Update: The Immunization Program in the Context of the COVID-19 Pandemic
(Version 2: 24 April 2020)

Following the declaration of the COVID-19 pandemic on 11 March 2020, the Pan American Health Organization (PAHO) recommended maintaining vaccination in the context of the pandemic, along with other essential health services. On 26 March 2020, PAHO published the first version of the document: The Immunization Program in the Context of the COVID-19 Pandemic¹, which was consulted on within the organization with various departments, and externally with the Technical Advisory Group (TAG) on Vaccine-preventable Diseases.

This document was presented and discussed in a webinar in which managers of immunization programs of the Region of the Americas, members of the TAG, members of National Immunization Technical Advisory Groups NITAGs), and immunization program partners.

Due to the constant development of new evidence regarding transmission of the new coronavirus (SARS-CoV-2) and its implications for public health, PAHO determined that the document would be updated, as necessary. To this end and considering new evidence, the second version was published on 24 April 2020², in which the following topics were added or updated:

- **Importance of maintaining the population’s trust in vaccination services**
  Indepedently of scenario, a personalized communication strategy must be implemented to disseminate precise health information, address concerns from the community, improve community ties and promote the continued use of immunization services.

- **Update on the use of masks**
  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.³ Priority use of medical/surgical masks should always be given to health personnel responsible for the care of patients (suspected and confirmed) of COVID-19.⁴

- **Importance of hepatitis B vaccination during first 24 hours of life**
  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.

- **Periodic and systematic registry of the population pending vaccination**
  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.

See IM PROGRAM COVID-19 page 2

---

IN THIS EDITION

1. Update: The Immunization Program in the Context of the COVID-19 Pandemic
2. Vaccination Week in the Americas 2020 in the Context of COVID-19
4. In Memory of Dr. Louis Z. Cooper (1931-2019)

---

In Memory of Dr. Louis Z. Cooper (1931-2019)

By Jon Kim Andrus, MD

Dr. Louis Z. Cooper was a tireless, life-long advocate for children’s causes around the world. Over the years, I personally witnessed first-hand his passion for the elimination of rubella and congenital rubella syndrome (CRS), which is how I met him years ago while working at the Pan American Health Organization (PAHO) as the chief of the immunization team. Later, we worked extensively on childhood advocacy issues like Helping Babies Breathe, an initiative of the American Academy of Pediatrics, and newborn hearing screenings. I feel very blessed to have had the honor to work with him and to call him a dear friend. I have been asked by PAHO to share a few of my own perspectives on the life of Dr. Cooper. Sadly, he died at age 87 in early October 2019 after a full and illustrious career. He was a loving father, a tireless community member, and a dear friend to many.

Dr. Cooper, or Lou, as his many friends called him, was Professor Emeritus at Columbia University School of Physicians and Surgeons, past Chairman of Pediatric Services of St. Luke’s/Roosevelt Hospital Center, past President of the American Academy of Pediatrics and a Captain in the United States Air Force. Dr. Cooper earned his undergraduate and medical degrees from Yale.

Early in his career, Dr. Cooper was a member of the team that developed the rubella vaccine leading to the elimination of CRS in many parts of the world. He was in the right place at the right time when outbreaks...
- Vaccinating a person infected with COVID-19 (suspected or confirmed) and contacts
  - **Person infected with COVID-19 (suspected or confirmed)**
    1. 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.
    2. 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 14 days after symptoms resolve.
    3. 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 case)**
    1. 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.
    2. 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.

- **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.
  - **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.

### Vaccination Week in the Americas 2020 in the Context of COVID-19

This year’s celebration of Vaccination Week in the Americas (VWA) was unlike any previous celebration, as it took place during the ongoing global COVID-19 pandemic. Because of this, one of the main focuses of the campaign was to encourage countries to maintain vaccination against vaccine-preventable diseases, with a special focus on vaccination against measles and influenza, during the pandemic. The 18th VWA campaign took place 25 April-2 May 2020 with the slogan “Love. Trust. Protect. #GetVax.” Since 2003, more than 806 million people of all ages have been vaccinated against a wide range of dangerous diseases under the regional initiative promoted by PAHO.

Immunization continues to be an essential service that must continue to keep people healthy and reduce burdens on health services so they can respond more effectively to COVID-19. Vaccinating to prevent serious respiratory illness from flu and stop measles outbreaks, which Argentina, Brazil, and Mexico are currently facing, to protecting people while helping health systems focus on the response to COVID-19. Some 17 countries in the Americas had reported they were using the WVA platform to vaccinate against influenza, and another 17 planned to vaccinate against measles, planning to reach over 100 million people using innovative approaches to vaccination, such as drive-through vaccination or setting up vaccination clinics at empty schools or banks where retirees collect their pensions. Special efforts are being made to vaccinate high-risk groups, including vaccination brigades visiting retirement homes and jails. PAHO reminded countries of the need to follow guidelines on physical distancing while conducting vaccination activities.

PAHO underlined the importance of all health care workers being up-to-date with their vaccines, and it has laid out a series of recommendations vaccine services can follow to protect workers and community members, including offering outdoor vaccination, exclusive vaccination sessions for high-risk groups, and limiting the number of people accompanying the person to be vaccinated.

Countries are also including messages related to COVID-19 prevention as part of their VWA campaigns, such as the importance of good hand hygiene and respiratory etiquette, and dispelling myths and misinformation about the disease. With virtual launches suggested by PAHO as a safe way to celebrate vaccines, Paraguay recently held a symbolic launch of the campaign with the president and minister of health that was shared on social media.

Regarding social media, VWA posts and messages shared this year in the context of the COVID-19 pandemic helped PAHO increase the number of followers on each platform. PAHO also hosted a tweet chat with the #ImmunizationDuringCovid hashtag, where participants had the chance to get their questions on vaccination during the pandemic answered by PAHO experts. To learn more information about this year’s VWA campaign, please visit www.paho.org/vwa.

---

### Vaccination of Newborns in the Context of the COVID-19 Pandemic

**Version 1: 19 May 2020**

**Preliminary recommendations subject to revision as new evidence becomes available**

#### Objective

- Provide guidance regarding vaccination of newborns with hepatitis B and BCG vaccines in the context of the COVID-19 pandemic, in order to maintain high vaccination coverage.

#### Key Considerations

- The COVID-19 pandemic is having a significant economic, social and health impact on the population, as well as placing a burden on health services. Based on currently available information, older adults and people of any age who have underlying medical conditions might be at higher risk for severe illness from COVID-19.
- Only a few cases of COVID-19 have been reported among newborns. Currently, there is no evidence of vertical transmission of SARS-CoV-2 from infected pregnant women to their fetuses\(^1\)\(^2\) and the virus has not been found in samples of breastmilk\(^3\). However, screening studies of pregnant women who gave birth in two hospitals during the peak of the epidemic in New York City (United States), showed that between 15%-20% were infected with COVID-19, although more than two-thirds of these infected women had no symptoms\(^4\)\(^5\). To avoid infected women from spreading COVID-19 to their newborns during the postpartum period, it is necessary to implement preventive measures, such as wearing a mask when breastfeeding\(^6\)\(^7\). The case series of newborns with COVID-19 published to date show that most neonates were asymptomatic and a minority presented mild clinical symptoms (in very few cases moderate) and outcomes were favorable\(^8\)\(^9\).
- These recommendations for vaccination of newborns in the context of the COVID-19 pandemic complement the guidance for immunization programs issued by PAHO\(^1\)\(^0\)\(^1\) and WHO\(^1\)\(^1\)\(^1\)\(^1\)\(^1\). They have been prepared by PAHO’s Comprehensive Family Immunization Team in collaboration with PAHO’s Latin American Center for Perinatology/Women’s and Reproductive Health (CLAP/SMR) and PAHO’s Incident Management System for COVID-19. Members of the Technical Advisory Group (TAG) on Vaccine-preventable Diseases and experts from PAHO collaborating centers were also consulted.

#### Table 1. Recommendations for vaccination of newborns in the context of the COVID-19 pandemic

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Mother*</th>
<th>Newborn</th>
<th>Institutional/hospital birth</th>
<th>Home birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No clinical suspicion of COVID-19 infection</td>
<td>No clinical suspicion of COVID-19 infection</td>
<td>Considering the national vaccination schedule, the following is recommended:</td>
<td>Considering the national vaccination schedule and the most appropriate vaccination delivery strategy(^1)(^2), the following is recommended:</td>
</tr>
<tr>
<td>B</td>
<td>Clinical suspicion but without laboratory confirmation of COVID-19 infection*</td>
<td>No clinical suspicion of COVID-19 infection*</td>
<td>The newborn should be considered a contact of a confirmed case (the mother), who could transmit COVID-19 to others.</td>
<td>The newborn should be considered a contact of a confirmed case (the mother), who could transmit COVID-19 to others.</td>
</tr>
<tr>
<td>C</td>
<td>With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)</td>
<td>Without laboratory confirmation of COVID-19 infection (with or without clinical suspicion)</td>
<td>The newborn should be considered a confirmed case (the mother), who could transmit COVID-19 to others.</td>
<td>The newborn should be considered a confirmed case (the mother), who could transmit COVID-19 to others.</td>
</tr>
<tr>
<td>D</td>
<td>With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)</td>
<td>With laboratory confirmation of COVID-19 infection (with or without clinical suspicion)</td>
<td>The newborn should be considered a confirmed case, who can transmit COVID-19 to others.</td>
<td>The newborn should be considered a confirmed case, who can transmit COVID-19 to others.</td>
</tr>
</tbody>
</table>

*Clinical suspicion and/or laboratory confirmation of a mother’s COVID-19 infection refers to the immediate pre-partum and peri-partum period.

1. The following can be considered vaccination in the health service, vaccination in the home, vaccination posts, brigades or mobile teams.
2. Newborns born to a mother with clinical suspicion of COVID-19 but without laboratory confirmation (pending results or unavailable tests) are not considered suspected cases\(^1\)\(^2\). Postponed period to prevent risk of COVID-19 transmission to others\(^3\).
3. Period to prevent risk of COVID-19 transmission to others\(^4\).
NEWBORNs COVID-19 cont. from page 3

Recommendations

- Vaccination of newborns is considered an essential service. Given that institutional deliveries will continue to take place in the context of the COVID-19 pandemic, vaccination of newborns with hepatitis B vaccine and BCG vaccine (according to each country’s national immunization schedule) should remain a priority.
- There are no known medical contraindications to vaccinating suspected or confirmed cases of COVID-19 or to vaccinating contacts. This applies to vaccination of newborns. Table 1 describes four scenarios according to the status of the newborn in relation to COVID-19 infection, with specific vaccination recommendations for newborns delivered in a hospital setting and those delivered at home. In all scenarios, preventive measures for COVID-19 transmission should be implemented (for health personnel taking care of the newborn and administering the vaccine), for the nursing mother, and for the newborn.
- Hepatitis B vaccine is an inactivated vaccine. Its administration during the first 24 hours of life decreases the risk of vertical transmission of hepatitis B, which is especially important in the case of neonates born to a mother positive for the hepatitis B surface antigen (HBsAg)/hepatitis B e antigen (HBeAg). If hepatitis B vaccine is administered after 24 hours but during the first week of life, a late birth dose has some effectiveness in preventing vertical transmission (although effectiveness declines progressively in the days after birth). If administered after first week of life, it can still be effective in preventing horizontal transmission of hepatitis B and therefore remains beneficial.
- BCG vaccine is a live attenuated vaccine to prevent tuberculosis. BCG administration is recommended at birth. If it cannot be given at birth, it should be given at the earliest opportunity thereafter. Pre-term infants with gestational age >31 weeks and low birth weight infants (<2500 g) who are healthy and clinically stable may receive BCG at birth, or at the latest, upon discharge.
- Co-administration of hepatitis B birth dose and BCG vaccine is safe and recommended by PAHO/WHO.
- The general vaccination recommendations indicate that presenting a mild acute illness, such as low-grade fever, upper respiratory infection, cold, otitis media or mild diarrhea, are not a contraindication to vaccination on schedule. Only in case of a moderate or severe acute illness, as a precaution, it is recommended to postpone vaccination, particularly live attenuated vaccines such as BCG, until the patient has recovered from the illness.

References


8. World Health Organization. Vaccine-preventable diseases and for the hepatitis B surface antigen (HBsAg)/hepatitis B e antigen (HBeAg). If hepatitis B vaccine is administered after 24 hours but during the first week of life, a late birth dose has some effectiveness in preventing vertical transmission (although effectiveness declines progressively in the days after birth). If administered after first week of life, it can still be effective in preventing horizontal transmission of hepatitis B and therefore remains beneficial.

9. BCG vaccine is a live attenuated vaccine to prevent tuberculosis. BCG administration is recommended at birth. If it cannot be given at birth, it should be given at the earliest opportunity thereafter. Pre-term infants with gestational age >31 weeks and low birth weight infants (<2500 g) who are healthy and clinically stable may receive BCG at birth, or at the latest, upon discharge.
- Co-administration of hepatitis B birth dose and BCG vaccine is safe and recommended by PAHO/WHO.
- The general vaccination recommendations indicate that presenting a mild acute illness, such as low-grade fever, upper respiratory infection, cold, otitis media or mild diarrhea, are not a contraindication to vaccination on schedule. Only in case of a moderate or severe acute illness, as a precaution, it is recommended to postpone vaccination, particularly live attenuated vaccines such as BCG, until the patient has recovered from the illness.**


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 whether to reduce COVID-19 transmission.
--Assess the potential benefits of a mass vaccination campaign and the country capacity to implement it safely and effectively (see detail, Table 2).

I. outlines a common framework for decision-making for the conduct of preventive and outbreak response campaigns;

- 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. lists the risks and benefits of conducting vaccination campaigns to respond to VPD/HID outbreaks; and

** WHO definition of suspect cases is a patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g. cough, shortness of breath), and a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset; and/or a patient with any acute respiratory illness, AR having had contact with a confirmed or probable COVID-19 case in the previous 14 days prior to symptom onset; or a patient with severe acute respiratory illness, AR requiring hospitalization in the absence of an alternative diagnosis that fully explains the clinical presentation.

*** WHO definition of confirmed cases a person who has been exposed during the 12 days before and the 14 days after the onset of symptoms of a probable or confirmed case.

This document is complemented by an annex (Annex 1) that provides guidance on how to safely organize a mass vaccination campaign, which 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, the Frequently Asked Questions: Immunization in the context of COVID-19 pandemic, and the Polio eradication programme continuity: implementation in the context of the COVID-19 pandemic. 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 vaccination 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 stepwise 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).
COVID-19 CAMPAIGNS cont. from page 4

Figure 1: Decision-making Flowchart

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 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.5,6

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

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 COVID19 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-communica-
tion 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.

Step 2: Assess the potential benefits of a mass vaccination campaign

a) Continual monitoring of the growing risk of VPD/HID outbreaks associated with the disruption of essential health services and routine immunization caused by 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-communica-
tion 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.

Step 2: Assess the potential benefits of a mass vaccination campaign

a) Continual monitoring of the growing risk of VPD/HID outbreaks associated with the disruption of essential health services and routine immunization caused by 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-communica-
tion 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.
Table 2. Key considerations when assessing the risk-benefit for implementing mass vaccination campaigns, irrespective of COVID-19 transmission scenarios

<table>
<thead>
<tr>
<th>Risk-Benefit Criteria</th>
<th>Key Considerations</th>
</tr>
</thead>
</table>
| 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  
Consider potential disruptions in supply freight transportation due to COVID-19 restrictions.  
Estimate economic and financial capacity including funds needed and available  
Determine monitoring needs for surveillance of adverse events following immunization, and for COVID-19 surveillance post-vaccination campaigns. |
| Estimate the public health impact of not 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).  
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. |

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. 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.

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 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.

d) 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. 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 characteristics of the VPD and HID outbreak. This should be determined on a case-by-case basis.

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

<table>
<thead>
<tr>
<th>Epidemiological characteristics of the VPD and HID outbreak</th>
<th>Covid-19 transmission scenarios</th>
<th>Recommended actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk</td>
<td>No cases</td>
<td>Implement outbreak response vaccination with standard IPC precaution measures</td>
</tr>
<tr>
<td>Moderate risk</td>
<td>Sporadic cases</td>
<td>Re-assess weekly, implement VPD/HID outbreak control measures, consider preventive vaccination campaign,</td>
</tr>
<tr>
<td>High risk</td>
<td>Clusters of cases</td>
<td>Re-assess weekly and implement VPD/HID outbreak control measures,</td>
</tr>
<tr>
<td></td>
<td>Community transmission</td>
<td>Both implementation or postponement of the campaign could have a negative impact. Decision should be made on a case by case basis</td>
</tr>
</tbody>
</table>

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

13 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.  
14 WHO COVID-19 transmission scenarios were developed to classify countries and can also be applied at sub-national level.
COVID-19 CAMPAIGNS cont. from page 6


of CRS ravaged the New York City area in the 1960s. He was actively involved in investigating those outbreaks. To my students, I often refer to him as the grandfather of CRS epidemiology. In addition, his work with this disease greatly enhanced access and educational services for disabled children that led to the establishment of the Handicapped Children’s Education Act (Individuals with Disabilities Education Act). His wife, Mady, an expert on childhood disabilities, and Lou were a dynamic duo. Lou was incredibly active in the local, state, national, and international arenas. He embodied the phrase, “Think globally and act locally.” To that end, Lou worked to establish New York’s Child Health Insurance Program which has allowed thousands of children to obtain health insurance and the vital medical care that should be theirs by right.

The last time I saw Lou was when I visited him and Mady at their home in NYC. He knew he had cancer and did not have much more time to live. I had a meeting at UNICEF with Robin Nandy, their chief of immunization. Lou had graciously invited me to stay in their home the night before the meeting. I asked him, “Have you ever visited UNICEF?” He had not and was delighted when I insisted that he come along with me the next day. We would work out the building-entry security issues. We had a great time; Robin was very gracious and gave Lou a quick tour.

Prior to the meeting, I went with Lou to walk his dog in Central Park. It was a beautiful morning. He received a call on his cell phone and carried on a conversation for some minutes bumping into other dog walkers, whom I am sure he had known for many years. While carrying on his phone conversation, he slipped in a few hellos to his dog owner friends, asking them between breaths and the phone conversation, how they were doing. With the person on the phone, I overheard him manage to arrange a breakfast meeting for the next day. Lou said to the person on the phone, “Do you know of a place where they serve grits? I love grits.” I found out later that the person on the phone was a man from the South who was on an early release program from jail, for which Lou volunteered as a mentor. I remember thinking here is a man dying of cancer, and he is going to carve out precious remaining time that he had left on this planet to have breakfast with a person newly released from jail. This was someone whom he had never met. But to Lou, that someone was a human being. With a twinkle in his eye, he confided to me that he was looking forward to meeting and discussing the meaning of life and its challenges, hopefully to provide some insight and assistance to this person in need. He whispered to me that it made him feel good. That was Lou, more than all his accomplishments and accolades. That was Lou, a good neighbor, a wonderful friend, a humble champion of the human spirit. What an incredible privilege and honor to have known him.