Report on country experience:
A multi-sectoral response to combat polio outbreak in Namibia

Ministry of Health and Social Services, Republic of Namibia
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Executive Summary

In June 2006, Namibia faced an outbreak of an imported poliovirus when a case of Wild Polio Virus type 1 was confirmed. The country had been polio free since 1996 and certification standard surveillance indicators were achieved in 2003 and were sustained until 2006. Based on this achievement the country was in the process of preparing documentation to be presented to the Africa Regional Certification Commission (ARCC) for consideration for Polio-free certification when the outbreak suddenly occurred. A total of 323 suspected cases were reported of which nineteen (19) were confirmed as wild polio virus, 24 as polio compatible and the remaining 280 discarded as non-polio AFP cases. Thirty two (32) of the suspected cases died, including six of the nineteen confirmed cases. Most of the cases (70%) involved adults aged 20-35 years with only 2 cases in children under 10 years of age.

Government intervention was needed to combat the outbreak and bring the epidemic under control within the shortest possible time. Namibia conducted three rounds of high quality outbreak vaccination response targeting the entire population of approximately 2 million using Monovalent Oral Polio Vaccine (mOPV) type 1. The first round was conducted within 2 weeks of confirmation of the disease, and a total of 2201 494 people were vaccinated. Thirty of the 34 health districts achieved coverage of 95% or above. The second round conducted about 4 weeks after the first round achieved similarly impressive coverage and reached an additional 5 000 people. The third round, which was the last round, targeted 328 768 children aged under five years provided measles vaccination, vitamin A supplementation and trivalent OPV and achieved coverages of 92%, 97% and 97% respectively. These coverages were independently verified by WHO, United Nation Children Fund (UNICEF) and Red Cross external monitors.

The main triggers that contributed to the outbreak were poor hygiene and sanitation in the informal settlements and the likelihood of a low level of immunity among the older population in the country. Not much is known about the immunity status of the older members in the community because of
lack of data and the fact that there was no national immunization program before independence (1990). Routine immunization coverage for OPV3 between 2000 and 2005 remained a challenge with coverage ranging from 70% to just above 80%.

Under the leadership of the Ministry of Health and Social Services and with support from the President and Cabinet, the National Health Emergency Management Committee of the Ministry of Health and social Services and in partnership with the World Health Organization, with its main collaborator Centre for Disease Control (CDC), UNICEF and the Namibia Red Cross Society, a total of 7725 personnel, and 1244 vehicles were mobilized for the campaign. Besides the salary of the personnel involved, the campaign cost in excess of N$32.2 million with the government meeting 78% (transport, capacity building, materials, supplies, catering services etc.). UNICEF provided the monovalent polio vaccines and cold chain equipment valued at N$ 6 million and WHO brought in technical assistance estimated at N$600,000. The local institutions (Namibia Institution of Pathology, Old Mutual, AVRIL Payment Solution) contributed cash of N$ 400 000.00 towards the cost of the campaign, while the Government of China donated US $ 30 000.00. Many other organizations and the community members made huge contributions towards the success of the campaign.

The outbreak brought to the fore the problem of health inequity in the country as those residing in the informal areas with poor social amenities and low standard of living were the worst affected. The need to strengthen partnerships and intersectoral collaboration to address the social determinants of health was highlighted and forms part of lessons from the Polio outbreak.

**Background**

Namibia attained independence in 1990 and inherited an inequitable health and social systems from the colonial masters. The main underlying problem that fostered the Polio outbreak in the country was the low level of immunity among the older population in the country as there was no
national immunization programme prior to independence and, only those who could afford had access to immunization services for their children. There was fragmented health system prior to independence, with the white population enjoying a better health and educational system than the blacks who are the main inhabitants of the informal settlements. In many informal settlements in the country there is poor sanitation and hygiene, poor housing and overcrowding among the dwellers. Poverty is rife and unemployment is high.

The Government of the Republic of Namibia immediately after Independence adopted Policies and Programmes to democratize access to basic services and improve the health, social and economic wellbeing of the majority of the population. A National Health Policy was adopted based on the principles of Primary Health Care and universal access to health and social services. The Expanded Programme on Immunization was introduced and the country introduced National Immunization Days in 1996 to supplement routine immunization coverage, following a Polio outbreak in 1995.

The government has also implemented medium term development programmes in form of Nation Development Plans 1-111, and the 4th phase is in the making. A long term development Plan known as Vision 2030 has also been developed and this seeks to transform the country into a technologically advanced country and knowledge-based society by 2030. The National Housing Enterprise was established and the Build-Together Programme set up to improve access to affordable housing for the population. A National Poverty Alleviation Strategy has also been developed and is being implemented.
Access to basic health services has improved through the construction of more health facilities, renovation and expansion of existing health facilities, training of more health workers and the decentralization of management structures. However, immunization coverage, though improving, has not reached expected levels especially for OPV3 as shown in Figure 1. Namibia is also surrounded by some countries where the wild Polio virus is still in circulation and from where there is free migration of people across the borders in line with the SADC Protocol. During the National Immunization Days some of the Commercial Farm owners do not allow their workers to participate or bring their children for vaccination as access to their farms is limited. Some of the private medical practitioners do not agree that the annual vaccination of children under 5 years as carried out during the NIDs is necessary and therefore advise their clients not to participate. These may have facilitated the Polio outbreak in 2006.

**Problem Space**

Namibia witnessed an outbreak of Wild Polio Virus Type 1 in 2006. Namibia had been polio free since 1996 and had continued routine and National immunization campaigns with the hope of being certified polio-free by the World Health Organization. The 2006 Polio outbreak shattered this dream when a total of 323 suspected cases were reported of which nineteen (19) were confirmed as wild polio virus, 24 as polio compatible and the remaining 280 discarded as non-polio AFP cases. Thirty two (32) of the suspected cases died, including six of the nineteen confirmed cases. Most of the cases (70%) involved adults between ages 20-35 years with only 2 cases of children under 10 years of age.
Government intervention was needed to combat the outbreak and bring the epidemic under control within the shortest possible time. Namibia needed to conduct three rounds of high quality outbreak vaccination response, with the first and second rounds targeting the entire population of approximately 2 million using Monovalent Oral Polio Vaccine (mOPV) type 1 and the third round targeting 328,768 children aged under five years with measles, vitamin A and trivalent OPV.

The main trigger that brought about the outbreak was the poor hygiene and sanitation in the informal settlement and the possible low level of immunity among the older population in the country. Not much is known about the older population’s immunity status because of lack of data and the fact that there was no national immunization program before independence in 1990. Routine
immunization coverage for OPV3 between 2000 and 2005 remained a challenge with coverage ranging from 70% to just above 80%.

Under the leadership of the Ministry of Health and Social Services and with support from the President and Cabinet, the National Health Emergency Management Committee of the Ministry of Health and Social Services and in partnership with the World Health Organization, the Centre for Disease Control (CDC), UNICEF and the Namibia Red Cross Society, Regional and District Managements Teams and all health workers, the public was mobilized and informed of the outbreak and the intended campaign to combat the outbreak. Active surveillance was mounted and a comprehensive plan initiated with active involvement and contribution of all stakeholders. Regular briefing and updates were provided and resource mobilization initiated and coordinated. Community and traditional leaders were mobilized as well as other Ministries, government and private institutions and the international community. Many organizations and the community members came forward with contributions towards making the campaign a success.

**Planning**

When it became obvious from the surveillance systems of the Ministry of Health and Social Services that unusual number of cases of acute flaccid paralysis were being reported during the month of May 2006, the Ministry declared a polio outbreak on 2nd June 2006 and immediately a number of measures were put in place to combat the outbreak. On the advice of WHO, a decision was taken to conduct 2 rounds of immunization to vaccinate the whole population with monovalent polio vaccine and a third round targeting children under 5 years using trivalent polio vaccine as well as administering Vitamin A and measles vaccine. The population targeted for each Region was calculated using projected population data from the 2001 National census plus an additional 10% to cover for migrant population. The set dates for the nationwide campaigns were as follows:

- **Round One**: 21st – 23rd June 2006
- **Round Two**: 18th – 20th July 2006
Round Three  :  22nd – 24th August 2006

The National Health Emergency Management Committee (NHEMC) was expanded to include a multi-disciplinary team to plan and coordinate a comprehensive response to the outbreak. The expanded NHEMC consisted of members from the following divisions/programmes: Epidemiology, Expanded Programme on Immunization (EPI), Pharmaceuticals, Transport, Finance, Laboratory, Environmental health, Planning, Quality Assurance, Logistics, IEC, staff from the referral hospitals, regional representatives, WHO, UNICEF, CDC, Ministry of Defense, City of Windhoek, Namibia Red Cross Society and chaired by the Director of Primary Health Care and Senior Medical Superintendent. Under the NHEMC, various subgroups were established to look into specific issues such as:

- Outbreak investigation
- Social Mobilization
- Logistics and Supplies
- Training
- Transport
- Human resources

The Minister of Health and Social Services approached Cabinet for support and a taskforce composed of Cabinet Ministers, chaired by the Honorable Deputy Prime Minister was established to give political support to the dissemination of information to the general public about the Polio outbreak. Support was sought from different companies, public and private institutions, development partners, non-governmental organizations, churches as well individuals. The government of South Africa and The Peoples Republic of China provided support in the form of finance and cold chain equipment.

Regional Directors and representatives were invited for briefing and micro-planning. Requirements were compiled and forwarded to the NHEMC and the subgroups worked tirelessly to get the necessary logistics in place for the set dates. The Permanent Secretary requested transport and personnel support from other Ministries, Agencies, Development Partners, civil society organizations, individuals and the media. Regional Directors similarly briefed stakeholders and mobilized support at
the Regional and local levels, including support from traditional, community and religious leaders.

Social mobilization was facilitated by the involvement of the media in the planning of the response. The major local newspapers were invited to the meetings of the NHEMC and regular briefings and press releases were issued by the Ministry of Health and Social Services. The newspapers assisted in the distribution of information leaflets on the polio outbreak and provided details as to where people may get help while the National broadcaster through its radio and television services aired regular messages to enlighten the public on the outbreak. On the eve of the campaign, the President made a nationwide broadcast on the national radio and television urging all to support the campaign and get vaccinated.

A total of 1244 vehicles were mobilized and used for round one, 1120 for round two and 936 for round three. Community vehicles were mobilized and fuel was provided by the government. Two helicopters were secured from the Ministry of Defense. Jet fuel for the helicopters’ use during the campaign was purchased and transported to the hard to-reach areas in Kunene and Caprivi regions. Two boats were also hired for Caprivi Region to take the vaccination teams to the communities that are isolated from the mainland by water. Health workers all over the country and volunteers were mobilized and trained for the campaign.

Most of the Monovalent Oral Polio vaccine needed, (2.5 million doses for the first round and 2.7 million doses for the second round) was donated by UNICEF. The trivalent Polio Vaccine used for the third round was purchased by the Government. All vaccines were distributed in time to the regions. An additional 300,000 doses of Monovalent polio vaccine was received from WHO. Vaccines were stored under effective cold chain conditions at all levels of implementation and adequate vaccine carriers and cold boxes were procured and distributed to Regions and districts. Technical support was provided by WHO, UNICEF, CDC, Red Cross and the health professionals within the Ministry of Health and Social Services and the Private Health Care providers in the country. The main policy tools identified to move towards implementation were the National Health Policy document, the National Health Emergency Management Guidelines and the various WHO Technical Guidelines on Polio eradication and National Immunization Activities.
Implementation

With all the logistics in place, the stage was set for the Polio vaccination campaign to combat the outbreak. Official launching of the campaign took place in Windhoek, the capital city, and was performed by the First Lady, Madam Penehupifo Pohamba while the Regional Governors performed similar launchings at each of the thirteen Regional capitals.
First Lady, Madam Penehupifo Pohamba, giving polio drops to a child immediately after the launch of the campaign

Photo credit: The Namibian Newspaper of 21 June 2006

All fixed health facilities in the country including the public and private health facilities served as vaccination points. In addition each Region identified a number of fixed points in the communities as well as mobile teams to cover the entire Region to conduct the vaccination.

Daily updates and progress on the cases of acute flaccid paralysis were provided by the surveillance teams from each Region to the NHEMC which met twice daily to review the reports. During the campaign vaccination teams were requested to search for all cases of acute flaccid paralysis in the communities, transfer them to hospitals and report accordingly.

The immunization teams were provided with all necessary materials and tools including the vaccines, cold boxes, vaccine carriers and ice packs, camping equipment and food (where necessary) as well as telecommunication facilities. Each team was also provided with tally sheets, health facility sheets and non-compliance sheets. Supervisors were provided with supervision and monitoring tools. The allocation of vaccines and other resources to each Region team was made based on the estimated
population to be covered while similar allocation to each vaccination team followed estimated population in the allocated towns and villages. Quality monitors were trained and allocated in each Region and district to follow on the immunization teams to ensure adherence to standards. The National level assigned supervisory and support teams to each Region, including staff from WHO and UNICEF who served as technical experts to observe, supervise and support the campaign in the Regions.

The implementation was carried out in three rounds of the campaign as per the set dates.

The young and the old queued up to receive Polio vaccine in various parts of the country during the campaign.

Photo credit: MOHSS

The campaign made use of 7545 personnel for the first round, 8110 for the second round and 6220 for the third round. Altogether 1244 vehicles were involved in the operations. The campaign was supported by 221 individuals, government and private institutions and organizations. The total cost
of the measures implemented in the 3 rounds of the campaign was put at N$32.2 million, 78% of which came from the government. This sum excluded the salaries of the health care providers and the cost relating to use of health facility space during the campaign. UNICEF provided most of the monovalent polio vaccines and cold chain equipment valued at N$ 6 million and WHO brought in technical assistance estimated at N$600,000. The local institutions (Namibia Institution of Pathology, Old Mutual, AVRIL Payment Solution) contributed cash of N$ 400 000.00 towards the cost of the campaign, while the Government of China gave US $ 30 000.00. Many other organizations and community members made significant contributions towards the success of the campaign.

5. Results

The national target population for Monovalent Oral Polio Vaccine immunization (first and second round), was 2 157 178. For Round one the vaccinated population was 2 201 494 while for second round it was 2 206 642.

Figure 3: Vaccination coverage by Regions

Generally during the first round, more people were reached than targeted for. The maps below show that during the first round, three (3) of the thirty four (34) districts namely; Andara, Nyangana and
Karasburg, did not achieve vaccination coverage of 95%, as compared to only two (2) districts (Nyangana and Karasburg) during the second round. Only 3 health districts did not reach 90% coverage in round 1 while 2 health districts did not reach 90% coverage in Round 2. Most of the districts achieved 95% or more coverage in the first and second rounds of the campaign.

**Figure 4: Comparison of Round 1 and Round 2 Polio Immunization coverage in health districts in Namibia during the 2006 outbreak response**

Round three targeted all children under the age of five years for Trivalent Oral Polio Vaccine (328 768), Measles vaccination and Vitamin A supplementation (263 014). For measles coverage twelve regions achieved above 90%, only two regions out of 13 did not reach 90% for Vitamin A and, for Polio, five of the regions were below 90%. Overall for round three the national coverage was 92% for Oral Polio, 97% for measles vaccines and 97% for Vitamin A.


**Monitoring and Evaluation**

During the campaign each team in the field communicated the number of children vaccinated daily to the Regional Coordinator who subsequently reported same to the National level, along with a report on any constraints experienced. A National evaluation meeting was called after the first and second rounds of the campaign to assess the achievements, challenges and constraints and carry out re-planning for the next round. A final evaluation and report writing meeting was held in September 2006 after the third round of the campaign.

![Final National Evaluation meeting in session](image)

*Photo credit: MOHSS*

Independent monitors were assigned in the field to monitor the conduct of the campaigns by the teams and all shortcomings were immediately reported and rectified. The final results were independently verified by WHO, UNICEF and CDC.

On-going surveillance activities continued throughout the response period and thereafter. The Municipal and local authorities immediately attended to sanitation facilities and provided potable water in areas where the cases were concentrated and the communities were mobilized to improve
their hygiene and sanitation. The last confirmed case of wild polio virus was isolated on 26th June 2006. Strengthened surveillance and routine immunization has continued since then while the government has continued with the task of improving access to health, social services and housing along with undertaking poverty alleviation programmes for the population.

**Follow-up activities**

Since the outbreak, the Ministry of Health and Social Services has strengthened surveillance in all health facilities and communities are being involved in surveillance. National immunization Days have continued annually and strengthened routine immunization implemented. Synchronization of the National Immunization Days with the neighbouring countries has been implemented and cross-border meetings on health issues conducted regularly with Angola.

**Lessons Learned**

The outbreak has shown that with support and cooperation from all stakeholders the country can confront and handle its health and social problems and achieve great success. Health and social welfare challenges such as maternal mortality, HIV/AIDS, Tuberculosis, alcohol abuse and gender-based violence can only be tackled and successfully combated if the nation joins hands as one.

The outbreak has highlighted the need for international cooperation and support to address communicable diseases. The wild polio virus that was isolated during the outbreak was found to be similar to the virus that caused an outbreak in Angola in 2005. Diseases do not require international passports to cross the border and what affects our neighbours should be of concern to us. Cooperation and assistance in disease surveillance and response and prevention is critical among countries and cross border. Health programmes need strengthening as well as addressing the social determinants of health.

Improving sanitation, nutrition and immunization coverage are critical factors in disease prevention and control and general poverty alleviation and socio-economic development and empowerment of the people are issues that need to be addressed across countries and ensure the achievement of the millennium development goals.
Summary and Conclusions

Namibia witnessed an outbreak of Wild Polio Type 1 virus in 2006. A total of 323 suspected cases of Acute Flaccid Paralysis were reported, of which 19 were confirmed as Wild Polio Virus Type 1. The outbreak affected mostly the older population and thirty-two of the suspected cases died. The country mounted an immediate response that enabled the whole population to be vaccinated against polio virus.

The outbreak of the epidemic witnessed an unprecedented response with the country coming together in the spirit of one Nation facing a common enemy. The reported deaths in some communities engendered fear among the populace and motivated the people to seek early treatment and prevention from further spread of the outbreak. The key to the successful response to the outbreak included:

- Political commitment
- Resource mobilization and availability
- Support of international community
- Good community mobilization and cooperation from the communities
- Commitment and dedication from the Health Care Providers and the volunteers
- Team work and delegation
- Good communication and support from the media

Here are some of the remarks from Officials:

“Having subgroups from the beginning and each one contributing in its own way was really instrumental to the success of the response. MOHSS cannot succeed if it works in isolation, whether in polio campaigns or in maternal health issues. Social mobilization is very crucial.” - Mrs.Diegaardt, Chief Health Programme Administrator, Reproductive and Child Health and Nutrition Subdivision.
“I can really say that Leadership, communication, delegation and coordination were critical in the response and containing the outbreak. The IEC group and community education led by Mr Maloboka did an excellent job.” – Mrs. Nghatanga, Director, PHC Directorate and Deputy Chair of the National Health Emergency Management Committee

The need to provide basic services such as good housing, water and sanitation and improved access to basic health services and education to all segments of the population is needed. Sustained immunization coverage of the entire population using Monovalent Oral Polio Vaccine (mOPV) type 1 and children aged under five years with measles, vitamin A and trivalent OPV should be maintained. Government should vigorously pursue this in the National development plans.

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References

