

Framework for decision-making: implementation of mass vaccination campaigns in the context of COVID-19

Interim guidance

22 May 2020



Background

Mass vaccination campaigns to prevent or respond to outbreaks of vaccine-preventable diseases and high impact diseases (VPD/HID) are effective strategies to reduce deaths and disease. Yet many countries have had to postpone such vaccination campaigns due to the physical distancing measures implemented to reduce COVID-19 transmission.

For countries affected by both VPD/HID and COVID-19 outbreaks, determining the best course of action may be challenging. Weighing the benefits of a safe and effective intervention that reduces mortality and morbidity against the risks of increasing transmission of a new disease that may burden essential health services can be complex. The starting point for such considerations is a risk-benefit analysis that reviews in detail the epidemiological evidence and weighs the short- and medium-term public health consequences of implementing or postponing mass vaccination campaigns, weighed against a potential increase in COVID-19 transmission.¹

In the context of the COVID-19 pandemic, this document:

- I. outlines a **common framework** for decision-making for the conduct of preventive and outbreak response campaigns;
- II. offers principles to consider when deliberating the implementation of **mass vaccination campaigns for prevention of increased risk of VPD/HID among susceptible populations**; and
- III. details the risks and benefits of conducting **vaccination campaigns to respond to VPD/HID outbreaks**.

This document is complemented by an annex (Annex 1) that provides guidance on how to safely organize a mass vaccination campaign, and is supplemented by a range of technical materials on prevention, response and control measures for COVID-19, including the [Guiding principles for immunization activities during the COVID-19 pandemic: Interim guidance](#),² the [Frequently Asked Questions: Immunization in the context of COVID-19 pandemic](#),³ and the [Polio eradication programme continuity: implementation in the context of the COVID-19 pandemic](#).⁴ This interim guidance should also be used in conjunction with existing disease-specific WHO prevention and control guidelines.

Audience

This interim guidance is to be used by national health authorities (and subnational where appropriate), together with immunization programme partners.

Common framework for decision-making

While the urgency and public health imperative for conducting a preventive mass immunization campaign or an outbreak-response vaccination campaign may differ, the decision-making method is similar. The framework outlined here is generally applicable to both scenarios and proposes that the comparative assessment of the relative risks and benefits is evaluated on a case-by-case basis, taking a step-wise approach.

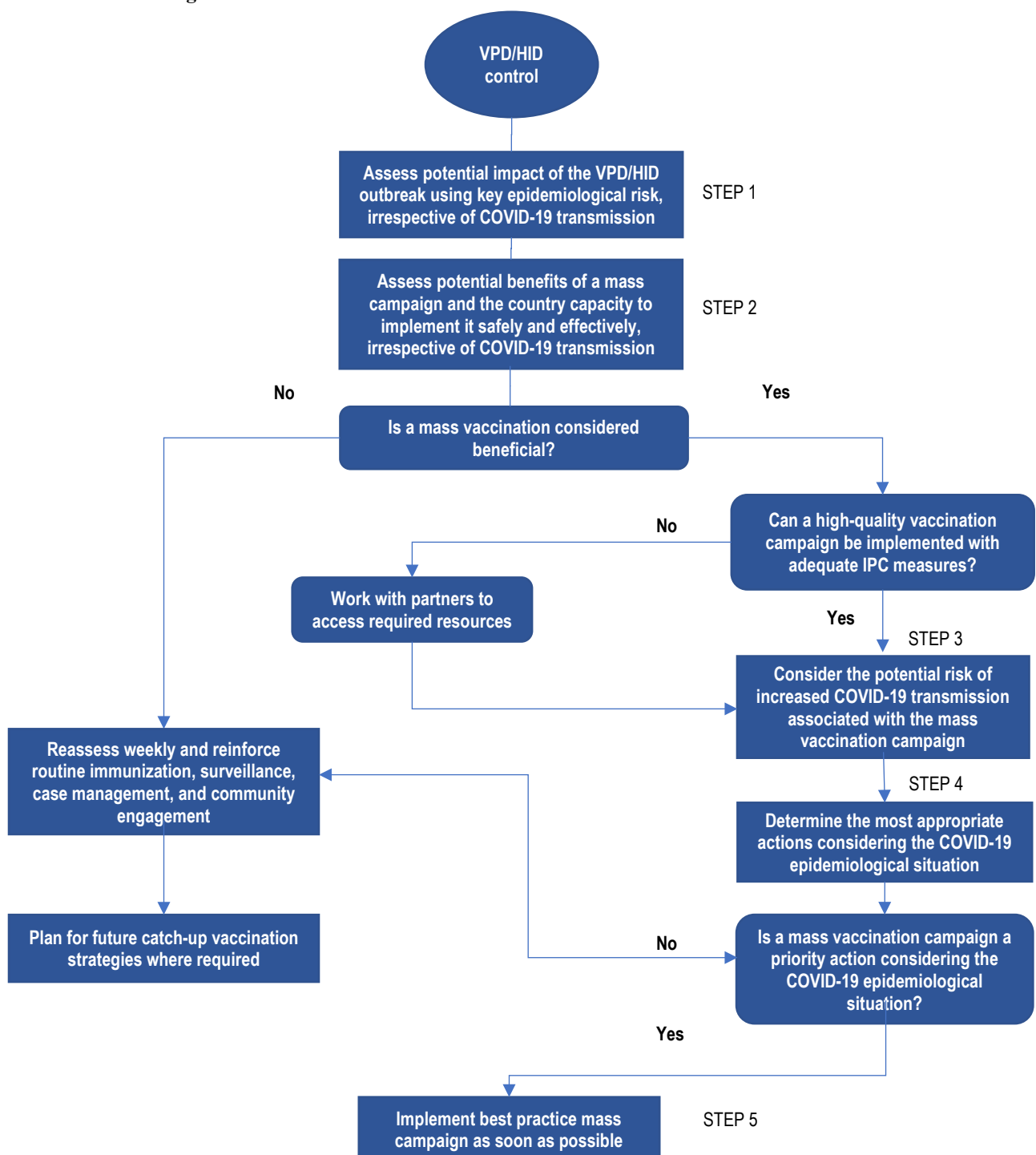
Figure 1 shows a decision-making flowchart that illustrates the five steps:

- Step 1:** Assess the potential impact of the VPD/HID outbreak using key epidemiological criteria (*see detail, Table 1*).
- Step 2:** Assess the potential benefits of a mass vaccination campaign and the country capacity to implement it safely and effectively (*see detail, Table 2*).
- 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 (*see detail, Table 3*).
- Step 5:** If a decision is made to proceed with a mass vaccination campaign, implement best practice. This should take account of:
- The coordination; planning; infection prevention and control (IPC); vaccination strategy approaches; community engagement; and equitable access to supplies. (*see detail, Table 4*),
 - The conduct of the campaign in accordance with: WHO’s 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.⁵⁻⁹

These five steps are generally implemented in sequence but are not strictly chronological. A certain degree of overlap in the step-wise process can be expected.

Figure 1: Decision-making Flowchart



Conduct of preventive mass vaccination campaigns

As countries gain a better understanding of local transmission of the COVID-19 virus and given the increased risk of morbidity and mortality resulting from the disruption of immunization services, countries are considering further postponement of mass vaccination campaigns and exploring options for their eventual implementation.

Health authorities are advised to adopt a systematic decision-making process, as illustrated in Figure 1, to determine whether and how a mass vaccination campaign should be pursued and to engage their National Immunization Technical Advisory Groups (NITAGs) in providing advice on the suspension and/or reinstatement of mass vaccination strategies.

The list below, while not exhaustive, provides key principles to consider before lifting any temporary suspensions on preventive mass vaccination campaigns. Further detail is referenced and can be found in Section III of the document. In the context of COVID-19 transmission, countries are strongly urged to:

- a) continually monitor the growing risk of VPD/HID outbreaks associated with the disruption of essential health services and routine immunization caused by the COVID-19 pandemic;
- b) execute only high-quality preventive vaccination campaigns that can be conducted under safe conditions, without undue harm to health workers and the community;
- c) evaluate the country's capacity to implement a mass vaccination campaign – national or sub-national - safely and effectively in spite of a COVID-19 outbreak by assessing: the adequacy of human resources; cold chain capacity; logistical and transport barriers; capability for infection, prevention and control adherence; flow of material; and financial needs (*see detail, Table 2*);
- d) understand health-seeking behaviours of the community in the context of COVID-19 and engage community leaders in the decision-making, design, and planning of activities to assure high demand and uptake while at the same time developing tailored risk-communication strategies; (*see detail, Table 2*);
- e) establish strong coordination and oversight mechanisms to jointly plan with COVID-19 task teams non-traditional vaccination strategies that respect physical distancing requirements. This novel approach may require extending the duration of the campaign, increasing the number of health workers involved or adapting communication strategies (*see detail, Table 4*);
- f) where feasible, seek to achieve efficiencies through integrated service delivery and adopt context-specific approaches to best address community needs or concerns;
- g) ensure that materials for meeting IPC requirements can be obtained in adequate supply, are accessible to all health workers at all levels, and closely monitor their proper application (*see detail, Table 4*);
- h) prioritize training of health workers including vaccinators to strictly adhere to infection, prevention and control recommendations for the organization at vaccination sites and sessions (*see Annex 1*);
- i) ensure the establishment of a strong supervision system and an effective monitoring system that captures adverse events following immunization.

Conduct of outbreak response mass vaccination campaigns

Building on the flowchart for decision-making illustrated in Figure 1, this section provides further detail on each of the five steps as described in Section I, in the context of an acute VPD/HID outbreak.

Step 1: Assess the potential impact of the VPD/HID outbreak using key epidemiological criteria

Table 1 presents key criteria that should be considered by health authorities when assessing the impact of VPD/HID outbreaks. The list is not exhaustive and is intended to guide decision-making. Although the criteria are applicable to any VPD/HID, the assessment should consider the specificities of each VPD/HID as well as the VPD/HID historical trends in the affected area.

Table 1. Key epidemiological and other risk considerations when assessing the impact of VPD/ HID disease outbreaks, irrespective of COVID-19 transmission scenarios

	Epidemiological criteria	Key considerations
1	Population susceptibility	What is the level of disease endemicity? Has the area been recently affected by an outbreak? Have preventive or outbreak response vaccination campaigns been conducted in the past 2-3 years? What is the estimated vaccination coverage (among infant and general population)? What is the proportion of cases that have been vaccinated? What is the birth rate in the area? Are there current or expected mass population movements?
2	Intensity and magnitude of transmission	How many cases and deaths have been reported and what is the overall outbreak trend? Is this a recent outbreak or has it been ongoing for several weeks/months? What are the age groups and gender most affected (attack and case fatality rates)? What is the rate of severe complications and deaths from the disease? What is the speed of transmission, and effective reproduction number?

3	Geographical spread	Are cases occurring in a localized geographical area? Are multiple areas in the country affected by the outbreak? Is the outbreak affecting high density population areas? Has the outbreak spread to other countries or is there a risk of international spread?
4	Seasonal patterns	How will seasonal and cyclical variations affect the evolution of the outbreak? At what time of the season is the outbreak occurring?
5	Socio-political context	Is the outbreak occurring in fragile, conflict or vulnerable settings, for example in camps for internally displaced persons (IDPs) or refugees? Is the outbreak affecting vulnerable sectors of the population (for example children aged under five years, pregnant women, elderly, hard-to-reach groups, prisoners, etc.)? How is the outbreak perceived by the community?

Step 2: Assess the potential benefits of a mass vaccination campaign and the country capacity to implement it safely and effectively

Wherever possible, provision of immunization to vulnerable populations at increased risk of morbidity and mortality due to VPD/HID should be prioritized. However, countries should conduct a careful risk-benefit assessment before deciding if a mass vaccination campaign is the most appropriate response during the COVID-19 pandemic. To facilitate decision-making, Table 2 provides decision-makers with key considerations against risk-benefit criteria

Table 2. Key considerations when assessing the risk-benefit for implementing mass vaccination campaigns, irrespective of COVID-19 transmission scenarios

Risk-benefit criteria	Key Considerations
Assess the impact of the mass vaccination campaign on VPD/HID transmission	Estimate the potential effect on interruption of VPD/HID transmission Estimate the level of potential morbidity and mortality reduction Estimate the potential to induce herd protection Consider the impact of COVID-19 on VPD surveillance
Determine country's capacity to implement a high-quality mass vaccination campaign	Assess human resources capacity and availability including mapping of trained staff (e.g., polio), and development partners, NGOs and CSOs. Determine material resource needs and evaluate procurement and logistics capabilities: availability of sufficient and adequate resources including masks and additional personal protective equipment (PPE) as required ⁹⁻¹¹ (Annex 1). Consider potential disruptions in supply freight transportation due to COVID-19 restrictions. Estimate economic and financial capacity including funds needed and available ^a . Determine monitoring needs for surveillance of adverse events following immunization, and for COVID-19 surveillance post-vaccination campaigns.
Estimate the public health impact of <u>not</u> conducting a mass vaccination campaign	Estimate risk of excess morbidity and mortality and increased risk of rapid amplification and spread. Consider the strain on health services due to excess VPD/HID disease burden and the indirect effect on mortality from other diseases (e.g. increase on deaths from malaria, measles, HIV/AIDS and TB deaths observed during 2014-2015 Ebola outbreak because of disruption of health services). ¹² Consider disruption of essential health services and diversion of resources away from routine programs and from COVID-19 response. Estimate increased risk of exposure to COVID-19 infection because of increased demand on health care by VPD/HID cases.
Assess the strength of community engagement	Determine how the community and target population perceive the risks associated with COVID-19 and with the VPD/HID outbreak. Consider engaging community representatives on the decision-making process and on planning and implementation of interventions. Consider tailoring community engagement and communication strategies to inform the public on the potential benefits and potential risks associated with the adopted control measures. Understand the risk-communication needs in case of an adverse event following immunization or an aggravation of COVID-19.

^a For GAVI eligible countries vaccine supply and operational costs for outbreak response campaigns (up to a ceiling) are covered for cholera, meningococcal meningitis, typhoid and yellow fever. For measles vaccine, costs are covered by the M&RI Outbreak Response Fund.

Step 3. Consider the potential risk of increased COVID-19 transmission associated with the mass vaccination campaign

Large gatherings during mass vaccination campaigns may increase the risk of introduction of COVID-19 or amplify person-to-person transmission of COVID-19 in communities and among health workers.¹³ The magnitude of that risk is not yet well understood, but results of ongoing modelling studies may soon provide more evidence to further inform decision-making. Meanwhile, when assessing the potential risk of COVID-19 transmission associated with the conduct of a mass vaccination campaign, countries are strongly advised to consider the following:

- a) **The COVID-19 transmission scenario in the country and areas affected.**¹⁴
- b) **The type and level of control measures and interventions imposed by governments and the community adherence to those measures:** The risk of COVID-19 transmission during mass vaccination may be different in areas with strong and well-enforced confinement measures than in areas where confinement measures are either are not practiced by the population or are weakly implemented.
- c) **The vaccination strategies and the type of vaccine administration:** The risk of COVID-19 transmission could be reduced by (i) decentralizing vaccine delivery through advanced posts or mobile sites and/or increasing the number of vaccination sites to limit large gatherings, and (ii) supervised self-administration or directly-observed delivery of oral vaccines in mono-dose vials (e.g. oral cholera vaccine) which limits the contact between vaccinators and recipients.

The capacity to implement rigorous COVID-19 IPC) measures during the campaign and to communicate and engage effectively with the community: The risk of COVID-19 transmission can be reduced with implementation of appropriate COVID-19 screening, respect of physical distancing between campaign attendees and the vaccination teams (1 meter), adherence to IPC practices and adequate availability of masks and additional PPE as required.^{9,10} (see Annex 1). Vaccination campaigns will be more effective if communities are confident in IPC and public health measures taken.

Step 4. Determine the most appropriate action considering the COVID-19 epidemiological situation

Based on the risk-benefit analysis conducted in Steps 1-3, health authorities can then determine the most appropriate action according to the epidemiological risk of the VPD/HID outbreak and the COVID-19 transmission scenario being experienced by the country. The graphic in Table 3 guides the recommended interventions in response to the dual risk .

Step 5: If the decision is made to proceed with a mass vaccination campaign, implement best practice

Several strategies are suitable for delivering mass vaccination campaigns. Countries are thus encouraged to explore alternate, non-traditional or mixed vaccination approaches at early on in the planning stage, and to follow WHO recommendations on the organisation of high-quality immunization campaigns in the context of COVID-19, with the support of local, regional and international stakeholders (Annex 1)

Table 3. Recommended interventions according to VPD/HID outbreak epidemiological risk and COVID-19 scenario¹⁴

Epidemiological characteristics of the VPD and HID outbreak	Covid-19 transmission scenarios ^b				Recommended actions (All scenarios: strengthen routine immunization)
	No cases	Sporadic cases	Clusters of cases	Community transmission	
Low risk					Implement outbreak response vaccination with standard IPC precaution measures
Moderate risk					Re-assess weekly, implement VPD/HID outbreak control measures, consider preventive vaccination campaign,
					Re-assess weekly and implement VPD/HID outbreak control measures
High risk					Both implementation or postponement of the campaign could have a negative impact. Decision should be made on a case by case basis

Low risk: sporadic cases in a geographically localized area where herd immunity is present

Moderate risk: cluster of cases in a geographically localized area with no/low herd immunity

^b WHO COVID-19 transmission scenarios were developed to classify countries and can also be applied at sub-national level

High risk: risk of rapid increase in cases, two or more districts affected, fragile-conflict settings and vulnerable populations

Where appropriate and feasible, a mass vaccination campaign could be considered a “window of opportunity” for other interventions including multi-antigen vaccination campaigns, or integrated delivery of other health interventions, such as vitamin A, deworming and insecticide-treated bed nets. However, the anticipated positive impact and feasibility of integrated interventions must be carefully assessed as such integration may significantly increase crowd size, extend implementation time and increase duration of contact between health-care workers and the recipients. The quality of the mass vaccination campaign should not be heavily compromised.

Table 4 characterises areas of best practice required to successfully implement a mass vaccination campaign in the context of COVID-19.

Table 4. Key considerations to implement best practice for mass vaccination campaigns

Areas for best practice	Key considerations
Coordination	Establish strong coordination and oversight mechanism to work in conjunction with the COVID-19 task teams along with immunization programme partners, civil society organizations, community leaders, international health agencies, and donors.
Planning	Detailed planning should include: updated information on target population (such as internal migration, such as shifts from urban to rural sector before/during confinement), best estimates for mask and additional personal protective equipment (PPE) requirements, and adequate measures for both infection prevention and control (IPC) and for waste management. ^{9,10,15} Consider additional human and financial resource needs to ensure implementation of a high-quality campaign, considering the implications of physical distancing or specific COVID-19 prevention and control measures. Ensure updated standard operating procedures and training on IPC, use of PPE, and any modified vaccination approaches.
Infection, prevention and control ^{9,10}	Activities should be undertaken only if aligned with existing WHO COVID-19 guidance on minimizing transmission. Adhere rigorously to IPC good-practices including adequate access to appropriate IPC supplies, such as masks, hand sanitizer or hand washing units with soap and water, to ensure application of standard and transmission-based precautions to protect health workers not only against COVID-19, but also other pathogens potentially transmitted via person-to-person contact or needlestick injuries, as per WHO recommendations. ¹⁶
Vaccination strategies	Tailor strategies to enable the safest, most effective delivery of the vaccination campaign. Consider increasing the timeframe and the number of vaccination sites, so that fewer people can be vaccinated per site/ day in line with physical distancing efforts. Consider tailored targeted campaigns in high-risk areas and/or high-risk groups. Consider decentralizing vaccination sites with mobile and advanced vaccination posts, use empty public or private premises as vaccination sites, such as schools and stadiums. House-to-house vaccination could be considered if adequate human resources, and logistical and IPC capacities are available. Use non-traditional or novel operational measures to deliver vaccine. For example, oral cholera vaccine (OCV) is administered using a single-dose vial and is thermostable. It does not require skilled personnel for administration and can be provided through directly observed self-administration, avoiding physical contact between vaccinators and recipients.
Community engagement	Involve community leaders and other trusted community actors in vaccination campaign planning, health message dissemination (for example community radio and social media) on COVID-19 prevention and encourage individuals to seek care if they experience potential symptoms of COVID-19. ^{10, 17} Build public trust and confidence in campaign’s ability to avoid increasing the risk of COVID-19 infection. Work closely with the community to minimize the risk of COVID-19 transmission during the vaccination campaign, for example people with fever and respiratory symptoms should be encouraged to seek health care before getting vaccinated
Equitable access	Ensure that emergency vaccine stockpiles for responding to cholera, measles, meningitis, polio and yellow fever outbreaks are readily available. Allow for rapid and equitable access to vaccine supply and to operational costs for the organization of mass vaccination campaigns. ^c

^c The cholera, meningitis and yellow fever emergency stockpiles are managed by the International Coordinating Group (ICG) and financed by GAVI, The Vaccine Alliance. Measles vaccine is available through the M&RI Outbreak Response Fund <https://measlesrubellainitiative.org/resources/outbreak-response-fund/>. The Global stockpile of Type 2 Oral Polio Vaccine (OPV) is governed by the World Health Organization (WHO) on behalf of its Member States. An advisory group, comprising representatives of the Global Polio Eradication Initiative partners (CDC, WHO, UNICEF, BMGF) and independent members, advises WHO’s Director-General on release of this vaccine from the global stockpile

Annex – Organization of mass vaccination campaigns in the context of COVID-19

Recommendation for organizing the vaccination site

- Conduct vaccination sessions in well-ventilated areas that are frequently disinfected.
- Ensure the availability of hand sanitizer or a hand washing station with soap and water for use by recipients and companions at the entrance of vaccination sites and health facilities.
- Limit the number of family members accompanying the person to be vaccinated (one companion) and maintain 1 metre distance between recipients at all times. Maintain 1 metre distance between companions as well.
- Perform screening of recipients and companions prior to admittance to the vaccination site to prevent the spread of COVID-19. Maintain 1 metre distance between screener and recipients/companions at all times. Screening should include assessments of:
 - i. COVID-19 exposure risk (that is contact with a suspected or confirmed COVID-19 case or other people with COVID-like symptoms in the household, personal travel to or contact with travellers from an area with known cases), and
 - ii. symptoms as described in COVID-19 case definitions for adults and children.

If **screening is negative**, vaccination can proceed.

If **screening is positive** offer a medical mask, do not vaccinate at the vaccination site, refer to service for COVID-19 evaluation, and, if feasible, offer vaccination at the COVID-19 evaluation site. If not feasible, postpone vaccination for 14 days after symptom resolution.

People who screen positive are considered COVID-19 suspected cases and should be managed as such, in accordance with WHO guidance.¹⁰

- Avoid crowded waiting areas or rooms. Some strategies for this could include:
 - integrating vaccination activities with other essential health services, as appropriate;
 - planning for small vaccination sessions and extending duration of the campaign;
 - utilizing outdoor spaces and adhering to the recommendation of social distancing within the facility, or vaccination site;
 - establish exclusive vaccination sessions for people with pre-existing medical conditions (such as high blood pressure, heart disease, respiratory disease, or diabetes).
- Whenever possible, separate vaccination site from curative services, for example by allocating different hours and different spaces).

Recommendations for vaccinators

- Perform hand hygiene after each recipient using soap and water or with hand sanitizer containing 60-80% alcohol.
- The vaccinator does not need to wear gloves, unless the skin of the recipient is not intact for example when there is a rash, lesion, or cut. If use of gloves is deemed necessary, the vaccinator must change gloves between every recipient and dispose of them appropriately in a bin with a lid, then practise hand hygiene.
- In areas **with widespread community transmission of COVID-19**, the vaccinator could consider extended use of medical/surgical masks, such as using the same mask throughout vaccination shift. In areas **without widespread community transmission of COVID-19**, use of medical masks by the vaccinator is not considered a requirement. In areas where transmission is not well known, or surveillance systems are weak, consider use of masks for vaccinators. **When no direct contact** with individuals is involved, such as self-administration of OCV, use of PPE is not required.¹⁰
- For campaigns with mono-dose oral vaccines, such as OCV, self-administration by the recipient is recommended under the supervision of the vaccination team to reduce physical contact between vaccinator and recipient.
- Vaccinators should not conduct vaccinations if they experience any symptoms of respiratory illness and should seek care, as recommended nationally.

Vaccination of COVID-19 cases (confirmed or suspected)

Currently, there are no known medical contraindications to vaccinating persons who have COVID-19.

However, a person with confirmed or suspected COVID-19 not staying in a health-care facility risks spreading the infection to others. For that reason, such individuals should defer vaccination until their symptoms resolve, preferably after two consecutive negative COVID-19 tests conducted 24 hours apart. If testing is not feasible, WHO recommends deferring vaccination for 14 days after symptom resolution.

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Acknowledgements

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WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this interim guidance document will expire 2 years after the date of publication

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