The 27th Meeting of the Technical Advisory Group on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region (TAG) was held in Manila, Philippines from 19 to 22 June 2018. Since 1991, the TAG has met annually to review the progress of the immunization programme in the Western Pacific Region and provide guidance on establishing and achieving immunization goals. The meeting was attended by six TAG members, three temporary advisers, 32 participants from 16 countries and areas, 43 representatives from partner organizations and World Health Organization (WHO) staff from headquarters, the Regional Office for the Western Pacific and county offices.

**Objectives**

The 27th Meeting of the Technical Advisory Group on Immunization and Vaccine-Preventable Diseases in the Western Pacific Region was held in Manila, Philippines from 19 to 22 June 2018. The objectives of the meeting were:

- 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* (GVAP) and the strategic objectives of the GVAP;

- 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

- to prepare recommendations by the TAG for WHO and countries.

**Conclusions**

**Immunization system strengthening (including progress towards GVAP strategic objectives)**

- 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.

- The TAG acknowledges the efforts made by Member States to strengthen functions of the 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 (cMYP) and appropriate actions by the national immunization programmes (NIPs).

- 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 Vaccine Product, Price and Procurement Initiative (V3P) 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 of adverse events following immunization (AEFI) are in place in 23 countries in the Region.

- 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:
  1. inadequate capacity for formulation of evidence-based immunization policy in lower middle-income countries (LMICs) and Pacific island countries;
  2. insufficient budget and weak financing for subnational immunization programme activities in LMICs;
  3. vaccine stock-outs due to insufficient capacity for forecasting, financing, procurement, stock management, and distribution, particularly in LMICs and Pacific island countries, and also due to global shortages and supply issues affecting some countries;
  4. insufficient capacity for implementation of AEFI surveillance and response including risk communications in many countries;
  5. 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
  6. 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

• 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 immunization programme and health system strength.

• The TAG acknowledges challenges with new vaccine introduction, particularly the limited progress in new vaccine introduction in upper middle-income countries, and the need to promote and facilitate 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

• 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.

• The TAG again notes the Hepatitis B Immunization Expert Resource Panel’s (ERP’s) proposed 2018–2025 regional targets that have yet to be adopted by the Regional Committee, including: 1) to reduce HBsAg prevalence to less than 1% in 5-year-old children in all countries and areas by 2025; and 2) 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.

• 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

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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.
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 know 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.

- 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 remain 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.

- The TAG notes that to build on the impressive progress towards
  accelerated HBV control and proposed coordinated triple EMTCT of HIV,
  HBV and syphilis (triple EMTCT), countries should develop clear strategies
  to 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 and child health, HIV, hepatitis and sexually
  transmitted infections programmes.

Sustaining polio-free status and implementation of polio endgame strategies

- 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 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 may 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
  (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.

- Despite the achievements and progress made in sustaining polio-free status and implementing the polio endgame strategy in the Region, the TAG notes that the following issues and challenges should be thoroughly addressed:
  
  1. risk of international spread of poliovirus remains a Public Health Emergency of International Concern;
  2. immunity and/or surveillance gaps remain at subnational levels in China, Cambodia, the Lao People’s Democratic Republic, Malaysia, Mongolia, Pacific island countries, Papua New Guinea, the Philippines and Viet Nam;
  3. national inventories of all biomedical facilities that may contain poliovirus potentially infectious materials are not yet complete in all countries in the Region;
  4. designation of polio-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
  5. 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

- 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) supplemental 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 to have achieved MNT elimination in sustaining their elimination status. The TAG also notes the 2017 WHO position paper on tetanus vaccines that recommends that 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.

- 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.

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Measles and rubella elimination

- 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 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.

- The TAG appreciates that the Regional Committee in October 2017 1) encouraged all Member States to eliminate rubella as soon as possible and establish a target year for each country or area, and 2) 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.

- 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:
  
  1. 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;
  2. 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;
  3. 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;
  4. 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
  5. 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

- 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.

- 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.

- 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: 1) 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 2) 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.

- The TAG notes: 1) that JE surveillance is not systematic in some areas and is fragmented into multiple systems, hindering data analysis and interpretation and limiting efforts to estimate disease burden, define target populations for vaccination, and measure the impact of vaccination in some countries; and 2) for the countries that have not yet achieved a high degree of JE control, strengthening surveillance with laboratory confirmation is critical for providing disease burden data and evidence of vaccine impact.

Preparedness for and Response to Diphtheria Outbreaks

- 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 for DAT to ensure that any
The population experiencing cases or an outbreak of diphtheria has rapid and easy access to equine DAT.

- 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 diphtheria toxin-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**

- 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 Pediatric Diarrhea 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.

- 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:

  1. 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;
  2. insufficient training of human resources for detection and investigation of cases, surveillance data management and analysis;
  3. 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);
  4. lack of surveillance and outbreak response guidance for various diseases in some countries;
  5. inadequate financial support and/or no plan for financial sustainability for VPD surveillance in some countries; and

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6) 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**

- 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.

- 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.

- 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.

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

- 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 1974, when the WHO EPI was founded and NIPs were established in Member States.

- Routine immunization coverage has continued to be improved at both national and regional levels since 1980 and has been more 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 had achieved rubella elimination. MNT elimination has been achieved in five out of six target countries. The 2017 target for accelerated hepatitis B control has been achieved in 21 countries and areas of the Region. 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.
• The TAG acknowledges that these initiatives for control and elimination of VPDs and introduction of new vaccines have had synergies that led to strengthened immunization systems and programmes in the Western Pacific in the last four decades. Progress has accelerated during the current decade with implementation of GVAP, launched in 2012.

• 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: 1) demographic and socioeconomic changes such as growing population, urbanization, increased immigration and increased vaccine hesitancy; 2) epidemiologic changes such as repeated outbreaks (diphtheria, pertussis, measles, rubella, cVDPV, etc.) and increased VPD incidence among older children, adolescents and adults; 3) operational shifts as newer vaccines are targeted to selected populations; 4) significant reduction in external funding for immunization programmes as countries transition from the Global Polio Eradication Initiative (GPEI), Gavi, The Vaccine Alliance (Gavi) and other donor support; and 5) increasing fragility and instability of global vaccine supply as small numbers of manufacturers attempt to meet growing global demand.

• 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.

Recommendations for Member States

Immunization system strengthening (including progress towards GVAP strategic objectives)

The TAG urges all Member States to:

(1) 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; and

(2) explore and implement immunization system strengthening strategies articulated in the Global Routine Immunization Strategies and Practices (GRISP) document; 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.

The TAG recommends Member States to:

(1) strengthen the functionality and effectiveness of NITAGs or equivalent immunization decision-making bodies to support formulation of evidence-based immunization policy;
(2) strengthen vaccine procurement processes for timely vaccine supply and effective vaccine management practices;

(3) ensure NRA functioning to meet WHO global benchmarks, supporting the availability of quality-assured vaccines;

(4) improve AEFI reporting, investigation and timely response capacity including risk communications; and

(5) strengthen immunization information systems to improve vaccination data quality and accessibility.

The TAG recommends Brunei Darussalam, Macau and Papua New Guinea to:

(1) establish a NITAG or equivalent immunization decision-making body to support development and strengthening of evidence-based immunization policy.

The TAG recommends Papua New Guinea to:

(1) establish a national vaccine safety expert committee to conduct causality assessment of serious AEFIs.

The TAG recommends Cambodia, Papua New Guinea and Solomon Islands to:

(1) 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

The TAG recommends Member States to:

(1) 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

The TAG recommends Member States to:

(1) 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 recommends Member States that have completed pilots of HepB-BD OCC to:

(1) 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.  

The TAG recommends Japan, the Marshall Islands, Samoa and Wallis and Futuna to:

(1) 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.

The TAG recommends Japan and New Zealand to:

(1) 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.

The TAG recommends Viet Nam to:

(1) 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.

Sustaining polio-free status and implementation of polio endgame strategies

The TAG urges all Member States to:

(1) 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;

(2) 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;

(3) 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;

(4) regularly analyse the risk of poliovirus transmission after importation of WPV or the emergence of VDPV, and ensure rapid and appropriate response;

(5) finalize GAPIII Phase 1, including identification followed by destruction, transfer or containment of type 2 poliovirus potentially infectious materials in all biomedical laboratories no later than April 2019, as described in the WHO guidance document;

(6) begin preparations to identify WPV type 1 and WPV type 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); and

(7) submit annual polio containment reports to the Regional Certification Commission together with annual National Certification Committee (NCC) reports.

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The TAG urges Member States that are supported by international partners to maintain polio-essential functions to:

(1) establish capacity and resources for sustaining polio-essential functions, as outlined in the Polio Post-Certification Strategy.

The TAG urges Member States with polio-essential facilities (PEFs), namely, Australia, China, Japan, Republic of Korea and Viet Nam, to:

(1) 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; and

(2) start the containment certification process as soon as possible and submit associated reports to the GCC for validation.

The TAG urges Cambodia, the Lao People’s Democratic Republic, Papua New Guinea and Viet Nam to:

(1) establish environmental surveillance for polioviruses to supplement surveillance for AFP, as part of the GPEI global plan for expansion of environmental surveillance.

The TAG recommends Mongolia and Viet Nam to:

(1) 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

The TAG recommends all Member States to:

(1) 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.

The TAG encourages all Member States that were validated to have achieved MNT elimination to:

(1) develop and implement national plans for sustaining MNT elimination that are in line with the Implementation Guide for Sustaining Maternal & Neonatal Tetanus Elimination.

The TAG urges Papua New Guinea to:

(1) 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

The TAG urges all Member States to:

1. Implement the WHO Regional Committee resolution 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.

The TAG recommends each Member State to:

1. 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;

2. 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;

3. 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; and

4. 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

The TAG recommends Member States that have not achieved effective control of the disease to:

1. Develop and implement national plans for accelerated control of JE.

The TAG recommends Member States that use or are planning to use live attenuated JE vaccine to:

1. 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

The TAG recommends all Member States to:

1. 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.

The TAG encourages Member States that have been frequently affected by diphtheria outbreaks to:

(1) 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

The TAG recommends all Member States to:

(1) 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;

(2) 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; and

(3) 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

The TAG recommends Member States to:

(1) 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, national verification committees, 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; and

(2) 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**

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

**Recommendations for WHO Secretariat**

**Immunization system strengthening (including progress towards GVAP strategic objectives)**

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

The TAG recommends the WHO Secretariat to:

1. continue to support Member States in strengthening NITAGs to improve the capacity for evidence-based immunization policy-making;
2. continue to support Member States in conducting international EPI reviews and developing or updating cMYPs;
3. 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;
4. 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;
5. support Member States in developing guidance for use of information technology to support the NIPs and in building capacity to use information systems; and
(6) carry out high-level missions with partners to Cambodia and Papua New Guinea to support advocacy and key NIP activities.

**New vaccines introduction**

The TAG reiterates the recommendations of the 26th TAG meeting, including: (i) each Member State should develop a national plan for evidence-based introduction of new vaccines; (ii) each Member State in which surveillance includes laboratory confirmation for diseases targeted by new vaccines, should monitor and improve surveillance implementation; (iii) 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; (iv) 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 (v) the WHO Regional Office for the Western Pacific should assess and improve the quality of surveillance implementation.

The TAG recommends the WHO Secretariat to:

1. 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;

2. support middle-income countries in the Region by leveraging all opportunities to promote the exchange of information, the sharing of lessons learned and peer-to-peer support to promote and facilitate introduction of new vaccines by addressing technical, logistical and financial barriers;

3. provide technical support to ministries of health in Pacific island countries in introduction of new vaccines that the Asian Development Bank is funding;

4. continue to provide technical support for special studies focusing on increasing the evidence base for NITAGs to consider for introduction of new vaccines and new vaccination technologies;

5. support countries to use introduction of new vaccines as opportunities to further strengthen and enhance overall immunization systems and programmes; and

6. encourage countries to make evidence-based decisions on introduction of new vaccines, including timing of introduction, vaccine safety and delivery system, while taking funding and country context into account.

**Accelerated hepatitis B control**

The TAG reiterates the recommendations of the 26th TAG meeting, including: (i) countries and areas with high and sustained high HepB-BD and third-dose coverage work to further EMTCT of HBV; (ii) incentivizing countries and areas to increase health facility delivery rates; and (iii) 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.
The TAG recommends the WHO Secretariat to:

(1) continue to provide support to 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;

(2) share lessons learned 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; and

(3) submit to the WHO Regional Committee for consideration the ERP’s proposed post-2017 control goals, which include: (a) all Member States reduce HBsAg prevalence among children at least 5 years of age to less than 1% by 2025; and (b) reduce HBsAg prevalence among children at least 5 years of age in countries that have met the less than 1% goal to less than 0.5% by 2025.

Sustaining polio-free status and implementation of polio endgame strategies

The TAG encourages the WHO Secretariat to:

(1) continue to work with all Member States in maintaining polio-free status in the Region by addressing gaps in population immunity and AFP surveillance, particularly gaps in population immunity against type 2 poliovirus;

(2) 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;

(3) continue to support Member States in implementing GAPIII, establishing functional national authorities for containment and implementing the containment certification process for PEFs; and

(4) 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

The TAG recommends the WHO Secretariat to:

(1) assist Papua New Guinea to address the identified impediments that serve to preclude MNT elimination; and

(2) provide technical support to the 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

The TAG reiterates the recommendations of the 26th TAG meeting, including that Member States should (i) 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; (ii) use SIAs and school-based vaccination screening and/or delivery to achieve high vaccination coverage among susceptible populations as quickly as possible; (iii) develop, or update, and accelerate implementation of national plans for measles and rubella elimination as soon as possible; (iv) establish CRS surveillance systems based on the forthcoming Field Guide for the Surveillance of Congenital Rubella Syndrome (CRS) in the Western Pacific Region; and (v) use MRCV rather than single-antigen vaccine at every opportunity.

The TAG requests the WHO Secretariat to:

1. 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;

2. develop draft regional guidelines for preparedness and response to measles and rubella outbreaks through consultation with the TAG, NIPs and partners; and

3. 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.

The TAG recommends WHO Secretariat to:

1. 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;

2. 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;

3. 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;

4. 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; and

5. 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

The TAG reiterates the recommendations of the 26th TAG meeting, including: (i) Member States to develop national plans for JE control; (ii) Member States to consider improving collection of cerebrospinal fluid specimens and sharing these specimens to allow genotyping and sequencing at reference laboratories; (iii) Member States to encourage laboratories to continue to achieve performance criteria set forth by the WHO JE laboratory accreditation programme; (iv) 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; (v) 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; (vi) WHO Regional Office for the Western Pacific to develop a regional guidance document to help Member States to develop national JE control plans; and (vii) WHO to revise the 2007 WHO 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.

The TAG requests the WHO Secretariat to:

1. 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; and
2. support Member States that have not achieved effective control of the disease in developing national plans for accelerated control of JE in countries.

The TAG recommends the WHO Secretariat to:

1. submit to the Regional Committee for consideration the draft incidence and coverage targets for achieving accelerated control of JE in the Western Pacific;
2. 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;
3. support countries to ensure that JE surveillance is implemented in accordance with the revised JE surveillance standards; and
4. 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.

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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.
Preparedness for and response to diphtheria outbreaks

The TAG reiterates the recommendations of the 26th TAG meeting, including: (i) 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 (ii) Member States to analyse diphtheria surveillance data to better define the disease burden and potential need for DAT.

The TAG requests the WHO Secretariat to:

(1) 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; and

(2) consider hands-on laboratory training for priority countries to strengthen laboratory diagnostic capacity for diphtheria.

The TAG recommends the WHO Secretariat to:

(1) 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.

(2) establish a regional case-based reporting system for diphtheria outbreaks.

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

The TAG reiterates the recommendations of the 26th TAG meeting, including: (i) Member States that have not yet established a CRS monitoring system to do so as soon as possible; (ii) countries with VPD surveillance of suboptimal representativeness and/or sensitivity to strengthen their surveillance systems; (iii) countries to prioritize strengthening the systems that support surveillance of diseases targeted by elimination goals; and (iv) countries to continue strengthening rotavirus and invasive bacterial VPD surveillance with laboratory confirmation.

The TAG encourages the WHO Secretariat to:

(1) 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;

(2) 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; and

(3) 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

The TAG requests the WHO Secretariat to:

(1) continue providing technical support to Member States in maintaining high-quality
VPD laboratories; and

(2) 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.

The TAG recommends the WHO Secretariat to:

(1) 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; and

(2) support Member States with insufficient capacity to manage increased laboratory
workload during VPD outbreaks to consider establishing subnational laboratories.
Post-2020 immunization and vaccine-preventable diseases in the Western Pacific Region

The TAG recommends the WHO Secretariat to:

1. initiate a consultation process with Member States and partners for development of a post-2020 regional framework of action for immunization and VPDs in the Western Pacific; and

2. prepare a draft regional framework and submit it to the 28th TAG meeting in 2019 for review by the TAG, Member States and partners.