27TH MEETING OF THE TECHNICAL ADVISORY GROUP ON IMMUNIZATION AND VACCINE-PREVENTABLE DISEASES IN THE WESTERN PACIFIC REGION

19–22 June 2018
Manila, Philippines
MEETING REPORT

27TH MEETING OF THE TECHNICAL ADVISORY GROUP (TAG) ON IMMUNIZATION AND VACCINE-PREVENTABLE DISEASES IN THE WESTERN PACIFIC REGION

Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

Manila, Philippines
19–22 June 2018

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NOTE

The views expressed in this report are those of the participants of the 27th Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region and do not necessarily reflect the policies of the conveners.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the 27th Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region in Manila, Philippines from 19 to 22 June 2018.
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Keywords:

Immunization / Immunization programs / Vaccines – standards / Regional health planning
SUMMARY

The 27th Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region was held on 19–22 June 2018 in Manila, Philippines. The meeting was attended by six TAG members, three temporary advisers, 32 participants from 16 countries and areas, 43 representatives from partner organizations, and WHO staff from headquarters, the Regional Office for the Western Pacific and representative country offices.

The meeting participants discussed lessons learnt and the status of the poliomyelitis (polio) endgame strategies as well as the draft Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region and draft Field Guide for Preparedness and Response to Diphtheria Outbreaks in the Western Pacific Region. Discussion also covered regional plans for surveillance, data management and laboratories and laboratory networks for vaccine-preventable disease control and elimination. Post-2020 goals for immunization and vaccine-preventable diseases for the 37 countries and areas that make up the Western Pacific Region were also discussed. It was acknowledged that initiatives for vaccine-preventable disease control and elimination and introduction of new vaccines have led to strengthened immunization systems and programmes in this Region over the last four decades. The TAG offered full support to the WHO Secretariat to initiate development of a post-2020 regional framework of action for immunization and vaccine-preventable diseases in the Western Pacific, working in collaboration with Member States and partners.

The TAG recommended Member States to use the Regional Framework for Action on Transitioning to Integrated Financing of Priority Public Health Services in the Western Pacific to guide actions to secure sustainable domestic financing for immunization. The TAG also encouraged Member States to review the Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030 and consider developing national plans for its implementation, acknowledging that coordination across programmes is required. The TAG recommended the WHO Secretariat to continue to provide technical support for special studies focusing on increasing the evidence base for National Immunization Technical Advisory Groups (NITAGs) to consider for introducing new vaccines and new vaccination technologies. The TAG recommended all Member States to update their national immunization schedules in line with 2017 WHO position papers on tetanus and diphtheria vaccines to include a primary series of three doses and three booster doses. The TAG also encouraged Member States to address residual measles and/or rubella immunity gaps among adolescents and adults by planning and conducting targeted immunization initiatives, which may include school-based, university-based or occupationally based immunization. Finally, the TAG recommended the WHO Secretariat to suggest to the Regional Committee for consideration that the draft incidence and coverage targets for achieving accelerated control of Japanese encephalitis in the Western Pacific be achieved by 2030.
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<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>AEFI</td>
<td>adverse event following immunization</td>
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<tr>
<td>AFP</td>
<td>acute flaccid paralysis</td>
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<td>ATAGI</td>
<td>Australian Technical Advisory Group on Immunization</td>
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<tr>
<td>bOPV</td>
<td>bivalent oral poliovirus vaccine</td>
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<tr>
<td>cMYP</td>
<td>comprehensive multi-year plans</td>
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<tr>
<td>CRS</td>
<td>congenital rubella syndrome</td>
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<tr>
<td>CTC</td>
<td>controlled temperature chain</td>
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<tr>
<td>cVDPV</td>
<td>circulating vaccine-derived poliovirus</td>
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<tr>
<td>DAT</td>
<td>diphtheria antitoxin</td>
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<tr>
<td>DTP3</td>
<td>three doses of diphtheria–tetanus–pertussis vaccine</td>
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<tr>
<td>EMTCT</td>
<td>elimination of mother-to-child transmission</td>
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<tr>
<td>EPI</td>
<td>Expanded Programme on Immunization</td>
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<td>ERP</td>
<td>Expert Resource Panel</td>
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<tr>
<td>GAPIII</td>
<td>Global Action Plan, third edition</td>
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<tr>
<td>GCC</td>
<td>Global Commission for the Certification of the Eradication of Poliomyelitis</td>
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<td>GPEI</td>
<td>Global Polio Eradication Initiative</td>
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<tr>
<td>GRISP</td>
<td>Global Routine Immunization Strategies and Practices</td>
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<td>GVAP</td>
<td>Global Vaccine Action Plan</td>
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<tr>
<td>HBsAg</td>
<td>hepatitis B surface antigen</td>
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<td>HBV</td>
<td>hepatitis B virus</td>
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<td>HepB-BD</td>
<td>hepatitis b birth dose</td>
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<td>HPV</td>
<td>human papillomavirus</td>
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<tr>
<td>HSI</td>
<td>HIV, Hepatitis and Sexually Transmitted Infection</td>
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<tr>
<td>IHR</td>
<td>International Health Regulations</td>
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<tr>
<td>iPMTCT</td>
<td>integrated prevention of mother-to-child transmission</td>
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<tr>
<td>IPV</td>
<td>inactivated poliovirus vaccine</td>
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<tr>
<td>JE</td>
<td>Japanese encephalitis</td>
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<tr>
<td>MCV</td>
<td>measles-containing vaccine</td>
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<tr>
<td>MNT</td>
<td>maternal and neonatal tetanus</td>
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<tr>
<td>MRCV</td>
<td>measles- and rubella-containing vaccine</td>
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<tr>
<td>MSF</td>
<td>Médecins Sans Frontières</td>
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<tr>
<td>NCC</td>
<td>National Certification Commission for Eradication of Poliomyelitis</td>
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<td>NIID</td>
<td>National Institute of Infectious Diseases</td>
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<td>NIP</td>
<td>national immunization programme</td>
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<td>NITAG</td>
<td>national immunization technical advisory group</td>
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<td>NRA</td>
<td>national regulatory authority</td>
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<td>NVC</td>
<td>National Verification Committees</td>
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<td>OCC</td>
<td>outside of the cold chain</td>
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<td>OPV</td>
<td>oral poliovirus vaccine</td>
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<td>PCV</td>
<td>pneumococcal conjugate vaccine</td>
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<td>PEF</td>
<td>poliovirus-essential facility</td>
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<td>PIRI</td>
<td>periodic intensification of routine immunization</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>RCC</td>
<td>Regional Commission for the Certification of Poliomyelitis Eradication</td>
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<tr>
<td>RVC</td>
<td>Regional Verification Commission for Measles and Rubella Elimination</td>
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<td>RMNCH</td>
<td>Reproductive, Maternal, Newborn and Child Health</td>
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<td>SAGE</td>
<td>Strategic Advisory Group of Experts</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>SIA</td>
<td>supplementary immunization activity</td>
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<td>SRVC</td>
<td>subregional verification committee</td>
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<td>TAG</td>
<td>Technical Advisory Group</td>
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<tr>
<td>Td</td>
<td>tetanus–diphtheria toxoid</td>
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<td>tOPV</td>
<td>trivalent oral poliovirus vaccine</td>
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<tr>
<td>TT</td>
<td>tetanus toxoid</td>
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<td>UHC</td>
<td>universal health coverage</td>
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<td>UNICEF</td>
<td>United Nations Children's Fund</td>
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<td>US CDC</td>
<td>United States Centers for Disease Control and Prevention</td>
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<td>V3P</td>
<td>Vaccine Product, Price and Procurement</td>
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<td>VDPV</td>
<td>vaccine-derived poliovirus</td>
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<td>VI&amp;I</td>
<td>Vaccine Introduction &amp; Impact</td>
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<td>VPD</td>
<td>vaccine-preventable disease</td>
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<td>WHE</td>
<td>WHO Health Emergencies Programme</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WPV</td>
<td>wild poliovirus</td>
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1. INTRODUCTION

1.1 Meeting organization

The 27th Meeting of the Technical Advisory Group (TAG) on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region was held on 19–22 June 2018 in Manila, Philippines. The meeting was attended by six TAG members, three temporary advisers, 32 participants from 16 countries and areas, 43 representatives from partner organizations, and WHO staff from headquarters, the Regional Office for the Western Pacific and representative country offices. A list of participants is provided in Annex 1, and the meeting programme is included in Annex 2.

1.2 Meeting objectives

The objectives of the meeting were:

(1) to review progress, identify critical issues and determine key actions to achieve the regional immunization goals specified by the Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific and the strategic objectives of the Global Vaccine Action Plan (GVAP);

(2) to identify opportunities to enhance coordination and collaboration among immunization-related initiatives, programmes and partners to support countries in achieving the regional immunization goals and the GVAP strategic objectives; and

(3) to prepare recommendations by the Technical Advisory Group on Immunization and Vaccine-Preventable Diseases in the Western Pacific for WHO and countries.

2. PROCEEDINGS

2.1 Opening session

In his opening remarks, Dr Shin Young-soo acknowledged the progress made in implementation of the GVAP in the Western Pacific Region. Most notably, the Region maintained its polio-free status and the Lao People’s Democratic Republic stopped an outbreak of circulating vaccine-derived poliovirus (cVDPV) type 1. Twenty-one countries and areas have been verified as having achieved the goal of less than 1% hepatitis B surface antigen (HBsAg) prevalence among 5-year-old children. In 2017, measles and rubella incidence were at historic lows in the Region despite some challenges. In 2017, six countries and areas were verified as having eliminated measles and two countries achieved rubella elimination. The Philippines achieved maternal and neonatal tetanus elimination in 2017, and eight of 12 countries in the Region with risk of Japanese encephalitis have introduced the vaccine into national immunization programmes (NIPs).

Dr Shin Young-soo concluded his remarks by discussing current and future challenges, including increasing domestic funding for immunization as several countries transition away from donor support for essential public health functions. Dr Shin encouraged countries and
partners to focus on 2020 targets during this meeting, specifically to review progress, to identify any roadblocks to overcome and to agree on key actions to achieve these goals.

2.2 Global update

2.2.1 Global overview of WHO’s roles in immunization

The WHO Thirteenth Global Programme of Work, 2019–2023 (GPW13) was endorsed at the World Health Assembly in May 2018. The GPW13 is structured around three strategic priorities designed to promote health, keep the world safe and serve the vulnerable. With the theme “Three Billion More”, each strategic priority has a one-billion people goal, including: 1 billion more people enjoying better health and well-being, 1 billion more people better protected from health emergencies, and 1 billion more people benefiting from universal health coverage.

To help achieve implementation of the GVAP, WHO’s strategic goals for vaccines for the period 2015–2030 are as follows: 1) to promote the development of new vaccines and vaccine delivery technologies to meet public health priorities; 2) to help achieve the implementation of the GVAP; and 3) to establish norms and standards for vaccines and delivery technologies are of assured quality.

The WHO publication *Global Routine Immunization Strategies and Practices* (GRISP) proposes areas requiring attention and investments to respond to the challenges of underperformance. A number of guidance documents and initiatives have been developed in the past few years to support improvement plans.

2.2.2 Global update on implementation of the GVAP

The GVAP puts forth six strategic objectives to be met by 2020. One of these goals, namely, to develop and introduce new and improved vaccines, was achieved in 2015. In 2017, cases of wild poliovirus (WPV) were at the lowest level ever, with only nine cases in two endemic countries, Afghanistan and Pakistan. The maternal and neonatal tetanus (MNT) elimination indicator of having 40 countries reach MNT elimination by 2015 remains off track, but the gap is slowly closing with three additional countries verified as having eliminated MNT in 2017. This leaves only 15 countries to achieve this target. Only the WHO Region of the Americas remains measles and rubella free, but globally, seven more countries were verified as having achieved measles and rubella elimination in 2016.

Introduction of pneumococcal conjugate vaccine (PCV) has been slower in middle-income countries that are ineligible to receive funding from Gavi, the Vaccine Alliance because of comparatively higher costs. Global coverage with three doses of diphtheria–tetanus–pertussis vaccine (DTP3) has scarcely changed since 2010, peaking at 86% in 2016, and though there has been some regional fluctuation since 2010, the Western Pacific Region reported 97% DTP3 coverage in 2016. The numbers of unvaccinated children is decreasing in some but not in all large countries. Six countries account for 50% of unvaccinated children globally.

Financing for routine immunization has shown a general increase, but it has not been uniform. Vaccine stock-outs are globally on the rise for varying reasons. Self-procuring
middle-income countries experience delays in procurement, while high-income countries experience vaccine shortage problems.

2.2.3 Regional update on progress towards the GVAP goals in the Western Pacific

In October 2014, the WHO Regional Committee for the Western Pacific endorsed the Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific to translate strategies and activities recommended by the GVAP to the regional context. The Regional Framework specifies eight immunization goals for the Western Pacific: (i) sustaining polio-free status; (ii) measles elimination; (iii) rubella elimination; (iv) maternal and neonatal tetanus elimination; (v) accelerated control of hepatitis B; (vi) accelerated control of Japanese encephalitis; (vii) introduction of new vaccines; and (viii) meeting regional vaccination coverage targets.

While polio-free status has been maintained and poliovirus-essential functions (e.g., immunization, surveillance, laboratories, etc.) have been sustained at high levels in many countries of the Region, several countries were affected by imported WPV (e.g., China in 2011) and cVDPV (e.g., Lao People’s Democratic Republic in 2015). While measles elimination was maintained in six countries and two areas and rubella elimination achieved in two countries in 2017, transmission of measles virus is ongoing and the risk of congenital rubella syndrome is increasing in some countries with large populations. The Philippines was the fifth of six countries in the Region to be validated as having eliminated MNT. A total of 21 countries and areas of the Region have been verified as having achieved the 2017 HBsAg prevalence target (<1% in 5-year-old children). Japanese encephalitis (JE) vaccine was introduced in eight out of 12 countries with JE virus transmission risk. Regional DTP3 coverage has been higher than 95% since 2009 and national DTP3 coverage higher than 90% (goal of the GVAP) in 24 countries and areas in 2017.

Emerging issues for the Region to address urgently include: (i) repeated outbreaks (diphtheria, pertussis, measles, rubella, cVDPV, etc.); (ii) increased VPD incidence among older children, adolescents and/or adults; and (iii) insufficient preparedness for and response to VPD outbreaks.

2.3 Immunization systems strengthening (including progress towards GVAP strategic objectives)


Progress and achievements in strengthening immunization systems in the Western Pacific Region from 1988 to 2017 were presented, in line with the core components of immunization systems, namely: policy and planning; budget and financing; human resources; vaccine supply and logistics; vaccine quality and safety; surveillance, monitoring, and evaluation including data management; and advocacy and communication.

Since the Global Polio Eradication Initiative (GPEI) was started in 1988, immunization systems have been broadly strengthened in the several areas: policy and planning; routine and
school-based immunization; microplanning, vaccine supply and logistics; injection safety; surveillance for vaccine-preventable diseases (VPDs) and adverse events following immunization (AEFIs); and laboratory support, through investments in key immunization initiatives, including the GPEI. Other initiatives have included formation of the regional TAG, National Immunization Day and other mass supplementary immunization campaigns, accelerated hepatitis B control and measles and rubella elimination, and introduction of new vaccines.

2.3.2 Update on regulatory systems strengthening and vaccine pharmacovigilance in the Western Pacific Region

The *Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific* identified regulatory systems strengthening as an area of regional priority for action. In vaccine-producing countries in the Region, regulatory systems strengthening has improved global supply of vaccines by sustaining the eligibility of national regulatory authorities for WHO prequalification application, while strengthening regulatory systems in vaccine-importing countries has improved vaccine quality oversight. Vaccine pharmacovigilance through AEFI surveillance is an important core component of the immunization system to ensure vaccine safety. In the Western Pacific Region, an AEFI surveillance system is in place in 23 countries and areas. As of 2017, 15 countries have met the GVAP indicator of reporting 10 AEFI cases per 100,000 surviving infants. Member States and WHO, in collaboration with regional partners, have worked together to improve AEFI reporting, investigation, data analysis, causality assessment, and efficient data-sharing using the WHO global medicines safety database in priority countries.

2.3.3 Experiences and lessons learnt of a well-functioning national immunization technical advisory group (NITAG)

Participants from Australia presented the experiences of the Australian Technical Advisory Group on Immunization (ATAGI). This committee has 12 voting members including the chair, who is appointed by the Minister of Health for a renewable term of four years. Two-day face-to-face meetings are held in Canberra three times a year, with additional teleconferences as required. The presenter provided examples of some recent ATAGI recommendations, covering: introduction of 9-valent human papillomavirus virus (HPV) vaccine for adolescent boys and girls; enhanced trivalent influenza vaccines; revision of PCV dose schedule; meningococcal conjugate vaccine to protect against serogroups A, C, W and Y at 12 months of age; booster Hib vaccine at 18 months of age; and maternal pertussis vaccine at each pregnancy. Meeting participants highlighted the importance of independent functionality of NITAGs and the usefulness of cost–benefit and cost-effectiveness studies when formulating immunization policy for new vaccines introductions.

2.3.4 Building advocacy capacity: vaccine hesitancy following dengue vaccine–related safety issues

The Philippines Department of Health introduced dengue vaccine (Dengvaxia®) to the school-based immunization programme in selected areas in April 2016. In December 2017,
after the release of results from the Dengvaxia® clinical trial led to a change in the vaccine label, the programme was suspended. The programme’s suspension generated intense media attention, political interest and public concern and resulted in a highly negative view towards DOH and the immunization program as a whole. Despite implementing a multi-faceted risk communications initiative, the controversy negatively affected the immunization programme overall, impacting community acceptance of school-based HPV immunization, the ongoing measles and rubella supplementary immunization activity (SIA), and the ongoing hepatitis B seroprevalence survey. The situation in the Philippines highlights the need for immunization programmes to strengthen capacities in risk communications, including effective use of modern communication technologies and social media, and proactive engagement to assess public perception of immunization activities.

2.3.5 Closing immunity gaps in rapidly urbanizing areas in the Western Pacific Region

The Asia–Pacific region is undergoing rapid urbanization. Resurgences of VPDs in cities indicate worrying immunity gaps. A study by UNICEF examining responsiveness of health systems in selected countries found critical challenges, including: growing populations; lack of essential data; resource constraints; and insufficient strategic recognition on impacts from urbanization. Country teams have tested various models to enable implementation of technical strategies. There are common elements driven from country actions, including: improving governance and leadership and enhancing resource management at local levels; engaging community leaders; expanding partnership; and introducing innovations.

More effort should be made to understand underlying reasons behind low coverage among the underserved, including social barriers, to inform tailored communications interventions. Evaluation of different working models will guide the scaling up of interventions. Given the complexity of urban systems, there is a need to partner with other sectors, particularly those governing urban development, civil registration and public financing management.

2.3.6 New strategies to enable equitable immunization service delivery: boosting inactive poliovirus (IPV) coverage through periodic intensification of routine immunization

Following a cVDPV outbreak in 2015–2016, the Lao People’s Democratic Republic took steps to ensure rapid improvements of IPV coverage. In order to protect all children with one dose of IPV at or after 14 weeks of age (together with penta3 and PCV3), the country decided to boost IPV coverage through a periodic intensification of routine immunization (PIRI).

The PIRI was organized to 1) improve IPV coverage among all children under 2 years old who were due or missed, and 2) provide other routine immunization for children under 1 year old who were due or missed. The PIRI was conducted in all 32 districts of three cVDPV-affected provinces and one adjoining province. Overall, the PIRI contributed to an increase in coverage for routine immunization for children under 1 year old, and a 30% coverage increase for IPV in 2017.
2.3.7 Securing vaccine supply: challenges and way forward

Vaccine stock-outs have been reported across the Region, often leading to interruption of immunization services and resulting in decreased immunization coverage. There were 24 stock-out events reported by nine countries in 2017. Supplier issues and global shortages were the leading causes of reported stock-out events; however, the impact of these shortages could have been minimized by improving the procurement and stock management processes. Stock management challenges caused by funding delays should be addressed through close coordination between NIPs, ministries of health, procurement units and ministries of financing. Vaccine stock-outs due to shortages in the international market need the highest attention by stakeholders in order to meet the increased demand of vaccine volume. Further, it was noted that WHO Vaccine Product, Price and Procurement (V3P) country fact sheets could aid ministries of health in decision-making on vaccine procurement, budgeting and product choice with comparison of prices and available product presentations.

2.3.8 Operational research: improved delivery approaches for life-course immunization

New Zealand has a comprehensive immunization programme that covers the whole life-course, informed by research, surveillance, evaluation and national and international clinical expert advice. The New Zealand immunization register provides data on national, regional and local immunization coverage as well as missed vaccine doses. The register is also used to enable forward forecasting for immunizations that are due in the coming month and three-month periods. Evaluations are used to assess the delivery of immunization programmes and the results are used to improve delivery. For example, evaluation of the HPV immunization programme led to changes in communications strategies, approaches and resources for both the health sector and families with resulting improvement of the HPV immunization coverage and equity. HPV coverage for 12-year-old girls increased from 53% in 2012 to 64% in 2017. The information and evidence from research, surveillance and evaluation are brought together using clinical expert advice as well as knowledge within the Ministry of Health to inform the strategy.

2.3.9 Proposed actions for 2018–2020 to accelerate progress towards the GVAP strategic objectives

Proposed actions for 2018–2020 for immunization systems strengthening are broadly aimed at intensifying strategies to accelerate progress towards the GVAP strategic objectives and the goals of the Regional Framework. The main areas of work are to: 1) support countries to strengthen national technical capacity in policy and planning by forming NITAGs and/or expanding the functionality of NITAGs; 2) provide technical support to conduct international comprehensive Expanded Programme on Immunization (EPI) reviews and develop or update costed comprehensive immunization plans in countries; 3) strengthen human resource capacity by facilitating implementation of GRISP, PIRI and Reaching Every District (RED) strategies and new interventions such as second-year-of-life (2YL) platform and reducing missed opportunities for vaccination; 4) facilitate Gavi-eligible countries to use funds for priority activities identified by the countries; 5) enhance vaccine supply and logistics
capacity; 6) strengthen vaccine quality and safety by expanding regulatory functions and AEFI surveillance; and 7) support advocacy and communications.

2.3.10 Proposed actions to strengthen immunization systems in the Western Pacific Region in 2021–2030

The vision for 2021–2030 is an EPI programme focused on expanding proposed core components of immunization systems strengthening: 1) strengthening immunization policy and planning by establishing NITAGS with six global indicators of functionality, and continually updating costed multi-year national immunization plans and implementing identified priority activities according to the predetermined plan, strategies and within timelines; 2) ensuring domestic funding for financing of all Gavi-transitioned countries to sustain achievements and further expand NIP activities; 3) strengthening vaccine supply through efficient procurement and effective vaccine management practices and also expanding research and development for vaccine development and production; and 4) strengthening functions of national regulatory authorities (NRAs) to meet all WHO benchmarks to ensure 100% of vaccines used by NIP, and vaccine pharmacovigilance processes in all countries meet the objectives of the global vaccine safety initiative.

2.4 New vaccines introduction

2.4.1 Global overview and regional update

An overview of the availability and introduction of new vaccines globally and in the Western Pacific Region was presented. Also discussed was progress towards achieving the GVAP target of all low- and middle-income Member States introducing at least one new vaccine during 2010–2020. *Haemophilus influenzae* type b (Hib) vaccine, HPV vaccine, JE vaccine, pneumococcal conjugate vaccine (PCV) and rotavirus vaccine were among those considered new vaccines. Since 2010, 11 (73%) of 15 low- and middle-income countries that had not introduced all new vaccines prior to 2010 successfully introduced at least one new vaccine by April 2018. Eight (89%) of nine low- and lower middle-income countries and three (50%) of six upper middle-income countries introduced at least one new vaccine by April 2018. Countries in the Western Pacific Region continue to make progress in introducing new vaccines, though new vaccine introduction in upper middle-income countries lags substantially behind that in low- and lower middle-income countries.

2.4.2 Experiences and lessons learnt of a lower middle-income country that has introduced three new vaccines since 2010 and will introduce two more in the next 1-2 years

Since 2010, the Lao People’s Democratic Republic has introduced PCV, IPV and JE vaccine with Gavi support, as well as the influenza vaccine with support from Partnership for Influenza Vaccine Introduction (PIVI). During this time, the country also added rubella vaccine and a second dose of measles–rubella vaccine, switched from trivalent oral polio vaccine (tOPV) to bivalent oral polio vaccine (bOPV), and successfully completed an HPV demonstration project. The Lao People’s Democratic Republic plans to introduce HPV and rotavirus vaccines during 2019–2020. The Lao People’s Democratic Republic is carefully
assessing the impact of each new vaccine introduction. A recent impact study shows that PCV has significantly reduced the nasopharyngeal carriage of *Streptococcus pneumoniae* vaccine types in the community and is likely to contribute to a reduction in child mortality. Related to the influenza vaccine, the odds of having an infant born premature were 35% lower in women who were vaccinated compared to those who were not vaccinated against influenza. In preparation for further new vaccine introductions, NIP is focusing on early and thorough preparation including development of appropriate training materials and updated planning and reporting forms.

2.4.3 Experiences and lessons learnt from the introduction of HPV in the Republic of Korea

The Republic of Korea’s EPI introduced the HPV vaccine in 2016, starting with a health facility–based approach and later vaccination in schools. Coverage has been lower than expected because of public concerns about safety, low perceived risk of cervical cancer for girls and concerns about AEFIs following the class action lawsuit regarding HPV vaccine in Japan in 2016. Efforts to increase HPV vaccination have included promotion through media and social network approaches, proactive monitoring of AEFIs and reiteration of the safety of the vaccine by experts. The main lessons learnt from the introduction of new vaccines in the Republic of Korea have been the importance of strong commitment and financial support from the Government, vaccination requirements for school entry, the Web-based Immunization Registry Information System (IRIS), and proper preparedness and prompt response to AEFIs. Key challenges include the changing epidemiology with regards to VPDs, the need for evidence-based strategies for vaccine introductions and ensuring stable procurement of vaccines.

2.4.4 Proposed actions for 2018–2020 and introduction of new vaccines into national immunization programmes in the Western Pacific Region in 2021–2030

The presentation described actions planned by the WHO Western Pacific Regional Office over the next three years and activities, vision and targets in the Region through 2030. During 2018–2021, the WHO Regional Office for the Western Pacific plans to support country-led efforts to introduce new vaccines (for example, PCV and HPV vaccine introductions in Mongolia, HPV and rotavirus vaccine introductions in the Lao People’s Democratic Republic and Solomon Islands, and a JE vaccination campaign in the Philippines); to assess typhoid burden; and to continue ongoing special studies and initiate new ones to increase evidence base on need for and impact of new vaccine introductions. During 2021–2030, the WHO Western Pacific Regional Office will work with Member States to develop national plans for evidence-based introduction of new vaccines, identify sources of support for new vaccine introductions and explore strategies to reduce costs of vaccines. The targets for 2030 are to introduce HPV, PCV and rotavirus vaccines in all countries in the Region and to achieve at least 95% vaccine coverage of populations targeted.
2.5 Accelerated hepatitis B control

2.5.1 Global and regional overview

Twenty-four countries in the Western Pacific Region have serosurvey evidence of meeting the target of less than 1% HBsAg among 5-year-old children. This target was regionally set for achievement by 2017, and globally set for achievement by 2020. The Region as a whole has met this 1% target, with 0.93% prevalence among children born in 2012. The global 2030 target of reaching 0.1% hepatitis B surface antigen prevalence (HBsAg) among 5 year old children will require hepatitis B interventions beyond high immunization coverage, such as antiviral treatment for mothers with high viral loads and hepatitis B immunoglobulin and post-vaccination serological testing for exposed newborns. These additional hepatitis B interventions require coordination across other programmes such as Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH) and HIV, Hepatitis and Sexually Transmitted Infections (HSI). The Regional Committee’s recent endorsement of the Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030 looks to use the shared RMNCH platform to coordinate and efficiently enable elimination of mother-to-child transmission (EMTCT) of these three infections.

2.5.2 Hepatitis B birth dose improvement: lessons learnt from pilot projects in Viet Nam

Viet Nam reported improvements in timely hepatitis B birth dose (HepB-BD) coverage (76.6% in 2017) after several interventions to overcome the negative impact of AEFI. Challenges have included: vaccine hesitancy and over-contraindication; high rates of delivery at home, in commune health centres or in polyclinics in mountainous areas where HepB-BD service has not been set up; and under-reporting of HepB-BD administration by hospitals. Current strategies to improve HepB-BD coverage include: update national guidelines; promote health facility-based delivery; improve communications; increase vaccine access and community demands; advocate local health authority for clear direction; and train health workers on proper reporting of birth registration at hospitals. All supported provinces in 2016–2017 with current strategies showed improvement. In order to achieve the coverage goal of timely HepB-BD, the following are needed: a new approach in mountainous areas as well as continuous implementation of current strategies; policy changes to revise current screening system; demonstration of house-to-house vaccination; and tailored communications for hard-to-reach population.

2.5.3 EMTCT of HIV, hepatitis B and syphilis: an opportunity to further acceleration of hepatitis B control

The Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030 was endorsed at the sixty-eighth session of the Regional Committee in 2017 and includes 2020 and 2030 impact and programmatic targets. High-level commitment will be necessary to enable EMTCT of HIV, hepatitis B and syphilis. Coordination across programmes will be required to ensure good-quality maternal, newborn and child health services to increase HepB-BD coverage.
Following the endorsement of the Regional Framework, consultations were held in China and Malaysia to discuss the development of additional hepatitis B interventions and validation of EMTCT of hepatitis B virus (HBV). Opportunities for accelerating hepatitis B control through triple EMTCT were discussed, noting that coordination and collaboration across programmes serves to improve antenatal screening and post-vaccination serological testing. These collaborations will better identify high-risk individuals and monitor the effectiveness of using additional hepatitis B interventions such as hepatitis B immunoglobulin and antiviral treatment of mothers with high viral HBV loads.

2.5.4 Moving towards EMTCT of hepatitis B in China: field and modelling experiences and challenges

Hepatitis B vaccine was introduced into China’s NIP in 2002. Through universal hepatitis B vaccination strategies including maintenance of high third-dose hepatitis B coverage, improvement of timely birth dose (96% in 2017), nationwide hepatitis B catch-up campaigns and integrated prevention of mother-to-child transmission (iPMTCT) programming, the prevalence of HBsAg has decreased to 0.32% among children. China’s 13th Five-Year Plan (2016–2020) includes integrated EMTCT of hepatitis B, HIV and syphilis. Three major projects related to EMTCT of HBV are the MCH-iPMTCT national programme, a post-vaccination serological testing pilot project and the hospital-based Shield Project. Analysis of 1000 pregnant women involved in the Shield Project found that 1.3% of HBV-exposed infants remained susceptible after vaccination and warrant revaccination. Pregnant women and infants in 100 project hospitals are monitored, and antivirals are given to pregnant women with HBV DNA > $10^6$ IU/ml. Future plans include strengthening timely birth dose policy in weak areas, screening pregnant women and promoting selective use of antivirals in areas with suboptimal indicators.

2.5.5 Proposed actions for 2018–2020 and accelerated hepatitis B control in the Western Pacific Region in 2021–2030

Proposed actions for 2018–2020 include adoption of the 2018–2025 regional targets proposed by the Expert Research Panel (ERP), including: 1) to reduce HBsAg prevalence to less than 1% in 5-year-old children in all countries and areas by 2025; and 2) in countries and areas that already have less than 1% HBsAg prevalence in 5-year-olds, to further reduce HBsAg prevalence to less than 0.5% by 2025. Partnerships with other programmes (for example, RMNCH and HSI) at both regional and national levels will be strengthened to support implementation of the Regional Framework for Triple Elimination. WHO will also support Member States in gaining experience with new survey and cost-effectiveness methodologies to document and further EMTCT of HBV efforts, given the high sample sizes required to achieve less than 1% HBsAg seroprevalence.

Eliminating HBV transmission by 2030 will require partnerships with programmes such as RMNCH and HSI for administration of hepatitis B interventions outside of immunization, such as antenatal screening, antiviral treatment and hepatitis B immunoglobulin administration. Also, a regional viral hepatitis laboratory network will need to be created and sustained to ensure that quality assurance and quality control mechanisms are in place. The
elimination of HBV transmission serves to further strengthen immunization programmes, such as improvement of HepB-BD coverage, immunization safety and AEFI management, immunization communications, promotion of occupational vaccination including health-care workers and high-risk adult catch-up vaccination.

2.6 Sustaining polio-free status and implementation of the polio endgame strategies

2.6.1 Global update

The Global Polio Eradication Initiative (GPEI) continues its efforts to stop polio transmission and deliver on its promise of a polio-free world. In 2017, only 22 cases of WPV type 1 were detected in two countries: Afghanistan and Pakistan. This is the lowest annual total ever recorded. As of 19 June 2018, 11 cases have been reported. However, transmission of WPV in the northern and southern transmission corridors between Afghanistan and Pakistan continues. In Nigeria, WPV was last detected in 2016. Significant progress has been made in Borno state since then, but gaps in surveillance and population immunity still remain.

The priorities of the global polio eradication programme for the next six months include: 1) interrupting transmission in Pakistan, Afghanistan and Nigeria; 2) stopping cVDPV outbreaks in the Democratic Republic of Congo, Nigeria, Somalia and Syria; 3) implementing recommendations of outbreak response assessments (Democratic Republic of Congo, Lake Chad, Nigeria and Syria); and 4) continuing to intensify surveillance in all at-risk areas.

2.6.2 Regional update

In 1988, the World Health Assembly declared the commitment of WHO to the global eradication of poliomyelitis by 2000. In the same year, the WHO Regional Committee for the Western Pacific decided to eradicate poliomyelitis in the Region by 1995. In 1990, there were an estimated 60,000 poliomyelitis cases in the Region. In 1992, thanks to the efforts of the Member States, the number of reported poliomyelitis cases in the Region decreased to 2087. The last confirmed case of WPV was reported in 1997. On 29 October 2000, the Regional Commission for the Certification of Poliomyelitis Eradication in the Western Pacific (RCC) certified the region as polio-free. Since 2000, the Region has successfully maintained its polio-free status by: increasing and sustaining high routine vaccination coverage with three doses of polio vaccine and effectively addressing immunity gaps (SIAs); implementing and strengthening surveillance for poliovirus; implementing annual risk assessments; implementing polio laboratory containment; and effectively responding to importations of WPV and emergence of cVDPV.

2.6.3 Update from the Regional Commission for the Certification of Poliomyelitis Eradication

The Twenty-third Meeting of the Regional Commission for the Certification of Poliomyelitis Eradication in the Western Pacific was held on 14–16 November 2017 in Vientiane, Lao People’s Democratic Republic. After reviewing and evaluating the National Certification Committees’ progress reports, the RCC concluded that the Western Pacific Region remained
The RCC also developed general and country-specific recommendations for maintaining polio-free status in the future.

In 2017, the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC) re-emphasized the importance of risk assessments and well-performing surveillance for polioviruses. In response to the global recommendations, the RCC urged Member States in the Western Pacific Region to review and update their national risk assessment methodologies and sustain immunization and surveillance infrastructures. To support Member States, the RCC recommended the WHO Secretariat to review and update regional and national risk assessment methodologies, standardize the annual reporting form and plan and implement a polio outbreak simulation exercise for priority countries in the fourth quarter of 2018.

2.6.4 Global supply of IPV and Strategic Advisory Group of Experts (SAGE) on immunization recommendations

As part of the Polio Eradication and Endgame Strategic Plan, WHO recommended in 2013 that all countries using only oral poliovirus vaccine (OPV) should introduce one dose of IPV into their national immunization schedules. The primary role of IPV is to provide an immunity base to reduce the risk of paralytic disease in case of any exposure to poliovirus type 2 following the switch from tOPV to bOPV in May 2016. Due to a severe global IPV supply shortage in 2017, Mongolia and Viet Nam are the remaining countries in the Western Pacific Region to introduce IPV, currently planned for 2018. The UNICEF Supply Division has concluded a tender for IPV for 2019–2022; sufficient quantities are anticipated to meet future demand of IPV. Country experiences from South-East Asia and the Americas demonstrate the feasibility of implementing a two-dose fractional IPV schedule through intradermal delivery, provided there is adequate planning and training for health workers. In 2017, SAGE recommended a shift in the immunization schedule during the post-certification phase to a two-dose schedule, with the first IPV dose administrated at 14 weeks and the second IPV dose administered at least 4 months after the first dose (full or fractional), with duration of IPV immunization continuing for at least 10 years after global bOPV withdrawal. Further recommendations were made by SAGE in 2018 to countries with poliovirus-essential facilities (PEFs) that store or manipulate WPV and/or Sabin/OPV, including recommendations on adaptations to the IPV schedule, coverage targets and geographical scope as soon as possible and no later than at the time of all OPV cessation.

2.6.5 Assessment of population immunity gap to poliovirus type 2

Viet Nam has been polio-free since 2000. However, IPV introduction was delayed because of a global vaccine shortage, and the two-year birth cohort without poliovirus type 2 immunity is accumulating. An assessment was carried out to quantify serological protection against poliovirus type 2 and to assess its continued circulation of in the environment after removal of tOPV. Two provinces were selected: one northern province with a subtropical climate, and one southern province with a tropical climate. In total, 1108 children aged 1–18 months old were enrolled and categorized into three age groups: children aged 1–7 months with maternal antibodies; children aged 8–15 months without known exposure to poliovirus type 2; and
children aged 16–18 months potentially exposed to poliovirus type 2 in the environment after the OPV switch. In Phase 1 of the assessment, blood samples were taken for neutralization assay for anti-polio antibodies presence in Phase I. High poliovirus types 1 and 3 seroprevalence indicates the Vietnamese EPI is well functioning, whereas a rapid decline in poliovirus type 2 seroprevalence by age group predicts no persisting poliovirus type 2 circulation after the switch. In total, 135 seropositive children, including 28 children without known exposure to poliovirus type 2, will be assessed to determine whether titers decline with time or not in Phase 2.

2.6.6 Update on polio laboratory network and environmental surveillance in the Western Pacific Region

A strong polio laboratory network has been maintained in the Western Pacific Region. Of the network’s 43 laboratories, 42 have capacity for intratypic differentiation of polioviruses. A quality management system is in place that includes accreditation processes, on-site visits and proficiency testing for all levels of laboratories. Expansion of environmental surveillance is ongoing in the Region. The focus of the regional polio network as we approach polio eradication and cessation of bOPV is to maintain the high quality of laboratory testing, including virus isolation, intratypic differentiation, and sequencing; to start planning for referral of samples for WPV and VDPV types 1 and 3 among network laboratories once global eradication is certified; to support polio laboratories designated as PEFs to meet requirements of the Global Action Plan, third edition (GAPIII); and to work on development of regional capacity for serologic testing, including development of new methods to measure antibody levels that do not require live poliovirus.

2.6.7 Detection of vaccine-derived poliovirus (VDPV) type 2

Australia remains free of circulating indigenous poliovirus since 2000. Immunization uptake for polio in Australia is around 95% of children aged less than 5 years. The last case of polio in Australia (wild type 1) was an imported case in 2007. On 4 December 2017, VDPV type 2 was confirmed in influent sewage samples collected on 21 November 2017 from Melbourne, Australia. Sequencing determined that the virus was highly mutated VDPV type 2 with 76 nucleotide differences from the OPV strain, suggestive of chronic carriage for several years with no relationship to known cVDPV isolates. Required IHR notification was sent to the WHO on 5 December 2017. Due to lack of evidence for circulation or identification of the excretor, this VDPV was classified as ambiguous, most likely related to primary immunodeficiency of the excretor. The Australian health authorities implemented recommended response actions. No more polio-positive samples from environmental samples have been reported.

2.6.8 Update on laboratory containment in the Western Pacific Region

The five countries in the Western Pacific Region that have designated PEFs to handle and store WPV/VDPV/OPV/Sabin PV 2 in Australia, China, Japan, the Republic of Korea and Viet Nam. Globally, there are 99 PEFs located in 30 countries.
At the World Health Assembly in May 2018, a resolution on containment was endorsed, urging Member States to appoint, as soon as possible and no later than December 2018, a competent National Authority for Containment that will process containment certification applications submitted by the facilities designated to store and/or handle poliovirus post eradication. Contact details for the national authorities must be sent to WHO by 31 March 2019. The resolution also urges Member States to complete inventories for poliovirus type 2, to destroy unneeded type 2 materials and to begin inventories and destruction of unneeded type 1 and 3 materials in accordance with the latest available published WHO guidance. The WHO Guidance to Minimize Risks for Facilities Collecting, Handling or Storing Materials Potentially Infectious for Polioviruses was developed to assist facilities to assess the risk of poliovirus potentially infectious materials in their possession and to implement appropriate risk-reduction strategies consistent with GAPIII. The GCC set the deadline for completion of the identification, destruction, transfer or containment of all type 2 polioviruses as April 2019 (one year after the publication of the WHO guidance).

2.6.9 Update on global polio eradication certification process

As global eradication of poliomyelitis approaches, GCC activities will increase. At its 17th meeting in February 2018, the GCC reviewed, among other topics, challenges related to certification of eradication of WPV in the context of the presence of cVDPV. The GCC recommended the WHO Secretariat to develop and refine a model for risk assessment, tailored to certification of eradication. The GCC also recommended that the announcement of the eventual global eradication of WPV should take into consideration the epidemiology of cVDPV at that time. The GCC specified the following criteria to be applied for certification of WPV eradication:

1) no WPV transmission detected from any population source for the previous three years;
2) adequate global poliovirus surveillance; and
3) safe and secure containment of WPV retained in facilities, such as laboratories and vaccine manufacturing facilities.

2.6.10 Proposed actions for sustaining polio-essential functions in 2018–2020 and polio programme in the Western Pacific Region in 2021–2030

Despite achievements in the past in maintaining polio-free status, the Region faces several challenges: 1) gaps in population immunity against poliovirus and surveillance for acute flaccid paralysis (AFP) at the national and subnational levels; 2) shortage of human and financial resources for the expansion of environmental surveillance; 3) need for timely implementation of polio laboratory containment activities; and 4) limited national capacities to sustain polio-essential functions after global eradication of poliomyelitis. As the world approaches global eradication of poliomyelitis, financial resources to support polio initiatives have been decreasing. However, the EPI team of the WHO Regional Office for the Western Pacific will continue to support Member States in preparation for global polio eradication to ensure that they will be able to maintain polio-essential functions in the post-eradication era.
2.7 Maternal and neonatal tetanus (MNT) elimination

2.7.1 Achieving MNT elimination in the Philippines

In November 2017, UNICEF and WHO validated the Philippines as having eliminated MNT. Elimination efforts in the Philippines started in the early 1980s with the introduction of tetanus toxoid (TT) vaccination for pregnant women. In 2003, evidence showed the country had achieved MNT elimination in many areas. However, the planned TT SIA to complete the elimination was cancelled because of the emergence of a TT controversy in the mid-1990s. This controversy lasted for 11 years and led to major reductions in TT and protection at birth (PAB) coverage. Finally, in 2009, the country resumed its elimination efforts with the successful conduct of tetanus–diphtheria toxoid (Td) and TT SIAs in the remaining high-risk areas. Several factors contributed to the successful elimination of MNT in the Philippines, including: the involvement and the cooperation of everyone; mothers taking responsibility for their well-being and for their unborn children; and the Government fulfilling its mandate to take care of the Filipinos’ health.

2.7.2 Regional overview and draft implementation guide for sustaining MNT elimination

The presentation provided an overview of tetanus and non-neonatal tetanus cases in the Region and tetanus vaccination schedules in routine immunization programmes in countries and areas. Based on WHO recommendations, three primary doses of TT-containing vaccine should be administered in the first year of life and three booster doses should be provided during childhood and adolescence, with booster doses specifically recommended to be given at: 12–23 months of age; 4–7 years of age; and 9–15 years of age. The draft WHO guidelines Protecting All People Against Tetanus: Implementation Guide for Sustaining Maternal and Neonatal Tetanus Elimination was presented. The participants discussed strategies on building routine immunization with three primary and three booster doses in childhood for long-term protection against tetanus, antenatal care contacts and tetanus vaccination status of pregnant women, skilled birth attendants and clean delivery/cord practices, tetanus surveillance and MNT elimination monitoring and evaluation. It was agreed that the equitable and sustainable approach is to ensure tetanus protection over the life course for all members of the population.

2.8 Measles and rubella elimination

2.8.1 Global and regional overview

The presentation reviewed the progress towards meeting the global control targets for 2015, established by the World Health Assembly in 2010, and the regional elimination targets established by the GVAP in 2012. Global progress is not on track for either measles or rubella elimination; only the Region of the Americas has eliminated measles and rubella as of 2018. Nevertheless, progress has been made towards decreasing the burden of measles and rubella, despite the occurrence of some large outbreaks in the Americas, Europe and the Western Pacific in 2018.
Despite the resurgence of measles from 2013 to 2016, progress has been made in achieving high population immunity in the Region. A second dose of measles-containing vaccine (MCV) has been introduced in all Member States except Solomon Islands (planning to introduce in 2018) and Vanuatu. The overall two-dose MCV coverage is 93% region-wide, but there is still wide variation in coverage among Member States. More than 40.84 million MCV doses were administered via SIAs during 2014–2017 in 10 countries. As a result, measles and rubella incidence declined in 2017 in Western Pacific Region Member States. Measles incidence in the Region reached a historic low of 5.2 cases per 1 million population, with 77% of Member States reporting less than 5 cases per 1 million population in 2017.

A new Regional Strategy and Plan of Action for Measles and Rubella Elimination was developed to guide the Region’s response to newly identified challenges during the measles resurgence of 2013–2016 and incorporate lessons learnt. In 2017, this document was endorsed by the sixty-eighth Regional Committee, which also decided that Member States should aim to eliminate rubella as soon as possible and that each one should establish a target year for rubella elimination. To further guide Member States in achieving measles and rubella elimination, final verification guidelines for measles and rubella elimination in the Western Pacific, and a draft field guide for congenital rubella syndrome (CRS) surveillance in the Western Pacific were developed in 2017.

2.8.2 Report from Regional Verification Commission

The background and terms of reference of the Regional Verification Commission for Measles and Rubella Elimination in the Western Pacific (RVC) were presented. The RVC was established in 2012 in response to the 2010 resolution of the WHO Regional Committee for the Western Pacific, requesting the Regional Director to establish a regional verification mechanism for measles elimination and urging Member States to establish independent national verification processes following the standardized regional verification mechanism. The RVC has the following objectives:

1) Serve in an honorary capacity and verify the progress of measles and rubella elimination first by country or area, the Pacific subregion, and eventually for the Region as a whole.

2) Establish criteria and procedures required for the verification of measles and rubella elimination in the Region.

3) Help develop verification guidelines for measles and rubella elimination in the Region.

4) Provide guidance and conduct field visits when necessary to national verification committees (NVCs) and/or the Pacific subregional verification committee (SRVC) on measles and rubella elimination.

5) Advise NVCs on issues related to verifying measles and rubella elimination and to provide feedback about RVC conclusions and recommendations.

6) Advocate measles and rubella elimination in collaboration with WHO, NVCs and the SRVC.
At the sixth RVC meeting in 2017, New Zealand was verified to have interrupted endemic measles virus transmission for more than 36 months, and New Zealand and the Republic of Korea became the first countries to be verified as having eliminated rubella transmission.

2.8.3 Final regional strategy and plan of action for measles and rubella elimination

During the region-wide measles resurgence in 2013–2016, new challenges were identified: increased measles virus transmission among age groups not targeted by existing strategies (adolescents, young adults, and infants below vaccination age); subnational variation of measles epidemiology in large countries; delayed and improper outbreak response; serious nosocomial transmission; surveillance and laboratory activities lacking resilience during outbreaks in some countries; and insufficient involvement, partnership and collaboration of communities and other ministries, sectors and partners. A Regional Strategy and Plan of Action for Measles and Rubella Elimination in the Western Pacific, which was developed to guide the Region’s response to these newly identified challenges and incorporate lessons learnt, was endorsed by the sixty-eighth Regional Committee. This document will serve as a guide to support Member States in development of national, subnational and subregional plans of action for measles and rubella elimination.

2.8.4 Developing a national plan of action for measles and rubella elimination in the Lao People’s Democratic Republic

Following the endorsement of the Regional Strategy and Plan of Action for Measles and Rubella Elimination in the Western Pacific by the sixty-eighth Regional Committee, the Lao People’s Democratic Republic has initiated the development of a national plan to achieve and sustain measles and rubella elimination. In addition to continued improvements in routine immunization coverage, the Lao People's Democratic Republic must also develop its capacity to detect and respond to measles and rubella outbreaks. As the plan is being finalized, the Ministry of Health will consult with subnational stakeholders as well as stakeholders from other public sectors including the ministries of education and labour. The Lao People's Democratic Republic will also work with neighbouring countries – notably Cambodia and Viet Nam – to share information and develop coordinated elimination activities.

2.8.5 Draft operational guidelines for congenital rubella syndrome (CRS) surveillance

Draft operational guidelines for CRS surveillance were developed in response to the 26th TAG meeting in 2017. CRS is a serious consequence of rubella infection during early pregnancy, with a wide range of manifestations that cause early mortality or life-long disability. Hearing impairment, congenital heart defects, and vision impairment are the most common symptoms and occur in ~80% of infants with CRS. Infants with CRS may have prolonged viral shedding for up to 12 months, and therefore may lead to secondary infections of nonimmune caregivers and other contacts. CRS surveillance serves three main purposes: 1) fill weaknesses in rubella surveillance, as up to 50% of rubella cases are asymptomatic or subclinical; 2) collect data for advocacy and to inform public health action; and 3) support evidence of rubella elimination. A proposed “minimum standard” for CRS surveillance was
presented, along with detailed strategic guidance about how CRS surveillance systems may be tailored to local context.

2.8.6 Sustaining elimination in the face of repeated measles importation

Cambodia was verified by the RVC as being free of endemic measles in March 2015. However, within the first year of verification, a laboratory-confirmed measles outbreak was first reported in January 2016; a total of 66 cases were reported from 16 provinces by June 2017. Epidemiological and laboratory surveillance data revealed that three cases were imported, 54 were import-related and nine were of unknown source of infection; there were at least 10 distinct chains of transmission. The Ministry of Health of Cambodia revised the measles–rubella (MR) vaccination schedule to add an MR zero dose at age 6–9 months, and an MR extra dose at 24–59 months. Outbreak response activities additionally included multiple small- and large-scale MR SIAs, which successfully interrupted transmission of measles virus and also reduced rubella incidence. The RVC met in September 2017 and verified that Cambodia has sustained the interruption of endemic measles virus transmission.

2.8.7 Measuring population immunity: results of a nationwide representative serological survey

The NIP of Mongolia successfully conducted a measles and rubella national serosurvey in 2017 with WHO support. The purpose of this cross-sectional three-stage cluster serosurvey was to estimate measles and rubella immunity among the population aged 6 months to 35 years in Mongolia. A total of 6030 households were selected for the study by random sampling (in 30 khoroo of seven districts of Ulaanbaatar City; and in 90 bags of 69 soums of 21 provinces). External quality assurance of 460 (10%) randomly selected samples was performed by the global MR reference laboratory at the United States Centers for Disease Control and Prevention (US CDC); high testing accuracy was found. The serosurvey results indicate high population immunity for both measles (94.0%) and rubella (95.4%) at the national level, but in Govi/Eastern regions, there is a 10% measles immunity gap among adults aged 31–35 years. Vaccination coverage survey results indicate that 56% of children aged 12–35 months had two doses of measles, mumps and rubella (MMR) vaccine, lower than the WHO and UNICEF national immunization coverage estimates of 90–98% for 2015–2016.

2.8.8 Proposed actions for 2018–2020 and measles and rubella elimination in the Western Pacific Region in 2021–2030

To respond to the issues and challenges facing the Region in 2018–2020, the EPI team at the WHO Regional Office will support Member States to: develop or update national, subnational and subregional plans of action for measles and rubella elimination and establish target dates for rubella elimination; plan and conduct high-quality SIAs; conduct targeted immunization initiatives to fill residual immunity gaps among adolescents and adults; develop, implement, and evaluate CRS surveillance systems; and evaluate and strengthen case-based surveillance for measles and rubella.
The EPI team will finalize and publish the draft *Field Guide for Establishing CRS Surveillance in the Western Pacific*; enhance coordination and collaboration with TAG, RVC, traditional and new partners in further advocating measles and rubella elimination; and continue to work with RVC in documenting, evaluating progress towards, and verifying measles and rubella elimination.

In 2021–2030, the EPI team proposes to achieve and sustain regional measles and rubella elimination through the following strategies: build and support strong foundational immunization systems and programmes; achieve overall immunization systems strengthening through investment in measles and rubella elimination; and support broader public health through investment in measles and rubella elimination.

### 2.9 Accelerated Japanese encephalitis control

#### 2.9.1 Regional overview

A presentation was made on JE burden, surveillance and vaccination programmes globally and in the Region. Accelerated control of JE was defined and targets for accelerated control were described. Ten of 12 countries and areas with endemic JE transmission in the Region have introduced JE vaccine in some or all JE risk areas or have very low levels of disease without vaccination; seven countries have introduced JE vaccine in all risk areas; one country has introduced JE vaccine in some risk areas; two countries have very low levels of disease and have made a decision not to introduce JE vaccine; one country is planning a subnational JE campaign in 2018 followed by routine introduction; and one country is collecting JE burden data in preparation to make a decision on introduction. Challenges and issues include: lack of or weak JE surveillance systems, which hinder the ability of countries to estimate disease burden, define target populations and monitor progress; and lack of updated national plans for control of JE in countries that have not achieved effective disease control. A technical guidance on how to achieve accelerated JE control in the Region is being developed that will assist countries that have not introduced JE vaccine or have recently established JE programmes achieve accelerated control and assist countries with long-standing JE programmes continue to control JE.

#### 2.9.2 Japanese encephalitis control in China

JE vaccination was expanded nationally in 2008. China is striving to achieve greater than 95% universal coverage with JE vaccines through routine childhood immunization, and SIAs in high-risk areas. The incidence of JE decreased from 0.3 cases per 100 000 population in 2007 to 0.08 per case per 100 000 population in 2017. China has been participating in the JE laboratory network since 2009; JE reference laboratories include JE laboratories at the China CDC and 25 provincial CDCs. In 2017, there were 1057 laboratory-confirmed JE cases; 32.5% of these were among children under 15 years. Efforts to achieve and sustain the JE vaccine coverage target and establish high-quality JE surveillance attribute have been made possible because of the strong public health system in China, ensured funding for JE immunization and surveillance from national and local levels, and technical support from the JE laboratory network.
2.9.3 Draft regional guide for developing a national plan of action for accelerated JE control

The presentation covered the rationale for accelerated JE control in the Region, the proposed aims and targets of accelerated JE control, and the contents of a draft technical guidance for achieving accelerated control of JE in the Western Pacific Region. The draft technical guidance consists of three sections. The first section provides background information on JE disease, surveillance and prevention and existing global guidance on JE control. The second section discusses the JE situation in the Western Pacific Region, highlighting current strategies, implementation of the strategies (progress and achievements) and rationale for accelerated JE control. The third section details the proposed regional guidance for accelerated JE control, including the regional target, strategic areas, and activities by strategic area. The presentation concluded with questions for TAG, including: Does TAG have any issues with or concerns about the structure or content of the draft guidance? Does TAG agree with the deadline of 2030 for achieving targets for accelerated control of JE? Does TAG have and other questions or concerns?

2.10 Diphtheria outbreak

2.10.1 Findings on gap analysis on diphtheria diagnostic capacity for laboratories in the Western Pacific Region

The 26th TAG recommended that the Region delineate diphtheria laboratory capacity throughout the Region. In collaboration with WHO Global Collaborating Centre for Reference and Research on Diphtheria at Public Health England, WHO conducted a survey among 18 laboratories in 15 countries that are part of the Region’s invasive bacterial disease network. The laboratories shared information on topics such as diphtheria surveillance, laboratory capacity and diagnostic services, external quality assurance (EQA) for laboratory training, serology and population immunity screening, and public health. The main findings of the survey included: 1) maintaining surveillance and laboratory expertise in the face of low disease prevalence is difficult, with only nine countries fulfilling minimum standards in terms of surveillance and laboratory methods; 2) the greatest diphtheria laboratory gap was related to training; 3) ensuring availability of media and reagents is important; and 4) quality management systems for laboratory testing need to be established and implemented.

2.10.2 Introducing diphtheria toxoid booster doses in routine immunization

Diphtheria incidence in Vietnam had been declining since DPT3 introduction into EPI in 1984. However, Vietnam experienced several outbreaks in 2014–2018. Age distribution showed that 95% of cases at least 5 years old (42.9% were 10–14 years, followed by 28.6% 5–9 years). As a public health response to this situation, Vietnam planned for the introduction of a second diphtheria booster dose at 7 years of age or for first-grade students in 2018–2020, starting in Q4 2018. The coverage area would include 27 high-risk provinces that had diphtheria or neonatal tetanus cases in the past three years, expanding to 37 provinces in 2019, and then nationwide in 2020. In preparation for the introduction, an immunogenicity study of domestic Td vaccine was conducted for those aged 6–25 years old. The key issues
before introduction were coordination with the Ministry of Education to set up school-based immunization including planning workshops and communication, AEFI surveillance, and vaccine supply and logistics.

2.10.3 Regional overview and draft regional field guide for preparedness and response to diphtheria outbreak in the Western Pacific Region

An overview of diphtheria cases in the Region and diphtheria vaccination schedules in routine immunization programmes in countries and areas were presented. WHO recommends a three-dose primary series administered in the first year of life and three booster doses in childhood and completed by adolescence, with doses specifically recommended to be given at: 12–23 months of age; 4–7 years of age; and 9-15 years of age. The epidemiology of the outbreaks reported from the Lao People’s Democratic Republic, Malaysia, the Philippines and Viet Nam were presented. The draft “Field guide for preparedness and response to diphtheria outbreak in the Western Pacific Region” was presented. Some sections on management, treatment and outbreak response immunization including information on equine diphtheria antitoxin (DAT) were discussed. The progress with the 2017 SAGE recommendations on the DAT mainly on the stockpiles was discussed. The diphtheria vision for 2021 and 2030 were discussed.

2.11 Surveillance, laboratory network and data management for vaccine-preventable disease (VPD) control and elimination

2.11.1 Introduction of new global guidelines on VPD surveillance

WHO has updated their 2003 VPD surveillance guidelines to include diseases not previously covered and updated laboratory confirmation guidelines based on new techniques and scientific evidences to ensure that VPD surveillance adequately supports the GVAP goals and to improve the quality of surveillance data. Since March 2017, several rounds of expert consultations occurred, involving 178 experts and representatives from 46 institutions from every region.

VPDs included in the guidelines were selected based on the following criteria: vaccine available and recommend by SAGE: vaccine projected to be used by at least 20 countries within the next five years; and VPD surveillance that will directly inform EPI programmes. VPDs are cholera, diphtheria, hepatitis A and B, Hib, HPV, influenza, JE, measles, mumps, meningococcus, neonatal and non-neonatal tetanus, pertussis, pneumococcus, poliomyelitis, rotavirus, rubella and CRS, typhoid, varicella and yellow fever. These new guidelines also include an introductory chapter to provide general information on surveillance and guide prioritization of VPDs for surveillance. For each VPD, new guidelines indicate the minimum standard that should be implemented at national level, either in VPD-specific or broader integrated disease surveillance systems.
2.11.2 Proposed actions for 2018–2020 to further improve surveillance of VPD in the Western Pacific Region

With the endorsement of the Regional Framework for GVAP in 2014, the support to VPD surveillance progressively shifted from diseases targeted by elimination goals to a broader range of VPDs including diseases targeted by new/underutilized vaccines. A survey was conducted in 2017 to understand the quality and scope of overall VPD surveillance, showing that several countries in the Western Pacific Region do not include or do not meet minimum requirements for surveillance (as defined in new WHO guidelines) for diseases such as diphtheria, pertussis, neonatal tetanus and CRS. Based on assessments of VPD surveillance in several countries, common challenges for surveillance implementation were identified, including inadequate coordination between curative and preventing sector, insufficient linkage between surveillance and response, insufficient data management and use, decreasing external funding to sustain high-quality surveillance, inadequate capacity of human resources involved in surveillance and suboptimal integration of VPDs surveillance into broader disease surveillance system. Actions to improve VPD surveillance should focus on meeting minimum standards for surveillance for all key VPDs, capacity-building and supervision, improving data quality and use, advocating for adequate funding and coordinating all stakeholders of surveillance and response.

2.11.3 Proposed actions for 2018–2020 to further improve surveillance systems to support introduction of new vaccines in the Western Pacific Region

The Global Invasive Bacterial Vaccine-Preventable Diseases and Rotavirus Surveillance Networks were established from existing surveillance systems and standardized across all WHO regions in 2008. There are 58 WHO Member States reporting their data to the invasive bacterial VPD surveillance network and 59 Member States to the rotavirus surveillance network. The background of the surveillance networks was presented, followed by surveillance objectives and results from both surveillance networks. The action plan for new vaccines surveillance for 2018–2020 was discussed, including proposed vision and targets for the next decade.

In conclusion, most surveillance sites performed well and maintained or improved their performance during the last few years. Surveillance is essential to generate evidence for the decision making process before vaccine introduction and for continued monitoring of pneumococcal, Hib, meningococcal and rotavirus diseases after vaccine introduction. There is a need to coordinate, harmonize, and integrate with other surveillance and VPDs (for example, JE surveillance) and create a strong, sustainable network for the future with greater country ownership and financing.

2.11.4 Proposed actions for 2018–2020 to further improve VPD laboratory networks in the Western Pacific Region

The EPI team in the WHO Regional Office coordinates five regional VPD laboratory networks, consisting of over 500 public health laboratories for polio (43) since 1992, measles and rubella (385) since 2001, Japanese encephalitis (20) since 2009, rotavirus (32) and
invasive bacterial VPD (20) since 2010. VPD laboratory networks are facing challenges with reduced financial support for donors, mainly due to the current polio transition period that requires a need to promote national ownership of laboratory surveillance programmes to sustain high quality of laboratory testing for VPDs. The projected main focus for these laboratory networks will be to continue maintaining high-quality VPD laboratories through: provision of technical support to VPD laboratories of priority countries in performing critical functions in the detection and confirmation of VPDs; continuous implementation of Quality Management System (QMS) for all VPD laboratory networks; and better integration of VPD epidemiologic surveillance with laboratory support in diseases confirmation and in outbreak situations.

2.12 Synergy with other areas and programmes

2.12.1 Roles of EPI in Sustainable Development Goals (SDGs) and universal health coverage / working for health system strengthening

Universal health coverage (UHC) is about all people having access to good-quality services that are needed without facing financial hardship when paying for them. Immunizations play a core role in countries moving towards UHC. The WHO regional action framework Universal Health Coverage: Moving towards Better Health (RC66.R2), highlights attributes of high performance health systems and priority actions countries can take to accelerate progress towards UHC. Every country can do something to progress UHC. Some of the key health system challenges and issues facing countries in the Region concerning immunizations were outlined, such as the need for strong governance of national immunization programme, especially during the transition process; service delivery integration; capacity-building of human resources; community engagement; effective monitoring, surveillance and outbreak response; procurement and cold chain vaccine management systems; and strengthened domestic financing. Taking a whole-of-system approach, WHO is working together with countries in their transitions towards more integrated financing and service delivery in immunizations and other priority public health services.

2.12.2 Roles of EPI in International Health Regulations/working with WHO Health Emergencies Programme

The new WHO Health Emergencies Programme (WHE) was mandated by the Sixty-ninth World Health Assembly. The objective of this programme is “to help Member States build their capacity to manage health emergency risks and to lead and coordinate the international health response when the national capacities are overwhelmed to contain outbreaks and to provide effective relief and recovery to affected populations”. This is done through the implementation of International Health Regulations (IHR, 2005) core capacities. In this Region, the IHR core capacities are translated into an action plan through the Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III). WHE and EPI have worked in partnership in managing many VPD-related outbreaks in the Region. Good coordination and collaboration are essential. Preparedness before and between events are crucial. Rapid and timely sharing of data and information between WHE, EPI and other
stakeholders will ensure readiness to diminish public health risks including VPDs in countries with high vulnerability.

2.13 Planning for the next decade

2.13.1 TAG report on progress of regional framework for implementation of the GVAP in the Western Pacific Region

The annual SAGE report on implementation of the GVAP in the Western Pacific Region was presented. This report summarizes the progress towards global and regional immunization goals from 2017 to mid-2018. It also highlights the progress towards the 12 recommendations made by SAGE in the 2017 midterm review of the GVAP. Progress in the Western Pacific Region is in line with the Decade of Vaccines goals at the global level, with tremendous efforts to achieve both the GVAP strategic objectives and eight regional immunization goals. Key factors for this steady progress are the commendable commitment by the governments and the continued support of partners. Despite these achievements, the Region still has to address a few fundamental challenges, including immunization coverage gaps, adequate vaccine access and availability, and sustainable domestic financing.

The report also highlighted the need to focus on strengthening all core components of immunization systems and programmes, including routine immunization, accelerated disease control and new vaccine introduction to address the aforementioned challenges. In addition, the Region will continue all efforts to implement the SAGE recommendations from their 2015–2017 assessment reports and thereby accelerate progress towards achieving regional and global immunization goals.

2.13.2 Process of development of new global immunization strategy 2021–2030

With a couple of years remaining for the GVAP and Regional Vaccine Action Plan, the objective of the presentation was to share the current ideas and thinking on a post-GVAP agenda for immunization – a new strategy that would re-emphasize the importance of accelerating efforts to complete the unfinished GVAP agenda; to set directions for addressing new and emerging priorities for the coming decade, including some important paradigm shifts; and to raise the visibility of immunization by repositioning its central role in contributing to broader global health agenda imperatives (primary health care, UHC, SDGs by 2030). It is thought that unlike its previous strategies, the new strategy should have a stronger focus on implementation and possibly suggest an approach to drive change in countries using a maturity grid to evaluate progress toward goals. For the Western Pacific Region, it will be important to begin a process to update the current Regional Vaccine Action Plan with one that would span the decade from 2020 to 2030.

2.13.3 Development of regional vision and strategy for VPDs and immunization 2021–2030

In the last 15 years, many countries and areas of the Region have effectively and successfully strengthened and expanded immunization systems and programmes through several regional initiatives: (i) sustaining polio-free status; (ii) maternal and neonatal tetanus elimination; (iii) measles elimination; (iv) accelerated control of hepatitis B; (v) rubella elimination; and
(vi) introduction of new vaccines, which were specified by the *Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific* as regional immunization goals. Towards 2020, the Region should prepare a new regional vision and strategy for VPDs and immunization in 2021–2030 to address emerging challenges against control and elimination of VPDs, including: growing population; expanding urbanization; increased immigration; repeated outbreaks (diphtheria, pertussis, measles, rubella, cVDPV, etc.); increased VPD incidence among older children, adolescents and/or adults; few new vaccines; transition from GPEI, Gavi and Global Fund support; increased need and unstable global vaccine supply resulting in vaccine stock-outs; and vaccine hesitancy.

The post-2020 regional vision and strategy for VPDs and immunization for the Western Pacific should aim to: (i) achieve existing goals and sustain gains; (ii) promote national ownership with sustainable financing; (iii) shift from vaccination for infants (birth, infant) to vaccination along the life course (birth, infant + child, adolescent, adult, the elderly); (iv) promote integration among service delivery (from opportunistic integration by vertical interventions to deliberated integration with the primary health care delivery platform), disease control initiatives, surveillance and laboratory support; (v) promote differentiated approaches and strategies (urban poor, remote poor, minority groups, unimmunized in middle-income countries, etc.); and (vi) further strengthen and expand partnership and collaboration within WHO and the Ministry of Health (EPI, CDC, MCH, NCD, emergency, etc.), with existing partners (UNICEF, Gavi, World Bank, US CDC, National Institute of Infectious Diseases of Japan, Korea Centers for Disease Control Prevention, etc.) and with new partners.

2.14 Partners’ presentations

Gavi, the Vaccine Alliance presented their strategic goals for closing the gap up to 2020. The key principles of Gavi’s grant management were presented, focusing on country-focused processes and more equitable and sustainable coverage and managing risks. Various areas of Gavi’s work in the Western Pacific Region were presented, highlighting geographic equity, priorities related to data quality in the Region and effective vaccine management (EVM) component. Viet Nam is the only country in the Region that meets the minimum requirements for effective vaccine management. The Gavi-eligible countries in the Region and their projections beyond 2018 for transition were highlighted. Also discussed were the December 2017 Gavi Board decision to approve the extension of the grace period for new vaccine introduction during the accelerated transition period, post-transition engagement, eligibility status and projections in 2018, Vaccine Investment Strategy and mid-term review objectives.

The UNICEF East Asia and Pacific presentation discussed the guiding principles of the work with SDGs, UNICEF strategic plan and UNICEF health strategy. The discussion focused on health system strengthening, improving coverage and equity, demand generations and community engagement, and accelerated disease control. Some other areas of discussion included supply chain system, strategies for middle-income countries and the need for collaboration on social policy, child protection and public–private partnership.
The US CDC presented on their activities and areas of work, including VPDs, routine immunization, human resources, field epidemiology, data management, communications and outreach, and immunization systems strengthening. The US CDC Stop Transmission of Polio (STOP) programme began in 1999, with more than 2040 participants having been deployed on more than 4100 assignments in over 75 countries.

The National Institute of Infectious Diseases (NIID), Japan presented their role in context to immunization and control of VPDs. The NIID was established in 1947 with 24 branches within the organization. Their work on surveillance, research, epidemiological and laboratory expertise and training were highlighted. The laboratory branches are currently researching JE, enteroviruses, measles and rubella. Major achievements and future plans for the next three years were highlighted.

The Bureau of International Health Cooperation of the National Center for Global Health and Medicine presented their work on conducting EPI-related research on seroprevalence survey for measles, rubella and hepatitis B and temperature monitoring of vaccine with the Lao People’s Democratic Republic, NIID and the London School of Hygiene and Tropical Medicine.

Australia’s National Centre for Immunisation Research and Surveillance presented their work on national vaccine introductions, coverage data analysis, disease surveillance, vaccine safety, education and training and clinical services. The National Centre for Immunisation Research and Surveillance expressed interest in collaboratively supporting the Region through training courses, NITAG-based assistance and disease burden assessments. Their work with global and regional engagement in the various aspects of work was also presented.

As noted last year, PATH has re-organized vaccine-related activities into one centre that oversees activities from the upstream end (discovery and development) to the downstream end (integration of new vaccines into public health programs). One of the teams within this Center for Vaccine Innovation and Access is Vaccine Introduction & Impact (VI&I) and an overview of VI&I was given, discussing activities related HPV, JE virus, respiratory syncytial virus vaccines and a recently WHO prequalified typhoid conjugate vaccine.

The Rotary International District 2650 outlined their role in the continued efforts towards polio eradication and improving public health. They have successfully completed missions to Cambodia and the Lao People’s Democratic Republic and are now focusing on the ongoing polio situation in Papua New Guinea. Lastly, Rotary International District 2650 reiterated the strong belief in the global polio eradication programme and continuous efforts of all stakeholders with technical support provided by WHO.

Médecins Sans Frontières (MSF) was founded in 1971 and is an international, independent, medical humanitarian organization that delivers emergency aid to people affected by armed conflict, epidemics, natural disasters and exclusion from healthcare in nearly 70 countries. In 2016, MSF delivered an estimated 6.57 million vaccine doses in more than 30 countries.
Current challenges such as higher prices for the new vaccines, vaccine shortages and refusals by manufacturer to sell were reviewed.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

Immunization systems strengthening (including progress towards the GVAP strategic objectives)

1. The TAG commends Member States' continuous efforts to strengthen immunization systems toward reaching immunization goals set by the GVAP and the Regional Framework for Implementation of the GVAP in the Western Pacific. The TAG congratulates the Western Pacific Region on its reported high regional coverage with three doses of diphtheria–tetanus–pertussis vaccine (DTP3) of 97.3% in 2017.

2. The TAG acknowledges the efforts made by Member States to strengthen functions of national immunization technical advisory groups (NITAGs) or equivalent bodies and notes that, as of 2017, NITAGs of six countries and areas (Australia, Hong Kong SAR [China], Mongolia, New Zealand, Republic of Korea and Singapore) have met all global indicators of NITAG functionality. However, there remains a need for comprehensive evaluation of the effectiveness of NITAGs. The TAG also notes that Cambodia (2017), the Lao People’s Democratic Republic (2018) and Mongolia (2017) conducted international Expanded Programme of Immunization (EPI) reviews, leading to updated comprehensive multi-year plans (cMYPs) and appropriate actions by the national immunization programmes (NIPs).

3. The TAG acknowledges the efforts of WHO and partners in supporting the Philippines to strengthen immunization systems and improve access to vaccines. Further, the TAG notes the country fact sheet developed by the WHO Vaccine Product, Price and Procurement (V3P) project and disseminated to NIPs to support vaccine procurement decision-making. The TAG also notes that, since 2015, national regulatory authorities (NRAs) in seven countries have met WHO NRA assessment criteria. These NRAs have overseen the quality of vaccines for 91% of the total population of the Region. The TAG notes that, as of 2017, surveillance systems for adverse events following immunization (AEFIs) are in place in 23 countries in the Region.

4. Despite these achievements in regional immunization coverage and progress in strengthening immunization systems, the TAG notes with concern that the following immunization system issues and challenges have not yet been sufficiently addressed:

   a. inadequate capacity for formulation of evidence-based immunization policy in lower middle-income countries and Pacific island countries;
b. insufficient budget and weak financing for subnational immunization programme activities in lower middle-income countries;

c. vaccine stock-outs due to insufficient capacity for forecasting, financing, procurement, stock management, and distribution, particularly in lower middle-income countries and Pacific island countries, and also due to global shortages and supply issues affecting some countries;

d. insufficient capacity for implementation of AEFI surveillance and response including risk communications in many countries;

e. inequities in vaccination coverage at the subnational level as a result of barriers to immunization access and insufficient engagement of communities in vaccination, especially for population groups such as migrants, minority ethnic groups and residents in both urban slums and remote areas; and

f. inadequate quality of immunization data; in countries with sufficient information technology infrastructure and capacity, electronic immunization information systems could support the improvement of data quality and better monitoring of immunization records for every child.

**New vaccines introduction**

5. The TAG commends the progress in the introduction of new vaccines in low- and lower middle-income countries in the Region. Eighty-nine per cent of low- and lower middle-income countries in the Region have introduced at least one new vaccine since 2010. The TAG also commends progress in the Region for developing and using evidence for making decisions on introduction of new vaccines and the continued support that WHO gives to governments on vaccination policy. Achievement of the Decade of Vaccines goals for introduction of new and underutilized vaccines requires that countries evaluate evidence on disease burden including surveillance, cost, the role of other disease prevention and control measures, vaccine characteristics, vaccine supply, and strength of immunization programmes and health systems.

6. The TAG acknowledges challenges with new vaccine introduction, particularly the limited progress in upper middle-income countries, and the need to promote and facilitate new vaccine introduction in these countries. The TAG also notes the importance of laboratory-based surveillance for diseases prevented by new vaccines and the critical need to maintain surveillance and laboratory capacity in an era of declining resources.

**Accelerated hepatitis B control**

7. The TAG congratulates the 21 currently verified countries and areas whose immunization programmes have met the 2017 prevalence target of less than 1% hepatitis B surface antigen (HBsAg) in 5-year-old children, including Cambodia and the Federated States of Micronesia, which were recently verified to have met this target.
8. The TAG again notes the 2018–2025 regional targets proposed by the Hepatitis B Immunization Expert Resource Panel (ERP)\(^1\) that have yet to be adopted by the Regional Committee, including: a) to reduce HBsAg prevalence to less than 1% in 5-year-old children in all countries and areas by 2025; and b) to further reduce HBsAg prevalence to less than 0.5% by 2025 in countries and areas that already have less than 1% prevalence in 5-year-old children. The TAG acknowledges that the ERP has written a request to the Japan and New Zealand ministries of health to demonstrate the effectiveness of their selective birth-dose administration programmes. The TAG also notes the ERP’s request for Japan and New Zealand to consider universal administration of timely hepatitis B birth dose (HepB-BD), which is defined as a dose given within 24 hours of birth.

9. The TAG further acknowledges the correlation between institutional deliveries and HepB-BD coverage, reflecting the challenges in reaching children born outside of facilities with a timely HepB-BD. Use of HepB-BD outside of the cold chain (OCC), an off-label use, or in a controlled temperature chain (CTC) with regulatory approval, can help address these challenges. The TAG is encouraged to learn that package inserts for at least two monovalent hepatitis B vaccines already indicate that the vaccine is stable for one month at 37 °C, and for one week at 45 °C. Availability of HepB-BD for CTC use is expected in the future.

10. The TAG acknowledges that the global goal to eliminate viral hepatitis as a public health threat by reaching 0.1% HBsAg prevalence in children by 2030 is ambitious but necessary for elimination of mother-to-child transmission (EMTCT) of hepatitis B virus (HBV). While reaffirming that HepB-BD and third-dose coverage remains the cornerstone of HBV control, the TAG acknowledges that EMTCT of HBV and HBV infection elimination will require interventions beyond those that are performed by immunization programmes, such as antiviral treatment of pregnant women with high HBV loads and provision of hepatitis B immunoglobulin and post-vaccination serological testing to HBsAg-exposed newborns. Access to and delivery of hepatitis B interventions, including immunization, hepatitis B immunoglobulin, antiviral treatment and post-vaccination serological testing, is necessary to ensure that HBsAg-positive pregnant women receive proper prevention, care and treatment services, along with their partners and their exposed newborns. Thus, the TAG appreciates the WHO Regional Committee’s recent endorsement of the Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030, which plans to use the shared maternal, newborn and child health platform to coordinate EMTCT of these three infections.

11. The TAG notes that to build on the impressive progress towards accelerated HBV control and proposed coordinated triple elimination of mother-to-child transmission of HIV, HBV and syphilis (triple EMTCT), countries should develop clear strategies to

\(^{1}\) The coordinator for the Hepatitis B Immunization Expert Resource Panel can be reached through the Expanded Programme on Immunization, WHO Regional Office for the Western Pacific, at woodringj@who.int.
incorporate EMTCT of HBV and to develop national triple EMTCT plans. The framework for triple EMTCT supports HBV control within immunization programmes and through coordination with other programmes, such as Maternal, Newborn and Child Health (MNCH) and HIV, Hepatitis and Sexually Transmitted Infections (HSI).

Sustaining polio-free status and implementation of polio endgame strategies

12. The TAG acknowledges that overall population immunity against poliovirus in the Region remains quite high; performance of acute flaccid paralysis (AFP) surveillance exceeded established targets, and the high quality of the polio laboratory network has been maintained since its establishment. The TAG commends efforts of the Philippines and Viet Nam in establishing environmental surveillance to monitor circulation of poliovirus that might not be captured by AFP surveillance, in addition to the environmental surveillance that had previously been established in Australia, China, Japan and Malaysia. The TAG congratulates the Region for having successfully completed Phase I of the Global Action Plan, third edition (GAPIII) for destruction or containment of wild poliovirus (WPV) and vaccine-derived poliovirus (VDPV) type 2 in all polio laboratories. The TAG was informed that Mongolia and Viet Nam plan to introduce inactivated polio vaccine (IPV) in the second half of 2018.

13. Despite the achievements and progress made in sustaining the polio-free status and implementing the polio endgame strategies in the Region, the TAG notes that the following issues and challenges should be thoroughly addressed:

   a. risk of international spread of poliovirus remains a Public Health Emergency of International Concern;
   b. immunity and/or surveillance gaps remain at subnational levels in Cambodia, China, the Lao People's Democratic Republic, Malaysia, Mongolia, Pacific island countries, Papua New Guinea, the Philippines and Viet Nam;
   c. national inventories of all biomedical facilities that may contain materials potentially infectious for polioviruses are not yet complete in all countries in the Region;
   d. designation of poliovirus-essential facilities (PEFs) and establishment of fully functional national authorities for containment are not finalized in China, Japan, the Republic of Korea and Viet Nam; and
   e. international funding support for maintenance of polio-essential functions is scaling down in China, Cambodia, the Lao People's Democratic Republic, Mongolia, Pacific island countries, Papua New Guinea, the Philippines and Viet Nam.

Maternal and neonatal tetanus (MNT) elimination

14. The TAG congratulates the Philippines on the 2017 achievement of validation of MNT elimination. This was possible after achieving more than 80% coverage in each of the three rounds of tetanus–diphtheria toxoid (Td) supplementary immunization activities
(SIAs) in the Autonomous Region of Muslim Mindanao. The TAG acknowledges the draft Implementation Guide for Sustaining Maternal & Neonatal Tetanus Elimination. This guide will support Member States that were validated as having achieved MNT elimination in sustaining their elimination status. The TAG also notes the 2017 WHO position paper on tetanus vaccines that recommends all countries include six doses (three primary plus three booster doses) of tetanus toxoid (TT)-containing vaccine in their schedules to sustain protection throughout adolescence and adulthood. As many countries do not have six doses of TT-containing vaccine in their current schedules, the TAG acknowledges that it may take some time to update their schedules according to the new recommendations.

15. Papua New Guinea is now the sole country in the Region not to be validated for MNT elimination. As of March 2018, there has been gradual progress in conducting TT SIAs in three high-risk provinces in Papua New Guinea. However, progress has been hindered by various issues including delay in cold chain equipment procurement and distribution, change in governance and leadership, and mobilizing funds and inadequate staffing.

Measles and rubella elimination

16. The TAG congratulates the Western Pacific Region on achieving the historically lowest reported incidence of measles and rubella in 2017. The TAG also congratulates New Zealand for achieving measles elimination, and congratulates New Zealand and the Republic of Korea for being the first countries to be verified as having achieved rubella elimination. The TAG commends Cambodia and the Lao People’s Democratic Republic for progress towards finalizing their draft national plans of action for achieving and sustaining elimination of measles and rubella. The TAG acknowledges the efforts that Member States are making to use the measles elimination platform to accelerate activities for rubella elimination, which many Member States are on track to quickly achieve.

17. The TAG appreciates that the Regional Committee in October 2017: a) encouraged all Member States to eliminate rubella as soon as possible and establish a target year for each country or area, and b) endorsed the Regional Strategy and Plan of Action for Measles and Rubella Elimination in the Western Pacific (WPR/RC68.R1). The TAG also acknowledges that a draft Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region was prepared by the WHO Secretariat in consultation with partners.

18. Despite progress towards measles and rubella elimination in the Western Pacific Region, the TAG notes with concern that the following issues and challenges should be urgently addressed to achieve regional elimination of measles and rubella:

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a. rapid accumulation of susceptible children, either nationwide or among specific communities, in Member States with inadequate or incomplete routine measles- and rubella-containing vaccine (MRCV) coverage;
b. risk of measles and/or rubella outbreaks due to residual measles and/or rubella immunity gaps among adolescents and adults who are not targeted by routine childhood immunization and traditional mass vaccination campaigns;
c. risk that cases of CRS will continue to occur, unless immunization strategies are implemented to fill adult immunity gaps and reduce rubella susceptibility among women of childbearing age who are not reached by immunization activities targeting children;
d. inadequate national or subnational capacity in some Member States for measles, rubella or CRS surveillance, including case detection, case investigation and/or case confirmation; and
e. insufficient capacity and preparedness in many Member States for responding to measles and rubella outbreaks, including lack of policies and procedures to ensure adequate surge capacity during large outbreaks; appropriate hospital infection control; appropriate data sharing and linkage between epidemiological and laboratory staff; and appropriate balance between epidemiological linkage and laboratory testing for case confirmation.

**Accelerated Japanese encephalitis control**

19. The TAG commends Member States for progress in control of Japanese encephalitis (JE) in the Region, noting that of the 12 Member States in the Region with JE virus transmission risk areas, eight have introduced the vaccine in most or all risk areas, two have very low levels of JE disease without immunization, one plans to introduce JE into its NIP in 2018, and one is assessing JE burden before making a decision about introduction of the vaccine.

20. The TAG notes that the Second Consultation on Accelerated Control of Japanese Encephalitis in the Western Pacific Region was convened in May 2018 in Manila, Philippines. During this consultation, participants from the Region, JE experts and partners reviewed and discussed progress, current status and issues concerning accelerated control of JE in countries with JE virus transmission risk in the Region; discussed timelines for achieving accelerated control of JE in the Region; and reviewed and revised the draft Guide for Accelerated Control of Japanese Encephalitis in the Western Pacific Region.

21. The TAG reaffirms the draft targets for accelerated control of JE in the Region that were recommended at the 25th TAG meeting in July 2016 but have yet to be endorsed by the Regional Committee, namely: a) a primary target of less than 0.5 cases per 100 000 population in the targeted population (generally children under 15 years) in affected areas (national and subnational) annually; and b) an interim target for Member States that do not have high-quality JE surveillance of coverage of at least 95%
with a primary JE vaccination series among the targeted population (generally children under 15 years) in affected areas. The TAG affirms the proposal made at the Second Consultation on Accelerated Control of Japanese Encephalitis in the Western Pacific Region that the draft targets recommended for accelerated control of JE in the Region be achieved by 2030.

*Preparedness for and response to diphtheria outbreaks*

22. The TAG acknowledges the draft *Field Guide for Preparedness and Response to Diphtheria Outbreaks in the Western Pacific Region* and the report on gap analysis for diphtheria diagnostic capacity for laboratories in the Region. The TAG notes the challenges in ensuring availability and access to diphtheria antitoxin (DAT) and the efforts of a WHO headquarters ad hoc working group on DAT to ensure that any population experiencing cases or an outbreak of diphtheria has rapid and easy access to equine DAT.

23. The TAG notes that national schedules for diphtheria immunization, especially for booster doses, vary, and that the 2017 WHO position paper on diphtheria vaccines recommends a three-dose primary series and three booster doses for all persons. As many countries do not have six doses of TT-containing vaccine in their current schedules, the TAG acknowledges that it may take some time for countries to update their schedules according to the new recommendations. The TAG also notes there is insufficient reporting of diphtheria cases from countries and areas. The TAG affirms the need for countries to enhance laboratory diagnostic capacity and ensure prompt management including proper DAT use.

*Surveillance and data management for vaccine-preventable disease control and elimination*

24. The TAG acknowledges the Western Pacific Region for maintaining well-performing AFP, measles and rubella surveillance and establishing several sentinel sites to monitor the burden and changing epidemiology of diseases targeted by new or underutilized vaccines. The TAG also acknowledges the continued efforts made by Member States, WHO and partners to improve the quality of VPD surveillance data management by expanding the use of new tools (for example, web-based reporting tools for AFP and acute fever and rash surveillance), conducting VPD surveillance reviews in priority countries (Cambodia, the Lao People’s Democratic Republic, Papua New Guinea and Viet Nam) and implementing new approaches (for example, Immunization and Surveillance Data Specialist project in the Lao People’s Democratic Republic and Global Paediatric Diarrhoea Surveillance in Fiji, the Lao People’s Democratic Republic and Viet Nam). The TAG acknowledges WHO’s effort in developing the new WHO VPD surveillance guidelines.

25. Despite the achievements sustained and progress made in improving and strengthening VPD surveillance and data management in the Region, the TAG notes
the following challenges to be addressed for further progress toward well-performing VPD surveillance, particularly for diseases targeted by elimination goals:

a. inadequate surveillance system scope, in terms of geographical representativeness, use of recommended case definitions, reporting of cases on aggregate or case basis, as well as inclusion of all VPDs that should be under surveillance;
b. insufficient training of human resources for detection and investigation of cases, surveillance data management and analysis;
c. the need to maintain VPD surveillance key functions in integrated national surveillance systems (that is, reporting of suspected cases and case classification following adequate investigation and laboratory testing);
d. lack of surveillance and outbreak response guidance for various diseases in some countries;
e. inadequate financial support and/or no plan for financial sustainability for VPD surveillance in some countries; and
f. insufficient laboratory capacity for confirmation of some VPD cases (such as, diphtheria or pertussis) in several countries.

Laboratories and laboratory networks for vaccine-preventable disease control and elimination

26. The TAG acknowledges the substantial efforts made by the WHO Secretariat and Member States to maintain regional VPD laboratory networks with high-level performance in the Western Pacific, in order to provide accurate and timely data for elimination and eradication of VPDs and for introduction of new vaccines. The TAG notes the need to maintain high-quality VPD laboratories by providing technical and financial support to network laboratories of priority countries, particularly for polio laboratories facing low workload and complacency due to the long absence of poliovirus detection.

27. The TAG reaffirms the urgent need for many Member States to promote collaboration between epidemiological and laboratory surveillance for VPDs to ensure that case definition criteria are correctly applied, adequate specimens are collected, epidemiological and laboratory data are properly linked, and laboratory resources are adequately used, particularly during outbreaks.

28. The TAG acknowledges the need to develop a regional strategy to maintain functional and sustainable laboratory surveillance for VPDs (polio, measles, rubella, JE, invasive bacterial VPD and rotavirus) with skilled staff and high-quality laboratory testing. Considering the reduction of financial support from donors for laboratory surveillance, the TAG reaffirms the urgent need to promote national ownership of laboratory surveillance.
29. The TAG reaffirms that the Western Pacific Region has made significant progress and remarkable achievements in immunization and in control and elimination of VPDs since the WHO EPI was founded in 1974. Since then, NIPs have been established and strengthened in Member States.

30. Routine immunization coverage has continued to be improved at both national and regional levels since 1980 and has been greater than 95% at the regional level since 2009. The regional polio eradication initiative was launched in 1988, and since 2000, the regional polio-free status has been sustained despite continuous challenges. The regional measles elimination initiative was launched in 2003, and as of 2017, six countries and two areas of the Region have achieved measles elimination. The regional rubella elimination initiative was launched in 2014, and by 2017, two countries of the Region have achieved rubella elimination. MNT elimination has been achieved in five out of six target countries. The 2017 regional target for accelerated hepatitis B control has been achieved in 21 countries. An accelerated JE control goal has been established. Ten of 12 countries with JE risk use JE vaccine in some or all risk areas or have very low levels of disease without vaccination. At least one new vaccine has been introduced in 89% of low- and lower middle-income countries in the Region since 2010.

31. The TAG acknowledges that these initiatives for control and elimination of VPDs and introduction of new vaccines have had synergies that have led to strengthened immunization systems and programmes in the Western Pacific in the last four decades. Progress has accelerated during the current decade since implementation of the GVAP, which was launched in 2012.

32. Despite these achievements, the TAG notes with concern that the immunization gains in the Region may be at serious risk in the next decade. Causes of the risk may include: a) demographic and socioeconomic changes such as growing population, urbanization, increased immigration and increased vaccine hesitancy; b) epidemiologic changes such as repeated outbreaks (diphtheria, pertussis, measles, rubella, cVDPV, etc.) and increased VPD incidence among older children, adolescents and adults; c) operational shifts as newer vaccines are targeted to selected populations; d) significant reduction in external funding for immunization programmes as countries transition from the Global Polio Eradication Initiative (GPEI), Gavi and other donor support; and e) increasing fragility and instability of global vaccine supply as small numbers of manufacturers attempt to meet growing global demand.

33. To address these issues and challenges in the coming decade, in order to sustain and expand the immunization gains of the last four decades, the TAG fully supports the WHO Secretariat to initiate development of a post-2020 regional framework of action.
for immunization and VPDs in the Western Pacific, in collaboration with Member States and partners.

3.2 Recommendations

3.2.1 Recommendations for Member States

*Immunization systems strengthening (including progress towards the GVAP strategic objectives)*

1. The TAG urges all Member States to initiate implementation of the resolution of the Regional Committee on transitioning to integrated financing of priority public health services (WPR/RC68.R5) and use the *Regional Framework for Action on Transitioning to Integrated Financing of Priority Public Health Services in the Western Pacific* to guide actions to secure sustainable domestic financing for immunization.

2. The TAG urges all Member States to explore and implement immunization systems strengthening strategies articulated in the Global Routine Immunization Strategies and Practices (GRISP) document, and to consider in particular strategies needed to reduce inequities in immunization coverage by reaching children of ethnic minorities and migrant groups and those living in dense urban areas and remote areas.

3. The TAG recommends Member States to strengthen the functionality and effectiveness of NITAGs or equivalent immunization decision-making bodies to support formulation of evidence-based immunization policy.

4. The TAG recommends Member States to strengthen vaccine procurement processes for timely vaccine supply and effective vaccine management practices.

5. The TAG recommends Member States to ensure NRA functioning to meet WHO global benchmarks, supporting the availability of quality-assured vaccines.

6. The TAG recommends Member States to improve AEFI reporting, investigation and timely response capacity including risk communications.

7. The TAG recommends Member States to strengthen immunization information systems to improve vaccination data quality and accessibility.

8. The TAG recommends Brunei Darussalam, Macau SAR (China) and Papua New Guinea to establish a NITAG or equivalent immunization decision-making body to support development and strengthening of evidence-based immunization policy.

9. The TAG recommends Papua New Guinea to establish a national vaccine safety expert committee to conduct causality assessment of serious AEFIs.
10. The TAG recommends Cambodia, Papua New Guinea and Solomon Islands to improve AEFI reporting to meet the GVAP minimal AEFI reporting target of at least 10 AEFI cases per 100 000 surviving infants per year.

New vaccines introduction

11. The TAG recommends Member States to consider introduction of new vaccines and continue to seek guidance from NITAGs or other advisory bodies for evidence-based decision-making, taking into account public health priority, implementation issues, funding and sustainability.

Accelerated hepatitis B control

12. The TAG recommends Member States to review the *Regional Framework for the Triple Elimination of Mother-to-Child Transmission of HIV, Hepatitis B and Syphilis in Asia and the Pacific 2018–2030* and consider developing national plans for its implementation, acknowledging that coordination across programmes is required.

13. The TAG recommends Member States that have completed pilots of HepB-BD OCC to consider scaling up OCC activities to facilitate timely HepB-BD for all newborns, if OCC use of HepB-BD has not already been fully considered. Countries that have completed HepB-BD OCC pilots are Cambodia, China, the Lao People’s Democratic Republic, Papua New Guinea, Solomon Islands and Viet Nam. OCC off-label use should follow WHO’s OCC and CTC recommendations, as noted in the 2017 WHO position paper for hepatitis B.3

14. The TAG recommends Japan, the Marshall Islands, Samoa and Wallis and Futuna to submit the results of their most recently completed nationally representative hepatitis B serosurvey to the ERP as part of their verification package to determine if they have met the 2017 regional target of less than 1% HBsAg prevalence in 5-year-old children.

15. The TAG requests Japan and New Zealand to respond to the ERP’s request about their HepB-BD programme. The response may include a description of current hepatitis B vaccination practices for preventing mother-to-child transmission and results of serosurveys and related studies.

16. The TAG recommends Viet Nam to revise the current national neonatal screening form to align contraindications with the 2017 WHO position paper for hepatitis B vaccines, and further improve HepB-BD uptake by continuing interventions in health facilities with low HepB-BD coverage and provinces with high home delivery rates.

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17. The TAG urges all Member States to achieve and maintain more than 90% coverage at the national level with all doses of polio-containing vaccines in the national schedule and address population immunity gaps, particularly in high-risk areas, by conducting SIAs, if needed.

18. The TAG urges all Member States to achieve and maintain the core AFP surveillance target of at least 1 AFP case per 100 000 population annually and conduct active surveillance in underperforming areas.

19. The TAG urges all Member States to ensure that national polio outbreak response plans are updated in accordance with the global guidance for timely and comprehensive response to any polio event or outbreak and tested by conducting polio outbreak simulation exercises.

20. The TAG urges all Member States to regularly analyse the risk of poliovirus transmission after importation of WPV or emergence of VDPV, and ensure a rapid and appropriate response.

21. The TAG urges all Member States to finalize Phase 1 of GAPIII, including identification followed by destruction, transfer or containment of materials potentially infectious for poliovirus in all biomedical laboratories no later than April 2019, as described in the WHO guidance document.

22. The TAG urges all Member States to begin preparations to identify WPV type 1 and 3 materials and destroy, transfer or contain them in approved places by the end of Phase II of GAPIII (at the time of global certification of poliomyelitis eradication).

23. The TAG urges all Member States to submit annual polio containment reports to the Regional Certification Commission together with annual National Certification Committee (NCC) reports.

24. The TAG urges Member States that are supported by international partners to maintain polio-essential functions to establish capacity and resources for sustaining polio-essential functions, as outlined in the Polio Post-Certification Strategy.

25. The TAG urges Member States with PEFs, namely, Australia, China, Japan, Republic of Korea and Viet Nam, to establish and operationalize a national authority for containment responsible for certifying PEFs, if not already established (China, Japan, Republic of Korea and Viet Nam), by the end of 2018 in line with GCC recommendations.

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4 Australia, China, Japan, Republic of Korea and Viet Nam
26. The TAG urges Member States with PEFs to start the containment certification process as soon as possible and submit associated reports to the GCC for validation.

27. The TAG urges Cambodia, the Lao People’s Democratic Republic, Papua New Guinea and Viet Nam to establish environmental surveillance for polioviruses to supplement surveillance for AFP, as part of the GPEI global plan for expansion of environmental surveillance.

28. The TAG recommends Mongolia and Viet Nam to conduct an IPV catch-up campaign, once supply becomes available, to fill the poliovirus type 2 immunity gap that has developed since the switch from trivalent to bivalent oral polio vaccine in May 2016.

Maternal and neonatal tetanus (MNT) elimination

29. The TAG recommends all Member States to update their national immunization schedules in line with the 2017 WHO position paper on tetanus vaccines to include for all children (male and female):

a. a primary series of three doses of TT-containing vaccines, administered in the first year of life;
b. three booster doses in childhood and completed by adolescence with doses specifically recommended to be given at: 12–23 months of age; 4–7 years of age; and 9–15 years of age; and
c. for booster doses and when TT is indicated in older age groups, use of combination tetanus–diphtheria toxoid rather than TT alone.

30. The TAG encourages all Member States that were validated to have achieved MNT elimination to develop and implement national plans for sustaining MNT elimination that are in line with the Implementation Guide for Sustaining Maternal & Neonatal Tetanus Elimination.

31. The TAG urges Papua New Guinea to complete required actions as early as possible to achieve MNT elimination, including TT SIAs in high- and medium-risk provinces, and implement a validation assessment.

Measles and rubella elimination

32. The TAG urges all Member States to implement the WHO Regional Committee resolution on measles and rubella elimination (WPR/RC68.R1) by:

a. developing or updating national strategies and plans of action relating to measles and rubella elimination, including the establishment of a target year for rubella elimination; and
b. ensuring adequate technical and financial resources are available for the implementation of national strategies and plans of action for measles and rubella elimination.

33. The TAG recommends each Member State to address residual measles and/or rubella immunity gaps among adolescents and adults by planning and conducting targeted immunization initiatives, which may include school-based, university-based or occupationally based immunization.

34. The TAG recommends each Member State to develop and implement national policies and procedures for hospital infection control for any suspected measles or rubella case to prevent health care–associated transmission and amplification of outbreaks.

35. The TAG recommends each Member State to develop and implement national procedures to ensure that epidemiological and laboratory data can be linked and used by public health staff to guide action in preventing and responding to measles and rubella outbreaks; and to guide appropriate use of laboratory testing and epidemiological linkage for case confirmation in routine surveillance and during outbreaks.

36. The TAG recommends each Member State to continue to use investment in measles and rubella elimination activities as a means to strengthen immunization programmes and overall public health systems, including development of an immunization visit during the second year of life to achieve high coverage of the second dose of measles-containing vaccine.

**Accelerated Japanese encephalitis control**

37. The TAG recommends Member States that have not achieved effective control of the disease to develop and implement national plans for accelerated control of JE.

38. The TAG recommends Member States that use or are planning to use live attenuated JE vaccine to forecast the number of JE vaccine doses they will need to ensure that the vaccine doses are distributed in advance of when they are needed.

**Preparedness for and response to diphtheria outbreaks**

39. The TAG recommends all Member States to update their national immunization schedules in line with the 2017 WHO position paper on diphtheria vaccines, to include:
   a. a primary series of three doses of diphtheria toxoid-containing vaccines, completed by 6 months of age, if possible; and
b. three booster doses in childhood and completed by adolescence with doses specifically recommended to be given at: 12–23 months of age; 4–7 years of age; and 9–15 years of age.

40. The TAG encourages Member States that have been frequently affected by diphtheria outbreaks to develop national guidelines for preparedness and response to diphtheria outbreaks, drawing on the draft *Field Guide for Preparedness and Response to Diphtheria Outbreaks in the Western Pacific Region.*

**Surveillance and data management for vaccine-preventable disease control and elimination**

41. The TAG recommends all Member States to strengthen surveillance for diseases targeted by new vaccines (rotavirus and invasive bacterial VPDs) and build capacity for laboratory diagnosis through training workshops, introduction of new technologies and implementation of quality assurance programmes.

42. The TAG recommends all Member States to review their VPD surveillance systems and ensure compliance with minimum requirements as detailed in the new WHO VPD surveillance guidelines, specifically with reference to the VPDs included in the surveillance system, case definitions, scope of the surveillance (that is, national or sentinel-based) and aggregate or case-based data collection; ensure that those minimum requirements are also met when VPD surveillance is integrated into broader communicable diseases surveillance.

43. The TAG recommends all Member States to sustain high-performing VPD surveillance systems, in the context of possible decreasing external funding from partners and donors.

**Laboratories and laboratory networks for vaccine-preventable disease control and elimination**

44. The TAG recommends Member States to improve collaboration between epidemiological and laboratory surveillance for VPDs by:

a. promoting collaboration of epidemiologists and laboratory experts in routine surveillance as well as in outbreak situations;

b. engaging both immunization programme and laboratory experts in national expert committees (NCCs, NVCs, etc.);

c. ensuring that interpretation and use of data for reporting and final classification are jointly assessed from clinical and laboratory perspectives; and
d. collecting adequate specimens from every case for virological testing in countries achieving or having achieved measles and rubella elimination to
ensure all virus transmission is properly monitored.

45. The TAG recommends Member States to develop plans to achieve sustainable laboratory surveillance for VPDs by:

a. developing long-term plans for disease surveillance with clear objectives and realistic milestones;
b. conducting self-assessments to map existing capacities and to identify strengths, gaps and challenges; and
c. assessing financial sustainability of existing surveillance.

Post-2020 immunization and vaccine-preventable diseases in the Western Pacific Region

46. The TAG did not make any recommendations for Member States on post-2020 immunization and VPDs in the Western Pacific Region.

3.2.3 Recommendations for WHO Secretariat

Immunization systems strengthening (including progress towards the GVAP strategic objectives)

1. The TAG reiterates the recommendations of the 26th TAG meeting, including:
   a. WHO and partners to support countries to overcome immunization coverage gaps, including through promotion of use of all available strategies;
   b. WHO to support Pacific island countries to improve their immunization programmes including immunization policy-making and addressing vaccine safety issues;
   c. WHO to support capacity-building in vaccine safety surveillance and response; and
   d. WHO and partners to support middle-income countries to achieve the Regional Framework goals through the Middle Income Country Strategy and other strategies.

2. The TAG recommends WHO Secretariat to continue to support Member States in strengthening NITAGs to improve the capacity for evidence-based immunization policy-making.

3. The TAG recommends WHO Secretariat to continue to support Member States in conducting international EPI reviews and developing or updating cMYPs.

4. The TAG recommends WHO Secretariat to support Member States in identifying and systematically addressing issues in procurement, supply and distribution of vaccines through:
a. conducting assessments and developing improvement plans for effective vaccine management;

b. continuing dissemination of the vaccine fact sheet developed by the V3P with NIPs for vaccine procurement decision-making;

c. mapping current and anticipated vaccine demand and supply for vaccines used for the NIP; and

d. considering options to address vaccine procurement including the potential feasibility of regional pooled procurement of vaccines to reduce vaccine costs.

5. The TAG recommends WHO Secretariat to continue providing technical support to Member States in a) conducting assessments of NRAs and developing and implementing institutional development plans; and b) developing and conducting in-country AEFI training workshops;

6. The TAG recommends WHO Secretariat to support Member States in developing guidance for use of information technology to support the NIPs and in building capacity to use information systems.

7. The TAG recommends WHO Secretariat to carry out high-level missions with partners to Cambodia and Papua New Guinea to support advocacy and key NIP activities.

New vaccines introduction

8. The TAG reiterates the recommendations of the 26th TAG meeting, including:

a. each Member State should develop a national plan for evidence-based introduction of new vaccines;

b. each Member State in which surveillance includes laboratory confirmation for diseases targeted by new vaccines should monitor and improve surveillance implementation;

c. Member States should use recommended immunization schedules and should not add immunization visits solely for the purpose of preventing the administration of multiple injections during the same visit;

d. the WHO Regional Office for the Western Pacific should continue to provide technical support and capacity-building for the development of national plans for evidence-based introduction of new vaccines; and

e. the WHO Regional Office for the Western Pacific should assess and improve the quality of surveillance implementation.

9. The TAG recommends WHO Secretariat to provide technical support and capacity-building to lower middle-income Member States (particularly Cambodia, the Lao People’s Democratic Republic, Mongolia, Papua New Guinea, the Philippines, Solomon Islands and Viet Nam) to prepare for or implement introduction of new vaccines.
10. The TAG recommends WHO Secretariat to support middle-income countries in the Region by leveraging all opportunities to exchange information, share lessons learnt and develop peer-to-peer support to promote and facilitate the introduction of new vaccines by addressing technical, logistical and financial barriers.

11. The TAG recommends WHO Secretariat to provide technical support to ministries of health in Pacific island countries for the introduction of new vaccines that the Asian Development Bank is funding.

12. The TAG recommends WHO Secretariat to continue to provide technical support for special studies focusing on increasing the evidence base for NITAGs to consider for the introduction of new vaccines and new vaccination technologies.

13. The TAG recommends WHO Secretariat to support countries to use the introduction of new vaccines as opportunities to further strengthen and enhance overall immunization systems and programmes.

14. The TAG recommends WHO Secretariat to encourage countries to make evidence-based decisions on the introduction of new vaccines, including timing of introduction, vaccine safety and delivery systems, while taking funding and country context into account.

**Accelerated hepatitis B control**

15. The TAG reiterates the recommendations of the 26th TAG meeting, including:
   a. countries and areas with high and sustained high HepB-BD and third-dose coverage work to further EMTCT of HBV;
   b. incentivizing countries and areas to increase health facility delivery rates; and
   c. the ERP to develop and prioritize recommendations for additional HBV interventions to be incorporated into perinatal programmes to achieve the proposed post-2017 hepatitis B goals.

16. The TAG recommends WHO Secretariat to continue to support Member States with low HepB-BD coverage in revising national HepB-BD improvement plans that were developed in 2012 by Cambodia, the Lao People’s Democratic Republic, Papua New Guinea, the Philippines and Viet Nam, and in ensuring that necessary actions and planned activities are implemented.

17. The TAG recommends WHO Secretariat to share lessons learnt and best practices employed by Cambodia, which, after being one of five priority countries identified in 2012 to develop a national HepB-BD plan, was recently verified as achieving less than 1% HBsAg prevalence in 5-year-old children.
18. The TAG recommends WHO Secretariat to submit to the WHO Regional Committee for consideration the ERP’s proposed post-2017 control goals, which include:

a. all Member States to reduce HBsAg prevalence among children at least 5 years of age to less than 1% by 2025; and
b. Member States that have met the less than 1% goal to reduce HBsAg prevalence among children at least 5 years of age to less than 0.5% by 2025.

*Sustaining polio-free status and implementation of polio endgame strategies*

19. The TAG encourages WHO Secretariat to continue to work with all Member States in maintaining the polio-free status in the Region by addressing gaps in population immunity and AFP surveillance, particularly gaps in population immunity against poliovirus type 2.

20. The TAG encourages WHO Secretariat to support Cambodia, the Lao People's Democratic Republic, Papua New Guinea and Viet Nam in establishing environmental surveillance, in line with the GPEI global plan for expansion of environmental surveillance; and continue to support Member States in maintaining environmental surveillance where it has already established.

21. The TAG encourages WHO Secretariat to continue to support Member States in implementing GAPIII, establishing functional national authorities for containment and implementing the containment certification process for PEFs; and

22. The TAG encourages WHO Secretariat to work with priority Member States to identify necessary resources for maintaining polio-essential functions as defined by the *Polio Post-Certification Strategy*.

*Maternal and neonatal tetanus elimination*

23. The TAG encourages WHO Secretariat to assist Papua New Guinea to address the identified impediments that serve to preclude MNT elimination.

24. The TAG encourages WHO Secretariat to provide technical support to Member States in developing and implementing national plans for sustaining MNT elimination in accordance with the *Implementation Guide for Sustaining Maternal & Neonatal Tetanus Elimination*, once finalized.
Measles and rubella elimination

25. The TAG reiterates the recommendations of the 26th TAG meeting, including:
   a. Member States should prevent outbreaks of rubella and CRS by protecting women of reproductive age and their babies from infection with rubella virus by identifying and filling rubella immunity gaps;
   b. Member States should use SIAs and school-based vaccination screening and/or delivery to achieve high vaccination coverage among susceptible populations as quickly as possible;
   c. Member States should develop, or update, and accelerate implementation of national plans for measles and rubella elimination as soon as possible;
   d. Member States should establish CRS surveillance systems based on the forthcoming Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region; and
   e. Member States should use MRCV rather than single-antigen vaccine at every opportunity.

26. The TAG requests WHO Secretariat to finalize the draft Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region through further consultation with the TAG, NIPs and partners, and submit it to the 28th TAG meeting in 2019 for review and possible endorsement.

27. The TAG requests WHO Secretariat to develop draft regional guidelines for preparedness and response to measles and rubella outbreaks through consultation with the TAG, NIPs and partners.

28. The TAG requests WHO Secretariat to develop other regional technical guides as recommended during the 26th TAG meeting, including: a) field guidance for planning and implementing MRCV SIAs; and b) field guidance for measles and rubella surveillance.

29. The TAG recommends WHO Secretariat to continue to support priority Member States to: a) develop, update and implement their national plans for measles and rubella elimination and set a national target date for rubella elimination; b) plan, prepare and conduct high-quality SIAs to fill immunity gaps due to inadequate routine immunization; c) develop and implement quality CRS surveillance based on the forthcoming Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region; and d) strengthen measles and rubella case-based laboratory-supported surveillance.

30. The TAG recommends WHO Secretariat to work with Member States that have residual measles and/or rubella immunity gaps among adolescents and adults, to plan and conduct targeted immunization initiatives, which may include school-based, university-based or occupationally based immunization.
31. The TAG recommends WHO Secretariat to support Member States to develop and implement national policies and procedures for hospital infection control for any suspected measles or rubella case to prevent health-care-associated transmission and amplification of outbreaks.

32. The TAG recommends WHO Secretariat to support Member States to identify opportunities, and when agreed, develop and implement plans for subregional and multi-country collaboration, coordination and synchronization of strategies and activities for measles and rubella elimination.

33. The TAG recommends WHO Secretariat to continue to work with the Regional Verification Commission on Measles and Rubella Elimination in the Western Pacific in documenting, evaluating progress towards and verifying measles and rubella elimination.

**Accelerated Japanese encephalitis control**

34. The TAG reiterates the recommendations of the 26th TAG meeting, including:

a. Member States to develop national plans for JE control;
b. Member States to consider improving collection of cerebrospinal fluid specimens and sharing these specimens to allow genotyping and sequencing at reference laboratories;
c. Member States to encourage laboratories to continue to achieve performance criteria set forth by the WHO JE laboratory accreditation programme;
d. JE surveillance with laboratory confirmation to be further strengthened in endemic areas of the Western Pacific Region, and sentinel surveillance be systematized to facilitate reporting at the regional level;
e. WHO Regional Office for the Western Pacific to expand the use of the JE surveillance structured tool for the assessment of detection and reporting of JE and vaccine impact;
f. WHO Regional Office for the Western Pacific to develop a regional guidance document to help Member States to develop national JE control plans; and
g. WHO to revise the 2007 *Manual for the Laboratory Diagnosis of Japanese Encephalitis Virus Infection* to reflect current responsibilities of the network and to provide recommendations, resources and guidelines for laboratory diagnosis of JE, data management and reporting of laboratory results, and implementation of quality assurance.

35. The TAG requests WHO Secretariat to finalize the draft *Guide for Accelerated Control of Japanese Encephalitis in the Western Pacific Region* and submit the final draft to the 28th TAG meeting in 2019 for its review and endorsement.
36. The TAG requests WHO Secretariat to support Member States that have not achieved effective control of the disease in developing national plans for accelerated control of JE in countries.

37. The TAG recommends WHO Secretariat to submit to the Regional Committee for consideration the draft incidence and coverage targets for achieving accelerated control of JE in the Western Pacific.

38. The TAG recommends WHO Secretariat submit to the Regional Committee for consideration that the draft incidence and coverage targets for achieving accelerated control of JE in the Western Pacific be achieved by 2030.

39. The TAG recommends WHO Secretariat to support countries to ensure that JE surveillance is implemented in accordance with the revised JE surveillance standards.5

40. The TAG recommends WHO Secretariat to continue working with Gavi and other partners and stakeholders to forecast JE vaccine needs in the Region in the next three years and to ensure that sufficient JE vaccine doses can be procured by countries that have introduced JE vaccine, by countries that are planning to introduce JE vaccine, and by countries that are planning JE vaccine campaigns.

**Preparedness for and response to diphtheria outbreaks**

41. The TAG reiterates the recommendations of the 26th TAG meeting, including:

   a. Member States to improve accuracy and completeness of diphtheria case data submitted to the WHO/UNICEF Joint Reporting Form on Immunization and consider implementation of case-based diphtheria surveillance; and
   
   b. Member States to analyse diphtheria surveillance data to better define the disease burden and potential need for DAT.

42. The TAG requests WHO Secretariat to finalize the draft *Field Guide for Preparedness and Response to Diphtheria Outbreak in the Western Pacific Region* through further consultation with the TAG, NIPs and partners and submit the final draft to the 28th TAG meeting in 2019 for its review and endorsement.

43. The TAG requests WHO Secretariat to consider hands-on laboratory training for priority countries to strengthen laboratory diagnostic capacity for diphtheria.

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5 WHO Revised Surveillance Standards are being finalized and will be disseminated in mid-2018. The revised JE surveillance standards recommend two types of surveillance: 1) minimal surveillance, consisting of year-round, case-based surveillance with laboratory confirmation at sentinel hospitals in national and subnational areas where JE is suspected to be a problem; and 2) enhanced surveillance, consisting of nationwide, case-based surveillance for JE and acute encephalitis syndrome, where possible.
44. The TAG recommends WHO Secretariat to support Member States to:

   a. achieve the regional vaccination coverage targets defined by the *Regional Framework for Implementation of the GVAP in the Western Pacific*;
   
   b. develop national plans or field guides based on the finalized version of the *Field Guide for Preparedness and Response to Diphtheria Outbreaks in the Western Pacific*;
   
   c. prepare for and respond to diphtheria outbreaks with appropriate public health interventions including DAT, and assess the need and feasibility of establishing a regional DAT stockpile; and
   
   d. strengthen laboratory diagnostic capacity for diphtheria and support countries with the shipment of samples to regional reference laboratories for laboratory diagnosis.

45. The TAG recommends WHO Secretariat to support Member States to establish a regional case-based reporting system for diphtheria outbreaks.

*Surveillance and data management for vaccine-preventable disease control and elimination*

46. The TAG reiterates the recommendations of the 26th TAG meeting, including:

   a. Member States that have not yet established a CRS monitoring system to do so as soon as possible;
   
   b. countries with VPD surveillance of suboptimal representativeness and/or sensitivity to strengthen their surveillance systems;
   
   c. countries to prioritize strengthening the systems that support surveillance of diseases targeted by elimination goals; and
   
   d. countries to continue strengthening rotavirus and invasive bacterial VPD surveillance with laboratory confirmation.

47. The TAG requests WHO Secretariat to continue to provide support to priority Member States in strengthening VPD surveillance and improving data quality through:

   a. development of national training materials on surveillance based on case studies and problem solving;
   
   b. expansion of the Immunization and Surveillance Data Specialist project or similar activities to other countries; and
   
   c. strengthening of linkages between epidemiological and laboratory data, including further expansion of WHO Regional Office of the Western Pacific web-based data management tools.

48. The TAG encourages WHO Secretariat to provide technical support to Member States in ensuring that national VPD surveillance systems, whether stand-alone or integrated
with surveillance for other communicable diseases, are compliant with minimum requirements (that is, number of VPDs under surveillance, national or sentinel surveillance, aggregate or case-based reporting, and case definitions) in accordance with the new WHO VPD surveillance guidelines.

49. The TAG encourages WHO Secretariat to support priority Member States (that is, those relying on external funding to support surveillance functions) in conducting cost–benefit analyses of VPD surveillance, particularly AFP and acute fever and rash surveillance, to advocate for adequate domestic funding to sustain high-quality surveillance systems.

**Laboratories and laboratory networks for vaccine-preventable disease control and elimination**

50. The TAG requests WHO Secretariat to continue providing technical support to Member States in maintaining high-quality VPD laboratories.

51. The TAG requests WHO Secretariat to start planning for developing a regional strategy to maintain functional and sustainable laboratory surveillance for VPDs, including:
   
   a. providing technical support to laboratories where needed to maintain technical skills and address gaps;
   b. ensuring that all network laboratories receive timely updates and recommendations on new developments in laboratory testing;
   c. addressing country-specific gaps and challenges; and
   d. supporting countries in the polio transition period.

52. The TAG recommends WHO Secretariat to work with Member States to promote collaboration between epidemiological and laboratory surveillance for VPDs by:

   a. organizing country-specific joint epidemiologic and laboratory workshops or meetings for advocacy purposes and exchange of experiences;
   b. ensuring that interpretation and use of data for reporting and final classification are jointly assessed from clinical and laboratory perspectives; and
   c. ensuring participation of both epidemiological and laboratory experts during country VPD surveillance reviews.

53. The TAG requests WHO Secretariat to support Member States with insufficient capacity to manage increased laboratory workload during VPD outbreaks to establish subnational laboratories.
54. The TAG recommends WHO Secretariat to initiate a consultation process with Member States and partners for the development of a post-2020 regional framework for action on immunization and VPDs in the Western Pacific.

55. The TAG recommends WHO Secretariat prepare a draft regional framework and submit it to the 28th TAG meeting in 2019 for review by the TAG, Member States and partners.
Annex 1

LIST OF TAG MEMBERS, EPI NATIONAL MANAGERS/SURVEILLANCE OFFICERS, MINISTRY/DEPARTMENT OF HEALTH STAFF, TEMPORARY ADVISERS, OBSERVERS/REPRESENTATIVES AND SECRETARIAT

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6 Dr Kimberley Fox will represent Dr Rebecca Martin who is unable to attend the meeting.
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## Annex 2

**27TH MEETING OF THE TECHNICAL ADVISORY GROUP ON IMMUNIZATION
AND VACCINE-PREVENTABLE DISEASES IN THE WESTERN PACIFIC REGION**

Manila, Philippines, 19–22 June 2018

### TIMETABLE

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<th>Time</th>
<th>Tuesday, 19 June 2018</th>
<th>Time</th>
<th>Wednesday, 20 June 2018</th>
<th>Time</th>
<th>Thursday, 21 June 2018</th>
<th>Time</th>
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<td>0830–0900</td>
<td>1. Opening session</td>
<td>0845–0900</td>
<td>5.1 Global and regional overview</td>
<td>0845–0900</td>
<td>8.1 Global and regional overview</td>
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<td>• Welcome remarks by the Responsible Officer</td>
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<td>5.2 Hepatitis B birth dose improvement: Lessons learnt from pilot projects in Viet Nam</td>
<td>0900–0910</td>
<td>Discussion</td>
<td>1045–1100</td>
<td>12.1 Roles of EPI in sustainable development goals and universal health coverage / working for health system strengthening</td>
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<td>• Opening remarks of the Regional Director</td>
<td>0915–0930</td>
<td>5.3 EMCT of HIV, hepatitis B and syphilis: An opportunity to further acceleration of hepatitis B control</td>
<td>0925–0940</td>
<td>Discussion</td>
<td>1100–1115</td>
<td>12.2 Roles of EPI for maternal and child health / working with WHO health emergencies programme</td>
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<td>• Self-introduction</td>
<td>0930–0940</td>
<td>5.4 Moving towards EMCT of hepatitis B in China: Field and modelling experiences and challenges</td>
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<td>Discussion</td>
<td>1115–1130</td>
<td>12.3 Roles of EPI in international health regulations / working with WHO health emergencies programme</td>
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<td>• Election of officers: Chair, Vice-Chair and Rapporteur</td>
<td>0945–0955</td>
<td>5.5 Proposed actions for 2018-2020 and accelerated hepatitis B control in the Western Pacific Region 2021-2030</td>
<td>0955–1010</td>
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<td>• Administrative announcements</td>
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<td>Discussion</td>
<td>1010–1025</td>
<td>6. Sustaining polio-free status and implementation of polio endgame strategies</td>
<td>1020–1035</td>
<td>8.5 Draft operational guidelines for congenital rubella syndrome (CRS) surveillance</td>
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<td>1055–1110</td>
<td>6.2 Regional update</td>
<td>1050–1105</td>
<td>8.6 Sustaining elimination in the face of repeated measles importation</td>
<td>1245–1300</td>
<td>13.1 TAG’s report on progress of regional framework for implementation of GVAP in the Western Pacific Region</td>
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<td>1125–1140</td>
<td>Discussion</td>
<td>1120–1135</td>
<td>8.8 Proposed actions for 2018-2020 and measles and rubella elimination in the Western Pacific Region 2021-2030</td>
<td>1315–1330</td>
<td>13.3 Development of WP regional vision and strategy for VPD and immunization 2021-2030</td>
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<td><strong>COFFEE BREAK</strong></td>
<td>1140–1155</td>
<td>6.4 Global supply of IPV and Strategic Advisory Group of Experts (SAGE) on immunization recommendations</td>
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<td>Discussion</td>
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<td>6.5 Assessment of population immunity gap to poliovirus type 2</td>
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<td>1025–1040</td>
<td>3. Immunization system strengthening/GVAP strategic objectives</td>
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<td>1055–1105</td>
<td>3.2 Update on regulatory system strengthening and vaccine pharmacovigilance in the Western Pacific Region</td>
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<td>13.2 Process of development of new global immunization strategy 2021-2030</td>
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<td>4.2 Experiences and lessons learnt of an LMIC that has introduced three NVs since 2010 and will introduce two more in the next 1-2 years</td>
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<td>1730–1745</td>
<td>5.3 Experiences and lessons learnt of an UIC that has introduced three NVs since 2010</td>
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<td>1745–1755</td>
<td>5.4 Proposed actions for 2018-2020 and introduction of new vaccines into national immunization programmes in WPR in 2021-2030</td>
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<td>1755–1810</td>
<td>5.5 Proposed actions for 2018-2020 to further improve VPD laboratory networks in the Western Pacific Region</td>
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<tr>
<td>1810–1820</td>
<td>Discussion</td>
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**Discussion**