IPI

INTERNATIONAL PEACE INSTITUTE

Vaccine Equity in Conflict-Affected Areas: The Challenges of Development, Production, Procurement, and Distribution

Katherine DeLand

MAY 2022

Katherine DeLand is Senior Health Adviser to the Office of the World Health Organization (WHO) Director-General's Special Envoy for COVID-19 and Founder of DeLand Associates, LLC. She is also a Senior Fellow at the Graduate Institute Geneva's Global Health Centre, an Honorary Research Fellow at the Institute of Global Health Innovation at Imperial College London, and a Non-resident Senior Adviser at the International Peace Institute.

The author would like to thank Adam Lupel for his guidance on this research. She would also like to thank Albert Trithart and Anna Sattler, both of whom contributed their time and expertise to this report, improving it enormously.

This issue brief forms part of IPI's COMPASS Initiative on multilateral approaches to pandemics, which is made possible by support from the Stavros Niarchos Foundation (SNF).

Executive Summary

The COVID-19 pandemic is having a disproportionately large impact on people living in areas affected by fragility, conflict, and violence. At the same time, the complications inherent to armed conflict—political, logistic, security, and otherwise—make it especially challenging for these people to access vaccines.

These challenges to equitable vaccine access in conflict-affected areas are linked to broader challenges related to the development, approval, production, procurement, and distribution of COVID-19 vaccines. While vaccine production has been scaled up at an unprecedented rate, it still falls short of meeting the needs of the entire global population. The limited supply available has disproportionately gone to high-income countries, often through nontransparent commercial contracts. COVAX, a mechanism intended to guarantee equal access to vaccines to all participating countries, has suffered from funding gaps. Even when countries do receive vaccines, they often face challenges in rolling out vaccination programs, whether because they lack adequate capacity or because the doses are set to expire or are not acceptable to the communities set to receive them.

These challenges are even greater in conflict-affected areas, where resources are scarce, logistics can be challenging, competing priorities can overwhelm the pandemic response, and insecurity may limit safe access to populations living behind conflict lines. To overcome these challenges, those planning and implementing vaccination programs should ensure that they are leveraging existing humanitarian logistical capacity to move vaccines into communities affected by conflict. They should also ensure that national governments, which are ultimately responsible for vaccinating their populations, include conflict-affected areas in their national deployment and vaccination plans. Moreover, they should consider how to accommodate shifting patterns of conflict and movements of people, such as by distributing vaccines at transit points for migrants or camps for refugees or internally displaced people.

Another consideration for vaccination campaigns in conflict-affected areas is the need to protect the vaccinators from threats they might face, which may require negotiating humanitarian access. In addition, it is critical that vaccination programs adhere to the principle of impartiality to avoid the perception that they are favoring one side of the conflict. To this end, those delivering vaccines should be cautious about partnering with military or security personnel when delivering vaccines and should prioritize community engagement.

Introduction

With more than 500 million confirmed cases and 6 million deaths reported globally, the COVID-19 pandemic has deeply damaged individuals and families, destabilized political and social structures, and pushed millions into extreme poverty.[1] While the wide-ranging impacts of COVID-19 are being felt in all countries and communities, the pandemic is having a disproportionately large impact on vulnerable populations.[2] People living in areas affected by fragility, conflict, and violence are particularly vulnerable and, as such, have experienced and will continue to experience acutely the negative impact of COVID-19.[3] Vaccines hold enormous promise to mitigate this impact, but they can only do so if they are available and people agree to receive them. The complications inherent to armed conflict—political, logistic, security, and otherwise—make accessing vaccines especially challenging.[4]

This paper focuses on the challenges of equitably distributing COVID-19 vaccines to populations in conflict-affected areas.[5] It starts off by looking at general issues related to the development, approval, production, procurement, and distribution of vaccines. It then turns to the particular challenges to distributing vaccines in conflict-affected areas both before and during the vaccine rollout. The paper concludes with policy recommendations for improving the delivery of vaccines in conflict-affected areas.

Background

The first publicly known case of COVID-19 was identified in Wuhan, China, in December 2019. Less than three weeks later, on January 14, 2020, the World Health Organization (WHO) stated that "it is certainly possible that there is limited human-to-human transmission."[6] By the end of January, cases had been reported in eighteen countries outside China, four of which had evidence of human-to-human transmission.[7] On January 30th, the WHO director-general declared COVID-19 to be a public health emergency of international concern, the highest level of health crisis under international law. On March 11th, with more than 100,000 cases worldwide, WHO characterized the situation as a pandemic, encouraging all countries to take urgent and aggressive whole-of-government, whole-of-society action to "detect, test, treat, isolate, trace, and mobilize their people in the response."[8]

As of April 2022, the pandemic continues at a fierce pace. While the number of new cases declined globally between August and October 2021, case numbers jumped to record highs in January 2022 due to the emergence of the Omicron variant. During the week of December 27, 2021, the number of new cases globally increased by 71 percent from the week before.[9] Despite this spike in infections, the death rate of those infected with COVID-19 has steadily decreased. This can, in part, be attributed to the protection against death and severe disease provided by the current generation

1 World Health Organization (WHO), "COVID-19 Weekly Epidemiological Update: Edition 88," April 20, 2022; Christoph Lakner et al., "Updated Estimates of the Impact of COVID-19 on Global Poverty: Looking Back at 2020 and the Outlook for 2021," World Bank, January 11, 2021.

2 WHO and the Alliance for Health Policy and Systems Research, "The Effects of COVID-19 on Vulnerable Urban Populations and Strategies for Mitigation Webinar," November 5, 2020.

3 Jarrett Blanc and Frances Z. Brown, "Conflict Zones in the Time of Coronavirus: War and War by Other Means," Carnegie Endowment for International Peace, December 17, 2020.

4 Chloe Taylor, "These Countries Have the Lowest COVID Vaccination Rates in the World," *CNBC*, February 2, 2022; Pip Cook, "COVID-19 Vaccine: The Hurdles of Reaching People Caught in Conflict," *Geneva Solutions*, December 8, 2020; Jason Beaubien, "For the 36 Countries with the Lowest Vaccination Rates, Supply Isn't the Only Issue," NPR, January 14, 2022.

5 The European Union defines conflict-affected and high-risk areas as "areas in a state of armed conflict or fragile post-conflict as well as areas witnessing weak or non-existent governance and security, such as failed states, and widespread and systematic violations of international law, including human rights abuses." European Parliament Regulation (EU) 2017/821 (May 17, 2017), EU Doc. 2017/821, Article 2(f).

6 UN Geneva (@UNGeneva), "'There are many similarities to SARS and MERS. The experience that we have with SARS and with MERS, the experience of our Member States with these pathogens, have all prepared us for this. This is not unexpected.' @WHO provides an update on the #coronavirus in #Wuhan, #China," Twitter, January 14, 2020, 12:07 p.m., available at https://twitter.com/UNGeneva/status/1217146107957932032 .

7 These included Germany, Japan, the US, and Vietnam. WHO, "Listings of WHO's Response to COVID-19,"June 29, 2020, available at www.who.int/news/item/29-06-2020-covidtimeline .

8 WHO, "WHO Director-General's Opening Remarks at the Media Briefing on COVID-19," March 11, 2020, available at www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020 .

9 WHO, "COVID-19 Weekly Epidemiological Update: Edition 73," January 6, 2022, p. 1.

of COVID-19 vaccines.

The development of effective COVID-19 vaccines has changed the course of the pandemic. Vaccines have both mitigated the direct health effects of the disease and reduced the risk of infection and, potentially, transmission.[10] Nonetheless, the distribution of the COVID-19 vaccine in areas affected by armed conflict has remained limited: in countries experiencing humanitarian emergencies—including those caused by conflict—vaccine rates are mostly below 15 percent, while the majority of the adult population is vaccinated in most high-income countries. The UN Security Council recognized this disparity when it unanimously adopted Resolution 2565 in February 2021, calling for increased global cooperation to facilitate vaccine access in conflict-affected areas.[11]

It has long been documented that armed conflict increases vulnerability to infectious disease among both combatants and civilians.[12] Among civilians, conflict exacerbates several factors that increase the incidence of infectious diseases, including mass movement of populations, overcrowding, lack of access to clean water, poor sanitation, lack of shelter, and poor nutrition.[13] Damage to public health infrastructure and reduced access to health services also make it harder to identify cases, control pathogen spread, treat those who are infected, and implement vaccination campaigns and other response programs. These challenges are even more severe in protracted crises where populations are often dependent on nongovernmental organizations for basic health services.

It has long been documented that armed conflict increases vulnerability to infectious disease among both combatants and civilians.

Since early on in the COVID-19 pandemic, there have been efforts to draw attention to the disproportionate impact it would likely have on conflict-affected populations. In 2020, for example, two UN officials wrote that "the global health emergency created by the coronavirus… could become even more dire as it spreads to countries affected by fragility, conflict and violence."[14] It is also in these conflict-affected areas, however, that the impact of COVID-19 can be hardest to assess. Conflict makes collecting accurate data on numbers of cases and deaths attributable to COVID-19 extremely difficult; the resources and capacity necessary to conduct broad-scale testing are often unavailable in high-income countries not affected by conflict, let alone in areas experiencing conflict and afflicted by poverty.[15] Data collection and surveillance are also affected by poor Internet access, limited phone network coverage, and poor roads.

Nonetheless, the data that are available indicate that armed conflict has provided an opportunity for the virus to spread.[16] For example, in several conflict-affected countries, very few COVID-19 cases were reported during periods of conflict in the first year of the pandemic, but as conflict subsided, reported infections grew dramatically. This suggests that earlier cases had been undercounted and that conflict both allowed for and hid the spread of the virus.[17]

It is worth noting that there is also evidence that COVID-19 is driving the initiation or intensification of armed conflict.[18] This is in part because the negative economic impact of measures taken to

10 The data on the extent to which any of the COVID-19 vaccines that have been granted emergency use listings (EULs) by WHO reduce or eliminate transmission of COVID-19 are inconclusive. Personal communication with WHO, August 10, 2021.

11 UN Security Council Resolution 2565 (February 26, 2021), UN Doc. S/RES/2565 (2021).

12 During the American Civil War, for example, pneumonia, typhoid, dysentery, and malaria caused two-thirds of the estimated 660,000 deaths and were known as the "third army." J. S. Sartin, "Infectious Diseases during the Civil War: The Triumph of the 'Third Army,'" *Clinical Infectious Diseases* 16, no. 4 (April 1993).

13 Máire A. Connolly and David L. Heymann, "Deadly Comrades: War and Infectious Diseases," *The Lancet* 360, Supplement (December 2002).

14 Franck Bousquet and Oscar Fernandez-Taranco, "COVID-19 in Fragile Settings: Ensuring a Conflict-Sensitive Response," United Nations, May 4, 2020.

15 WHO recommends the use of nucleic acid amplification tests, such as real-time reverse-transcription polymerase chain reaction (RT-PCR) assays, to detect COVID-19. However, in many countries, access to this form of testing is limited if it exists at all. The current generation of rapid tests (i.e., antigen and antibody detection) is not accurate enough to drive decision making in most settings. See: WHO, "Recommendations for National SARS-CoV-2 Testing Strategies and Diagnostic Capacities—Interim Guidance," June 25, 2021.

16 Rick Gladstone, "Armed Conflicts Have Helped the Virus Spread, A U.N. Official Says," *New York Times*, May 26, 2021.

17 Mohamed A. Daw, "The Impact of Armed Conflict on the Epidemiological Situation of COVID-19 in Libya, Syria and Yemen," *Frontiers in Public Health* 9 (June 2021).

18 See, for example: Tobias Ide, "COVID-19 and Armed Conflict," *World Development* 140 (April 2021); and Marius Mehrl and Paul W. Thurner, "The Effect of the Covid-19 Pandemic on Global Armed Conflict: Early Evidence," *Political Studies Review* 19, no. 2 (2021).

control COVID-19 and the prioritization of the pandemic over other issues can offer opportunities to opposition movements. The vicious cycle of conflict exacerbating COVID-19 and COVID-19 exacerbating conflict is likely to persist as long as the virus continues to circulate.

Developing, Approving, Producing, Procuring, and Distributing COVID-19 Vaccines

To end the vicious cycle between armed conflict and COVID-19, widespread vaccination will be critical. Due to supply constraints, vaccine hesitancy, and the inevitable mutations in the virus that can increase transmissibility and limit vaccine efficacy, COVID-19 vaccines are not a panacea. Additionally, the current family of vaccines is designed to prevent death and severe disease rather than to eliminate transmission, which is still possible among vaccinated people. Nonetheless, vaccines remain the best tool available to save lives by dramatically reducing the incidence of severe infection. Understanding the challenges facing vaccination campaigns in conflict-affected areas requires first understanding the broader process for developing, approving, procuring, and distributing COVID-19 vaccines.

Development and Approval of Vaccines

The rapid development of COVID-19 vaccines has been heralded as a testament to human ingenuity and global cooperation in science. Indeed, the fastest that any vaccine had been developed previously was in the 1960s when it took four years to develop the vaccine for mumps. For COVID-19, the process from identification and characterization of the virus to a fully tested immunization approved for emergency use took only ten months. This was made possible by years of research on other coronaviruses, novel types of vaccines, and ways to manufacture vaccines faster.[19] It was also facilitated by unprecedented levels of funding and expedited regulatory processes driven by political necessity—conditions that are unlikely to be repeated in circumstances other than a global pandemic.[20]

The process for approving the vaccines was also expedited. To be administered to people outside of clinical trials, vaccines must be approved by national regulatory authorities, each with its own processes and standards. Typically, there are pathways for rapidly approving vaccines for use in emergencies using standards that accommodate the need for rapid distribution while maintaining the development process, clinical trials, and safety evaluations used in nonemergency vaccine approvals. As of April 2022, thirty-five different COVID-19 vaccines had been approved for emergency use by at least one country.[21]

On the global level, WHO also has a procedure for assessing unlicensed vaccines, therapeutics, and in vitro diagnostics during public health emergencies that results in emergency use listing (EUL), with associated recommendations on the use of the listed product.[22] The EUL designation is a prerequisite for the international procurement of vaccines by organizations such as UNICEF. It is also a prerequisite for vaccines to be supplied through the COVAX Facility, a platform put in place to support equitable access to COVID-19 vaccines around the world (see below). In addition, the EUL designation allows countries to expedite their own regulatory approval of a vaccine and provides a mechanism to ensure the safety and efficacy of vaccines provided to countries that do not have robust regulatory mechanisms, including many conflict-affected areas. As of late April 2022, ten vaccines had received an EUL, all of which are also among

19 Other coronaviruses include those that cause severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). Other types of vaccines include those based on genetic material, such as messenger RNA.

20 Philip Ball, "The Lightning-fast Quest for COVID Vaccines—and What It Means for Other Diseases," *Nature* 589 (January 2021).

21 UNICEF, "COVID-19 Vaccine Market Dashboard," available at www.unicef.org/supply/covid-19-vaccine-market-dashboard .

22 See, for example: WHO, "WHO Recommendation BioNTech Tozinameran—COVID-19 mRNA Vaccine (Nucleoside Modified)—COMIRNATY®," December 31, 2020. To be eligible for an EUL, a vaccine must meet four criteria: (1) the disease for which the product is intended is serious or immediately life threatening, has the potential of causing an outbreak, epidemic or pandemic and it is reasonable to consider the product for an EUL assessment; (2) existing products have not been successful in eradicating the disease or preventing outbreaks; (3) the product is manufactured in compliance with current Good Manufacturing Practices; and (4) the applicant undertakes to complete the development of the product… and apply for WHO prequalification once the product is licensed." WHO, "Emergency Use Listing Procedure for Vaccines," available at www.who.int/teams/regulation-prequalification/eul/eul-vaccines .

the thirty-five vaccines that have received national approval in at least one country.[23]

Production of Vaccines

The introduction of COVID-19 vaccines has fundamentally changed the vaccine market landscape on both the supply and demand sides—at least temporarily. In 2019, global production of all vaccines was approximately 5.5 billion doses, and the value of the global vaccine market was estimated to be $33 billion.[24] In 2021, production of COVID-19 vaccines alone exceeded 11 billion doses, and Pfizer, a single manufacturer, reported $30 billion in sales of its COVID-19 vaccine.[25]

While global vaccine production has been scaled up at an unprecedented rate, there were still not enough doses for the global population to be fully vaccinated in 2021, and production may still fall short in 2022. Fully vaccinating 70 percent of the global population would require at least 11 billion vaccine doses, depending on whether a particular regimen requires one or two doses. Including a third "booster" dose would raise this number further.[26]

> Since its establishment, COVAX has experienced a substantial funding gap.

Procurement of Vaccines

The COVID-19 pandemic has also changed the way vaccines are procured. Before the pandemic, global vaccine procurement followed relatively predictable patterns. National governments were the highest-volume buyers; UNICEF, which procures vaccines for distribution to eligible low- and middle-income countries, was a close second. Now, countries obtain COVID-19 vaccines not only by purchasing them directly from manufacturers but also by accepting bilateral donations and receiving shipments from the COVAX Facility. Understanding these modes of acquiring COVID-19 vaccines is necessary to improve equitable vaccine distribution, including in conflict-affected areas.

Commercial acquisition remains the predominant method for procuring vaccines in high-income countries. By the end of 2021, high-income countries had finalized agreements to purchase more than three times as many vaccines as they needed to fully vaccinate their population, while upper-middle-income countries had secured enough for only 46 percent of their population, lower-middle-income countries for 48 percent, and low-income countries for 4 percent.[27] Many of these agreements are not publicly reported, and those that are often lack key information such as the total number of vaccines being provided, timelines for delivery, liability arrangements, flexibility to resell, and pricing. This lack of transparency "makes it difficult to independently estimate global supply, which countries will control that supply, and when vaccines will be delivered to whom."[28] It also leads to substantial variation in pricing from country to country.

Commercial acquisition thus fuels vaccine inequity, as countries that can purchase doses do so in advance—perhaps cornering the market—while those with less purchasing power either cannot afford to do so or find that there is inadequate production to meet their needs. In anticipation of this scenario, key international organizations collaborated to develop COVAX. Coordinated by Gavi, the Coalition for Epidemic Preparedness Innovations, and WHO, COVAX is intended to guarantee that all participating countries have equal access to vaccines, with a goal of providing

23 These include AstraZeneca, Serum Institute of India, Janssen, Moderna, Pfizer/BioNTech, Novavax, Sinopharm, and Sinovac. To satisfy the Good Manufacturing Practices (GMPs), EULs are granted to each manufacturing location separately, even if the facilities are producing vaccines using the same formulation. As such, several vaccines listed here have multiple EULs. WHO, "Status of COVID-19 Vaccines within WHO EUL/PQ Evaluation Process," April 2, 2022; UNICEF, "COVID-19 Vaccine Market Dashboard."

24 WHO, "Global Vaccine Market Report," December 2020.

25 Airfinity, "COVID-19 Intel Report," December 16, 2021; Michael Erman and Manas Mishra, "Pfizer Expects 2021, 2022 COVID-19 Vaccine Sales to Total at Least $65 Bln," Reuters, November 2, 2021.

26 WHO, "Strategy to Achieve Global Covid-19 Vaccination by Mid-2022," October 2021.

27 This excludes the 680 million doses available for African Union members to purchase through arrangements between the AU and vaccine producers, which would equate to coverage of roughly 35 percent of the population.

28 Graduate Institute Geneva Global Health Centre, "COVID-19 Vaccine Purchases and Manufacturing Agreements," 2022, available at www.knowledgeportalia.org/covid19-vaccine-arrangements .

enough doses to cover 20 percent of each country's population.

Toward this end, the COVAX Facility pools vaccine purchases and negotiates lower prices for any countries willing and able to self-finance. Within the COVAX Facility, a second mechanism, the Gavi COVAX Advance Market Commitment (AMC), provides access to vaccines for low- and middle-income countries. The Gavi COVAX AMC is funded mainly through official development assistance, as well as contributions from the private sector and philanthropic organizations.[29] Ninety-two low- and middle-income countries are eligible to participate in the Gavi COVAX AMC, including all countries with a per capita gross national income under $4,000 as well as countries eligible for lending through the International Development Association.[30] This includes most countries with areas experiencing armed conflict.

Since its establishment, COVAX has experienced a substantial funding gap. While this gap has narrowed, including due to $2.4 billion in pledges at the June 2021 "One World Protected" summit, acquisition of vaccines through COVAX has continued to fall short of expectations.[31] By February 2022, COVAX had acquired and distributed only 500 million of the more than 11.5 billion doses administered globally, with countries and regions with the highest incomes being vaccinated more than ten times faster than those with the lowest.[32]

In addition to COVAX, more than eighty countries or entities have donated or committed to donate doses to other countries bilaterally—a significant increase since the first quarter of 2021. However, most of these commitments are prospective, with delivery stretching into mid- to late 2022, and only a limited number have been delivered so far.[33] Additionally, details such as the date of delivery, the number of doses being delivered, and which vaccine is being donated are only irregularly provided, even to recipient countries. Most concerning, many of the donated doses are close to expiration, making it difficult for countries receiving donations to ramp up their rollout strategies in time.[34]

Beyond donations, some countries have loaned doses. For example, the US indicated it would loan doses to Canada and Mexico with the expectation of later reciprocation.[35] Some countries have also "redeployed" expiring doses to neighboring countries that have indicated their readiness to absorb them, as the Democratic Republic of the Congo did with doses received from COVAX.[36]

Most recipients of bilateral vaccine donations have been lower-middle-income countries, while low-income countries have received relatively few donations. Overall, recipient countries vary widely in terms of their income level and COVID-19 disease burden, which "suggests that so far recipients are being selected not just on the basis of financial and/or epidemiologic need, but based on diplomatic and strategic relationships."[37] For example, China, India, and Russia have strategically distributed vaccines through their "Health Silk Road," Vaccine Maitri (Vaccine Friendship) program, and Direct Investment Fund, respectively.[38]

There is a risk that disparities in vaccine procurement will be exacerbated by many high-income countries' policies on booster doses. As of December 2021, more than 4.7 million booster doses are being administered on a daily basis, though this may be an underestimate, as many countries do not share the breakdown between primary doses and booster doses. Most of these are

29 Gavi, the Vaccine Alliance, "COVAX Explained," September 3, 2020, available at www.gavi.org/vaccineswork/covax-explained .

30 For the full list, see: Gavi, the Vaccine Alliance, "92 Low- and Middle-Income Economies Eligible to Get Access to COVID-19 Vaccines through Gavi COVAX AMC," July 31, 2020, available at www.gavi.org/news/media-room/92-low-middle-income-economies-eligible-access-covid-19-vaccines-gavi-covax-amc .

31 Gavi, the Vaccine Alliance, "World Leaders Unite to Commit to Global Equitable Access for COVID-19 Vaccines," June 2, 2021.

32 Gavi, the Vaccine Alliance, "COVAX Crosses Milestone of 500 Million Donated Doses Shipped to 105 Countries," February 4, 2022; Tom Randall et al., "More Than 11.5 Billion Shots Given: Covid-19 Tracker," *Bloomberg,* April 24, 2022.

33 Graduate Institute Geneva Global Health Centre, "COVID-19 Vaccine Purchases and Manufacturing Agreements."

34 Sarah Newey, "'Trojan Horse': Bulk of UK Vaccine Donations to Poor Countries Set to Expire in September," *Telegraph*, July 28, 2021.

35 Natalie Kitroeff, Maria Abi-Habib, Zolan Kanno-Youngs, and Jim Tankersley, "U.S. to Send Millions of Vaccine Doses to Mexico and Canada," *New York Times*, March 18, 2021.

36 "Congo Starts Re-deployment of Expiring COVID-19 Vaccines to Other African Countries," Reuters, April 29, 2021.

37 Graduate Institute Geneva Global Health Centre, "COVID-19 Vaccine Purchases and Manufacturing Agreements."

38 Denis Cenusa, "China, Russia and Covid-19: Vaccine Diplomacy at Different Capacity," Italian Institute for International Political Studies (ISPI), July 7, 2021.

administered in high- or upper-middle-income countries. In fact, on a daily basis, eight times more booster doses are administered globally than primary doses in low-income countries.[39]

Distributing COVID-19 Vaccines

For vaccines to be effective, doses have to be available in accessible locations, with appropriately trained healthcare providers to administer them. Further, people have to be comfortable receiving the vaccines, which depends on trust in government and in the safety of the vaccines themselves. The global rollout of the COVID-19 vaccine is thus one of the greatest logistical challenges ever undertaken. The number of moving parts involved in delivering vaccines to every person in every community is tremendous, challenging even countries with highly developed infrastructure, healthcare systems, and communications capacity. In places where there are gaps in any of these areas, the challenge is even greater.

> Delivering vaccines to every person in every community is challenging even for countries with highly developed infrastructure, healthcare systems, and communications capacity.

The first step, therefore, is to assess the feasibility of implementing the campaign and the resources needed, including logistical and supply-chain needs and the number of trained vaccinators required. This assessment should identify the vaccination needs of different parts of the population, which vary on the basis of age and other demographic factors. It should also account for social, cultural, and economic barriers and limitations to access that the campaign will need to overcome to ensure equitable distribution, including to the most vulnerable.

To help prepare countries to deliver vaccines, WHO, UNICEF, the Gavi Secretariat, and several other partner organizations developed the Country Readiness and Delivery (CRD) work stream as part of COVAX. The CRD develops and disseminates guidance, trainings, tools, and advocacy materials to support the introduction of COVID-19 vaccines.[40] It has also provided a toolbox that countries can use to prepare for delivering COVID-19 vaccines, including training for national and subnational focal points and healthcare workers.[41]

Based on this assessment, countries also need a realistic, implementable, agreed-upon plan that provides for the financing, human resource, and logistical capacities needed to move vaccines from delivery crates to clinics. Many countries have not had such a plan. Some countries did not have adequate delivery or supply-chain mechanisms to distribute the doses they received.[42] Others did not factor in the full cost of delivery, including healthcare worker training and salaries. This can result in the wastage of vaccine doses, as seen in July 2021 when the Democratic Republic of the Congo, Liberia, Malawi, and other countries destroyed expiring doses.[43] On the other hand, countries like Rwanda that had invested in their healthcare workforce in the long term were able to roll out vaccines almost immediately on receipt. In some cases, even with an agreed on, thorough plan and adequate financing, vaccine rollout has been challenged by lack of forewarning of when vaccines will arrive, which ones will be in the shipment, and when they will expire. Vaccination campaigns have numerous components, and repeatedly turning them on and off reduces overall readiness by increasing fatigue and damaging confidence.

Many wealthier countries have developed vaccine rollout plans on their own. Often, these are countries that have purchased their vaccine supply through bilateral deals and are not dependent on COVAX. In contrast, the ninety-two low- and middle-income countries eligible to receive doses through the Gavi

39 Personal communication with personnel from WHO Access to COVID-19 Tools (ACT) Accelerator, December 2021.

40 WHO, "COVID-19 Vaccine Country Readiness and Delivery," March 1, 2021, available at www.who.int/initiatives/act-accelerator/covax/covid-19-vaccine-country-readiness-and-delivery .

41 WHO, "COVID-19 Vaccine Introduction Toolkit," available at www.who.int/tools/covid-19-vaccine-introduction-toolkit .

42 Quote from Emily Janoch, "In COVID-19 Vaccine Race, Rollouts Are Sometimes an Afterthought," Sara Jerving, Devex, April 15, 2021.

43 Due to the complexity of the process, there is an expected amount of wastage in any vaccination campaign, and WHO estimates that this amount can be as high as 50 percent. Though this wastage amount has been much lower with COVID-19 vaccines, even at only 1 percent, 9.4 million doses would still be wasted. WHO, "Monitoring Vaccine Wastage at Country Level: Guidelines for Programme Managers," WHO Doc. WHO/V&B/03.18/Rev.1, May 2005.

COVAX AMC are required to submit COVID-19 national deployment and vaccination plans (NDVPs) to the COVID-19 Partners Platform.[44] WHO recommends that NDVPs be developed consultatively through a process led by the national government (typically the ministry of health) and supported by other partners, including WHO, UNICEF, and civil society organizations. The NVDPs are detailed and thorough and must outline "key aspects of readiness," including regulatory preparedness, planning and coordination, costing and funding, vaccination strategies, waste management, human resources, vaccine acceptance and demand, vaccine safety, and immunization monitoring.[45] Following submission, a regional review committee assesses the plan and, if it satisfies the assessment criteria, allows it to join the process for being allocated vaccine doses from the COVAX Facility.

The Challenges of COVID-19 Vaccine Distribution in Conflict-Affected Areas

Planning and supporting vaccine rollout is particularly critical in conflict-affected areas, where resources are scarce, logistics can be challenging, competing priorities can overwhelm the pandemic response, and insecurity may limit safe access to populations living behind conflict lines.[46] Nonetheless, adhering to several good practices for planning and implementing vaccination programs in conflict-affected areas can increase the chances of success.

Planning, Coordinating, and Implementing the Rollout

Many conflict-affected areas are already receiving humanitarian assistance, and UN country teams and humanitarian teams may play an important role in rolling out vaccines. However, existing humanitarian logistical capacity has been underutilized during the COVID-19 vaccine rollout, and country-level humanitarian response plans and sustainable development cooperation frameworks have tended not to focus on COVID-19 vaccination. To effectively contribute to vaccination efforts, UN country teams need to objectively determine who is best placed to leverage tools that are already in place to move vaccines into communities affected by conflict.[47]

COVAX has come to play an important role in vaccination campaigns in many conflict-affected areas. As noted earlier, most of the countries experiencing conflict are dependent on COVAX for obtaining COVID-19 vaccines. In March 2021, Gavi reserved 5 percent of its COVAX AMC funding for a Humanitarian Buffer, which it co-created with humanitarian agencies. The Humanitarian Buffer procures vaccines for high-risk populations in conflict zones and other humanitarian settings. Gavi describes the Humanitarian Buffer as being "particularly relevant in instances of state failure and conflict, and in covering people in areas controlled by non-state armed groups that are inaccessible to governments… [which] challenge the standard allocation and deployment scope of COVAX."[48] The Inter-Agency Standing Committee's (IASC) Emergency Directors Group has decision-making authority on allocating vaccines. Allocation is meant to be in line with the humanitarian principles of impartiality, neutrality, independence, and humanity and to take into consideration the context of the pandemic, the needs of populations of concern, and the availability, logistics, and rollout of doses. All COVAX participants, both self-financing and AMC-eligible, can access the Humanitarian Buffer, along with national and international humanitarian agencies.[49]

However, the Humanitarian Buffer is not intended to address the vaccination needs of all high-risk populations of concern or to relieve states of their

44 WHO, "Country Readiness for COVID-19 Vaccines," February 19, 2021, available at www.who.int/news-room/feature-stories/detail/country-readiness-for-covid-19-vaccines . See also: WHO, "Partners Platform for Health in Emergencies," available at https://partnersplatform.who.int/en/ .

45 WHO, "Country Readiness for COVID-19 Vaccines."

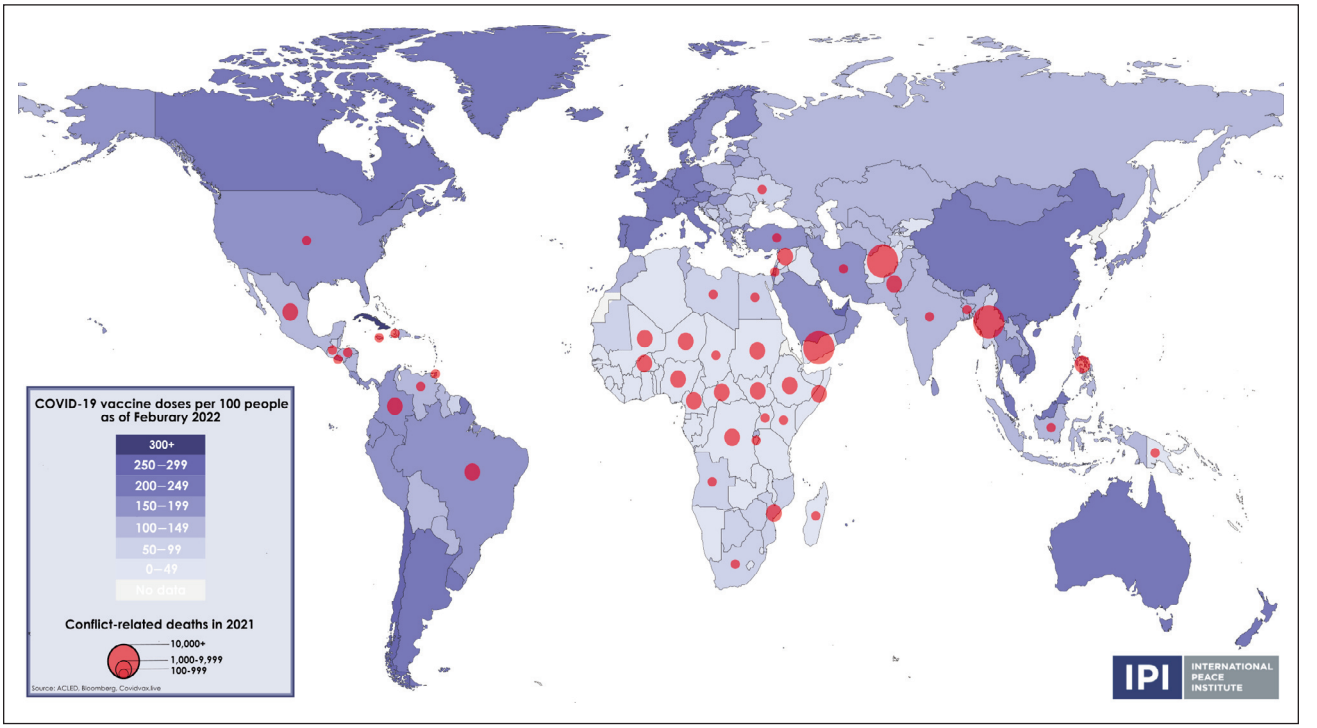
46 Taylor, "These Countries Have the Lowest COVID Vaccination Rates in the World"; Cook, "COVID-19 Vaccine: The Hurdles of Reaching People Caught in Conflict"; Beaubien, "For the 36 Countries with the Lowest Vaccination Rates, Supply Isn't the Only Issue."

47 Personal communication with World Food Programme official, January 20, 2022.

48 Gavi, the Vaccine Alliance, "The COVAX Humanitarian Buffer Explained," March 30, 2021, available at www.gavi.org/vaccineswork/covax-humanitarian-buffer-explained .

49 Ibid.

Figure 1. Rates of COVID-19 vaccinations among conflict-affected countries



obligations related to vaccination. A core principle of vaccination campaigns is that "countries have primary ownership and responsibility for establishing good governance and for providing effective and quality immunization services for all."[50] This principle applies regardless of whether an area is affected by conflict. This means that national or local government authorities should lead vaccination efforts. The Humanitarian Buffer is therefore a "last resort" to fill unavoidable gaps in coverage, including when a functional government does not exist or is not fully operational.[51]

The "first resort" is therefore to include high-risk populations in humanitarian settings in COVID-19 NDVPs.[52] However, there have been challenges in ensuring that these national plans include all populations, particularly in conflict-affected areas, which often have high numbers of displaced people. For example, as of early 2021, only 53 percent of NDVPs for countries with more than 500 refugees included refugees and asylum seekers, and only 17 percent included migrants in irregular situations, though the situation has subsequently improved.[53] Ultimately, in conflict-affected countries, as elsewhere, COVID-19 vaccination programs should be included in NDVPs and integrated into other health and non-health services or interventions. This can speed up the delivery of initial doses, make vaccination programs more sustainable, and use limited public health resources more efficiently.

> Existing humanitarian logistical capacity has been underutilized during the COVID-19 vaccine rollout.

In general, logistics planning for COVID-19 distribution requires ensuring the availability of adequate quantities of vaccines and related items at all storage and service points. In conflict-affected areas, however, logistics planners encounter challenges related to shifting patterns of conflict and movements of people. This can create narrow windows of opportunity for conducting vaccination campaigns. To enable local actors to rapidly mobilize to take advantage of these opportunities

50 WHO, "Global Vaccine Action Plan: 2011–2020," 2013, p. 22.

51 Gavi, the Vaccine Alliance, "The COVAX Humanitarian Buffer Explained."

52 Ibid.

53 WHO, "WHO Issues an Interim Guidance on COVID-19 Immunization in Refugees and Migrants," September 3, 2021.

on short notice, vaccines and supplies need to be pre-positioned at the national and subnational level. Vaccines can also be distributed at transit points for migrants or at refugee and internally displaced person camps to ensure that they reach displaced populations.[54]

Mass-vaccination campaigns are another tool for taking advantage of a negotiated cease-fire or "days of tranquility" to immunize large populations over a short period of time.[55] However, mass-vaccination campaigns are high-cost and unsustainable compared to routine vaccination. They also require rapid, large-scale procurement, shipment, and reception of vaccines and supplies and are often conducted outside healthcare settings. This requires special accommodations for injection safety (including disposal of needles) and monitoring for adverse events following vaccination.

Sanctions, which disproportionately impact populations in conflict-affected areas, present another logistical barrier to vaccination programs in some contexts. Sanctions can restrict the import of vaccine doses and related supplies and medical equipment and limit humanitarian actors from operating because of financial constraints and donor restrictions. For example, in countries such as Iran, North Korea, and Venezuela, sanctions may hinder COVAX from delivering vaccines due to lack of access to goods and services such as temperature-controlled equipment or logistics capabilities that are essential to vaccine delivery.[56] Sanctions can also challenge the impartiality of humanitarian action.[57]

Ensuring Security, Maintaining Impartiality, and Building Trust

Before sending in people to administer vaccinations, those conducting vaccination programs need to assess the risks vaccinators could face and how to adequately protect them. Healthcare, including medical personnel, equipment, and facilities, has been subject to attack in many conflict-affected areas. The UN Security Council took up this issue in Resolution 2286, strongly condemning "acts of violence against the wounded and sick, medical personnel and humanitarian personnel exclusively engaged in medical duties, their means of transport and equipment, as well as hospitals and other medical facilities." The resolution also demands "that all parties to armed conflicts facilitate safe and unimpeded passage for medical personnel and humanitarian personnel exclusively engaged in medical duties, their equipment, transport and supplies, including surgical items, to all people in need, consistent with international humanitarian law."[58] The International Committee of the Red Cross (ICRC) reported 3,780 attacks and cases of obstruction between 2016 and 2020.[59] WHO reported 812 attacks in 2021, resulting in 241 deaths.[60] These can be devastating for vaccination campaigns by causing casualties among people administering and receiving vaccines and by making vaccinators less willing to enter areas with a history of violence against healthcare.

To protect vaccinators, vaccination campaigns in conflict-affected areas may require negotiating humanitarian access. The Security Council has considered humanitarian access a number of times, including in Resolution 1894, in which it stressed the importance for "all parties to armed conflict to cooperate with humanitarian personnel in order to allow and facilitate access to civilian populations."[61] For vaccination campaigns, these negotiations should take place only after building trust with local communities, and negotiation should be conducted in an independent, neutral, and impartial manner.[62]

In addition to access negotiations, it is critical that

54 Chimeremma Nnadi et al., "Approaches to Vaccination Among Populations in Areas of Conflict," *Journal of Infectious Diseases* 216, Supplement 1 (2017).

55 This approach was used for vaccinations during the civil war in El Salvador, for example. See: Madeline Drexler, "The Troubled History Of Vaccines And Conflict Zones," NPR, August 29, 2021.

56 Karl Blanchet, Grégoire Mallard, Erica Moret, and Jin Sun, "Sanctioned Countries in the Global COVID-19 Vaccination Campaign: The Forgotten 70%," *Conflict and Health* 15, no. 69 (2021).

57 Alice Debarre, "Making Sanctions Smarter: Safeguarding Humanitarian Action," International Peace Institute, December 2019.

58 UN Security Council Resolution 2286 (May 3, 2016), UN Doc. S/RES/2286 (2016).

59 International Committee of the Red Cross (ICRC), "Health-care Providers, Patients Suffer Thousands of Attacks on Health-care Services over the Past Five Years, ICRC Data Show," May 3, 2021.

60 See: WHO, "Surveillance System for Attacks on Health Care (SSA)," 2017, available at https://extranet.who.int/ssa/ .

61 UN Security Council Resolution 1894 (November 11, 2009), UN Doc. S/RES/1894 (2009).

62 WHO, "Vaccination in Humanitarian Emergencies—Implementation Guide," WHO Doc. WHO/IVB/17.13, July 2017.

vaccine delivery programs themselves adhere to the principle of impartiality. If one side of a conflict feels that a vaccination program is favoring the other side, it may try to block the program. As stated by Govinda Clayton, executive director of the Conflict Research Society, "You have this very kind of difficult situation... of who gets the credit for bringing in the vaccines. It might be that, in the end, both parties decide it's just in both of their best interest just to continue fighting and not allow the vaccination campaign to happen, because they don't lose anything by doing that and they don't let the other side gain anything."[63] To avoid this situation, vaccines should be provided impartially to both residents and refugees and to populations in areas controlled both by the state and by non-state armed groups. In areas controlled by armed groups in particular, some people may be unwilling or unable to access government vaccination programs. At the same time, some government actors may not have access to or be willing to serve those areas, either for their own protection or because they see the population as supportive of their opponents.

> If vaccination programs are politicized or perceived as partial, they can fuel vaccine hesitancy.

Questions over impartiality also emerge when military or security personnel are involved in delivering vaccines. In conflict-affected areas, healthcare workers—including vaccinators—may be accompanied by military or security escorts or even embedded with troops or security forces.[64] In partnering with military actors, however, humanitarian actors can be turned into instruments for non-humanitarian objectives and can be perceived as partial and politicized by the people they are trying to help. This can reduce community trust in healthcare services and make community members less willing to receive vaccines.[65] To mitigate this risk, the UN has issued criteria to govern military involvement in humanitarian action.[66] Other organizations—notably Médecins Sans Frontières and ICRC—have policies of not engaging with military elements.

If vaccination programs are politicized or perceived as partial, they can fuel vaccine hesitancy—"the reluctance or refusal to vaccinate despite the availability of vaccines."[67] For vaccination campaigns to be effective, people have to trust those who are delivering the vaccine. This may be a challenge in conflict-affected areas where trust in the government is low. People also have to trust the vaccine itself. This trust can be undermined by misinformation and disinformation, which can easily take root in conflict-affected communities that may have long-standing distrust in official sources of information. Additionally, people who live in conflict-affected areas may have priorities that take precedence over COVID-19. As one Somali cattle herder stated in early 2021, "Before we get the vaccine, we need other things. We need food, water, healthcare and shelter. Our people are dying because of the basics in life. We will need the vaccine when we are liberated, now we are basically under siege."[68]

Shifting from vaccine hesitancy to vaccine acceptance requires engaging with people, listening to local leaders, understanding local cultural norms, and addressing the concerns people express. As one humanitarian practitioner recently wrote, it requires "investing time and showing empathy—drink more tea, sit with people and listen to them to understand their concerns, cultures and creeds before coming at them with a needle."[69] This is particularly important in conflict-affected areas. As the Global Polio Eradication Initiative has indicated in the context of polio vaccination campaigns, "Engaging with all conflict participants, including state and non-state actors, as well as their allies, while complicated, is key to effective delivery of vaccines, as well as to effective disease surveil-

63 Drexler, "The Troubled History Of Vaccines And Conflict Zones."

64 Kendra Dupuy and Siri Aas Rustad, "Trends in Armed Conflict, 1946–2017," Peace Research Institute Oslo (PRIO), May 2018.

65 This was the case, for example, during the Ebola vaccination campaign in the Democratic Republic of the Congo. Personal communication, January 24, 2022.

66 UN Office for the Coordination of Humanitarian Affairs (OCHA), "Humanitarian Civil-Military Coordination," available at www.unocha.org/themes/humanitarian-civil-military-coordination .

67 WHO, "Report of the Sage Working Group on Vaccine Hesistancy," November 12, 2014.

68 Nita Bhalla and Mohammed Omer, "Insecurity, Suspicion Will Mar Vaccine Rollout in Africa War Zones," Reuters, February 19, 2021.

69 Charles Deutscher, "COVID-19 Vaccine: Three Considerations for Equitable Access within Countries at War," ICRC Humanitarian Law & Policy blog, March 24, 2021.

lance."[70] The same approach is required for COVID-19 vaccines.

Recommendations

Populations affected by conflict are likely to remain the least vaccinated for some time to come.[71] To ensure the more equitable distribution of vaccines, particularly in conflict-affected areas, policymakers could consider the following recommendations.

- **Redistribute global resources to increase the supply of vaccines to conflict-affected countries**: All countries that have promised vaccine donations—whether bilaterally, regionally, or through COVAX—should follow through on these promises more quickly. High-income countries should also increase support to COVAX, and COVAX itself should consider increasing the proportion of its resources funneled to the Humanitarian Buffer. In the longer term, pharmaceutical companies and countries with strong vaccine-production capacity should transfer technology to and establish production facilities in lower-income and fragile countries to enable them to develop vaccine supplies domestically.
- **Increase the transparency and predictability of global vaccine supplies**: Vaccine manufacturers and purchasers should make public the terms of their vaccine procurement agreements to improve planning and resource allocation and prioritization. Countries donating vaccines should also do so in a more stable and predictable way, which is especially important for conflict-affected areas where there may be narrow windows of opportunity for vaccination campaigns.
- **Enhance cooperation and coordination at the national and local levels to deliver vaccines to conflict-affected areas through existing humanitarian response mechanisms**: UN entities, national and local governments, NGOs, philanthropic organizations, and private sector actors should reinforce their cooperation in conflict-affected countries to ensure that vaccines reach conflict-affected populations. Where a health cluster has been established, cluster members should coordinate at the senior and working levels to ensure that they are each leveraging their expertise and resources, including those related to logistics, vaccination campaigns, communications, community engagement, and risk analysis. Those already working in conflict-affected areas should anticipate and recognize opportunities to conduct vaccination campaigns or administer doses as part of broader initiatives and other activities (e.g., in camps for displaced people or refugees or during other routine health interventions). As responsibility for vaccine distribution ultimately resides with governments, the UN and other partners should also support governments in developing national deployment and vaccination plans that adequately include conflict-affected populations.
- **Ensure that vaccination campaigns in conflict-affected areas adhere to humanitarian principles**: Those organizing vaccination campaigns in conflict-affected areas should adhere to the humanitarian principles of impartiality, neutrality, independence, and humanity. To this end, they should be cautious about using military or security forces in vaccination campaigns. They should also engage with communities to build trust and reduce vaccine hesitancy, especially in areas where populations may distrust state actors.

70 Nnadi et al., "Approaches to Vaccination Among Populations in Areas of Conflict."

71 Taylor, "These Countries Have the Lowest COVID Vaccination Rates in the World"; Cook, "COVID-19 Vaccine: The Hurdles of Reaching People Caught in Conflict"; Beaubien, "For the 36 Countries with the Lowest Vaccination Rates, Supply Isn't the Only Issue."

The **INTERNATIONAL PEACE INSTITUTE** (IPI) is an independent, international not-for-profit think tank dedicated to managing risk and building resilience to promote peace, security, and sustainable development. To achieve its purpose, IPI employs a mix of policy research, strategic analysis, publishing, and convening. With staff from around the world and a broad range of academic fields, IPI has offices facing United Nations headquarters in New York and in Manama.

IPI
INTERNATIONAL PEACE INSTITUTE

ΙΣΝ/SNF
ΙΔΡΥΜΑ ΣΤΑΥΡΟΣ ΝΙΑΡΧΟΣ
STAVROS NIARCHOS FOUNDATION

777 United Nations Plaza, New York, NY 10017-3521, USA
TEL +1-212-687-4300 **FAX** +1-212-983-8246

52-52 Harbour House, Bahrain Financial Harbour
P.O. Box 1467, Manama, Bahrain

www.ipinst.org