Optimizing vaccine uptake in sub-Saharan Africa: Lessons learnt from a collaborative COVID-19 vaccination campaign in Madagascar

Viola Pavoncello[1,2], Diavolana Koecher Andrianarimanana[3,4], Rivo Rakotomalala[3], Holinirina Ramananjanahary[5], Zely Arivelo Randriamanantany[6], Solange Lalatiana Hoasy[7], Rivo Rakotoarivelo[8,9], Dewi Ismajani Puradiredja[1†] and Daniela Fusco[1,2†]

[1]Department of Infectious Disease Epidemiology, Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany; [2]German Centre for Infection Research (DZIF), Hamburg-Borstel-Lübeck-Riems, Germany; [3]Centre Hospitalier Universitaire (CHU) Androva, Mahajanga, Madagascar; [4] University of Mahajanga, Madagascar; [5]Vaccination Program, Ministry of Public Health, Antananarivo, Madagascar; [6]Ministry of Public Health, Antananarivo, Madagascar; [7]Regional direction of Public Health, Mahajanga, Madagascar; [8]University of Fianarantsoa, Madagascar; [9]Centre Hospitalier Universitaire (CHU) Tambohobe, Fianarantsoa, Madagascar

Background

- COVID-19 pandemic highlighted the need for tailored strategies to improve immunization programs in limited resource settings
- In Madagascar, as of October 2022, only 3.5% had been fully vaccinated, and 3.7% had received at least one COVID-19 vaccine dose, falling significantly short of the WHO's 70% global coverage goal

Aim & objectives

- To vaccinate 25.000 individuals against COVID-19
- To present lessons learnt from a COVID-19 vaccination campaign (CoBoGo) implemented August 2022-April 2023 in the Boeny region, Madagascar
- To provide guidance for future mass vaccination campaigns in similar settings

Figure 1. Panel A: Selected drawings and paintings from the CoBoGo final event. Panel B: Vaccinations in different sites of CoBoGo.

21 primary healthcare centers and nearby rural villages were included as well as the Mahajanga prison

Figure 2: Boeny region in Madagascar.

Methods

- Participatory approach together with the Malagasy Ministry of Health (MoH) was used to identify challenges and pragmatic solutions to increase vaccination coverage
- Needs along the vaccine distribution chain (VDC) were assessed using a 4 components framework: Sourcing, storage, transportation, and administration
- The campaign was organized into 5 sequential specific activities (SA): SA 1. Vaccine Acquisition, SA 2. VDC needs assessment, SA 3. Staff Selection and Training, SA 4. Awareness Campaign, and SA 5. Vaccination Campaign

Results

- Overall, a 4.66% vaccination coverage was achieved compared to the initial 2.7% campaign target. 19.338 people received the first dose of COVID-19 vaccine, and 5.550 received their second dose.

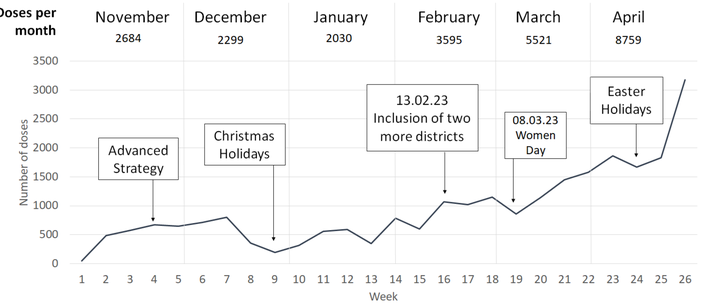

Figure 3. Weekly trend of administered doses from November 2022 to April 2023.

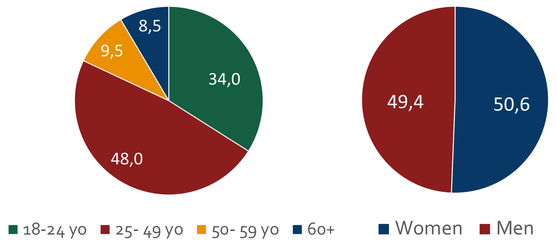

Figure 4. Distribution of administered COVID-19 vaccine doses by age group (left) and by gender (right).

Lessons Learnt

Implement VDC
- VDC assessment
- Set up an implementation strategy tailored to the local context
- Identify early warning signs and monitor indicators, adapt strategy as needed
- Share feedback and discuss progress

Participatory approach and coordination
- Engage with government and local stakeholders
- Regular meetings and continuous informal interviews with local authorities
- Build trust by providing transparent updates on vaccine rollout to the authorities

Trainings and community engagement
- Hire and train personnel, provide refresher training to caregivers
- Social listening, conferences, focus group discussion, round tables
- Wide mass media communication
- Participation of community and public events
- Empower trusted community channels and leaders with accurate information

Conclusion

Vaccine uptake can be strengthened through collaborative, multi-sectoral campaigns with a particular focus on pro-active vaccine administration initiatives, continuous stakeholder engagement, and sustainable capacity strengthening activities.