



# COVID-19 Vaccine Redistribution to Save Lives Now

*Why high-income countries must immediately redistribute excess COVID-19 vaccines to address global vaccine inequity*

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## Summary

Millions of people have already died and millions more are at risk of dying from vaccine inequity if COVID-19 vaccine doses are not urgently redistributed. While high-income countries (HICs) hoard excess COVID-19 vaccines, with more than 870 million excess doses expected among just 10 HICs by the end of 2021, many healthcare workers and people in vulnerable groups in low- and middle-income countries (LMICs) and places where Médecins Sans Frontières (MSF) works have not yet received their first doses.<sup>a</sup>

The world is far from achieving World Health Organization (WHO) vaccination targets, and the COVAX Facility (COVAX) – created to support distribution of COVID-19 vaccines globally – is severely off course. Millions of doses could be tragically wasted if HICs do not immediately redistribute excess doses. G7 and EU countries alone could waste 241 million doses by the end of 2021.<sup>1</sup> Still, pharmaceutical companies continue to prioritise high-profit sales to HICs over a fairer distribution of vaccines. Meanwhile, COVID-19 anywhere is a problem everywhere. If the world is not urgently vaccinated, it is more likely that ‘variants of concern’ (VOC) will develop and spread globally. The public health, ethical, human rights and economic justifications for ensuring equitable and rapid access to COVID-19 vaccines that can save lives and limit the spread of COVID-19 are clear.

Vaccine dose redistribution can happen via ‘reallocation’, whereby doses reserved or purchased by HICs are made available to LMICs, COVAX or regional bodies to purchase, or via donation. For dose redistribution to be effective, doses must be suitable, have sufficient remaining shelf-life, and be redistributed in a transparent and timely way. If doses are reallocated, they must be made available at the lowest possible price. Manufacturers must help lift barriers to dose redistribution by assuming liability for their own vaccines.

The fastest way to save lives right now is for HICs to stop hoarding COVID-19 vaccine doses, and immediately redistribute excess doses to LMICs via COVAX or regional bodies. If available vaccine doses are steadily redistributed, an estimated nearly one million deaths could be averted by mid-2022.<sup>1</sup> Pharmaceutical companies must also prioritise their vaccine supplies for LMICs. However, these are only short-term emergency measures. To overcome COVID-19, we need to increase global production and supply of COVID-19 vaccines in the longer term, particularly in regions with limited access to current vaccine supplies. Pharmaceutical companies must share their vaccine technology and know-how with the world to help diversify vaccine production and supply, and world leaders must support the TRIPS waiver at the World Trade Organization (WTO) to remove key intellectual property barriers and legal risks on COVID-19 medical products.

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<sup>a</sup> MSF defines COVID-19 vaccine doses as ‘excess’ once 40% of a population has been vaccinated before the end of 2021, in line with WHO vaccination targets. Calculations based on data provided by Airfinity, science data and analytics company, as of 17 September 2021.

## **Dose redistribution is urgently needed**

### *Millions of people are at risk of dying from vaccine inequity*

While many LMICs affected with new, dangerous COVID-19 variants are hit by deaths and shortages of hospital beds, oxygen and therapeutics, access to vaccines in these countries to protect against the disease remains abysmally low. Over 60% of people in HICs have received at least one dose of a COVID-19 vaccine, but less than 3% of people in low-income countries (LICs) have.<sup>2</sup> HICs have administered 120 doses per 100 people, whereas LICs have administered just 3 doses per 100 people.<sup>3</sup> In places where MSF works, healthcare workers and the people most vulnerable to COVID-19 who are desperate to be vaccinated may be unable to access a vaccine. The world now faces a situation in which healthcare workers and high-risk populations in LMICs may not receive their vaccinations until after the majority of wealthy countries' populations are fully protected. Millions of people are at risk of dying from COVID-19 as vaccine inequity persists, while modelling data suggest that "more equitable vaccine distribution will lead to the biggest reduction in deaths."<sup>4</sup>

### *Global cooperation has failed*

Despite grand promises from world leaders to help vaccinate the world, rich countries continue to hoard vaccines, meaning that fewer vaccines are available for COVAX or regional bodies to redistribute. MSF supports the World Health Organization (WHO) calls for 40% of all national populations to be fully vaccinated by the end of 2021 and 70% to be fully vaccinated by mid-2022.<sup>5</sup> WHO also called for 10% vaccination coverage by the end of September 2021, but 56 countries missed this target.

Furthermore, when HICs have committed to redistributing doses, these commitments often come without concrete timelines. While redistribution promises are welcome, COVID-19 vaccines are desperately needed in LMICs now. People in these countries cannot wait until the end of 2021 or mid-2022 for doses to arrive. World leaders must move beyond high-level statements. They must begin redistributing doses now and commit to clear delivery schedules by the end of October 2021.

### *The world will not overcome the COVID-19 pandemic by relying on COVAX*

Initiated by Gavi, the Vaccine Alliance (Gavi), with support from the Bill and Melinda Gates Foundation, the COVAX Facility (COVAX) was launched in June 2020 to enable global collaboration and ensure equitable COVID-19 vaccine access. The goal was to deliver two billion doses by the end of 2021. However, 15 months later, COVAX is severely off course. As of early September 2021, COVAX has only delivered 230 million doses, including doses to HICs.<sup>6</sup> COVAX recently had to decrease its anticipated 2021 supply forecast by approximately 25% due to delayed shipments by several manufacturers.<sup>7</sup>

COVAX was developed on false assumptions: that global solidarity would prevail; that HICs would meaningfully support the model; and that traditional market forces could be relied upon to end the most significant public health crisis in a century. While Gavi was focused on courting HICs to join COVAX, those countries made bilateral deals with manufacturers. COVAX and the LMICs relying on COVAX were pushed to the back of the queue.

Since COVAX has been reluctant to comment on technology transfer, intellectual property and licensing issues in order to diversify manufacturing, they relied heavily on one supplier – the Serum Institute of India (SII) – which obtained exclusive licenses for two different vaccines from Oxford-AstraZeneca and Novavax. No other manufacturer was included from India to manufacture these vaccines, although other manufacturers later went on to negotiate agreements for the manufacture of Sputnik V from the Gamelya Institute and COVAXIN from Bharat Biotech. In February, WHO approved the Oxford-AstraZeneca vaccine for emergency use. However, beginning in March 2021, India experienced a COVID-19 surge that at its peak caused over 4,000 deaths a day.<sup>8</sup> The Indian government asked SII to halt all vaccine exports to meet urgent domestic needs between April and September 2021. SII had been due to deliver 90 million doses of the vaccine to COVAX by May, mainly for countries in Africa and the Asia-Pacific region. This left COVAX – and, by extension, dozens of LMICs – without sufficient supply.

Considering what was at stake, how did such a precarious model become the global mechanism to overcome the COVID-19 pandemic? Essentially, this is a result of a business-as-usual approach, allowing pharmaceutical corporations to decide who will and will not produce the vaccine and which countries will be supplied. The exclusion of key stakeholders from the design process and the lack of transparency and accountability has undermined COVAX's functioning since its inception. COVAX was developed by a small group of organisations, with key groups notably absent from the discussions: LMIC governments, regional bodies, and civil society organisations. If these perspectives had been included in the design process, COVAX could have better reflected the needs and aspirations of LMICs and prioritised them over the wishes of HIC donors and corporations.

While COVAX is currently the best mechanism to redistribute vaccines at scale and quickly, it is not a model to be replicated for future pandemics. Promising regional procurement mechanisms, such as the Africa Vaccine Access Trust, have been developed that enable regions to take control of their own vaccine supply. However, they are also undermined by HICs buying up the majority of available vaccines.

### Millions of excess doses could be wasted

Many HICs are starting to announce booster programmes to give certain sections of their populations an additional shot of a COVID-19 vaccine before many frontline healthcare workers and vulnerable groups in LMICs have even received their first dose. Scientific consensus has yet to be reached regarding the widespread need for booster doses for the general population. The use of booster doses must be driven by strong scientific evidence and prioritised for people with the greatest need. In the face of global vaccine inequity and supply constraints, governments and pharmaceutical corporations should not plan or administer booster shots anywhere before all healthcare workers and vulnerable people globally are fully vaccinated. Priority must be given to increasing global vaccination coverage with the full vaccination series, before booster doses are administered. However, additional doses as part of the primary vaccination series may be needed for certain individuals such as the moderately to severely immunocompromised, who may not be adequately protected with the 'standard' series.<sup>9</sup> Ultimately though, the most lives will be saved by providing vaccines to people who have not yet received any doses.

Even if boosters are administered in HICs, these countries would still have millions of excess doses.<sup>10</sup> If excess COVID-19 vaccine doses are not urgently redistributed, millions of doses could be wasted as they lay idle in HIC storage and are unable to be used before their expiry date.<sup>b</sup> G7 and EU countries alone could waste 241 million doses by the end of 2021.<sup>1</sup> This would be a tragedy given the urgent need in LMICs. Table 1 lists the number of excess doses that will be held by 10 HICs by the end of the year even after all people ages 16 and up are fully vaccinated in these countries, including third doses for high-risk groups.

| <b>Table 1. Excess doses of WHO-listed vaccines by the end of 2021 after vaccinating people ages 16 and up, including third doses for high-risk groups<sup>c</sup></b> |                     |
|--|---------------------|
| <b>Country</b>   | <b>Excess doses</b> |
| United States  | 490,233,000         |
| United Kingdom   | 96,952,000          |
| Germany  | 80,950,000          |
| France   | 75,406,000          |
| Canada   | 62,317,000          |
| Australia  | 22,387,000          |
| Netherlands  | 18,559,000          |
| Sweden   | 11,265,000          |
| Denmark  | 6,368,000           |
| Norway   | 6,158,000           |
| <b>Total</b>   | <b>870,595,000</b>  |

An additional concern is the timeline for dose redistribution. If doses are ‘dumped’ towards the end of the year instead of being steadily redistributed, LMIC health systems may not have the capacity to absorb these doses and they would be wasted, especially if these doses are close to their expiry date. This is why it is essential that HICs begin redistributing doses now and commit to clear delivery schedules by the end of October 2021. It is also essential that HICs coordinate with COVAX and regional bodies to ensure that doses are redistributed to where there is greatest need and where health systems are able to absorb them.<sup>d</sup>

Dose redistribution must be coupled with the needed resources for vaccine delivery and community outreach. Sufficient funding for the operational costs of vaccine delivery in LMICs is crucial. Not covering these costs will compromise countries’ implementation capacity and therefore the effectiveness of vaccination strategies. HICs should support the rollout of COVID-19 vaccines in LMICs, financially and through technical, logistical and community

<sup>b</sup> It is important to note that up to 10-15% of doses in any vaccination program may need to be destroyed due to health and safety reasons, and this should not be considered wastage. Doses must not be wasted due to HICs hoarding vaccines and failing to redistribute them in time before their expiry.

<sup>c</sup> ‘High-risk groups’ include people ages 65 and up and people with existing immunodeficiencies. Calculations based on data provided by Airfinity, science data and analytics company, as of 17 September 2021.

<sup>d</sup> While MSF encourages HICs to redistribute doses via COVAX, HICs and COVAX should coordinate this redistribution with regional bodies to ensure that doses go to where there is greatest need. If, as a last resort, doses are redistributed bilaterally, coordination with regional bodies is essential.

preparedness support to ensure that doses can be successfully administered when they are redistributed. Based on MSF's experience in several resource-limited settings, strong health promotion and dialogue with communities to counter disinformation and vaccine hesitancy is key. All stakeholders should also work together to urgently reach marginalised groups, including refugees, internally displaced persons, migrants, and those living in non-government-controlled areas.

### The pharmaceutical industry is profiting from a pandemic

The International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) suggests that vaccine supply will no longer be an issue as there will be enough vaccine doses to vaccinate the world this year and that it is up to countries to redistribute their excess doses.<sup>11</sup> While countries do need to urgently redistribute their doses, the pharmaceutical industry also has a critical role to play in ensuring equitable access to doses. Unfortunately, as WHO Director-General Tedros stated, "companies and countries that control the global supply of vaccines think the world's poor should be satisfied with leftovers."<sup>12</sup>

Pharmaceutical companies are making huge profits from vaccines whose development was substantially paid for by taxpayers.<sup>13</sup> BioNTech-Pfizer and Moderna estimate they will earn US\$26 billion and \$19.2 billion, respectively, in sales from COVID-19 vaccines in 2021.<sup>14,15</sup> They have together secured over \$60 billion in sales of the shots just for 2021 and 2022.<sup>16</sup> Furthermore, BioNTech-Pfizer and Moderna recently raised their COVID-19 vaccine prices in the UK and EU.<sup>17</sup>

Despite the desperate need for vaccines in LMICs, companies continue to prioritise sales to HICs. BioNTech-Pfizer have allocated 78% of their deliveries to HICs, and Moderna has allocated 85% of their deliveries to HICs.<sup>e</sup> LMICs, COVAX and regional bodies have struggled to access doses and LMICs are experiencing low vaccination coverage as a result. Increased supply does not resolve vaccine inequity if vaccines are still not available where they are most needed. While control over global supply and production of COVID-19 vaccines remains in the hands of a few pharmaceutical companies, vaccine inequity will persist. Pharmaceutical companies need to prioritise sales to LMICs through COVAX and regional bodies, and they need to share critical information to help increase vaccine production and supply where it is urgently needed (see 'Redistribution alone is not enough').

### COVID-19 anywhere is a problem everywhere

The public health imperative of vaccinating the world is obvious. Variants are more likely to develop in countries with low vaccination rates due to increased opportunities for the virus to mutate, including 'variants of concern' (VOCs) that may be vaccine resistant and cause more severe disease.<sup>18</sup> Low vaccination coverage also poses practical and ethical concerns for healthcare workers in countries with limited access to vaccines. Ensuring healthcare systems remain operational requires healthy staff, and no healthcare worker should have to risk their life to go to work for want of a basic vaccine. Increasing vaccination coverage worldwide is vital to protect public health by reducing the likelihood of even more dangerous VOCs developing and saving more lives.

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<sup>e</sup> Calculations based on Airfinity data as of 22 Sep 2021.

There is also a clear human rights imperative for vaccinating the world. The United Nations (UN) Human Rights Council has affirmed that universal, equitable access to COVID-19 vaccines is a human right and that all states have an obligation to cooperate to achieve this aim.<sup>19</sup> The UN Committee on Economic, Social and Cultural Rights has also affirmed that states have an obligation to support other states to access vaccines.<sup>20</sup>

Furthermore, there are major economic benefits to vaccinating the world. Research suggests that a faster end to the pandemic could inject the equivalent of \$9 trillion into the global economy by 2025.<sup>21</sup> In contrast, vaccine nationalism and the unequal allocation of COVID-19 vaccines could cost the global economy up to \$1.2 trillion a year.<sup>22</sup> Even if countries can vaccinate everyone within their country, they remain at risk of a sluggish economic recovery if COVID-19 continues to spread unabated elsewhere.<sup>23</sup>

## How doses can be redistributed

If available vaccine doses are steadily redistributed, an estimated nearly one million deaths could be averted by mid-2022.<sup>1</sup> There are multiple options to redistribute doses (Annex). Any transfer of doses from HICs to LMICs is 'dose redistribution.' In addition to dose donations, doses can be redistributed by 'reallocation' when made available by HICs to LMICs, COVAX or regional bodies for purchase. For dose redistribution to be most effective, redistribution must meet key criteria and manufacturers must assume liability for their own products.

### Key criteria for dose redistribution

1. **Urgency.** Doses must be redistributed urgently to meet current need in LMICs. HICs must begin redistribution immediately and publish clear timelines for dose redistribution to LMICs with monthly targets by the end of October 2021.
2. **Volume.** Redistribution must be scaled up to meet WHO targets: at least 40% of all national populations should be fully vaccinated by the end of 2021 and 70% by mid-2022. With global cooperation this is achievable.
3. **Suitability.** The product profile of a vaccine must match the context in which it is being given. Vaccines should be of practical use to recipient healthcare systems as agreed by the recipient country. Factors such as efficacy against mutations present in the recipient country, thermostability and cost must be considered.
4. **Shelf life.** Redistributed doses must have adequate remaining shelf life that takes into account the regulatory requirements of recipients and the timeline for in-country delivery. Donating doses to COVAX that are nearing their expiration is not acceptable, unless expressly approved by COVAX and recipient governments. Vaccines that are wasted due to insufficient shelf life should not be counted in redistribution totals.
5. **Affordability.** If redistribution is in the form of reallocation (as opposed to donation), these doses must be sold to LMICs at the lowest possible price. Countries and/or manufacturers should sell these doses at a non-profit price or lower, even if the original purchasing countries negotiated/paid a higher price.
6. **Barrier free.** Governments that have purchased vaccines or enter into negotiations to do so must ensure that vaccine manufacturers remove all barriers to dose redistribution, including any legally binding barriers written into supply contracts.
7. **Transparency.** Donations must be fully transparent with all necessary information about type, quantity, date of expiry and timing in the public domain.

8. **Coordination.** Redistribution of vaccines via COVAX or otherwise should be coordinated with relevant regional bodies to ensure vaccines are going to where they are most needed. Regional bodies include the African Union, including through the Africa Vaccine Access Trust and Africa Centres for Disease Control and Prevention, and the Pan American Health Organization.
9. **Complement other commitments to support LMICs and global health.** Vaccine dose donations to official development assistance (ODA)-eligible countries should be donated in addition to, not counted towards, existing ODA commitments.
10. **Compliance with WHO and UNICEF Vaccine Donations guidelines.** Any donations should comply with the UN's guidance on donation of medical tools, specifically the WHO guidelines from the 2010 Joint Statement on Vaccine Donations.<sup>24</sup>

### Manufacturers must assume liability for their own products

Under normal circumstances in most countries, manufacturers accept liability for the vaccines they produce in case of an 'adverse event following immunisation'. However, due to the rapid development of COVID-19 vaccines, upon manufacturers' insistence both HICs and COVAX have been obliged to agree to a contractual approach to liability, which places the liability for vaccines on the buyer (in this case governments) rather than manufacturers. This means that if a manufacturer is found liable by a national judge to pay a compensation to potential victims in case of any serious adverse vaccine side effects, governments are required to pay that compensation. Whether LMICs receive doses via direct donations from HICs, via COVAX, or via bilateral deals with manufacturers, they have to accept these liability terms.

COVAX has set up a 'No Fault Compensation Fund' to which a victim of an adverse event living in an eligible LMIC can file a claim for financial compensation for doses received via COVAX.<sup>25</sup> However, the fund will be closed in June 2022 while governments will still be legally and financially liable beyond this date. Although claims under national laws are expected to be limited in countries eligible for the COVAX 'No Fault Compensation Fund', they cannot be ruled out. COVAX has also been exploring some backstopping guarantees to help LMICs cover the costs should a claimant bring a successful claim under national law, but countries still need to assume ultimate legal responsibility.<sup>26</sup> This could be a barrier to vaccination efforts in LMICs.<sup>27</sup>

COVID-19 vaccines are starting to shift regulatory status from being approved under emergency use to being fully approved. As more data become available on the safety and efficacy of these vaccines, companies must take back legal responsibility for adverse events related to their products. HICs and their regulatory agencies need to act quickly to ensure that this occurs. Furthermore, a lack of transparency around COVID-19 supply contracts disadvantages LMICs when negotiating terms with manufacturers. Companies should make the terms of supply contracts public to enable civil society to scrutinise them for any predatory practices.

A humanitarian buffer has been established as part of the COVAX mechanism as a measure of 'last resort' to ensure access to COVID-19 vaccines for high-risk and vulnerable populations in humanitarian settings. Doses are allocated to the humanitarian buffer as a portion of total COVAX supplies.<sup>f</sup> However, due to the removal of liability from manufacturers and the difficulty for humanitarian agencies to assume legal responsibility for adverse events, actual

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<sup>f</sup> This portion is up to 5% of COVAX's doses as they become available.



access to these doses may become impossible. The simplest and most obvious solution to remove liability for humanitarian actors is for companies to waive this obligation for doses distributed through the humanitarian buffer.

## Redistribution alone is not enough

We are facing such extreme vaccine inequity due to a broken global system that allows pharmaceutical companies to decide what volumes of vaccines they produce, what prices to set, and whom to sell to first. With industry's drive to profit off of these lifesaving vaccines, it is not surprising that HICs that could quickly pay the most have had preferential access to COVID-19 vaccines.

For the world to overcome COVID-19 and be prepared for future pandemics, we need to increase and diversify production and supply of COVID-19 vaccines. We also need to equip regions to be as self-sufficient as possible to address regional health needs. In April 2021, WHO launched the COVID-19 mRNA Vaccine Technology Transfer Hub (the Hub) to further this goal for mRNA-based vaccines.<sup>28</sup> The Hub will train staff, conduct research and development, and facilitate full technology transfer of mRNA vaccine technology. Pharmaceutical companies must share their vaccine technology and know-how with the Hub to help increase manufacturing capacity for cutting-edge mRNA vaccines in regions that have insufficient access to COVID-19 vaccines. Unfortunately, thus far not one of the largest pharmaceutical companies distributing WHO-listed COVID-19 vaccines has offered to share the science, technology and know-how behind their vaccines with the Hub. Sharing this technology is critical to boosting manufacturing globally and preparing for future pandemics.

Another opportunity to improve vaccine production is through the proposed World Trade Organization (WTO) TRIPS waiver. World leaders must support the TRIPS waiver to remove intellectual property (IP) barriers to COVID-19 vaccines, treatments and tests and facilitate the scale-up of vaccine production, and urgently advance text-based negotiations to ensure the waiver can be adopted and implemented as soon as possible.

## Recommendations

### High-income country governments should:

1. **Urgently redistribute excess doses to LMICs.** HIC governments should begin immediately redistributing excess doses via COVAX or regional bodies without earmarks to ensure doses are directed to where they are most needed. By the end of October 2021, they should publicly commit to monthly redistribution targets for the following 12 months to ensure a steady flow of doses and prevent wastage. Doses should be suitable, affordable and have sufficient remaining shelf life. Governments should aim to meet the WHO target to vaccinate at least 40% of all national populations by the end 2021.
2. **Be transparent.** HIC governments should publish fortnightly updates on doses received, doses used, doses wasted, and a summary of dose redistribution to LMICs. The summary should include details of which vaccines were redistributed, remaining shelf life of redistributed doses, recipient countries, and whether doses were redistributed via COVAX, regional bodies or bilaterally. All dose redistribution should be coordinated with

regional bodies, like the African Union, including the Africa Vaccine Access Trust and Africa Centres for Disease Control and Prevention, and the Pan American Health Organization.

3. **Prioritise access for countries most in need.** HIC governments that are self-financing participants of COVAX but already have adequate supply through their own bilateral deals should refrain from drawing on their doses available through COVAX. LMICs with the most limited access should be prioritised for vaccine supply through COVAX.
4. **Support vaccine delivery.** HIC governments should further support the rollout of COVID-19 vaccines in LMICs by providing financial, technical, logistical and community preparedness support for vaccine delivery, and should work together with all stakeholders to urgently reach marginalised groups.
5. **Maintain other commitments to support developing countries and global health.** HIC governments should ensure that dose redistribution commitments do not detract from existing vital humanitarian and development programmes.
6. **Support efforts to increase production and supply of COVID-19 vaccines in neglected regions.** HIC governments should support existing global initiatives like the WHO COVID-19 mRNA Vaccine Technology Transfer Hub and the WTO TRIPS waiver to remove IP barriers on COVID-19 medical tools. All HICs with WHO-listed mRNA vaccine developers based in their jurisdictions should use all political, legal and financial means possible to ensure that developers share their technologies with the WHO's Hub.

**Manufacturers should:**

1. **Prioritise current and future production for LMICs,** in coordination with COVAX and regional bodies.
2. **Fulfil commitments to COVAX** as outlined in their advance purchase agreements and cease any delays of vaccine distribution to COVAX.
3. **Remove any contractual barriers** to HICs redistributing doses to LMICs.
4. **Improve transparency** by publishing their supply contracts and supply schedules, including information on volumes distributed to purchasers.
5. **Assume liability** for their own products in all countries as regulatory status shifts from being approved under emergency use to being fully approved by WHO.
6. **Share real-time stability testing results** with regulatory authorities and apply for shelf-life extension regularly.
7. **Share the science, technology and know-how behind mRNA vaccines** with the WHO COVID-19 mRNA Vaccine Technology Transfer Hub.

## Annex: Mechanisms for dose redistribution

MSF classifies any transfer of doses from HICs to LMICs as ‘dose redistribution.’ ‘Dose reallocation’ is when doses are made available by HICs to LMICs, COVAX or regional bodies, for purchase. Countries can also redistribute doses by donating them (‘dose donation’). In all cases, any liability issues that prevent redistribution of vaccines should be urgently addressed.

### Dose reallocation

HICs can reallocate doses to LMICs by any of the following methods:

1. **Delivery swap.** HICs can ask for doses already contracted from manufacturers (either already purchased or contract options) to be delivered directly to LMICs via COVAX or regional bodies, such as the African Union, including the Africa Vaccine Access Trust and Africa Centres for Disease Control and Prevention, and the Pan American Health Organization. HICs have been given preferential access by the pharmaceutical industry in both the volumes of doses they have received and also in the timing of those deliveries; these countries should give their delivery slots to COVAX or regional bodies and insist that manufacturers prioritise delivery to those mechanisms serving LMICs. Pharmaceutical companies should remove any contractual barriers to this transfer taking place and proactively reach out to purchasers to discuss options to redistribute doses. These doses should be sold at the lowest possible price (at a non-profit price or lower), even if the original purchasing countries had previously negotiated/paid a higher price.
2. **Contract delay or cancellation.** HICs can delay or cancel existing contracts and refrain from securing additional contracts with manufacturers so that manufacturers can prioritise production for LMICs, COVAX or regional bodies. When doing so, HICs should seek assurances from manufacturers that production will instead be prioritised for LMICs that have not received adequate doses via COVAX or regional bodies. HICs that have included ‘options’ (to purchase additional doses) in their contracts with manufacturers should refrain from exercising those options and instead insist that manufacturers allocate these doses to COVAX or regional bodies.
3. **COVAX slot swap.** HICs that have signed up as a ‘self-financing participant’ to purchase doses via COVAX can agree to forgo their dose allocations so that these doses can be made available to COVAX advanced market commitment (AMC) countries. Since HICs have already secured adequate doses through their own bilateral deals, diminishing the COVAX supply by accepting their COVAX-allocated doses at this time is excessive. HICs should defer any receipt of COVAX doses until all LMICs have been adequately covered.

### Dose donation

HICs can donate doses to LMICs by any of the following methods:

1. **COVAX or regional bodies donation.** HICs can ask for doses already contracted with manufacturers to be delivered directly to COVAX or regional bodies and agree to cover the costs. This is the best way for HICs to donate vaccine doses as the majority of doses are tied up in bilateral contracts and making them available to COVAX or regional bodies will ensure that vaccines go to where they are most needed.
2. **COVAX slot donation.** HICs that have signed up to COVAX as ‘self-financing participants’ (i.e., to purchase doses via COVAX) can donate their dose allocations to AMC countries,

covering the costs of vaccine purchase. This is another effective way of making a dose donation but may represent lower volumes of doses than those contracted bilaterally between HICs and manufacturers (option 1).

3. **Bilateral donation.** It is highly preferable for donations to be made via COVAX or regional procurement bodies so that donations are allocated by public health priority. However, HICs can also donate doses by asking for doses already contracted with manufacturers to be delivered directly to LMICs and cover the costs. Any bilateral donations should be coordinated with regional bodies. Information on bilateral donations must also be transparently shared with WHO to be taken into consideration for other allocations managed by COVAX or regional bodies.
4. **Donating already received doses.** HICs should explore all avenues to redistribute doses before they have been received in their country. However, if vaccines have already been received by the HIC, HICs should still work with COVAX and regional bodies to explore possibilities for donation as a last resort. If COVAX or regional bodies are unable to accept these doses, they should be donated bilaterally, taking into account the above recommendations for bilateral donation (option 3). HICs should maintain doses in central storage as much as possible so that it can be verified that cold-chain requirements have been met. The remaining shelf life of redistributed vaccines should be as long as possible. HICs should not use this mechanism to offload doses nearing expiration. Vaccines that are wasted due to insufficient shelf-life should not be included in donation totals.

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