Mpox vaccination strategies in DR Congo

Alexandra Savinkina and colleagues[1] present findings from the first mpox vaccination modelling study in DR Congo. Using a dynamic transmission model, they assess various vaccination strategies across age groups (<5 years, 5–15 years, and >15 years) and provinces (endemic and non-endemic). The study aims to provide policy makers with insights into the effects of different interventions on mpox cases and mortality. The modelling suggests that vaccinating 80% of children younger than 5 years in endemic regions could reduce mpox cases by 27% and deaths by 43%, requiring about 10·5 million doses. Expanding vaccination to 80% of children aged 15 and younger could result in a 54% reduction in cases and a 71% reduction in deaths, necessitating 26·6 million doses. Without vaccination, the model predicts 14 700 mpox cases and 700 deaths over a year.

The study suggests that vaccination campaigns in endemic provinces are the most efficient strategy, using fewer vaccine doses while effectively preventing cases and deaths. This finding highlights the importance of targeting younger children in endemic regions, particularly in resource-limited settings like DR Congo. These findings are consistent with previous studies that have documented a substantial burden of mpox morbidity and mortality among children younger than 15 years in the African region.[2] However, the model by Savinkina and colleagues[1] might oversimplify mpox transmission dynamics in DR Congo by assuming an age-specific deterministic model. This assessment is valid when comparing model results to observed cases. For mpox, age-dependent heterogeneity and social mixing patterns are crucial. Incorporating stochastic elements and dynamic population changes would enhance robustness of the model, especially in regions with varying endemicity. Additionally, considering spatial and temporal variations in movement, particularly in conflict-affected areas like DR Congo, is essential for accurately assessing disease transmission. Hence, the lack of uncertainties in the model makes it difficult to determine whether the countermeasure effects are real or artifacts of the model.

Introducing a new vaccine into a low-resource setting presents considerable challenges. A thorough risk assessment is essential for understanding how to maximise the uptake of the mpox vaccine in DR Congo and other African nations. This can be achieved by ensuring adequate immunisation services and implementing incentives to stimulate demand. Previous research indicates that both financial and non-financial incentives can significantly increase vaccination rates.[3] Although targeted vaccination in endemic provinces is the most efficient strategy, the implications of vaccination coverage levels raise important questions about achieving herd immunity. In DR Congo, where child mortality is estimated at 79 per 1000 livebirths and routine childhood vaccination rates are low,[4] careful consideration is needed to evaluate the impacts of a vaccination campaign on the fragile health-care system. Resource diversion from other critical health initiatives, such as the recently initiated malaria vaccination programme,[5] requires thorough evaluation.

Although the study by Savinkina and colleagues[1] offers valuable insights into mpox vaccination strategies in DR Congo, addressing limitations regarding stochasticity, population dynamics, and reporting biases is crucial for enhancing the model's accuracy and public health applicability. Urgent action is needed to implement effective vaccination strategies against mpox. Policy makers and public health officials must consider these insights to develop equitable and effective responses to combat mpox in DR Congo and across Africa.

We declare no competing interests.

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