



UNRESOLVED ISSUES

Measles in the Democratic Republic of Congo: an urgent wake-up call to adapt vaccination implementation strategies

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All countries in Africa have made a commitment to eliminate measles by 2020. This is laudable, as measles elimination will have a crucial impact on reducing childhood mortality. An important operational challenge is the resurgence of measles outbreaks in a number of countries; one of the main reasons for this is that many children are being missed by vaccination programmes. In the Democratic Republic of Congo (DRC), outbreaks continue unabated despite repeated vaccination campaigns and high reported coverage by the Ministry of Health. This paper brings into question the effectiveness of the current approach and the need for better reflection on bottlenecks and strategies that can address this issue. If we are to eliminate measles by 2020, there will be a need for impetus, a need for decisive action to reach that goal and prevent unnecessary childhood deaths in countries such as the DRC.

Measles outbreaks are ongoing in the Democratic Republic of Congo (DRC), with more than 130 000 cases and at least 1600 deaths reported in 2011,¹ mainly among children aged <5 years.

Like other countries in Africa, the DRC has made a commitment to control and eliminate measles by 2020.^{2,3} This is laudable, as measles elimination will have a crucial impact on reducing childhood mortality. However, a pre-requisite to making such a goal viable is the effective implementation of vaccination activities and the achievement of high measles vaccination coverage levels within the population.

In recent years, there has been a resurgence of measles outbreaks in a number of countries; one of the main reasons for this is that many children are being missed by the vaccination programmes.⁴ In the DRC, an estimated 800 000 children were not vaccinated by routine services in 2011 despite high vaccination coverage reported by the Ministry of Health (MoH).¹ As part of the outbreak response, emergency vaccination campaigns were required in addition to routine health facility-based immunisations.^{5,6} Although these activities occurred in 2011 and 2012, and despite the high reported vaccination coverage, the epidemic has continued, with over 140 000 additional measles cases and about 3000 deaths to date.⁷ This raises the question as to why vaccination interventions on the field have such a limited impact. At the very least, it brings into question the effectiveness of the current approach and highlights the need for reflection on implementation bottlenecks and strategies that can lead to real change.

So what are some of these bottlenecks? First, access to routine vaccination services is extremely limited. The population is spread over large geographic areas with very limited road and public transport networks. Second, in several provinces, health clinics perform poorly due to shortages of health staff, ill-equipped health structures, irregular supplies of vaccines and inadequate cold chain equipment for vaccine storage.^{8,9} Third, the logistics challenge of accessing children in distant areas is overwhelming.

In a recent measles workshop in Kinshasa, provincial medical directors reported a lack of refrigeration material and fuel, which at best reached 50% of requirements. For example, in the health zone of Yambuku (Equatorial Province), where Médecins Sans Frontières (MSF) supported the local MoH in responding to the measles outbreak, no refrigerators were available. Nevertheless, more than 110 000 children aged 6 months – 15 years, living in an area more than half the size of Belgium, needed to be vaccinated, with a single motorcycle being the sole means of transport. In Yalimbongo, Oriental Province, the situation was similar: most of the 40 000 children who needed vaccination lived in areas accessible only by boat, several hours away from a health centre that had only one functioning refrigerator and four cold boxes.

In addition, there is a problem of unreliable vaccination coverage, involving exaggeration of real coverage figures. While the average Supplementary Immunisation Activities (SIA) coverage in RDC is presented as being above the 95% coverage target,¹⁰ data gathered in the field in several districts differ widely. In July 2011, over 95% vaccination coverage was reported in vaccination campaigns conducted in Yalimbongo by the MoH, with World Health Organization (WHO) support.¹¹ This figure is in striking contrast to findings from a vaccination coverage survey conducted by MSF in August 2012, showing that only 30% of children aged 1–5 years were actually vaccinated. The story is similar in Yaliko, Oriental Province, where a vaccination coverage survey conducted by MSF revealed that only 38% of children aged 12 months – 5 years were vaccinated against measles. Only 24% of the vaccinated children had received two doses of the vaccine. Of all children vaccinated, 55% had been vaccinated through campaigns, and barely 20% through routine services — the latter supposedly the cornerstone of any immunisation programme.

To increase the implementation and effectiveness of vaccination activities in the DRC, a number of stra-

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TABLE Strategic and operational considerations to increase the implementation and effectiveness of vaccination activities in the Democratic Republic of Congo

- The current standardised and rigid maximum time-frame of 5 days for vaccination campaigns does not take into account operational challenges (geographic access, coverage population, availability of transport, cold chain and human resources). Timing and resources need to be adapted to cope with the situation in the field
- Hard-to-reach areas should be provided with additional resources to cope with logistics, transport, cold chain and human resource limitations
- Additional staff are needed for vaccination campaigns and incentives and other means of motivating and supervising existing staff need to be considered
- Vaccination coverage surveys should be used as the yardstick for measuring measles vaccination coverage
- Contact opportunities for vaccination should be maximised, for example by accepting to open a vaccine vial of 10 or 20 doses when only a few children present for vaccination in health structures. Although this increases vaccine waste, the cost-benefit is high
- Children aged 12 months - 5 years should be included if they have not been (completely) vaccinated before
- Routine vaccination activity should be improved at existing health facilities by increasing investment in cold chain equipment and outreach activities to increase proximity to populations and providing dedicated staffing.

tegic and operational considerations need to be implemented (Table). Of particular concern is the current rigid time limitation of a maximum of 5 days for vaccination campaigns, as these campaigns are reliant on a combination of a passive cold chain and very limited availability of transport and human resources, and vaccine viability after this time is thus questionable. There is no other justification for the limit, which remains unchanged irrespective of contextual challenges and the numbers of children to be vaccinated. In practice, once the 5-day limit is reached, any vaccination activity grinds to a halt. At greatest loss are those living at distant locations, who are unreachable due to cold chain management, transport and human resource deficiencies.

New plans are being developed by the MoH, with funding support from Global Alliance for Vaccines and Immunisation, the WHO, the United Nations International Childrens' Emergency Fund and the Central Emergency Response Fund for carrying out new, large-scale vaccination campaigns in the coming months. A total of 10.7 million US dollars is now available for vaccinating children against measles in four provinces. The imperative this time is to use these resources wisely by adapting the time frame and approach in a manner that ensures that mobilised resources are sufficient and that they will result in children being both vaccinated and protected against measles. Importantly, the differing operational challenges in the different health zones imply that the 'one size fits all' approach, which is inadequate and ineffective, needs to be done away with.

The striking differences between the vaccination coverage reported by the administration and the field-based coverage surveys

suggest that administrative coverage figures are unreliable and deceptive. There is thus a clear need to rely on field-based vaccination coverage surveys.

Routine vaccination activities at health facilities also need to be improved and adapted. Increased availability of cold chain equipment is required at the health centre level, increasing the proximity of vaccine availability at the population level. Missed opportunities need to be avoided, for example by opening vials even when only a few children are present, despite the consequence of vaccine waste, and vaccinating children aged >12 months or previously non-vaccinated children.

The sharp reduction in measles cases in Africa over the last 10 years has shown that measles can be controlled; however, for the campaign to be successful, all children have to be vaccinated. It is hoped that the Global Alliance for Vaccines and Immunisation (GAVI), which is considering developing specific approaches for immunisation delivery in 'fragile states', will draw upon the lessons of the so far unsuccessful response to the measles outbreak in DRC.

It is laudable that the global community has resolved to eliminate measles by 2020;^{2,3} however, there is also a need for resolve and impetus, a need for decisive action, if we are to reach that worthwhile goal and prevent unnecessary childhood deaths in countries such as the DRC.

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Tous les pays d'Afrique se sont engagés à éliminer la rougeole d'ici 2020. C'est un but louable car cette élimination aura un impact crucial sur la mortalité des enfants. La résurgence de flambées épidémiques de rougeole dans un certain nombre de pays constitue un défi majeur lié surtout au fait que les stratégies vaccinales manquent de nombreux enfants. En République démocratique du Congo (RDC), des flambées épidémiques continuent à survenir en dépit de campagnes de

vaccination répétées et d'une couverture élevée selon le Ministère de la Santé. Cet article remet en question l'efficacité de l'approche actuelle et souligne la nécessité d'une réflexion relative aux goulots d'étranglements actuels et aux stratégies susceptibles d'y remédier. Si nous voulons éliminer la rougeole d'ici 2020, il sera nécessaire de donner un nouvel élan à la lutte afin d'atteindre cet objectif et de prévenir des décès d'enfants évitables dans des pays comme la RDC.

Todos los países de África se han comprometido con la eliminación del sarampión en el 2020. Este propósito es meritorio, pues la eliminación del sarampión tendrá un efecto considerable en la disminución de la mortalidad infantil. Una dificultad operativa mayor consiste en la reaparición de brotes de sarampión en varios países, debido en buena parte a que se omiten muchos niños en las estrategias de vacunación. En la República Democrática del Congo no disminuyen los brotes epidémicos, pese a las repetidas campañas

de vacunación y la alta cobertura notificada por el Ministerio de Salud. En el presente artículo se cuestiona la eficacia del enfoque actual y la necesidad de una mejor reflexión acerca de los obstáculos y de las estrategias que pueden responder a este problema. Si el objetivo consiste en la eliminación del sarampión en el 2020, el cumplimiento de la meta exige un paso decisivo a la acción, con lo cual se evitarán las muertes innecesarias de niños en países como la República Democrática del Congo.