Learning from a massive epidemic: measles in DRC

Recent outbreaks of measles in central Africa expose gaps in vaccination coverage and poor access to care. Tanja Ducomble and Etienne Gignoux from Medecins sans Frontieres report.

The world is witnessing an alarming surge in measles. In 2018, WHO reported 359 921 cases, the highest caseload since 2006. In 2019, those numbers were already exceeded by September, with over 400 000 reported cases. The true figure may lie far above as measles is known to be heavily underreported.

Large-scale outbreaks in Madagascar, Democratic Republic of Congo (DRC), Chad, Nigeria, Philippines, Yemen, and Ukraine fuelled the overall increase in incidence in all regions, the worst hit being the African region.

In low-income countries, poor access to vaccination, compounded by high birth rates, continues to produce massive epidemics. DRC suffers from outbreaks recurring every 2–3 years, with peaks of 182 485 cases in 2005, 133 802 in 2011 and 88 381 cases in 2013. But the magnitude of the 2019 epidemic has been unprecedented with 311 471 reported cases, more than ever previously reported in the history of DRC surveillance.

This particular outbreak began mid-2018 in Katanga, eastern DRC, a region frequently experiencing measles epidemics. Early in 2019, the northeast was hit, and the outbreak further expanded to all provinces of the country. In 2018, 100 Health Zones were declared in areas with confirmed epidemics, 124 more Health Zones were added in the first semester of 2019, and 129 in the next semester. Over two years 353 Health Zones out of 519 had a confirmed epidemic.

In 2019, 6045 deaths due to measles were reported, mostly among children under 5 years of age. Poor access to health care and fatal complications occurring after the rash make many more deaths attributable to measles remain unnotified. In addition, measles puts children at high risk of acute malnutrition. Also, recent evidence tells us that beyond the direct immune suppression, measles resets the immune system re-exposing children to infections they were previously immune to.

> "measles transmission continues in communities with sub-optimal vaccination coverage or in non-targeted age groups"

At the same time, sometimes in the very same villages, the Ebola epidemic flared, capturing the attention of the media—and that of global health actors. Although it has caused more deaths, the measles epidemic has mobilised far fewer resources. Even within Médecins Sans Frontières (MSF), it took time to galvanise a response at scale to this humanitarian emergency. Still, the DRC Ministry of Health (MoH) and its partners vaccinated over 5·7 million children, of those 1·5 million with MSF support.

In addition to vaccination, access to free healthcare services can reduce mortality during outbreaks. MSF's vaccination campaigns were thus systematically part of a wider intervention that improved access to health care. Some 66 484 children were treated for measles and its complications in MSF supported services.

Even if this response saved many lives, it was not fast enough to effectively halt the transmission and failed in stemming the epidemic. The MoH decided to bring forward the national Supplementary Immunization Activities (SIA) to November and December 2019, targeting all children from 6 to 59 months old. This salutary operation put a brake on this epidemic, with cases falling from 26 803 in December 2019, to 14 533 cases in January 2020. Yet, the epidemic is not over; measles transmission continues in communities with sub-optimal vaccination coverage or in non-targeted age groups. The MoH has developed a comprehensive response plan for the coming months, but insufficient funding puts the plan at risk.

SIAs are powerful vaccination strategies to drastically reduce the number of susceptible individuals and thus prevent large epidemics. Their timing should be determined by epidemiological analysis. In DRC the last SIAs were conducted in 2016/2017; an earlier implementation of the SIAs planned to start by the end of 2019 would have likely prevented hundreds of thousands of cases and related deaths.

Meanwhile, in the Central African Republic (CAR) another measles epidemic is spreading. CAR has all the characteristics conducive to a massive and deadly spread: low vaccination coverage, high birth rates, and poor access to health care. Initially planned for end of 2019, most districts are yet to be vaccinated. In Chad, another massive epidemic occurred last year. The onset of the rainy season, when movements are limited, has brought the epidemic to a brief rest. This year, case numbers have started to grow again, as they did this time last year. Planning and funding processes have delayed the SIAs in Chad.

With the lessons learned from last year and from DRC, it is essential to implement national SIAs as timely as possible. All concerned parts should act upon expediting their implementation and preparing for outbreak response.

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