Fourth meeting of the WHO South-East Asia Regional Verification Commission for measles elimination and rubella/congenital rubella syndrome control

Kathmandu, Nepal, 23–25 April 2019
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<td>EPI</td>
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<td>SIA</td>
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<td>UNICEF</td>
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Executive summary

The Regional Verification Commission for measles elimination and rubella/congenital rubella syndrome (CRS) control for the South-East Asia Region (SEA-RVC) was established by the Regional Director in March 2016 to verify progress towards measles elimination and rubella/CRS control in the Region. The Fourth meeting of the SEA-RVC was held in Kathmandu, Nepal during 23–25 April 2019.

The key objective of the meeting was to review the country progress reports on measles elimination and rubella/CRS control submitted by national verification committees (NVCs) and verify the progress made.

The methodology for review of individual country progress reports was based on the guidelines for the verification of measles elimination and rubella/CRS control in the WHO South-East Asia (SEA) Region endorsed by the SEA-RVC during its first meeting in 2016.

Following an extensive review of evidence, SEA-RVC verified Sri Lanka as having eliminated endemic measles and Bhutan, Maldives, Democratic People’s Republic of Korea and Timor-Leste as having sustained their measles elimination status. The Commission also reviewed the progress made towards rubella and CRS control, verifying that control of rubella and CRS in six countries had been maintained (Bangladesh, Bhutan, Maldives, Nepal, Sri Lanka and Timor-Leste). The SEA-RVC categorized the remaining countries in the Region as endemic for both measles and rubella virus transmission.

SEA-RVC acknowledged the significant progress made by all countries in the Region towards measles elimination and rubella/CRS control and requested World Health Organization (WHO), NVCs and Member States to provide some additional country-specific information at the next meeting to ensure better review of progress towards achieving the 2020 goal of measles elimination and rubella/CRS control in the SEA Region.
1 **Background**

In September 2013, the Sixty-sixth session of the Regional Committee for South-East Asia adopted the goal of measles elimination and rubella/congenital rubella syndrome (CRS) control in the South-East Asia (SEA) Region by 2020. The Regional Director established an independent Regional Verification Commission for SEA Region (SEA-RVC) in March 2016 to monitor progress towards measles elimination and rubella/CRS control, as well as to verify countries that have stopped the transmission of measles and/or have controlled rubella/CRS. The first meeting held in August 2015 developed the framework for verification of measles elimination and rubella/CRS control, and templates for national verification committees (NVCs) of countries in the Region to report on the annual progress made towards achieving the goal of measles elimination and rubella/CRS control.

The Fourth meeting of the SEA-RVC was held in Kathmandu, Nepal during 23–25 April 2019.

2. **Objectives of the meeting**

The objectives of the Third meeting of the SEA-RVC were as follows:

➢ To review reports submitted by NVCs of all countries in the SEA Region on the progress made towards measles elimination and rubella/CRS control and provide feedback

➢ To review the existing framework for verification of measles elimination and rubella/CRS control to include rubella elimination in line with the global roadmap.

3. **Organization of the meeting**

On Day 1, a preliminary meeting was held exclusively for SEA-RVC members. During this meeting, members discussed and agreed on the methodology to be adopted to review the progress reports and provide feedback and recommendations. The meeting was chaired by the Chairperson of the SEA-RVC and attended by 10 of the 12 members of the SEA-RVC.

The Chief Specialist from Ministry of Health, Nepal inaugurated the meeting, along with the WHO Representative to Nepal and the Chair of the SEA-RVC. On behalf of the Regional Director, the WHO Representative to Nepal read out the Regional Director’s message (attached at Annex 2). Subsequently, presentations were made by the Secretariat giving global and regional updates on the measles and rubella situation. A presentation to review components of the regional guideline for verification of measles elimination and rubella/CRS control was made by SEA-RVC to update the attendees in line with the Global Road Map for measles and rubella elimination. There was a joint meeting of SEA-RVC members and representatives of the NVCs, where NVCs presented the country reports and RVC members made constructive remarks on the progress report.

The chairpersons/representatives of all 11 NVCs of the Region and representatives from WHO headquarters, the United Nations Children’s Fund (UNICEF) Regional Office for South Asia, and the United States Centres for Disease Control and Prevention (US CDC) participated in the meeting. Secretarial support was provided by the Immunization and Vaccine Development (IVD) team of WHO Regional Office for South-East Asia.

The agenda of the meeting is available at Annex 1 and the list of participants at Annex 5.
4. **Methodology of the review of country progress**

The methodology of the review of country progress was based on the guidelines on verification of measles elimination and rubella/CRS control endorsed by the SEA-RVC in 2016.

4.1 **Prior to the meeting**

- Prior to the third meeting of the SEA-RVC, the annual reporting template on progress toward measles elimination and rubella/CRS control that had been finalized in the first SEA-RVC meeting held in 2016 was shared by the SEA-RVC Secretariat at the Regional Office with all the NVCs through the WHO country offices in January 2019.
- The filled-in and signed annual reports were submitted by all 11 NVCs to the SEA-RVC Secretariat at the Regional Office by March 2019.
- Two SEA-RVC members were assigned as reviewers for each country report, except for Nepal and Sri Lanka, for which three SEA-RVC members were assigned. This was done in January 2019.
- All SEA-RVC members were provided with a review checklist template to independently review the assigned country’s progress on measles elimination and rubella/CRS control against the five lines of evidence outlined in the guidelines. Field visits were conducted by SEA-RVC members to Nepal and Sri Lanka during April 2019. The field reports to these countries were archived by the SEA-RVC Secretariat and shared with all the SEA-RVC members as well as presented during the respective country sessions at the meeting.

4.2 **During the meeting**

- Ten of the 12 SEA-RVC members attended the meeting. The SEA-RVC chairperson and members acknowledged the high level of commitment to measles elimination and rubella/CRS control by countries.
- Printed copies of the country progress reports and RVC reviews of the reports were provided to all SEA-RVC members present at the meeting. Electronic versions were made available on the web and by email through the link provided in Annex 3.
- The reviews of the country reports written by the SEA-RVC members who were not present were read out by the SEA-RVC Secretariat.
- Each NVC representative presented the country’s progress towards measles elimination and rubella/CRS control based on a template that had been provided to each NVC representative prior to the meeting by the SEA-RVC Secretariat. All presentations were made available and uploaded on the website given in Annex 3.
- Each country presentation was given a time slot of 40 mins – 20 mins for presentation and 20 mins for discussion and comments.
- The reviews by various participants were conducted in the following order:
  - dedicated reviewers of the country report
  - other RVC members
  - representatives of partner agencies.
After the comments, the NVC chairpersons responded with additional information and clarifications.

Dedicated closed-door sessions were conducted by SEA-RVC members on Day 3 after all the presentations of the NVCs were made, to discuss and finalize the conclusions and recommendations of the meeting.

A field visit was conducted for the NVC chairs and representatives to Tathali Health Post in Bhaktapur district of Nepal to observe the process of fully immunized village declaration concept in Nepal.

SEA-RVC members and the countries allocated to them for review of the annual progress reports are given in Table 1.

Table 1: Countries and SEA-RVC members allocated for review

<table>
<thead>
<tr>
<th>Country name</th>
<th>Reviewer 1</th>
<th>Reviewer 2</th>
<th>Reviewer 3</th>
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<tr>
<td>Bangladesh</td>
<td>Dr Joe Icenogle</td>
<td>Dr Rupa Singh</td>
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<tr>
<td>Bhutan</td>
<td>Dr Hinky Hindra Satari</td>
<td>Dr Sujeewa Amarasena</td>
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<tr>
<td>Democratic People’s Republic of Korea</td>
<td>Dr Shahina Tabassum</td>
<td>Dr Pilavong Bounpheng</td>
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<tr>
<td>India</td>
<td>Dr Jon Andrus</td>
<td>Dr Natasha Crowcroft</td>
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<tr>
<td>Indonesia</td>
<td>Dr Kinzang Tshering</td>
<td>Dr Sujeewa Amarasena</td>
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<tr>
<td>Maldives</td>
<td>Dr Kinzang Tshering</td>
<td>Dr Shahina Tabassum</td>
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<tr>
<td>Myanmar</td>
<td>Dr AP Dubey</td>
<td>Dr Rupa Singh</td>
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<tr>
<td>Nepal</td>
<td>Dr Natasha Crowcroft</td>
<td>Dr Soe Lwin Nyein</td>
<td>Dr Jon Andrus</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Dr Kumnuan Ungchusak</td>
<td>Dr AP Dubey</td>
<td>Dr Joe Icenogle</td>
</tr>
<tr>
<td>Thailand</td>
<td>Dr Soe Lwin Nyein</td>
<td>Dr Hinky Hindra Satari</td>
<td></td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>Dr Kumnuan Ungchusak</td>
<td>Dr Pilavong Bounpheng</td>
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5. Conclusions and recommendations

Following an extensive review of the reports from NVCs to assess the status of progress towards rubella and CRS control in the Region, the SEA-RVC made certain recommendations.

5.1 Categorization of countries

The SEA-RVC categorized countries as given in Table 2.
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Table 2: **Categorization of countries by SEA-RVC**

<table>
<thead>
<tr>
<th>Country</th>
<th>Measles elimination</th>
<th>Rubella/CRS control</th>
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<tbody>
<tr>
<td>Bangladesh</td>
<td>Endemic</td>
<td>Controlled</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Eliminated</td>
<td>Controlled</td>
</tr>
<tr>
<td>Democratic People’s Republic of Korea</td>
<td>Eliminated</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>India</td>
<td>Endemic</td>
<td>Endemic</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Endemic</td>
<td>Endemic</td>
</tr>
<tr>
<td>Maldives</td>
<td>Eliminated</td>
<td>Controlled</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Endemic</td>
<td>Endemic</td>
</tr>
<tr>
<td>Nepal</td>
<td>Endemic</td>
<td>Controlled</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Eliminated(^1)</td>
<td>Controlled</td>
</tr>
<tr>
<td>Thailand</td>
<td>Endemic</td>
<td>Endemic</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>Eliminated</td>
<td>Controlled</td>
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\(^1\) Pending demonstration of completion of interrupted transmission of indigenous cases for 36 months in May 2019
5.2 **Overarching recommendations by SEA-RVC**

The SEA-RVC made the following recommendations to WHO and all Member States of the WHO SEA Region:

- The SEA-RVC endorsed the outcome of the high-level consultation on revising the goal of rubella elimination and harmonizing the goal of measles elimination with the revised rubella elimination goal.
- The Commission reviewed the proposal made to update the guidelines for the verification of measles elimination and rubella/CRS control in WHO SEA Region with inclusion of components for verification of rubella elimination and alignment with the global roadmap, as presented in the meeting. The SEA-RVC requested the Secretariat to update the regional guidelines as per the discussions in the meeting and present the revised guidelines to the next SEA-RVC meeting for endorsement. The following items and tools were specifically mentioned for inclusion:
  - Criteria for verification of rubella elimination
  - Component to report on actions on cross-border collaboration for measles and rubella
  - Component to report on actions taken towards implementation of recommendations made in the previous meeting
- It endorsed all the recommendations suggested by the respective NVCs of all the Member States in their annual progress report and requested provision of an update on the status of implementation of these recommendations in the next meeting.
- During the next meeting, country reviews may be grouped based on the country’s progress status. Review of all countries that have eliminated measles should be grouped as one; similarly, countries that have controlled rubella and CRS can be grouped together for review of progress.
- SEARO should conduct one or more WebEx consultation with RVC members, prior to the next meeting of the RVC to review the objectives of and expectations.
- The Regional Office should engage SEA-RVC members for country level advocacy activities, as appropriate, to make the best use of their expertise and stature.
- The Regional office to discuss with Member States on strategies around cross border collaboration by
  - working closely with the International Health Regulations (IHR) teams;
  - developing a regional plan of action around cross-border collaboration; and
  - including this as an agenda item in the next SEA-RVC meeting.

5.3 **Country specific recommendation**

SEA-RVC requested additional information related to the following actions from countries to be included in the next Annual Report.
Bangladesh

➢ Strategies implemented to achieve high coverage (>95%) of measles- and rubella-containing vaccine doses 1 and 2 (MRCV1 and MRCV2) at the second administrative level
➢ Laboratory strengthening activities, including:
   - addressing the problem of inadequate human resources in the laboratory
   - expansion of the laboratory network for serology and virology of measles and rubella within the country
   - developing country capacity for genotyping on measles and rubella
➢ Efforts towards classifying the cases of measles and rubella by origin (endemic, imported, import-related or unknown)
➢ Actions taken to optimize the acute flaccid paralysis (AFP)/measles–rubella (MR) reporting network, including the private sector.

Bhutan

➢ Efforts to maintain high MRCV2 coverage in all districts
➢ Actions taken to ensure better cross-border collaboration for measles and rubella surveillance activities, especially for Bhutanese nationals residing across the border
➢ Activities to sustain the emergency response mechanism, including vaccination response and active case finding, and ensure a systematic documentation of response measures undertaken
➢ Report on non-measles non-rubella discard rate by epidemiological blocks with a population of at least 100,000.

Democratic People’s Republic of Korea

SEA-RVC requested clarification on the first recommendation made by NVC on the role of Ministry of Public Health and WHO on surveillance activities. It sought a report on the following in the next meeting:
➢ Implementation status of MR supplementary immunization activity (SIA) and introduction of rubella-containing vaccine (RCV) in Routine Immunization
➢ Actions conducted to enhance sensitivity of the fever and rash surveillance system
➢ Considering no evidence of circulating rubella virus in the country, additional evidence for population immunity profile for rubella in women of childbearing age, such as by conducting age-stratified serological survey for rubella
➢ Details of post-elimination sustainability plan as well as outbreak response plan
➢ Actions taken towards data quality self-assessment, and the findings.

India

➢ Implementation status of the recommendations made by MR-India Expert Advisory Group (IEAG) with focus on:
   - the roadmap for expansion of fever and rash surveillance in the country
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- data quality gaps (immunization, surveillance, and especially immunization history)
- health facility contact analysis for cases of acute fever and maculopapular rash and optimizing the AFP/MR reporting sites based on evidence

➢ Progress made towards measles elimination and rubella/CRS control at subnational level by epidemiological blocks/regions within the country.

Indonesia

➢ Progress made towards measles elimination and rubella/CRS control at subnational level by epidemiological blocks/regions within the country
➢ Implementation status of recommendations of the proposed joint appraisal/Expanded Programme on Immunization (EPI) review plan for 2019
➢ Efforts to accelerate expansion of case-based surveillance (acute fever and maculopapular rash), including genotyping information
➢ Efforts to ensure testing of more specimens from cases with fever and rash
➢ Efforts to ensure greater involvement of the private sector
➢ Efforts made to strengthen and evaluate RI coverage/surveillance activities with granular coverage/surveillance data below second administrative units
➢ Considering that Indonesia has reported 89 CRS cases in 2018 that are preventable through vaccination, this should be taken as an opportunity by NVC/national immunization technical advisory group (NITAG) to advocate for implementation of expanded age-range MR campaign to eliminate CRS.

Maldives

➢ Report on non-measles non-rubella discard rate by epidemiological blocks with a population of at least 100,000 population
➢ Strategy and the outcomes of vaccination of small island dwellers and migrant populations with MRCV
➢ Findings and implementation of the data quality assessment (DQA) activities conducted
➢ Review the need to expand CRS surveillance sites and actions taken to strengthen CRS surveillance
➢ Activities taken to strengthen surveillance and outbreak preparedness and response for measles and rubella, including by the private sector.

Myanmar

➢ Efforts made to strengthen case-based surveillance, genotyping, case investigation, case classification, serological testing for rubella and CRS surveillance and involvement of the private sector
➢ Actions taken to collaborate with Mekong Basin Diseases Surveillance system to strengthen cross-border MR surveillance
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➢ Implementation of strategies to address low coverage in high-risk areas/populations including older age groups, ethnic minorities, peri-urban areas, satellite townships and geographically hard-to-reach areas
➢ Evaluation of MRCV1 and MRCV2 coverage at subnational level, including root-cause analysis for unvaccinated cases of measles reported during the outbreaks
➢ Implementation of vaccination strategy for all health-care workers (HCWs)
➢ Outcome of the planned MR SIA in 2019.

Nepal
➢ Implementation of the recommendations made by the joint national–international review conducted in April 2019
➢ Progress on strategy to vaccinate HCWs
➢ Actions taken to ensure timeliness of receiving vaccination of measles-containing vaccine first and second dose (MCV1 and MCV2) in RI.

Sri Lanka
➢ SEA-RVC provided a conditional verification of elimination of endemic measles in Sri Lanka and asked NVC Sri Lanka to provide a summary report to the RVC Secretariat, after 1 June 2019, containing evidence of continued interruption of transmission of indigenous measles virus for the period January to May 2019. The report should also mention efforts made to evaluate the non-measles non-rubella discard rates, in the context of the surveillance system in the country.
➢ SEA-RVC requested the RVC Secretariat to coordinate a review of this summary report by RVC members. This summary report will be used by the RVC as an annexure to the main report submitted by NVC this year, to confirm the verification of the elimination status in Sri Lanka.
➢ Status of implementation of the specific recommendations made by the mission comprising of RVC members and IVD unit of the Regional Office to Sri Lanka (16–18 April 2019).

Thailand
➢ RVC encouraged the NVC to discuss the programme for reconsideration of the strategy proposed for the upcoming SIA to ensure high coverage of un-vaccinated/under-vaccinated population and requests a detailed report on the implementation of their proposed MR SIA including documentation of the processes followed
➢ Efforts made to strengthen MRCV1 and MRCV2, including efforts to overcome vaccine hesitancy across the country, rather than maintaining focus on a particular area
➢ Status and findings of any special study done to assess the CRS burden
➢ Actions taken to develop and implement outbreak preparedness and response plan
➢ Progress in implementation of the elimination standard surveillance for measles and rubella as per the Regional guidelines, including genotyping information.

**Timor-Leste**

➢ Status and findings of the planned sero-survey for measles and rubella
➢ Efforts made to confirm all rubella cases, including conducting special tests to exclude false positives
➢ Report on non-measles non-rubella discard rate by epidemiological blocks with a population of at least 100,000.
**Annex 1**

**Agenda**

<table>
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<td>Administrative announcements</td>
<td>WHO Regional Office for South-East Asia</td>
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<td>WHO headquarters</td>
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<td>Presentation on the status of measles, rubella and CRS in the SEA Region</td>
<td>WHO Regional Office for South-East Asia</td>
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<td>Review to align the SEA Region verification framework to the global framework, including criteria for verification of rubella elimination</td>
<td>WHO Regional Office for South-East Asia</td>
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<td>Presentation on the modus operandi of the third SEA-RVC meeting</td>
<td>Chair RVC</td>
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<td>Presentation of country progress reports by NVC chairs:</td>
<td>NVC chairs</td>
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<td>• Bangladesh</td>
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Members of the SEA Regional Verification Commission for measles elimination and rubella/CRS control, chairpersons and representatives of the NVCs from Member States, colleagues from WHO headquarters and representatives of partner agencies, ladies and gentlemen,

It is with great pleasure that I welcome you to Kathmandu and to the Fourth meeting of the SEA Regional Verification Commission for measles elimination and rubella and CRS control.

Although our Regional Director, Dr Poonam Khetrapal Singh, would have very much liked to attend this important meeting, she is unable to do so due to a prior commitment. I therefore take great pleasure in delivering this message on her behalf.

The Regional Director urges you to remember how in September 2013, at the Sixty-sixth meeting of the Regional Committee, our Region’s Member States unanimously adopted the goal of eliminating measles and controlling rubella and CRS by 2020.

She says you will also recall how in 2014 that goal became one of our Region’s flagship priorities and a critical part of our quest to rid the Region of vaccine-preventable diseases.

She notes that you are gathered today with that goal and the vision it represents – a region in which no child should suffer or die from a disease as easily prevented as measles; where no pregnant woman should lose her unborn baby due to a virus as avoidable as rubella; and where no neonate should be born with a heart ailment or loss of hearing owing to a tragedy as needless as in-utero rubella infection.

Dr Khetrapal Singh says that it is clear that each of our Member States has shown a high level of commitment towards this shared vision and made impressive efforts to implement our Region’s Strategic Plan. As a result, they have made strong progress.

The Regional Director is keen to emphasize that we have already verified Bhutan, Democratic People’s Republic of Korea, Maldives and Timor-Leste as free of endemic measles transmission, while six countries have been verified to have controlled Rubella.

She is pleased to note that children in all countries have access to two doses of measles-containing vaccine.

The coverage of the first dose of measles-containing vaccine has reached 88%, while coverage of the second dose is at 76%.

Between 2014 and 2018, she notes, Member States reduced measles-related deaths by 24% Region-wide. Rubella-containing vaccine has now been introduced in 10 countries, and Democratic People’s Republic of Korea is already preparing to introduce the vaccine in its routine immunization programme before the end of the year.

The Regional Director emphasizes that between 2014 and now, almost half a billion additional children have been vaccinated with measles- and rubella-containing vaccine to close
the population immunity gap for measles and rubella in younger children, which in itself speaks of the Member States’ commitment to achieve measles elimination and rubella/CRS control.

Nevertheless, she says, even as we forge ahead, we must be mindful of our vulnerabilities, such as gaps in coverage and surveillance.

The Regional Director notes that a midterm progress review conducted in late 2017 concluded that although the Region’s immunization systems were reasonably robust – with well-established supply, logistics and effective human resources – and that although surveillance systems had been strengthened, their effectiveness as of now would not allow us to achieve the 2020 goal. Indeed, it concluded that to do so, Member States would need to significantly up their game.

Distinguished members of the Commission, participants and partners,

The Regional Director reiterates that last month a high-level regional consultation was held to update the goals for measles and rubella elimination, considering the recommendations of the midterm review in 2017.

Member State experts and programmers, as well as global and regional experts, deliberated on the feasibility of adopting the goal of rubella elimination and thereby harmonizing it with the goal of measles elimination.

The Regional Director notes that this is one the recommendations you made, which was again subsequently made at your meeting in 2018.

Dr Khetrapal Singh recalls that the meeting concluded that rubella elimination is indeed feasible with optimal implementation of well-known strategies,

She says we will take this agenda to the Regional Immunization Technical Advisory Group, or Regional ITAG meeting in July for endorsement, with the aim of making this a Regional Committee meeting agenda item, provided it is approved by the Regional ITAG.

The Regional Director reiterates the role of the members of this Regional Verification Commission as her technical advisors to ensure that robust review mechanisms and processes are in place to ensure that the Region is ready to pursue the goal and measure progress against it.

Distinguished members of the Commission, partners and participants,

The Regional Director is certain that with hard work and steadfast commitment you will reach your goal. She is quick to note that despite all the doubters, we have not had a single case of wild polio virus in the Region for 7 years. That includes the Region’s biggest country, India.

She is also quick to note that we are one of only two regions in the world to have eliminated maternal and neonatal tetanus. She insists we must harness these remarkable achievements – both the infrastructure and inspiration they provide – to achieve the formidable task at hand, which we are gathered to discuss.

The Regional Director appreciates that you know how fast measles moves, and that we must move faster. “Business as usual” will not suffice.

The policies, strategies and frameworks for success are in place. She says WHO’s technical documents and guidance are readily available. And she again reiterates and gives her personal
assurance that WHO Regional Office for SEA Region is fully committed when it comes to providing technical and operational support to Member States, including coordinating and mobilizing the resources required to fast-track progress.

The Regional Director nevertheless asks to leave you with one final thought. And that is her firm conviction that your success depends on expanding equitable access to vaccination for all people everywhere – to ensuring every newborn, child, adolescent and pregnant woman in our Region can avail themselves of the life-saving benefits vaccines provide.

In leaving you with that thought, Dr Khetrapal Singh has no doubt that this eminent group of experts will examine the progress made and continue to provide actionable feedback and guidance on where accelerated progress can be made. She looks forward to the report of your deliberations and the recommendations that come from this meeting.

The Regional Director once again wishes you productive deliberations and an engaging meeting.

I echo that sentiment and wish you a comfortable stay.
Annex 3

Presentations

Presentations made at the SEA-RVC meeting

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

http://www.searo.who.int/immunization/meetings/RVC/en/
Annex 4

Field visit report of the Technical Mission of SEA-RVC members to Sri Lanka on measles elimination and rubella/CRS control – 16 to 18 April 2019

Introduction

WHO-SEARO organized a mission to Sri Lanka from 16 to 18 April 2019 with the objective of assessing the progress made towards measles elimination in the country. Although a review of rubella/CRS control was not an objective of this mission, it is noted that Sri Lanka has achieved the goal of rubella/CRS control, which was verified by SEA-RVC in 2018.

Sri Lanka is an island country with a tropical climate. The country has a total population of about 21.7 million. Administratively, the country is divided into nine provinces and 25 districts, demarcated into 26 health districts. For health administration, each province is headed by a provincial director of health. Each health district is headed by a regional director of health and technical support staff. The largest districts are Colombo and Gampaha with a population of about 2.4 million each. Five other districts have populations above 1.1 million.

At the field level, there are 347 health administrative divisions administered by medical officers of health who supervise other public health staff such as public health nursing sisters, public health inspectors and public health midwives. MR vaccination to prevent CRS, surveillance, outbreak detection and response are implemented through this field-level divisional public health staff.

The National Immunization Programme including work related to measles elimination, rubella and CRS control is carried out by the Central Epidemiology Unit of the Ministry of Health. Case-based investigation includes investigation of each case at the field level by public health inspectors and medical officers of health, with laboratory confirmation using serology and virology performed at the Medical Research Institute of the Ministry of Health. This is the National Reference Laboratory and was last accredited in October 2016.

Mission members

The visiting members of the mission were:

(1) Professor Dr A.P. Dubey, Ex Director and Professor, Department of Paediatrics, Maulana Azad Medical College, New Delhi; member SEA-RVC for measles elimination and rubella/CRS control

(2) Dr Joseph Parker Icenogle, Public Health Virologist, US CDC; member SEA-RVC for measles elimination and rubella/CRS control

(3) Dr Sunil Bahl, Team Leader, Immunization & Vaccine Development, WHO-SEARO.

Overall objective of the mission

To assess the current status of measles elimination in Sri Lanka.
Key activities undertaken during the mission

➢ Desk review of data
➢ Meetings with key stakeholders:
  - Director General of Health Services (delivered preliminary report of mission)
  - Epidemiology Unit (National Immunization Programme & National Communicable Disease Surveillance Programme), Ministry of Health, Government of Sri Lanka
  - WHO country representative and National Professional Officer (communicable diseases – functions as EPI focal person)
➢ Visits to key institutions:
  - National Hospital of Sri Lanka
  - National Institute of Infectious Diseases
  - Medical Research Institute
  - Medical Officer of health (MoH) offices (3)
➢ Colombo municipality area; Ratmalana; Dehiwala.

Key observations

Background information to provide context for specific key observations of the mission

There is a National Strategic Plan for measles elimination and rubella and CRS control.

The measles, mumps and rubella (MMR)1 and MMR2 coverage in all districts is over 90%. Measles seroprevalence, which was done in 2015 in four districts using 800 samples, showed an 80–100% seroprevalence in different age groups, excepting in the 6–11 months age group.

Immunization campaigns with MRCV were conducted in 2003, 2004 and 2014 covering different age groups. No SIAs were conducted in 2017 and 2018.

Recent activities include:

➢ Shifting to a more sensitive case definition of “fever and maculopapular rash”.
➢ Continuing strong response to confirmed cases including: a close follow up of contacts; vaccination of unvaccinated contacts of confirmed cases, if unprotected, including family members up to 45 years of age; vaccination of children <15 years of age within 1 km radius of the confirmed case; and refresher training of all health staff on updated measles/rubella elimination/control strategies.
➢ There was an outbreak of measles from 2013 to 2015, with about 5000 confirmed cases. There were 76 confirmed cases in 2016 and 1 in 2017 (with unknown exposure history) and 1 in 2018 (with clear exposure history in China and genotype H 1 detected in sequencing).
➢ Included in this mission was a review of recent cases, i.e. in 2019 including one case in January 2019 and a 10-case outbreak in March 2019 (8 medical students and 2 priests). All these cases were fully investigated. Available evidence from
epidemiological and lab investigations indicate that these cases may be due to importations (or are import-related). This investigation needs to be completed.

**Specific key observations**

**Immunization**

- Two doses of MRCV are provided as MMR vaccine with a routine EPI schedule. The first dose is at age 9 months and the second dose is at age 3 years. Only limited justification for the high age of the second dose was available, and that was a desire to contact children at this age to assess their general health status.
- Reported coverage with MCV1 and MCV2 has been 96% or more since 2011. In 2018, 100% of districts reported >90% coverage for both MRCV1 and MRCV2. Furthermore, in 2018 all but 3 districts reported above 95% coverage for MRCV1 and all but 2 districts reported above 95% coverage for MRCV2.
- Most persons born between 1984 and 1992, and 1998 onwards, have received two doses of MCV, either through RI or SIAs.
- One cohort born between 1993 and 1997 have had only one opportunity to receive MRCV during their lifetime, leaving a potential vulnerability to measles in these individuals.

**Surveillance**

- The representativeness and timeliness of reporting by surveillance units is good.
- Measles is a notifiable disease in Sri Lanka. Surveillance of all VPDs is an integral part of the communicable disease surveillance system, and the system is fully functional.
- The case definition of suspected measles cases has been broadened to fever and maculopapular rash to improve sensitivity of surveillance.
- The non-measles non-rubella discard rate does not meet global standards, largely because most surveillance in Sri Lanka is disease specific, e.g. for dengue. Discards from disease-specific surveillance, e.g. non-dengue cases from dengue specific surveillance are not tested for measles/rubella and therefore are not included in the surveillance indicator. However, the vast majority of these discards will not be measles or rubella cases as they met the clinical case definition for another disease, i.e. dengue.

Overall, the reviewers concluded that the risk of missing measles cases was low.

**Outbreak response**

A strong response system was activated for the 10-case outbreak of measles in March 2019. Although containment of this outbreak seems to have been achieved as on the date of this report (22 April 2019), confirmation of containment will require a few more incubation periods.
**Laboratory support**

- Sri Lanka has one national laboratory (Medical Research Institute) in the country which has capacity for serology and polymerase chain reaction (PCR) detection of measles virus.
- The laboratory is accredited by WHO for serology. It is highly proficient in serology (100% score on proficiency testing for the past 3 years). The highly functional serology component of the laboratory is crucial for the achievement of very low measles cases and outbreak containment. Within the past year, the laboratory has extended its capacity to avidity testing.
- In the past, PCR products have been referred to Regional Reference laboratory (RRL) in Thailand for sequencing and genotyping. MRI is working with the RRL in Bangkok to become highly functional in molecular surveillance. Within the past one year, it has extended its capacity for these techniques. The laboratory expects to receive a molecular mEQA panel for molecular proficiency evaluation in 2019. Strong cooperation with RRL should continue until self-sufficiency is achieved.
- The system of providing feedback of testing results to submitting surveillance units needs strengthening.

**General observations**

The reviewers were impressed with positive institutional and cultural factors contributing to the effectiveness of the measles surveillance and control programme. These included effective and voluntary admission of most suspect measles cases to isolation hospitals pending a final diagnosis, and robust and positive interactions between the public health officers, i.e. regional epidemiologists and medical officers health, the public health inspectors (assigned for every 10,000 people) and public health midwives, who each serve 3000–6000 children through their early years.

**Conclusions**

- Sri Lanka is likely to have interrupted indigenous measles transmission.
- However, verification of interruption of measles virus transmission in Sri Lanka can be effective only at the end of May 2019, i.e. 3 years after the last case of indigenous measles.
- Importations of measles virus during recent years is not surprising and these are likely to continue to happen from neighbouring countries, especially from endemic countries with significant population movements into Sri Lanka.
- Continuing vigilance and improvements in measles surveillance and outbreak response will be necessary.

**Specific recommendations**

- Maintain high population immunity to prevent spread of imported measles:
  - Ensure that high coverage with MRCV1 and MRCV2 is maintained.
- Reconsider age at which the second dose is provided (currently provided at 3 years of age). Consider giving the second dose at 15–18 months to reduce the current vulnerability to measles between 9 months and 3 years.
- Consider conducting a vaccination campaign with a MRCV for the 21–24-year-old age group. Specifically target students at universities.

➢ Ensure that the capacity to detect measles remains high through continued efforts to sustain MR surveillance performance, both nationally and sub-nationally.
➢ Continue to build laboratory capacity to improve elimination quality laboratory testing.
➢ Improve laboratory data needed for case classification in an eliminated setting:
  - Maintain highly functional serology laboratory including IgG testing and avidity testing.
  - Continue to develop PCR testing and virus characterization (sequencing).
  - Continue to utilize support of RRL, Thailand when necessary.
➢ Ensure readiness to respond to any measles case urgently to prevent spread of measles virus (outbreak preparedness and response plan).
➢ Annual subnational EPI and surveillance reviews must continue to identify gaps in surveillance and immunization, followed by appropriate action.

Professor Dr A.P. Dubey
Dr. Joseph P. Icenogle
Dr Sunil Bahl
### Annex 5

**List of participants**

**RVC members**
- Professor Dr Shahina Tabassum
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- Professor and Chairman
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- Dr Ro Nam Chol
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- Dr Narendra Arora
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- Dr Madhuri Kulkarni
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- Professor Elisabeth S. Herini
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  Indonesia
- Dr Ahmed Faisal
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- Dr Ye Hla
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Fourth meeting of the WHO South-East Asia Regional Verification Commission for measles elimination and rubella/congenital rubella syndrome control

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