Tenth Meeting of the WHO South-East Asia Regional Immunization Technical Advisory Group (SEAR-ITAG)

New Delhi, India, 9 to 12 July 2019

Report
Contents

A. Introduction ........................................................................................................... 3
B. Objectives ............................................................................................................ 4
C. Organization of the meeting ................................................................................. 4
D. Review of SEAR VAP goals–progress, conclusions and recommendations 6
E. Posters on Innovations to improve immunization coverage and equity 31
F. Poster Café– Best practices in immunization in countries ......................... 39
G. Informational session on two new vaccines .................................................. 49
H. Data management, quality and coverage estimations ............................... 51
I. Looking beyond 2020 ......................................................................................... 53
A. Introduction

The Tenth Meeting of the World Health Organization’s (WHO’s) South-East Asia Regional Immunization Technical Advisory Group (SEAR-ITAG) was held from 9 – 12 July 2019 in New Delhi, India. The SEAR-ITAG (referred to hereafter as 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 vaccine-preventable-disease (VPD) prevention, control, elimination and eradication. It comprises experts from such disciplines as programme management, communicable disease and VPD control, virology, epidemiology and immunization. National Expanded Programme on Immunization (EPI) managers, 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 to:

- review regional and Member State policies, strategies and plans for the control, elimination and/or eradication of VPDs, in particular polio eradication, measles elimination, rubella and congenital rubella syndrome (CRS) control, maternal and neonatal tetanus elimination (MNTE) and the acceleration of Japanese encephalitis (JE) and hepatitis B control;
- provide guidance on the setting of regional priorities for immunization and vaccines;
- make recommendations on the framework for development of national immunization policies as well as operational aspects of these policies’ implementation; 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 for the introduction of these vaccines and for the monitoring and impact evaluation of new vaccines once they are introduced into national immunization programmes (NIPs);
- promote and provide technical guidance for the implementation of high-quality VPD surveillance, including high-quality laboratory networks to support VPD surveillance;
- advise Member States on regulatory requirements to ensure quality and safety of vaccines used in NIPs;
- provide guidance on public–private partnerships in immunization and vaccines; and
- identify and advise on appropriate implementation of research topics in immunization and vaccines and review the conduct and results of such research projects.
B. Objectives

The objectives of this meeting were to:

- review progress in performance of national immunization programmes relative to the strategic goals outlined in the South-East Asia Regional Vaccine Action Plan 2016–2020 (SEAR–VAP);
- review progress in implementation of recommendations of the Ninth meeting of the South-East Asia Regional Immunization Technical Advisory Group (SEAR–ITAG) held in July 2018; and
- seek guidance of SEAR–ITAG on priority actions that should be taken during 2019–2020 to achieve milestones and goals outlined in the SEAR–VAP.

C. Organization of the meeting

The meeting was organized over a period of four days and included six components:

1. Review progress of national immunization programme performance of each Member State of the Region relative to the goals outlined in the SEAR–VAP.
2. Review progress of implementation of recommendations of the Ninth meeting of the SEAR–ITAG.
3. Poster presentations by Member States on:
   - innovations to improve immunization coverage and equity; and
   - sharing a best practice on immunization.
4. Informational sessions on new vaccines on the horizon–dengue vaccine, malaria vaccine.
5. Cross-cutting session of special interest – data management, quality and coverage estimations.

The meeting began with an opening address by Dr Poonam Khetrapal Singh, WHO Regional Director for South-East Asia (see Annex 1 for the address of the Regional Director). The meeting was chaired by Professor Gagandeep Kang and co-chaired by Professor Mohammad Shahidullah. The meeting was attend by all ITAG members. The other meeting participants included:
• representatives from NITAGs from 11 countries of the South-East Asia (SEA) Region of WHO;
• national EPI managers and surveillance focal points from ministries of health of the 11 countries of the Region;
• the chairperson and two members of WHO’s Strategic Advisory Group of Experts on Immunization (SAGE);
• the chairpersons of the SEA Regional Certification Commission for Polio Eradication (SEA–RCCPE) as well as Regional Verification Commission for measles elimination and rubella control;
• representatives and technical experts from the United Nations Children’s Fund (UNICEF) headquarters and from UNICEF’s Regional Office for South Asia (ROSA) and its East Asia and Pacific Regional Office (EAPRO), immunization focal points from UNICEF Country Offices;
• representatives from the United States Centers for Disease Control and Prevention (US CDC);
• immunization and VPD surveillance focal points from 11 WHO Country Offices in the Region;
• representatives and technical experts from WHO headquarters and the WHO Regional Office for SEA; and
• representatives of regional and global partners, donors and stakeholders in immunization and vaccines, including Gavi, the Vaccine Alliance (Gavi), PATH and Rotary International. (see Annex 2 for the agenda of the meeting and Annex 5 for the full list of participants).

Methodology for the review of NITAG country progress reports

Both in preparation for and during the meeting, significant time and effort were dedicated to developing the methodology for the review of NITAG country progress reports, as these reviews were the major focus of the ITAG meeting.

Prior to the meeting:

• Eight weeks prior to the tenth ITAG meeting, a country–tailored template for annual reporting on progress in meeting SEAR–VAP goals was developed and shared with all NITAGs in the Region.
The annual progress reports, based on the template mentioned above, were submitted to the ITAG (through WHO’s Regional Office for South-East Asia) by all 11 NITAGs by the end of June 2019. The Regional Office and country offices provided technical support to all NITAGs as required.

For each country report, two ITAG members were assigned as reviewers (Annex 3). The ITAG members were provided with a checklist to guide their review of countries’ progress in implementing the recommendations from the ninth ITAG meeting and any newer initiatives and in achieving the SEAR-VAP goals.

*During the meeting:*

- The country progress reports and the reviewers’ reports were provided to all ITAG members.
- Each NITAG representative presented their respective country progress report as per the template shared prior to the meeting.
- Comments on the progress report were provided by the ITAG members and partners.
- Country-specific discussions were conducted in the closed-door session and recommendations made accordingly.

### D. Review of SEAR VAP goals—progress, conclusions and recommendations

The SEAR–VAP describes a set of goals and objectives for immunization and control of VPDs for the period 2016–2020. It has eight goals, as follows:

- 1: Routine immunization (RI) systems and services are strengthened.
- 2: Measles is eliminated, and rubella/congenital rubella syndrome (CRS) controlled.
- 3: Polio-free status is maintained.
- 4: Elimination of maternal and neonatal tetanus is sustained.
- 5: Control of JE is accelerated.
- 6: Control of hepatitis B is accelerated.
- 7: Introduction of new vaccines and related technologies is accelerated.
- 8: Access to high-quality vaccines is ensured.
**Overall conclusions**

Presentations on progress towards each SEAR-RVAP goal were made during the meeting. Based on the deliberations, the SEAR–ITAG appreciated the overall progress made in the Region to achieve the goals of the SEAR–VAP and commended the ministries of health of all 11 countries of the Region for their commitment to implement strategies targeted to achieve the goals of the SEAR–VAP as well as on the follow-up actions taken by countries towards the recommendations made by ITAG in its Ninth meeting in 2018.

The SEAR–ITAG noted that all countries in the Region have established NITAGs that provide technical support and monitoring oversight to the NIPs. The ITAG acknowledged the critical role of NITAGs in providing guidance to national programmes on policies and strategies related to vaccination, introduction of new vaccines and monitoring the NIP performance at national and sub-national levels. It acknowledged that NITAGs need more support to work with their NIPs and appreciated the efforts of the WHO Regional Office for South-East Asia (SEARO) to build NITAG capacity by conducting a workshop on strengthening the capacity of NITAGs.

The ITAG was pleased with the high quality of country reports submitted by NITAGs of all the 11 countries and fully endorsed the recommendations made by respective NITAGs.

The SEAR–ITAG:

- recognized the critical role of NITAGs in monitoring progress and guiding actions to overcome the various challenges at national and subnational levels in each country, and to achieve the goals of the SEAR–VAP;
- congratulated the partners for providing strategic support to countries of the Region; and
- noted that challenges and risks remain and that concerted efforts will be required to overcome these if all goals outlined in the SEAR–VAP are to be met.

**Overall Recommendations**

The SEAR–ITAG:

1. Emphasized the need for continued monitoring of implementation of its recommendations at national and sub-national levels by the national immunization programmes (NIPs) and the NITAGs;
2. Recommended that immunization partners should coordinate technical and financial support for monitoring the programme and meeting challenges both at national level and sub-national levels;
3. Re-iterated the need for the full implementation of the ITAG 2018 recommendations and their monitoring by NITAGs;
4. NIPs and NITAGs should implement the recommendations of the NITAGs capacity building workshop' (March 2019), including a review of current ToRs, to formalize processes and declarations of interest and for capacity building of NITAG members; and

5. WHO-SEARO should conduct an external evaluation of the NITAGs in the Region.

**Goal 1. RI systems and services are strengthened**

**Progress**

Strengthening the RI systems and services is the overarching goal of the SEAR–VAP 2016–2020. The key targets to achieve are that:

- by 2015 all countries have ≥90% national coverage and ≥80% coverage in every district or equivalent with three doses of DPT containing vaccine (DTP3); and
- by 2020 all countries have ≥90% national coverage and ≥80% coverage in every district or equivalent for all vaccines in national programmes, unless otherwise recommended.

As per the WHO/UNICEF estimates, Bangladesh, Bhutan, DPR Korea, Maldives, Myanmar, Nepal, Sri Lanka and Thailand have achieved 90% or more national coverage with DPT3 in 2018. India has achieved 89%, Timor–Leste 83% and Indonesia 79% DPT3 coverage. Bangladesh, Bhutan, DPR Korea, Maldives, Sri Lanka and Thailand have achieved 90% coverage for all vaccines provided during infancy. As per the 2018 national reports, all districts have achieved more than 80% DPT3 coverage in Bangladesh, DPR Korea, Maldives and Sri Lanka. 95% districts in Bhutan and 90% districts in Thailand have reported more than 80% coverage. From 2000 to 2017, the overall DPT3 coverage in the SEA Region has increased from 64% to 88%.

India has reported 5 293 diphtheria cases, 23 766 pertussis cases and 12 032 measles cases in 2018 while Indonesia has reported 954 diphtheria cases, 1 043 pertussis cases and 9 035 measles cases during the same period. Myanmar has reported 68 diphtheria cases and 1 293 measles cases and Nepal has reported 232 diphtheria cases and 4 153 pertussis cases, in 2018. The occurrence of diphtheria outbreaks demonstrates a vulnerability of populations to diseases for which vaccines have been available for a long time, due to sub–optimal coverage with these vaccines as well as policy barriers.

All Member States in the Region have committed to immunization through legislation or a legal framework that upholds immunization as a priority. National immunization plans are integrated into national health plans, and countries are demonstrating good stewardship in implementation of their national plans. All countries are implementing their national comprehensive national multi–year immunization plans.
Countries in the Region are involved with assessing coverage at district and sub-district levels to identify pockets of low coverage and taking appropriate actions to improve coverage and reach the un-immunized. EPI and VPD surveillance reviews and EPI coverage evaluation surveys (CES) have been conducted in the Region to identify areas of low coverage, barriers for immunization and to take appropriate actions. Bangladesh, DPR Korea, Indonesia, Nepal and Timor-Leste have recently conducted EPI coverage evaluations surveys. India continues to conduct evaluation surveys in phases. Bhutan Maldives, Myanmar and Nepal have relied on demographic and health surveys. Bangladesh, Indonesia and Timor-Leste conducted coverage evaluation surveys using new WHO methodology in 2018 and Myanmar is planning to do a similar survey in 2019.

Countries have developed innovative approaches such as mapping hard-to-reach areas using GIS mapping tools, electronic registration of beneficiaries and an urban immunization strategy in Bangladesh; installing solar direct drive (SDD) refrigerators at rural RI levels and tracking and immunization of missed children by household doctors in DPR Korea; the Intensified Mission Indradhanush followed by Gram Swaraj Abhiyan in India; declaring 2018 as the “immunization acceleration year” in Indonesia; verification of completion of childhood vaccine doses at the time of entry into school in Maldives; prioritization of townships for service delivery improvement in Myanmar; fully immunized district initiative in Nepal; nationwide adult vaccine programme in Thailand; and community registration and additional outreach clinics in Timor-Leste. These approaches have not only strengthened RI services but have also increased the access of the general population to the health system.

On promoting vaccination demand

In South-East Asia – as elsewhere in the world – there is a substantial need to improve confidence in immunization. Phrased more positively, there is an opportunity to promote resilient demand for vaccines. Vaccine demand and refusal is not a binary issue. There is a spectrum from outright refusal, through to hesitancy, to passive acceptance, to resilient demand. Parents’ decisions about whether to vaccinate their children or not are based on multiple factors. Communication plays a key part in addressing concerns and promoting the benefits of vaccination. But communication alone is insufficient. Action to strengthen vaccine demand needs to be multi-faceted, to: i) reduce barriers – using data and evidence to make vaccination the easiest action for parents to take; ii) build trust – cultivating and sustaining trust in vaccines and services through social and political will, and ensuring resilience and preparedness for challenges to trust; iii) tailoring services – involving communities to improve the quality and accountability of services; iv) activating intentions – using motivation to overcome the gap between intentions and action, through community engagement.
Countries in the Region engage communities in effective discussions on their knowledge, attitudes, and practices as they relate to immunization and health services in general. Countries in the Region are implementing and evaluating strategies to increase community demand for immunization. All countries are building capacity by training front-line health workers in effective communication techniques and recruiting new voices to champion immunization. As a part of the EPI coverage evaluation survey (CES) knowledge of caretakers on immunization, sources of immunization and reasons for not vaccinating or partial vaccination are evaluated. The CES in Bhutan and DPR Korea had found no vaccine hesitancy in these countries. However, CES in Bangladesh and Nepal has demonstrated an emerging hesitancy in these countries. There are potential issues of vaccine hesitancy in some areas of India. At the onset of the second phase of the measles rubella (MR) immunization campaign in 2018 in Indonesia, there was resistance to vaccination with MR vaccine.

To assist and support countries in the development of multi-year immunization demand promotion strategies and plans (or the review of existing plans), the UNICEF Regional Office for South Asia (ROSA), in partnership with the WHO Regional Office for South-East Asia (SEARO) and the UNICEF East Asia and Pacific Regional Office (EAPRO), is developing regional programme guidance on the promotion of resilient vaccination demand in South and South-East Asia. The first part of this guidance was presented to the ITAG for input. Over the next year, the full guidance will be developed, piloted in two countries, and presented to the ITAG.

**Conclusions**

The ITAG:

- observed that countries have initiated implementation of 2018 ITAG recommendations on improving coverage and recognized that improving coverage requires ongoing efforts.

- noted that financial sustainability is essential to maintain equity and coverage achievements, even in countries with high coverage, and that this is an indicator of sustainable immunization programmes.

- took note of the diphtheria outbreaks in some countries of the Region.

- was concerned that some recommendations from the 2018 ITAG, such as introducing booster doses, shifting from TT to Td and initiating case-based surveillance supported by laboratories, were not been fully implemented in many countries.

- acknowledged the multifactorial determinants of NIP performance, including the strength of health systems in addition to the social factors that influence vaccine delivery, demand and acceptance.
– supported the direction being taken by UNICEF to develop practical and user-friendly guidance on demand generation for use by national and sub-national programmes.

**Recommendations**

The ITAG recommended that:

1. In-country financing for immunization should increase in countries that are currently not fully self-funding their immunization programmes.

2. NIPs should continue to:
   a. identify and prioritize districts for interventions to strengthen immunization services;
   b. identify gaps and reasons for why children are not fully vaccinated;
   c. improve micro-plans for immunization;
   d. track and reach missed children with vaccination;
   e. improve data quality for immunization and surveillance;
   f. monitor progress and provide supportive supervision to immunization programme; and
   g. strengthen laboratory-supported surveillance for vaccine preventable diseases.

**On Diphtheria**, the ITAG re-iterated the following recommendations:

1. Strengthening laboratory supported case-based surveillance for diphtheria.

2. Achieving high coverage with DPT3 and minimizing DPT1–DPT3 drop-outs in all areas in all countries.

3. Ensuring three booster doses of diphtheria vaccination, at appropriate times of the life cycle, based on epidemiological evidence, as recommended by ITAG in 2018.

4. Implementing timely and appropriate outbreak response, that includes immunization of close contacts and chemoprophylaxis, as specified in the Regional surveillance guidelines.

**On Demand generation**, the ITAG recommended that

1. Demand generation should be a standing agenda item at future ITAG meetings.

2. Practical guidance for demand generation should be urgently finalized and shared with countries.
3. Strategies should be developed, implemented and evaluated to improve communication skills of immunization providers to better inform patients/parents/guardians about vaccine benefits and safety.

4. NIPs should work closely with NRAs and other key stakeholders on the development of risk communication strategies in the case of AEFI or other events to mitigate the risk of public loss of confidence in vaccinations.

**Bangladesh**

1. Adequate government funds should be allocated for the NIP and vacancies filled at the earliest.

2. The urban immunization strategy should be urgently implemented.

**Bhutan**

1. AEFI surveillance should be strengthened.

**India**

1. An evaluation of Mission Indradhanush (MI) and Intensified MI should be conducted, and the findings presented at the next ITAG meeting.

2. Lessons learned from urban immunization strengthening pilots and best practices in other urban settings should be identified and expanded.

**Indonesia**

1. Tailored sub-national plans, supported by partners, should be developed and monitored to improve coverage and equity.

2. Sufficient sub-national resources should be ensured to address un- and under-immunized populations.

3. NITAG training needs should be addressed to ensure highly functional NITAG.

**Maldives**

1. A clear policy and plan should be developed to recruit NIP staff.

**Myanmar**

1. Strategies should be developed and implemented to improve immunization for urban, hardship areas and migrants.

**Nepal**
1. Quality information systems should be built that integrate data across platforms to guide programme actions.

2. Consideration should be given to appropriately relocate cold chain facilities following federalization.

**Thailand**

1. The utility of the immunization registry should be improved to enable accurate coverage estimation, identification and reminder/recall of children who are due or late for immunization, targeting of public health interventions, operational research to assess vaccine impact (particularly for new vaccines) and other programme priorities. Plans should be developed to expand the registry nationwide.

**Goal 2. Measles is eliminated, and rubella/CRS controlled**

**Progress**

The WHO Regional Committee for South-East Asia, during its Sixty-sixth session in September 2013, adopted resolution SEA/RC66/R5 to eliminate measles and control rubella/CRS in the Region by 2020. To ensure adequate technical guidance to accelerate progress towards the goal, a Strategic Plan for Measles Elimination and Rubella and Congenital Rubella Syndrome Control 2014–2020 was developed.

Five countries in the South-East Asia Region – Bhutan, DPR Korea, Maldives, Sri Lanka and Timor-Leste – have been verified by the South-East Asia Regional Verification Commission for measles elimination and rubella/CRS control (SEA–RVC) as having eliminated endemic measles. Six countries of the Region – Bangladesh, Bhutan, Maldives, Nepal, Sri Lanka and Timor-Leste – have been verified as having controlled rubella and CRS. An estimated 75% reduction in mortality due to measles has occurred in the Region in 2017 compared with 2000. And a nearly 23% decline in mortality is estimated during the period 2014–2017.

As of end-2018, all countries in the Region are administering two doses of measles-containing vaccine (MCV) under their routine immunization programmes and 10 countries have introduced rubella-containing vaccine (RCV) in their programme. DPR Korea, the only remaining country, has plans to introduce RCV before the end of 2019. The regional coverage of first dose of measles-containing vaccine (MCV1) was 89% in 2018 compared with 63% in 2000 and six countries have reported coverage of more than 95% at national level in 2018. The regional coverage of the second dose of measles containing vaccine (MCV2) has increased to 80% in 2018 compared with 59% in 2014. The coverage of RCV delivered through RI was reported at 83% for the Region in 2018 compared to 13% in 2014. An estimated 400 million children are likely to be reached
through mass vaccination campaigns with a measles–rubella (MR) vaccine in the Region between 2017 and 2019. Of these, nearly 305 million children have already been reached in India and 60 million in Indonesia.

All countries in the Region are conducting laboratory supported case-based surveillance for measles and rubella, with India and Indonesia expected to complete the expansion by end-2019. Seven out of 11 countries in the Region have achieved the desired target for the non-measles and non–rubella discard rate (as a proxy of sensitivity of surveillance). CRS surveillance has been initiated in all 11 countries, either as sentinel surveillance or as part of the case-based surveillance system. All countries in the Region have at least one proficient national laboratory to support measles and rubella case-based surveillance. The measles–rubella laboratory network has expanded from 23 laboratories in 2013 to 50 in 2018 with 41 laboratories accredited as “proficient” for measles and rubella testing.

A mid-term review, conducted in 2017, of the Strategic Plan for Measles Elimination and Rubella and Congenital Rubella Syndrome Control in the South-East Asia Region (2014–2020) concluded that the goal of achieving measles elimination and rubella/congenital rubella syndrome (CRS) control by 2020 is unlikely to be achieved in the Region due to suboptimal implementation of the strategies in some countries. Financial insufficiency to accelerate implementation of activities for measles elimination and rubella/CRS control remains a challenge in the way of achieving the 2020 target.

The Regional Office conducted a high-level consultation in March 2019 on the feasibility of adopting the goal of rubella elimination and harmonizing the goal of measles elimination with that of rubella elimination. The consultation discussed a position paper on “Establishing a rubella elimination goal and aligning measles and rubella elimination goals in the WHO South-East Asia Region”. Representatives from countries, technical experts and professional bodies proposed the revision of the goal of ‘rubella control by 2020’ to ‘rubella elimination by 2023’ and the harmonization of the goal of measles elimination with that of rubella elimination.

A draft Strategic Plan for Measles and Rubella Elimination: 2020–2024 has been developed for achieving and sustaining measles and rubella elimination in the South-East Asia Region. The key elements of the plan are to:

1. strengthen immunization systems for increasing and sustaining high level of population immunity against measles and rubella at both the national and subnational levels through well laid-out subnational plans and their optimal implementation;
(2) enhance and ensure highly sensitive laboratory–supported case–based surveillance systems so that high–quality epidemiological assessments of population susceptibility to measles and rubella are conducted to inform policy and better plan strategies to increase population immunity levels uniformly at the national as well as subnational levels;

(3) ensure preparedness for response activities for measles and rubella outbreaks through development and effective implementation of outbreak preparedness and response plans for measles and rubella;

(4) develop national measles and rubella elimination policy strategies addressing subnational variations using evidence–based data in line with the Regional Strategic Plan; and

(5) mobilize political, societal and financial support to ensure interruption of transmission of indigenous measles and rubella virus by 2023.

Conclusions

The ITAG acknowledged the significant progress and momentum created towards measles elimination and rubella/CRS control in the Region; however, it noted that the regional target of measles elimination and rubella control will not be met by 2020.

The ITAG endorsed the recommendations of the high–level consultation meeting (March 2019) on revising the current goal to ‘measles and rubella elimination by 2023’ and appreciated efforts of WHO to present the revised goal to the Seventy–second session of the Regional Committee for South–East Asia for consideration by Member States as well as the draft ‘Strategy for Achieving and Sustaining Measles and Rubella Elimination:2020–2024’ in the WHO South–East Asia Region.

The ITAG also endorsed the conclusions and recommendations of the fourth meeting of the Regional Verification Commission for measles and rubella and congratulated:

a. Sri Lanka for eliminating endemic measles;

b. Bhutan, DPR Korea, Maldives and Timor–Leste for sustaining measles elimination; and


The ITAG appreciated efforts made by the Region for putting together a MR Laboratory Quality Management System to ensure sustained proficiency status of the MR laboratory network.

Recommendations
1. The ITAG recommended that WHO-SEARO should: work closely with the MR SAGE working
group to ensure that Regional priorities are included in the SAGE agenda.
2. identify research priorities on measles and rubella and work with key partners and
stakeholders for implementation.
3. report back on the progress towards implementation of the Measles and Rubella
Laboratory Quality Management Systems at the next ITAG meeting.
4. Measles rubella laboratory network in SEAR should develop a quality assurance plan that
is aligned with the new Regional Strategy 2020–2024.
5. Countries should genotype all viral chains of transmission and share data through MeaNS
and RubNS database, including for sporadic cases in countries that have eliminated or are
close to achieving elimination status.

The ITAG also made country–specific recommendations:

**Bangladesh**

1. Considering the occurrence of measles cases in infants less than nine months of age a
zero–dose of MR vaccine at six months of age should be considered based on an
epidemiological review.
2. The upcoming MR SIA should be planned and implemented to achieve high coverage and
RI strengthening activities should be implemented during and after the SIA and presented
at the next ITAG meeting.

**Bhutan**

1. Vaccination should be considered for migrant workers.
2. MCV2 district–level coverage should be reviewed for appropriate action to ensure high
coverage.

**DPR Korea**

1. The MR SIA planned for this year should be implemented with high coverage and used to
improve and sustain high routine immunization coverage.

**India**

1. MR–IEAG recommendations should be fully implemented and progress shared at the next
ITAG meeting.
2. Multi–antigen sero–surveys should be considered to help with:
identification of rubella immunity gaps in women of child-bearing age;
- decision-making and vaccine scheduling of Td booster doses; and
- monitoring the progress for achieving the hepatitis B control goal.

**Maldives**

1. Consideration should be given to vaccination of migrant workers.

2. The post-elimination sustainability plan for measles should be revised with a focus on strengthening surveillance for both measles and rubella.

**Myanmar**

1. The MR SIAs planned later this year should be of high quality and used to strengthen routine immunization.

**Nepal**

1. The recommendations made by the recent measles and rubella programme review should be fully implemented and progress reported in the next meeting.

2. An in-depth independent external review of the MR laboratory should be conducted to ensure adequate laboratory support post-elimination of measles and rubella.

**Sri Lanka**

1. A post-elimination sustainability plan for measles and rubella should be developed with a focus on:
   - closing the immunity gap in birth cohorts between 1994–1997; and
   - outbreak preparedness and response.

2. Measles outbreaks should be used to identify and improve areas with sub-optimal immunization programme performance, and used to advocate for programme resources.

3. High quality MCV SIA should be conducted to strengthen routine immunization delivery and target appropriate age groups.

4. Vaccination policies should be considered in high-risk occupational groups like health care workers.

**Timor-Leste**
1. A detailed desk review should be conducted to identify activities to enhance coverage of MCV1 and MCV2 and to reduce the drop-out rate.

Goal 3. Polio-free status is maintained

Progress

The SEA Region has achieved the goal of polio eradication and maintained its polio-free status for the past eight years. However, the Region continues to be at risk of importation of wild poliovirus (WPV) from countries with current poliovirus transmission and any outbreak due to circulating vaccine-derived poliovirus (cVDPV).

Acute flaccid paralysis (AFP) and environmental surveillance (ES)

The overall non-polio AFP rate in the Region in 2018 was 6.55 (data as on 3 June 2019) per 100000 population under 15 years of age which exceeds the globally recommended operational target of 2 per 100000. The non-polio rate was above 2, in 2018, in seven countries of the region, namely Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar and Nepal, while it was between 1 and 2 (which meets certification standards) in three countries, namely DPR Korea, Sri Lanka and Thailand. No AFP case was reported from Timor-Leste in 2018.

In 2018, two stool samples were collected at least 24 hours apart and within 14 days of onset from 85% of the reported AFP cases in the Region, as against the globally recommended target of at least 80%. Nationally, the target was achieved in 2018 by eight countries, namely Bangladesh, Bhutan, DPR Korea, India, Indonesia, Myanmar, Nepal and Sri Lanka. For both performance indicators there is considerable subnational variance in several countries.

In 2018, Environmental Surveillance (ES) is being conducted through 81 sites in six countries – namely Bangladesh, India, Indonesia, Myanmar, Nepal and Thailand. Bangladesh is operating four temporary sites in Cox’s Bazaar following the influx of migrants from Myanmar in 2017–18. Indonesia has initiated ES in Papua Province recently following the recent detection of a cVDPV outbreak.

In February 2019, a circulating vaccine-derived poliovirus type 1 (cVDPV1) was confirmed in Papua province of Indonesia. An aggressive outbreak response has been carried out comprising of an immediate district level bivalent oral poliovirus vaccine (bOPV) campaign followed by two mass vaccination campaigns, in Papua and Papua Barat provinces, targeting 1.5 million children less than 15 years of age.

Population immunity
Eight SEAR countries – namely Bangladesh, Bhutan, DPR Korea, Maldives, Myanmar, Nepal, Sri Lanka and Thailand – have reported OPV3 coverage above 90% while India, Indonesia and Timor-Leste have coverage between 80–90% in 2018. To close immunity gaps against polio, SIAs with bivalent OPV (bOPV) were conducted in 2018 in India. All countries in the Region, have access to IPV supplies for their routine immunization programme. Four SEAR countries – Bhutan, Maldives, Sri Lanka and Thailand – have reported IPV coverage above 90%, while two – Myanmar and Timor-Leste – have coverage between 80–90% and three – Bangladesh, DPR Korea and Indonesia – have coverage between 60–80%. India reported a coverage of 50% and Nepal 16% with IPV in 2018. Bhutan carried out a catch-up campaign to reach children missed during the IPV stockout period.

Poliovirus laboratory containment

Activities to contain type 2 polioviruses in facilities under GAPIII requirements are progressing in the Region. Two poliovirus essential facilities (PEF) have been identified to store/handle type 2 polioviruses in two countries of the Region, namely India (research facility) and Indonesia (vaccine manufacturer). National authorities for containment (NAC) have been established in both countries. The Global Certification Commission (GCC) has endorsed the certificate of participation (CP) submitted by the vaccine manufacturer in Indonesia as designated poliovirus essential facility (PEF) through the Indonesia national authority for containment (I–NAC). As of March 2019, only four CPs had been granted worldwide making Indonesia a frontrunner in GAPIII implementation and poliovirus facility containment. From India, submission of certificate of participation (CP) is expected in mid-2019 and future PEFs are expected to be identified among vaccine manufacturers.

The Regional Polio Laboratory Network (RPLN) has conducted several bio-risk management capacity building activities and network laboratories are conducting self-assessments against GAPIII requirements. GAPIII update implementation training for national containment taskforces (NCTF), PEFs, NAC and vaccine manufacturers, was conducted at Bandung, Indonesia in February 2019. An advance auditors training and mock audit exercise was conducted at Pune, India in March 2019.

All countries are completing new surveys of biomedical laboratories and facilities to meet requirements outlined in GAPIII. While WPV type 2 (WPV2) and VDPV type 2 (VDPV2) inventories have been completed by all countries inventories for Sabin2 potentially infectious materials are likely to have been completed in six countries and in process in four; Indonesia has yet to start. One of the challenges in GAPIII implementation is the involvement of facilities that collect, handle and store clinical and environmental samples for purposes other than polio research. To support such laboratories, WHO has developed ‘Guidance for non-poliovirus facilities to minimize risk of
sample collections potentially infectious for polioviruses (PIM)' which were pilot tested in Bangladesh in December 2017 in a workshop with high risk laboratories. All materials identified in Bangladesh can be stored outside a PEF as per the PIM guidance. Work for poliovirus type 2 inventories provides a good platform for inventories for type 1 and type 3 polioviruses. WHO is supporting countries in preparation of a national response framework for use in the event of a breach of poliovirus containment.

Certification of maintaining polio-free status

The Regional Certification Commission for Polio Eradication (RCCPE) and National Certification Committees for Polio Eradication (NCCPEs) in all 11 countries remain functional and continue to provide oversight and guidance for polio eradication activities. The 11th RCCPE meeting took place in November 2018 in Paro, Bhutan. The RCCPE reviewed progress in each country in the Region and concluded that the Region has remained polio-free. The RCCPE, however, was concerned about continued WPV1 transmission and the ongoing and new outbreaks of circulating vaccine-derived polioviruses.

Transition planning

The Global Polio Eradication Initiative (GPEI) has begun to ramp down its funding and will eventually end in the post-eradication era. However, certain critical functions as mentioned in polio Post-Certification Strategy (PCS) would still be required to be maintained after global certification.

Over the past two decades, polio-funded assets that include human workforce, infrastructure, equipment and systems have been established in five countries of the Region, namely Bangladesh, India, Indonesia, Myanmar and Nepal. These assets have not only contributed to the elimination of polio and the implementation of the polio endgame strategies but have also been increasingly involved with other health activities in the Region.

Polio transition efforts are being considered as a critical opportunity to strengthen immunization systems, strategies for elimination of measles, vaccine-preventable disease surveillance and strengthen capacity for implementation of the IHR (2005). The status of transition in priority countries of the Region is summarized below:

1. Government of Bangladesh has endorsed the national polio transition plan and is on track with the implementation in three phases, as planned.
2. Recent endorsement of the national plan in India by the government and transfer of domestic resources to cover the gaps reflects its commitment to priorities outlined in the plan.
3. Government of Indonesia has initiated actions to self-fund a large proportion of the surveillance, laboratory and immunization costs, previously funded by GPEI.
4. The national transition plan of Myanmar is under consideration for endorsement by the government.
5. Due to ongoing federalization, there has been a delay in endorsement of the national transition plan by the Government of Nepal.

Global Polio Eradication Initiative (GPEI) Polio Endgame Strategy 2019–2023
The four objectives of “The Global Polio Eradication and Endgame Strategic Plan: 2013–2018” have proven effective around the world. However, to guide the programme in its last mile towards eradication, GPEI recently finalized the Polio Endgame Strategy 2019–2023. The key elements of the strategy are:
1. Eradication
2. Integration
3. Certification and containment

Conclusions
The ITAG commended the Region for remaining polio-free for over eight years but recognized that risk of poliovirus resurgence remained. The ITAG noted with concern the recent detection of cVDPV1 in Indonesia and a VDPV1 in Myanmar in areas with pockets of low routine immunization coverage of OPV and IPV.

While the ITAG noted progress with GAPIII implementation, it continued to be concerned about the complexity of requirements for poliovirus essential facilities, as well as the identification and proper handling of potentially infectious materials.

Recommendations
The ITAG recommended:
1. Outbreak response plans for the detection of any wild or vaccine-derived polioviruses should be updated as per recent global guidelines. An outbreak response assessment should be conducted following response to all WPV or cVDPV outbreaks.

2. Polio transition plans should be operationalized in five polio priority countries (Bangladesh, India, Indonesia, Myanmar and Nepal) and NITAGs should provide a progress report to the ITAG.

The following country-specific recommendations were also made:
**Indonesia**

1. AFP surveillance should be improved, and consideration given to expansion of environmental surveillance.

**Myanmar**

1. Appropriate measures should be taken in response to the recently detected VDPV1.

**Goal 4. Elimination of maternal and neonatal tetanus is sustained**

**Progress**

All countries follow the WHO recommendation on vaccinating pregnant women with tetanus toxoid containing vaccine (TTCV). Five countries have reported $\geq 90\%$ coverage with two or more doses of TTCV in pregnant women (TT2+) for several years as reported through the WHO/UNICEF Joint Reporting Form (JRF). However, lower coverage does not necessarily indicate weak programme performance. After accumulating repeated vaccine doses during multiple pregnancies and SIAs, women of childbearing age (WCBA) eventually become non–eligible for further vaccination during pregnancy while still contributing to the target denominator for calculation of TT2+ coverage. Field surveys conducted during validation exercises have indicated much higher protection at birth than reported TT2+ coverage suggested.

Infant immunization against tetanus (DTP and Penta) rose from 56% in 2000 to 88% in 2017 according to JRF country official estimates. Several countries give booster doses in early childhood or have integrated TTCV vaccination into their school health programmes. Five countries have six doses TTCV in their national schedule; however, coverage rates are not available beyond the primary series. Five countries offer only short–term protection and continue to create protection gaps between early childhood and child bearing age for females and after early childhood for males.

The number of reported NT cases declined to 252 in 2018 in six countries. None of the countries exceeded the “elimination” definition of $<1$ NT case per 1000 LB in each district (3rd administrative level of a country). The total number of reported tetanus cases continued to increase but it is not known if due to better reporting. Analysis of tetanus cases reported in JRF remains limited and no module is yet available for tetanus surveillance.

**Conclusions**

The ITAG noted that no country exceeded the “elimination” definition of $<1$ NT case per 1000 LB in each district in 2018 although quality of surveillance data is limited. The ITAG noted that TT2+
coverage remains <90% in several countries while no protection at birth data are available. However, ITAG appreciated that countries have begun reporting subnational TT2+ data to SEARO. The ITAG noted that TTCV booster doses are being provided in several countries and plans for introduction exist in others. The ITAG also noted the planned post-validation assessments in Bangladesh and Indonesia.

Recommendations

The ITAG recommended:

1. A full implementation of the recommendations of the 2017 WHO position paper on tetanus vaccines as appropriate in countries;

2. Countries should review and implement the 2019 WHO guidelines “Protecting All Against Tetanus: Guide to sustaining maternal and neonatal tetanus elimination (MNTE) and broadening tetanus protection for all populations”; and

3. WHO–SEARO should review with priority countries, data on immunization, disease reporting and reporting systems for NT surveillance.

Goal 5. Control of JE is accelerated

Progress

Currently, 10 of 11 countries in the SEA Region are endemic for JE, with the exception being Maldives. Vaccination is the most cost-effective strategy to prevent and control JE and WHO recommends that JE vaccination be integrated into national immunization schedules in all areas where JE is recognized as a public health priority. Four countries – Myanmar, Nepal, Sri Lanka and Thailand – have introduced JE vaccination nationwide while India has introduced JE vaccine in nationally-defined high-risk areas and Indonesia in one province. The estimated coverage in 2018 for these five countries are: India (69%), Myanmar (88%), Nepal (81%), Sri Lanka (99%) and Thailand (95%). All JE endemic countries in the Region are conducting JE and acute encephalitis syndrome (AES) surveillance with varying levels of intensity: nationally in six countries (Bangladesh, Myanmar, Nepal, Sri Lanka, Thailand and Timor–Leste), in all high-risk areas in India and at sentinel sites in Bhutan, DPR Korea, and Indonesia. JE/AES surveillance is supported by 14 laboratories in the Region and one regional reference laboratory (RRL) in Bangalore, India. In 2017, 10 laboratories were accredited while four laboratories are provisionally accredited. In April 2019, a regional workshop to strengthen the capacity of JE laboratory network in the region was organized at RRL Bangalore, India.
Due to the variability of type of surveillance in the countries, there is a wide variation in the number of confirmed cases reported in each country. In 2018, around 22 000 cases of suspected JE were reported in the Region of which India reported around 17 000 cases and Myanmar about 2000 cases. Around 338 cases were laboratory confirmed as JE in the Region of which 126 were in Myanmar and 96 in Bangladesh.

**Conclusions**

The ITAG noted that five countries are providing JE vaccine nationally or in endemic sub-national areas. It acknowledged that there were opportunities to improve protection against JE remains in countries that have already introduced the vaccine.

**Recommendations**

The ITAG recommended that:

1. A JE expert panel should be convened at the regional level to address issues related to case definition of AES and the adequacy of number and type of vaccine doses required for protection.

2. Case-based surveillance for AES should be strengthened by:
   a. following up on regional workshop recommendations on strengthening the capacity of the JE laboratory network;
   b. linking laboratory and epi surveillance data; and
   c. sharing case-based data with WHO-SEARO monthly.

There were country-specific recommendations as well:

**Bangladesh**

1. A JE disease burden analysis should be completed to consider the introduction of JE vaccine with Gavi support.

**India**

1. Reasons for outbreaks in areas that have introduced JE vaccination should be identified and corrective actions taken.

**Goal 6. Control of hepatitis B is accelerated**

*Progress*
In 2018, all 11 countries in the Region continued to have hepatitis B vaccine (HepB) in their routine immunization schedules as part of combination vaccines, and eight countries (Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Thailand, Timor-Leste) had a universal HepB birth dose (HepB BD) (WHO Monitoring System 2018).

A South-East Asia Regional Expert Panel (SEA–REP) has been formed in 2019 to make recommendations to the Regional Director on whether the target of reducing chronic hepatitis B prevalence to less than 1% among children at least five years old has been achieved. The SEA–REP finalized draft ‘Guidelines for verification of achievement of hepatitis B control target through immunization in the WHO South-East Asia Region’ and reviewed progress made by Bangladesh, Bhutan, Nepal and Thailand and verified that these countries have achieved the target of reducing chronic hepatitis B prevalence to less than 1% among children.

The overall HepB3 coverage with three doses HepB (HepB3) in the Region increased from 54% in 2010 to 88% in 2017 (Source: WUENIC best estimates in JRF 2017). As per draft WHO/UNICEF best estimates in 2018 the HepB3 coverage was reported to be >90% in eight countries (Bangladesh, Bhutan, DPR Korea, Maldives, Myanmar, Nepal, Sri Lanka, Thailand). India reported 89%, Indonesia 79% and Timor-Leste 83%. Among the eight countries that included HepB BD in their vaccination schedule in 2018, coverage was >90% in four (Bhutan, DPR Korea, Maldives, Thailand). India and Indonesia reported 54% and Myanmar and Timor-Leste where the HepB–BD was introduced in 2016 reported 14% and 61%, respectively. Several countries have sustained high HepB BD and HepB3 coverage for at least five years and likely achieved the target of reducing chronic hepatitis B prevalence to less than 1% among children.

Nationally representative sero surveys among children at least 5 years of age are available in Bangladesh, Bhutan, Nepal and Thailand and indicate low post-vaccination infection rates in the surveyed cohorts. Maldives is planning a national school–based survey among Grade 1 children while DPR Korea is planning to conduct a national household–based survey among children aged over 5 years.

**Conclusions**

The ITAG appreciated the establishment of the South-East Asia Regional Expert Panel (SEA–REP) for Verification of Hepatitis B Control and noted the report of its first consultation. It endorsed the draft ‘Guidelines for verification of achievement of hepatitis B control target through immunization in the WHO South-East Asia Region’.

**Recommendations**

The ITAG recommended that:
1. WHO-SEARO should:
   a. distribute the final version of the “Guidelines for verification of achievement of hepatitis B control target through immunization in the WHO South-East Asia Region” to all stakeholders.
   b. convene a specific technical consultation on hepatitis B control through immunization and report on the outcomes at subsequent ITAG meetings.

2. In countries that have been verified to have achieved the control target, NITAGs should assess whether hepatitis B control status has been maintained and report their conclusions at subsequent ITAG meetings.

3. NIPs should enhance the dialogue and coordination with other programmes concerned, especially to increase birth dose coverage.

   There were country-specific recommendations as well:

   **DPR Korea**
   1. A seroprevalence survey should be conducted to support verification of Hep B control.

   **Indonesia**
   1. Hepatitis B birth dose coverage is improved, and monitoring strengthened.

**Goal 7. Introduction of new vaccines and related technologies is accelerated**

**Progress**

New vaccines have become available in the last decade for diseases that were previously not included in the national Immunization programmes (NIPs). As a result, all countries in the Region have added two or more new vaccines to the national immunization schedule during the last decade and have strengthened their NIPs in the process. The SEA–RVAP 2016–2020 has identified the acceleration of introduction of new vaccines as a goal. Each country is expected to introduce at least two additional new or underutilized vaccines from 2016 to 2020. Table 1 highlights the progress in new and underutilized vaccine introduction in the Region.
Table 1: Introduction of new and underutilized vaccines in the SEA Region, 2016–2019

<table>
<thead>
<tr>
<th>Country</th>
<th>National</th>
<th>Subnational</th>
<th>Planned introductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>HPV vaccine (1 district)</td>
<td></td>
<td>Rotavirus vaccine (2020)</td>
</tr>
<tr>
<td>Bhutan</td>
<td>MMR, PCV</td>
<td></td>
<td>Influenza vaccine</td>
</tr>
<tr>
<td>India</td>
<td>MR</td>
<td>Rotavirus vaccine (11 States),</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCV (6 states) HPV (2 States),</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>IPV, MR</td>
<td>HPV (1 province and 4 districts),</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCV (3 districts), JE (1 province)</td>
<td></td>
</tr>
<tr>
<td>Maldives</td>
<td>MR, HPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myanmar</td>
<td>MR, PCV, JE</td>
<td></td>
<td>Rotavirus vaccine (2020)</td>
</tr>
<tr>
<td></td>
<td>Influenza</td>
<td></td>
<td>HPV (2020)</td>
</tr>
<tr>
<td>Nepal</td>
<td>HPV (2 districts)</td>
<td></td>
<td>Rotavirus vaccine (2019)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>HPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>HPV, Hib</td>
<td>Rotavirus vaccine (1 province)</td>
<td>Rotavirus vaccine nationally (2019)</td>
</tr>
</tbody>
</table>

Priority vaccines for consideration are rubella-containing vaccine (RCV), pneumococcal conjugate vaccine (PCV), human papilloma virus (HPV) vaccine, JE vaccine and rotavirus vaccine (RV). In addition, cholera, mumps, seasonal influenza and typhoid vaccines could be considered for specific geographical areas and age groups.

In the South-East Asia Region, Bhutan introduced HPV vaccine nationally in 2011 while Sri Lanka and Thailand introduced the vaccine nationwide in 2017. Maldives is the most recent country in the Region to have introduced HPV vaccine (March 2019). In India, HPV vaccine was introduced in Sikkim state in 2018 while in Indonesia, HPV vaccine has been introduced in all districts of Jakarta province in 2016, two districts of Jogjakarta in 2017 and in Surabaya city in 2018. Nepal and Bangladesh have successfully completed demonstration projects with HPV vaccine in one district each and are now planning to submit applications to Gavi, The Vaccine Alliance (Gavi) for national introduction. Myanmar has successfully submitted its application to Gavi for HPV introduction and is planning for national introduction of the vaccine in June 2020. A regional meeting on prevention of cervical cancer through HPV vaccination was conducted in India in June 2018 with the overall objective of strengthening the capacity of countries for prevention of cervical cancer through HPV vaccination and other strategies.
India has initiated a phased introduction of indigenous Rotavirus Vaccine (RV) and has already introduced the vaccine in 11 states. Bangladesh and Nepal are likely to introduce RV nationwide, with Gavi support, in 2019 while Myanmar is likely to introduce RV in 2020. Thailand has conducted a pilot project of RV introduction in one province and plans for national introduction in 2019. Non-availability of RV is a challenge that may delay introduction of the vaccine in countries of the Region.

Bangladesh, Nepal, Myanmar, five states of India and, more recently, Bhutan, have introduced PCV while Indonesia has introduced PCV in three districts and one city. Sentinel surveillance data from invasive bacterial disease surveillance sites in these countries has supported decision making for the introduction of PCV, which have been supported by Gavi. Post-introduction evaluations conducted in Bangladesh and Nepal and subsequent follow-up of recommendations confirmed that PCV3 coverage has reached coverage equivalent to DPT3 coverage, the vaccine is acceptable to the communities and poses no concerns related to injection safety.

Conclusions

The ITAG noted the introduction of HPV in four countries and PCV in one country since its last meeting.

The ITAG noted that introduction of Rotavirus vaccine is planned in five countries, HPV vaccine in two countries and influenza vaccine in high-risk populations of two countries over the next two years.

The ITAG recognized that conducting a cost effectiveness analysis of HPV vaccination would help with advocacy – making the case for securing internal and external financial resources, selecting the right mix of interventions to optimize the healthcare budget, and facilitating tender evaluation between purchasers and vaccine manufacturers.

Recommendations

The ITAG recommended that:

1. NITAGs and NIPs should work together to prioritize introduction of new and under-utilized vaccines based on the country context and SAGE recommendations.

2. Pre-readiness assessments and post-introduction evaluations should be conducted when new vaccines are introduced to help identify and correct programmatic gaps.

3. All countries should consider sharing their data with the Global Invasive Bacterial Surveillance Network (GIBSN) and the Global Rotavirus Surveillance Network (GRSN) through WHO-SEARO.
4. All countries should consider implementing recommendations for vaccination against HPV, as part of cervical cancer elimination, as recommended at the Regional Consultation (June 2019).

There was a country specific recommendation as well:

*Sri Lanka*

All evidence (research, clinical data, socio-demographic, disease trend, disease burden, co-morbidity/mortality reduction) should be considered when deciding on the introduction of new vaccines.

**Goal 8. Access to high–quality vaccines is ensured**

*Progress*

Recognizing that access to affordable vaccines of assured quality is central to the performance of immunization programmes, the SEAR–VAP 2016–2020 has identified ensuring access to high–quality vaccines as one of its eight goals.

The National Vaccine Institute (NVI), Thailand in collaboration with the Association of Southeast Asian Nations (ASEAN) Member States and the ASEAN secretariat has identified key areas for regional collaboration and prioritization including (1) system development for vaccine security, (2) human resource development, (3) ASEAN price policy for vaccines and pooled procurement, and (4) communication and coordination plan. These identified areas are expected to be incorporated into a regional strategic action plan which is to be developed following the anticipated endorsement of an ASEAN Leaders Declaration on ASEAN Vaccine Security and Self Reliance (AVSSR) at the 3rd ASEAN Health Cluster Meeting and the 35th ASEAN Summit in 2019. The NVI will be hosting the Eastern Asian Sub–Regional Vaccine Procurement Exchange Forum (VPPEF) in partnership with UNICEF and Learning Network for Countries in Transition (LNCT) in September 2019 in Yangon, Myanmar. Participating countries include Indonesia, Myanmar, Philippines, Papua New Guinea, Thailand, Timor–Leste, Mongolia and Vietnam.

In 2019, all SEAR countries in the Region reported to WHO’s Vaccine Product, Price and Procurement (V3P) web–based platform through the WHO/UNICEF Joint Reporting Form (JRF). The Regional Office provided additional inputs collected through other monitoring activities to finalize analysis with the WHO Market Information for Access to Vaccines (MI4A) team. It is estimated that the size of the vaccine market in the Region is 35% of the global market by volume but about 8% by value.
Vaccine procurement policy in the Region is split between self-procuring in three of the 11 Member States (27%); group procurement through UNICEF in six countries (55%) and mix procurement in two countries (18%). Among the five countries self-procuring vaccine; three are ranked by the World Bank as low middle-income countries (MIC), one is a low-income country (LIC) and one is upper MIC. In 2019, no supply shortages for the primary series vaccines were reported among countries in the Region. MICs however, have reported price as a major barrier to introduce RV, HPV, PCV and MMR and the uncertainty about vaccine availability contributed to delay in their introduction into the NIPs.

IPV supply situation has gradually improved since 2016 and no shortages of BCG and DPT vaccine are reported. However, the global production for recently introduced vaccines, such as HPV, PCV and Rota, is below current requirements.

WHO will conduct a workshop on Good Distribution Practices for National Regulatory Authority (NRA) inspectors in countries of the Region and from other WHO regions. These trained regulators will be collaborating with national EPI managers and the MoHs to enforced good distribution practices (GDP) standards within the cold chain system in the national immunization programme as part of their regulatory inspection plans for pharmaceutical products.

In the South-East Asia Region, more than a billion doses of vaccine are administered annually, with the introduction of new vaccines and combinations of antigens growing steadily. In 2016–2018 countries in the Region reported 1.5 billion doses of bOPV administrated representing 57% of all antigens provided during this period. During the same period, half a billion individuals received MR vaccine in the routine and SIAs representing 16% of all vaccine doses administered. Pentavalent is the third most administered vaccine with more than 300 million doses (11%) during 2016–2018.

**Conclusions**

The ITAG acknowledged current regional initiatives on vaccine procurement and vaccine price sharing platforms, including the proposed pooled procurement initiative by the ASEAN Vaccine Security and Self-Reliance (AVSSR) working group.

**Recommendations**

The ITAG recommended that:

1. WHO–SEARO should report to ITAG on good practices for vaccine pool procurement.
2. WHO-SEARO should review existing initiatives on vaccine products, procurement and prices information exchange initiatives to identify suitable mechanisms to share procurement experience and engage with manufacturers on vaccine demand and supply.

3. NIP managers should engage with regulatory inspectors of NRAs to elaborate standards for benchmarking on good distribution practices within the cold chain infrastructure.

Countries should continue to meet regularly to review AEFI cases and publish vaccine safety data collected through the AEFI monitoring system as reviewed by national AEFI causality committees.

E. Posters on Innovations to improve immunization coverage and equity

All countries made poster presentations on innovative approaches adopted by them to improve immunization coverage and equity. The summary of each country poster is presented below.

BANGLADESH: Piloting online registration for vaccination

Bangladesh has initiated several innovations to improve immunization coverage to overcome immunization gaps in low coverage areas and populations. The country piloted online registration of children for vaccination in three city corporations and a rural area with the support of the government and city corporations. The online registration helps to track children for vaccination, defaulters and drop-outs. Messages are generated and sent to parents one day before the day of vaccination to remind them of vaccination. Reports are generated automatically, and vaccination certificates are generated and issued to parents after completion of full vaccination. Bangladesh has also initiated a GIS mapping tool to map all high-risk populations in city corporations and districts to reduce gaps in immunization. The information is used for better micro planning and to reschedule vaccination centres as per need.

BHUTAN: Initiative to improve immunization coverage

Bhutan has a robust immunization system that is delivered through a network of national referral hospital, district hospitals, basic health units and through outreach and satellite clinics. The immunization programme has maintained high coverage over 95% for most vaccines consistently for many years. Significant progress has been made and several vaccine-preventable diseases eliminated. However, there are certain pockets especially in the remote areas where coverage is lower than 90%. Also, there are challenges in providing immunization services to the nomadic population residing mostly in the difficult northern terrain of the Himalayas.
Annual review meetings are conducted to monitor the coverage and supply chain system and to discuss the way forward for increasing coverage in areas that have less than 90% coverage. Catch-up vaccination campaigns are conducted to fill the coverage gaps. As an example, a catch-up campaign with MR vaccine and OPV was conducted in five districts in 2018.

Riding on the good immunization system, Bhutan is striving to be at the forefront of introducing new vaccines. The country introduced PCV in routine immunization schedule in 2019 and is planning to introduce flu vaccine in October 2019 for key priority groups as recommended by WHO.

DPR KOREA: High Immunization coverage has been sustained

DPR Korea has sustained high coverage for RI during the past several years.

There is a strong commitment by the government and a sound policy for immunization in the country. In DPR Korea, under the wise leadership of the government, universal and free health care and immunization services are guaranteed under the Constitution, the law on upbringing of children as well as the public health law on prevention of communicable diseases.

There is a well-organized health system from the central down to the peripheral level. The quality of health care and immunization services also contribute to high vaccination coverage.

Primary health care units are available everywhere in the country regardless of mountainous or remote areas and these PHC units are supported by a section doctor system through which one household doctor takes care of 100–120 families.

The Central Hygiene and Anti-Epidemic Institute (CHAEI) conducts various activities to maintain high vaccination coverage by organizing routine technical training on both vaccination planning and practices under the guidance of National Hygiene Control Board, Ministry of Public Health.

The national EPI team and NITAG continue to strengthen supportive supervision of the immunization programme activities while strengthening surveillance of diseases prevented by routine immunization and other VPDs according to the Global Vaccine Action Plan of WHO.

Improved community awareness on vaccine effectiveness has also contributed to high vaccination coverage. The household doctors conduct various IEC activities in their catchment areas to encourage voluntary participation in the routine immunization programme.

INDIA: Boosting and sustaining routine immunization coverage– addressing inequities through Mission Indradhanush
India's immunization programme (one of the largest in the world) caters to a birth cohort of around 26.7 million infants and 29 million pregnant women every year through 12 million sessions. Despite being operational for over 30 years, immunization coverage among children aged 12–23 months in the country increased at a slow pace of almost 1% each year (from 35% in 1992–93 to 62% in 2015–16). There was also a significant disparity in immunization coverage of urban areas with only 6.3% improvement from NFHS 3 to NFHS 4 as compared to 22.7% in rural areas.

Receiving commitment from the highest political level for an aggressive action plan to achieve 90% full immunization coverage in the country, the Ministry of Health & Family Welfare launched a massive routine immunization (RI) intensification campaign called Mission Indradhanush (MI) in December 2014. This was further intensified as initiated under the Prime Minister’s vision to accelerate progress and bolstered focus on 190 districts in the lowest quintile of identified FIC (fully immunized child) as Intensified Mission Indradhanush (IMI). MI / IMI was rolled out in phases through an amplified demand generation and communication approach. It successfully reached 33.9 million children and 8.7 million pregnant women in 680 districts across the country during Mission Indradhanush.

Ensuring that the gains made under MI are integrated into RI, a roadmap has been drawn to guide states in fast-pacing their efforts and ensure sustainability thereafter. Emphasis is given on adopting different actions for three categories of districts in the country based on their FIC status as summarized below:

Category 1: Sustaining gains, incorporating MI areas in RI micro-plans.

Category 2: Prioritizing and focusing on poor performing areas, urban and tribal areas, improving RI plans.

Category 3: Mission Indradhanush in districts with less than 50% FIC.

The categorization is based on latest IMI survey (2018) for 120 IMI districts conducted by UNDP and 70 districts by WHO and NFHS–4 data for remaining districts.

The roadmap is complemented by other key reforms—introduction of new vaccines, greater investments in research and innovation to bolster coverage (especially in urban and tribal areas), enhanced use of data, increased focus on adolescent immunization and robust surveillance to detect & counter AEFIs.

Sustained high level political support, advocacy and supervision is required for achieving the goal. Communication and counselling skills are to be tailored to deal with vaccination-centered barriers.
INDONESIA: Strengthening routine immunization in pockets of low coverage areas

Indonesia has made several innovations in strengthening routine immunization in pockets of low coverage areas. These include the newly introduced defaulter tracking system using “my village and my home” approach during immunization session, empowerment of volunteer/kaders for family–based approach to increase access to health services, drop-out follow-up and sweeping immunization, sustainable outreach sessions 3–4 times per year in hard-to-reach areas, communication strategy using immunization and MCH flash card and technical assistance for routine immunization training.

The Ministry of Health has identified EPI as one of the three national priority programmes and declared 2018 as the “immunization acceleration year”. Eighty districts are being targeted for intensification of RI through various strategies such as sustained outreach strategy and drop–out follow–up as well as immunization sweeps. Five major urban areas with many immunization drop–outs are being supported through a Rapid Pro programme. Remote islands and hard–to–reach areas were identified and supported to improve immunization coverage; additional operational costs were provided for these areas; additional new cold chain equipment was provided. Due to challenges during the second phase of the MR immunization campaign a communication strategy for immunization that includes directives from religious leaders in support of the immunization programme was developed. Additional IEC materials including messages from religious leaders have been prepared and disseminated. Defaulter–tracking guidelines for health centres have been revised for better tracking of partially vaccinated children. Private sector reporting is being intensified, and a web–based electronic routine reporting pilot is being developed. Meanwhile, a vaccine management improvement plan has been developed and implemented. The national immunization technical advisory group is independent and functioning well.

However, there are challenges like VPD outbreaks, rapid urbanization, vaccine hesitancy due to religious issues, limited integration of the private sector and lack of province–or island–specific effective commination strategy and non–implementation of mandatory vaccination policy.

As a way forward, the programme has included indicators such as second dose of MR and Pentavalent 4 vaccine coverage, high quality micro plans development, defaulter tracking tool implementation. The programme has also included additional technical assistance at subnational level and advocacy to gain more political commitment and development of province–or island–specific communication plan with engagement of local leaders.

MALDIVES: Initiatives to improve immunization coverage; innovations to overcome immunization gaps in low coverage areas
The Maldives spends 9.5% of GDP on health and health care is free for all citizens. The expanded programme on immunization was officially launched in 1976. Since then the country has maintained decades of high immunization coverage. Polio, neonatal tetanus and measles have been eliminated and rubella and CRS controlled. MR, DPT booster, and HPV vaccines have been introduced in the last two years. National immunization policy was developed in 2018. Vaccine-preventable diseases are rare.

In order to improve immunization coverage, verification of completion of immunization at school entry is ongoing for decades. Several partners are actively engaged in the programme ranging from Islamic Ministry, Ministry of Education, the private sector, academic institutions, telecommunication sector, NGOs etc. Mass vaccination campaigns have been conducted to bridge immunity gaps e.g. MR vaccination campaign, HPV campaign. Sermons related to immunization in Friday prayers and involvement of MTAGI in supportive supervision and monitoring trips is a part of efforts to improve immunization coverage. Panel discussions (experts) in mass media during introduction of new vaccines or campaigns, reaching out to people using social media platforms (facebook, twitter, viber) to monitor and respond to queries and concerns including vaccine hesitancy have contributed to achievement of high coverage.

The country maintains a vaccine refusal database to monitor, track and address issues of vaccine hesitancy. Development of a communication plan is underway to improve acceptance of vaccine and tackle vaccine hesitancy.

**MYANMAR: Use of GIS in EPI microplanning and monitoring**

Routine immunization in Myanmar is a building block of strong primary health care and universal health coverage as it provides a point of contact for health care at the beginning of life. The Ministry of Health and Sports (MoHS) is constantly identifying possible ways to improve routine immunization coverage by reaching the unreached population of geographically and socially hard-to-reach areas through innovative approaches, such as hospital–based immunization clinics and urban immunization strategy. Myanmar highlighted the need for identification of reliable target for EPI and is currently piloting GIS–based microplanning as one among the many innovative ways to strengthen efficiency of immunization service delivery and logistics for outreach immunization.

GIS map–based microplanning strategy is built on the development of a micro–plan based on population information in the catchment areas of health workers and is mainly intended to identify missed villages through satellite imagery followed by strengthened delivery of health services for geographically hard–to–reach areas.
The project encourages accountability of health workers and supervisors to ensure every eligible child is included in the plan and all efforts are made to reach them on time.

The project will allow health workers to review, edit and update the micro-plan electronically. A national roll-out of this project is planned in 2019–2020.

**NEPAL: Fully immunized declaration initiative**

In December 2012, Nepal started a unique initiative known as ‘Full Immunization Declaration (FID) Initiative’. With the aim to reach every child through immunization services and reduce child morbidity and mortality associated with vaccine-preventable diseases, the initiative’s slogan is ‘With local participation, ownership, and local resources mobilization; Our commitment is to ensure full immunization’. The initiative is deeply grounded in the cultural-political ethos of Nepal where local communities have traditionally taken ownership and continue to do so. Full immunization declaration initiative is often integrated with other health and beyond-health initiatives such as open defecation-free, full literacy, domestic smoke free, nutrition, and menstrual taboo-free programmes.

The objective of the initiative is to have all eligible children fully immunized with all vaccine doses as per the national immunization programme. A rigorous method is followed as laid out in national FID guidelines. The local health workers first search and line list all eligible children by visiting every house-hold and vaccinate any unvaccinated children found in their area. The health facility then invites the district to run a cross-check in its catchment area based on a sample survey. If no unimmunized children are found, the health facility area is declared to have achieved full immunization with local community celebration. Once all health facility areas in a district are declared as fully immunized, the district is declared FID.

This initiative addresses issues of inequities in immunization as the FID declaration is done in a bottom-up manner starting at the lowest level. Further, every child regardless of socio-economic, geographical, or cultural aspect within an administrative boundary is to be fully immunized under this programme. To declare any administrative area as fully immunized, all stake-holders should ensure that 100% of the eligible children in that area have received complete vaccination as well as ensure sustainability following guidelines jointly endorsed by the Ministry of Health and Population and Ministry of Federal Affairs and Local Development.

Over the years, Nepal has witnessed participation of all stakeholders at all levels to achieve full immunization. This has ensured ownership of the immunization programme not only by policy makers and service providers, but also by the communities. As of June 2019, 56 out of 77 districts, and one out of seven provinces have been declared fully immunized.
SRI LANKA: Sustaining high immunization coverage: Addressing Challenges

Sri Lanka has a strong public health infrastructure for immunization service delivery and is coordinated through district level regional epidemiologists and divisional level medical officers of health staff (MOH staff).

Immunization is provided at various stages of the life cycle. All divisional level geographic areas are divided into smaller areas and a public health midwife (PHM) and a public health inspector (PHI) are allocated to each area to ensure ownership and accountability for immunization and communicable disease prevention. Field level public health staff routinely create demand for vaccination through regular home visits which are well accepted. During home visits, appointments are given for vaccination and missed and newly arrived children to the area are identified for vaccination.

Immunization services are provided as an integrated service at the community level with other public health services by the same public health staff. As the same system is existing throughout the country, there is no difference observed for urban and rural immunization service provisions. Vaccination services are made available on weekends (Saturdays) for client convenience and for providing an opportunity for missed children for vaccination. Further, missed opportunities for vaccination are well addressed during other service seeking opportunities such as when individuals come for curative care to institutions, or are accompanying parents during antenatal, well-women clinic services and during Grade 1 school enrolment.

Good public–private partnership exists in providing EPI vaccines free by the private health sector and coverage data and AEFI data is shared by the private sector with the government. There are enabling factors in assuring public trust in providing quality vaccines controlled through NRA. A well-functioning AEFI system and staff competency in addressing AEFI emergencies have built public confidence to accept vaccines. Regular supervision, regular reviews and feedback by national EPI staff enable the programme to identify gaps and help in taking measures for improvement. Sri Lanka plans to take further measures to sustain high coverage and establish a legal framework for immunization based on the national immunization policy.

THAILAND: Improvement in immunization coverage

A national immunization coverage survey among children under 5 years and pregnant women has been conducted annually since 1980. After survey results showed high immunization coverage in 1999, the survey frequency was changed to every 3–5 years. School children were included in the survey in 2013 and survey sites were expanded to cover Bangkok and deep–south provinces in 2018.
There are two immunization coverage estimation techniques in the country. A conventional maternal and child health handbook which is a paper-based system that is used to record type and date of vaccination, as well as making an appointment. An electronic-based system was developed to collect 43 categories of health data from healthcare facilities, including demographic data and vaccination-related variables.

The latest national immunization coverage survey was conducted in 2018. The results showed high coverage in general provinces. However, low coverage was marked in the deep-south for all vaccines except birth doses. And under-target of vaccine coverage among late years children were shown in Bangkok.

A gap analysis was conducted, and the way forward proposed to solve the identified issues. 1) In the deep-south where vaccine hesitancy is causing low coverage, communication and social mobilization will be promoted to encourage parents to get their children vaccinated. 2) Seeking extra sources for funds for migrant vaccination is ongoing to reduce obstacles to access vaccination services. 3) In the urban areas coordination with the private sector is to be strengthened. 4) An immunization recording platform and gathering individual vaccination history from all health facilities is planned to be put in place.

**TIMOR-LESTE: Reaching the unreached- path to achieving CVAP goals**

The government and partners in Timor-Leste have worked together to improve the immunization coverage and control vaccine-preventable disease. The key activities conducted to reach the un-immunized and partially immunized children were prioritization of districts for interventions, regular micro planning and following the plans to identify and map areas with low coverage, identification of partners support including logistic and other related needs, encouragement of community leaders and local authorities to fully participate in developing micro planning which will help in advocacy and encourage mothers to seek health services, including immunization.

National reviews were conducted with local authorities to find solutions to address the gaps and monthly immunization coverage reviews were conducted at national level to identify low coverage areas and the action taken to bridge the gap. Mothers’ support groups were engaged to advocate for the immunization programme by using local media and local languages. To track and reach missed children, the routine immunization programme was strengthened in all government health facilities and some private clinics by providing daily immunization services. Screening of mother’s card was intensified to identify the eligible age for different antigens and outreach and mobile clinics were conducted in areas with low coverage.
EPI data quality audit was conducted in 2018 and recommendations are under implementation. Timor–Leste has already implemented the DHIS 2 online platform to report EPI data integrated with data from other public health programmes. The country has implemented unique information technology platform, “Saude na Familia” to capture all health–related information including immunization and plans are in place to develop an electronic national immunization register.

Dili municipality is the main urban centre with 30% of the national population. Since 2015, Stop Transmission of Polio (STOP) consultant has been continuously assigned to the municipality for direct international technical assistance and many strategies were instituted to improve the immunization coverage, such as: involving community /political leadership in advocacy and the establishment of cold chain and immunization services in all health posts and the private sector, strengthening of immunization services in the National Hospital to minimise miss--opportunities, involving the highest political leadership and NITAG chairperson and members in advocacy through TV and radio and regular quarterly EPI and VPD reviews as well as in--service training with STOP consultant support.

With these efforts WHO UNICEF has estimated that DPT3 coverage has increased from 72% in 2010 to 83% in 2018.

**F. Poster Café– Best practices in immunization in countries**

Each country presented one theme to showcase a best practice in immunization. A summary of the presentations is provided below:

**BANGLADESH: MR SIA planning and preparedness**

Bangladesh is planning to conduct MR follow–up campaign targeting children between 9 months to 9 years (34 million children). Gavi has agreed to support vaccine and operation cost up to five years. The vaccine operation cost to cover children 5–9 years will be funded by the government. Bangladesh has the highest level of political commitment and would like to ensure the campaign reaches at least 95% of children especially those that were missed by previous campaigns and routine immunization. The programme will use innovative approaches such as real–time data monitoring, flexible opening and closing hours, use of supervision app, use of invitation card and household sticker and mapping of hard–to–reach areas using GIS mapping tool.

Bangladesh is piloting selective vaccination in two districts: one high–performing and one poor–performing. In these districts, all children of eligible age will be line–listed and their MR vaccination status recorded. A child already vaccinated with 2 doses of MR vaccine, documented
by card, will not receive vaccination during the campaign. The approach will be evaluated after the campaign.

Several pre-campaign readiness assessments will be conducted both at national and sub-national levels using the WHO prescribed checklist.

**BHUTAN: Introduction of PCV 13 – a cost utility analysis**

In September 2015, the National Committee on Immunization Practice (NCIP) made a recommendation to the MoH to introduce the PCV vaccine. With support from WHO and the Health Intervention and the Technology Assessment Programme (HITAP) a cost utility study was conducted in early 2017 and this was presented to MoH and a policy brief recommending introduction of vaccine was issued in July 2017.

The vaccine was launched on Her Majesty's birthday on 4th June 2018 and was introduced into the routine EPI programme from January 2019.

The essential medicines and technology department (EMTD) conducted a cost utility study comparing no vaccination to PCV 10 and PCV 13 looking at only the government perspective of the cost of vaccine. The Markov model with a one-year cycle was used and both the cost and outcomes were discounted at 3% per annum. The results were presented using an ICER (incremental cost effectiveness ratio) in US$ per quality-adjusted life year (QALY) gained. The disease incidence rates of meningitis, bacteremia, pneumonia, and acute otitis media were derived from the Annual Health Bulletin 2016. The incidence rates of pneumococcal bacteremia and sequelae were transferred from Thai studies as these data were not available in Bhutan. Mortality rates and probability of developing sequelae were derived from literature reviews.

A cost–effectiveness threshold of 1xGPD per capita or US$ 2708 per QALY gained was deemed to be appropriate for this study. With indirect effects of vaccination, the ICERs of PCV10 and PCV13 were US$ 36 and US$ 40 per QALY gained, respectively. The ICER of PCV13 versus PCV10 was found to be US$ 92 per QALY gained. Without indirect vaccine effects, the ICERs per QALY gained of PCV10 and PCV13 were US$ 175 and US$ 205, respectively, compared to no vaccination. PCV 13 was found to prevent more episodes of illness and deaths compared to PCV 10 in both the vaccinated and unvaccinated population.

The study also looked at the impact on human resources on health and it was found that if PCV vaccine is introduced into the routine immunization programme the work of the health assistant would increase by 2 full time equivalent (FTE) per year while the FTE of other health workers would decrease, particularly for specialists (from 0.6 to 1.1 FTE) and nurses (from 1 to 1.6 FTE).
The findings of the study indicated that both PCV 10 and PCV 13 were cost-effective at the current price of US$ 3.05 and US$ 3.55 respectively. The study also showed that the maximum prices for these two vaccines to be cost-effective are US$ 7.95 and US$ 8.65 for PCV 10 and PCV 13 respectively. The budget impact analysis revealed that the total budgetary requirement will increase by approximately US$ 3.77 million for PCV10 and US$ 3.75 million for PCV13.

Limitations:

a) Data on sequelae and health utility estimates were transferred from Thailand studies and the data on herd protection was adapted from the USA.

b) The incidence of OPD visits was based on the data collected between January and March and this may not capture seasonal variations if they exist.

c) The direct non-medical costs borne by households including traveling costs for seeking care, and productivity loss of caregivers was not considered.

DPR KOREA: EPI and VPD surveillance review – recommendations and follow-up actions

The recommendations of the EPI and VPD surveillance review have been followed by the programme and the key actions taken are summarized below:

- A software for logistics drug management inventory system (LMIS) has been developed and LMIS has been established at the national and provincial level.
- A plan for vaccine distribution and supervision on implementation of EPI and VPD surveillance activities according to the monthly immunization clinic plan in each province and estimate for the vehicle requirement has been developed and is being implemented.
- Heating systems were installed in a few immunization clinics with support from GAVI and using local funding to improve the quality of immunization services.
- Session schedule was reviewed, and different vaccination days were set for different immunization posts at peripheral level within counties to improve transport of immunization supplies and supportive supervision.
- A standardized checklist for field supportive supervision and monitoring was developed and is being used.
- The progress of the programme is being reviewed regularly through national committees.
- A national cold chain equipment (CCE) deployment and comprehensive national CCE repair/maintenance plan has been developed for further strengthening of the cold chain.
- Polio and measles/rubella outbreak response plans have been developed.
• VPD surveillance guidelines have been updated in line with WHO regional guidelines.

• AEDs (Anti–Epidemic doctors) at county hygiene and anti–epidemic station (HAES) were increased and training on HHDS for timely case investigation and sample collection was planned.

• For computerized surveillance data management of county hygiene anti–epidemic stations, a software is being developed for county/province/national–level. Hardware and training will be conducted first in Pyongyang city and in a few provinces located in the north–eastern part of the country.

• According to the updated guideline all AEFI data by minimum core variables is analyzed, detailed information is collected and causality assessment for severe AEFIs is being conducted with involvement of a strengthened national AEFI committee.

• National/provincial joint supportive supervision and monitoring of HAES/sentinel hospitals is being strengthened with a log system for supervisory notes.

**INDIA: Rotavirus introduction – key lessons learnt**

India introduced the rotavirus vaccine (RVV) in phases starting from 2016. Currently, there are four Rotavirus vaccine products available in the Indian market: Rotavac®, Rotasil®, Rotarix® and RotaTeq®. All four products are technically interchangeable under the routine immunization programme but vaccine handling, dose and administration differs. India has introduced two types of RVV– the oral liquid RVV (Rotavac®) and the oral lyophilized RVV (Rotasil®). Separate trainings were conducted, and a separate training package was developed for the two types of RVV. Various innovations tried during the trainings were the station approach – a small group interactive session, online pre– and post–test, query process using the sticky pad and a vaccine administration film for the participants.

Nearly 50 million doses of RVV have been administered since the introduction of the vaccine in 2016. Only three cases of intussusception have been confirmed and all of them recovered. The preliminary findings of the impact study being done in different sentinel sites shows a decrease in rotavirus positivity rate in the post–vaccination period.

The key product–related challenges faced during the introduction of the two types of RVV include the large cold chain and dry storage space requirement for Rotasil®, logistic mismatch if bundling is not meticulously followed and the increased time required for vaccine reconstitution and administration for Rotasil®. During the introduction process, the key lessons learned were that the preparedness assessment with cold chain and dry storage space requirement and focused training of cold chain handlers on bundling ensures smooth logistic management after the
vaccine introduction, hands-on training at all levels is required for smooth programme implementation. Strengthening AEFI surveillance is essential for immunization safety and the interchangeability of the RVV products to decrease drop-outs and improve coverage.

INDONESIA: Interrupting cVDPV1 transmission – enhancing surveillance, boosting immunity and strengthening routine immunization

On 12 February 2019, Indonesia reported an outbreak of circulating vaccine-derived poliovirus type 1 (cVDPV1) in Yahukimo district, Papua province. Laboratory data confirmed that VDPV1 was isolated from a 31-month-old male child with date of onset of paralysis on 27 November 2018. Evidence of virus circulation was confirmed through the detection of genetically related VDPV1 in stool from two healthy children, living in the same district, collected on 24 January 2019 and 13 February 2019. The cVDPV1 outbreak has been graded as emergency grade 1. The country has mounted an aggressive outbreak response to control the outbreak. The cVDPV1 case count remains one and localized to Yahukimo district. The salient features of the outbreak response activities are summarized below:

- Immunization response: Two mass scale vaccination campaigns were conducted using bivalent oral polio vaccine (bOPV), targeting 1.26 million children under 15 years, in provinces of Papua and Papua Barat.
- Coordination and partnership: Weekly coordination meetings were held among partners, consultants were deployed to support the response activities. Emergency operations centres were established at national and provincial levels for coordination of outbreak response activities.
- Surveillance: Actions were taken to enhance active surveillance by measures such as; hospital record reviews, collection of stool specimens from community contacts and expansion of environmental surveillance.
- Risk communication and community engagement: Local religious leaders have been engaged, tools have been revised to cater to populations with low literacy level and local communication channels are being utilized.
- Managing vaccines and logistics: Adequate vaccine and marker pens were procured and provided to all teams in a timely manner, monitoring tools were simplified and new cold chain equipment was provided to the province.

The priority actions undertaken are monitoring and supervision of high-risk districts including real time monitoring, social and behavioural change communication, including involvement of religious leaders, surveillance trainings for district, hospital, health centre focal points in 12 high-
risk provinces, and applying lessons learnt from Yahukimo special operations to reach hard-to-reach children. An assessment of outbreak response will be undertaken to determine the end of outbreak or any need for additional mass vaccination campaigns.

MALDIVES: Planning hepatitis B seroprevalence survey

Planning for hepatitis B seroprevalence survey started through a consultative process involving the health protection agency (HPA), Maldives Technical Advisory Group on Immunization (MTAGI), WHO and UNICEF. The objectives of the survey are to measure the prevalence of hepatitis B surface antigen among Grade 1 school children and to collect immunization coverage data and calculate the effectiveness that hepatitis B vaccine has on preventing chronic infection. The survey population proposed for inclusion is children enrolled in Grade 1 (~ 6 years of age). The proposed sample size is 2121 students. A total of six schools in the Greater Male’ region, nine from atoll capital schools and 48 from other peripheral islands are proposed to be selected for the purpose. The training and piloting of the survey is planned for September–October 2019 and survey implementation is expected to be completed by December 2019 with the availability of the report in early 2020.

MYANMAR: Post–introduction evaluation of JE vaccine –Key recommendations and follow–up

JE vaccine has been introduced into RI at 9 months of age since January 2018 following a nationwide catch-up campaign (9m–15 yrs. age group). A post–introduction evaluation (PIE) was conducted with the main objectives to assess the impact of JE vaccine introduction on the EPI programme performance; to use the findings to correct identified problems and to improve planning for introduction of additional vaccine in the future.

The methodology included a desk review and adaptation of tools, a field assessment at different health administrative levels by assessment teams (MoHS, WHO, UNICEF, PATH). The main findings of the PIE indicated that JE vaccination coverage was high (>90% in most of the townships) and the reported AES and JE positive cases had declined significantly after introduction of JE vaccine in 2018.

PIE also identified strengths and weaknesses on areas of planning, cold chain and vaccine management and storage, logistics, AEFI management and highlighted suggestions for improvements in areas such as distribution of training materials, funds, availability of reporting forms, capacity building of cold chain handlers and adherence to the multi–dose vial policy to reduce vaccine wastage as well as needs for specific plans for AEFI crisis communication. On waste management, the PIE indicated that all health facilities use safety boxes, but incinerators are available only at a few hospitals. It also noted the unsafe waste disposal practices at some
facilities and recommended the need for standard operating procedures and further trainings on waste management.

**NEPAL: Concurrent routine immunization monitoring – processes, outputs and challenges – Data triangulation to improve immunization programme performance.**

The goal of the national immunization programme (NIP) is to immunize every child with all vaccines included in the NIP. Immunization is mandated as a right of every child in the National Immunization Act.

To operationalize this concept, the NIP needs real time, reliable and actionable data to inform decisions. The health management information system (HMIS) is a nation–wide passive aggregate data collection system with granularity down to the health facility level. Data from vaccine–preventable diseases surveillance system including case–based laboratory supported measles surveillance system (supported by a nationwide network of programme for immunization–preventable diseases at WHO also known as WHO–IPD) is also available. Measles case and outbreak data could serve as the proverbial ‘canary in the coal mine’ to identify areas with suboptimal immunization programme performance.

However, a system of granular data which would also identify actionable intervention points for the local programme manager at health facility or municipality levels was lacking. Furthermore, information available from different sources was not triangulated systematically to inform programmatic decisions.

The NIP in collaboration with immunization partners (WHO and UNICEF) established an immunization programme core group (IPCG) to triangulate information from different sources to improve access and equity for NIP. The IPCG holds periodic meetings with immunization partners and other sections of the department of health services’ divisions (like logistics) to solve problems promptly.

To fill the gap of granular data which would also identify actionable intervention points for local programme managers, WHO–IPD spearheaded a system of concurrent routine immunization monitoring (with support from Gavi, the vaccine alliance). IPCG endorsed the methodology and standardized data collection tools. Under this system, specially trained independent monitors hired by WHO–IPD and surveillance medical officers (SMO) of WHO–IPD monitor immunization programme performance at district, health facility, and immunization session levels as well as conduct quick immunization assessments in areas selected through purposive selection. In 2018, more than 5000 children have been assessed in 460 communities across Nepal. The monitors share the data immediately at local level so that corrective actions can be taken.
Information from measles surveillance has been used to vaccinate more than 10,000 persons in different age groups with measles–rubella vaccine as part of outbreak response immunization.

HMIS data is analyzed at least every quarter and WHO-IPD SMO follows up with local health authorities for any gaps identified. IPCG examines and triangulates all available information holistically to improve immunization coverage with access and equity in the country.

**SRI LANKA: HPV vaccine introduction and scale-up–lessons learnt**

The estimated girl cohort in Grade 6 in schools (10 years completed) is 175,000 for HPV vaccination. The age-specific school enrolment ratio (grade 1–9) was high and 96.3% in 2017. The NIP has experience of school-based vaccination for aTd booster in Grade 7 and rubella vaccination until 2012.

HPV vaccination was introduced as an evidence-based new vaccine introduction by assessing country-specific HPV prevalence among normal women, incidence of cervical cancers, genotype risk attribution for cervical cancer development, government cost incurred for cervical cancer screening, costs being incurred for cervical cancer management at each stage, including radiotherapy and chemotherapy. These cost implications were used for different case scenarios such as costs on investing in screening in preventing country cervical cancer burden, costs required for total case burden management and comparing with costs required to vaccinate for preventing vaccine preventable cervical cancers.

The decision of national introduction of the HPV–quadrivalent vaccine through existing public health infrastructure of *school medical inspection programme* was taken based on results of an implementation feasibility study.

The government assured sustainable funding, with some Gavi support, for implementation and assured access to vaccines at Gavi price. All partner organizations (Gavi, UNICEF, WHO) supported the preparatory work including advocacy and training conducted by the NIP, in line with the programme requirements. Consistency of advocacy messages was maintained for different categories (health staff, teachers, students, parents) and this helped to achieve public trust and to create demand. Shared resources for refresher training on AEFI also helped to build confidence among health staff to handle anxiety-related issues in schools. All this contributed to achieve high coverage within a short period of time after the introduction of the HPV vaccine in October 2017.

The key lessons for scale-up include the need for organizing carefully and targeting consistent messages on the benefit of vaccine to gain confidence of parents, children and school authorities. Trainings should be targeted to build confidence of health care staff to address emergency AEFI
and anxiety-related issues. There should be a proper mechanism for 2nd dose follow-up and mechanism for opportunistic screening to vaccinate any missed children. Sri Lanka is practicing opportunistic screening of girls at Grade 7 school medical inspection and combines missed HPV doses, if any, with the due aTd booster dose.

**THAILAND: Closing immunity gap for measles – action taken, planned**

Thailand started the measles elimination programme in 2012. Immunization, surveillance and laboratory strategies are being implemented. Measles cases declined during 2014–2015. However, a large outbreak occurred in 2018 with a high number of measles cases in the deep-south, along the Thai–Myanmar border, in urban and industrial areas, with spread to other parts of the country.

Epidemiological data shows that most cases in the deep-south provinces are in children under 5 years caused due to vaccine hesitancy. In the rest of Thailand cases are mostly between 20–40 years and one-tenth of these are among migrants.

A MCV immunization campaign was conducted in the deep-south to contain outbreaks in late 2018. Around 250000 doses of vaccine were administered from routine stockpile. Non-health sectors such as religious leaders, community leaders, media and local administrative offices were involved to encourage vaccination acceptance among hesitant parents. The number of cases is showing a decline in early 2019.

Three population groups were classified as high risk; children in the deep-south, migrant children and adults living in crowded conditions.

A national immunization campaign with MR vaccine is planned in September 2019. The target beneficiaries will be children between 1 – 12 years in the entire country who have missed MCV regardless of nationality. In 2020 an adult immunization campaign is proposed to raise immunity among adult risk groups such as military personnel, prisoners, factory workers, tourism staff and health personnel in the 10 highest-risk provinces and Bangkok.

**TIMOR–LESTE: Coverage evaluation survey – overcoming challenges of denominator**

Timor–Leste is an island at the eastern end of the Indonesian archipelago with an estimated total population of 1.2 million. The population census (2010) gave a projected birth cohort of 40351 for 2016. But the cohort size was found to be 33710 in 2016 based on the population census conducted in 2015. This reduction in the birth cohort causes a sudden rise in the coverage estimates for the first two years of life based on data reported routinely. Hence, a vaccine coverage evaluation survey was planned according to the new guidance published by WHO in
2018 with the objective to estimate the vaccine coverage in the first and second years of life as per the national schedule.

Children who were 12–23 months and 24–35 months old at the time of the survey were studied as separate cohorts for their first and second year of life vaccinations respectively. The new vaccine coverage survey methodology used probability sampling.

The primary sampling unit was the census enumeration area. Assumed non-response rate and design effect were 5% and 1.45% respectively. The final sample size was 301 per cohort. Three children were expected to be enrolled from each cluster per cohort and it was expected to find one eligible child in every 8th household from the 26 selected per cluster. A nationally representative sample of 101 clusters was selected based on probability proportional to the size of the population.

Data were collected using an interviewer-administered questionnaire. The home-based records and health facility records were referred to extract date of vaccinations.

The selected households were identified on the field using paper maps and Global Positioning System (GPS) receivers. An independent group of external supervisors verified the survey protocol adherence.

In the first year of life cohort, the estimated highest crude dose coverage was 94.7% (95%CI, 91.7–97.0) for BCG. The lowest crude dose coverage was reported for hepatitis birth dose, 66.2% (95%CI, 58.5–73.0). Among the infants, 4.8% (95%CI, 2.9–8.0) had never been vaccinated. DTP 4th and the MR 2nd doses in the second year of life were also low at 54.8% (95% CI, 46.5–63.0) and 54.4% (95% CI, 46.1–62.0) respectively. The estimated design effect was 1.74.

The new methodology is technically more robust and feasible. However, training of surveyors is challenging when compared to 30x7 cluster survey practiced earlier. The sample size calculation depends on reliable data for birth rate, infant mortality rate and average household size. Hence, current methodology is relatively difficult to be practiced in a country where the civil registration system is not functioning. Similarly, considerable resources need to be invested when the required maps, GPS are not readily available.

The immunization coverage estimates derived from EPI coverage survey was much lower than the over 100% administrative immunization coverage derived when using 2015 census–based population estimates and this led the Ministry of Health to revisit the 2015 census–based population estimates and adjust accordingly.
G. Informational session on two new vaccines

Dengue vaccine

CYD–TDV (Dengvaxia®) is a live attenuated, recombinant tetravalent vaccine employing the attenuated Yellow fever (YF) virus 17D strain as the replication backbone. Two large Phase–3 trials involving over 30 000 participants aged 2–16 years indicated that a 3–dose regimen of this vaccine was associated with 65.6%, 93% and 81% reduction in virologically–confirmed dengue, severe dengue and dengue hospitalizations, respectively, over a 25–month period from the first dose, in the 9–16–year age group. These data led to licensure of the vaccine with an indication of 9 to 45 years.

In April 2016, SAGE recommended the use of dengue vaccine, while suggesting that the public health benefits of vaccination could be maximized if dengue seropositive was high (70% or greater) in the targeted age group. SAGE noted the limited safety data in seronegative populations and recommended further safety studies, particularly in vaccinated seronegative persons.

Additional data that became available in 2017 showed that the vaccine performs differently in seropositive and seronegative individuals. Vaccine efficacy against virologically–confirmed symptomatic dengue in the 25 months after the first vaccine dose was higher among those aged ≥9 years who were seropositive at baseline (76%; 95% CI: 63.9 – 84.0%) than those seronegative at baseline (38.8%; – 0.9 – 62.9%). Also, there was an increased risk of hospitalized dengue and severe dengue in seronegative individuals from year 3 onwards during the 66–month observation period. Thus, in high prevalence settings, the vaccine provides overall population benefit but an increased risk for seronegative individuals.

SAGE, in April 2018, considered these data and discussed two vaccination scenarios for countries considering the use of the dengue vaccine as part of their dengue control programme: (i) screening individuals for seropositivity prior to vaccination and vaccinating only those who were seropositive, and (ii) using the vaccine only in populations with high seroprevalence (>80%) in those 9–45 years of age. It concluded that the former, i.e. a pre–vaccination screening strategy in which only dengue–seropositive persons are vaccinated, is the preferred option. This requires a validated screening test with the highest specificity to identify persons who have had a previous dengue infection, to minimize inadvertent vaccination of seronegative persons; however, currently, point–of–care screening tests with high accuracy are not available. The alternative strategy of introduction of CYD–TDV dengue vaccine in disease–endemic areas (e.g. those with frequent dengue outbreaks) based on population seroprevalence criterion without individual
screening requires identification of areas with documented seroprevalence rates of at least 80% at age 9 years using population sero-surveys at district and sub-district levels.

SAGE also emphasized that important research and implementation questions remain concerning CYD–TDV, in particular the need to develop a highly sensitive and specific rapid diagnostic test to determine serostatus, simplified immunization schedules, and assessment of the need for booster doses.

An updated dengue vaccine WHO position paper on CYD–TDV was published on September 2018 and is available online at https://apps.who.int/iris/bitstream/handle/10665/274315/WER9336.pdf?ua=1.

**Malaria vaccine**

The ITAG was provided an update on the RTS, S/AS01 malaria vaccine implementation programme (MVIP), a synopsis of the vaccine development pathway, the main results of the phase–3 clinical trial and the considerations that led to the WHO recommendation in 2016 for pilot-testing of RTS, S/AS01. The MVIP was established by WHO to coordinate and support national immunization programmes in Ghana, Kenya and Malawi in introducing the vaccine in selected areas and to ensure rigorous evaluation of the programmatic feasibility of administering the required four doses, the impact on mortality and the safety of the vaccine. The main aim of the programme is to answer the questions identified in 2015 by SAGE and the Malaria Policy Advisory Committee (MPAC) as a basis for WHO recommendations on wider use of the vaccine.
H. Data management, quality and coverage estimations

Improving data quality and use in the Region:

A number of actions were identified and discussed to improve the quality and use of data on surveillance and immunization in the SEA Region. These are summarized below:

• Timely, complete and accurate data should be ensured through WHO/UNICEF Joint Reporting Form (JRF) and SEAR Annual EPI Reporting Form (AERF) as these are critical documents for tracking progress of RVAP and GVAP indicators, monitoring the health situation and assessing health trends and contribute to WHO/UNICEF estimate for national immunization coverage;

• Mechanism to validate/estimate sub-national level immunization coverage data should be strengthened;

• Data should be used for action at national and subnational level;

• Methods to improve target population estimates for programmatic use– including a bottom-up strategy and the use of alternative sources of data should be explored to derive better estimates of targets;

• Inbuilt data validation mechanisms should be developed to ensure quality of data, and provide regular feedback to sub-national levels on core variable data omissions, inconsistencies or discrepancies;

• Communication between the laboratory and surveillance units should be strengthened for linking the laboratory and surveillance data;

• Periodic in-depth data review/assessment (e.g., data quality review should be conducted and plans for improvement developed;

• Regional office should continue to provide feedback to the NIPs on the quality of surveillance data and share data omissions, inconsistencies and errors.

WIISE—A new tool on data management for improving data capture, analysis and dissemination

A brief overview of WIISE (WHO Immunization Information System) was presented. WIISE is a collection of applications to collect, manage, analyze and disseminate immunization and VPD surveillance data reported to WHO worldwide. WIISE is not a replacement for countries’ information systems.

WHO uses immunization and surveillance data to develop strategies and implement activities to reduce the morbidity and mortality of vaccine preventable diseases as well as assess their impact at the country level. Immunization is key to achieving several of the SDG goals and targets. The
ability to collect and analyze accurate, up-to-date data is critical for the activities of the Organization. For example, data on children’s immunization coverage helps identify gaps in national vaccination programmes and trigger information to ensure that every child is vaccinated, punctually and adequately, no matter where he or she lives.

WHO currently relies on fragmented data collection and analysis systems in which WHO Regional Offices and HQ have their own processes, workflows, and storage system to manage country-level and subnational data. These systems work in silos, may contain slightly different data, and have limited analytical capabilities, preventing WHO from having the consolidated view of information that is needed for decision-making and to best support its Member States.

In order to mitigate these constraints, the Organization is developing a common platform that will simplify and harmonize immunization data management while ensuring the autonomy of regional offices. WIICE will streamline processes and workflows and improve the overall governance of immunization data across the Organization.

**Estimating coverage using survey and reported data**

Countries measure immunization coverage by administrative reports and through coverage surveys. The two methods are complementary and can be used in combination to better interpret time trends in immunization coverage data. A similar approach, used by WHO and UNICEF to estimate national immunization coverage and methodology, has been published and available. It is important that immunization programmes get involved with household surveys measuring immunization coverage in an early state to provide necessary information on vaccination schedules and recording practices. WHO recently published a white paper on harmonizing vaccination measures in household surveys [https://www.who.int/immunization/monitoring_surveillance/Surveys_White_Paper_immunization_2019.pdf?ua=1](https://www.who.int/immunization/monitoring_surveillance/Surveys_White_Paper_immunization_2019.pdf?ua=1) to ensure results are useful for immunization programmes.

In addition, it is essential to use data for action at all levels of the immunization programme, including at the service delivery level. To better understand programme performance and identify pockets with un- and under-vaccinated children it is important to review data from different sources, such as vaccination histories from surveillance data, SIA post-campaign data, immunization session monitoring data and vaccine stock data.
I. Looking beyond 2020

Immunization Agenda 2030 consultation at the SEARO TAG in July 2019

The vision and strategy for the immunization programme in WHO South-East Asia Region is guided by the South-East Asia Regional Vaccine Action Plan 2016–2020 (SEARVAP) which describes the regional goals and targets for immunization and control of vaccine-preventable diseases in the Region. In the development of SEARVAP, global strategic documents such as the Global Vaccine Action Plan 2011–2020 (GVAP), WHO’s Twelfth General Programme of Work 2014–2019 and the relevant United Nations (UN) Sustainable Development Goals were taken into consideration.

With SEARVAP coming to an end in 2020, development of a new regional strategic document to guide the programme was identified as an immediate priority for the Region. To align the future strategies and direction for the Region with the global post-2020 vision that is currently being documented in the ‘Immunization Agenda 2030”, a regional consultation was held at the Tenth meeting of the SEAR ITAG (July 2019) to review the global strategy for leaving no one behind, and to provide a perspective based on priority needs and emerging challenges in the countries of the Region.

Much like the SEARVAP, the Global Vaccine Action Plan will also end in 2020 and a new global strategy is needed for the next decade 2021–2030, a strategy that engages and aligns stakeholders for immunization and beyond at all levels, addressing emerging issues, and to harness new solutions for impact while reiterating the importance of vaccinations in contributing to the broader health and development agendas. This strategy has been envisioned in the Immunization Agenda 2030 (IA 2030) through a wide stakeholder consultation. The final IA 2030 will be presented to the SAGE in October 2019, then presented to the Executive Board in Q1 2020 and finally for endorsement at the World Health Assembly in May 2020.

IA 2030 is intended to inspire and align the plans and activities of country, regional and global audiences, including immunization, health and development stakeholders. Achieving the IA 2030 vision will ensure that everyone, everywhere has access to immunization. The benefits of immunization are currently spread unevenly, both between and within countries. IA 2030 will set the strategic priorities and world-wide goals for the decade 2021–2030 and is expected to provide a dynamic way forward until 2030. Further, IA 2030 will be complemented by a living online resource, including technical guidance, implementation plans in regions and a monitoring & evaluation framework, which will evolve throughout the decade.

The regional review of the IA 2030 at the SEAR ITAG was led and facilitated by WHO–HQ and Unicef–HQ. Participants from each of the 11 SEAR Member States of the Region brainstormed within the country-specific groups, including other partners/stakeholders, to review at least two pre-assigned strategic priorities to provide a collective country-group feedback on:

a) ‘Key focus areas’ described for the strategic priority

b) ‘Objectives’ and ‘Core Principles’ for the strategic priority

(with specific focus to get feedback on how the core principles – people centered, country owned, partnership and data-driven – could be applied to implement the strategic priority proposed in the IA 2030)
c) ‘Goals and Targets’ set for the strategic priority

Any significant gaps, issues of regional and country relevance or irrelevance, key priorities, and suggestions for modifications and/or improvement to the above three parameters forming the key elements of the IA 2030 were highlighted. Charts below summarize the key outcomes of this regional consultation, and the feedback was sent to the secretariat of IA 2030 to be incorporated into the final version of the document.

The main themes for feedback to the IA 2030 co-creation process from the SEARO TAG are summarized below:
Feedback on key focus areas (KFAs) in the strategic priorities

**SP 1 – PHC/UHC**
- Include data quality & long term political commitment

**SP2 – Equity & Access**
- Include: quality of service, increased demand, ethnic minorities,

**SP3 – Ownership & Accountability**
- Emphasize HW capacity building, account. framework, community ownership, "communication" profession

**SP4 – Outbreak & Emergencies**
- Make immunization programme less reactive, more resilient, placed within health system
- Include cross-border preparedness and joint response plans

**SP5 – Lifecourse & Integration**
- Include legal and policy framework, financing, NITAGs
- Elaborate on the process of integration

**SP6 – Research & Innovations**
- Include affordability, support from manufacturers, supply, implementation research
- Drive R&D to address the need at country level

**SP7 – Availability & Sustainability**
- Emphasize international stockpiles and contributions for emerging countries
- Include country capacity for self-procurement, bilateral partnerships, "biologicals" & "IHR"

Proposed changes

Suggested new KFAs

- Private sector engagement (policy & legislation)
- Demand generation
- Advocacy for demand creation
- HWs training for dealing with vaccine hesitancy
- Vaccine supply for emergency situations
- Ensuring availability of financing

Minor changes

Moderate changes

Important changes

Proposed new KFAs

No new KFAs

New KFAs

55
Feedback on goals and targets

**Proposed changes**

- Include milestones for 2025, immunity, sub-national data, actions and targets
- Add "Sustain" [coverage & polio]; change to "all regions" [measles]
- Crisper language (perceived as broad or narrow, mix of goals and indicators)

**Suggested new goals and targets**

- Financial commitment
- Data quality
- Community mobilization
- Capacity building of HW
- Decreasing vaccine hesitancy

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**SP 1 – PHC/UHC**

- Minor changes

**SP2 – Equity & Access**

- Crisper language (perceived as broad or narrow, mix of goals and indicators, word tweaks)

**SP3 – Ownership & Accountability**

- Include laboratory network, supply chain, use of surveillance data for zero doses
- Perception that polio, measles, MNT to be one goal

**SP4 – Outbreak & Emergencies**

- Add existence of regulation (incl. addressing hesitancy)
- Perceived as hard to measure

**SP5 – Lifecourse & Integration**

- Include disease elimination and eradication in decreasing outbreak cases
- Emphasize prevention of cases
- Align cervical cancer with existing global goal
- Crisper language (perceived as broad or narrow or hard to measure, mix of goals and indicators, word tweaks)

**SP6 – Research & Innovations**

- Crisper language (perceived as broad or narrow)

**SP7 – Availability & Sustainability**

- Crisper language (perceived as broad or narrow, mix of goals and indicators, word tweaks)

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Proposed new KFAs

- Set timeframe for new vaccine development
- Sustain coverage and vaccine introduction financing
- Access to global/regional stockpiles for eradication & elimination

No new KFAs

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Minor changes | Moderate changes | Important changes
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Feedback on objectives and core principles

**SP 1 – PHC/UHC**
- Adding "aligned to local contexts"
- Strengthening health workforce
- Setting milestones & (sub-) national data-driven regulation
- Involving comm. in surv.
- Envisioning immunization as an investment
- Positioning community as a risk for general population
- Ensuring security & safety of response teams
- Making 'data-driven' decisions a priority
- Engaging private sector

**SP 2 – Equity & Access**
- Integrating religion, ethnicity, disability
- Creating innovative messages
- Perceiving immunization as an investment
- Positioning community as a risk for general population
- Ensuring security & safety of response teams
- Setting priorities by countries
- Engaging from CSO & professional bodies

**SP 3 – Ownership & Accountability**
- Creating innovative messages
- Perceiving immunization as an investment
- Positioning community as a risk for general population
- Ensuring security & safety of response teams
- Having national regulation
- Conducting adequate budgeting
- Having government leadership
- Setting priorities by countries
- Generating accountability for private sector and manufacturers
- Engaging at all layers

**SP 4 – Outbreak & Emergencies**
- Creating innovative messages
- Perceiving immunization as an investment
- Positioning community as a risk for general population
- Ensuring security & safety of response teams
- Placing focus on routine EPI
- Clarifying essential immunization
- Enabling country coordination mechanisms for donors
- Building bilateral / multilateral platforms for price regulations at country level

**SP 5 – Lifecourse & Integration**
- Adding "biologica"s
- Conducting economic evaluations to support country decision making

**SP 6 – Research & Innovations**
- Adding "biologica"s

**SP 7 – Availability & Sustainability**
- Adding "biologica"s
- Conducting economic evaluations to support country decision making
- Building bilateral / multilateral platforms for price regulations at country level