

Polio Eradication in Nigeria: Prospects and Challenges-A Review

Muhammad A. B.^{1, *}, Yahaya H.¹, Ibrahim A.¹, Tijjani M. B.², Ahmad M. B.¹

¹Department of Medical Laboratory Science, Faculty of Allied Health Sciences, Bayero University, Kano, Nigeria

²Department of Microbiology, Faculty of Science, Ahmadu Bello University Zaria, Kaduna, Nigeria

Abstract

The global polio eradication initiative (GPEI)—an international partnership of government and private institutions—has reduced the burden of polio worldwide by more than 99 percent. However, the last 1% of the journey has experienced several setbacks and rate of progress has slowed down in the last few years. Nigeria is one of the remaining three (3) endemic countries in the world that has never interrupted the transmission of the poliovirus compared to more than 125 countries in 1988. In the past few years, Nigeria made some giant strides in polio eradication efforts. There are some obstacles to be surmounted. Controversies based on unfounded rumours about alleged adverse health effects, vaccine safety, contamination with anti-fertility drugs and virus that causes HIV/AIDS; overdose as well as promotion of anti Oral polio vaccine (OPV) sentiments by political and religious opinion leaders led to a noticeable decline in vaccine acceptance. The security challenge in the northern part of the country has put the polio eradication at risk. The federal, state governments and other stakeholders should regard the eradication of polio as a national public health emergency. Misinformation and controversy surrounding this campaign should be squarely addressed through robust public enlightenment campaign, targeting marginalized communities with information on the importance of vaccination and to respond directly to their expressed concerns. What are the prospects and challenges to polio eradication in Nigeria? This paper reviews these and other relevant issues regarding polio eradication in Nigeria.

Keywords

Polio, Eradication, Nigeria, OPV and GPEI

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1. Introduction

Polio (poliomyelitis) is a viral disease transmitted through contaminated food, water or faeces, in its severest form; it attacks the nervous system leading to paralysis. Nigeria is one of only four countries that have never interrupted poliovirus transmission (the others are Afghanistan, India, and Pakistan). With resurgence in wild poliovirus (WPV) transmission due to a loss of public confidence in oral poliovirus vaccine (OPV) and suspension of supplementary immunization activities (SIAs) in several northern states (CDC, 2005). Subsequently, WPV spread within Nigeria and

ultimately into 20 previously polio-free countries during 2003--2006 (CDC, 2008). Even after national SIAs resumed, limited acceptance and ongoing operational problems resulted in low polio vaccination coverage and continued WPV transmission. In addition, type 2 vaccine-derived poliovirus emerged in 2005--2006 and continues to circulate in northern Nigeria, causing a total of 103 vaccine-derived polio cases in 2008, in addition to the 841 confirmed WPV cases, and despite multiple trivalent oral polio vaccine (tOPV), SIAs (CDC, 2007). However, Nigeria accounts for 88% of the 575 WPV1 cases reported globally (WHO, 2008). WPV1 cases have been reported than all WPV cases in the entire previous year, with both WPV1 and WPV3 have re-

* Corresponding author

E-mail address: abmmakarfi9@gmail.com (Muhammad A. B.)

emerged in some southern states (WHO, 2008). Such circulation reflects the historically long-standing, weak status of routine immunization services in these states. Recent WPV1 cases in Benin, western Niger, and Burkina Faso have again raised the threat of increased international transmission of WPV1 from Nigeria during 2008 (CDC, 2003). After the introduction of multiple oral polio vaccine (mOPV1) and Immunization Plus Days (IPDs) in early 2006, some progress was made in Nigeria toward the goal to interrupt WPV1 transmission (CDC, 2008). Community acceptance of OPV in response to the IPDs seemed to improve: the proportion of zero-dose children in high-incidence states decreased, and the number of WPV1 cases and affected districts at the end of 2006 and during 2007 decreased substantially (CDC, 2009). However, improvements have not been sufficient to prevent renewed WPV1 transmission in high-incidence northern states because of high birth rates, continued low routine immunization coverage, and less than optimal OPV coverage during SIAs. Also the routine vaccination coverage and political accountability for implementation was truncated despite willingness of Nigerian government and its immunization partners. Although improvement of routine immunization services in primary health care is a goal of all partners, much more urgent efforts to reach all children during SIAs are necessary to control the recent upsurge in cases and to interrupt WPV1, and subsequently WPV3, transmission in Nigeria (CDC, 2010).

2. Progress Towards Poliomyelitis Eradication in Nigeria

2.1. Immunization Activities

Through a program of enhanced health-worker training and supervision and community outreach begun in 2006, Nigeria was able to improve routine vaccination coverage (CDC, 2007). National reported routine vaccination coverage for 3 doses of trivalent OPV (tOPV) among infants increased from 32% (range by state: 10%--57%) in 2005 to an average of 62% in 2007 (range by state: 30% to >100%), with the lower range of coverage reported from some northern states. In addition to lower average coverage, the highest proportion of local government areas (LGAs) with reported coverage <30% was in selected northern states reported by National Primary Health Care Development Agency and Federal Ministry of Health, (2008). The Nigerian government first used mOPV1 in March 2006, following a national tOPV SIA in February 2006. In May 2006, the government introduced a modified strategy of SIA implementation, called immunization plus days (IPDs), during which OPV and other health interventions (e.g., other vaccines, antihelminthics, and

insecticide-treated bed nets) were delivered at fixed sites, combined with providing OPV through house-to-house delivery. Subsequent SIAs in 2006 were implemented as sub-national IPDs in states with confirmed WPV transmission; three sub-national IPDs were held using mOPV1 and one using tOPV. In January 2007, a national IPD used tOPV in northern states and mOPV1 in the south. Of six sub-national IPDs in affected areas during 2007, two used tOPV alone, three primarily used mOPV1 alone, and one used mOPV3 alone. In addition, five smaller mop-up SIAs using the best-matched vaccine were conducted in response to recent local WPV circulation. In 2008, as of August 12, two national IPDs (one using mOPV1, the other mOPV3) and three sub-national IPDs had been conducted (primarily using mOPV1). During late 2007 and early 2008, state funding delays and logistical problems resulted in limited availability of other vaccines and health interventions in IPDs in some areas. One innovation introduced in May 2008 was to implement sub-national SIAs using a staggered approach, beginning in states at highest risk and followed by campaigns in other states about a week later, to better supervise campaign preparation and implementation. An additional mOPV1 SIA was planned for late August in the northern states. Measles campaigns planned for northern states in November and for southern states in December also will include mOPV1 administered to target children at fixed sites. During December, several northern states with high incidence of polio also plan to conduct additional SIAs with mOPV1 (Cheng, 2004). Vaccination histories of children aged 6--59 months with non-polio acute flaccid paralysis (AFP) are used to estimate OPV coverage of the overall target population. Because of lower routine vaccination coverage in areas with high polio incidence, and despite repeated SIAs, the proportion of zero-dose children (those whose parents reported that they had never been vaccinated with OPV) remained substantially higher in polio-affected areas (18%) in Nigeria than in polio-free areas (2%) in 2007 (GPEI, 2011). In seven high-incidence northern states (Bauchi, Jigawa, Kano, Kaduna, Katsina, Yobe, and Zamfara), the proportion of zero-dose children decreased from 45% by quarter in early 2006 to 30% in early 2007, but the proportion had not fallen below 25% as of August 12, 2008.

2.2. Prospects for Polio Eradication in Nigeria

The prospects for polio eradication in Nigeria and by Extensions globally are high. These are based on:

- The antecedent of not just small pox eradication but also progress so far made in polio eradication in Nigeria, India and the currently polio-free countries and regions
- The huge financial and human resources the country is

able to mobilize from the Federal, State and Local Governments; as well as from International and local partners.

- Already existing health care structure, especially for immunization, established by the National Programme on Immunization (NPI) and improved upon by the National Healthcare Development Agency (NPHCDA).
- High level of community and political awareness and commitment already achieved.
- Skilled and experienced personnel-both full time and ad-hoc health workers
- Massive global technical, political and financial support especially based on the fact that polio eradication is a global initiative and not just a Nigerian programme (Tagbo, 2012)

3. Challenges to Polio Eradication in Nigeria

3.1. The Role of the Federal Government

The National Government has the overall leadership and coordination role for polio eradication in Nigeria. In collaboration with international partners and agencies, the National Government has led the development of the Abuja Declaration, and with it much came of the recent progress. The Federal Government is in a position to assist and encourage States and Local Government to renewed efforts to finish the job. Though the Federal government has placed a lot of effort on polio eradication despite a very broad health development agenda, it is felt that the Polio Eradication would benefit from even more support at the Federal level, especially as polio eradication will need to be given increased attention as we progress towards zero transmission. A possible mechanism may be the use of a focal point in the Federal Government, with the authority of the President and Government, to ensure that progress continues to be made at all levels. It would be helpful to establish similar focal points at State and Local Government levels. Such focal points would clarify lines of responsibility, improve implementation and establish clearer accountability. Task Forces should provide overall technical and administrative support to the focal point. Efforts are needed to enhance their capacities particularly at the Local Government and State levels. To ensure that commitment and oversight is translated into improved quality of implementation of key program activities, the Evaluation Team should consider the value of enhancing the accountability and political stake of the partners in the polio eradication programme by ensuring close monitoring and follow up of polio eradication activities at high level, including by the President's and Governors' Offices (Nwozor,2013) The Evaluation Team should consider

a number of suggestions to address road blocks in the way of polio eradication, including the addition of polio eradication as a regular agenda item in discussions between the President and State Governors and subsequently with the Local Government Chairpersons (Obregon *et al.*, 2009).

3.2. The Role of the States

States provide much of the immunization infrastructure. States have major roles to play in vaccine logistics and cold chain management. The planned upgrades should ensure that the vaccine stores at all the places are adequate.

State Governments also play a major role in leadership. There are two key components to this:

- Leadership in programme management, and
- Leadership in social mobilization.

In the recent past, there have been issues with community perceptions of the safety of polio vaccines, to the extent that OPV was withdrawn from use in the State of Kano in 2003-2004. The issues with the vaccine were couched in religious terms and in this community, as in other areas, this may have depressed community demand to a very great extent. These religious concerns have created major barriers to implementation of polio eradication, which persists today. However, political, religious and traditional leaders are now very supportive of polio immunization and an enthusiastic programme of social mobilization should overcome these barriers. The education sector, in particular, was keen to play a prominent role in social mobilization, using the schools as major vehicles for building and reinforcing community demand for polio eradication (WHO, 2009). The accountability of the polio eradication programme could be enhanced through monitoring and follow up of activities carried out by Local Government and State Governors. Polio eradication could be a standing agenda item in regular meetings between the State Governors and Local Government Chairpersons. This would increase the political commitment and support at Local Government levels.

3.3. The Role of Local Government

The war against polio in Nigeria will be won or lost at the local government level. Immunization delivery takes place at this level, and it is the face of the polio eradication programme to the public. Local Government is in the ideal position for this task, being the instrument of state that is closest to the people and is able to respond most effectively to the needs of the community (Renne, 2012).

There is great variability in Local Government. In the State of Kano there are 44 Local Governments and 14 in Zamfara. In some areas the programme was well supported, but in others interest, support and supervision were weak. In some

Local Governments, funds for polio immunization activities were released very late, sometimes only 24 hours before the start of activities which left inadequate time for preparation and mobilization of resources and the community. The performance of polio eradication activities was highly dependent on the commitment of the Local Government Chairpersons, and the priority they placed on polio eradication. Local Government Chairpersons should make polio eradication activities a high priority. The physical infrastructure for the programme appeared to be basically sound, with more than adequate Health facilities, cold stores, transport and the like. Maintenance of the cold chain was observed to be problematical. A key example was the non-functioning of solar refrigerators; many had no batteries, often because the refrigerators had been worked beyond their design, being used to make large quantities of ice-bricks, a purpose for which they were not designed. Funding of polio eradication activities was variable. Often funds were not available or were available very late, such that the detailed planning required for SIAs could not be effectively carried out. A longer-term funding solution will need to be found. Despite the quality of the basic infrastructure, there were very significant issues with maintenance, consumables and other materials. The polio eradication programme has a very detailed operational manual, which provides excellent guidance on all aspects of the programme. Polio staff was not able to carry out all its precepts because small or large impediments were placed in the way. Often critical supplies were missing, and team supervisors were not able to rectify these problems (Alto, 2008).

Performance management was weak in all areas visited. Local Government performance could be evaluated on a continuing basis with several methods including

- Checklists that cover essential components of the programme
- Methods used in lot quality studies.

It is important to consider the quality of mid-level and lower-level (at the level of community activities) management to be very significant barriers to the achievement of polio eradication in Nigeria.

The large numbers of children missed by the routine immunization programme and the Polio Eradication Initiative were grim reminders of the seriousness of these barriers. The State of Zamfara state recently introduced street teams to find and cover missed children, but this initiative did not yield the desired result. Reasons given were that the scheme was very new was not well understood. However, a more focused strategy to reach out to missing children and to reach the hard-to-reach should be considered important barrier and addressed.

3.4. The Role of Donors

A large numbers of donors are assisting in Polio Eradication Initiative. The role of the donor and partners in supporting the National Polio Eradication effort in Nigeria is clearly laid out in the ICC governance structure, which was last reviewed in 2004 and may need to be updated. All partners and donors are members of the different committees and working groups according to their areas of competence. The 2009 immunization operational plan was adopted in Gusau, Zamfara state at an ICC meeting chaired by the Honourable Minister of Health and attended by all partners and Donors on the ICC. Discussions with several donor organizations indicated that there is not a coherent strategic plan specifically for polio Eradication although there is a comprehensive Multiyear immunization plan for 2009-2014 (developed with the support of all the partners and donors). The mechanisms for developing such a strategic plan for Polio Eradication with the support of the partners and donors are laid out in the ICC structure. Involvement of donor partners in monitoring and analysis through a strategic framework of programme implementation and accountability to the suggested focal points at the Presidential and Governor and Local government levels could be considered (UNICEF, 2004). Donor partners should be involved in monitoring and analysis to ensure achievement of results and accountability (Willey *et al.*, 2008).

3.5. Social Mobilization and the Role of Community-Based Organizations

Community-based organizations are critical to the success of polio eradication, in ensuring a well-informed community demanding high-quality immunization services. Inadequate mobilization of such groups, such as women's groups and others, is a key barrier to community demand. Inadequate community interest, support, and demand have therefore become barriers to polio eradication. The community demand for polio and routine immunizations was not strong, since there had been doubts expressed by political and religious leaders some years ago. Polio has not been the highest priority in terms of child survival and there is a disjunction between immunization and other health care services (Renne, 2010). Mothers were skeptical about the free availability of polio vaccine, and the requirement to purchase treatment for malaria, for example, the vaccination teams were equally poorly equipped with the appropriate interpersonal communication skills to respond to even the slightest community challenges met during IPDs. Such skills should be a basic requirement for immunization team members, especially in areas of low coverage. It may be necessary to establish training programmes for staff to ensure that all teams are adequately prepared. The late release of funds to

support social mobilization activities is a major issue. Late release of funds seriously compromises the quality of social mobilization activities implemented prior to each round of immunization. Addressing these issues will require the cooperation of many sectors of society, but particularly partners supporting social mobilization activities, community women organizations, religious and traditional leaders (Renne, 2010).

Some innovative social mobilization projects have been established which appear to have resulted in good results. These projects should be examined for lessons and applied more broadly. The essence of social mobilization is ownership by and partnership with the community. Results from Polio Eradication activities will be greatly improved through such an approach and avoidance of any suggestion of compulsion. Funding could be targeted to building participatory approaches (GPEI, 2011).

3.6. Programme Management

Management issues which occur at all levels were the most critical barriers to the success of the Nigerian programme. At high level, the recent increase in commitment has to be translated into action that supports staff in the middle levels and, most importantly, on the ground. At the lower level, Local Government Chairpersons must show leadership in timely mobilization and release of funds to the programme. They should also show their commitment to the programme with effective leadership of Local Government Task Forces and management of their health staff. This is shown very clearly in the performance of Immunization Plus Days. Performance is variable and critically dependent on Local Government Chairperson's commitment (GPEI, 2011).

3.7. Financing

Financing the polio eradication programme is a critical area. There appeared to be major problems with the management of funds. Often funds were released very late, sometimes as late as 24 hours before the start of SIAs. This had the effect that planning was largely ineffective, and that the considerable resource mobilization required did not occur. As a consequence performance in the SIAs in those areas was very weak and accountability for the use of funds was a major issue. Very many respondents raised concerns over funds mismanagement and lack of accountability for funds. If verified, this may constitute a serious barrier to effective implementation of the Polio Eradication Programme. Weak accountability and non-receipt of updated financial expenditure statements are contributing to a major barrier like emerging polio-fatigue amongst policy makers, stakeholders and communities and inadequate and late arrival of operational funds. All stakeholders at all levels should

embrace good accountability practices. Communities should also be encouraged to demand immunization services (Akande and Akande, 2006).

4. The Major Challenges for Polio Eradication in Nigeria

- Translation of the increased commitment into programme effectiveness at all levels. This is largely a matter of management commitment, skill and commitment. It depends on high quality personnel, logistics and financial management and strong political leadership.
- Establishment of dedicated leadership positions for polio eradication at Federal, State and Local government levels. These leaders would put the decisions and recommendations of government and Task Forces into practice.
- Good programme management and oversight, particularly at the Local Government level
- Sub-optimal OPV coverage at National Immunisation Days (NIDs).
- Further strengthening of surveillance systems in order not to miss any chains of Transmission
- Creation, strengthening and maintenance of community interest in immunization and demand for polio eradication.

5. Conclusions

Progress has been made in polio eradication in Nigeria in the last year or so. At Federal, State, and Local governments, political, religious, and traditional leaders are now very supportive of the immunization campaign and that previous concerns or misconceptions based on unfounded rumors about polio vaccine safety appear to have been largely corrected or only maintain a negligible influence. To effectively eradicate polio there is need to raise routine immunization coverage from the current 79% to at least 95%. This coverage should not only be achieved nationally but also sub-nationally in all Local Government Areas (LGAs) and wards nationwide, when there is low and differential routine and supplemental immunization coverage below the threshold required for interruption of transmission. These immunity gaps allow viruses to persist in smaller areas and population sub-groups.

Recommendations

As the basic infrastructures in Kano and Zamfara States were found to be sound, however, it should be considered by:

- Sustained Government commitment at all levels,

- Defining the mandate, responsibilities, objectives, and accountability of key leaders at various levels of government committed to eradication,
- Accelerating activities,
- Good operational financial and logistical programme management, especially for NIDs,
- Good public communication and social mobilization,
- Further strengthening the existing surveillance system, and
- The involvement of all strategic partners, including the community and women's groups etc

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