Western Pacific Regional Guide for the Immunization Programme and Vaccine-preventable Disease Surveillance during the COVID-19 Pandemic
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Preface

The coronavirus disease 2019 (COVID-19) pandemic is posing an unprecedented challenge to health systems globally, with serious implications for immunization services. Routine immunizations, supplementary immunization activities and the surveillance of vaccine-preventable diseases (VPDs) are being impacted in many countries due to the pandemic. The decline in routine immunizations and an impaired surveillance system may well lead to the resurgence of VPDs. As the battle against the COVID-19 pandemic continues, it will be necessary to adopt dynamic strategies to avoid the disruption of essential services, and planning must begin for the resumption of the immunization and surveillance activities as soon as the pandemic is under control.

Member States, the World Health Organization and our partners have been working together closely during the pandemic to maintain core public health services, including immunization. This regional guide aims to provide a guide for better planning, preparedness and implementation for immunization activities during the pandemic, specifically targeting countries where partner support is needed. It also offers a range of recommendations. Section 5 highlights activities to mitigate the impact of the pandemic, based on local COVID-19 transmission scenarios of either low- or high-transmission status. The COVID-19 situation varies widely among the 37 countries and areas in the Western Pacific Region, and national decision-makers can refer to this guidance – and adapt it to their specific context – in developing a feasible and sustainable response to immunizations and the surveillance of VPDs during the pandemic.
Abbreviations

AFRI adverse events following immunization
AESI adverse events of special interest
AFP acute flaccid paralysis
AFR acute fever and rash
bOPV bivalent oral poliovirus vaccine
CBS community-based surveillance
cVDPV1 circulating vaccine-derived poliovirus type 1
COVID-19 coronavirus disease 2019
DTP3 diphtheria–pertussis–tetanus vaccine, third dose
GPEI Global Polio Eradication Initiative
GPLN Global Polio Laboratory Network
IPC infection prevention and control
IPV inactivated poliovirus vaccine
IPV2 inactivated poliovirus vaccine, second dose
MCV1 measles-containing vaccine, first dose
MNT maternal and neonatal tetanus
mOPV monovalent oral poliovirus vaccine
PIRI periodic intensification of routine immunization
PPE personal protective equipment
SARS-CoV-2 severe acute respiratory syndrome coronavirus 2
SIA supplementary immunization activity
VDPV vaccine-derived poliovirus
VPD vaccine-preventable disease
WHO World Health Organization
1. Overview

1.1 Immunization programme in the Western Pacific Region

The Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific was endorsed by the World Health Organization (WHO) Regional Committee in October 2014 (WPR/RC65.R5). The Regional Framework adapted strategies and activities recommended by the WHO Global Vaccine Action Plan 2011–2020 into the context of the Western Pacific and specified eight regional immunization goals:

1. sustaining polio-free status
2. maternal and neonatal tetanus (MNT) elimination
3. measles elimination
4. accelerated control of hepatitis B
5. rubella elimination
6. accelerated control of Japanese encephalitis
7. meeting regional vaccination coverage targets
8. introduction of new vaccines.

As the Decade of Vaccines draws to a close, the WHO Western Pacific Region is steadily making significant progress towards achieving global and regional immunization goals including implementing many priority actions proposed by the Regional Framework (1).

1.2 Vaccine-preventable disease control and elimination in the Western Pacific Region

The Western Pacific Region has made significant progress in the battle against vaccine-preventable diseases (VPDs). The Region has maintained polio-free status, MNT elimination has been achieved with the exception of one country, rubella elimination is on track, the control of hepatitis B has accelerated, and the introduction of new vaccines, overall, has been on track.

High coverage of the third dose of diphtheria–pertussis–tetanus (DTP3) vaccine (95.6%) and the first dose of measles-containing vaccine (MCV1) (95.3%) in 2019 demonstrate public demand, acceptance and improved service delivery in immunization. Through implementation of the Regional Strategy and Plan of Action for Measles and Rubella Elimination in the Western Pacific, the Region experienced historically low incidences of both measles and rubella in 2017 and 2018. As of September 2019, nine and areas have been verified as having achieved measles elimination and five countries and areas have been verified as having achieved rubella elimination. However, since 2019 several countries have suffered from a resurgence and large outbreaks of measles. Since late 2018, the emergence and circulation of vaccine-derived poliovirus (VDPV), outbreaks of rubella among adults and repeated outbreaks of diphtheria also have posed critical challenges in the Region. In addition, the Region faces challenges from uneven immunization coverage that cause population immunity gaps in VPDs, gaps in VPD surveillance, immunization service delivery and, immunization coverage monitoring, and growing concerns with the safety of vaccines and immunizations.

The draft Regional Strategic Framework for Vaccine-preventable Diseases and Immunization in the Western Pacific 2021–2030 is developed to align with the Immunization Agenda 2030: A Global Strategy to Leave No One Behind and takes into account lessons identified in the implementation of the Global Vaccine Action Plan 2011–2020 in the Western Pacific Region and the need to reach unreached and underserved populations.

2. COVID-19 in the Western Pacific Region

2.1 Global status

In early January 2020, a novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was identified from a cluster of pneumonia cases of unknown etiology in China. The disease caused by the virus was named coronavirus disease 2019 (COVID-19). On 30 January 2020, WHO declared the COVID-19 outbreak a public health emergency of international concern. COVID-19 rapidly spread to other countries and now the pandemic is affecting most countries globally. As of 03 November 2020, there have been more than 46.8 million COVID-19 cases including 1,204,028 deaths in 219 countries or areas. Many countries that have experienced large outbreaks have also reported considerable excess mortality.

All countries have initiated measures to contain and mitigate transmission and reduce the impact of the outbreak on health-care systems. WHO is working with countries across all six regions, analysing the latest data and science, informing and engaging the public, providing updates on the current situation, coordinating with partners, distributing life-saving supplies, advancing preparedness and strengthening health systems.
2.2 Regional status

In the Western Pacific Region, 21 out of 37 countries and areas have reported 747,162 confirmed COVID-19 cases and 15,714 deaths since December 2019 (as of 3 November 2020). The first peak of the incidence ran from the end of January to March 2020 in China and the Republic of Korea, before spreading in other countries and areas.

In the Western Pacific Region, countries and areas have imposed travel restrictions and implemented non-pharmaceutical interventions such as physical distancing measures to prevent further spread. Several countries and areas that have been reporting low case numbers or no reported cases for more than seven days from the end of May are starting to lift their quarantine measures and movement restrictions.

Since 2005, Member States in the Western Pacific Region have strengthened national health system capacities to detect and respond to emerging infectious diseases, guided by the Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies. The COVID-19 response in Member States aligns with this Regional Guide for the Immunization Programme and Vaccine-preventable Disease Surveillance during the COVID-19 Pandemic and aims to minimize health and socioeconomic impact of the pandemic.

3. Impacts of COVID-19 pandemic on immunization and VPDs

3.1. Impacts on the immunization programme

a. Common impacts in many countries

During the COVID-19 pandemic, routine immunizations have been disrupted due to both the pandemic-related burden on health systems and strict travel and movement restrictions. In some countries, routine immunizations were temporarily suspended or delayed. Even where health workers continued providing routine immunizations, movement restrictions and the fear of COVID-19 infection have affected public demand. Some health workers have expressed concerns about providing routine immunization, particularly where the supply of personal protective equipment (PPE) was limited. Mass immunization campaigns have been deferred, in accordance with preliminary WHO guidance. Due to school closures, school-based immunization activities also were suspended. Outreach services have been hindered by movement restrictions and shortages in the health workforce, leaving hard-to-reach populations unimmunized. All of these factors will contribute to a considerable decline in immunization coverage and increasing immunity gaps. The reporting rate of immunization also declined in some countries, making it difficult to grasp the true impact of the pandemic towards routine immunization.

Domestic and international border closures lessened the risk of importation of diseases, but they also affect logistics and the supply of vaccines. Although none of the countries reported immediate stock-outs of routine vaccines, some international transport of vaccines has been delayed. Transport to far regions and the remote facilities remains a challenge, especially in the epidemic areas with movement restrictions.

The immunization and VPD surveillance staff at the national, subnational and service-delivery levels are mobilized full-time or part-time for the COVID-19 response. The areas with scarce human resources for health are under strain to maintain routine immunization services.

b. Country-specific impacts/examples of specific impacts

Routine immunization coverage decreased, especially during the lockdown period (Fig. 1). However, most immunization services were resumed within a short period in countries with favourable conditions.

Malaysia and the Philippines experienced an emergence and circulation of VDPVs in 2019 and 2020, and immunization campaigns to respond to this were ongoing when the pandemic began. Considering the high risk and impact of circulating vaccine-derived poliovirus type 1 (cVDPV1), Malaysia has proceeded with its bivalent oral poliovirus vaccine (bOPV) campaign in limited high-risk areas, but the monovalent oral poliovirus vaccine (mOPV) campaign
3.2 Impacts on VPD surveillance

a. Common impacts in many countries

Epidemiological surveillance of VPDs has been affected by the COVID-19 pandemic and response. In most countries, the reduced flow of patients in facilities can be seen in a decline of reporting rates for acute flaccid paralysis (AFP) and acute fever and rash (AFR), which indicated a lower sensitivity and possible undiscovered cases. Also, physical distancing measures, the promotion of sanitation and school closures potentially have minimized the incidence of infectious diseases. Hospital staff work has been focused on COVID-19, leaving less time for disease surveillance.

International and domestic regulations on transport and movement also are jeopardizing the surveillance system with regard to laboratory support, collection of both human and environmental samples, and transport from subnational to national laboratories and/or shipment to overseas reference laboratories. Transport restrictions are posing difficulties for the collection of samples and their transport to national laboratories, affecting the sample quality and delaying response. Since some countries and areas in the Western Pacific Region are shipping AFP stool samples to overseas reference laboratories, the laboratory results from reference laboratories could not be received or are delayed. Countries are advised to correctly preserve those samples and prioritize shipment of recent samples and to appropriately store collected specimens, such as stool, blood and respiratory specimens, until shipment schedules are restored. Across the Region, the majority of VPD laboratories have been repurposed for COVID-19 testing, with staff and equipment on loan to support the surge in testing. Borders are still closed in most of countries, and the number of flights has been severely decreased. WHO is supporting the shipment of specimens and also arranging special flights to provide necessary resources, such as PPE.


Fig. 1. DTP3 and MCV1 coverage in January to April 2019 vs 2020

b. Country-specific impacts/examples of specific impacts

According to a self-assessment of the risk of VPD outbreaks by WHO country offices (updates reported every two weeks and every month from April to July 2020), VPDs assessed as high risk were: (i) measles in Cambodia, the Lao People’s Democratic Republic, Malaysia and the Philippines; (ii) poliomyelitis (polio) in Malaysia and the Philippines; (iii) rubella in Cambodia and the Lao People’s Democratic Republic; (iv) diphtheria in Malaysia and Papua New Guinea; and (v) pertussis in Papua New Guinea.

Although there have been no cVDPVs reported after 16 January 2020 in the Philippines and no positive environmental surveillance samples reported after 4 February 2020 in Malaysia, impaired surveillance performance and the suspension of immunization campaigns pose a great threat to ensuring the disruption of cVDPVs and endanger the regional goals for polio. Cambodia, Papua New Guinea, the Philippines and Viet Nam have reported a decline in the reporting rate of AFP and suspected measles cases, as well as a decrease in the timeliness and completeness of reporting. Although countries intend to integrate COVID-19 and other VPD surveillance, the emphasis is still on COVID-19-related activities in some countries.

Malaysia and Papua New Guinea reported delayed transport and/or shipment of environmental surveillance samples for polio. Some Pacific island countries and areas have reported short delays in the shipment of AFP stool samples to overseas reference laboratories.

4. Challenges during the COVID-19 pandemic

4.1. Challenges to the immunization programme

Accumulating population immunity gaps: With prolonged disruptions to routine immunizations and the suspension of supplementary immunization activities (SIAs) and school-based immunizations, the accumulation of susceptible individuals and the risk of VPD outbreaks increase, especially for epidemic-prone diseases such as measles and polio. The underserved population is even more vulnerable to these diseases during the absence of outreach services. These challenges also have highly affected population immunity, especially the pocket of unimmunized people who are regularly missed by routine immunizations. The longer the disruption, the higher the risk of VPD outbreaks. When resources are limited, immunization activities should be prioritized for vulnerable populations at higher risk of morbidity and mortality from VPDs, such as high-risk communities with low vaccination rates.

Sustaining immunization service delivery: Restarting routine immunizations at full capacity as soon as possible to limit the accumulation of susceptible unvaccinated individuals is the top priority. However, this effort faces challenges such as ongoing COVID-19 transmission and ongoing measures to prevent or minimize disease transmission, the high workload of health systems, limited human resources and supplies (vaccines, PPE, etc.), and decreased public demand. Therefore, creativity and innovation may be needed to adapt immunization practices to changing local conditions and challenges. Detailed plans to identify and provide catch-up vaccinations for children who have missed theirs must be prepared as soon as feasible. Where possible, this may include actively maintaining lists of people who have missed their vaccinations to guide catch-up activities. Enhancement of the community uptake monitoring and the default tracking system, through communication and community engagement, is required more than ever to strengthen immunization services. The implementation of SIAs should be planned while recognizing challenges such as reduced human resources, vaccine forecasting and mitigation measures for COVID-19 transmission. The reopening of schools is a challenging decision for governments, and there is a possibility that reopening might be delayed up to the end of 2020. Support from schools and parents to conduct school-based immunizations following school reopening is, therefore, a challenge.

Vaccine supply and other logistics: The supply of vaccines and other logistics, including immunization safety supplies (auto-disable syringes, re-use prevention syringes for the reconstitution of vaccines and safety boxes), will be challenging due to production, access and transport issues caused by domestic and international airline flight restrictions. As a result, vaccine stock-outs can occur and replacement with new supplies can be delayed due to lengthy procurement processes, budget constraints (due to the COVID-19-related economic and financial crisis) and shipment delays. Stock-outs of PPE will potentially impact not only immunization sessions but also surveillance activities and laboratory procedures. Although WHO and its partners have been working continuously to distribute PPE to countries, the increasing demand in the community is causing serious constraints in the PPE supply for the health sector. Careful planning is required to distribute to prioritized essential health services within the countries.
the increasing demand in the community is causing serious constraints in the PPE supply for the health sector. Careful planning is required to distribute to prioritized essential health services within the countries.

**Human resources:** Since most immunization staff members are occupied in the COVID-19 response, the availability of staff members and the distribution of their duties need to be reviewed carefully. The safety of the health staff, including through provision of adequate PPE, and their confidence and positive attitude can ensure a sufficient workforce to maintain immunization services.

**Introduction of new vaccines:** The introduction of new vaccines such as the second dose of inactivated poliovirus vaccine (IPV2) and rotavirus vaccine into routine immunizations was planned in some countries in 2020. WHO is recommending suspending the commencement of or postponing activities in areas where COVID-19 transmission is high and not under control. Therefore, it is necessary to review the current vaccine introduction plan and modify it to suit “new normal” settings.

**Considerations for COVID-19 vaccine introduction:** There are many candidate COVID-19 vaccines in the development pipeline. Governments and public expectations are high. However, there will be many challenges such as equitable access and the availability and affordability of the vaccines. Thus, proper planning and preparation focusing on these challenges are necessary, with due consideration of the immunization response to COVID-19.

**Re-establishing community demand:** Communication with the public is necessary and important to reassure people about the importance of continuing immunizations as an essential health service despite ongoing COVID-19 transmission.

### 4.2. Challenges to VPD surveillance

Careful investigation of the epidemiology of VPDs, COVID-19 and routine immunization performance, including a risk–benefit analysis, is essential for all countries. Sustaining laboratory-supported VPD surveillance is the key for preventing VPDs.

As the pandemic progresses towards community transmission in countries, the demand for laboratory services is increasing and will impact VPD laboratory services and their ability to respond. Further, with the continuous restriction of transport and the delay in processing specimens, disease epidemiology for VPDs is obscured with respect to laboratory-based surveillance, leading to an underestimation of the disease burden and delayed detection of outbreaks. Epidemiological surveillance, such as syndromic surveillance, must be strengthened, and reactive approaches may be demanded before the arrival of the laboratory results in case of an uptrend in any syndrome.

Disease surveillance officers for influenza-like illness and severe acute respiratory infections must integrate their surveillance activities with COVID-19 surveillance activities in order to sustain effective surveillance for preventing the widespread transmission of COVID-19.
5. **Proposed actions for addressing the challenges and impact of COVID-19 pandemic**

Immunization is a core health service that should be safeguarded and prioritized for the prevention of communicable diseases and for continuity during the COVID-19 pandemic, where feasible. Immunization delivery strategies may need to be adapted to the current situation and should be conducted under safe conditions, avoiding undue harm to health workers, caregivers and the community.

5.1 **Activities during high-transmission periods for COVID-19 pandemic**

<table>
<thead>
<tr>
<th>Immunization programme</th>
<th>Fixed site*</th>
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<tbody>
<tr>
<td><strong>Fixed site</strong>*</td>
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<tr>
<td>• Continuously monitor the dynamics of COVID-19 in the country or region through national authorities (1).</td>
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<tr>
<td>• Recognize the important role of National Immunization Technical Advisory Groups in providing advice with respect to the maintenance, adaptation, suspension and/or reinstatement of immunization services (1); Prioritize vaccines for epidemic-prone diseases and possibly lengthen intervals between doses in a multidose series (2).</td>
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<tr>
<td>• Continue routine immunization sessions* on an appointment basis or/and a flexible time schedule for individuals with limited numbers (2). Reschedule or delay routine childhood vaccination sessions, as necessary (2).</td>
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<tr>
<td>• Continue bacille Calmette–Guérin and hepatitis B birth-dose vaccinations at hospitals.</td>
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<tr>
<td>• Continue tetanus toxoid and tetanus–diphtheria vaccination of pregnant women.</td>
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<tr>
<td>• Reduce missed opportunities by combining vaccination with well-baby visits (if taking place) or medical examinations (2).</td>
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<tr>
<td>• Develop a list of cohorts of children who have missed their vaccine doses (2).</td>
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<tr>
<td>• Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and provide training to adopt infection prevention and control (IPC) practices (3).</td>
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<tr>
<td>• Where feasible, provide influenza vaccinations for health workers, older adults and pregnant women (1).</td>
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<tr>
<td>• Provide measles–rubella vaccine for staff at quarantine and health-care facilities (1).</td>
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<tr>
<td>• Where available, administer pneumococcal vaccine (conjugate or polysaccharide vaccines) to those over age 65 and people with chronic diseases, which may help reduce health-care visits and hospitalizations due to respiratory illnesses (1).</td>
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</tbody>
</table>
### Immunization programme

#### Outreach activities*

- Allow limited outreach immunization sessions* (discourage outreach in areas of cluster and community transmission of COVID-19), provided that the safety and travel for staff members are ensured (3).
- Consider mobile vaccination posts or outreach, whenever feasible, to equitably improve access to immunization, while minimizing risk of infection (2).
- Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).

#### SIAs: Planning and preparation

- Implement SIAs during high-transmission periods is not encouraged or recommended. However, start as early as possible with planning and preparation for SIAs, anticipating the need of SIAs to fill immunity gaps built during the pre-COVID-19 period and during the pandemic.
- The SIAs may be aimed to prevent VPDs or for an outbreak response. Decisions for either of above SIAs require the following assessment steps:
  - Step 1 – Assess the potential impact of the VPD outbreak using key epidemiological criteria.
  - Step 2 – Assess the potential benefits of a mass vaccination campaign and the country capacity to implement it safely and effectively.
  - Step 3 – Consider the potential risk of increased COVID-19 transmission associated with the mass vaccination campaign.
  - Step 4 – Determine the most appropriate actions considering the COVID-19 epidemiological situation.
  - Step 5 – If a decision is made to proceed with a mass vaccination campaign, implement best practices taking account of: (a) coordination, planning, IPC, vaccination strategy approaches, community engagement and equitable access to supplies; and (b) conducting the campaign in accordance with WHO disease-specific guidance for outbreak control, WHO guidelines for IPC in the context of COVID-19 outbreaks, and local COVID-19 prevention and control measures and regulations (4).
- Track and follow up with individuals who missed vaccinations and assess immunity gaps (1).
- Design strategies for catch-up vaccination for the post-COVID-19 outbreak period (low-transmission period) and make plans that anticipate a gradual recovery (1).
- Prepare detailed plans and micro-plans for identifying and providing catch-up vaccination for children who have missed their vaccinations, as soon as is feasible once the COVID-19 situation permits (2). If resources for catch-up are limited, prioritize outbreak-prone VPDs such as measles and polio in catch-up immunization activities.
- Develop standard operating procedures and training on IPC, the use of PPE and any modified vaccination approaches (3).
## Immunization programme

| School-based immunization | • Delay or reschedule school-based vaccinations in coordination with the ministry of education.  
|                          | • Prepare detailed plans with names of schools and the number of children for catch-up vaccination. |
| PIRI: Planning and preparation | • Plan and prepare periodic intensification of routine immunization (PIRI) activities targeting low-performing districts and districts with interrupted routine immunization. |
| Vaccine supply            | • Monitor stocks of vaccines and injection supplies at the national and subnational levels; consider expiry dates.  
|                          | • Establish and implement stringent procedures for safeguarding in-country stocks of vaccines through robust management of temperature records (1,2).  
|                          | • Prepare vaccine and injection supply estimates and initiate procurement process.  
|                          | • Ensure funds (domestic/partner support) for vaccines.  
|                          | • Coordinate with partners to mobilize vaccine supply; if necessary, arrange chartered flight to import vaccines.  
|                          | • Distribute vaccines at the subnational level. |
| Communication and advocacy | • Advocacy and communication with specific information targeting political leadership and other stakeholders.  
|                          | • Develop and disseminate standard operating procedures for IPC that include the community health workforce and are informed by the transmission scenario and local guidance and protocols (1,2).  
|                          | • Provide correct information on COVID-19 and IPC, and reduce stigma (5).  
|                          | • Inform health facilities, local governments, and nongovernmental and community organizations about any temporary changes in immunization practices.  
|                          | • Create a communication system (short message service, messaging apps, simple notices) to inform parents of clinic schedules and important IPC practices.  
|                          | • Re-establish community acceptance and demand (1,5).  
|                          | • Develop advocacy and communication materials focusing importance on routine immunizations and SIAs during COVID-19.  
|                          | • Use existing digital platforms for teleconsultations to disseminate information and alerts to communities (2). |
### VPD and AEFI surveillance†
- Maintain and reinforce to enable early detection and management of VPD cases and, where feasible, human resources and infrastructure for VPDs that could contribute to surveillance of COVID-19 (1).
- Evaluate populations with elevated risk for VPDs (such as groups with low immunization coverage, cohort populations at risk of outbreaks) for VPD surveillance data, subnational vaccination coverage and local knowledge of special risk groups (1).
- Provide real-time laboratory support for active COVID-19 surveillance at sentinel sites: (i) to identify high-risk geographic areas and population groups; and (ii) to detect adverse events of special interest (AESI) related to COVID-19 such as acute cardiac/liver/kidney injuries, multiple system inflammatory syndrome in children (this will generate background rates of Adverse Event of Special Interest (AESI) and will be useful for adverse events following immunization (AEFI) causality assessment) (6).
- Polio and measles: Continue case investigation of all AFP and AFR cases. If possible, maintain active surveillance visits for AFP and AFR in high or highest priority sites (Priority 1) only or in main hospitals. Conduct AFR and AFP investigation in health-care facilities that are identified as non-COVID-19 facilities, or in other facilities upon appointment for adequate triage and infection control. Alternatively, conduct investigations at home, if safe and feasible. No in-person or group sensitization as part of community-based surveillance (CBS) and expand CBS set-up for COVID-19 to AFP and AFR (7,8).

### Laboratory surveillance:†
- **Collection**
- **Storage**
- **Shipment**
- **Testing**
  - Continue specimen collection of all AFP and AFR cases according to the local context and guide (1,2).
  - Polio: Collect stool specimens as per Global Polio Eradication Initiative (GPEI) guidance, at health-care facilities. Delay/stop community sampling for polio. Engage governments and other organizations as appropriate to ensure that critical supplies and specimens can be transported within countries and into and out of countries. Identify and monitor storage capacity for specimens at the provincial and central levels and, in case of flight cancellation, store specimens under right conditions and ship to laboratory as soon as situation allows, prioritizing the newly collected specimens. Receive stool specimens and environmental surveillance samples as per Global Polio Laboratory Network (GPLN) guidelines and maintain environmental sampling, with monthly sample collection frequency if circumstances allow (collecting from a source) (7,8).

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* Immunization delivery strategies may need to be adapted to the local context and should be conducted under safe conditions, without undue harm to health workers, caregivers and the community.
† VPD surveillance activities need to be adapted to the local context and should be conducted under safe conditions, without undue harm to health workers, patients, caregivers and the community.
## 5.2 Activities during low-transmission periods for COVID-19 pandemic

<table>
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<tr>
<th>Immunization programme</th>
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<tbody>
<tr>
<td><strong>Fixed sites</strong></td>
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<tr>
<td>* Continue routine immunization or restart at the highest possible capacity as soon as possible to limit the accumulation of susceptible unvaccinated individuals.</td>
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<tr>
<td>* Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).</td>
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<tr>
<td><strong>Outreach activities</strong></td>
</tr>
<tr>
<td>* Restart at the highest possible capacity as soon as possible to limit the accumulation of susceptible unvaccinated individuals.</td>
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<tr>
<td>* Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).</td>
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<tr>
<td><strong>SIAs: Implementation and evaluation</strong></td>
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<tr>
<td>* Implement vaccination campaigns in areas where COVID-19 transmission is low and/or there is no transmission (2).</td>
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<tr>
<td>* For implementation of catch-up activities, consider strategies: (i) to track and follow up with individuals who missed vaccinations and to assess immunity gaps (1); (ii) to enforce standard IPC precautions; (iii) to minimize overcrowding; and (iv) to schedule convenient timing and duration of clinic sessions at fixed/mobile sites (2,3).</td>
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<tr>
<td>* Conduct evaluations in terms of: (i) coverage assessment; (ii) identification of unvaccinated target population during SIAs; and (iii) planning for PIRI to cover missed population.</td>
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<td>* Monitor and re-evaluate at regular intervals the necessity for additional SIAs (3).</td>
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<tr>
<td>* Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).</td>
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<tr>
<td><strong>School-based immunization</strong></td>
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<tr>
<td>* Reinstate school immunizations at the highest possible capacity as soon as possible.</td>
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<td>* Carry out school entry checks to ensure completeness of childhood immunization.</td>
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<td>* Implement planned activities to cover target school programme.</td>
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<tr>
<td>* Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).</td>
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<tr>
<td>Immunization programme</td>
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<td>------------------------</td>
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<tr>
<td><strong>PIRI: Implementation and evaluation</strong>*</td>
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<tr>
<td>- Identify low-performing immunization areas and high-risk populations.</td>
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<tr>
<td>- Identify missed opportunities for vaccination and plan to use every opportunity to complete vaccination missed during the COVID-19 pandemic.</td>
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<tr>
<td>- Plan with other primary care activities (such as maternal and child health, nutrition) depending on the local context.</td>
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<tr>
<td>- Conduct targeted, tailored immunization campaigns to protect high-risk populations (such as ethnic minority groups, urban slum dwellers).</td>
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<tr>
<td>- Ensure the safety and health of all health workers by providing PPE appropriate to the tasks performed and training to adopt IPC practices (3).</td>
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<tr>
<th>Vaccine supply</th>
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<tr>
<td>- Monitor stocks of vaccines and injection supplies at the national and subnational levels.</td>
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<tr>
<td>- Coordinate with the National Immunization Programme and partners at the subnational level to mobilize vaccine supply to the subnational level.</td>
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<tr>
<th>Communication and advocacy</th>
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<tr>
<td>- Disseminate widely advocacy and communication materials on the reinstatement of routine immunization and planned SIAs.</td>
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<tr>
<td>- Enhance community engagement.</td>
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<td>- Re-establish community demand (1).</td>
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## Surveillance and laboratory

### VPD surveillance†
- Conduct a retrospective search of missed VPD cases during COVID-19 pandemic to identify recent undetected clusters/outbreaks of VPDs that could be still ongoing.
- Polio and measles: If possible, maintain active surveillance visits in all priority reporting sites.
- Polio: Maintain environmental surveillance sampling, only with monthly sample collection frequency. Implement CBS and AFP case investigation. Collect stool specimens as per GPEI guidance (7,8).

### Laboratory surveillance:
- **Collection**
- **Storage**
- **Shipment**
- **Testing†**
- Continue specimen collection of all AFP and AFR cases (1,2).
- Polio: Collect stool specimens as per GPEI guidance at health-care facilities. Receive stool specimens and environmental surveillance samples as per GPLN guidelines. Maintain environmental surveillance sampling as much as possible, especially in areas with ongoing cVDPVs outbreaks. If shipment is not available, collect environmental sample specimens and store in −70 °C if storage allows until shipment can be resumed (national and international) (7,8).

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* Immunization delivery strategies may need to be adapted to the local context and should be conducted under safe conditions, without undue harm to health workers, caregivers and the community.
† VPD surveillance activities need to be adapted to the local context and should be conducted under safe conditions, without undue harm to health workers, patients, caregivers and the community.
6. Considerations for the immunization response to COVID-19 pandemic

- **COVID-19 candidate vaccines have different platforms**: live attenuated, inactivated, DNA, RNA, recombinant protein, virus-like particles, peptide based, replicating viral vector and non-replicating viral vector (9).

- **Vaccine safety**: Future COVID-19 vaccines will have different platforms, different excipients (such as adjuvants, stabilizers) and limited prelicensure safety data. Therefore, related signals and possible AESI, including vaccine-enhanced disease, need to be quickly detected and scientifically evaluated post-vaccine introduction (10).

- **Vaccine efficacy**: Evaluating clinical and immunological end points (correlation and duration of protection) to determine the efficacy are continuing and details will be available from the completion of Phase IIb and III clinical trials. The number of doses (vaccination schedule) and duration of protection will depend on the types of COVID-19 vaccine (10).

- **Vaccine regulation**: New COVID-19 vaccine(s) need to be evaluated for safety and efficacy by the national regulatory authority. The capacities of national regulatory authorities in lower-middle-income countries and Pacific island countries and areas in Western Pacific Region are limited. Thus, a regional mechanism is necessary to support the respective national regulatory authority for accelerated registration of COVID-19 vaccines.

- **Vaccine production capacity**: The expectation and demand that governments and the public have for COVID-19 vaccine is very high. However, it is unlikely that large-scale vaccine production to meet global demand within a short period following the development of the vaccine(s) will be ready, following regulatory clearance. Therefore, identifying and preparing to expand vaccine production capacity is critically important in planning for COVID-19 vaccine introduction. COVAX is the vaccine pillar of the ACT Accelerator (11) which will coordinate and support vaccine developers and regional manufacturers as well as the involvement of regional partners (Japan International Cooperation Agency, Korea International Cooperation Agency, Australian Aid, etc.) which is helpful to accelerate vaccine production capacity.

- **Access to vaccine**: A COVID-19 vaccine should be a global public good and available for all countries. Availability is essential, but affordability also is extremely important (11). Since the initial demand is high, production capacity may be limited to meet the country’s need. Guided by an allocation framework developed by WHO, the COVAX Facility will work on equitable distribution of vaccines to help protect the most at-risk groups in COVAX facility participating countries. Government commitments for vaccine financing and other logistics are necessary.

- **COVID-19 surveillance**: Laboratory-supported COVID-19 surveillance is important: (i) to monitor disease epidemiology; (ii) to identify high-risk geographic areas and groups; and (iii) to evaluate the effectiveness of the vaccinations. Real-time surveillance data linking to a national/centralized database will be an essential component of COVID-19 prevention and control in every country.

- **Target population for COVID-19 vaccination**: All population age groups are at risk of COVID-19, but prevalence and severity are greater among adult populations, particularly the elderly. Therefore, the COVID-19 vaccine may target adult population age groups, which is different from most vaccines which are often targeted for child or adolescent populations. Further, the immediate expectation of the COVID-19 vaccine is to protect risk population groups, than rapid disruption of the transmission. With limited supply of the vaccine (at least in early introduction period) it would be more rational to focus first on priority populations. Priority populations to consider are (i) health workers and (ii) population with higher mortality and serious morbidity rates than general population, where risk-benefit analysis warrant vaccination (e.g.; People with chronic comorbidities, elderly). The WHO Strategic Advisory Group of Experts (SAGE) on Immunization is the highest technical group which provides technical guidance on new vaccines introduction. It is expected that SAGE will provide guidance on identifying priority target population in line with each COVID-19 vaccine candidate, as the vaccines becomes available for deployment. The recommendations will also address the best use of different vaccines if more than one vaccine is available.
• **Vaccine storage:** With the high demand for a vaccine, countries need additional cold-chain capacity for COVID-19 vaccine storage. Some new COVID-19 vaccines may require ultra-cold chain (-70°C to -80°C) storage facility.

• **Vaccination strategy:** Countries may adopt different strategies for the introduction of COVID-19 vaccines, depending on the disease epidemiology, target population and affordability/accessibility of the vaccines. Mass vaccination activities and individual vaccination are possible options. However, due to limited supplies and considering programme delivery constraints, COVID-19 vaccines are likely to be rolled out in a phased manner from highest-priority groups to less vulnerable population groups. Countries where private providers are actively engaged in immunization service delivery may be involved in COVID-19 vaccine service delivery, if necessary.

• **Advocacy and communication:** Advocacy and communication with specific information targeting political leadership, other stakeholders and the public is necessary and important in vaccine acceptance and uptake. Providing correct information on the advantages and limitations of COVID-19 vaccines is necessary, while emphasizing the continuity of all other preventive practices against COVID-19. Countries need to plan and prepare by having effective communication tools and rumour monitoring in place to support the COVID-19 vaccination programme.

• **Vaccine safety surveillance:** Countries need to be prepared with enhanced surveillance for early detection and reporting of AEFI of COVID-19 vaccines and for a proper causality assessment. Since COVID-19 vaccines will have limited clinical trial safety data, an inability to properly and quickly detect, evaluate and respond to AEFI and AESI during the vaccination programme could jeopardize COVID-19 vaccine implementation.

• **Documentation:** Proper recording of all people vaccinated and maintenance of a national database are essential for monitoring, evaluation and other follow-up action in the post-introductory phase. The introduction of a vaccination certificate or card will be necessary as a record, follow-up and day-to-day requirement (such as to verify vaccination status during travel).
References


