

Guidance on vaccination and prevention of vaccine-preventable disease outbreaks for countries hosting refugees from Ukraine

April 2022 update

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Abbreviations

ACIP	Advisory Committee on Immunization Practices
AFP	acute flaccid paralysis
cVDPV	circulating vaccine-derived poliovirus
GPEI	Global Polio Eradication Initiative
IPV	inactivated poliovirus vaccine
JCVI	Joint Committee on Vaccination and Immunisation
MRCV	Measles- and rubella-containing vaccine

Summary

This document provides guidance on interventions to prevent vaccine-preventable disease outbreaks in the context of mass population movement resulting from the ongoing crisis in Ukraine. The priority actions include:

1. planning and provision of resources to fully vaccinate refugee children with routine vaccinations in the national immunization schedule of the host country;
2. prioritizing vaccination against poliomyelitis, measles, rubella and COVID-19;
 - a. inactivated poliovirus vaccine (IPV) for children under 6 years;
 - b. measles- and rubella-containing vaccine (MRCV) to children up to 15 years who do not have at least two documented doses of these antigens;
 - c. COVID-19 vaccine for priority groups in line with WHO recommendations and national guidelines;
3. identifying and closing any immunity gaps in the host population and proactively addressing any identified weaknesses in national immunization service delivery and programme performance;
4. ensuring effective disease surveillance and reporting systems are in place; and
5. identifying, investigating and rapidly responding to signals of vaccine-preventable disease outbreaks.

Background

The ongoing crisis in Ukraine is having a devastating impact on health and well-being in the country. It is also increasing the risk for humanitarian and public health emergencies across the WHO European Region, particularly in countries bordering Ukraine. In addition to the disruption of basic public health services in Ukraine, mass displacement of the population within and outside of the country continues unabated. This population displacement presents public health challenges within Ukraine and beyond, increasing the risk of vaccine-preventable disease outbreaks, that require timely and effective preventative actions.

The guidance for the provision of immunization services to refugees in this document is built upon the [WHO-UNHCR-UNICEF joint technical guidance: general principles of vaccination of refugees, asylum-seekers and migrants in the WHO European Region](#) published in 2015 (1).

Risk of increased transmission of vaccine-preventable diseases

Refugees are at overall increased health risks resulting from the physical and psychological effects of fleeing their homes and the long, arduous journeys they undertake. Mass population movement, often accompanied by overcrowding and changes in population mixing patterns increase the risks for outbreaks of communicable diseases, particularly among children. Young children who have not yet been vaccinated are most at risk for vaccine-preventable diseases.

The mass population movement of refugees resulting from the ongoing crisis in Ukraine is giving rise to temporary or permanent integration of refugees with the domestic population of refugee-host countries. The large scale of this movement and the rapidity with which it is occurring imposes stress to the existing health systems and poses challenges in vaccination service delivery capacity. Moreover, existing immunity gaps in the refugee-host countries may get compounded. In this context, the risk of poliovirus and measles outbreaks is particularly high.

Risk of poliomyelitis transmission

The European Regional Certification Commission for Poliomyelitis Eradication concluded in 2021 that based on available evidence for 2020, Poland, Romania and Ukraine are at high risk of a sustained poliomyelitis outbreak in the event of importation of wild poliovirus or emergence of circulating vaccine-derived poliovirus (cVDPV) due to suboptimal programme performance, particularly low population immunity (3).

Ukraine has been experiencing an outbreak of type-2 circulating vaccine-derived poliovirus (cVDPV2) since October 2021. The circulation of virus has been confirmed in two provinces (oblasts): Rivne in the northwest, and Zakarpattya in the southwest of the country. In the current crisis setting, this outbreak poses a substantial risk of international spread due to subnational gaps in immunization coverage in countries surrounding Ukraine since 2020 caused by local-level disruptions in immunization programmes due to COVID-19 pandemic, declining performance of acute flaccid paralysis (AFP) surveillance in multiple countries and mass population movement linked to the crisis.

Risk of measles transmission

In addition to Ukraine, several other countries in the Region including Poland, Slovakia, Romania are also endemic for measles (2). Suboptimal surveillance and the presence of immunity gaps in the population are some of the reasons for persistent transmission of measles. Recent outbreaks of measles in some countries in the Region indicate that adolescents and young adults are particularly susceptible. Furthermore, measles outbreaks have disproportionately affected specific groups, such as Roma in Poland, immigrants in Spain, anthroposophic communities in German-speaking countries and Sweden and orthodox Protestant communities in the Netherlands.

Priority actions

Refugee-host countries need to provide access to vaccination for refugees, prioritizing IPV and MRCV vaccines to prevent outbreaks of poliomyelitis and measles. Whilst doing so, countries are also urged to intensify their efforts to close existing immunity gaps and improve vaccination coverage in the domestic population. Furthermore, countries need to ensure that they have effective disease surveillance and reporting systems, timely outbreak investigation ability and response capacity.

1. Immunizing refugees

Ensuring refugees are fully included in any immunization activity

Ensuring equitable access to immunization services

- a. Refugee-host countries must ensure adequate planning and resourcing to fully vaccinate refugee children with routine vaccinations and plan any supplementary immunization activities, if need be, directed at the domestic population.
- b. Awareness of and demand generation for vaccination in the refugees should consider issues around language barrier and cultural attitudes towards healthcare and taking care to avoid any stigmatization. Countries are encouraged to prepare user-friendly communications in a language understood by the refugees. Such messages should include information on benefits of vaccination, recommended vaccine(s), the expected adverse reactions and actions to take (including how to

contact a health care provider) in case of any serious adverse events that may happen following immunization.

- c. Routine immunization service delivery strategies should be carefully assessed to identify and address any potential barriers faced by refugees in accessing these services, including location, timing, payment, registration requirements, and other considerations.
- d. Planning for supplementary immunization activities or intensified routine immunization should ensure refugees are fully considered in target population denominators.

Determining vaccination status and completing the vaccination schedule

- a. Refugee children should be vaccinated according to the routine immunization schedule of the host country. Any documentation provided by refugees that reflects the official healthcare record of a child's vaccination status should be used to determine which vaccines are needed to complete the schedule based on the child's age.
- b. Most refugees are likely to have incomplete or no documentation of vaccination status; in cases where official vaccination records cannot be reviewed by a vaccination provider, a child would be considered as unvaccinated and would warrant an age-appropriate vaccination series (see section on *Practical guidance on vaccine delivery to refugee children*). WHO has been working with the Ministry of Health of Ukraine to establish a procedure by which a refugee may remotely obtain proof of vaccination status from primary care providers in Ukraine. Information is provided in the Supplement to this document: *Obtaining proof of vaccination status and assessing vaccination records of refugees from Ukraine*.
- c. Efforts should be made to facilitate refugees to obtain their vaccination records to minimize repeated doses being administered to children due to lack of documentation.

Ensuring vaccine mandates achieve their aims without unintended consequences

School entry and similar mandates for vaccination in the refugee-host countries can be a very useful tool to ensure children are fully vaccinated and to protect children against outbreaks of any vaccine-preventable diseases. However, these mandates must be reviewed carefully when applied to a refugee population, particularly when documentation of vaccination, if this constitutes a prerequisite, may be limited for the vast majority. It is critical to ensure that such mandates are implemented in a way that avoids creating undue burden to the refugee population or a barrier to education or other basic services or right, while still helping to close immunity gaps and prevent vaccine-preventable disease outbreaks.

- a. Where mandates for vaccination exist, countries must make special efforts to support and facilitate refugees in accessing their vaccination records, whenever possible. This will allow fully vaccinated children to duly receive education and other social benefits as per the refugee-host countries.
- b. Countries with mandates for vaccination should adequately plan and prepare the necessary systems and resources to ensure refugee children receive vaccinations in a convenient and accessible manner as possible. Moreover, adequate vaccine stocks and vaccination providers must be ensured for catch-up vaccination as appropriate. For example, where vaccination is a school entry requirement, the school registration process could include on-site vaccination clinics or provision of information and guidance on where and how to obtain needed vaccinations. Children should not be deprived of education because of gaps in immunization service delivery.
- c. If needed, countries may decide to apply some flexibility in the application of mandates for vaccination in some circumstances, for example, to accommodate the logistical challenges of vaccinating large numbers of school-age children in a short period. Such flexibility may include prioritization of vaccines against outbreak-prone diseases such as poliomyelitis, measles, and diphtheria or extending deadlines for vaccination. Both the application of the mandates and any

flexibilities applied to refugees should be planned in a way that it avoids undermining the acceptance of the mandates by the host or refugee population or generating or amplifying any stigma towards refugees.

Documenting and monitoring vaccination of refugees

- a. Following vaccinations of refugees, each vaccinee or caregiver should be provided with proof of vaccination (physical or digital), or an updated record of vaccination. This is particularly important for refugees who may be in transit either within a host country or to another country.
- b. Monitoring of routine immunization coverage should be appropriately adapted to ensure refugees are considered when calculating both numerators and denominators; when possible, doses provided to refugees should be separately monitored. This may be done using national recording systems (e.g., categorizing refugees as foreigners or newly established residents); or using an ad-hoc registry.

Priority vaccines

As part of efforts to catch-up missed vaccine doses according to the national immunization schedule of the host country, ensuring refugees have received at least age-appropriate dose/s of vaccines against poliomyelitis, measles, rubella, and COVID-19 should be the priority.

Poliomyelitis, measles and rubella vaccines

Given the Regional goals of achieving measles and rubella elimination and maintaining polio-free status, measles- and rubella-containing vaccines and polio-containing vaccines should be prioritized to reduce risk of outbreaks of these viruses. As part of efforts to fully vaccinate all refugee children according to the national immunization schedule of the host country, special effort should be made to vaccinate children who do not have at least two documented doses of these antigens, with:

- inactivated poliovirus vaccine (IPV) for children under 6 years; and
- measles and rubella containing vaccine (MRCV) to children up to 15 years.

COVID-19 vaccines

COVID-19 vaccination of priority population groups should be prioritized in line with current WHO recommendations and national guidelines since the risk for severe disease and death from COVID-19 among refugees may be elevated, particularly those living in overcrowded shelters. Detailed considerations for provision of COVID-19 vaccine to refugees, including co-administration of COVID-19 and other vaccines, is provided in the annex.

Non-priority vaccines

In addition to vaccines against poliomyelitis, measles, and rubella and COVID-19, other vaccines are important especially if they are part of the national immunization programme of the host countries.

Seasonal influenza vaccine

The seasonal influenza vaccine is no longer available to vaccinate eligible populations for the 2021/22 influenza season. In preparation for the autumn 2022 influenza vaccination, public health authorities are urged to include refugees in the vaccination campaign and include them while estimating the size of the eligible population for vaccination. Orders for the influenza vaccine for the 2022/23 season need to be

urgently placed by the Ministries of Health and the National Public Health Authorities and ensuring refugees are part of the target population estimate of planned procurement of doses.

Other routine vaccines

Refugee-host countries usually offer vaccines against other diseases in their national immunization schedules including, diphtheria, tetanus, pertussis, *Haemophilus influenzae* type B, rotavirus disease, pneumococcal disease, meningococcal disease type C, hepatitis B, varicella and tuberculosis. Some of these vaccines are given in combined forms. The national schedule for the different vaccines by country is accessible on the WHO headquarters website (<https://immunizationdata.who.int/listing.html?topic=vaccine-schedule&location=>).

When and where to vaccinate refugees

Mass population movement poses challenges in deciding when and where to vaccinate. Access to the full vaccination schedule, through follow-up vaccinations, is difficult to ensure while people are on the move. The situation is compounded by the fact that many vaccines must be given in consecutive doses at timed intervals. Nevertheless, refugees should be vaccinated without unnecessary delay according to the immunization schedule of the host country in which they intend to stay for more than a week.

Vaccination of refugees at border crossings is generally not recommended; however, in case of an outbreak or if the level of risk for serious disease transmission is considered high in an epidemiological risk assessment, countries may decide to vaccinate on the basis of the recommendations in the document [Vaccination in acute humanitarian emergencies: a framework for decision making](#) (4). Provision of measles-containing vaccines is further defined in [Reducing measles mortality in emergencies, WHO–UNICEF joint statement](#) (5), and provision of polio vaccines is discussed in [Reducing risk of poliomyelitis outbreaks in emergencies](#), issued by the Global Polio Eradication Initiative (GPEI) (6).

Practical guidance on vaccine delivery to refugee children

A suggested algorithm for the delivery of vaccines to refugee children aged 1–18 years old is found in the annex. It takes into consideration [recommendations for interrupted or delayed routine immunization](#) WHO position papers (7). These are also found in the document [Leave No One Behind: Guidance for Planning and Implementing Catch-up Vaccination](#) which also includes recommendations for minimum intervals between doses in a vaccine series (8).

Additional WHO guidance on this topic is available in the following documents:

- [Delivery of immunization services for refugees and migrants \(2019\)](#) (9)
- [Vaccination in Humanitarian Emergencies: Implementation Guide \(2017\)](#) (10)

An example of how this guidance is adapted for use by a country is given in the annex (see section 1.6 Country guidance on vaccinating refugees).

2. Strengthening the overall immunization service delivery system

The Ukraine crisis with its consequential mass population movement may amplify any existing immunity gaps in the domestic population of refugee-host countries. It will also stress the capability of the immunization programme at national and sub-national levels to achieve high immunization coverage and widen immunity gaps among previously under-served populations and risk groups in the refugee-host countries.

The predominant pattern of refugee movement from Ukraine has included a brief initial period of mass influx followed by continued mobility within and between countries, during which refugees are being integrated into existing domestic social and public health structures. In this context, immunization interventions directed only towards refugees may not be highly effective or feasible. Preventing any outbreak of vaccine-preventable diseases will require intensification and strengthening of national routine immunization for the overall population, with special efforts to ensure refugees are fully integrated into the vaccination activities.

Identifying and closing immunity gaps

- a. Careful review and triangulation of immunization coverage at the sub-national and community level with analysis of epidemiological trends and other supplemental activities such as immunization coverage surveys, where available, will help identify immunity gaps in geographical areas and among population groups.
- b. Countries are urged to identify the communities/areas with low vaccination coverage, investigate the drivers and barriers to vaccination in local areas and develop tailored community-specific action plans to close any immunity gap together with strong communication and social mobilization in the intervention areas. Published strategies such as the [Tailoring Immunization Programmes](#) approach (11) may provide useful tools to adapt vaccination programme strategies using local behavioral insights.
- c. Intensification of routine immunization activities in every communities/areas will help boost demand and acceptance and immunization coverage among both the domestic population and refugees. Such intensified activities should include information campaigns; expansion of vaccination services (locations and/or hours) for a temporary period, training of vaccine providers to address issues such as false contraindications to vaccination and reduce missed opportunities for vaccination.

Estimating needs and securing additional vaccines

- a. Any calculation for estimating the additional number of individuals to be vaccinated in the refugee-host countries due to the crisis in Ukraine should take into consideration not only the additional vaccine demand resulting from refugees, but also any catch-up vaccination activities to close pre-existing immunity gaps in the host country population.
- b. The expanded target population for vaccination should be assessed frequently, as accurate estimation of the additional stock needs of vaccine and supplies due to the evolving nature of the Ukraine crisis may be challenging due to a number of factors:
 - o the refugee population is highly mobile and the exact number rapidly changes in the host countries;
 - o the demography of the refugee population may not mimic the demography of the Ukraine population, and is difficult to determine the vaccination eligible population with certainty;
 - o ascertainment of vaccination status of the refugees may not be reliable; and
 - o demand and acceptance for vaccination (due to various reasons) among refugees may vary and change over time.
- c. National health authorities are urged to take accurate stock of vaccines at the national and subnational levels to make decision for any additional vaccine supplies. Due to the unpredictability of population movement, and vaccine acceptance and demand among refugees, it is critical to closely monitor vaccine stock utilization and stock balance since January 2022. Frequency of reporting on vaccine stock utilization from the subnational levels may need to be increased in order to rapidly identify any increase in supply needs and respond accordingly to avoid stock-outs.

- d. Immunization supply chain systems may need to be strengthened to ensure safe storage and transportation of increased volume of vaccine supplies. Vaccine supply frequency will have to be adapted, so that doses may be ordered, returned, or reallocated, as needed, to address storage capacity gaps and prevent under- or overstocking.

3. Outbreak detection and response

Under the [*International Health Regulations \(2005\)*](#) (12), all countries should have effective disease surveillance and reporting systems, outbreak investigation ability and case management and response capacity. With this capacity, countries should also be able to perform quick, effective epidemiological risk assessments. In the case of measles and poliomyelitis outbreaks, countries should review and update their national preparedness plans.

WHO/Europe encourages all countries in the Region to take the following public health measures to identify and rapidly respond to vaccine-preventable disease outbreaks.

Routine and enhanced surveillance

Surveillance should be intensified to detect the first signals of potential outbreaks of vaccine-preventable diseases. When outbreaks are suspected they should be confirmed by laboratory methods. For individual case confirmation, laboratory confirmation or epidemiologic linkage with a laboratory-confirmed case should be sought. An outbreak is considered confirmed if there is epidemiologic and/or virologic evidence of linkage between two or more laboratory-confirmed cases. Appropriate specimens should be collected not only for laboratory confirmation but, depending on the disease, to also characterize the pathogen to allow identification of the sub-type and to assist in identifying the origin of the pathogen (endemic versus imported). Once an outbreak is confirmed, subsequent cases can be primarily confirmed based on epidemiologic linkage to laboratory-confirmed case.

Enhanced surveillance may include active case finding by regular visits and retrospective record review at health facilities (both public and private), and other settings as appropriate and feasible to identify unreported cases. Enhanced surveillance should focus on population groups at high risk of disease transmission and congregate settings, such as refugee centres, schools and military or workplaces.

Case investigation should be initiated immediately (no later than 48 hours) after notification and include collection of demographic, epidemiologic, immunization and clinical data about the case, and identification of contacts. Thorough follow-up investigation of patient contacts, including household residents, classmates and teachers, may help identify additional cases. In the case of poliomyelitis, sampling of stool from close contacts should be expanded for all AFP cases.

Case reporting

Once an outbreak is suspected, the frequency of reporting (cases and zero reporting in the absence of cases) should be increased (at least weekly) depending on the disease regardless of frequency of reporting prior to the outbreak. If timely case-based reporting during an outbreak is not feasible because of the large number of cases, case-based data should still be collected and reported as feasible.

Reporting outbreaks

All outbreaks of poliomyelitis, measles and rubella and should be reported to the WHO Regional Office for Europe. The initial notification should be submitted early in the outbreak.

Descriptive analysis

Analysis of outbreak data allows national health agencies to guide the outbreak response activities, especially vaccination, and helps to focus the response on groups most in need. To maximize the impact and minimize delays, the analysis should be performed not only at the national, but at district and provincial levels, as per the administrative levels in a country, as well. The basic analysis should describe cases by person, place and time and includes case distribution and incidence over time (for example weekly) and categorize by age group, sex, immunization status and geographic area.

Advocacy and communication

Advocacy and communication should be part of early outbreak response activities. Outreach to affected community or population groups helps to ensure effective community involvement and public awareness, to address public concern, and to encourage cooperation with public health authorities.

Immunization activities in response to an outbreak

Outbreak response immunization is indicated for confirmed poliomyelitis, measles and rubella outbreaks. Immunization efforts in an outbreak setting are aimed at reducing the extent and duration of the outbreak and helping to interrupt transmission by raising population immunity. When deciding on the need for immunization activities, the specific target group(s) and the most appropriate strategies for outbreak response immunization, several considerations are relevant. It is important to consider the results of the assessment of risk of a large-scale outbreak, financial and human resources, vaccine availability, regulatory framework and the attitude towards immunization and the disease among potential target groups and health care workers. The potential impact of the intervention will be greater if implemented early in the outbreak and in settings with a substantial proportion of susceptible individuals, where the risk of widespread transmission is higher.

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Annex 1

1.1 Provision of health services and vaccines

The [Alma-Ata declaration](#) on universal health coverage (1978) (13), [Health 2020 \(the European policy for health and well-being\)](#) (14), [World Health Assembly resolution WHA61.17 on migrants' health](#) (15) and the ['1951 Refugee Convention](#) (16) state that refugees should have non-discriminatory, equitable access to health care services, including vaccines, irrespective of their legal status. Equitable access to new and existing vaccines for everyone regardless of age, identity and geographic location and migration status, is crucial to realize the goals of the [European Programme of Work](#) flagship initiative – [European Immunization Agenda \(EIA2030\)](#) (17, 18), but also broader universal health coverage ambitions.

In addition, the [Convention on the Rights of the Child](#) (19) and the [United Nations Children's Fund \(UNICEF\) Core Commitments for Children in Humanitarian Action](#) (20) call for equitable access of all children, adolescents and women to essential health services, with sustained coverage of preventive and curative interventions. These include timely immunization against vaccine-preventable diseases, particularly measles and poliomyelitis.

The health systems in the countries receiving refugees must be adequately organized to provide the necessary support to the refugees while at the same time ensuring the health of the resident population. Vaccines should be provided in an equitable manner with a systematic, sustainable, non-stigmatizing approach. As vaccination is a health intervention that requires a continuum of follow-up until the full schedule is completed, there should be cooperation among the countries of origin, of transit and of destination.

1.2 Provision of COVID-19 vaccine

To prevent severe disease and deaths and reduce morbidity, including post-COVID-19 conditions, countries should offer COVID-19 vaccines to all refugees according to eligibility criteria defined in national COVID-19 vaccination policies of the host country. Furthermore, access to vaccination services shall be facilitated both for individuals at temporary common shelter sites as well as for those who integrate with local communities.

The offered vaccine products and vaccination schedules shall consider previous COVID-19 vaccinations documented in vaccine certificates of refugees, wherever available. Administered doses shall be recorded and documentation shall be made available to vaccinated individuals for further reference (on paper and/or electronically). The following approach is recommended:

1. Eligible individuals without any previous vaccinations or without documented vaccinations should receive a primary vaccination series and a booster dose.
2. Eligible individuals with one documented COVID-19 vaccine dose should receive the second dose and a booster dose.
3. Eligible individuals with two documented doses of COVID-19 vaccines should receive a booster dose.

The intervals between successive doses recommended by national vaccination policy of the host country should be applied. Minimum intervals may be considered to achieve rapid uptake of recommended doses and protection due to concerns about community transmission or risk of severe disease.

If relevant, countries should ensure that refugees have access to any available dedicated (online) system of registration for COVID-19 vaccination.

Co-administration with other vaccines

Strategic Advisory Group of Experts on Immunization (SAGE) recently published recommendations for the co-administration of inactivated and vector-based vaccines with other routine vaccines. For adults, based on several co-administration studies of COVID-19 vaccines and inferred from co-administration studies of other adult vaccines, that COVID-19 vaccines may be given concomitantly, or any time before or after, other adult vaccines including live-attenuated, inactivated, adjuvanted, or non-adjuvanted vaccines. When administered concomitantly, the vaccines should be injected in separate sites, preferably different extremities. For children and adolescents, evidence from co-administration studies is currently insufficient to make a recommendation for concomitant administration with COVID-19 vaccines.

Below is a list of relevant WHO interim recommendations:

1. [Interim recommendations for use of the Bharat Biotech BBV152 COVAXIN® vaccine against COVID-19](#) (interim guidance 15 March 2022) (23)
2. [Interim recommendations for use of the inactivated COVID-19 vaccine, CoronaVac, developed by Sinovac](#) (interim guidance 15 March 2022) (24)
3. [Interim recommendations for use of the inactivated COVID-19 vaccine BIBP developed by China National Biotec Group \(CNBG\), Sinopharm](#) (interim guidance - 7 May 2021, updated 15 March 2022) (26)
4. [Interim recommendations for use of the ChAdOx1-S \[recombinant\] vaccine against COVID-19 \(AstraZeneca COVID-19 vaccine AZD1222 Vaxzevria™, SII COVISHIELD™\)](#) (interim guidance 15 March 2022) (26)

For mRNA vaccines and Novovax, WHO SAGE recommendations remain the same. These vaccines can be co-administered with inactivated influenza vaccines; different arms for injection should be used when both vaccines are delivered during the same visit.

The National Immunization Technical Advisory Groups (NITAGs) of the United States (Advisory Committee on Immunization Practices - [ACIP](#)) and the United Kingdom (Joint Committee on Vaccination and Immunisation - [JCVI](#)) recommended administration of all licensed COVID-19 vaccine regardless of timing of administration of other vaccines administered before or after COVID-19 vaccines, as well as co-administration of COVID-19 vaccines with any other vaccines (except for the shingles vaccine in the United States) during the same visit. These recommendations are detailed in the publications below:

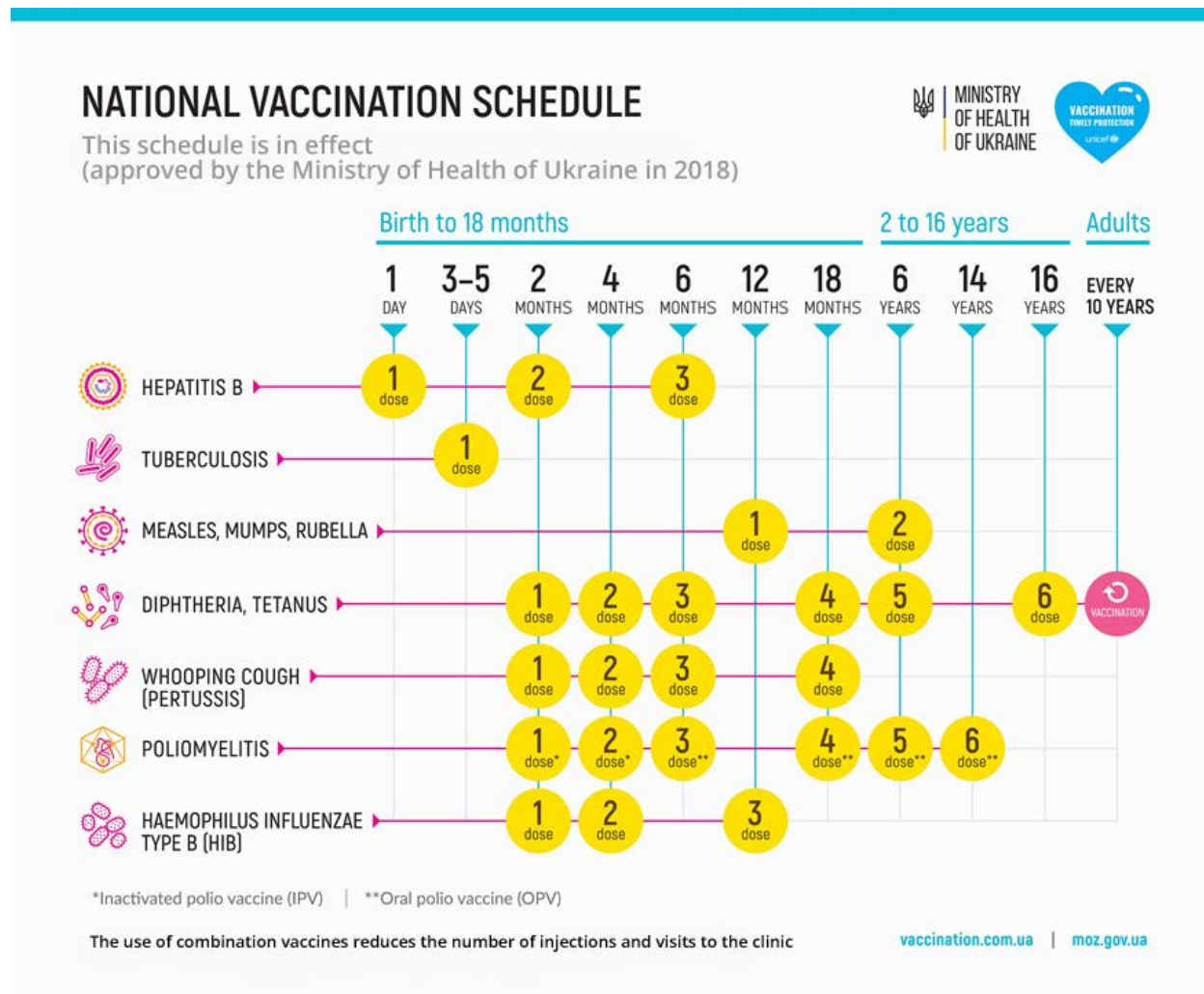
1. [Summary Document for Interim Clinical Considerations for Use of COVID-19 Vaccines Currently Authorized or Approved in the United States](#) (21)
2. [COVID-19 vaccination programme information for healthcare practitioners](#) (22)

Considering the need for urgent vaccination of adult population in Ukraine, NITAGs of the refugee-host countries may consider using SAGE recommendations on co-administration of inactivated and vector-based COVID-19 vaccines with other vaccines for adults. NITAGs may also consider applying ACIP and JCVI recommendations on co-administration of mRNA vaccines and Novovax with other vaccines, based on evidence collected and summarized by these NITAGs.

1.3 Protection of health care workers

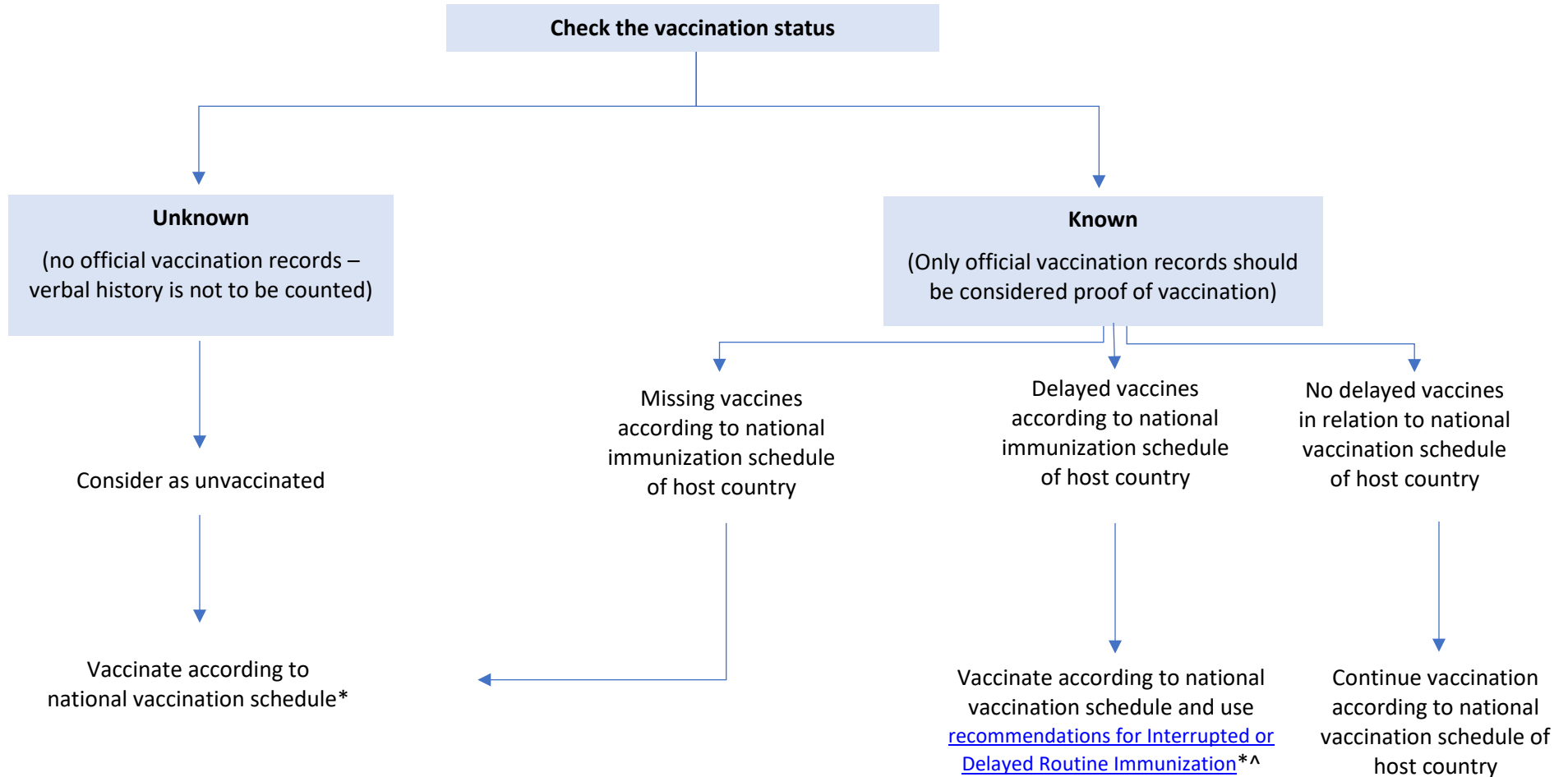
Frontline health care workers should receive a primary series of COVID-19 vaccination and a booster dose to avert severe COVID-19 outcomes and protect health systems. In line with WHO recommendations, most countries of the WHO European Region also recommend seasonal influenza vaccination for health care workers. Vaccination against, poliomyelitis, measles, rubella and hepatitis B is also recommended to those who are still susceptible to these diseases.

1.4 Ukrainian vaccination schedule for information of the refugee-host countries



Source: [Vaccination \(moz.gov.ua\)](http://vaccination(moz.gov.ua)) (accessed 31 March 2022)

1.5 Guidelines for vaccinating children 0-18 years



Governments should consider providing documentation of the vaccinations given to each vaccinee or child's caregiver to help avoid unnecessary revaccination.

^Follow [recommended minimal intervals](#) between vaccine doses in vaccine series (see also 1.6 below)

*Prioritize polio-containing vaccines and measles- and rubella- containing vaccines

1.6 WHO recommendations of minimum intervals between doses in routine vaccine series

Antigen	Minimum age at first dose	Minimum interval between doses 1 and 2	Minimum interval between doses 2 and 3	Minimum interval between doses 3 and 4	Comments
BCG	Birth				Give at earliest opportunity after birth
Hepatitis B birth dose	Birth				Give at earliest opportunity after birth, up until eligible for the first dose of HepB1 or combination vaccine
Hepatitis B (excluding birth dose)	6 weeks	4 weeks	4 weeks		
DTP-containing vaccine	6 weeks	4 weeks	4 weeks (If >1 year, leave at least 6 months between dose 2 and 3)	6 months (and >1 year of age)	If >7 years, use only aP containing vaccine; if >7 years, use Td-containing vaccine A total of 6 doses of Td/DT-containing vaccine are recommended, minimum interval of 6 months. If Td vaccination is started during adolescence or adulthood, only 5 doses are required.
Hib*	6 weeks	4 weeks	4 weeks		If >1 year, only 1 dose is needed. Not recommended for >5 years, if healthy.
Polio OPV (excluding birth dose)*	6 weeks	4 weeks	4 weeks	4 weeks	
Polio IPV*	8 weeks	4 weeks	4 weeks		For IPV-only schedules, if the first dose is given
Rotavirus	6 weeks	4 weeks	4 weeks (if using a 3-dose schedule)		Not recommended >2 years.
PCV*	6 weeks	4 weeks	4 weeks		If 1-5 years, only 2 doses needed.
MR or MMR	9 months (6 months, see comments)	4 weeks (and >1 year of age, for 2nd dose)			In certain cases, a supplementary dose of measles vaccine can be given as early as 6 months of age. Any dose given
HPV	9 years (if started ≥15 years, see comments)	5 months			If series is started ≥15 years old, 3 doses are needed (minimum interval 1 month between 1st and 2nd dose; 4 months between 2nd and 3rd dose)

*Alternative schedules available. See '[WHO recommendations for interrupted or delayed immunization](#)' for additional detail and for other antigens not shown above. Adapted from '[Leave no one behind: guidance for planning and implementing catch-up vaccination](#)'

The WHO Regional Office for Europe

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