# Successes and Failures of the National Polio Vaccination Campaign, Case Report of the North West Region, Cameroon

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#### Abstract

**Background:** An evaluation of the failures and successes of the Polio Vaccination campaign in the North West Region of Cameroon was carried out within the context of a Poliomyelitis epidemic and an upsurge of diseases of epidemic potential such as Measles and yellow fever in the North West Region and other Regions of Cameroon.

**Objective**: The main objective of this appraisal was to decipher the various factors, activities, omissions and commissions that constitute an impediment to the efforts of the Cameroon health authorities, her partners and stake-holders in their effort to contend and eradicate these debilitating and fatal diseases.

**Purpose**: To contribute in the building of a more efficient and effective vaccination programme for the immunization of Poliomyelitis in the North West Region of Cameroon in general and the Bamenda Health District in particular.

**Methodology:** This involved evaluation of the background of Poliomyelitis in Cameroon, the organization and implementation of vaccination programmes in Cameroon and its peculiarities in the North West Region, including eminent lapses. A SWOT analysis was also conducted.

**Results:** A substandard vaccination programme was revealed characterized by Twenty-four imported cases of wild polio registered in the North Region of Cameroon between 2003 and 2011. There exists a huge number of flaws and inadequacies in the vaccination and immunization programme in the North West Region, including poor management of vaccination resistance and refusals. This indicates a high risk of resurgence of vaccine-preventable diseases.

**Conclusion:** The SWOT analysis and the recommendations that follow are believed to serve as lessons to other communities across Africa and beyond.

Keywords: Evaluation, Vaccination, Poliomyelitis, SWOT, Immunization, Eradication.

### Introduction

Poliomyelitis is a contagious disease caused by the Poliovirus. It attacks the nerves and causes weakness and paralysis of muscles especially of the limbs and the respiratory muscles for the rest of one's lifetime. If it does not kill its victim, it results in permanent disability.

Transmission is oro-fecal. Therefore, apart from vaccination, good personal and environmental hygiene are very important elements in limiting infection transmission. One confirmed case in a country is usually declared as epidemic since 1 confirmed case equals 200 undetected cases (WHO, 2014). This disease is targeted for eradication; hence surveillance is very important in monitoring progress towards its elimination and eventual eradication. The burden of the disease is very severe on the individual, family, community in particular and the whole country in general (WHO, 2012) If a sufficient number of children are fully immunized against polio, the virus is unable to find susceptible children to infect, and dies out.

Most infected people (90%) have no symptoms or very mild symptoms and usually go unrecognized. In others, initial symptoms include fever, fatigue, headache, vomiting, stiffness in the neck, and pain in the limbs.

According to the World Health Organization (WHO), Polio treatment is predominantly, by prevention through immunization. Polio vaccine, given multiple times, almost always protects a child for life. If enough people in a community are immunized, the virus will be deprived of susceptible hosts and will die out. This is the concept of herd immunity. High levels of vaccination coverage must be maintained to stop transmission and prevent outbreaks occurring. The lifetime disability adjusted Life years due to polio infection are horrific and shown below in pictures 1, 2 and 3.

In May 2012, the World Health Assembly declared the completion of polio eradication a programmatic emergency for global public health and requested the Director-General to rapidly finalize a comprehensive eradication and "endgame strategy" for the period 2013-2018. It is therefore imperative to make a comprehensive appraisal of the failures and successes of the National Polio Vaccination campaign in the North West Region of Cameroon.

### Government Polio Health Strategy: Assessment and comments

The Cameroon government, in some of her books entitled "Strategies for Growth and Employment" and "Health Sectorial Strategy," developed and put in place several interventions aimed at reducing maternal and infant morbidity and mortality. This was in the quest to achieve the 4<sup>th</sup> and 5<sup>th</sup> Millennium Development Goals (MDGs) which are respectively, to reduce infant mortality by 3/4 and maternal mortality by 2/3 by the year 2015, with reference to the 1990 rates (151 per 1,000 and 430 per 100,000 live births per year respectively).

Currently, these rates are 122 per 1,000 for children and 782 per 100,000 live births in women (Cameroon Health Sectorial Strategy, 2015). To attain the MDGs, one of the strategies fuelled by Cameroon Government with the support of development partners, consisted of the delivery of an integrated package of interventions with high impact on the health and survival of the child and mother. The goal of these interventions is to contribute to the reduction of maternal and infant morbidity and mortality. A recap of these interventions is highlighted in the following paragraph.

### Interventions for the child

The government prescribes and implement vaccination against poliomyelitis for children aged zero to 59 months alongside Vitamin A supplementation of children aged 6 to 59 months, deworming of children aged 12 to 59 months; catch-up for children who missed their routine vaccination (in the health facilities); screening for malnutrition (in the East and 3 northern regions).

### Interventions for the mother

Catch-up vaccination for pregnant women who missed or did not complete their routine vaccination calendar; Intermittent preventive treatment (IPT) of malaria for pregnant women as from the fourth month of pregnancy; Vitamin A supplementation of immediate post-partum women (within 8 weeks after delivery) and Promotion of family planning (some Health Districts in the Adamaoua, Far-North, SW and West Regions).

Therefore, the ultimate goal of these interventions is to reduce the rate of maternal and infant morbidity and mortality as stipulated by the World Health Organisation. Meanwhile, Cameroon at the moment is experiencing an epidemic of Poliomyelitis. Measles and Yellow Fever are up surging, indicating that a lot of effort still has to be made in order to eradicate these diseases. Vaccination campaigns were therefore organized by the Ministry of Public Health in collaboration with its partners – UNICEF and WHO as one of the on-going global campaigns to eradicate poliomyelitis and other diseases of epidemic potential from the nations of the world.

This appraisal was therefore carried out to decifer the failures and successes of the Polio vaccination campaigns in the North West Region of Cameroon so that it could serve as a spring board for the health authorities and all stake-holders to gain inspiration as they develop and adopt further strategies aimed at eradicating Poliomyelitis and other epidemic diseases in Cameroon and elsewhere.

# Background of the Poliomyelitis epidemic in Cameroon

Cameroon has been fully engaged in the polio eradication initiative since its inception in the early 1990s and has thus been assuring a continuous and sustainable rise in routine vaccination coverage, organizing supplementary immunization activities to reach out to all target children zero to 5yrs old, including all zero doses. Cameroon also puts in place a system for active surveillance of cases of Acute Flaccid Paralysis (AFP), Measles and Yellow Fever, and organizes catch-up campaigns in areas where the wild poliovirus continues to circulate.

## Results

With active case-based surveillance of AFP, the last indigenous case of wild polio in Cameroon was registered in Kousseri health district in 1999. However, between 2003 and 2011, Twenty-four imported cases of wild polio were registered in the North Region of Cameroon. The last 2 cases in 2011 were registered in Kolofata and Goulffey health districts though traced to be imported from Nigeria. Between 20th October and 20th November 2013, four cases of the wild poliovirus were confirmed in Cameroon from Malantuen (3 cases) and Foumbot (1 case) in the West Region. This therefore necessitated the first vaccination response campaign, which was organized in December 2013.

Due to the poor quality of this response campaign there was necessity for the organization of better-quality campaigns in January, February and March 2014. During these campaigns two other cases of wild polio were confirmed in March 2014 in Kumbo West in the North West Region (on transit from Kribi) and Bankim (on transit from Yoko) and later, a 3<sup>rd</sup> case in Djoungolo (originating from Equitorial Guinea), thus confirming the circulation of the wild poliovirus in Cameroon. This inevitably called for additional campaigns in April, May and July 2014.

In April 2014, a mixed WHO, UNICEF, CDC-Atlanta, USAID, CAFELTP and Rotary International external review mission visited Cameroon to assess the quality of the country's response since the onset of the Epidemic. The following lapses were noticed:

Lack of robust bottom-up realistic microplans for the campaigns.

Insufficient mobilization of resources (both local and otherwise).

A weak surveillance and monitoring system.

# Method

The external review mission saw the need to organize high quality campaigns based on bottom-up realistic micro plans in May and July and the organization of Synchronized campaigns in September and October 2014. In July 2014, two cases of wild poliovirus were confirmed in refugee camps in the Kette health district of the East Region. These cases were genetically linked to the cases of Malantuen, implying that there is persistent circulation of the wild poliovirus in the West Region of Cameroon. A follow-up mixed WHO, UNICEF, CDC-Atlanta, USAID, CAFELTP and Rotary International external review mission visited Cameroon again in July 2014 to assess the level of implementation of recommendations of the first external review mission. They noticed a satisfactory implementation of the recommendations of the previous mission as well as improvement in some aspects of a quality response.

They however noted a marked residual risk of circulation of the wild poliovirus.

For example: they noted that about 20% of notified cases of Acute Flaccid Paralyses were children who had never received the polio vaccine before (zero doses) despite the multiple campaigns. The recommendation of this followup external review mission was that the country should continue with the mass vaccination campaigns of high quality and more than ever before put in place strategies to reach all children with emphasis on Motor-parks, children on transit, children in refugee camps, farms, churches, market places, hard-to-reach children etc.

All along, independent monitors (external observers) were always available in the field to monitor the quality of all the campaigns organized since December 2013 all over the country.





Figure 1. Children 0-59 months vaccinated in the North West Region in 2013

Figure.1 illustrates the number of target children aged 0-59 months vaccinated during each campaign in each health district of the North West Region; culminating in a Regional synthesis. One can notice an apparent low number of children vaccinated in some health districts such as Bali, Njikwa, Mbengwi, Tubah, and Nwa. From experience, the most common reason amongst others is an apparent discrepancy with regards to the real target population (Denominator). This discrepancy is most often influenced either by socio-political factors or poor census. This also has a negative impact on the Regional vaccination synthesis. From the Regional synthesis one can see that the Regional coverage has hardly attained the envisaged 95% (38000) except may be, in the month of December. That notwithstanding, there is a tendency of improvement from one campaign to the other.



Figure 2. Children 0-11 months old vaccinated during each campaign

Figure. 2 illustrates the number of children 0-11 months of age vaccinated during each campaign in each of the health districts of the North West Region. From figure 2 above, one finds that the highest results were obtained in February, June and December. Looking at the Regional synthesis one would realize that the highest coverage was in the month of December, but still did not meet the envisaged 95% coverage. It was about 93.75% (74000 of an estimated total target population of 80000 children). The rest of the campaigns had more inconsistencies due to various challenges as mentioned before. It is worth noting that the 0-11 age group is the more important and crucial target group considering that these children are easily left alone at home by their mothers during the farming season, or carried on their backs to the farm, market, church, meeting houses, celebration grounds, journeys etc while majority of the 12-59 months of age are easily found at

the nursery and kindergartens, reason why the vaccination coverage of the latter target group is usually higher. The coverage of the 12-59 months age group may tend to exaggerate the real overall vaccination coverage. That is why strategies to reach all children with emphasis on Motor-parks, children on transit, children in refugee camps, farms, churches, market places, hard-to-reach children etc. are mandatory, including revisit of the homes of missed children, and serious catch-up and mopping exercise after the campaign days. In fact, it is very easy to miss vaccinating children of this target group. This is very important for all the health districts especially health districts like Bali, Njikwa, Mbengwi, Tubah and Bafut with an apparently low coverage.

The following are external monitoring results of December. 2013 – March 2014 (percentage of missed children) for the whole country.



Figure 3. External Monitoring Results of December, 2013 – March, 2014

From Figure. 3, in the North West Region about 4% of children were missed during inhouse monitoring in December, 2013 and about 6% of children missed during field monitoring in the same month ; while about 4.8% and 5% of children were missed during the respective monitoring exercices in March, 2014. This was fairly good compared to the results of the other Regions of Cameroon where vaccination campaign was also carried out.



Figure 4. Results of External monitoring, April-June 2014 (percentage of missed children)

The results on Figure.4 show that 9% of the children were missed in April, 2014 in the North West Region. This is one of the worst performances registered by the North West Region.

There was rapid improvement in the months of May and June 2014 whereby only 3% of the children were missed.

# The SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats)

### Strengths

The North West Regional Delegation of Public Health is endowed with qualified, dynamic and hardworking human resources. There is a well-equipped EPI Unit. There are high potentials for high-level advocacy and lobbying. The periodical seminar/workshops organized by the Regional Delegation are very instrumental in staff capacity building.

### Weaknesses

Weak Mobilization of local resources. Poor organization characterized by poor time management, non-systematic launching in most health districts, weak supervision, weak transborder activities, lack of itinerary maps, poor numbering of households, non-systematic revisit of the homes of missed children, inadequate mopping, late and inadequate reporting etc. Weak routine immunization programmes. The cold chain is not the best in many health areas. Laxity on the part of some District Medical (DMOs) coupled Officers with partial implementation of directives and non-systematic

promptitude in the justification of funds. Inadequate management of refusal cases in some health districts. Poor attitude and waywardness of some drivers during the campaigns.

### Opportunities

There is excellent partnership with WHO and UNICEF. The population of the North West Region very receptive and collaborative with regards to health campaigns. National and international consultants are readily available for various inputs. The government, through the Regional Governor, is very concerned with the vaccination campaigns.

All the stakeholders are very anxious to see the ultimate goals of the campaigns achieved. External sponsorship is readily available provided there is systematic promptitude in the justification of used funds.

### Threats

Stiff centralization of biomedical diagnostic test facilities at Centre Pasteur Laboratory Institute, Yaoundé. Poor road infrastructure. Non-systematic availability of documents and tools in English. Porous nature of the Regional borders during vaccination campaigns. Late arrival of funds and social mobilization materials for the vaccination campaigns. Parallel instructions and activities from hierarchy that tend to conflict with the organization of the vaccination campaigns.

There is an acute crisis in the North West Region in terms of water treatment, protection, availability and supply. This favors the transmission of the Polio Virus.

# Conclusion

From the multiple revelations discussed above, one is definitely right to believe that there exist many flaws and inadequacies in the vaccination and immunization programme in the North West Region. Therefore, the Polio vaccination programme in the North West Region is substandard and consequently there is a high risk of an upsurge of morbidity and mortality from Poliomyelitis and other vaccine-preventable diseases in the Region.

Resistance to childhood vaccination is a concerning public health issue. However, in attempting to address vaccine resistance, it's important to keep in mind that parents are just trying to do what is best for the health of their children.

## Recommendations

1. Proper time-bound conception, planning, effect composite budgeting, supervision and evaluation focusing on performance and meticulous coverage should be ensured by Government and stake-holders.

2. The cold chain, and realistic micro-plans should be strictly maintained and well managed right to the grassroots level by all involved in the vaccination campaigns.

3. The health authorities should step up transborder immunization activities and routine vaccination programmes.

4. Health personnel involved in immunization campaigns should intensify their surveillance and improve on monitoring systems to reach out even to catchment pools such as herbalists, healing homes, traditional healers, refugee settlements, etc.

5. The Ministry of Mines, Water and Energy should improve the quality of potable water in terms of treatment, protection, availability and supply in a bid to reduce water born transmission of Poliomyelitis.

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