating with MoH&FW in sharing information on cross-border issues (surveillance and out-break response) on measles, rubella and other VPDs surveillance and supporting Bangladesh in implementing IHR and hope that country would be able to reach IHR compliance.

7. Country presentation-Bhutan

Mr Sonam Wangchuk presented on behalf of the Government of Bhutan and informed that Bhutan has maintained high vaccination coverage for VPD's for last ten years and achieved polio elimination in 2014 and measles elimination in 2017 respectively. Bhutan is now working for rubella elimination by 2020. However sustaining eliminated VPD's is challenging due high risk of importation across the border as Bhutan shares long open porous border with India that stretch from East (Arunachal Pradesh), South (Assam & West Bengal) and West (Sikkim). To mitigate the risk of VPD's importation in border areas especially the polio and measles, Bhutan has conducted measles and rubella SIA in August 2017 in high-risk communities in border areas and re-enforced routine immunization programme and risk communication for polio, measles and rubella. Bhutan has also instituted active surveillance in hospitals located in borders areas in addition to case-based

surveillance for polio and measles. Bhutan is pursuing an establishment of cross-border collaboration at border entry points with Indian states on cross-border VPDs transmission information sharing, prevention, preparedness and response. Bhutan employs significant number of migrant workers from India for its economic developmental activities. All migrant workers entering Bhutan need to undergo mandatory medical screening at border entry points however, the requirement for immunization documentation of polio, measles and rubella has not yet introduced as this entail policy decision with concern ministries and private institutions. Bhutan is committed to work on strengthening cross-border collaboration on VPDs and other communicable disease transmission prevention, preparedness and response.

8. Country presentation-Cambodia

The Cambodian delegates presented that Cambodia is a country in mainland South-East Asia, bordering Thailand, Laos, Viet Nam and the Gulf of Thailand. The length of Cambodia-Thailand border is 803km, Cambodia-Lao PDR is 435km and Cambodia-Viet Nam is 1,228km (Total border length is 2,466km). 22 official entry points has been declared (2 international airports, 19 land entry points and 1 international seaport). The surveillance system of VPDs included facility base (public and selected private facilities) and community base. VPDs surveillance list included Polio, Measles, Rubella, CRS, JE, Diphtheria, Pertussis and Neonatal Tetanus.

Regarding the Cambodia Joint External Evaluation (JEE), Technical capacity scores showed that there's no indicator reached 5 score, 12.5% of indicator 4 score, 29.0% reached 3 score and 12.5% of indicator reached 1 score.

The progress toward the recommendations for member states from the 2nd bi-regional cross-border meeting, 12–14 May 2015, only 2 recommendations out of 7 are achieved. Cambodia has shared the experience on Measles outbreak response over the period 15 months, from January 2016 to May 2017 which are labelled as multiple importations. The Ministry of Health, Cambodia, decided to provide MR0 to children from 6-<9 months old, MR1 for 9-18 months old, MR2 for 19-<24 months old and MR extra for children from 24-59 months old as ORI.

Way forward, NIP needs strong collaboration such as trying to be linked to country's existing cross-border collaborative mechanism of other programmes under the MOH or local government. NIP has been working with IHR and will continue its effort to improve information sharing. Partners may conduct advocacy to senior officials of Government for legal/administrative issues such as screening at entry points, vaccination to overseas workers. NIP of each country may think to select focal point for information sharing through IHR. Unofficial information sharing among NIP of neighbouring countries need to be done, if possible. There is need to establish a mechanism to have tele-conference/video-conference with neighbouring countries and/or periodic face to face meeting at border area. WHO may play roles of sharing information of VPD disease outbreak in timely manner.

9. Country presentation-DPR Korea

The presenter highlighted that DPR Korea is located in North-East Asia and bordered with China in WPRO and Russia in EURO requiring coordination with three WHO Regions. VPD surveillance system in DPR Korea includes the disease like polio, measles, rubella, infant diphtheria, pertussis, influenza hemophilus influenzae B, mumps and Japanese encephalitis under the vertical guidance by State Hygiene and Inspection Bureau, MoPH.

The country is committed to IHR and has met most of the criteria on the IHR core capacities. Key challenges include insufficient coordination of outbreak notification and information sharing with neighboring countries across the border in order to respond to VPD outbreaks timely; difficulties in receipt of Lab reagents and kits and other supplies even with WHO support is impacting the timely diagnosis and laboratory confirmation of VPDs; and training huge workforce involved in VPD surveillance at the hospital and community level on regular basis in line with the changing global surveillance requirements.

The presentation highlighted some way forward as need for active support from WHO SEARO for timely provision of lab reagents, kits and other supplies for rapid and accurate confirmation of VPDs; support from neighboring countries to facilitate shipment/transport of laboratory reagents and supplies; WHO support and cross-border cooperation with neighboring countries (including IHR focal points) to further strengthen improvement of information sharing and outbreak notification; and support for cross-border sharing of experience and learning laboratory technologies used and developed in collaboration with WHO.

10. Country presentation-India

Dr M K Agarwal presented on behalf of India and informed that India has 15107 km of land border, with seven countries, running through 92 districts and 17 states. Countries are Bangladesh, China, Pakistan, Nepal, Myanmar, Bhutan and Afghanistan. India has 256,000 migrant sites and 166,000 high risk areas out of which 134,037 migrant sites and 124,944 high risk areas are in bordering districts of 17 states/provinces of India, sharing borders with other countries. India provides vaccination against 8 VPDs at national level and 4 additional VPDs at sub-national level. The country has a system for gathering health intelligence through Central Bureau of Health Intelligence whereby data on 20 communicable diseases (7 VPDs) is collected from sentinel sites and published annually. Another system is Integrated Disease surveillance program which is outbreak based surveillance system and has presence till block level. It gathers data on 18 communicable diseases (5 VPDs) and also state specific diseases. There is a WHO supported lab based surveillance system for AFP, MR and DPT. It is a weekly reporting system.

There are 8 national upgraded labs and one global specialized lab for AFP surveillance. For MR surveillance there are 12 national labs and 2 national reference labs. For DPnT surveillance, there are 6 national labs and one reference lab. Labs are supported by WHO and fully funded by Govt. of India. Field guide for AFP, MR and VPD surveillance are available and revised from time to time.

India follows IHR guidelines 2005 and adequate HR is available at port of entry like airports, seaports etc. India follows polio outbreak preparedness and response plans and has identified Rapid Response Teams (RRTs) in each state. Simulation exercised also conducted from time to time. In 2016, this exercise was conducted in 12 states. Country also has mechanisms to share information on risks with states and further till block levels. Since, 2015 lots of work done for EPI strengthening which include Health System Strengthening and rapidly increasing full immunization coverage through intensive immunization drives in the districts/blocks/pockets with partially immunized and left out children (Mission Indradhanush). Review mechanisms and monitoring is strengthened.

MR campaigns in phased manner – first phase completed in 5 states with more than 95% coverage and in eight states it is ongoing. Will be completed by December, 2018 targeting more than 400 million children in the age group of 9 months to 15 years.

Though at local level along borders, informal arrangements are made many times for sharing information and jointly investigating the outbreaks but no formal arrangements exist. It is suggested that WHO may share the protocols/MoU with countries for sharing information on outbreaks and also it may be part of agenda for WHA so that it may be adopted by all countries for implementation.

11. Country presentation-Indonesia

As an Archipelago Country Indonesia has sea border across 10 countries: Malaysia, Singapore, Philippines, India, Thailand, Viet Nam, New Papua Guinea, RD Timor-Leste, Australia and Republic Palau and land border across 3 countries: Papua New Guinea, Malaysia and Republic Democratic Timor-Leste.

Indonesia has an agreement on cross border coordination including VPD surveillance with Malaysia, Papua New Guinea and Timor-Leste, that has been signed by representative of each Country.

As a way forward, Indonesia will develop SOP for reporting system on outbreak notification and information sharing mechanisms across border; conduct regular technical meeting with the border countries.

12. Country presentation-Lao PDR

Lao People's Democratic Republic (Lao PDR) team presented that the country is a landlocked country that shares borders with five countries: Thailand, Myanmar, The People's Republic of China, Viet Nam and Cambodia. The country has progressed in its activities to protect against vaccine preventable diseases. An MR supplementary immunization activity (SIA) for children from 9 months to under-five year was conducted with b-OPV campaign in January 2017. The National Immunization Programme (NIP) is planning introduction of a second dose of measles-rubella vaccine in Q4 2017. A sub-national risk assessment was completed for measles transmission at the district level in 2016. Additionally, the country has applied for support to introduced HPV and rotavirus vaccines in 2019.

The National Center for Laboratory and Epidemiology (NCLE) has also made progress in strengthening epidemiologic and virology surveillance. NIP and NCLE will continue to conduct a detailed programme risk assessments to identify high-risk areas and thereafter involve local sub-national authorities to develop an action plan to strengthen measles elimination activities. Additionally, NCLE has focused on strengthening the acute fever and rash (AFR) and rubella surveillance with special focus to the silent districts and provinces. This will require conducting sub-national risk assessment and improve the performance of the quality of surveillance indicators. To support the achievement of measles-rubella elimination, a measles outbreak response preparedness plan needs to be developed. The NIP will use the existing measles elimination platform and strategies to initiate or accelerate activities for rubella elimination.

Finally, in order to improve and strengthen cross-border collaboration with focus on information exchange especial when there is VPDs outbreak along the border areas, both the NIP and NCLE will promote information sharing through formal and information mechanism like IHR (EIS) and bi-lateral collaboration channel.

13. Country presentation-Malaysia

Malaysia's land border is with Thailand in the north, Singapore in the south and Indonesia's Kalimantan along south part of Sabah and Sarawak eastern borders. The sea border on the north-eastern of Sabah is with island of Mindanao of Philippines, whilst Sumatera of Indonesia on the western side of Peninsular Malaysia separated

by the straits of Malacca. Malaysia has more than 70 entry points but only 24 are designated under IHR 2005. A total of 10 seaports, 8 airports and 6 land crossing are gazetted. The high-risk border areas for VPD program implementation are along coastal areas of Sabah and the northern part of peninsular Malaysia, partly due to security reason.

Malaysia's Surveillance system for all diseases including VPD consists of mandatory notification of notifiable diseases under the prevention and control of infectious disease Act 1988, Laboratory-based surveillance system for several pathogens including measles and rubella, syndromic surveillance of which either sentinel or national (AFP, AFR, ARI), Rumor surveillance (community surveillance) and surveillance in other agencies (e.g. the veterinary department, FOMEMA). Data collected by Family Health Development Division (FHDD), MOH showed an increasing number of vaccine hesitancy among certain groups in the community as evidenced in the geographical clustering of VPD outbreaks. Still endemic for measles, Malaysia is confident to achieve measles elimination status if vaccine coverage is continuously high. Malaysia is polio-free since 2000 and has persistently achieved AFP monitoring surveillance indicators every year. Pockets of diphtheria outbreak were noted from vaccine hesitancy groups and has posed challenges to health care workers.

The relevant eight (8) core capacities for IHR which are related to cross-border VPDs have been achieved directly or indirectly through the initiatives of APSED, MySED and the latest being GHSA. APSED developed in 2005, formed the basis for strategic framework to meet IHR requirements to strengthen regional and national core capacities needed to detect, prepare for and respond to threats posed by emerging infectious diseases (EIDs) and public health emergencies (PHEs). The existing IHR focal points, Bi-lateral and Multi-lateral arrangement as well as Border Goodwill Meeting (between states/districts/provinces) already established and functional among ASEAN member states provide platform for further work on VPDs cross-border public health activities.

There were 8 recommendations made in the last meeting and Malaysia has encountered challenges in implementation of the recommendations. Therefore, Malaysia's proposed as way forward based on our challenges: to set up VPDs contact points to exchange notifications and other information for immediate action; propose for vaccination screening at exit points for polio and yellow fever from endemic countries; propose for Regional WHO office to keep DAT stockpile for emergency used to assist member states in outbreak situation; to timely share information on AFP cases between relevant border states and; the need to further strengthen collaboration in area of elimination, surveillance and sharing information locally and across border for VPDs and other diseases. For ASEAN member states, the use of EOC should be enhanced.

14. Country presentation-Myanmar

Dr Aung from Myanmar presented that the country has 16 official transit points and 12 unofficial major transit points. High-risk population with immunity gap for VPDs was mainly detected among migrant workers (Myanmar-China/Thailand borders), Internally Displaced Persons due to social conflict and armed conflict areas (Myanmar-Bangladesh border), minor ethnic groups who reside in border area (geographically hard to reach areas (Myanmar-India border).

He also reported on salient findings of Joint External Evaluation (JEE) report which was implemented in May 2017 and highlighted the low scores technical area on IHR core capacities such as emergency preparedness and response, risk communication plan and mechanism and effective public health response at points of entry.

JEE report had recommended that Myanmar needs to continue the good practice of having cross-border local MoU between with Thailand.

Then he also shared the experience of investigation and outbreak response measure on cVDP outbreak in Maungdaw township of Rakhine State in 2015. Information on the VDPV2 cases, response plans and surveillance information were shared with neighboring countries through the WHO Regional Office. Myanmar shared the experience on outbreak investigation and response activities for measles outbreak in Naga Self Administrative zone at Sagaing Region bordering with India through WHO Regional Office. Myanmar also shared the experience of recent measles outbreak near Myanmar – China border in Kokant Self-administered zone during June and July 2017, affecting 31 children under 15 years of age highlighting the interruption of both routine immunization and SIA due to armed conflict in that area Myanmar has highlighted on key issues for outbreak notification and information sharing mechanism: MOU status with neighboring countries, illegal residence and movement of people across the border, limited lab facility, difficult access, inadequate health infrastructure and human resource in some border areas, limited private sector involvement and surveillance gap and limited synchronized SIAs in cross- border areas.

Myanmar had concluded that based on JEE results and progress of achievement on recommended activities by previous cross-border workshop, Myanmar has been developing 5 year strategic plan to strengthen human resource and facilities at cross-border township), enhance collaborative efforts on VPDs surveillance at border townships and implementing greater Mekong subregion health security project with focus on cross-border and intersectoral information sharing and outbreak control.

15. Country presentation-Nepal

The Nepal delegates presented that the hazard of cross-border transmission: exists through open and densely populated border with India. The vulnerability to polio identified as low (High OPV3 coverage) but type2 vulnerability remains a concern. For measles: MR1 coverage has increased in border districts; MR2 is a concern which is being addressed by the EPI program. On cross-notification of cases, strong mechanism exists for AFP cases (through SEARO); IHR mechanisms in place for polio and the model need to follow for measles.

Outbreak notification and information sharing & response mechanisms is strong and time tested protocol exists for AFP cases through WHO-IPD and SEAR and needs to be replicated for measles. MR SIA (proposed in cMYP) in 2nd half of 2018 for which support needed for technical assistance, operational funding and vaccine

Polio transition remains critical. If current polio funded network is terminated, that will pose tremendous challenges to maintain the strong data systems built for AFP, measles & other VPDs surveillance programs. GoN has initiated transition planning process (budget line included by MOH for FY 2017/18) but needs more support.

Country context of federalization is an internal challenge that MOH is continuously reviewing and developing mitigation plans.

16. Country presentation-Papua New Guinea

The PNG delegates informed about the status of immunization coverage and VPD surveillance in the country. The team informed on the identified major transit points. The country explicitly presented on the status of the eight core-capacities on IHR including the existing coordination mechanism for preparedness and response to

any VPD outbreak around border areas. The team also informed that they will revisit current MoU with Indonesia government. Establish and strengthening multilateral relationship with other border sharing countries Australia and Solomon Islands on VPDs. Papua New Guinea has been implementing recommendation one - To sustain and strengthen EPI and Disease specific initiatives including implementation of strategies to eradicate Polio and Eliminate Measles through Special Integrate Routine EPI program strengthening strategy, we are rehabilitating the Cold Chain equipment's in 89 districts and 22 provincial vaccines store across the country.

The country is planning to conduct integrated MR/Polio and routine SIA in 2019 in low MR and polio coverage districts as well as ensuring meaningful and community involvement at large on VPDs activities by establishing community base surveillance. We are planning to strengthen preparedness and rapid response plan for all public health emergencies by strengthening intra and inter facility integration by conducting regular program specific review meeting every quarter as much as possible.

17. Country presentation-Philippines

The Philippines in an archipelago situated in the Western Pacific, composed of a total of 7, 100 islands. Despite the Philippines, not having problems on border areas as we are an archipelago, our population is highly mobile. Monitoring areas with ports of entries are priority high risk areas for the country. The country is also host to some of the most beautiful islands and beaches worldwide, bringing about 2.5M international arrivals in 2016. The economy is heavily reliant upon remittances from overseas Filipinos, estimated at around 2.2M OFWs worldwide (2016).

The country has attended the 2nd bi-regional cross border meeting and our current progress on the recommendations provided during this meeting mostly focused in increasing population immunity, strengthening surveillance, capacitating our ports of entries in detecting imported VPDs and prevention of exportation of infections.

In terms of International Health Regulations (IHR), the Philippines annually answers a Self-Assessment Questionnaire to determine the performance and status of core capacities for IHR. As of 2017, all core capacities are in place.

As way forward, the following activities are being conducted:

- Strengthen external and internal networking relationship between DOH IHR focal point and partners (both foreign and local partners)
- Joint External Evaluation of IHR in the Philippines (2018?)
- In terms of immunization, continue initiated collaboration with the labor and tourism departments in ensuring vaccination among inbound and outbound travelers and migrant workers

18. Country presentation-Thailand

The country delegate presented that Thailand is located in South-East Asia with a total area of 513,000 sq. km. There are 77 provinces, which 31 lie on the border area. Land border length is 3,300 km connecting to Myanmar, Laos, Cambodia and Malaysia. There are designated 18 points of entry. About 1/3 of healthcare facilities are in border provinces. In 2016, Thailand had a population of 65 million, 17% are under 15 years old. Female is slightly more than male. 26 million live in border areas. Estimated number of migrant is 4.5 million,

3/4 are worker. IHR evaluation in June 2017 shows high levels of capacity, most items got 4 scores and immunization got 5 scores for both indicators.

Thailand established national communicable disease surveillance since 1971, AFP surveillance in 1992, Measles Elimination database in 2012. All healthcare providers are requested to send report to national level via provincial epidemiology focal point. Communicable Diseases Act, which first published 1980 and was updated in 2015, covers surveillance, prevention and control measures.

The National Immunization Program in Thailand was commenced in 1977. Now we provide 2 doses of MMR to 9-month and 2.5 years old children. The MCV1 coverage was 98% and MCV2 coverage was 95% in 2013. Thailand also has progressed on implementation of measles elimination activities. However, in 2016-2017, Measles outbreak occurred in the Deep South, which cause by low vaccination coverage among children, and in central part of Thailand, which spread among migrant workers. Many implementations were done to control the disease; catch-up activity for incomplete vaccinated children, vaccination campaign, increase frequency of vaccination service, set up mobile unit, increase community communication, close situation monitoring, strengthening surveillance, supervision and technical support were provided by regional and national experts. Migrant parents were educated to get their children vaccinated.

To achieve an elimination target, our recommendations are to focus on vaccination coverage in border area and among migrant population. Pre-departure immunization should be considered for a worker. Health information sharing should be promoted.

19. Country presentation-Viet Nam

The Viet Nam delegate reported that the VPDs surveillance system in Viet Nam is very systematic and is considered one of the best surveillance systems in the Western Pacific Region. MCV1 coverage has reached over 90% in 2014 and is maintained over 90% onwards. MCV2 coverage dropped to 83-86% during 2012 to 2013, and there was a big outbreak of measles in 2013-14 with highest incidence among children under 1 year. MOH is developing a plan to vaccinate children born after SIA 2014-2015 in high risk areas (remote, hard to reach areas, urban slums) and also the mobile population. Immunization status will be asked before school enrolment very soon, which will close immunity gaps in older children in future. Viet Nam is now a vaccine producing country. All vaccines in EPI except pentavalent, are produced in Viet Nam. MR vaccine has been licensed successfully in 2017.

Country has achieved and maintained the IHR (2005) core capacities (and also implementing Circular 54) which is enforcing timely notification of any disease outbreak or any Public Health Emergency of International Concern to WHO and to initiate appropriate response immediately. Although transmission of VPDs has decreased, the risk of international spread still remain; the neighboring countries still represent a significant risk especially at international border gates. Fortunately, the level of cooperation along the international border between the countries is very good.

Viet Nam endorses the Western Pacific Regional Strategy and Plan of Action and aim to eliminate rubella by 2025. The priority is on measles and rubella elimination, prevention of Congenital Rubella Syndrome and it is well reflected in the national immunization plan 2016-2020.

20. Bangladesh experience-use of risk assessment tool

Dr Md. Jahangir Alam presented on Bangladesh experience of measles and polio risk assessment tool. Bangladesh has been using measles risk assessment tool since 2014. Last risk assessment was conducted in August 2017 including parameters for population immunity, surveillance quality, program delivery and threat assessment. Based on overall risk assessment out of 64 districts in Bangladesh, 16 are at low risk, 31 at medium, 13 at high-risk and 4 districts at very high-risk level. Bangladesh had conducted measles catch up campaign (age 9m-9y) in 2006-2007, follow up campaign (9m-59 m) in 2010 and later in 2014, conducted MR catch up campaign. Based on the measles and rubella immunity profile and epidemiology, Bangladesh has been planning for MR follow up campaign in 2018.

Bangladesh has also been using polio risk assessment tool since 2013. As per current analysis, the risk of an outbreak following an importation is medium only in 2 districts and in 2 city corporations. However, rest of the country is at low risk level.

To assess the population immunity for measles, Bangladesh had used last 3 years' (2014-2016) MCV1 and MCV2 survey coverage. But taking for SIA coverage, admin data was used. Since reported coverage of measles in some districts were >100%; it misinterpreted the results. This is the limitation for measles risk assessment tool. While doing the polio risk analysis, last 5 years' (2011-2016) OPV3 survey coverage and 2016 high-quality AFP surveillance indicators were used.

Currently, the risk assessment tool has been using at national and divisional level by WHO staff. Bangladesh expect to introduce this tool at district level and below with providing training to existing surveillance network and government workforce.

21. Philippines experience-use of risk assessment tool

The WHO Measles risk assessment (RA) tool was developed in 2013 during the Global Measles and Rubella Management Meeting and pilot tested in the Philippines in the same year. The primary objective of the tool is to prevent future measles outbreaks at district level. It assesses multiple categories of risk with an aim to make the tool useful for a variety of settings, and final completion and packaging of a user-friendly tool for assessing risk at a sub-national level. It is also expected to guide annual assessments to monitor progress on measles elimination efforts. This risk assessment model is adapted from the framework of the polio risk assessment tool used in calculating susceptibility profiles and population immunity. It includes a range of data inputs, in addition to vaccination coverage.

The tool assesses the overall risk for each district as a function of indicator scores from four main categories: 1) population immunity, 2) surveillance quality, 3) program delivery performance, and 4) threat probability assessment. The subtotal scores from all four main categories are shown in the pie chart. The tool is designed to identify high-risk districts so that actions can be made to address program weaknesses in measles elimination efforts.

Data sources include case-based measles surveillance data, administrative coverage data, statistics office data and local knowledge. A total score of 100 is used for easier interpretation and to allow for more transparency with a direct scoring.

The Philippines conducted the risk assessment in 2013 when measles outbreak in some parts of the country started. The tool predicted outbreak in some regions of the country such as National Capital Region (NCR) and

4A, and CARAGA, but very limited. The tool further identified 30 of the 122 provinces & cities were identified as Very High Risk. Those identified as low risk had the most number of measles cases (provinces of Regions 3 & 12). However, it did not predict other areas such as Region 3, 12 and ARMM and other regions and districts of the country.

The 2013 result was compared with the bi-annual incidence in 2015-2016, wherein, there was very limited prediction; only 1 region was predicted as high-risk (1 province in CAR). Other factors such as the sensitivity of measles surveillance and lack of reporting from some provinces may have affected the results of the RA.

The assessment was done in 2013 when there are already measles outbreaks in some parts of the country. The tool may not have served its main purpose of preventing future outbreaks during that time since there were already pockets of outbreaks in some parts of the country when the assessment was finalized.

However, for the Philippines to benefit from the results of the RA, it was used in the strategic planning & monitoring of the 2014 Supplemental Immunization Activity in terms of deployment of internal & external monitors, resource mobilization, focused supervision & monitoring and advocacy activities to policy makers & local chief executives & community leaders & other operational component of the immunization program. The Philippines planned to conduct risk assessment at this time, when there is low measles incidence among districts/province, but, with modifications on the categories and assigning of risk points or scoring for a more realistic calculation.

The right timing of the assessment is also an important factor for assessment. The assessment tool is also dependent on the quality of the inputs; therefore, every effort should be made to provide high-quality data to ensure a reliable risk assessment.

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