



REGIONAL OFFICE FOR

World Health
Organization

South-East Asia

Twelfth meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group

Virtual meeting

New Delhi, India, 9–11 August 2021

Twelfth meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group

**Virtual meeting
New Delhi, India, 9–11 August 2021**

Report of the meeting

Twelfth meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group
SEA-IMMUN-125

© **World Health Organization 2021**

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization..

Suggested citation. Twelfth meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group. New Delhi: World Health Organization, Regional Office for South-East Asia; 2021. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Contents

Abbreviations	iv
1. Introduction	1
2. Objectives of the meeting	3
3. Organization of the meeting	4
4. Overview of immunization in the Region	6
5. Impact of the COVID-19 pandemic on immunization and VPD surveillance	7
6. Measles and rubella elimination	12
7. COVID-19 vaccine deployment in the South-East Asia Region	15
8. Strategic Framework for South-East Asia Regional Vaccine Action Plan 2022–2030 – “Leaving no one behind unprotected”	20
9. Conclusions and recommendations	22
9.1 Key conclusions	22
9.2 Country-specific conclusions	23
9.3 Overall recommendations	27
9.4 Additional country-specific recommendations	31
Annexes	
1 Opening address by the Regional Director	36
2 Agenda	40
3 List of participants	41

Abbreviations

AEFI	adverse event following immunization
AFP	acute flaccid paralysis
bOPV	bivalent oral polio vaccine
COVAX Facility	COVID-19 Global Vaccine Access Facility
cMYP	comprehensive multiyear plan
CRS	congenital rubella syndrome
DTP	diphtheria–tetanus–pertussis vaccine
DTP3	third dose of diphtheria–tetanus–pertussis vaccine
EPI	Expanded Programme on Immunization
EUA	emergency use authorization
EUL	emergency use listing
Gavi	Gavi, the Vaccine Alliance
HepB	hepatitis B vaccine
HPV	human papillomavirus
IA2030	Immunization Agenda 2030
IPC	infection prevention and control
IPV	inactivated poliovirus vaccine
ITAG	Immunization Technical Advisory Group
IVD	Immunization and Vaccine Development
JE	Japanese encephalitis
MCV	measles-containing vaccine
MCV1	first dose of measles-containing vaccine
MCV2	second dose of measles-containing vaccine
MoH	Ministry of Health
MR	measles–rubella
NDVP	National Deployment and Vaccination Plan

NIP	national immunization programme
NITAG	National Immunization Technical Advisory Group
OPV	oral poliovirus vaccine
PCV	pneumococcal conjugate vaccine
PIE	post-introduction evaluation
RCV	rubella-containing vaccine
RI	routine immunization
RVAP	Regional Vaccine Action Plan
SAGE	Strategic Advisory Group of Experts
SEA	South-East Asia
SEAR-ITAG	South-East Asia Regional Immunization Technical Advisory Group
SIAs	supplementary immunization activities
TCV	typhoid conjugate vaccine
Tdap	Tetanus, diphtheria and acellular pertussis
TTS	Thrombosis with thrombocytopenia syndrome
UNICEF	United Nations Children's Fund
SOP	standard operating procedure
US CDC	United States Centers for Disease Control and Prevention
VDPV	vaccine-derived poliovirus
VPD	vaccine-preventable disease
WHO	World Health Organization

1 Introduction

The 12th meeting of the World Health Organization's (WHO's) South-East Asia Regional Immunization Technical Advisory Group (SEAR-ITAG) was held from 9 to 11 August 2021. Due to the COVID-19 pandemic, the SEAR-ITAG meeting (referred to hereafter as the ITAG) was conducted online as a virtual meeting. The ITAG is a regional technical expert group, established by WHO's Regional Director for South-East Asia to provide advice on all aspects of immunization, vaccines and the prevention, control, elimination and eradication of vaccine-preventable diseases (VPDs). It comprises experts from such disciplines as programme management, communicable disease and VPD control, virology, epidemiology, immunization and behavioural sciences. The managers of the national Expanded Programme on Immunization (EPI), national surveillance focal points, representatives of national immunization technical advisory groups (NITAGs) and partner agencies participate in the ITAG's annual meeting.

The terms of reference of the ITAG are as follows.

- ⦿ Review regional and Member States' policies, strategies and plans for the control, elimination and/or eradication of VPDs, in particular, the eradication of polio, elimination of measles, control of rubella and congenital rubella syndrome (CRS), elimination of maternal and neonatal tetanus, and acceleration of the control of Japanese encephalitis (JE) and hepatitis B.
- ⦿ Provide guidance on the setting of regional priorities for immunization and vaccines.
- ⦿ Make recommendations on the framework for the development of national immunization policies, as well as the operational aspects of the implementation of these policies; and provide a framework for and approaches to periodic evaluation and strengthening of routine immunization (RI) services and systems.
- ⦿ Advise Member States on appropriate choices of new vaccines, recommend optimal strategies, and provide technical guidance on the introduction of these vaccines, and on the monitoring and evaluation of the impact of new vaccines once they are introduced into national immunization programmes (NIPs).

- ⦿ Promote and provide technical guidance on the implementation of high-quality VPD surveillance, including high-quality laboratory networks to support VPD surveillance.
- ⦿ Advise Member States on the regulatory requirements for ensuring the quality and safety of the vaccines used in NIPs.
- ⦿ Provide guidance on public–private partnerships in immunization and vaccines.
- ⦿ Identify research topics in the area of immunization and vaccines and review the conduct and results of such research projects.

2. Objectives of the meeting

In view of the recent COVID-19 pandemic, the objective of the 2021 meeting was adjusted to focus on the impact of the pandemic and measures taken to revive the performance of immunization and VPD surveillance following the pandemic, as well as on the deployment of COVID-19 vaccines in the Region. More specifically, the ITAG was expected:

- ⦿ to review the status of performance of national immunization and surveillance programmes in relation to the goals and objectives of the South-East Asia Regional Vaccine Action Plan 2016–2020 (extended to 2021);
- ⦿ to assess the progress in deployment of COVID-19 vaccines in countries of the South-East Asia Region, identify challenges/gaps as well as actions taken to address them;
- ⦿ to seek guidance on the Strategic Framework of the Regional Vaccine Action Plan 2022–2030 and its implementation plan 2022–2026;
- ⦿ to review the status of implementation of the recommendations of the 11th ITAG meeting conducted in July 2020 and the special session of ITAG conducted in November 2020.

3. Organization of the meeting

The 12th ITAG meeting was conducted virtually using an online meeting platform. The meeting lasted for a period of three days. The deliberations were focused on the following four areas of work (see Annexure 2 for the programme):

1. review of the impact of COVID-19 on immunization and VPD surveillance in the Region and actions taken to resume immunization and surveillance services;
2. measles and rubella elimination in the Region – the impact of the pandemic and actions to mitigate the associated risks;
3. the progress in deployment of COVID-19 vaccines in the Region and actions being taken to identify and overcome the challenges;
4. looking beyond 2021 – Strategic Framework for a Regional Vaccine Action Plan (RVAP) for South-East Asia 2022–2030.

The meeting began with an opening address by Dr Poonam Khetrpal Singh, WHO Regional Director for South-East Asia (see Annexure 1).

The meeting was chaired by Professor Gagandeep Kang and attended by ITAG members. The other participants of the meeting included:

- ⦿ chairs of the NITAGs;
- ⦿ national focal points for immunization and VPD surveillance of the ministries of health (MoHs), members of WHO and the United Nations Children’s Fund (UNICEF) from countries of the Region;
- ⦿ chair of the Strategic Advisory Group of Experts (SAGE) on Immunization and its members from countries of the Region;
- ⦿ chairs of regional certification/verification bodies for polio eradication and measles elimination;
- ⦿ representatives from the headquarters and regional offices of WHO and UNICEF;
- ⦿ Gavi representatives;
- ⦿ vaccine manufacturers and regulators.

(See Annexure 3 for the list of participants.)

The deliberations during the meeting focused on the reports submitted by the NITAGs on the performance of the programme in the countries and contributed to the conclusions and recommendations of the advisory group.

Methodology for the review of NITAG reports on the impact of the COVID-19 pandemic on programme performance

- ⦿ A country-tailored template was prepared for reporting on the impact of COVID-19 on immunization and VPD surveillance as well as actions taken by countries to improve/maintain high immunization coverage as well as VPD surveillance. The template also included reporting on the progress in and challenges to COVID-19 vaccine roll-out and scale up in countries.
- ⦿ The template was pre-populated with data available with the WHO Regional Office and shared with all NITAGs in the Region eight weeks prior to the ITAG meeting.
- ⦿ Nine NITAGs (except the Democratic People's Republic of Korea [DPR Korea] and Myanmar) submitted reports, based on the template mentioned above, to the ITAG (through the Regional Office) prior to the meeting.
- ⦿ Two ITAG members were assigned the task of reviewing one country's NITAG report. The ITAG members were provided with a checklist to guide the review of the reports.

The meeting proceeded as follows.

- ⦿ The NITAG reports were provided to all ITAG members through a shared drive.
- ⦿ The NITAG representatives presented a summary of their respective country reports through a brief intervention.
- ⦿ The ITAG members and partners provided comments on the progress reports through interventions and the chat function in the online meeting platform.
- ⦿ Country-specific discussions were conducted during the closed-door session of the ITAG and recommendations made accordingly.

4. Overview of immunization in the Region

The immunization programme in the Region is guided by the eight goals of the RVAP 2016–2020 (extended to 2021). These eight goals are as follows:

1. Strengthening RI systems and services
2. Eliminating measles and controlling rubella/CRS (revised in 2019 to “measles and rubella elimination”)
3. Maintaining a polio-free status
4. Sustaining the elimination of maternal and neonatal tetanus
5. Accelerating the control of JE
6. Accelerating the control of hepatitis B
7. Accelerating the introduction of new vaccines and related technologies
8. Ensuring access to high-quality vaccines.

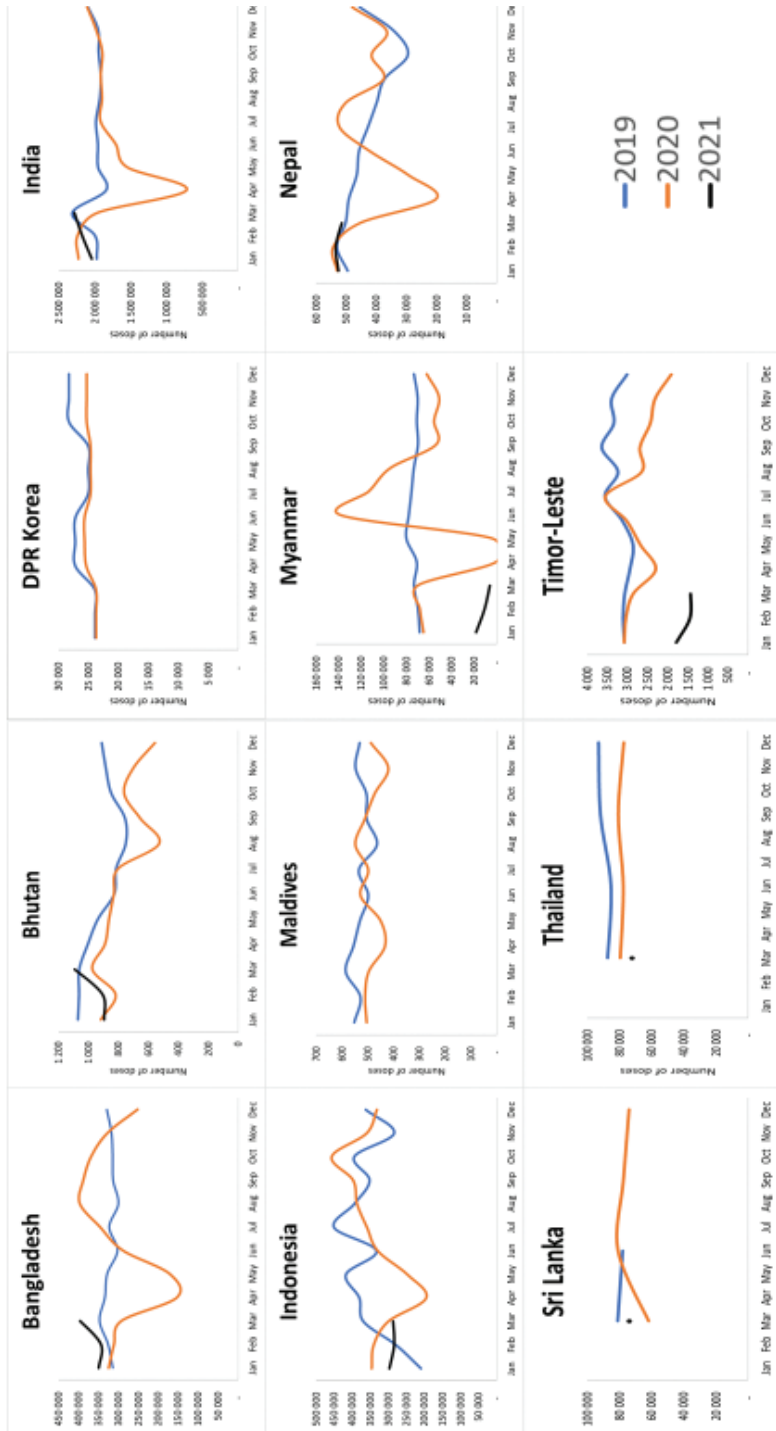
5. Impact of the COVID-19 pandemic on immunization and VPD surveillance

As of end-2019/early 2020, the Region had made extensive progress in achieving the goals of the RVAP. The overall coverage of immunization with three doses of the DTP vaccine (DTP3) increased from 83% in 2010 to 91% in 2019. However, following the COVID-19 pandemic in 2020, DTP3 immunization coverage declined to 85%. The number of un- and undervaccinated children in the Region increased to 4.9 million in 2020 compared with 3 million in 2019. The unvaccinated children (also referred to as zero-dose children) increased to 4.1 million in 2020 compared with 2 million in 2019. Seven countries of the Region experienced a decline in the DTP3 coverage during 2020 compared with 2019 coverage levels. These countries are Bhutan, India, Indonesia, Myanmar, Nepal, Sri Lanka and Timor-Leste. Coverage estimates for Thailand for 2020 were not available at the time of the meeting. As a result of this decline, five countries reported a DTP3 coverage of below 90% in 2020. These countries were India, Indonesia, Myanmar, Nepal and Timor-Leste.

Immunization coverage declined for other antigens as well (inactivated poliovirus vaccine, measles- and rubella-containing vaccines), leading to widening of immunization gaps for several VPDs in the Region.

Surveillance for VPDs also declined in several countries of the Region during 2020 compared with 2019. This resulted in a decrease in the sensitivity for detecting polio, measles, rubella and other VPDs. The overall non-measles non-rubella discard rate, an indicator of the sensitivity of surveillance for measles and rubella, declined from 1.66 per 100 000 population in 2019 to 0.98 in 2020, with six countries in the Region having a rate below the minimum targeted rate of 2 per 100 000 population in 2020.

Fig. 1. Coverage of DTP3 in countries of the Region, 2019, 2020 and 2021 (qtr1)



ata source: Monthly routine immunization data from Member States

Fig. 2. Immunization gaps for various antigens in the South-East Asia Region – 2020

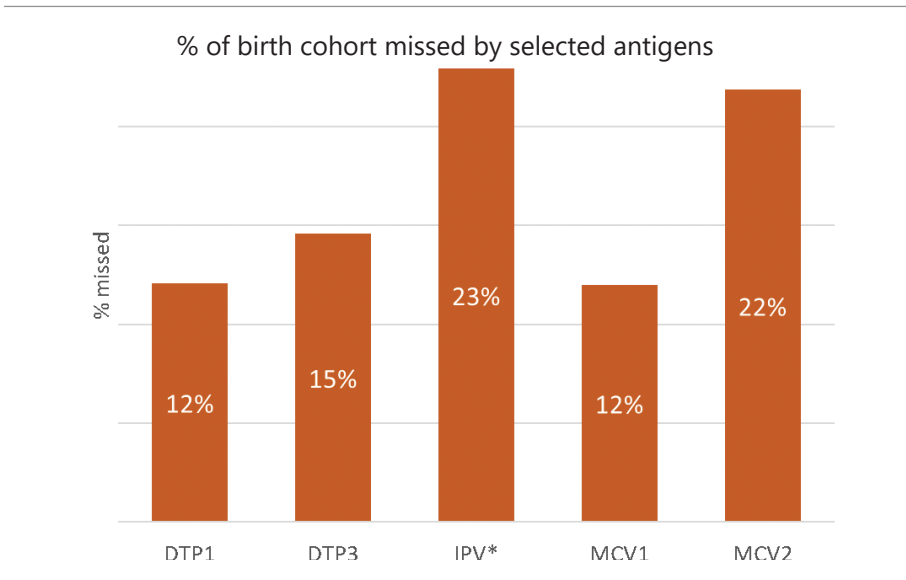
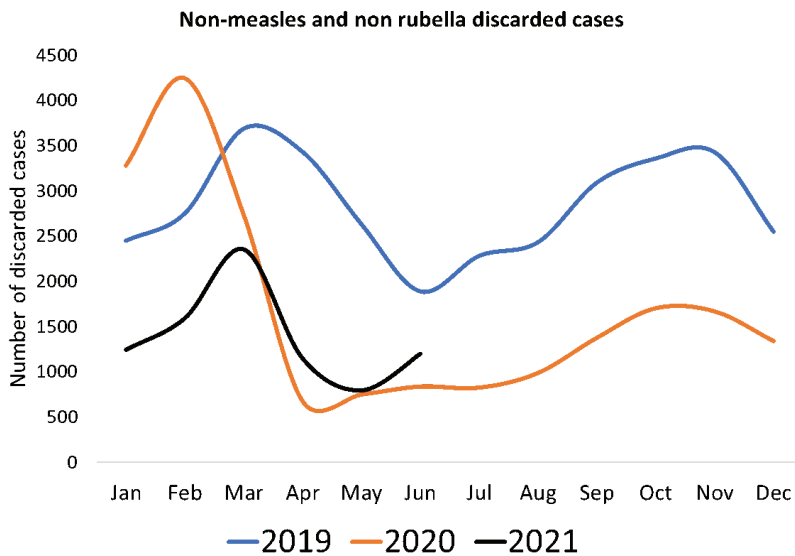


Fig. 3. Non-measles and non-rubella discarded cases reported in the South-East Asia Region, 2019, 2020 and 2021 (qtr 1 and 2)



Similar declines were observed in reporting of cases of acute flaccid paralysis (AFP) as well as in environmental surveillance for poliovirus detection. As a

result of the decline in the immunization coverage and surveillance sensitivity in 2020, several achievements of the Region were put to risk due to the COVID-19 pandemic. These include regional achievements, including polio elimination and maternal and neonatal tetanus elimination status, as well as country-specific achievements that include measles elimination in five countries (Bhutan, DPR Korea, Maldives, Sri Lanka, Timor-Leste), rubella elimination in two countries (Maldives and Sri Lanka) and hepatitis B control in four countries of the Region (Bangladesh, Bhutan, Nepal and Thailand).

Actions taken in countries to resume routine immunization and improve surveillance

National guidelines on immunization/VPD surveillance were developed by most countries of the Region in 2020. These guidelines were updated in 2021 based on lessons learnt from 2020. The key elements of the guidelines include alternative strategies and innovations for conducting fixed and outreach sessions during high transmission of COVID-19, catch-up vaccination of missed children, adolescents and pregnant women, infection prevention and control (IPC) measures during immunization sessions, communication strategies and tools, and guidance on conducting VPD surveillance during COVID-19 transmission.

By quarter 3 of 2020, immunization activities had been resumed and are currently functioning in all countries. All countries are now holding fixed sessions. However, the status of outreach sessions varies across countries and across subnational areas of large countries. WHO's field staff in Bangladesh, India and Nepal are engaged in monitoring of RI sessions with a focus on observing availability of vaccines and other logistics as well as the implementation of COVID-19-appropriate behaviour. The monitors were also tasked with identifying reasons for missing vaccination through community visits and providing feedback to the local health authorities so that action could be taken by them to improve coverage.

Supplementary immunization activities

The COVID-19 pandemic affected mass vaccination campaigns for polio and measles–rubella (MR) in the Region in 2020. However, efforts were made in 2021 to resume these campaigns. India successfully conducted two subnational campaigns with bivalent oral polio vaccine (bOPV) in 2020 during which more than 65 million children aged 0–5 years were vaccinated. This was followed by one nationwide and one subnational polio campaign in 2021 to vaccinate more than 191 million children in the country. A polio campaign with inactivated

poliovirus vaccine (IPV) was conducted in high-risk districts of Indonesia and with bOPV in high-risk municipalities of Timor-Leste, vaccinating 130 000 and 46 000 children, respectively, as part of efforts to maintain high immunity against polio in these countries.

Bangladesh postponed the planned mass campaign with measles–rubella (MR) vaccine in 2020 but conducted this campaign in 2021 by administering the MR vaccine to nearly 36.5 million children aged between 9 months and 9 years. Nepal halted an MR vaccination campaign mid-way in April 2020 but resumed and completed the campaign two months later, vaccinating more than 2.5 million children aged 9 months to 5 years.

Polio transition planning

Activities related to polio transition in five countries where polio is a priority (Bangladesh, India, Indonesia, Myanmar and Nepal) are in progress to mitigate the risks associated with a decline in and/or a potential interruption of polio funding to these countries. The global Transition Independent Monitoring Board (TIMB) recognized the South-East Asia (SEA) Region as the most advanced in polio transition, highlighting the strong commitment from the highest levels of WHO and MoHs, the full integration of polio activities with overall immunization and the support provided by the polio/immunization networks during emergencies. The TIMB identified the lack of plans for the long-term horizon for financial sustainability as a major concern.

National transition plans were available for all five polio-priority countries, even though the pace of implementation of these plans had been hindered due to the COVID-19 pandemic as well as other in-country factors. Immunization network personnel were deployed for the COVID-19 response in all five countries.

Introduction of new vaccine

- ⊙ Rotavirus vaccine was introduced in Myanmar, Nepal and Thailand during 2020 and 2021.
- ⊙ Myanmar introduced the human papillomavirus (HPV) vaccine in quarter 4, 2020.
- ⊙ Rubella-containing vaccine (RCV) was introduced in DPR Korea in 2020.
- ⊙ The use of pneumococcal conjugate (PCV) vaccine was expanded from six states to 25 states in India in 2021.

6. Measles and rubella elimination

In September 2019, during the Seventy-second Session of the Regional Committee, countries of the Region adopted the goal of measles and rubella elimination by 2023. A costed strategic plan was endorsed by Member States. The five strategic areas of the plan are immunization, surveillance, laboratory, outbreaks and linkages. The Regional Framework for verification of measles and rubella elimination has been developed in line with the global framework. It describes two essential criteria and five lines of evidence for the verification of measles and rubella elimination. Five countries (Bhutan, DPR Korea, Maldives, Sri Lanka and Timor-Leste) have achieved and sustained measles elimination, while two countries (Maldives and Sri Lanka) have achieved rubella elimination.

All countries of the Region provide two doses of measles-containing vaccine (MCV) and at least one dose of rubella-containing vaccine (RCV) under their national immunization plans (NIPs). The estimated coverage with the first dose of measles-containing vaccine (MCV1) in the Region in 2020 was 88%, compared with 94% in 2019 and 63% in 2000. The estimated coverage with the second dose of measles-containing vaccine (MCV2) in the Region in 2020 was 78%, compared with 83% in 2019 and 3% in 2000. Around 32.7 million children in the Region received MCV1 during 2020, 29 million children received MCV2 and similarly 32.7 million children received RCV1 through routine immunization (RI) programmes. Around 35 million additional children were vaccinated with the MR vaccine through mass campaigns during 2020 in Bangladesh and Nepal following a brief interruption due to the COVID-19 pandemic.

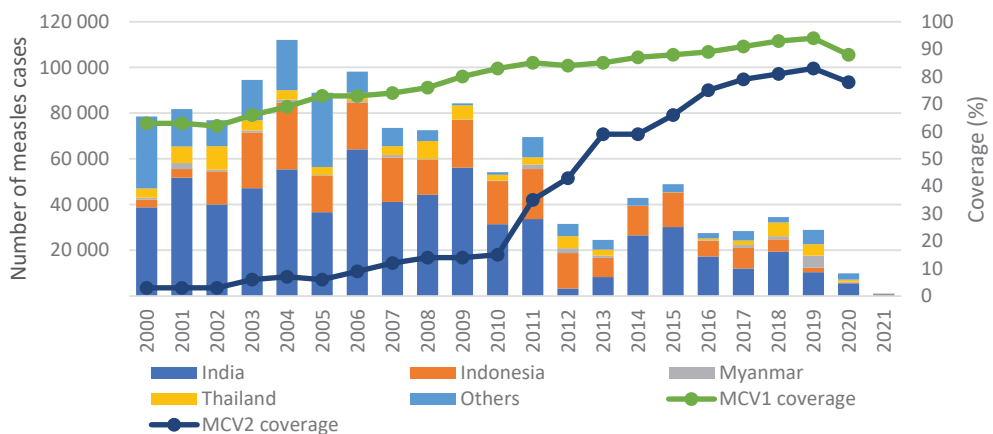
Laboratory-supported case-based surveillance for fever and rash for measles and rubella is functional in all countries of the Region. A Regional Technical Committee and a laboratory quality management framework has been established to ensure the quality of MR laboratories in the Region. With 49 proficient network laboratories, all countries in the Region have access to a proficient laboratory for measles and rubella diagnostics, which includes immunoglobulin M (IgM) serology testing proficiency of 19 laboratories, serology as well as molecular testing (reverse transcriptase-polymerase chain reaction [RT-PCR]) proficiency of 26 laboratories and serology, molecular and sequencing proficiency of

four laboratories The national verification committees for measles and rubella elimination are functional in all 11 countries of the Region.

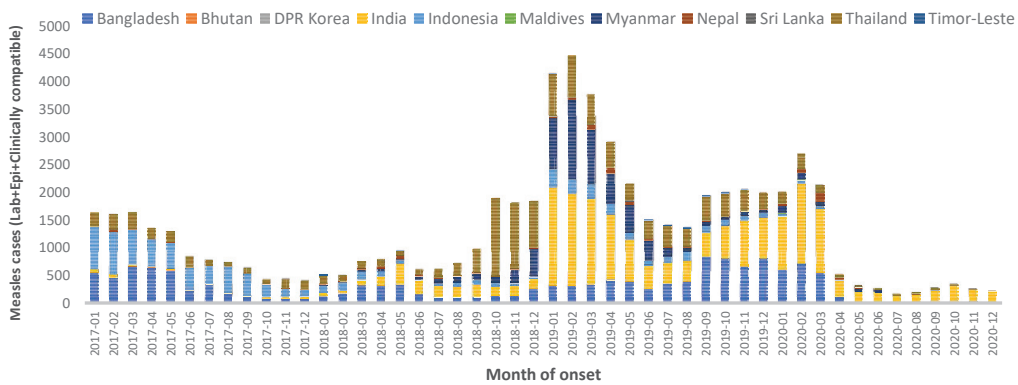
Impact of the COVID-19 pandemic

The COVID-19 pandemic has had a significant impact on the Regional Flagship Priority Programme of Measles and Rubella Elimination. The coverage of MCV1 and MCV2 under RI declined significantly during 2020, compared to 2019 (Fig. 4), thereby increasing the immunity gap and vulnerability to measles and rubella outbreaks. Similarly, surveillance for measles and rubella was affected, with a decline in the number of suspected MR cases reported following the COVID-19 pandemic (Fig. 5). Surveillance has been partially affected in six countries and significantly affected in two, mostly due to repurposing and diversion of surveillance staff for the COVID-19 response.

Fig. 4. Confirmed measles cases and coverage of MCV1 and MCV2 by year – SEA Region



Source: WHO/UNICEF coverage estimates, July 2020 and WHO/UNICEF JRF and EPI/MOHFW; Measles cases from JRF 2000–2019 and 2020 and 2021 from SEA Region MR surveillance database as of 12 April 2021

Fig. 5. Confirmed measles cases by month and by country (2017–2020), SEA Region

Challenges

There are immunity gaps for measles and rubella in various population groups in a few countries due to the suboptimal coverage of MCV and RCV under RI programmes.

The sensitivity of surveillance remained below the desired targets in all countries in the Region in 2020 mostly because of the COVID-19 pandemic, leading to underreporting and underestimation of the exact disease burden in these countries.

Laboratory network support, especially for procurement services for diagnostic kits, is becoming a challenge. Most countries are still dependent on WHO for the procurement of laboratory diagnostic kits for measles and rubella.

Financial insufficiency to accelerate the implementation of activities for measles and rubella elimination remains a challenge to achieving the 2023 target. A study on costing of measles and rubella elimination has estimated that reaching the measles and rubella elimination goal by 2023 will entail an additional cost of US\$ 1.55 billion during 2020–2023. This amounted to an estimated expenditure of US\$ 0.19 per capita per year above the current levels of investment on immunization before the pandemic and will have significantly increased following the COVID-19 pandemic.

7. COVID-19 vaccine deployment in the South-East Asia Region

There has been significant progress in the roll-out of COVID-19 vaccines across the Region. As of 9 August 2021, 10 of the 11 countries in the SEA Region (except DPR Korea) had introduced COVID-19 vaccines. Vaccination data are being documented and shared through a WHO SEA Region dashboard for COVID-19 vaccination, available at: <https://www.who.int/southeastasia/health-topics/immunization/covid-19-vaccination>. More than 650 million doses of COVID-19 vaccines have been administered in the Region with more than 496 million individuals having received one dose and nearly 154 million persons having been fully vaccinated.

All countries that have introduced COVID-19 vaccines have prioritized health workers, frontline workers and elderly populations for vaccination. Five countries have expanded the scope of vaccination to cover all adults. Nearly 24% of individuals in the Region have been vaccinated with the first dose and 7.5% with both doses of COVID-19 vaccines. Bhutan and Maldives have fully vaccinated more than 50% of the total population. Sri Lanka has vaccinated 13.3% with two doses, while India, Indonesia, Nepal, Thailand and Timor-Leste have full vaccination rates of between 5% and 10% of their total population.

Planning and coordination

All 10 countries in the Region that have introduced the COVID-19 vaccine have established high-level national coordination committees for COVID-19 vaccine deployment with subcommittees for key functions. The Vaccine Introduction and Readiness Assessment Tool (VIRAT) has been used by countries to monitor their progress in preparing for the deployment of COVID-19 vaccines.

A Regional Operational Framework for COVID-19 vaccine preparedness, deployment and use was developed and shared with countries in October 2020. Countries used this framework to initiate their planning for COVID-19 vaccines,

together with the global WHO National Deployment and Vaccination Plan (NDVP) guidance that was released in November 2020. Meetings and workshops to support countries in the Region with their COVID-19 vaccine deployment were organized by the Regional Office. These included: regional meetings with vaccine manufacturers and regulators of COVID-19 vaccines, a meeting with national programme managers on cold chain and logistics management for COVID-19 vaccine deployment and a special session of the SEAR-ITAG on COVID-19 vaccine prioritization and deployment as well as a regional workshop on safety surveillance for COVID-19 vaccines.

NDVPs were developed by February 2021 in all 10 countries. In February 2021, a multi-stakeholder Regional Review Committee (RRC) was created to review the NDVPs and determine if countries were sufficiently prepared to be included in the COVID-19 Global Vaccine Access (COVAX) Facility vaccine allocation rounds. All countries were recommended by the RRC for allocation of COVID-19 vaccines in the first round to cover 3% of the population, and only two were not recommended for the allocation to cover 20% of the population.

Emergency-use authorization of COVID-19 vaccines

All countries were able to expedite their regulatory pathways to grant emergency-use authorization (EUA) for multiple COVID-19 vaccines. The number of vaccines that have received EUA in countries have varied from two to nine in individual countries. Nearly 91% of the vaccines used in the Region are from manufacturers who currently have received emergency-use listing (EUL) from WHO. The SEA Regional Office published procedures, checklists and standard operating procedures (SOPs) that regulators need to consider for issuing EUA for vaccines with WHO EUL, vaccines obtained via bilateral purchases and from government-to-government donations.

Vaccine availability and utilization

From the beginning of the pandemic, countries in the Region considered all options to obtain COVID-19 vaccines. As of 9 August 2021, out of the vaccine doses received by countries, 91% have been through direct procurement of vaccines by governments from manufactures, 6% from the COVAX Facility and 3% from donations. The most used vaccine in the Region was the AstraZeneca vaccine from various manufactures, amounting to 68% of the vaccines used. Other vaccines mainly used were Sinovac (16%), Covaxin (9%), Sinopharm (5%), Moderna (2%) and some Pfizer and J&J vaccines.

Countries and the Regional Office have been closely monitoring the utilization rates of available vaccines in each country. Supply constraints combined with high demand for the vaccines have ensured a high utilization rate of COVID-19 doses. The overall utilization rate, as a percentage of doses received, stands at 89% across the Region.

Cold chain and logistics management

UNICEF and WHO conducted a workshop to orient personnel involved with vaccine supply chain management on the tools and resources for planning and preparing cold chain capacity for COVID-19 vaccines. It found that most countries have reasonable cold chain capacity to store and manage vaccines for 20% of the population, for vaccines requiring +2 to +8 degree Celsius temperatures with some augmentation, adjustment and planning. It was noted that the available cold chain capacity for –20 degree Celsius is limited and for ultra-cold chain is negligible. Following the workshop, countries made efforts to enhance current cold chain facilities and looked for options for ultra-cold chain facilities and expansion of the currently used cold chain. The cold chain optimization platform of COVAX has enabled this expansion. However, the immediate need for ultra-cold chain equipment has eased out due to the longer shelf-life of Pfizer and Moderna vaccines at +2 to +8 degree Celsius temperatures.

Communication and risk management

The following activities have been undertaken in countries of the Region as part of efforts to strengthen communication and risk management in the Region:

- ⦿ demand generation and community engagement planning;
- ⦿ risk communication strategy to address misinformation;
- ⦿ social and behavioural data application to generate demand for and acceptance of COVID-19 vaccines;
- ⦿ training of health workers and other stakeholders on demand generation, interpersonal communication and crisis communications.

Vaccine effectiveness studies

A regional vaccine effectiveness (VE) working group has been established in the Region. Six countries in the Region have either already conducted a VE study, or have an ongoing evaluation study, or have plans to conduct a study very

soon. These countries include Bangladesh, Bhutan, India, Indonesia, Sri Lanka and Thailand. The Regional Office has been supporting the development or review of evaluation protocols, providing training workshops, collaborating with global experts and research institutions, information-sharing and coordination for these completed/ongoing/planned studies. Most studies in the Region are on health workers and other high-risk groups. The vaccines under study/proposed to be studied for their VE include the AstraZeneca, Covaxin, Moderna, Sinopharm and Sinovac.

Post-introduction evaluations

An intra-action review (IAR) of COVID-19 vaccination, also called a mini-post introduction evaluation (PIE) has been carried out in Bhutan in May 2021. Several other countries of the Region have shown interest in conducting a mini-PIE. The key success factors identified during the evaluation included strong political leadership, multisectoral coordination and collaboration at national and district levels, timely dissemination of information on vaccines to the community and the use of digital technology for registration, reporting of adverse events following immunization (AEFI), follow up and management of AEFI cases. The key challenges identified included securing the budget and ensuring clarity on financial guidelines, as well as challenges related to distribution of vaccines and updating the digital platform used in the country.

Vaccine safety surveillance

All countries are in the process of strengthening systems for surveillance of AEFI. As of 9 August 2021, AEFI data were received from 6/11 countries (Bangladesh, Bhutan, Indonesia, Maldives, Nepal, Sri Lanka). A total of 32 682 AEFIs (serious and non-serious) was reported for all COVID-19 vaccines from all reporting countries. There is wide variation in AEFI reporting rates (0.37 to 1791 per 100 000 COVID-19 vaccine doses) between countries of the Region. The most important contributing factor for this variation is the variable reporting of serious and/or non-serious adverse events by different countries. A total of 502 serious AEFIs was reported for all COVID-19 vaccines from all reporting countries. The reporting rates for serious AEFIs vary between 0.25 and 34 reports per 100 000 doses, indicating less variability when compared with the total (serious and non-serious AEFI) rates. Countries with a smaller population (Maldives, Bhutan) tend to have much higher reporting rates for both serious and non-serious AEFIs. A total of 484/502 (96%) of AEFI cases have been investigated and 406/502

(81%) have undergone causality assessment, based on which 29 reports of anaphylaxis (or severe allergic reactions) and seven events of thrombosis with thrombocytopenia syndrome (TTS) have been reported in the Region.

Monitoring mechanisms in countries

Monitoring systems have been developed by countries to register individuals for vaccination. Countries have also developed mechanisms to provide vaccination cards/certificates in various formats (hard copy/electronic version). The key challenges that data management systems face in countries include difficulty in identifying target groups in the system, lack of knowledge to use mobile apps by individuals, tracking migrant populations, tracking for second dose administration and insufficient human resources to manage the systems.

8. Strategic Framework for South-East Asia Regional Vaccine Action Plan 2022–2030 – “Leaving no one behind unprotected”

The Immunization Agenda 2030 (IA2030) sets out a global immunization strategy up to 2030. The South-East Asia Region Strategic Framework for the Regional Vaccine Action Plan 2022–2030, developed collaboratively with countries and immunization stakeholders, adapts this global strategy according to the regional context and lays out the Region’s specific impact goals. This Regional Vaccine Implementation Plan 2022–2026 complements these documents, providing guidance on how the Regional Strategic Framework will be implemented within countries and at the regional level.

The primary responsibility for implementation lies with individual countries. Using the Regional Strategic Framework, countries will identify where their national immunization programmes need to be strengthened to achieve the regional goals and targets. For key indicators, they will establish their own targets – challenging but achievable – which will act as stepping stones towards regional “gold standard” targets.

Partners will work with countries to identify development needs, and coordinate and collaborate their activities to deliver tailored packages of support that meet individual country needs. Technical support will draw upon globally collated resources, plus regional expertise, and peer support among countries. Other “accelerators” of regional progress include Gavi national and subnational support, as well as the leveraging of disease-specific control efforts (including those related to COVID-19).

The NITAGs will offer technical advice to national immunization programmes. They will also provide an oversight mechanism for monitoring progress towards targets. At a regional level, the ITAG will provide an overarching oversight mechanism and offer countries individualized advice and support.

Implementation in countries will be based on national immunization strategies and comprehensive multi-year plans (cMYPs), which will be updated over time to reflect Regional strategic priorities. Annual workplans will be developed, outlining the specific activities that need to be undertaken to achieve national targets and identifying who has responsibility for ensuring that they are carried out.

Annual reports will summarize activities undertaken and progress towards national targets. These reports will also identify areas requiring further attention, creating continuous quality improvement cycles that will drive ever-improving programme performance.

Annual workplans and annual reports will be put together by national immunization programmes (NIPs) in collaboration with partners. Annual workplans will include the specific contributions to be made by countries and partners. Annual reports will guide the development of tailored packages of support focused on priority areas. The NITAGs will also feed into the development of annual workplans and comment on annual reports. The ITAG will similarly review annual workplans and reports and offer advice to enhance performance.

The Region's monitoring and evaluation framework will underpin these continuous quality improvement cycles. The framework will include regional versions of global impact goals, as well as indicators corresponding to global strategic priority objectives. A further set of indicators has been established covering regional priority key areas of focus. Scorecards will be developed to provide a visual representation of progress towards both regional gold standard and national targets.

For large countries and those with devolved health systems, similar mechanisms will be established at the subnational level. These will include subnational target-setting within the context of national planning, with input from subnational-level technical experts and partners. The principle of continuous quality improvement, underpinned by data collection and analysis, will be promoted at all levels of national immunization programmes.

The Regional Office will develop analogous regional annual workplans and annual reports, providing an overview of the performance of all countries in the Region as well as a summary of activities undertaken at the regional level. These processes will also be undertaken in collaboration with partners to ensure coordination and alignment.

The Regional Vaccine Implementation Plan will run until 2026. Initially, activities will have a strong focus on the roll-out of COVID-19 vaccination and repair of the damage caused to immunization services and VPD surveillance by the pandemic. A more comprehensive mid-term review will be carried out in 2026 and used to inform the development of a revised Implementation Plan for 2027–2030.

9. Conclusions and recommendations

9.1 Key conclusions

The ITAG appreciated the submission of annual reports by the NITAGs of nine of the 11 countries of the SEA Region, despite the ongoing COVID-19 pandemic. It commended the NIPs and partners for their extensive efforts to ensure continuity of RI services and to revive RI and VPD surveillance despite the challenges posed by the pandemic.

The ITAG noted with concern that immunization and VPD surveillance have been affected due to the COVID-19 pandemic in several countries of the Region, leading to increased vulnerability to outbreaks of VPDs. It also noted that immunization staff has been repurposed for COVID-19-related work in most countries.

The ITAG appreciated the efforts to ensure that mass vaccinations campaigns (polio, MR) were conducted successfully by some countries in the Region during the pandemic and that high administrative coverage was achieved during these campaigns.

It also noted that new vaccines have been introduced in some countries of the Region, despite the pandemic, while some other countries are in the process of introducing additional vaccines.

The ITAG commended the Region for the progress in polio transition but highlighted the continued risks related to long-term sustainability of the immunization networks.

The ITAG expressed concern at the negative impact of the COVID-19 pandemic on measles and rubella elimination efforts in countries of the Region.

The ITAG appreciated that 10 of the 11 countries in the Region are currently administering COVID-19 vaccines. It noted that the availability of COVID-19 vaccines has been a challenge and supply has not been able to meet the demand in several countries, leading to slowing down of the pace of vaccination.

The ITAG commended all countries for having prioritized vaccination of target groups as per the SAGE prioritization roadmap while noting that some countries have gone beyond the priority groups.

While appreciating the good progress in COVID-19 vaccination of health-care workers and frontline workers in the Region, the ITAG expressed concern at the suboptimal COVID-19 vaccine coverage of the elderly population, women, population of certain geographical locations, migrants and displaced populations.

The ITAG noted that countries are facing challenges associated with the management of different types of vaccines (using multiple platforms) from multiple sources.

It appreciated the Region and countries for the high utilization rates of COVID-19 vaccines and for the monitoring and evaluation efforts to optimize vaccine delivery.

The ITAG commended countries for the successful application of cold chain equipment (CCE) support through the COVAX facility.

The ITAG noted that countries have expedited the EUA of several COVID-19 vaccines and that surveillance of vaccine safety is gradually picking up. However, it expressed concern at the low reporting of AEFIs and insufficient causality assessments in some countries.

It noted that countries are providing either electronic and/or paper-based vaccination records to the recipients of COVID-19 vaccines.

The ITAG noted that the Strategic Framework for the South-East Asia Regional Vaccine Action Plan 2022–2030 has been updated with regional approaches for coordinated planning, ownership and accountability, and monitoring and evaluation, based on the IA2030 Framework for Action, and that the Framework will be presented to the South-East Asia Regional Committee in September 2021.

It also noted that the development of a draft Regional Vaccine Implementation Plan for 2022–2026 has been initiated.

9.2 Country-specific conclusions

Bangladesh

- Noted that essential immunization is largely maintained and the impact of COVID-19 in early 2020 was compensated for later in 2020 and early 2021.

- ⦿ Commended Bangladesh for conducting catch-up immunization amid the ongoing COVID-19 pandemic.
- ⦿ Expressed concern that the July 2021 wave of COVID-19 might impact essential immunization coverage.
- ⦿ Noted that the impact on VPD surveillance has been much more than on immunization.
- ⦿ Commended Bangladesh for conducting an MR campaign in December 2020–January 2021.
- ⦿ Noted that the country has set an objective of vaccinating 80% of its population against COVID-19 by 2022.
- ⦿ Expressed concern that with the limited number of vaccine doses, targeting lower-priority groups may reduce the ability to reach the most affected groups.
- ⦿ Noted that shortage of supplies and multiple products have created significant challenges for the roll-out of COVID-19 vaccines.

Bhutan

- ⦿ The ITAG commended Bhutan for maintaining immunization services with no interruption of vaccine and logistics supplies and the high demand for all vaccines, despite the pandemic.
- ⦿ Appreciated uninterrupted VPD surveillance, despite some decline in performance and plans to sensitize health workers on the importance of reporting and investigation.
- ⦿ Appreciated Bhutan for maintaining high MR vaccine coverage during the pandemic.
- ⦿ Commended the country for COVID-19 vaccine roll-out and good coverage attained.
- ⦿ Commended Bhutan for the activities undertaken to build public confidence in the mixed schedule of the COVID-19 vaccine.
- ⦿ Noted that the activities carried out generated good acceptance of vaccines and strong AEFI surveillance.

India

- ⦿ Noted the significant impact of the COVID-19 pandemic on RI vaccine coverage (Penta3, OPV3 and MR) resulting in a decline in immunization coverage to less than 90% for all vaccines during 2020.

- ⊙ Expressed concern over the decline in demand for routine vaccination due to the COVID-19 pandemic.
- ⊙ Commended India for the plan on catch-up immunization.
- ⊙ Appreciated the expansion of PCV to additional states during the COVID-19 pandemic.
- ⊙ Appreciated the existence of a robust vaccine supply chain system in India as a result of which no stock-outs of EPI vaccines or injection equipment were reported at the national or subnational level.
- ⊙ Expressed concern at the decline in VPD surveillance performance.
- ⊙ Noted that the MR elimination programme in India is off-track.
- ⊙ Commended the country for successfully implementing the COVID-19 vaccine roll-out and for progressively increasing vaccine coverage.
- ⊙ Commended India for monitoring a large number of COVID-19 vaccination session sites and taking corrective actions based on monitoring feedback.
- ⊙ Expressed concern at the limited reporting and investigation of AEFIs in India.

Indonesia

- ⊙ Noted that RI coverage has declined for all vaccines in Indonesia and expressed concern at the increasing risk of vaccine-derived polioviruses (VDPV) due to decline in performance of AFP surveillance and OPV/IPV coverage.
- ⊙ Noted that multiple COVID-19 vaccines have been introduced in Indonesia and COVID-19 vaccination of younger children (aged 12–17 years of age) has been initiated.
- ⊙ Noted the efforts to secure sufficient vaccine supplies to meet the requirement for vaccinating all adults.
- ⊙ Commended the country for initiating the surveillance of adverse events of special interest.

Maldives

- ⊙ Appreciated that immunization coverage and VPD surveillance remained on track despite the pandemic.
- ⊙ Expressed concern at the lack of sufficient human resources for the management of immunization and surveillance activities in the country.
- ⊙ Noted that appropriate countermeasures were taken to handle hesitancy for the measles–mumps–rubella (MMR) vaccine in Maldives.

- ⦿ Commended Maldives for reaching high coverage with both doses of COVID-19 vaccine and the innovative approaches taken to identify and reach undocumented foreigners and unregistered migrants.
- ⦿ Commended the home visits through mobile teams to vaccinate bedridden people with COVID-19 vaccines.
- ⦿ Appreciated the high demand for COVID-19 vaccines and efforts made to counteract the spread of misinformation.

Nepal

- ⦿ Noted the actions taken to increase coverage and equity through routine sessions to address left-outs and drop-outs.
- ⦿ Appreciated the successful completion of MR SIA and its linkage with routine immunization to identify zero-dose and partially vaccinated children.
- ⦿ Commended nationwide introduction of the rotavirus vaccine despite the pandemic.
- ⦿ Commended the country for applying to Gavi for typhoid conjugate vaccine (TCV) introduction amid the ongoing COVID-19 pandemic.
- ⦿ Appreciated the efforts made to reach the elderly population with COVID-19 vaccines and to improve cold chain space and waste management of COVID-19 vaccines.

Sri Lanka

- ⦿ Appreciated that the immunization programme in Sri Lanka has performed well, even in during the difficult situation of the pandemic.
- ⦿ Noted the challenges of RI delivery and surveillance during large outbreaks of COVID-19 where the workforce is repurposed for the COVID-19 outbreak response.
- ⦿ Noted that a catch-up plan for RI is planned in Q4 2021.
- ⦿ Commended Sri Lanka for achieving high coverage with COVID-19 vaccines among health-care and frontline workers.
- ⦿ Noted the plan to lower the age group for persons eligible for COVID-19 vaccination.
- ⦿ Appreciated the efforts made by the country to overcome supply constraints during the initial phase of COVID-19 vaccine roll-out.

Thailand

- ⊙ Appreciated that immunization services are currently fully functioning throughout Thailand, although there has been an overall decline in coverage.
- ⊙ Noted the important measures taken to maintain RI services such as catch-up immunization, public communication and target population prioritization.
- ⊙ Noted the introduction of the combined tetanus, diphtheria and acellular pertussis (Tdap) vaccine for pregnant women.
- ⊙ Noted that national MR elimination strategies were developed and disseminated to all subnational levels in mid-2021 and appreciated the rescheduling of second dose of the MR-containing vaccine (MRCV2) from 2.5 years to 1.5 years.
- ⊙ Expressed concern that low/uncertain coverage still exists in some populations – such as among migrants, in the deep south and in urban areas.
- ⊙ Noted that religious beliefs, conflict situations and weakening of primary health care in deep-south Thailand is a cause of vaccination gaps in children.
- ⊙ Commended Thailand for successful roll-out of the COVID-19 vaccine.
- ⊙ Noted that Thailand has recently started to produce COVID-19 vaccines.
- ⊙ Appreciated the efforts to regularly analyse COVID-19 surveillance data, inform policy-makers and provide guidance on prevention and control measures.

Timor-Leste

- ⊙ Noted that the COVID-19 pandemic has caused a decline in demand for routine vaccination.
- ⊙ Noted that the introduction of new vaccines (PCV and HPV) has been postponed due to the pandemic.
- ⊙ Noted that the country has followed guidelines for vaccinating priority target groups against COVID 19 as per the national deployment and vaccination plan.

9.3 Overall recommendations

The SEAR-ITAG made the following key recommendations.

- ⊙ All recommendations made in 2020, i.e. during the 11th ITAG meeting (July 2020) and during the special session of ITAG on COVID-19 vaccination

(November 2020) continue to hold and efforts to implement these should continue.

- ⦿ The ITAG endorsed the recommendations made by the respective NITAGs and encouraged NIPs to continue/enhance engagement with NITAGs.
- ⦿ It urged NIPs to develop a time-sensitive joint implementation plan as part of their annual workplan to operationalize the ITAG and NITAG recommendations.
- ⦿ It recommended that future NITAG reports should specifically include efforts undertaken by the country to identify areas/populations with high zero-dose children as well as actions to improve coverage in these areas.

Routine Immunization revitalization

- ⦿ The ITAG recommended that immunization should be considered as an essential service and continuity of services must be ensured.
- ⦿ Strategies to maintain and enhance RI should be in place while efforts to increase COVID-19 vaccination rates are ongoing.
- ⦿ It should be ensured that adequate human resources are identified and available to meet the need to conduct RI sessions while COVID-19 vaccination is ramped up.
- ⦿ Enhanced communication efforts to build confidence for RI services should be ensured in the context of the COVID-19 pandemic.
- ⦿ Policies should be developed and ensured for catch-up vaccination with EPI antigens beyond conventional age groups of immunization programmes.
- ⦿ Tracking of children should be ensured for their full immunization status (measured by completion of MCV2) and efforts made to increase the coverage of fully immunized children.
- ⦿ Countries should be encouraged to continue to identify opportunities to introduce new or underutilized vaccines, similar to Nepal's example of application to Gavi for the Typhoid conjugate vaccine (TCV).
- ⦿ Strategies should be in place to identify high-risk groups and areas and tailored strategies developed and implemented to reach these groups through SIAs, periodic intensification of RI, catch-up or sweeping activities.
- ⦿ In the eventuality of future lockdowns/movement restrictions, especially in areas that are at high risk, it should be ensured that SOPs are in place for enhancing immunization activities immediately following cessation of lockdown periods.

- ⦿ Monitoring efforts should be strengthened in all countries and a tailored approach taken to enhance the quality and coverage of immunization using concurrent monitoring and other real-time monitoring data.
- ⦿ In places with ongoing school immunization programmes, special strategies should be developed to vaccinate schoolchildren who have missed vaccination due to prolonged school closure.

VPD surveillance revitalization

- ⦿ The ITAG recommended regular/periodic national and subnational reviews of surveillance indicators of AFP/MR/other priority VPDs to identify and implement evidence-based actions.
- ⦿ Focus is needed on understanding the reasons for the decline in case reporting, and actions taken to improve reporting.
- ⦿ Appropriate/innovative strategies should be developed and implemented to ensure that VPD surveillance is maintained at the targeted levels.
- ⦿ Alternative communication/reporting/tracking methods should be identified and applied for case identification, investigation and reporting of suspected cases of priority VPDs with a focus on AFP, fever and rash, and diphtheria surveillance during and post lockdowns.
- ⦿ Availability should be ensured of adequate human and financial resources for VPD surveillance activities.
- ⦿ Sharing best practices on surveillance activities during lockdowns should be encouraged.

MR elimination

- ⦿ The ITAG recommended that all recommendations made for revitalization of RI and VPD surveillance apply to MR elimination as well.
- ⦿ It recommended conducting an in-depth review of MR elimination activities in countries of the Region and reporting back the findings to the SEAR-ITAG, followed by a consultation with all Member States on the feasibility/revision of the regional target of MR elimination by 2023 based on the findings of the in-depth reviews.

COVID-19 vaccine roll-out

- ⦿ The ITAG recommended close monitoring of vaccination coverage among priority populations such as the elderly, pregnant and lactating women, people with comorbidities, and displaced/migrant populations with both the first and second doses.
- ⦿ Availability should be ensured of COVID-19 vaccination coverage data disaggregated by vaccine type, and by different target groups.
- ⦿ Mechanisms should be ensured to provide high-quality, secure and authentic documentation for vaccination (certification) to the population and advised that the WHO Regional Office should orient and support countries on this.
- ⦿ AEFI management and surveillance systems should be strengthened, including causality assessments, and regular sharing of data ensured with the WHO Regional Office and through ViGiBase – a global database of individual case safety reports.
- ⦿ An in-depth assessment should be conducted of gender balance among various priority groups as a research priority.
- ⦿ Availability, monitoring, evaluation and updating should be ensured of the “risk communication plan” for COVID-19 vaccines in all countries.
- ⦿ Progress on risk communication should be reported during the next ITAG meeting.
- ⦿ Mini-PIEs should be conducted as part of the COVID-19 pandemic response intra-action review.
- ⦿ Mechanisms should be in place to monitor and track coverage of the second dose of the vaccine (for all vaccines requiring two doses).
- ⦿ Countries are encouraged to conduct need-based vaccine effectiveness studies for various vaccines.
- ⦿ Inclusion of vaccination status of COVID-19 cases should be ensured in COVID-19 case investigation forms and use of COVID-19 epidemiological data for programmatic decisions, e.g. prioritization of future target groups.
- ⦿ Continuation of public health and social measures should be ensured along with COVID-19 vaccination.
- ⦿ Countries should ensure that the enablers of and barriers to adult vaccination are well documented in countries that are vaccinating adults for the first time,
- ⦿ All factors that affect COVID-19 vaccination uptake should continue to be monitored and addressed using appropriate data collection tools, including factors related to acceptance and operational issues that affect uptake.

- ⦿ The ITAG encourages countries to initiate surveillance of adverse events of special interest to strengthen the national pharmacovigilance system.

Strategic Framework for the Regional Vaccine Action Plan 2022–2030

- ⦿ The ITAG recommended that countries and partners should work together to review the current version of the Plan and identify national and regional key performance indicators, baseline values for them, targets for 2026, and important activities for country-level and regional-level implementation.
- ⦿ Recommended that the development of the Regional Vaccine Implementation Plan 2022–2026 should be completed by November 2021.

9.4 Additional country-specific recommendations

Bangladesh

- ⦿ Provide a report on the immunization and VPD surveillance activities for migrants/displaced populations in Cox's Bazar.
- ⦿ Ensure that the definition of “acute fever and maculopapular rash” is implemented nationwide as a part of MR surveillance.
- ⦿ Enhance laboratory and surveillance capacity for molecular epidemiology to identify the source of transmission for measles and rubella.
- ⦿ Enhance mechanisms for identification of priority groups and develop strategies to vaccinate these groups with COVID-19 vaccine and monitor coverage among them.
- ⦿ Improve AEFI surveillance and monitoring systems and turnaround of investigation of all COVID-19 vaccine-related AEFIs.
- ⦿ Ensure human resource capacity is adequate at all levels and existing vacant positions of cold chain handlers are filled on a priority.

Bhutan

- ⦿ Conduct an in-depth review to resolve the denominator issue with RI antigens, especially for MCV2.
- ⦿ Conduct supplemental surveillance activities (such as retrospective case search) to understand the true VPD situation for possible missed measles outbreaks/cases or other VPD cases.

- ⦿ Develop and build capacity for outbreak preparedness and response plan to respond rapidly to MR outbreaks.
- ⦿ Strengthen laboratory support with a focus on dealing with cases of rubella in the context of very low incidence of rubella and possible false-positive cases.
- ⦿ Strengthen the COVID-19 vaccination registration system to reduce duplication and identify persons in high-risk categories.

India

- ⦿ Conduct state-by-state assessment of RI and VPD surveillance and develop state-wise immunization and VPD surveillance revitalization plans; mechanisms to monitor implementation of state-level plans be put in place at the national level.
- ⦿ Share lessons learnt on the deep-dive on RI and VPD surveillance and its outcome.
- ⦿ Conduct MR immunity profile assessments for all states and plan and implement subnational MR SIAs in states with significant unprotected populations (more than 80% of birth cohort).
- ⦿ Considering that polio continues to be a risk, continue to maintain a high population immunity level for polio through RI and periodic SIAs, as well as by tracking surveillance indicators.
- ⦿ Identify and address the issues related to COVID-19 vaccine hesitancy among the elderly and persons with comorbidities.
- ⦿ Improve the delivery strategies of COVID-19 vaccines for elderly persons.
- ⦿ Enhance reporting of serious/severe AEFI cases following COVID-19 vaccination, expedite causality assessment of all serious/severe AEFIs and share the outcomes with the Regional Office and in ViGiBase.
- ⦿ Ensure and monitor equitable distribution of COVID-19 vaccines to both males and females.

Indonesia

- ⦿ Develop a timeline for the implementation of NITAG recommendations along with a monitoring mechanism.
- ⦿ Conduct province-wise assessment of RI and VPD surveillance and develop an immunization and VPD surveillance revitalization plan for each province.

- ⊙ Conduct an assessment on the adequacy of partners' support at the subnational level and gaps to be filled to revitalize RI/VPD surveillance.
- ⊙ ensure mechanisms to monitor implementation of province-level plans at the national level.
- ⊙ Assess the impact, if any, of COVID-19 vaccination on RI and address it.
- ⊙ Assess the impact of COVID-19 vaccine hesitancy on the demand for RI and address it.
- ⊙ Conduct stakeholder analysis of the vaccine procurement system to develop plans for streamlining planning, implementation and monitoring of the vaccine procurement and distribution process.
- ⊙ Plan and implement high-quality subnational MR SIAs urgently to close immunity gaps with the necessary measures to deal with any vaccine hesitancy based on previous experience.
- ⊙ Ensure a continued focus on COVID-19 vaccination of priority groups as per the SAGE prioritization roadmap.
- ⊙ Accelerate coverage of COVID-19 vaccines for all, including elderly populations, by addressing both access and demand obstacles.
- ⊙ Develop and implement strategies to improve access to COVID-19 vaccines in remote/island populations.
- ⊙ Address issues related to COVID-19 vaccine hesitancy among the elderly and persons with comorbidities.
- ⊙ Ensure that cold chain improvement plans for COVID-19 vaccines are implemented and monitored.

Maldives

- ⊙ Develop a long-term human resource plan for immunization and surveillance, including an interim task-shifting mechanism.
- ⊙ Ensure training/orientation of new staff on immunization in practice and VPD surveillance.
- ⊙ Strengthen the programme at the central level through dedicated teams to monitor implementation.
- ⊙ Develop demand-generation strategies to enhance MR vaccine uptake in migrant and unregistered populations.
- ⊙ Develop and implement plans for immunization of expatriate workers with MR vaccine.

- ⦿ Ensure that dedicated human resources are available to support COVID-19 vaccine roll-out.
- ⦿ Continued efforts to track, identify and vaccinate migrant populations and foreigners with COVID-19 vaccines.
- ⦿ Enhance the AEFI monitoring and surveillance mechanism following COVID-19 vaccination with capacity for causality assessment.

Nepal

- ⦿ Advocate with subnational decision-makers to ensure support to enhance immunization coverage in each *palika*.
- ⦿ Ensure capacity-building of local-level health managers (health coordinators at *palika* level) to manage immunization activities through tailored training.
- ⦿ Review the status of fully immunized districts and municipalities for sustainability plans.
- ⦿ Conduct regular reviews with provinces and districts with feedback on immunization coverage and measles/AFP and other VPD surveillance indicators.
- ⦿ Enhance national capacity for molecular epidemiology of measles and rubella.
- ⦿ Share the evaluation findings and lessons learnt on linking MR SIAs with essential immunization strengthening in the next ITAG meeting.
- ⦿ Enhance human resource capacity at the central level for casualty assessment of serious/severe AEFIs following COVID-19 vaccination.

Sri Lanka

- ⦿ Develop plans to sustain the gains and ensure that EPI reviews at the subnational level are reinstated.
- ⦿ Develop and implement more specific plans for catch up of essential immunization.
- ⦿ Develop a more specific plan to ramp up MR surveillance.
- ⦿ Conduct an assessment to understand issues with COVID-19 vaccine acceptance/demand and develop a communication plan accordingly.
- ⦿ Review the COVID-19 vaccine data management system and correct issues with completeness of data.

Thailand

- ⦿ Conduct an urgent review of EPI and VPD surveillance in the country and develop a revitalization plan with an accountability framework for monitoring implementation of the recommendations.
- ⦿ Ensure capacity-building of local level health managers to manage immunization activities through tailored mid-level managers' training.
- ⦿ Ensure capacity-building of vaccinators on immunization in practice with focus on deep-south Thailand.
- ⦿ Enhance systems to capture data on COVID-19 vaccine utilization and wastage by vaccine type.
- ⦿ Enhance the capacity for timely causality assessment of severe AEFI cases following COVID-19 vaccines.

Timor-Leste

- ⦿ Ensure that the procurement policies and SOPs for all vaccines are in place and there are no delays in procurement of vaccines.
- ⦿ Develop and introduce a plan to improve the coverage of MCV2 vaccination urgently.
- ⦿ Strengthen laboratory support with a focus on dealing with cases of rubella in the context of very low incidence of rubella and possible false-positive cases.
- ⦿ Develop and implement strategies to improve full COVID-19 vaccination coverage for priority groups.
- ⦿ Enhance uptake of the second dose of COVID-19 vaccine.
- ⦿ Ensure targeted communication and improved strategies to identify and deliver COVID-19 vaccines to the elderly and persons with comorbidities.

Annex 1

Opening address by the Regional Director

Shri Rajesh Bhushan, Secretary, Ministry of Health & Family Welfare, Government of India; Members of the South-East Asia Region Immunization Technical Advisory Group, Chairpersons and Representatives of National Immunization Technical Advisory Groups from Member States, technical experts, programme managers, representatives of partner agencies, ladies and gentlemen,

Good afternoon and welcome to this 12th meeting of the South-East Asia Region Immunization Technical Advisory Group (ITAG) – the third such meeting since the onset of the COVID-19 pandemic.

I will deliver these remarks in three parts, each part corresponding to your broad objectives:

First, the COVID-19 response and vaccination roll-out;

Second, the status of routine immunization and the South-East Asia Regional Vaccine Action Plan;

And third, the way forward to update the Regional Vaccine Action Plan, in line with World Health Assembly and Regional Committee endorsements, and in pursuit of the Immunization Agenda 2030 targets.

As of 6 August, almost 201 million cases of COVID-19 have been confirmed globally, including more than 4.2 million deaths.

The South-East Asia Region is the world's third most affected region, with more than 38 million cases and just over 585 000 deaths.

Since we last met in November, an array of safe and effective vaccines has been developed globally.

WHO has now listed 11 vaccine products for emergency use; we continue to assess more.

Countries in the Region and across the world are administering vaccines on the basis of the WHO-listed vaccines for emergency use, in addition to the emergency use authorization provided by national regulatory agencies.

Ten of the Region's 11 Member States have introduced COVID-19 vaccines to respond to the pandemic. As of 8 August, more than 646 million doses of COVID-19 vaccines have been administered in the Region, with 24% of people having received at least one dose, and 7.5% being fully immunized.

Variability in coverage between countries that have initiated vaccination ranges from 70.7% to 3.4% for the first dose and 62.7% to 2.7% for the second dose.

All countries in the Region have designed national vaccine deployment plans with a focus on priority groups, including health-care and frontline workers, and elderly populations.

Limited availability and inequitable access to vaccines continue to be a challenge.

Globally, high-income and upper-middle-income countries have achieved a much higher percentage coverage compared with lower-middle-income and low-income countries. This is not because high-income countries are more efficient, but because they have more vaccines.

We now face a two-track pandemic, defined by each country's access or lack thereof to vaccines.

Efforts to increase country access to equitable vaccine supplies continue to be initiated, including through the removal of barriers to scale up manufacturing, the waiving of intellectual property rights, and the global sharing of technologies and know-how.

I am aware of how closely all partners and countries in the Region are working to ensure a coordinated roll-out and to scale-up access to vaccines. I thank you for your efforts.

Our targets are to vaccinate at least 10% of the population of every country by September, at least 40% by the end of the year, and 70% globally by the middle of next year. These are the milestones we must reach together to control the pandemic.

Our message to all countries and partners remains steadfast: Vaccine equity is not only the right thing to do, but it is also the most efficient way forward. The global failure to share vaccines equitably is fuelling the pandemic and will continue to do so for as long as the situation persists.

Supplies of COVID-19 vaccines are expected to increase over the coming months and it is important for countries to be prepared to absorb and utilize them.

Systems must be in place to store, distribute and administer vaccines. Strategies must be in place to increase vaccine acceptance. Achieving high vaccine coverage, especially among those at highest risk, will remain critical, alongside the continued implementation of public health and social measures.

I now turn to routine immunization and the South-East Asia Regional Vaccine Action Plan, which has in recent years facilitated tremendous Regionwide progress towards our immunization goals.

Since 2014 the Region has remained polio-free. Since 2016 it has maintained maternal and neonatal tetanus elimination.

Five countries have eliminated measles, two of which have also eliminated rubella.

Four countries have achieved hepatitis B control through immunization.

Since 2010, all countries have introduced between three and five new or underutilized vaccines.

By 2019, immunization coverage in the Region had reached a remarkable 91%, up from 83% in 2010.

The total number of unvaccinated or partially vaccinated children had declined to 3.3 million, compared with 8.2 million in 2009.

You are all aware: The pandemic continues to put these and other achievements at risk.

We know that in 2020 the global coverage of antigens under routine immunization significantly declined, increasing immunity gaps, and with them, vulnerabilities to vaccine-preventable diseases.

Seven of the Region's 11 countries reported a decline in DPT3 coverage, which in 2020 averaged 85%.

National commitment to essential routine immunization has remained strong, but increased efforts are required at the subnational level to translate national commitment into positive on-the-ground results.

To reach the unreached and underserved, countries must continue to refine strategic, operational and policy guidelines for reviving immunization and surveillance activities, towards which this ITAG can contribute.

As you embark on this 12th ITAG meeting, update the Regional Vaccine Action Plan, and chart the path forward, towards our regional and global targets, that message – the importance of prioritizing equity – is one that I want to focus on.

In the South-East Asia Region and across the world, COVID-19 has disproportionately impacted those who have been or are at risk of being left behind.

It has exploited and exacerbated social and economic inequities, and negatively impacted almost all areas of health, including immunization.

Amid the ongoing COVID-19 response, it is our duty not only to revive immunization systems, but to catch up to and even surpass pre-pandemic levels of coverage.

In pursuing that outcome, we must focus on the most vulnerable first, ensuring that the updated Regional Vaccine Action Plan is linked to the wider quest to achieve universal health coverage, for which a primary health care approach is essential.

I am certain that this group of esteemed experts will deliver, and I look very much forward to being apprised of your guidance, contained in the updated Framework of the Regional Vaccine Action Plan and its implementation plan.

I wish you all the very best, and reiterate WHO's full support, as together we strive to ensure that everyone, everywhere, at every age, fully benefits from vaccines, for a fairer, healthier future for all.

Thank you.

Annex 2

Agenda

1. Opening remarks by Regional Director WHO South-East Asia
2. Remarks by the Secretary, Ministry of Health & Family Welfare, Government of India
3. Objectives of the meeting and introduction of SEAR ITAG members
4. Progress against RVAP goals and impact of the COVID-19 pandemic on the RVAP goals - an overview
5. Actions taken/proposed to improve routine immunization coverage and VPD surveillance following the COVID-19 pandemic
6. Measles and rubella elimination in South-East Asia Region - an overview
7. Regional Vaccine Implementation Plan 2022-2026 - an overview
8. COVID-19 situation and vaccine roll-out in the South-East Asia Region - an overview
9. COVID-19 vaccine roll-out - global update/challenges/COVAX developments, supply scenario
10. Highlights on COVID-19 vaccines from recent SAGE meetings, including vaccine safety discussions
11. Progress and challenges in COVID-19 vaccine roll-out
12. Conclusions and recommendations of the SEAR-ITAG and discussion

Annex 3

List of participants

ITAG Members

Professor Gagandeep Kang
Chairperson ITAG; and
Professor
Wellcome Trust Research Laboratory
Division of Gastrointestinal Sciences
Christian Medical College
Tamil Nadu, India

Professor Mohammad Shahidullah
Professor of Neonatology; and
Bangabandhu Sheikh Mujib Medical
University (BSMMU)
and President Bangladesh Pediatric
Association and BMDC
Dhaka, Bangladesh

Dr Yasho Vardhan Pradhan
Former Director-General
Health Services
Ministry of Health
Kathmandu, Nepal

Dr Piyanit Tharmaphornpilas
Senior Medical Advisor
Department of Disease Control
Ministry of Public Health
Thailand

Professor Harendra de Silva
Emeritus Professor of Paediatrics
University of Colombo
Colombo, Sri Lanka

Dra Togi Junice Hutadjulu
Director of Standardization of Drugs
Narcotics, Psychotropic and Precursors
Jakarta, Indonesia

Professor Julie Leask
Professor, Sydney Nursing School
Faculty of Medicine and Health
The University of Sydney School of
Medicine
Sydney, Australia

SAGE/RCCPE/RVC

SAGE

Dr Alejandro Cravioto
Chair, Strategic Advisory Group of
Experts on Immunization (SAGE); and
Facultad de Medicina Universidad
Nacional Autónoma de México
Cluded de México, Mexico

Professor Rakesh Aggarwal
Member, SAGE; and
Director, Jawaharlal Institute of
Postgraduate Medical Education and
Research (JIPMER)
Puducherry, India

Dr Sonali Kochar
Member, SAGE; and
Medical Director, Global Healthcare
Consulting and Clinical Associate
Professor
Department of Global Health
University of Washington, Seattle, USA

Professor Punnee Pitisuttithum
Member, SAGE; and
Head, Department of Clinical Tropical
Medicine; and
Head, Vaccine Trial Centre
Faculty of Tropical Medicine
Mahidol University
Bangkok, Thailand

SEA-RCCPE

Professor Mahmudur Rahman
Chair, Regional Certification Commission
for Polio Eradication; and
Senior Technical GHSA Consultant
GHD/EMPHNET
Dhaka, Bangladesh

SEA-RVC

Professor Shahina Tabassum
 Chairperson, South-East Asia Regional
 Verification Commission for Measles; and
 Rubella Elimination; and
 Professor, Department of Virology
 Bangabandhu Sheikh Mujib Medical
 University (BSMMU)
 Dhaka, Bangladesh

NITAG Members**Bangladesh**

Professor (Dr) Choudhury Ali Kawsar
 Chairperson, National Immunization
 Technical Advisory Group (NITAG)
 (Ex-Chairman, Dept of Paediatrics,
 BSMMU)
 Dhaka, Bangladesh

Bhutan

Dr Mimi Lhamo Mynak
 Chairperson
 National Committee on Immunization
 Practices; and Paediatrician
 C/o Ministry of Health, JDWNR Hospital
 Thimphu, Bhutan

India

Sh Rajesh Bhushan
 Chairperson
 National Technical Advisory Group on
 Immunization; and Secretary
 Ministry of Health & Family Welfare
 Nirman Bhavan
 New Delhi, India

Indonesia

Dr Professor Sri Rezeki Hadinegoro
 Chairperson – Indonesian Technical
 Advisory Group on Immunization (ITAGI)
 C/o Directorate General DC-EH
 Immunization
 Jakarta, Indonesia

Dr Julitasari Sundoro
 Executive Secretary – Indonesian Technical
 Advisory Group on Immunization (ITAGI)
 C/o Directorate General DC-EH
 Immunization
 Jakarta, Indonesia

Maldives

Dr Ahmed Faisal
 Chairperson Maldives Technical Advisory
 Group on Immunization (MTAGI); and
 Consultant in Paediatrics
 Indira Gandhi Memorial Hospital
 Male', Maldives

Nepal

Dr Ramesh Kant Adhikari
 Chairperson
 National Immunization Advisory
 Committee
 Kathmandu, Nepal

Sri Lanka

Dr Samitha P Ginige
 Consultant Epidemiologist
 Epidemiology Unit
 Ministry of Health, Nutrition and
 Indigenous Medicine
 Colombo, Sri Lanka

Timor-Leste

Dr Celia A. Gusmao dos Santos
 President of National Immunization
 Technical Advisory Group
 Dili, Democratic Republic of Timor-Leste

Ministry of Health**Bangladesh**

Dr Mowla Baksh Chaudhury
 Program Manager, EPI
 Directorate General of Health Services
 Ministry of Health & Family Welfare
 Mohakhali, Dhaka
 Bangladesh

Dr Md Tanvir Hossen
Deputy Program Manager, EPI &
Surveillance
Directorate General of Health Services
Ministry of Health & Family Welfare
Mohakhali, Dhaka
Bangladesh

Bhutan

Mr Sangay Phuntsho
Sr Program Officer, EPI
Department of Public Health
Ministry of Health
Thimphu, Bhutan

Mr Jit Bahadur Darnal
Clinical Officer /IFETP
Royal Centre for Disease Control
Department of Public Health
Ministry of Health
Thimphu, Bhutan

India

Dr Pradeep Halder
Advisor
Ministry of Health & Family Welfare
New Delhi, India

Dr M.K. Agarwal
Additional Commissioner (UIP)
Ministry of Health & Family Welfare
New Delhi, India

Dr Veena Dhawan
Joint Commissioner
Ministry of Health & Family Welfare
New Delhi, India

Indonesia

Dr Indri Oktaria Sukmaputri, MPH, Sub
Coordinator – Immunization
Ministry of Health
Jakarta, Indonesia

Dr Sherli Karolina
Deputy Manager-Surveillance
Surveillance & Response
Ministry of Health
Jakarta, Indonesia

Maldives

Dr Ibrahim Afzal
Epidemiologist
Health Protection Agency
Ministry of Health
Male, Maldives

Ms Nashiya Abdul Ghafoor
EPI Programme Manager
Health Protection Agency
Ministry of Health
Male, Maldives

Nepal

Dr Jhalak Sharma Gautam
Chief – Child Health & Immunization
Section
Family Welfare Division, DoHS
Ministry of Health and Population
Kathmandu, Nepal

Mr Bashanta Shrestha
Public Health Officer
Family Welfare Division, DoHS
Ministry of Health and Population
Kathmandu, Nepal

Sri Lanka

Dr Deepa Gamage
Consultant Medical Epidemiologist
Epidemiology Unit
Ministry of Health, Nutrition and
Indigenous Medicine
Colombo, Sri Lanka

Thailand

Dr Suchada Jiamsiri
Director
Vaccine Preventable Disease Division
Department of Disease Control
Ministry of Public Health
Nonthaburi, Thailand

Dr Chaninan Sonthichai
 Medical Officer, Professional Level
 Division of General Communicable
 Diseases
 Department of Disease Control
 Ministry of Public Health
 Nonthaburi, Thailand

Miss Peewara Boonwisat
 Public Health Technical Officer,
 Practitioner Level
 Division of Epidemiology
 Department of Disease Control
 Ministry of Public Health
 Nonthaburi, Thailand

Timor-Leste

Mr. Manuel Mausiry
 EPI Program Manager
 Ministry of Health
 Dili, Democratic Republic of Timor-Leste

Dr Filipe de Neri Machado
 Head of Surveillance Department
 Ministry of Health
 Dili, Democratic Republic of Timor-Leste

Ms Liliana Varela
 Surveillance Officer
 Ministry of Health
 Dili, Democratic Republic of Timor-Leste

Donors and Partners

Centre for Disease Control and Prevention (CDC)

Dr Ahmed Kassem
 Medical Epidemiologist
 Global Immunization Division
 Center for Disease Control and
 Prevention, Atlanta, USA

Dr Steve Wassilak
 Science, Program and Research
 Coordinator, Polio Eradication
 Global Immunization Division
 Center for Disease Control and
 Prevention, Atlanta, USA

Gavi, The Vaccine Alliance

Mr Dirk Gehl
 Senior Country Manager
 Asia Pacific Regional Team
 Gavi Secretariat
 Geneva, Switzerland

Dr Nilgun Aydogan
 Senior Country Manager
 Asia Pacific Regional Team
 Gavi Secretariat
 Geneva, Switzerland

UNICEF

East Asia and Pacific Region (EAPRO)

Dr Khin Devi Aung
 Regional Health Specialist,
 Immunization and Health Systems
 UNICEF, EAPRO
 Bangkok, Thailand

Dr Ridwan Gustiana
 Regional Health Specialist
 Immunisation and Health Security
 UNICEF, EAPRO
 Bangkok, Thailand

Dr Dyned Michelle
 Regional Immunization Demand Specialist
 Demand and Behavior Science and a Lead
 Researcher in implementation Researches
 UNICEF, EAPRO
 Bangkok, Thailand

Regional Office for South-Asia (ROSA)

Dr Azhar Abid Raza
 Regional Immunization Specialist
 UNICEF Regional Office for South-Asia
 Kathmandu, Nepal

Dr Günter Boussey
 Senior Health Specialist – Immunization
 & HSS
 UNICEF Regional Office for South-Asia
 Kathmandu, Nepal

Bangladesh

Dr Jucy Merina Adhikari
Immunization Specialist
United Nations Children's Fund
Dhaka, Bangladesh

Bhutan

Dr Indrani Chakma
H&N Specialist (Chief Health, Nutrition
and WASH Section)
United Nations Children's Fund
Paro, Bhutan

Dr Anshu Kumar
Cold Chain Specialist
United Nations Children's Fund
Paro, Bhutan

DPR Korea

Dr Ngozi Diana Ekundayo Kennedy
Chief of Health
United Nations Children's Fund
Pyongyang, DPR Korea

Ms Paula Ghrist
Health Manager
United Nations Children's Fund
Pyongyang, DPR Korea

Ms Caroline Kiyiika
Health Supply Specialist
United Nations Children's Fund
Pyongyang, DPR Korea

India

Dr Rija Andriamihantanirina
Immunization Specialist
United Nations Children's Fund
New Delhi, India

Dr Bhrigu Kapuria
Health Specialist (Immunization)
United Nations Children's Fund
New Delhi, India

Indonesia

Dr Mohammad Ruhul Amin
Immunization Specialist
United Nations Children's Fund
Jakarta, Indonesia

Dr Kenny Peetosutan
Health Specialist Immunization
United Nations Children's Fund
Jakarta, Indonesia

Maldives

Dr Shahula Ahmed
Programme Specialist
United Nations Children's Fund
Male, Maldives

Dr Khadheeja Ahmed
Health & Nutrition Officer
United Nations Children's Fund
Male, Maldives

Myanmar

Dr Satish Gupta
Immunization Manager
United Nations Children's Fund
Yangon, Myanmar

Dr Tin Htut
Health Specialist
United Nations Children's Fund
Yangon, Myanmar

Nepal

Dr Budhi Setiawan
Chief of Health
United Nations Children's Fund
Kathmandu, Nepal

Mr Pradeep Shrestha
Health Officer
United Nations Children's Fund
Kathmandu, Nepal

Sri Lanka

Dr Dhammica Rowel
Health and Nutrition Officer
United Nations Children's Fund
Colombo, Sri Lanka

Timor-Leste

Mr Aderito Gregorio do Carmo
Health Officer – Immunization
United Nations Children's Fund
Dili, Timor-Leste

Dr Angelita Maria Gomes
Health Officer
United Nations Children's Fund
Dili, Timor-Leste

Dr Shyam Sharan Pathak
Health Manager
United Nations Children's Fund
Dili, Timor-Leste

Vaccine manufacturers**GlaxoSmith Kline (GSK)**

Dr Sanjay Gandhi
Vice-President – Medical and Clinical
Smith Kline (GSK)
Mumbai, India

Serum Institute of India Private Limited

Dr Sunil Gairola
Executive Director
Serum Institute of India Private Limited
Pune, Maharashtra

Dr Yashwant Changdeo Dhake
Additional Director – Regulatory Affairs
Serum Institute of India Private Limited
Pune, Maharashtra

Dr Parag Nagarka
Head Global Regulatory Affairs
Serum Institute of India Private Limited
Pune, Maharashtra

P.T. Bio Farma Limited

Dr Dyah Widhiastuti
Head of Department
PT Bio Farma Limited
Bandung, Indonesia

Ms Lilis Setyaningsih
Pharm
PT Bio Farma Limited
Bandung, Indonesia

Ms Fikrianti Surachman
Apt.
PT Bio Farma Limited
Bandung, Indonesia

Ms Rini Mulia Sari
Head of Clinical trial department
PT Bio Farma Limited
Bandung, Indonesia

WHO**WCO Bangladesh**

Dr Rajendra Bohara
Team Leader-IVD
WHO Country Office
Dhaka, Bangladesh

Dr Balwinder Singh
Medical Officer
WHO Country Office
Dhaka, Bangladesh

Dr Chiranjit Singh
National Professional Officer-
Immunization
WHO Country Office
Dhaka, Bangladesh

WCO Bhutan

Dr Sonam Wangdi
National Professional Officer
WHO Country Office
Paro, Bhutan

WCO DPR Korea

Dr Md Rezwan Kumar
 Technical Officer
 WHO Country Office
 Pyongyang, DPR Korea

WCO India

Dr Robert Linkins
 Team Leader-National Public Health
 Surveillance Project
 WHO Country Office
 New Delhi, India

Dr Pankaj Bhatnagar
 National Professional Officer – Deputy
 Team Lead
 National Public Health Surveillance Project
 WHO Country Office
 New Delhi, India

Dr Danish Ahmed
 National Professional Officer
 -Immunization Intensification
 National Public Health Surveillance Project
 WHO Country Office
 New Delhi, India

Dr Kristin Vanderende
 Technical Officer (Universal (Immunization)
 National Public Health Surveillance Project
 WHO Country Office
 New Delhi, India

Dr Arun Kumar
 National Professional Officer
 -Immunization Intensification
 National Public Health Surveillance Project
 WHO Country Office
 New Delhi, India

WCO Indonesia

Dr Paba Palihawadanapa
 Medical Officer, EPI (RI)
 WHO Country Office
 Jakarta, Indonesia

Dr Olivi Silalahi
 National Professional Officer (RI)
 WHO Country Office
 Jakarta, Indonesia

Dr Kamal Mushtofa
 National Professional Officer (VPD)
 WHO Country Office
 Jakarta, Indonesia

WCO Maldives

Ms Aishath Thimna Latheef
 National Professional Officer
 WHO Country Office
 Male, Maldives

Dr Lokesh Alahari
 Consultant
 WHO Country Office
 Male, Maldives

WCO Myanmar

Dr Stephen Chacko
 Medical Officer
 WHO Country Office
 Yangon, Myanmar

Dr Khaing Khaing Gyi
 National Technical Officer
 WHO Country Office
 Yangon, Myanmar

Dr Yee Yee Cho
 National Professional Officer
 WHO Country Office
 Yangon, Myanmar

Dr Hsu Myat Myo Naing
 National Technical Officer
 WHO Country Office
 Yangon, Myanmar

WCO Nepal

Dr Vinod Bura
 Medical Officer, EPI
 WHO Country Office
 Kathmandu, Nepal

Dr Rahul Pradhan
National Professional Officer
WHO Country Office
Kathmandu, Nepal

Ms Mona Lacoul
National Professional Officer
Data cluster lead
WHO Country Office
Kathmandu, Nepal

Dr Pasang Rai
VPD surveillance Focal Point
WHO Country Office
Kathmandu, Nepal

Dr Abhiyan Gautam,
New Vaccines & Immunization
Programme Support Officer
WHO Country Office
Kathmandu, Nepal

Dr Dipesh Shresta
Immunization Monitoring Focal Point
WHO Country Office
Kathmandu, Nepal

Dr Dipendera Khatiwadal
Surveillance Medical Officer
WHO Country Office
Kathmandu, Nepal

WCO Sri Lanka

Dr Janakan Navaratnasingam
National Professional Officer
WHO Country Office
Colombo, Sri Lanka

Dr Preshila Samaraveera
National Consultant
WHO Country Office
Colombo, Sri Lanka

Dr Mizaya Cader
National Professional Officer (Neglected
Tropical Diseases/Anti-Microbial
Resistance)
WHO Country Office
Colombo, Sri Lanka

WCO Thailand

Ms Aree Mounsookjareoun
National Professional Officer
WHO Country Office
Bangkok, Thailand

WCO Timor-Leste

Dr Sudath Peiris
Technical Officer
WHO Country Office
Dili, Timor-Leste

Mr Mateus Cunha
National Professional Officer, GAVI/HSS
WHO Country Office
Dili, Timor-Leste

Dr Sheena J. Dias Viegas
National Professional Officer
WHO Country Office
Dili, Timor-Leste

WHO headquarters

Dr Katherine O'Brien
Director, IVB
WHO headquarters
Geneva, Switzerland

Dr Ann Lindstrand
Coordinator, IVB
WHO headquarters
Geneva, Switzerland

Dr Joachim Maria Hombach
Senior Health Advisor, IVB
WHO headquarters
Geneva, Switzerland

Dr Diana Chang Blanc
Manager, Immunization Programme
Operations, IVB
WHO headquarters
Geneva, Switzerland

Mr Claudio Politi
Health Economist
Polio Transition Team
WHO headquarters
Geneva, Switzerland

Dr Darcy Levison
Consultant, IVB
WHO headquarters
Geneva, Switzerland

Dr Ebru Ekeman
Technical Officer, IVB
WHO headquarters
Geneva, Switzerland

WHO SEA Regional Office

Dr Suman Rijal
Director, Department of Communicable
Disease
WHO SEA Regional Office
New Delhi, India

Dr Jos Vendelaer
Regional Emergency Director
World Health Emergency (WHE)
WHO SEA Regional Office
New Delhi, India

Dr Sunil Bahl
Coordinator (COVAX, IVD)
Immunization and Vaccine Development
(IVD)
WHO SEA Regional Office
New Delhi, India

Dr Jayantha Liyanage
Regional Adviser – Immunization Systems
Strengthening
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Sigrun Roesel
Technical Officer (Vaccine Preventable
Diseases)
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Sudhir Khanal
Technical Officer (Measles)
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Sudhir Joshi
Technical Officer-Polio Endgame
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Tondo Opute Emmanuel Njambe
Technical Officer
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Lucky Sangal
Virologist/immunologist
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Ms Uttara Aggarwal
Technical Officer (Immunization)
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Mr Md Sharifuzzaman
Data Management Officer
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Anil Kumar Chawla
Consultant
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Dr Michael Gold
Consultant
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Mr Deepak Dhongde
Data Management Associate
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India

Ms Poonam Sharma
Executive Assistant
Immunization and Vaccine Development
WHO SEA Regional Office
New Delhi, India



**World Health
Organization**
REGIONAL OFFICE FOR
South-East Asia



SEA-IMMUN-125