



Letter to the Editor

The recent measles outbreak in South African Region is due to low vaccination coverage. What should we do to mitigate it?

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Dear Editor,

The highly contagious measles virus, belonging to the Paramyxoviridae family, spreads through respiratory droplets and can survive in the air for up to 2 hours. Up to 90% of individuals without immunity can become infected, and each infected person can transmit the virus to 10 others. Upon entering the body through the respiratory tract, the virus targets dendritic cells, which then transport it to the lymph nodes, resulting in systemic infection. This leads to characteristic symptoms such as fever, cough, runny nose, red eyes, and the distinctive Koplik spots in the mouth. A rash subsequently develops, starting on the face and spreading across the body [1]. While immunization with Measles-containing vaccines (MCV) has reduced its impact, measles remains deadly, causing up to 134,000 deaths worldwide annually [2], particularly in unvaccinated and immunocompromised individuals.

The measles outbreak in South African region has been of public health concern, affecting most provinces in the region since October 2022. As of March 16, 2023, 772 confirmed cases with no deaths were reported [3]. However, recent June 9, 2023 data shows 1060 confirmed cases, including 28 new cases in the past two weeks [4]. Children under 14 account for most cases (86%), with the highest rates in the 1–4 and 5–9 age groups. The vaccination status of most cases is unknown, but only 10% of confirmed cases received at least one dose of the measles-containing vaccine. The national immunization coverage for both MCV1 and MCV2 was estimated at 86% in 2022. The WHO considers the national risk high, regional risk moderate, and global risk low [3]. We therefore write this letter to critically look at this recent measles epidemics as a menace due to the low immunization coverage in South African countries and efforts to mitigate it.

From our scientific search in past and recent journals, we found that measles can cause severe complications like pneumonia, encephalitis, blindness, and even death. However, it can be prevented by two doses of MCV. The WHO recommends that at least 95% of the Southern African population be vaccinated with both doses to combat this challenge. The Ministry of Health, in collaboration with WHO, has implemented a

national measles response plan and is conducting a mass vaccination campaign for children aged 6 months to 15 years in all provinces. The WHO staff supports coordination, surveillance, supplies, logistics, and community engagement. Additional response activities include active case searches, meetings, situation reports, rapid response team deployments, health professional training, enhanced surveillance, public awareness, and resource mapping with partners [3]. Ensuring consistent measles vaccination and implementing extensive immunization initiatives in high-burden countries are crucial public health strategies to reduce disease impact and transmission. However, various obstacles hinder the successful implementation of vaccination programs, hampering effective measles control efforts in South Africa.

Maternal education plays a significant role in vaccination uptake [1–5]. Recent research shows that educated mothers are more likely to immunize their children [5]. However, early marriages and pregnancies in Africa limit female education, resulting in low immunization rates. Vaccine hesitancy is another contributing factor that persists in some areas of Southern Africa, despite efforts to raise awareness. Some people perceive vaccination as unnecessary and unsafe. Furthermore, many people live in rural areas where inaccessible and limited healthcare services, staff shortages, inadequate transport infrastructure, and logistical challenges, lead to insufficient vaccine coverage and ongoing measles outbreaks.

In tackling this menace, we recommend that the South African governments should address these vaccination challenges by prioritizing vaccine availability and transportation funding to expand the reach to neglected areas in their countries. It is imperative to strengthen vaccination campaigns and tackle vaccine skepticism. Innovative approaches like engaging influential figures like national heroes and celebrities who could attain public attention and foster trust among the masses to spread awareness and eliminate vaccine hesitancy. It is crucial to actively engage communities and communicate effectively to provide essential information and promote widespread acceptance of vaccines. Additionally, making education compulsory for females in the South-African Region can have a long-term impact on improving vaccination rates for the

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generations to come. Overall, strategic planning and optimization of the vaccination drive to specifically overcome the hurdles faced during mass immunization are key to eradication of measles from Southern Africa.

Authors contribution

Conceptualization; MOO and AF, **Data curation;** ATJ, **Formal analysis;** MOO and AM, **Funding acquisition;** KAK, **Investigation;** MOO and ATJ, **Methodology;** MOO and VZ, **Project administration;** MOO and AM, **Resources;** All authors, **Software;** KAK and ATJ, **Supervision;** MOO, **Validation;** All authors, **Visualization;** All authors, **Roles/Writing - original draft;** GDO, AAK and VZ, **Writing - review & editing;** MOO and VZ, **Final approval of manuscript:** All Authors.

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List of Abbreviations

MCV Measles-containing vaccines
WHO World Health Organization

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