

COVID-19

The Immunization Program in the Context of the COVID-19 Pandemic

Version 2: 24 April 2020¹

Objective

- Provide guidance regarding the operation of immunization programs in the context of the COVID-19 pandemic.

Key Considerations

- In December 2019, a new coronavirus (SARS-CoV-2) was identified as the causative agent of a severe acute respiratory disease (COVID-19) in Wuhan, China. (1,2) The virus spread to different countries and the World Health Organization (WHO) declared a pandemic on 11 March 2020. (3)
- There are still some uncertainties in the natural history of SARS-CoV-2, including sources, transmission mechanisms, and persistence of the virus in the environment. Person-to-person transmission has been documented, with an incubation period of 2 to 14 days.
- There is currently no vaccine available against COVID-19. WHO has launched a project (4), which aims to coordinate and accelerate the development of this vaccine. As of 23 April, there are six candidate vaccines that have already started clinical trials and 77 that are in the preclinical phase. (5)
- Meanwhile, in the context of the COVID-19 pandemic, health systems are facing a rapid increase in demand. When health systems are overwhelmed, both direct outbreak mortality and indirect mortality from preventable and treatable conditions, such as vaccine-preventable diseases, increase dramatically. In fact, an analysis of the 2014-2015 Ebola epidemic suggests that the increase in the number of deaths caused by measles, malaria, HIV/AIDS, and tuberculosis attributable to health system failures outnumbered deaths from Ebola. (6)
- Therefore, WHO recommends that vaccination should be considered an essential health service that should not be interrupted.

Recommendations

- The recommendations emitted by PAHO on the immunization program in the context of the COVID-19 pandemic were consulted on by members of PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases, and are aligned with recommendations from WHO's Strategic Advisory Group of Experts (SAGE) on immunization. (7)
- This document was initially published on 26 March 2020. Given new evidence and publications emitted by WHO, the following topics have been added or updated:
 - Importance of maintaining the population's trust in vaccination services
 - Update on the use of masks
 - Importance of hepatitis B vaccination during first 24 hours of life
 - Periodic and systematic registry of the population pending vaccination
 - Update on vaccinating a person infected with COVID-19 (suspected or confirmed) and contacts
 - Summary of WHO declarations on the efficacy of the Bacillus Calmette-Guerin (BCG) vaccine and the oral poliomyelitis vaccine (OPV) to prevent COVID-19

¹ This publication updates the previous publication from 26 March 2020.

COVID-19

- These recommendations are preliminary and are subject to review as new evidence becomes available.²

1. Routine Vaccination during the COVID-19 Pandemic

- Involve the National Immunization Technical Advisory Group (NITAG) in making decisions about continuing vaccination services.
- The decision to maintain immunization services will be determined by national guidelines on social distancing, the health system situation, the burden of vaccine-preventable diseases (VPDs), the context of local SARS-CoV-2 transmission (without cases, sporadic cases, conglomerates or community transmission), as well as other factors, such as demographic data and the availability of vaccines and supplies. Possible scenarios to consider are the following:

Scenario	Recommendation
1. If the capacity of the health system is intact and the provision of essential health services continues	Vaccination should be conducted through fixed posts, mobile posts, and coverage extension activities, guaranteeing fulfillment of the recommended measures for infection prevention and control (8,9) and safe vaccination. The population should be informed on the continuation of vaccination services, and the importance of attending scheduled vaccination appointments.
2. When only limited service provision is available	Prioritize vaccination of vulnerable populations with the highest risk of morbidity and mortality from VPDs (for example, older adults, people with chronic diseases, health personnel, pregnant women, children under 5 years of age, communities with active outbreaks of measles, diphtheria, yellow fever).
3. If vaccination cannot be performed safely, and the risk of SARS-CoV-2 transmission increases	Suspend vaccination activities until the risk of SARS-CoV-2 transmission has been reduced and the capacity of the health system has recovered sufficiently to resume these activities.

- In scenarios 1 and 2, vaccination against influenza and measles should be prioritized:
 - **Influenza:** The recommendation to vaccinate against influenza applies primarily to countries that, following WHO recommendations for the southern hemisphere, will apply the flu vaccine in the coming months. Vaccination of health personnel, older adults, people with chronic diseases, and pregnant women should be prioritized.
 - **Measles:** Consider applying the zero-dose strategy for children aged 6-11 months in municipalities with active outbreaks.
- Independently of scenario, a personalized communication strategy must be implemented to disseminate precise information health, address concerns from the community, improve community ties and promote the continued use of immunization services.
- In health establishments where vaccination activities are to be carried out, it is essential that health professionals be alert to signs and symptoms of respiratory illnesses and offer patients with flu symptoms

² Updated information on COVID-19 is available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

COVID-19

a surgical mask and refer them for medical evaluation according to local protocols for initial approach to patients with suspected COVID-19.

- The use of medical/surgical masks by immunization personnel (in health units, mobile posts or community brigades) should be determined by each country/department/locality based on criteria established by the WHO (purpose of using the mask, risk of exposure to SARS-CoV-2, vulnerability, community characteristics, feasibility and type of mask), and following recommendations on how to put on, take off and discard the masks. (10) Priority use of medical/surgical masks should always be given to health personnel responsible for the care of patients (suspected and confirmed) of COVID-19 (11).
- As institutional births will continue, vaccination of newborns must remain a priority in all settings. It is especially important to vaccinate against hepatitis B during the first 24 hours of life to reduce the risk of vertical transmission.
- Countries with pneumococcal vaccination programs for older adults and people with high-risk conditions should maintain these programs whenever the administration of this vaccine is possible.
- It is important to maintain a periodic and systematic registry of the population pending vaccination, including newborns that have not received the corresponding doses, with the aim of planning how to complete their schedules as soon as the situation allows.

2. Vaccinating People with Suspected or Confirmed Infection by COVID-19 and Contacts

- Person infected with COVID-19 (suspected or confirmed) (12):
 - There are no known medical contraindications to vaccinate a person infected with COVID-19. To minimize the risk of COVID-19 transmission, people with suspected or confirmed COVID-19 should be isolated and attended based on the WHO guide.
 - If the person with COVID-19 (suspected or confirmed) is not in a health establishment or hospitalized, getting vaccinated may increase the spread of the disease to others. For this reason, vaccination should be deferred until symptoms go away, preferably after two consecutive negative COVID-19 tests (conducted with 24 hours difference). If confirmation through laboratory is not feasible, WHO recommends postponing vaccination for the 14 days after symptoms resolve.
 - If the person with COVID-19 (suspected or confirmed) is in a health establishment/hospitalized, they should be vaccinated according to the national vaccination schedule at the moment of recovery and before being discharged, respecting the appropriate measures for infection prevention and control.
- Contacts (people exposed to suspected or confirmed COVID-19 cases) (12):
 - There are no known medical contraindications to vaccinate contacts.
 - If the contact is not in a health establishment/hospitalized, complete 14 days of isolation to avoid the risk of COVID-19 transmission to others, if the contact does not develop COVID-19 symptoms after 14 days of isolation, then this person can be vaccinated.
 - If the contact is in a health establishment or hospitalized, the person should be vaccinated according to the national vaccination schedule, prior to being discharged, respecting the appropriate measures for infection prevention and control.

3. Conducting Vaccination Campaigns

- Based on current knowledge of SARS-CoV-2 transmission, and recommended prevention measures for social distancing, it is recommended to temporarily suspend mass vaccination campaigns due to the risk of strengthening transmission in the community and in health establishments.

COVID-19

- If a VPD outbreak occurs, the risk-benefit of conducting outbreak response vaccination should be evaluated while considering the health system's ability to safely carry out this activity in the context of the current COVID-19 pandemic. This evaluation should assess the risk of a late response against the associated risks of an immediate response, both in terms of VPD morbidity and mortality, and the potential impact of increased SARS-CoV-2 transmission. If the decision to conduct a vaccination campaign is made, strict measures must be followed to protect health workers, safeguard the population, and ensure solid waste management. If the decision is to delay the outbreak response vaccination campaign, a periodic assessment of VPD morbidity and mortality will be required and the risk of further delaying a response will be considered.
- The countries that had planned this year to conduct follow-up campaigns against measles, rubella or human papillomavirus (HPV) should continue the micro-planning phase and postpone the implementation phase until conditions permit.

4. Guidance for Vaccination Posts

- Conduct vaccination sessions in well-ventilated areas that are frequently disinfected. (13)
- Ensure the availability of hand sanitizer or a hand washing station with chlorinated water for use by users at the entrance of the health facility. (13)
- Limit the number of family members accompanying the person to be vaccinated (one companion).
- Perform triage of persons presenting respiratory symptoms before admission to the vaccination posts to prevent the spread of SARS-CoV-2. If patient presents respiratory symptoms, offer medical mask, do not vaccinate, and refer to service for evaluation.
- Avoid crowded waiting rooms. Some strategies for this could include:
 - Scheduled times for vaccination appointments;
 - Integrate vaccination activities with other essential preventive health services, as appropriate;
 - Carry out small and frequent vaccination sessions;
 - Utilize outdoor spaces and adhere to the recommendation of social distance within the facility, or vaccination post;
 - Establish exclusive vaccination sessions for older people and people with pre-existing medical conditions (such as high blood pressure, heart disease, respiratory disease, or diabetes).
- Whenever possible, the vaccination post must be separate from healing services (i.e., different hours, different spaces);
- Recommendations for vaccinators:
 - Frequently maintain hand hygiene as described in "My 5 Moments for Hand Hygiene": i) Before touching a patient; ii) Before clean or aseptic procedures; iii) After body fluid exposure/risk; iv) After touching a patient, and v) After touching patient surroundings. (14)
 - Hand hygiene consists of washing hands with soap and water or with a hand sanitizer that contains between 60% and 80% alcohol.
 - Comply with guidelines on clothing: i) Use a uniform, which should be not used outside the health facility; ii) Use closed shoes; iii) Do not use accessories (for example: earrings, rings, chains, watch).
 - Clean cell phones properly. Do not use cell phone while providing medical attention.
 - If you experience symptoms, such as cough or fever, you should not be working and should seek medical attention.

5. Reestablishing Vaccination Services

COVID-19

- Vaccination services should be restored when the risk of transmission of SARS-CoV-2 has been reduced and the capacity of the health system has recovered enough to resume these activities. There will probably still be some level of SARS-CoV-2 transmission when services resume. It is likely that stricter IPC measures and social distancing practices are still needed in the early stages of resuming vaccination services. The NITAG should advise the country on how to resume service and what populations to prioritize.
- Once health services go back to normal, countries should intensify vaccination as soon as possible, even if routine vaccination has continued throughout the entire pandemic, since it is possible that the service delivery level was not optimal or the population was unable or unwilling to access the service. Therefore, the intensification of vaccination services should be a priority. Furthermore, the mass vaccination campaigns that were suspended due to the pandemic should be prioritized. It may be necessary to adjust the target age groups of the campaigns to consider the largest number of age cohorts with low immunity. Where feasible, other vaccines and health interventions should be integrated to maximize health benefits, facilitate recovery and minimize the burden of multiple campaigns. Micro-planning will need to be reevaluated, especially if services were interrupted for an extended period.
- The decision to establish vaccination services should be communicated in a timely manner to health personnel and the population.

6. Cold Chain and Vaccine and Supply Stock

- It should be noted that interruption of flights and the manufacturing of vaccines and supplies can affect delivery plans.
- Monitor the stocks of vaccines and supplies, as well as the functionality of the cold chain.
- The existing cold chain storage capacity may need to be expanded if excess vaccines exist due to anticipated shipments and/or low use due to an unexpected decline in vaccination services. Countries should maintain an updated list of all potential facilities (public and/or private) with a functional cold chain to expand capacity if necessary.

7. VPD Epidemiological Surveillance

- Surveillance systems should continue with early VPD detection and case management, at least for diseases with global surveillance mandates and elimination and eradication objectives: measles, rubella, neonatal tetanus, polio.
- Countries should also prioritize surveillance of VPDs with epidemic potential: influenza, meningococcus, yellow fever, measles, rubella, diphtheria, and polio.
- Routine surveillance by laboratory for other VPDs should continue as long as possible or with a lower frequency; when laboratory testing is not possible, samples should be stored appropriately for confirmation when laboratory capacity allows. Countries should ensure enough sample storage capacity at the provincial and central levels and monitor it regularly. It is recommended to review the conservation conditions for samples, according to the type of sample and event. It is possible that it might be necessary to adjust laboratory testing algorithms to satisfy the demand for laboratory confirmation during the COVID-19 pandemic.
- If it is not possible that VPD surveillance systems continue to function normally, identify and maintain critical functions, such as active acute flaccid paralysis (polio) surveillance, outbreak monitoring and sending of urgent samples and laboratory confirmation of priority VPDs. To reduce the risk of exposure to SARS-

COVID-19

CoV-2, active surveillance for polio can continue in a limited number of priority hospitals, provided the surveillance officer uses the appropriate personal protective equipment (PPE). If this is not possible, active surveillance should be carried out remotely (for example, via internet, telephone) as much as possible.

- If epidemiological surveillance activities are temporarily suspended due to the COVID-19 pandemic, countries should implement necessary actions to ensure continuity of activities and plan recovery measures, if necessary (for example: active searches for suspected measles/rubella cases).
- Since the laboratories performing tests to detect VPDs may also be responsible for conducting SARS-CoV-2 tests, it is important that countries retain the ability to identify priority VPDs, although potentially at reduced levels, with a decreased frequency.
- Optimizing and prioritizing the use of laboratory tests will be essential to ensure the sustainability of laboratory surveillance during the time of the pandemic and in the months immediately following. There is a risk of limited availability of reagents and laboratory supplies due to an interruption or decrease in production, and limited capacity for their international transportation.

8. Efficacy of BCG and OPV Vaccines in Preventing COVID-19

- **BCG:** There is no evidence that the BCG vaccine protects people against infection with the SARS-CoV-2 virus. Two clinical trials addressing this topic are underway, and WHO will evaluate the evidence when it becomes available. In the absence of evidence, WHO does not recommend the BCG vaccine for the prevention of COVID-19. WHO continues to recommend neonatal BCG vaccination in countries or settings with a high incidence of tuberculosis. (15)
- **OPV:** There is no evidence that the OPV vaccine protects people against infection with the SARS-CoV-2 virus. A clinical trial to address this issue is planned to be conducted in the United States. WHO will evaluate the evidence when it becomes available. In the absence of evidence, WHO does not recommend the OPV vaccine for the prevention of COVID-19. WHO continues to recommend the administration of OPV to prevent polio and as part of global efforts to eradicate this disease. (16)

BIBLIOGRAPHY

1. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *Lancet*. 2020.
2. Novel, C. P. E. R. E. (2020). The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. *Zhonghua liu xing bing xue za zhi= Zhonghua liuxingbingxue zazhi*, 41(2), 145.
3. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020 Geneva2020 [Available at: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>].
4. World Health Organization. 2019 Novel Coronavirus. Global Research and Innovation Forum: Towards a Research Roadmap/report. [Available at: <https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus/en/>]
5. World Health Organization. DRAFT landscape of COVID-19 candidate vaccines – 23April 2020. [Available at: <https://www.who.int/blueprint/priority-diseases/key-action/draft-landscape-COVID-19-candidate-vaccines-23-April-2020.pdf?ua=1>]
6. Elston, J. W. T., Cartwright, C., Ndumbi, P., & Wright, J. (2017). The health impact of the 2014–15 Ebola outbreak. *Public Health*, 143, 60–70.
7. World Health Organization. Coronavirus disease (COVID-19) technical guidance: Maintaining Essential Health Services and Systems. Guiding principles for immunization activities during the COVID-19 pandemic. March 2020. [Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/maintaining-essential-health-services-and-systems>]

COVID-19

8. Pan American Organization. Requirements and technical specifications of personal protective equipment (PPE) for the novel coronavirus (2019-ncov) in healthcare settings. February 2020 [Available at: <https://www.paho.org/en/documents/requirements-and-technical-specifications-personal-protective-equipment-ppe-novel>]
9. World Health Organization. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19). March 2020 [Available at: https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPPE_use-2020.2-eng.pdf]
10. World Health Organization. Advice on the use of masks in the context of COVID-19. 6 April 2020 [Available at: [https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-\(2019-ncov\)-outbreak](https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak)]
11. Pan American Health Organization. Ethics guidance for the use of scarce resources in the delivery of critical health care during the COVID-19 pandemic. April 2020. [Available at: <https://www.paho.org/en/documents/ethics-guidance-use-scarce-resources-delivery-critical-health-care-during-covid-19>]
12. World Health Organization. Immunization in the context of COVID-19 pandemic Frequently Asked Questions (FAQ). April 2020 [Available at: https://apps.who.int/iris/bitstream/handle/10665/331818/WHO-2019-nCoV-immunization_services-FAQ-2020.1-eng.pdf]
13. World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. March 2020. [Available at: [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)]
14. World Health Organization. My 5 Moments for Hand Hygiene [Available at: <https://www.who.int/infection-prevention/campaigns/clean-hands/5moments/en/>]
15. World Health Organization. Bacille Calmette-Guérin (BCG) vaccination and COVID-19. Scientific Brief. 12 April 2020. [Available at: [https://www.who.int/news-room/commentaries/detail/bacille-calmette-gu%C3%A9rin-\(bcg\)-vaccination-and-covid-19](https://www.who.int/news-room/commentaries/detail/bacille-calmette-gu%C3%A9rin-(bcg)-vaccination-and-covid-19)]
16. World Health Organization. The use of oral polio vaccine (OPV) to prevent SARS-CoV2. April 2020. [Available at: <http://polioeradication.org/wp-content/uploads/2020/03/Use-of-OPV-and-COVID-20200421.pdf>]

PAHO/FPL/IM/COVID-19/20-0008

© Pan American Health Organization, 2020. Some rights reserved. This work is available under license CC BY-NC-SA 3.0 IGO.