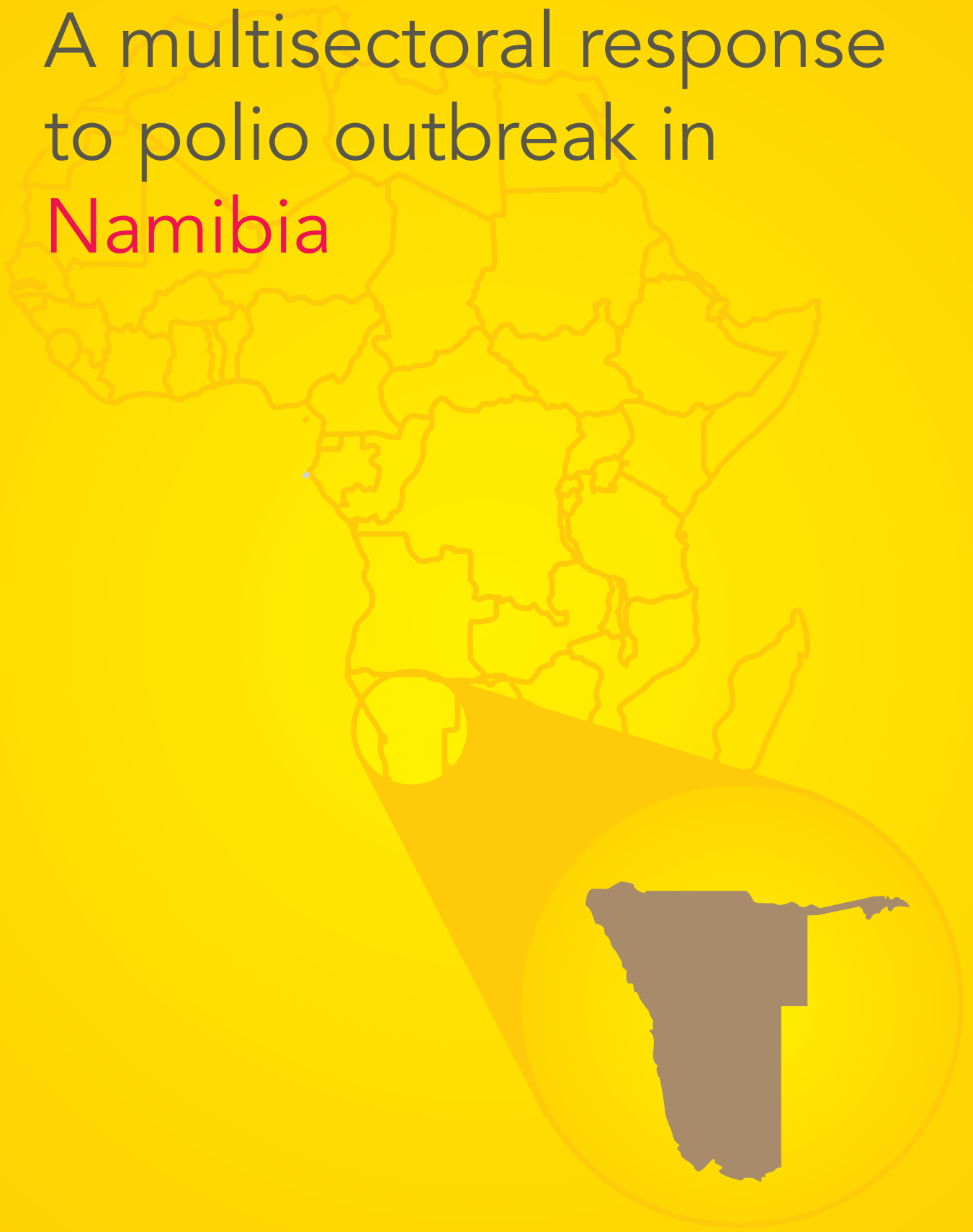


A multisectoral response to polio outbreak in Namibia

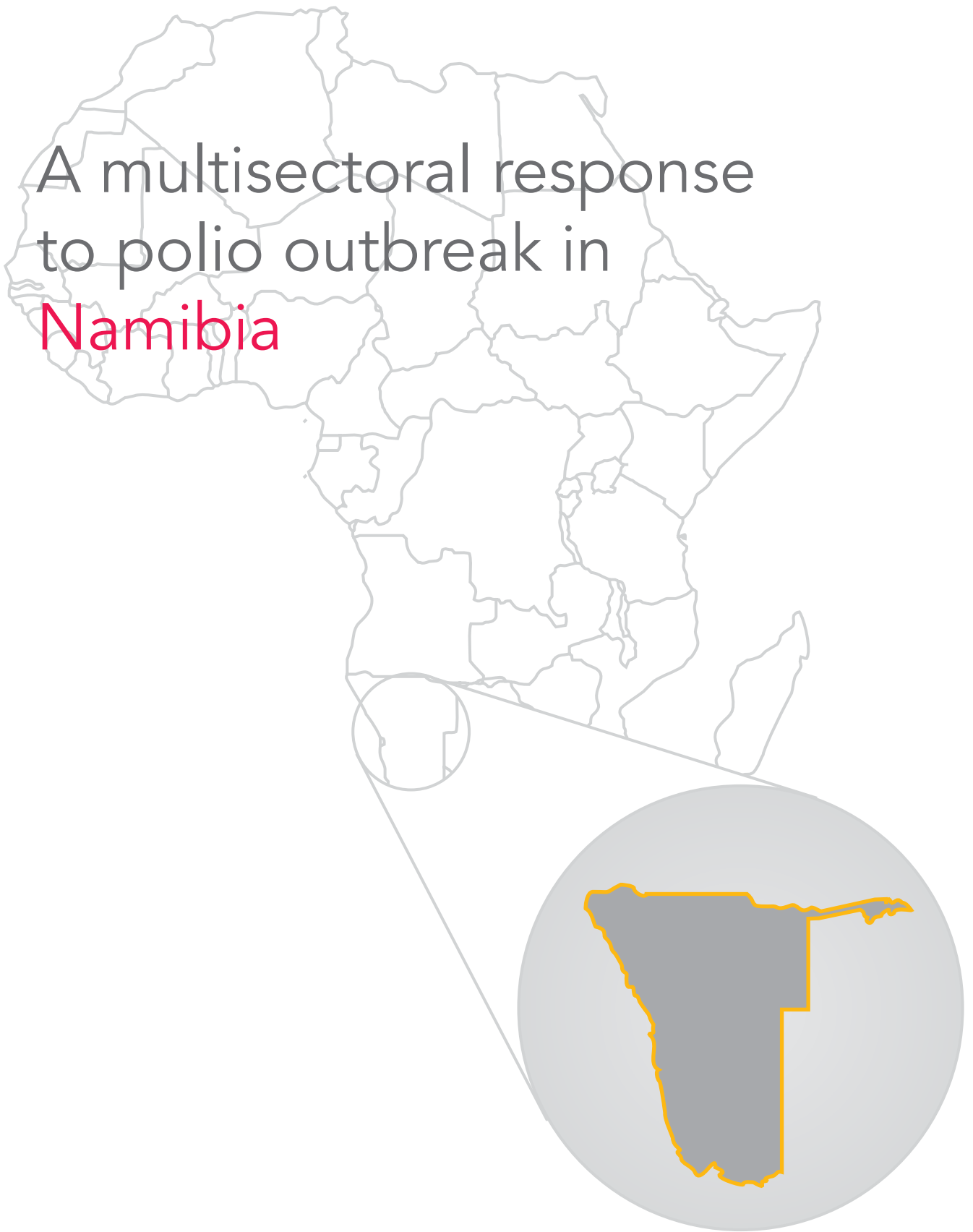


World Health
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REGIONAL OFFICE FOR Africa

A multisectoral response
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Namibia



Namibia

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Disclaimer

This report was prepared by the Ministry of Health and Social Services for sharing experience with participants at the 2011 World Conference on Social Determinants of Health. Technical support was provided by the World Health Organization Country Office in Namibia, but the views expressed are solely those of the Ministry of Health and Social Services. Any errors or unintended consequences are regretted.

Contents

- Acknowledgments..... iv
- Abstract v
- 1. Introduction 1
- 2. Hypothesis 4
- 3. Methodology 4
- 4. Results 7
- 5. Monitoring and evaluation 8
- 6. Follow-up activities..... 9
- 7. Lessons learnt..... 9
- 8. Conclusion 10
- Bibliography 11

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An earlier draft of this case study was included in a special collection of global experiences on intersectoral actions which was widely disseminated during the World Conference on Social Determinants of Health held in Rio de Janeiro, Brazil in 2011. At the country level, the review process leading to the finalization of the case study generated multi-stakeholder policy and strategy discussions on implementing intersectoral actions to address social determinants of health.

The final product is a result of collective efforts of many individuals and organizations. However, the drafting team included Mr Puumue Katjuano, Ministry of Health; Ms Taimi Amaambo, WHO (Namibia) and Ms Odete Cossa (WHO/IST-ESA)

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Abstract

A paralytic poliomyelitis outbreak occurred in Namibia in 2006, almost exclusively among adults. Nineteen cases were virologically confirmed as of wild poliovirus type 1 (WPV1) and 26 cases were classified as polio-compatible. Eleven deaths occurred among the confirmed and compatible cases. Of the confirmed cases, 97% were aged 15-45 years, 89% were male, and 71% lived in settlement areas in Windhoek. The virus was genetically related to a virus detected in 2005 in Angola, which had been imported from India. The outbreak was likely due to immunity gaps among adults who were inadequately vaccinated during childhood. This outbreak underscores the ongoing risks posed by poliovirus importations, the importance of maintaining strong acute flaccid paralysis (AFP) surveillance and the need to maintain high population immunity to avoid polio outbreaks in pre-eradication era and outbreaks due to vaccine-derived polioviruses in the post-eradication phase. High-level political support, multisectoral action, social mobilization and capacity enhancement are some of the core elements that facilitated success in containing the outbreak.

1. Introduction

Namibia attained independence in 1990 and inherited an inequitable and fragmented health and social system from the colonial masters. The legacy of inequitable systems contributed to poverty and high unemployment rates. Informal settlements in many urban areas are increasing which lead to overcrowding and subsequently poor hygiene and sanitation.

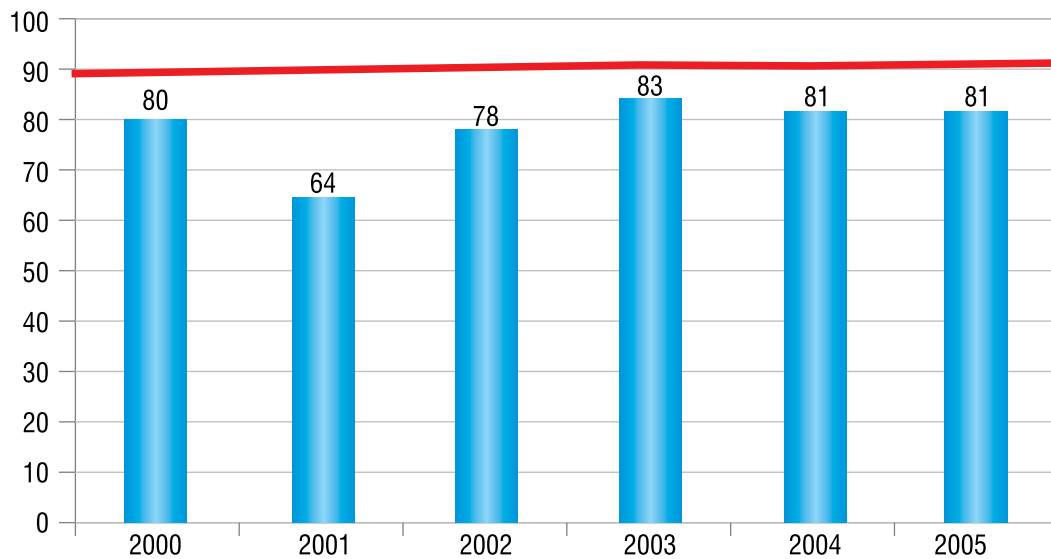
Table 1. Basic demographic indicators, Namibia, 1991 and 2001

Indicator	Census 1991	Census 2001
Population	1 409 920	1 830 330
Inter-censal growth rate (%)	3.1	2.6
Density (population/km ²)	1.7	2.1
Percent urban	28	33
Life expectancy at birth		
Male	59	48
Female	63	50
Child mortality rates		
	1992	2000
Under-five mortality rate	83/1000	62/1000
Source: http://www.npc.gov.na/census/census_indicators http://www.healthnet.org.na		

The government has embarked upon a number of development programmes implemented through the National Development Plans. A long-term development plan known as Vision 2030 has also been developed which seeks that all Namibians have equitable access to high quality and affordable health care services, are living healthy lifestyles, and are provided with safe drinking water and comprehensive preventive and curative services.

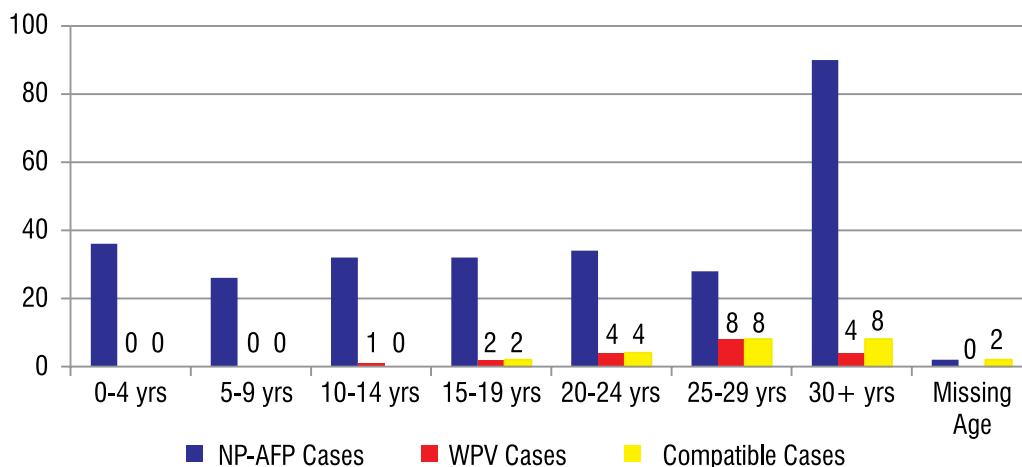
In 1990, the Expanded Programme on Immunization (EPI) was introduced, followed by National Immunization Days (NIDs) in 1996 to supplement routine immunization coverage. The routine immunization coverage improved but has not reached expected levels, especially in OPV3, as shown in Figure 1. Supplementary vaccination coverage appears to be good but has also challenges as not all children could be reached during NIDs as some commercial farm owners do not allow their workers to participate or bring their children for vaccination, hence access to their farms is limited.

Figure 1: OPV3 coverage in Namibia, 2000 - 2005



In addition, some private medical practitioners do not value the importance of the annual supplemental vaccination of children under 5 years and therefore advise their clients not to participate. All these factors may have contributed to low immunization coverage, thus low herd immunity in the population. Given this low vaccination coverage and the fact that Namibia is surrounded by countries where wild poliovirus (WPV) is still in circulation, the country was put at risk of wild polio virus importations from endemic and infected neighbouring countries.

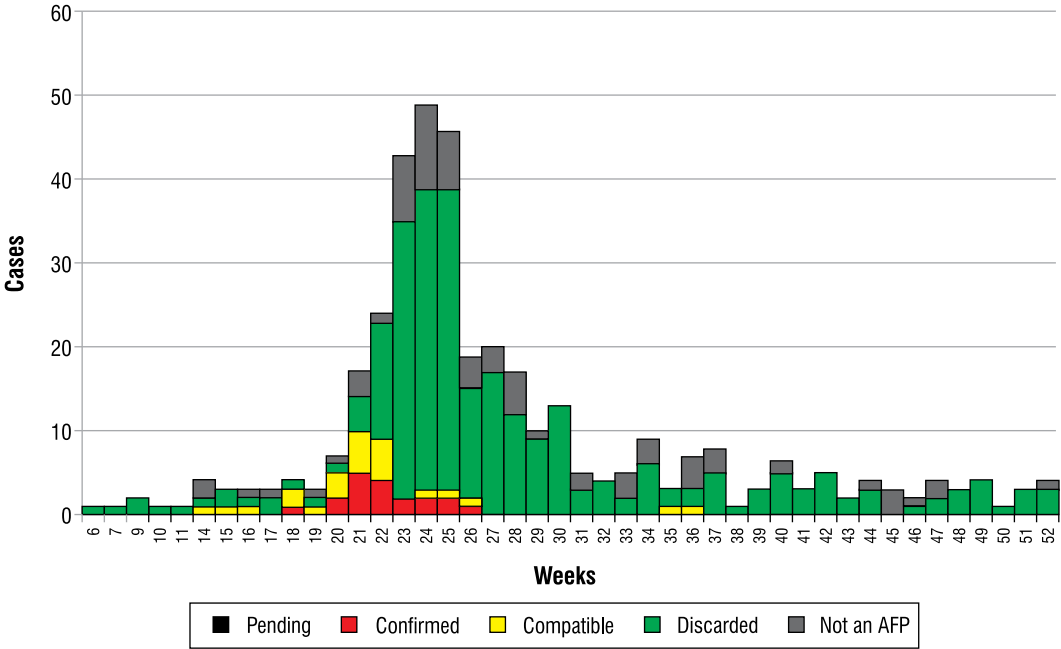
Figure 2: Distribution of AFP cases by Age-group in Namibia, 2006



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 (WHO). However, in 2006, the country witnessed an outbreak of wild poliovirus type 1 (WPV1). This outbreak shattered the dream of a polio-free country 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 two (2) cases of children under 10 years of age as shown in Figure 2.

Figure 3. Reported cases of confirmed and suspected acute flaccid paralysis (AFP) cases during polio outbreak, by epidemiological week, 2006



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 two 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 oral polio vaccine (tOPV).

The main triggers that brought about the outbreak were the poor hygiene and sanitation in the informal settlements 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 programme before independence. Routine immunization coverage for OPV3 between 2000 and 2005 remained a challenge, with coverage ranging from 70% to just above 80%, which is far below the target of 95%.

Under the leadership of the Ministry of Health and Social Services (MOHSS) and with support from the President and his Cabinet, the National Health Emergency Management Committee (NHEMC) of the MOHSS and in partnership with WHO, the Centers for Disease Control (CDC), UNICEF, the Namibia Red Cross Society, the Regional and District Management 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 the active involvement and contribution of all stakeholders. Regular briefing and updates were provided and resource mobilization initiated and coordinated. Community and traditional leaders as well as other ministries, government and private institutions and the international community were mobilized.

Many organizations and community members came forward with contributions towards making the campaign a success.

Most of the countries neighbouring Namibia had stopped conducting polio supplemental campaigns as most of those countries were free of wild poliovirus for more than 10 years, with the exception of Zambia that suffered a polio importation in 2001-02, and Angola). Contrarily however, in addition to routine immunization, annual NID campaigns had been organized in Namibia since 1996, targeting children aged <5 years. Although accelerated EPI activities targeting the population under five years rapidly increased immunization coverage among children, between 1993 and 1995, two separate outbreaks, predominantly among children less than 5 years of age, were reported in Namibia with implicating viruses linked to Angola. (ref = Biellik 1997 175 Suppl). Since 1995 until the outbreak in 2006, no WPV cases had been reported.

2. Hypothesis

In containing a poliovirus outbreak, a well-coordinated multisectoral response is essential.

3. Methodology

Following the confirmation of the initial case together with the unusual number of cases of acute flaccid paralysis reported during the month of May 2006, the MOHSS declared a polio outbreak on 2nd June 2006 and immediately a number of measures were put in place to combat the outbreak.

An outbreak investigation team led by the National Deputy Director of Epidemiology and including the national surveillance focal person and the Khomas region surveillance counterpart was constituted. Additional technical support was provided to the team by epidemiologists from WHO headquarters, Geneva, the WHO Intercountry Programme (ICP) Office, Harare, Zimbabwe, and the United States Centers for Disease Control (CDC). Information on probable risk factors such as history of recent travel to polio-infected countries or contact with persons from such areas and immunization status was collected from the caretakers of the first reported case in the outbreak. A week after the lab confirmation of the first case in the outbreak, active case search was conducted in his farm and other neighbouring farms in Aranos (about 350 km from Windhoek) for possible missed cases of AFP. Immediately following laboratory confirmation of the outbreak, the two main referral hospitals and the major health centre in Windhoek were visited to interview clinicians, paediatricians and other health workers in order to identify possible new or missed cases of AFP. Outpatient and inpatient records were searched for possible missed cases and to validate reported cases. Two stool specimens were collected and tested from two contacts of the confirmed cases to ascertain the spread of the virus. At the same time, regional and district health staff were instructed to intensify AFP surveillance in health facilities and in the community and to report weekly to the central level.

A line-list of reported AFP cases was kept at the central level and updated on a regular basis with laboratory results. An epidemic curve of the outbreak was updated regularly. Core AFP surveillance performance indicators were analyzed weekly and the regions were given feedback on their performances.

The National Health Emergency Management Committee (NHEMC) was expanded to include a multidisciplinary team to plan and coordinate a comprehensive response to the outbreak. The expanded NHEMC consisted of members from the following divisions/programmes: Epidemiology, EPI, Pharmaceutical Services, Transport, Finance, Laboratory, Environmental Health, Human Resources Development, Policy Planning, Quality Assurance, Logistics, IEC, staff from the referral hospitals, regional representatives, WHO, UNICEF, CDC, Ministry of Defense, City of Windhoek and Namibia Red Cross Society. This was 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 and human resources.

On the advice of WHO, a decision was taken to conduct two rounds of immunization to vaccinate the whole population with mOPV and a third round targeting children under 5 years using tOPV 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.

Political leadership: Political support was demonstrated at all levels, including the Office of the President, Governors and traditional leaders to mobilize communities, civil society organizations (CSOs) and the private sector to support the nationwide campaign.

Resource mobilization: Given the large geographical area and scattered populations, particularly in rural, remote and hard-to-reach areas such as Caprivi and Kunene regions where boats and helicopters are required to access them, sufficient logistical support was critical in ensuring nationwide vaccination coverage. The total cost of the measures implemented in the three rounds of the campaign was put at N\$32.2 million, 78% of which came from the government. The support in the form of financial, material, supplies and human resources which came from public and private institutions, CSOs and development partners and communities was overwhelming. Technical support from lead agencies such as WHO, UNICEF, CDC and the Red Cross Society of Namibia contributed to capacity enhancement in micro planning, surveillance and cold chain management as part of preparedness and response.

Intersectoral action: All intersectoral activities were coordinated through the expanded National Health Emergency Management Committee.

Social mobilization: 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 MOHSS. The newspapers assisted in the distribution of information leaflets on the polio outbreak and provided details as to where people could 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, while the First Lady launched and supported the campaign throughout.



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

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 vaccination in various parts of the country during the campaign.
Photo credit: MOHSS

All fixed public health facilities in the country, including 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 AFP 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 AFP in the communities, transfer them to hospitals and report accordingly.

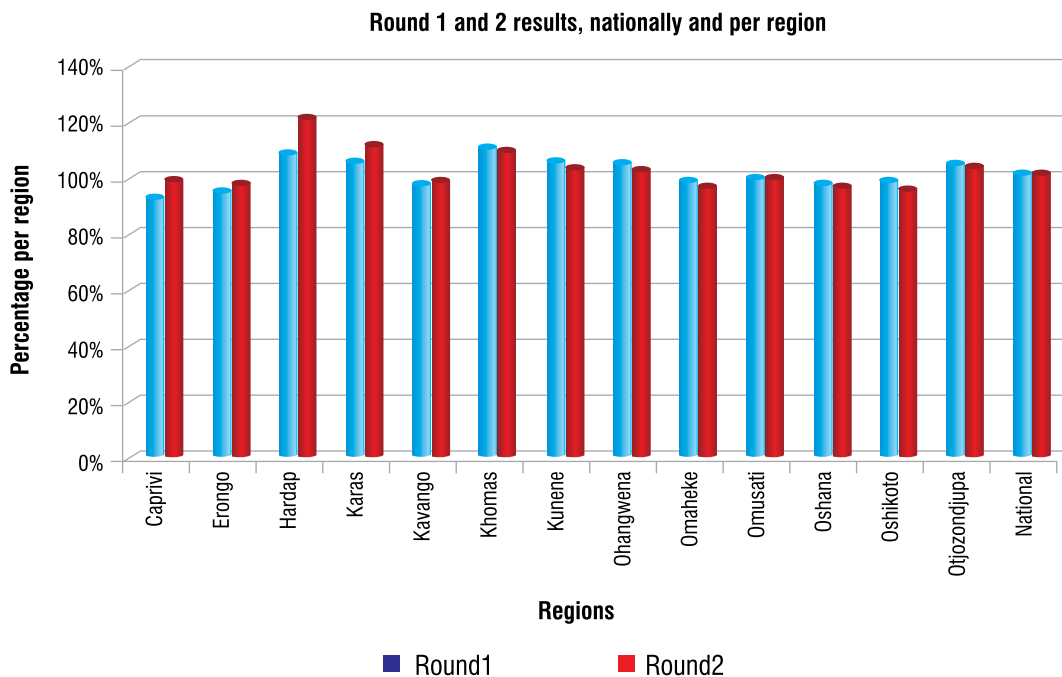


National and regional managers attending the micro-planning meeting (left) and volunteers undergoing orientation (right) preparatory to the campaign. Photo credit: MOHSS

4. Results

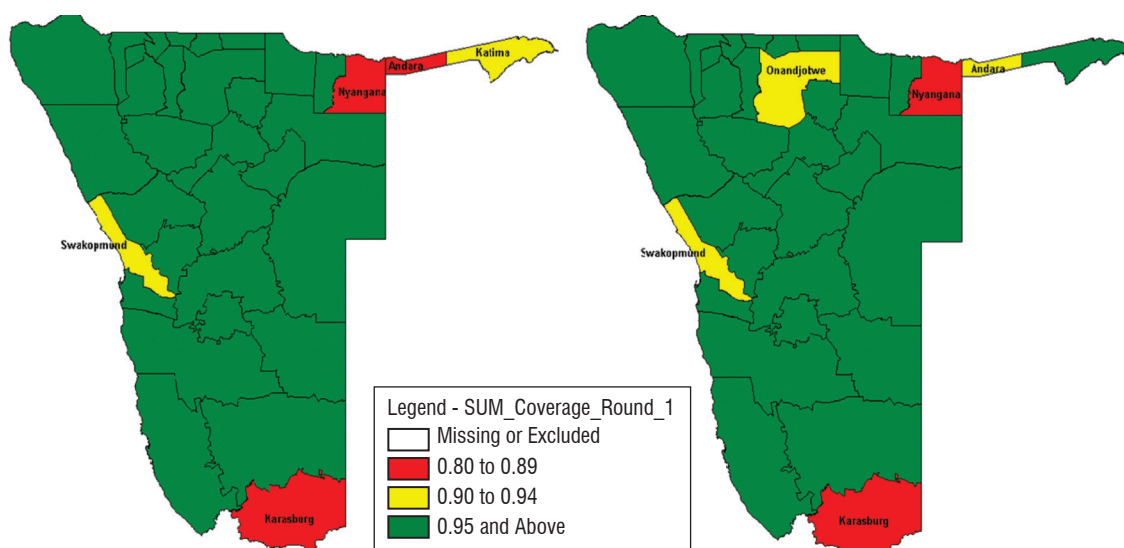
The national target population for monovalent oral polio vaccine (mOPV) immunization (first and second round) was 2 157 178. For Round One the vaccinated population was 2 201 494 (102%) while for Round Two it was 2 206 642 (102%). One possible reason for the >100% coverage was the addition of truck drivers, tourists, fishermen onshore, people from neighbouring countries, etc.

Figure 4: Vaccination coverage during 1st and 2nd rounds by regions



Generally, during the first round, more people were reached than targeted for. The maps (Figure 5) show that during the first round, three of the thirty-four districts, namely, Andara, Nyangana and Karasburg, did not achieve vaccination coverage of 95%, as compared to only two districts (Nyangana and Karasburg) during the second round. Only three health districts did not reach 90% coverage in Round One while two health districts did not reach 90% coverage in Round Two. Most of the districts achieved 95% or more coverage in the first and second rounds of the campaign.

Figure 5: 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 tOPV (328 768), measles vaccination and vitamin A supplementation (263 014). For measles coverage, 12 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 vaccine and 97% for vitamin A.

5. 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 the same to the national level, along with a report on any constraints and challenges 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. Photo credit: MOHSS

6. 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 has been implemented. Synchronization of National Immunization Days with the neighbouring countries has been implemented and cross-border meetings on health issues have been conducted regularly with Angola.

7. Lessons learnt

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. The outbreak has highlighted the need for international cooperation and support to address communicable diseases. Thus, we have learnt that we have to move people away from their old thinking of:

- “Sectoral planning and action” TO “Integrated planning within and between sectors and institutions”.
- “Developing and implementing a fixed plan” TO “Operating an adaptive, dynamic system or process that can continuously improve”.
- “Information is a record” TO “Knowledge is shared and information flows freely”.
- “Secrecy is necessary” TO “Transparency is necessary”.
- “The system reacts to needs” TO “Needs are anticipated”.
- “Cost reduction is sought” TO “Waste is continuously decreased”.
- “Government-funded and delivered services with a centralized top-down management” TO “A pluralistic health system operating in a globalized context”.

- “PHC with all its components including DHIS is cheap and requires only a modest investment” TO “PHC is not cheap: It requires considerable investment, but it provides better value for money than its alternatives”.

8. Conclusion

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 poliovirus type 1. The outbreak affected mostly the older population and 32 of the suspected cases died. The country mounted an immediate response that enabled the whole population to be vaccinated against poliovirus.

The wild poliovirus 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 passports to cross international borders 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 across borders. 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 socioeconomic development and empowerment of the people are issues that need to be addressed across countries to ensure the achievement of the Millennium Development Goals.

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 population and motivated the people to seek early treatment and prevention from further spread of the outbreak. The keys to the successful response to the outbreak included:

- Political commitment
- Resource mobilization and availability
- Support of international community
- Good community mobilization and cooperation from all communities
- Commitment and dedication from health care providers and volunteers
- Team work and delegation
- Good communication and support from the media.

There is 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. Sustained immunization coverage of the entire population using mOPV type 1 and children aged under five years with measles, vitamin A and tOPV should be maintained. The government should vigorously pursue this in the national development plans.

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