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Commentary

Mpox vaccines: an urgent equity imperative

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Mpox is a viral zoonotic infectious disease caused by the mpox virus (MPXV). As global attention continues to shift toward other pressing geopolitical and economic issues, the mpox epidemic risks becoming another neglected crisis, especially in Africa, where the burden remains most severe. Despite recent declines in mpox case counts in high-burden countries such as the Democratic Republic of Congo (DRC), Burundi, Uganda, and Sierra Leone, the number of countries currently reporting cases continues to grow, reaching 23 African Union (AU) Member States in the first week of August 2025.[1] At the same time, vaccine supply, driven by donations and some procurement, is drying up. As of July 2025, less than 30,000 doses are available for allocation to countries at the Continental Mpox Incident Management Support Team (IMST) level, yet most countries with active outbreaks still need vaccines, including five AU Member States—Togo, Tanzania, South Sudan, Ethiopia and Mozambique that have not received any vaccine allocations from any source. This is a stark reflection of the global inequities that continue to plague vaccine-preventable disease outbreak response efforts. This inequality in accessing vaccines will continue to bear adverse consequences if we fail to translate lessons from previous emergencies, such as the COVID-19 pandemic and Ebola outbreaks.

Experiences from the COVAX rollout during COVID-19 and Ebola vaccination campaigns offer critical insights for equitable mpox vaccine deployment in Africa. The COVAX model, despite its pooled procurement framework, exposed persistent inequities—by early 2022, only 22 % of Africans had received a dose, even after 1.4 billion doses were delivered globally.[2,3] This underscores the need for transparent allocation triggers, early dose commitments, and diversified regional manufacturing to prevent future supply gaps.

COVAX demonstrated that centralized planning, combined with transparent allocation frameworks, can help overcome supply inequities and prioritize high-risk populations. For mpox, a similar model could be adapted through the Africa CDC and regional economic communities to negotiate vaccine access, streamline logistics, and support cold chain infrastructure. Additionally, COVAX highlighted the need for local manufacturing and regulatory harmonization, which are critical for long-term sustainability. Strengthening Africa's capacity to produce and approve vaccines locally would reduce dependency on external suppliers and improve responsiveness during outbreaks. Finally, community engagement and demand generation, which were underutilized in early COVID-19 vaccine rollouts, must be prioritized to build trust and ensure uptake. These lessons position Africa to develop a more agile, inclusive, and resilient vaccine delivery system for mpox and future epidemics.

Africa CDC and WHO, through their joint continental IMST for mpox, have made a data-driven case for a minimum of 6.4 million vaccine doses needed to interrupt transmission and halve the number of cases in endemic countries by August 2025.[4,5] This estimated number of vaccine doses was based on a single-dose approach. We also assumed a case load of 3200 suspected cases per week and a 50 % increase in cases during the first four weeks due to intensified response efforts, including enhanced community surveillance, active case finding, improved testing capacity, and the spillover effects of the ongoing conflict in eastern DRC. Yet, as of July 2025, only 3.1 million doses cumulatively had been shipped to African countries (Table 1) since August 2024. This includes 1.55 million doses of the LC16m8 vaccine, donated bilaterally by the Government of Japan to the Democratic Republic of Congo (DRC), and an additional 1.55 million doses of the MVA-BN vaccine, mobilized through global solidarity mechanisms such as the Mpox Access and Allocation Mechanism (AAM) and bilateral agreements between countries (Fig. 1). The vaccine allocation was done based on the recommendations of a Technical Review Committee (TRC) that was established to advise on the allocation of mpox vaccines based on the disease epidemiology and country readiness. The necessary technical and logistics support was provided for countries to streamline the

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Table 1
Mpox Vaccines Pledges Vs Donated Vs Shipped Oct 2024 - August 2025, based on IMST collaborative procurement portal dashboard.

Source of vaccine	Pledged*	Donated**	Shipped***	Proportion shipped (%)
Canada	200,000	200,000	200,000	100.0
European Union	416,949	389,080	389,080	93.3
Emergent BioSolutions (ACAM)	50,000	–	0	0.0
Gavi	15,260	15,460	15,460	101.3
HERA/BN	215,420	215,420	215,420	100.0
Japan	3,050,000	1,550,000	1,550,000	50.8
United Arab Emirates	43,000	43,000	40,000	93.0
UNICEF	500,000	500,000	98,680	19.7
UNICEF/Gavi	500,000	500,000	500,000	100.0
USG	1,060,000	310,340	90,800	8.6
Bavarian State-Germany	12,700	0	0	0.0
Total	**6,020,329**	**4,472,980**	**3,099,440**	**51.5**

BN: Bavarian Nordic.
HERA: Health Emergency Preparedness and Response.
* Pledged: Number of mpox vaccine doses agreed by donors (manufacturers) to be provided.
** Donated: Number of mpox vaccine doses donated by donors (manufacturers)
*** Shipped: Number of mpox vaccine doses transported to the African countries.

vaccination efforts.

While these efforts are commendable, they remain far from sufficient as the number of countries with new or additional requests for mpox vaccines is on the increase due to growing mpox case load as of July 2025. Alarmingly, though, some of the pledges from donor countries, such as the United States Government (USG), did not materialize due to shelf life falling below six months before shipment of the doses, mainly due to bureaucratic delays in authorization processes, rendering them unsuitable for use in African settings where logistical and distribution challenges could lead to expiration before administration. UNICEF, meanwhile, has issued an appeal for US$33 million to support vaccine procurement, highlighting the scale of the shortfall.[6]

As of July 2025, less than 15 % of the projected 6.4 million target population in Africa has been vaccinated since the declaration of the PHECS and PHEIC. This gap, due to the unavailability of mpox vaccine resources and limited operational funds, risks undermining the progress made thus far in countries that have developed well-contextualized vaccination strategies and deployment plans. In Uganda, Sierra Leone, and the DRC, vaccination efforts are focused on those most at risk, people living with HIV, sex workers, truck drivers, household contacts, and health workers in affected areas. Shaped by on-the-ground realities, these campaigns run on limited resources and support, yet they remain a fragile but vital shield keeping vulnerable communities safe from further outbreaks.

Consequently, South-South collaboration has emerged as a lifeline in dealing with the limited equitable global support, as Member States have begun demonstrating solidarity amongst themselves to deal with these challenges. Nigeria donated 1000 doses to Rwanda, and the DRC has donated 75,000 doses to Sierra Leone. The United Arab Emirates has provided 20,000 doses each to the DRC and Sierra Leone. While these donations face regulatory and logistical hurdles, they represent a powerful example of how African countries are stepping up for one another. Yet, good intentions cannot replace global responsibility.

The equitable distribution of mpox vaccines is not merely an act of goodwill; it is a shared responsibility for global health security. Preventing the spread and potential endemicity of mpox in under-resourced settings protects not only affected countries but the world at large. A systematic review of studies that assessed the mpox vaccine's impact during the outbreak underscored the importance of vaccination in controlling the outbreak.[7] However, as seen during both COVID-19 and the 2022–2023 mpox outbreak, challenges in timely and equitable access persist.[8–12]

While important progress has been made, various systemic and operational hurdles continue to limit Africa's ability to respond effectively.

External or systemic challenges include limited global vaccine supply, delayed donations, and short shelf life on arrival, compounded by vaccine nationalism, uneven access deals, and underinvestment in African manufacturing. While Bavarian Nordic has partnered with India's Serum Institute, similar arrangements have not yet materialized for Africa, although promising discussions are underway. Past delays in mRNA tech transfer during COVID-19 highlight the need for early, inclusive manufacturing partnerships, such as strengthening the AU's PHAVM initiative and exploring opportunities for transfer to capable producers in Africa could help build long-term regional resilience.

Internal or operational challenges within countries also play a critical role, as weak cold chains, staffing shortages, poor surveillance,

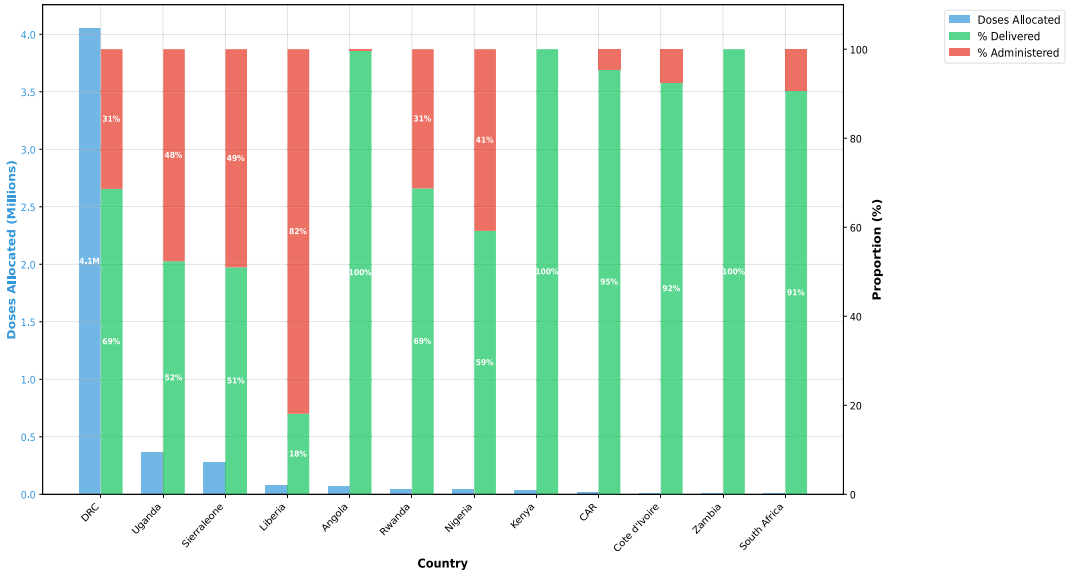


Fig. 1. Cumulative Vaccine doses Allocated vs Proportion Delivered vs Proportion Administered per country between October 2024–August 2025.

and low funding slow campaigns. Insecurity, remote communities, and misdiagnosis, like mpox being mistaken for chickenpox in DRC add to the difficulty, while Uganda faces contact tracing gaps for high-risk groups. Without strong surveillance, vaccines risk being misdirected; without vaccines, outbreaks persist as both require sustained global and regional cooperation.

The way forward

To control mpox and mitigate its impact, vaccination remains central. This requires timely access to available stockpiles, strategic deployment aligned with local realities, and financial and technical support for delivery. Partnerships between African institutions, manufacturers, and global stakeholders supported by WHO, Gavi, CEPI, and others should prioritize sustainable supply, capacity building, and innovation, including dose-sparing approaches such as intradermal fractional dosing and single-dose outbreak strategies. These combined efforts can help close the gap between need and access, safeguarding health security for all.

To transform this collective intent into specific actions, stakeholders must urgently move from broad declarations to targeted interventions. Donor countries, partners and global mpox vaccine manufacturers must make concerted efforts to provide optimal access to mpox vaccines in Africa. This will ensure the outbreak is controlled at its origin. Crucially, fast-tracking the operationalization of Partnerships for African Vaccine Manufacturing (PAVM) and the Platform for Harmonized African Health Manufacturing (PHAHM) to catalyze regional production of mpox vaccines—an essential step toward ensuring Africa's self-reliance and timely response during outbreaks. Moreover, the adoption of dose-sparing intradermal vaccination regimens for mpox is also critical.

However, this should be based on robust scientific evidence to stretch limited vaccine supplies without compromising efficacy, particularly in resource-constrained settings. Strengthening cross-border logistics and cold-chain infrastructure is vital to guarantee the efficient and equitable distribution of vaccines and therapeutics, especially in remote and high-risk communities. Furthermore, it is critical to promote community engagement to enhance the uptake of the vaccines by the population. These actions, taken together, offer a practical roadmap for operationalizing solidarity and safeguarding public health across the continent.

CRediT authorship contribution statement

Yap Boum: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Charles U. Ibeneme:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Data curation, Conceptualization. **Sheillah Nsasiirwe:** Writing – review & editing, Visualization, Validation, Supervision, Methodology, Data curation, Conceptualization. **Rose Nakame:** Writing – review & editing, Visualization, Validation, Data curation, Conceptualization. **Reena Doshi:** Writing – review & editing, Visualization, Validation, Data curation, Conceptualization. **Shanelle Hall:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Data curation, Conceptualization. **Kyeng Mercy:** Writing – review & editing, Visualization, Validation, Methodology, Investigation, Data curation. **Nora Efire:** Writing – review & editing, Visualization, Validation, Methodology, Data curation, Conceptualization. **Michel Muteba:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Data curation, Conceptualization. **Tesfaye Hailemichael:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Project administration, Data curation, Conceptualization. **Mory Keita:** Writing – review & editing, Visualization, Validation, Resources, Funding acquisition, Data curation, Conceptualization. **Nebiyu Dereje:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Methodology, Investigation, Data curation, Conceptualization. **Ngashi Ngongo:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Methodology, Funding acquisition, Data curation, Conceptualization. **Jean Kaseya:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Funding acquisition, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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