COMPLETE KENYA COUNTRY POLIO CERTIFICATION DOCUMENTATION REPORT

KENYA NATIONAL DOCUMENTATION FOR THE CERTIFICATION OF POLIOMYELITIS ERADICATION

September 2005

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Date of submission of country report: 14th September 2005

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ACRONYMS

AFP	- Acute Flaccid Paralysis
AFRO	- African Region
AKMLSO	- Association of Kenya Medical Laboratory Scientific Officers
AIDS	- Acquired Immune Deficiency Syndrome
CBS	- Central Bureau of Statistics
CDC	- Centre for Disease Control
DANIDA	- Danish International Development Agency
DDSC	- District Disease Surveillance Coordinator
DHMT	- District Health Management Team
EPI	- Expanded Programme on Immunization
GBS	- Gullain Barre Syndrome
GAVI	- Global Alliance for Vaccine Initiative
HMIS	– Health Management Information System
HDSCs	– Hospital Disease surveillance Teams
IACC	- Inter Agency Coordinating Committee
IEC	- Information Education and communication
KDHS	- Kenya Demographic Health Survey
KEPI	- Kenya Expanded Programme on Immunization
KEMRI	- Kenya Medical Research Institute
MOH	- Ministry of Health
NDSC	- National Disease Surveilance Cordinator
NGO	- Non Govermental Organization
NNT	- Neonatal Tetanus
NCC	- National Certification Committee
NPCC	- National Polio Certification Committee
NPEC	- National Polio Expert Committee
NPHLS	- National Public Health Laboratories
NTF	- National Task Force
OPV	- Oral Polio Vaccine
PHC	- Primary Health Care
PHMT	- Provincial Health Management Team
PDSC	- Provincial Disease Surveillance Coordinator
RED	- Reaching Every District
SIA	- Supplemental Immunization Activities
SNID	- Sub National Immunization Days
TOR	- Terms of Reference
UNICEF	– United Nations International Children Education Fund
WHO	- World Health Organization

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ACKNOWLEDGEMENT

The Ministry of Health through the Kenya Expanded Programme on Immunization (KEPI) would like to thank all individuals and partners who directly or indirectly supported polio eradication efforts in Kenya; ultimately culminating to the development of this report on National Documentation for the Certification of Poliomyelitis Eradication.

Special thanks go to the Minister for Health and the Director of Medical Services for their support since the inauguration of NPCC and NPEC to oversee Polio eradication activities in Kenya.

Similarly, special appreciations go to WHO for its participation ,financial and technical support through continuous guidance towards polio eradication efforts in the country, without whom the attainment of key routine immunization and surveillance indicators would not have been realized.

I cordially thank all partners who have contributed in one way or another towards the provision of the health care services in the country and in particular in the activities related to Polio eradication.

Special recognition and appreciation goes to Global Alliance for Vaccine and Immunization (GAVI) for its commitment to fund immunization services in the period 2003-2005.

I also wish to truly acknowledge the immense efforts of NPCC, NPEC and KEPI Secretariat in preparation of this report. Similarly, I would like to sincerely acknowledege retired officers Mr Alfred Maisiba (formerly NDSC ,KEPI) and Mr. Muli (formely Polio Lab, KEMRI) for their efforts and contributions to polio eradication in Kenya and participation in the preparation of this report.

It is my sincere hope that this collaboration will continue to be extended to the future in this noble task of **POLIO ERADICATION IN THE COUNTRY AND CERTIFICATION TO POLIO FREE STATUS**!

Professor Nimrod O. Bwibo

Chairman,

NATIONAL POLIO CERTIFICATION COMMITTEE

EXECUTIVE SUMMARY

For the purpose of Polio Eradication, the Republic of Kenya follows the guidelines stipulated by WHO. The Government nominated and inaugurated two Committees the National Polio Expert Committee (NPEC) and the National Polio Certification Committee (NPCC) whose composition of membership and the terms of reference (TOR) are along the said guidelines. Both committees have been active since their inauguration in 2001. The committees have their secretariat at the Kenya Expanded Programme on Immunization (KEPI) headquarters where the activities for polio eradication are well structured and coordinated.

AFP surveillance is well structured and in place. Active AFP surveillance for polio Eradication is coordinated through AFP focal point person at the headquarters. Information is channelled to and from the facility level through District and Provincial Disease surveillance systems. Performance of AFP surveillance is in place and well coordinated with interactions and various components done through KEPI. There is monitoring mechanism in place. AFP cases are reported and investigated fully with active AFP case search done in all the major hospitals (public and private). Active case search is done on weekly and monthly basis at facility level by the health records and information officers and District Disease Surveillance coordinators respectively. The timeliness of AFP specimen from the filed to KEMRI has been above 90% since active surveillance started.

Monitoring of AFP surveillance is done requlary as per WHO recommendations. Feedback of surveillance data from National to Provincial levels is done through email. Results of AFP cases classification is done by NPEC and forwareded to NPCC for report compilation to WHO Regional office in Harare.

The NPEC only physically reviews problematic cases that cannot be classified by using the information in the normal investigation forms. However, the NPEC reviews charts for all suspected AFP cases and uses the information for classification. A number of these cases were found not to be AFP and appropriately discarded. We have come to realise that a few of these non-APF cases were mistakenly retained as AFP cases especially during our initial period in classification. Also until after the middle of 2004, the NPEC only concentrated on finding out whether a suspected AFP case was due to polio or not and did not concern themselves in trying to make a diagnosis of these cases who were discarded, using the information on the charts, including the follow up review form.

Consequently diagnosis of discarded cases was not really made and most cases were simply classified as discarded. When in the later part of 2004 we were informed that we should make a diagnosis of all the AFP cases not having polio, we

made fruitless efforts to come out with some diagnoses and found out that we could not really make such diagnosis from the information one could obtain from the then available forms and charts. Consequently we re-designed the 60 day follow up form to include vital clinical information that could enable us to make such a diagnosis of the AFP cases not having polio. This form is attached to this document. The form was adopted as the official 60 day follow up form for Kenya and with the information from the new form we were able to make some diagnosis of AFP cases not having polio. Using this form and reviewing the non-polio AFP cases between January 2005 and June 2005 we were able to identify 6 cases of Guillain-Barré Syndrome (GBS), 2 of Transverse Myelitis, and one of unknown aetiology.

It is also worth stating that in a few cases of suspected AFP, vaccine polio viruses were identified. The NPEC carried out exhaustive reviews of the charts of these children including their sixty day follow up information and in each case it was conclusively established that the paralysis was not due to the vaccine polio virus.

Supplemental surveillance activities addressing silent areas and supervisory field visits are done requlary by KEPI staff and whenever necessary evaluation field visits by members of NPEC. These have been found useful in boosting morale to the staff on the ground through information sharing and other identified corrective interventions.

There is a Polio Laboratory focal point officer responsible for coordinating stool specimen movements and feedback at the National Polio Laboratory at KEMRI. There is a strong structure at the Ministry of Health and KEPI for developing and reviewing data collection tools for information education and communication materials (IEC); for polio eradication and standard operating procedures for AFP case investigation and developing guidelines for disease surveillance coordinators.

The last confirmed polio case was in 1984. No wild polio virus has been isolated in the country since 1996 when active disease surveillance was initiated. Kenya has now and then been at risk of importing the polio virus from neighbouring countries but has dwelt with this risk by conducting National and Sub-National immunization activities for polio.

National Immunization Days were conducted from 1996 to 2000 and Sub-National Immunization Days in 2001 and 2002. In February and April 2005 two rounds polio campaign were conducted in three districts bordering Sudan. The campaign was very effective with a coverage of over 80% in each round. Currently, there is a national plan for preparedness for any possible polio importation.

National immunization coverage for OPV3 have continuously improved over the last three years up from 57% to 74% by end of 2004. Despite this improvement there are wide variations in coverage between high density and low-density population areas. These areas of low coverage are being addressed with CDC support for selected Districts (Migori, Busia and Pumwani) in Nyanza, Western and Nairobi Provinces respectively and EPI plus programme by UNICEF in Garrisa and Ijara districts in North Eastern Province.

National Task Force for Laboratory containment of wild poliovirus was inaugurated on 5th October 2004 and has already developed and tested a survey tool for identifying the laboratories that may contain materials with wild polio virus and training of disease surveillance and laboratory staff to implement the survey is underway at the end of September 2005.

Kenya is, therefore, still far from being able to provide inventory of laboratories for containment of wild polioviruses, infectious or potentially infectious materials.

From the available data, the National Polio Certification Committee is convinced that there is no indeginous case of polio circulating in the republic of Kenya.

INTRODUCTION

In 1988, the World Health Assembly adopted the goal of global poliomyelitis eradication. The maximum benefits of this global disease eradication initiative will only be realized once wild poliovirus transmission has been interrupted everywhere in the world, the eradication of wild poliovirus has been certified, and when immunization against polioviruses can be stopped eventually.

For independent certification of the absence of wild poliovirus from all countries in the world, WHO established a Global Commission for the Certification of the Eradication of Poliomyelitis that subsequently developed the principles and guidelines for the certification process. As part of this process, Regional Certification Commissions have been established in each of the six WHO Regions.

The basic criteria on which the certification of polio eradication will be based were stated as follows:

a) Absence of circulation of indigenous wild poliovirus for at least a three-year period during which surveillance activities have been maintained at the level of performance needed for certification;

b) A National Certification Committee (NCC) in each country has validated and submitted the required documentation to the African Regional Certification Commission (ARCC);

c) Appropriate measures are in place to detect and respond to importations of wild poliovirus into polio-free areas, and

d) Appropriate measures have been taken for laboratory containment of wild poliovirus infectious or potentially infectious materials.

Using the criteria above, a Regional Certification Commission can only certify the entire WHO Region (not individual countries) as free of indigenous wild poliovirus.

The NCCs play a critical role in supporting the efforts of the ARCC - they must critically review and validate all national data before submitting the national documentation to claim polio-free status to the ARCC. NCCs in countries that have already submitted national documentation will need to provide annual update reports on the maintenance of polio-free status to the ARCC until regional certification.

Both ARCC and NCCs will remain active after regional certification to support countries in sustaining polio-free status until global certification will occur. The purpose of this document is to outline the standard information that the ARCC will require from each of the Member States of the WHO African Region. NCCs are requested to follow this guideline closely in assembling the national documentation; the submitted data will undergo close scrutiny by the ARCC, and potential follow-up requests for additional information can be avoided by submitting well-prepared, complete and clear documentation.

STANDARD DOCUMENTATION FOR CERTIFICATION OF POLIO ERADICATION

Purpose

The purpose of this report is familiarize the Regional and Global Commissions with the basic demography of Kenya and the organisation of the national polio eradication initiative, including immunization, surveillance and laboratory services.

PART 1: BACKGROUND INFORMATION

Country Background information

The Republic of Kenya lies astride the equator, between longitudes 34^0 East and latitudes 41^0 West and 4^0 North and 4^0 South and borders Tanzania to the South, Uganda to the West, Sudan and Ethiopia to the North and Somalia to the North Eastern and Indian Ocean to the East(Figure 1). It covers an area of approximately 583,000sq.km. Geographically the South East has plains which are hot, dry and sparsely populated; North East of coastal and inland plains consisting of thorny bushes; south west bisected by rift valley with mount Kenya, Mt Elgon and Aberdare's range of mountains and north West scrubland similar to north east and they have difficult terrain making transport communication difficult.

The altitude varies from sea level to 5200 meters above 33,445,119 sea level. The upland plateau is higher than much of Africa and due to these geographical characteristics there are two seasons per year; the long rains season from mid March to May and short rains season from Mid October to December. This seasonal variations affect diseases prevalence with most outbreaks occurring between March to June.

Section 1.1 <u>Demography</u>

summary of population data.Please use projected population from most recent census and not that the same source denominator data should be used consistently to calculate AFP rates(<15 yrs olds) and immunization coverage (<5 and <1 yr olds);comment on whether or not standard denominator data are used at different levels.

The Population of Kenya is currently (2005) estimated at 33 million based on projection of the 1999 population census of which 4% are children aged less than one year; 16% under five years and 40% under 15 years (Table1). Women of childbearing age, that is, 15 to 49 years constitute 24% of the total population. The population growth rate that stood at 2.4% at independence rose to a record 4% in 1979 before declining to 2.9% (1989-1999 inter censual growth rate).

Infant mortality rate (IMR) is estimated at 74 per 1,000 live births for the periods 1993-1998 (KDHS 1998). It is currently estimated that 40% of infant deaths occur during the first month of life.

Table1: Population Data for the year 2005

	Total Population	Population aged < 15 years	Population aged < 5 years	Population aged < 1 year
Number of persons	**33,445,119**	**13,378,048**	**5, 351,220**	**1, 386,680**
Percentage of total population	**100%**	**40%**	**16%**	**4.16%**

CBS; Analytical Report of Kenya's population projection Vol.VII.1999.

1.1.2 Map of the Country indicating Population Density

The population density varies from region to region. Nairobi, Western, Nyanza and Central Provinces have the highest density while Rift Valley, Eastern and Coast have medium densities and North Eastern province low density as shown in Figure1.

Fig 1. Map of Population Density

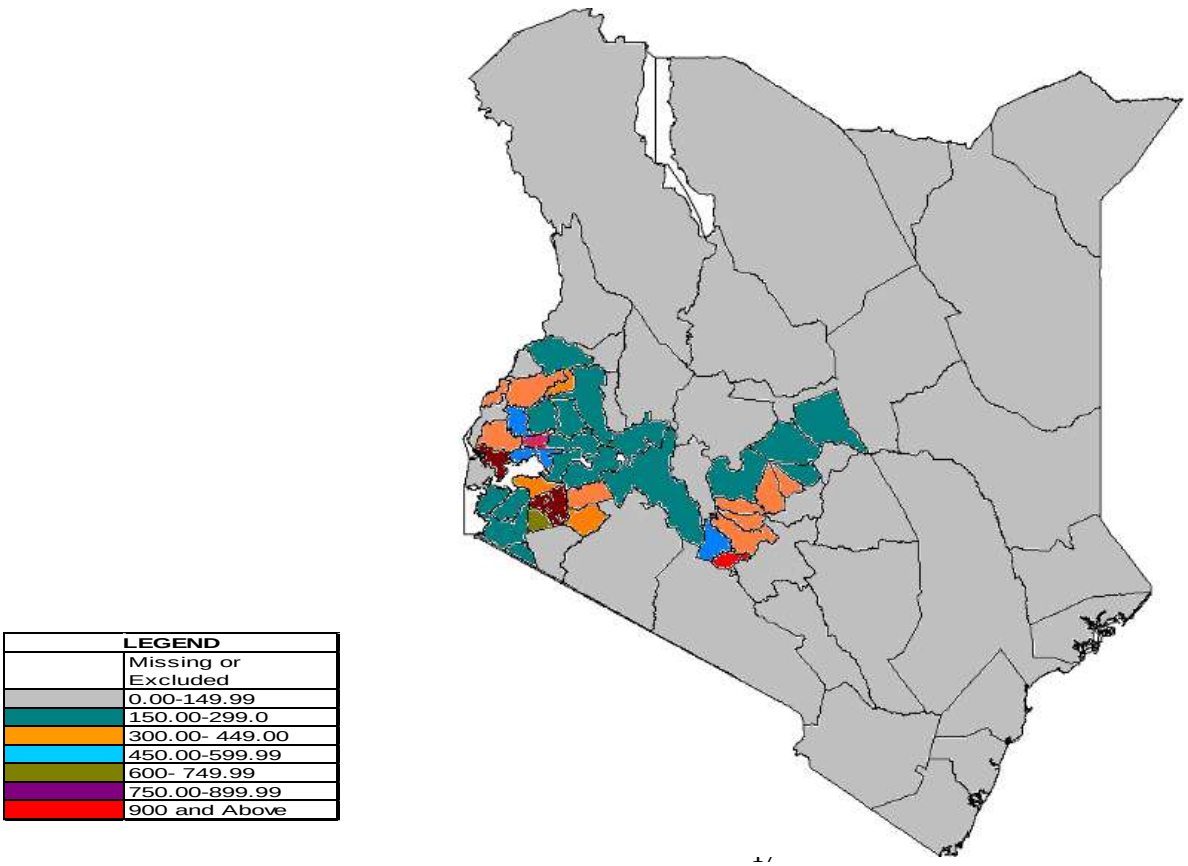
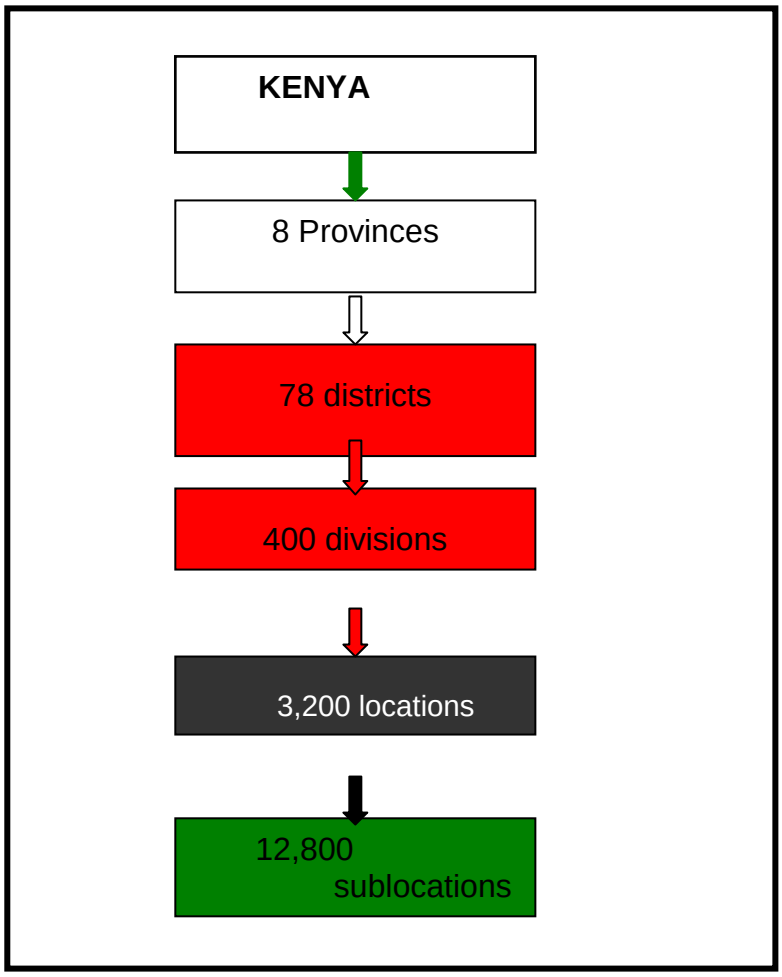


Fig 2; Map of Kenya showing major physical features

1.1.3 Principal Administrative units of the country (please note that the size of the terms used for administrative units differ from country to country):

Administratively, Kenya is divided into 8 provinces i.e Coast, Eastern, North Eastern, Central, Rift Valley, Nyanza, Western and Nairobi. The Provinces are divided into 78 districts. The Districts are further divided into approximately 400 divisions, over 3,200 locations and about 10,000 sub-locations that is the lowest administrative level about 6 to 10 districts per province.

Fig 3. KENYA ADMINISTRATIVE STRUCTURE



Number of 1st Level Adminstrative unit(states,regions,provinces,etc):

8 Provinces

Number of 2nd Level Adminstrative unit(districts,local government area etc):

78 Districts

Health Infrastructure

Table2: Health Infrastructure.

Type of Health Facilty	Teaching /Refferal Hospitals	Hospitals	Health Centers	Dispensaries	Clinics	Total
Government	**2**	**156**	**453**	**1586**	**0**	**2197**
NGO/Mission Health facilities	**0**	**73**	**177**	**609**	**104**	**963**
Private Facilities	**0**	**66**	**135**	**1854**	**5,000**	**7,055**
Totals	**2**	**295**	**765**	**4049**	**5,104**	**10,215**

Source: HMIS Ministry of Health 2004

There are two national referral and teaching hospitals namely Kenyatta National Hospital, Nairobi and Moi Hospital located in Eldoret township of the Rift Valley Province. The Provincial Hospitals serves as a referral point for respective provinces. At District level, there are district hospitals, which serve as referral hospitals for the respective districts. Densily populated districts have in addition sub district Hospitals.

Provincial General Hospitals are located in the Provincial administrative towns hence totalling to 8 Hospitals: Mombasa for Coast, Garissa for North Eastern, Embu for Eastern, Nakuru for Rift Valley, Kisumu for Nyanza, Kakamega for Western, Nyeri for Central and Kenyata National Hospital which is a teaching and Referral Hospital functions as the Provincial Hospital for Nairobi.

At Divisional levels, there is an average of 3 health centres per division depending upon population density while at the location level there are at least 1 dispensaries.

1.1.4 Percentage of total population living in 'urban' vs Rural areas

35% of population live in urban areas and peri-urban while 65% of population live in rural areas. Most of these population urban population are based in three cities namely Nairobi, Mombasa and Kisumu and intermediate major towns such as Nakuru, Nyeri Eldoret, Kakamega, Garissa. There is a rapid rural urban migration affecting Nairobi heavily resulting into slum dwellings, and this strains the water and sanitation systems.

1.2 Structure/responsibilities of national polio eradication initiative

1.2.1 Table3 ; Division of responsibilities for polio eradication activities

	Polio Immunization Policies and Activities	Polio Surveillance Policies and Activities	Polio Laboratory Activities*
Ministry Responsible	**Ministry of Health**	**Ministry of Health**	**Ministry of Health**
Division/Department or Institute Responsible	**Department of Preventive and Promotive Health Services**	**Department of Preventive and Promotive Health Services**	**Kenya Medical Research Institute (KEMRI)**
Responsible Person/Position	**Dr Tatu Kamau** **Manager KEPI**	**Dr Tatu Kamau** **Manager KEPI**	**Dr Peter Borus** **Director Polio Laboratory**

*If there is no national poliovirus laboratory please specify to which laboratory specimens are sent:

Not Applicable

1.2.2 Is there a designated national polio eradication co-ordinator? : ✔ **Yes** /no

a) If yes, please specify the name / position and responsibilities of the Polio Eradication Co-ordinator :

Juliet Muigai, AFP disease surveillance focal point officer; responsible for coordination of AFP surveillance activities; training of health workers, planning and implementation; data analysis and Management; performance monitoring; feedback to lower levels and national levels.

b) If there is no designated coordinator, who coordinates polio eradication activities? Please specify name / position and responsibilities:

Not Applicable

1.2.3 Are there regular meetings between immunization, surveillance and laboratory personnel to discuss polio eradication activities?

Yes

If yes, how often are such meetings held: **Weekly**

Please comment on the overall quality of coordination between the groups involved in polio eradication.

KEPI AFP surveillance team holds quarterly meetings with provincial disease surveillance coordinators where immunization, surveillance and laboratory officers participate and share experiences and recommendations to improve polio eradication activities.

The Polio laboratory focal point officers and AFP surveillance Focal point officers meet on weekly basis to harmonize laboratory and AFP data. The Immunization department and AFP surveillance section meet monthly to give updates on immunization and AFP Surveillance.

Data Management officers participate in all activities of Polio eradication including analysis, monitoring and evaluation and training for proper documentation.

Development and review of data collection tools, information education materials (IEC) for polio eradication and Standard

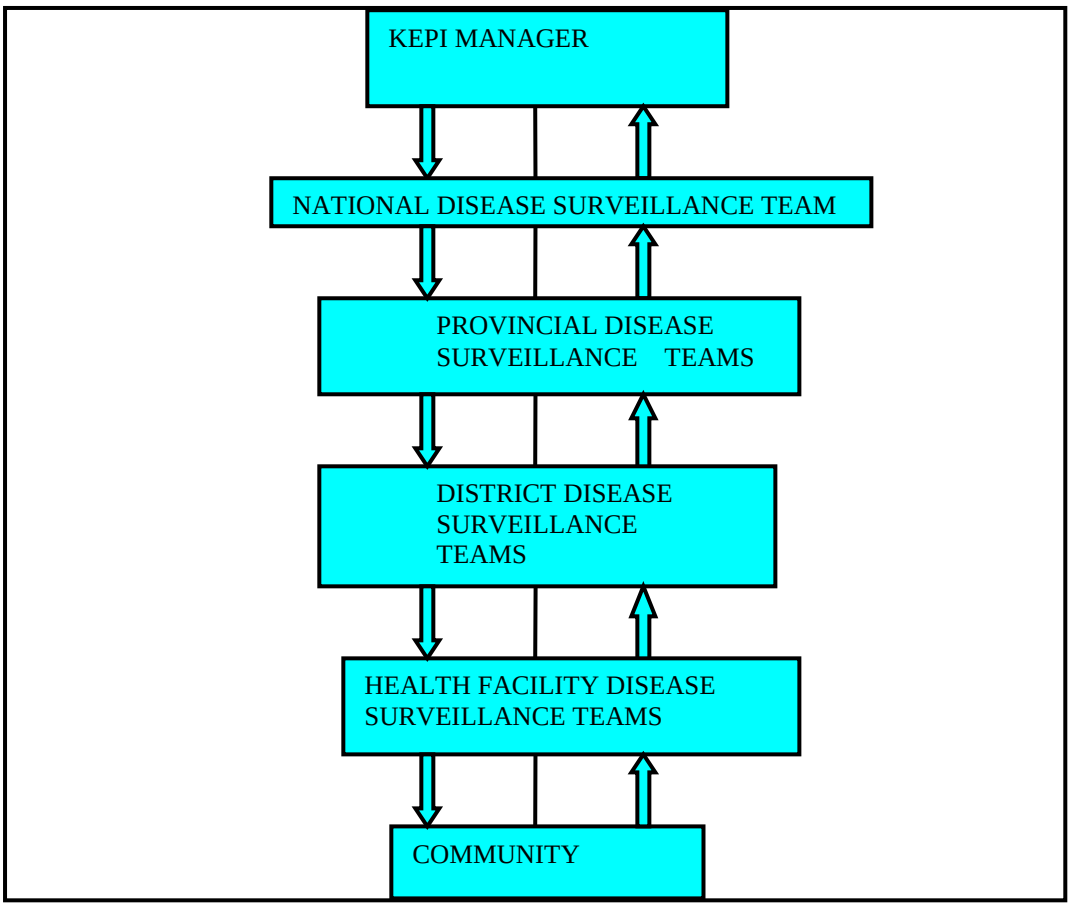
Operating Procedures for AFP case investigation are done jointly by these teams.Development of national guidelines for disease surveillance coordinators done jointly by these teams.NPCC, NPEC and NTF are updated on all activities for disease surveillance during their meetings.

The quality of coordination is good and effective and addresses current surveillance gaps.

Section 1.3 Structure/responsibilities of the AFP surveillance system

Describe the overall structure of the AFP surveillance system indicating whether the existing surveillance system is providing adequate coverage of the entire population, according to population density. State clearly who or which teams, are responsible for investigating AFP cases and at what level. How is surveillance data used for programmatic action?

Fig 4: Structure of Disease Surveillance In Kenya



AFP surveillance in Kenya is implemented and integrated with surveillance for other communicable diseases at all levels of the surveillance structure.

- **At the National level disease surveillance team comprised of KEPI manager, National disease surveillance coordinator , AFP Surveillance focal point officer and Data Managers are responsible for coordination of AFP surveillance activities.**
- **At Provincial level the disease surveillance team comprise of Provincial disease surveillance coordinator, Provincial EPI logistician and Provincial data Manager headed by the Provincial Medical officer.**

- **At the District leve, the disease surveillance team comprises of the District Medical Officer, District disease surveillance coordinator, district Health records and information manager, District clinical officer and District Public health Officer. The Districts is the level where investigation and follow up of AFP cases is coordinated.**
- **Health facilities disease surveillance team comprise of all heads of departments where AFP cases may be detected. Health facility coordinators immediately investigate and hand deliver stool samples to KEMRI and inform the district level by copy of the case investigation form as well as by telephone.**
- **The Health facilities compile and forward reports on AFP cases weekly and monthly basis to Districts and receive feedback on their performance. Feedback on specific cases is also provided by this level to the community through local leaders. All hospitals and major private facilities have a coordinator selected by health facility team to coordinate AFP surveillance activities. Other small facilities like the dispensaries and clinics being manned by single health workers detect and investigate cases with the help of area public health officer located at locational level.**
- **At the community level there are sensitized community health workers and traditional healers who report any cases of Acute Flaccid Paralysis identified at this level. Lay case definition posters have been developed for use at community level.**

  The Health infrastructure is set up with more facilities situated in densely populated regions enables Disease surveillance teams to provide adequate coverage for AFP surveillance in the country. The data is analysed at all levels and used for programmatic action by; Identifiying gaps in disease surveillance and directing appropriate programmatic action.

1.3.1 Which health facilities are required to immediately report AFP or polio cases (circle) : ✔ Hospitals/ ✔ rehabilitation centres/ ✔ laboratories/ ✔ private doctors/ ✔ health clinics/other (specify) : e.g. ✔ traditional healers

1.3.2 Is there a designated person at each level to whom an AFP case would be reported? ✔ Yes / No

If yes indicate who;

National AFP surveillance focal point officer, Provincial Disease Surveillance Coordinator and District Disease Surveillance Coordinator, Health facility surveillance coordinator and community health worker.

If No please explain ----------**Not Applicable ----------**

1.3.3 How often are routine AFP surveillance reports required? (circle correct answers) **:** Weekly/ ✔ monthly/bimonthly/other (specify)

1.3.4 Is there a national **zero** reporting policy? (i.e. all reporting sites must file a regular report stating **'0'** cases of AFP even if no cases are seen) : ✔ yes/no ;

Zero reporting done on monthly basis and data is captured in the intergrated Disease surveillance form of the 18 priority conditions. The report is provided in the technical disease surveillance reports submitted to provinces and national level.

1.3.5 Who conducts AFP case investigations? (Position and level, i.e. district health officer):

Trained focal persons at the health facilty.

1.3.6 Who has overall responsibility in the country for co-ordinating the investigation of an AFP case (name/position) :

Juliet Muigai, National AFP surveillance Focal point officer

1.3.7 Who has responsibility at national level for ongoing analysis of AFP data and use of AFP surveillance data for programmatic action (i.e. prioritizing 'hot cases' for rapid laboratory work-up, responding to clusters of polio-compatible cases, use of AFP data to target supplementary immunization activities)? : (Name/position) ;

Dr Tatu Kamau, KEPI Manager

1.3.8 Please, comment on any changes that may have occurred in the National Polio Expert Committee membership since inception/establishment. What steps if any were taken to orient the new members?

No changes made on the National Expert Committee Members.

PART 2: HISTORY OF CONFIRMED POLIOMYELITIS CASES AND WILD POLIOVIRUSES

Purpose

To demonstrate the decline and elimination of wild polioviruses in the country.

Data required

The national epidemiology of poliomyelitis should be described in this section to include all available information on the circulation of wild polioviruses. The history of reported poliomyelitis cases in the country should be outlined taking into account the transition from clinical to virological case classification criteria, i.e. differentiating between clinically confirmed cases, cases confirmed by wild poliovirus isolation and polio-compatible cases. Specific attention should be given to the period since 1997. The probable origin of any viruses that were isolated (indigenous versus imported) should be documented.

The section should also provide details, where such data exists, of any wild polioviruses that have been isolated since 1997 from sources other than poliomyelitis cases or their contacts, such as from environmental samples or from healthy children.

Standard Documentation Form # 2 :

Section 2.1 History of confirmed Poliomyelitis cases and wild poliovirus

There has not been any confirmed polio case in the country since 1984, when the last known case of clinically confirmed poliomyelitis was reported. No wild Poliovirus has been isolated in the country since then despite continued active AFP surveillance initiated in 1996. (See Attachments of extracts from 1984 laboratory register).

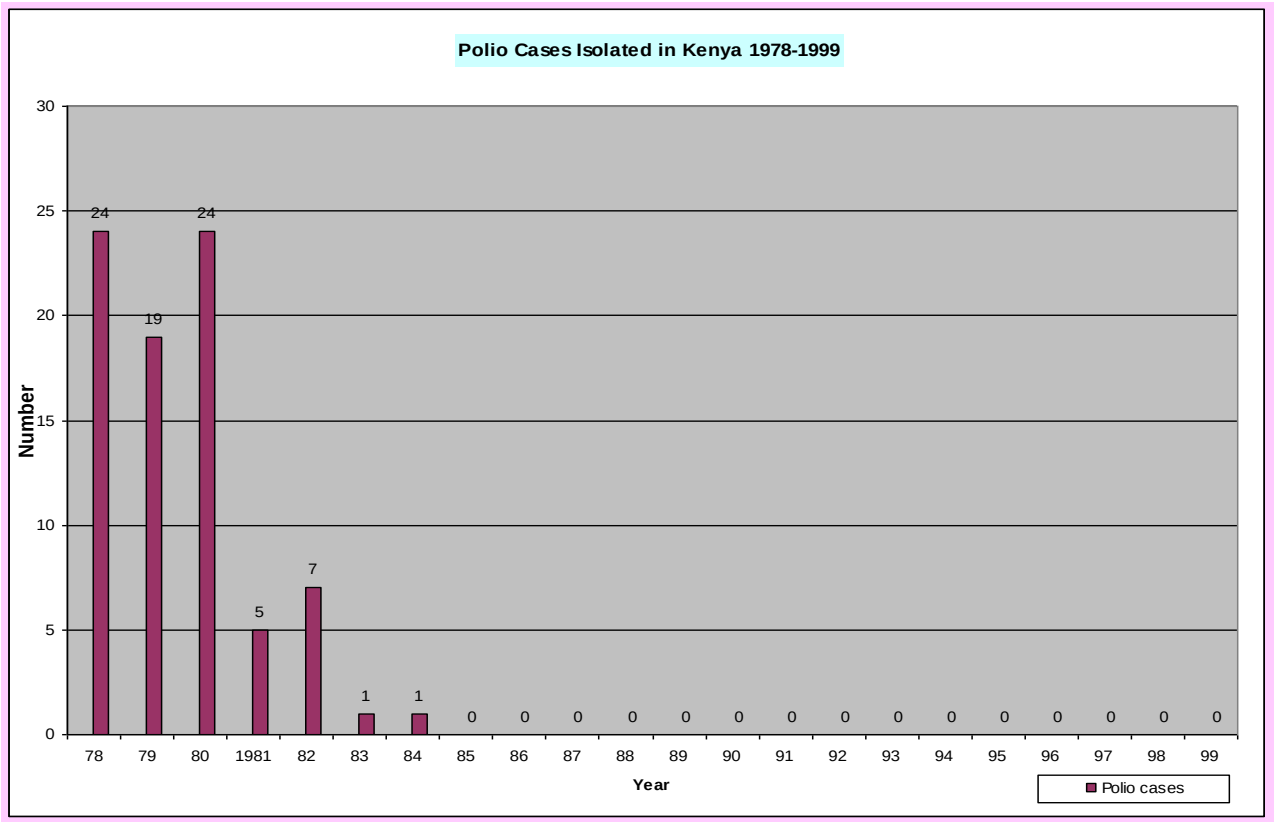
The first recorded poliomyelitis epidemic in Kenya occurred in 1921–1922. Thereafter epidemics occurred on a 3 year cycle and became endemic in the country, with specific epidemics reported by Walker A. J. 1956, Fendall N. R. E. in 1958, 1960, and 1962. The last outbreak of 1965-1966 was reported by Kaur and Metsellar in East Africa Journal in 1967.

A comprehensive review of poliomyelitis admitted to Kenyatta National Hospital polio unit in 1969, 1970 and 1971 was made by Ayim E. N. in 1974 involving 78 cases. Out of these, 25 cases were confirmed on stool culture as due to polio virus type 1, in 15 cases and type 3 in 10 cases. A few cases were confirmed on CSF and post mortem findings. The majority of the cases (95%) were below six years. The earlier cases were predominantly due to type 1.

The last case of confirmed poliomyelitis in Kenya was in 1984 and was isolated on stool culture to have been due to poliovirus Type II. Incidentally, in the same year, an out break of poliomyelitis occurred in the non human primates: Black and White colobus Monkey (colobus abyscinicus Kikuyuensis) in captive environment reported by Institute of Primate Research of National Meseum of Kenya. The outbreak was confirmed from stool culture at KEMRI Virus research Laboratory to be due to Poliovirus Type I (see additional documents).

Since then,there has been no isolation of wild poliovirus in Kenya from stool cultures of cases presenting with Acute Flaccid Paralysis many of whom has been investigated from stool specimens countrywide on poliovirus isolated by KEMRI virus research centre from suspected polio cases in the country 1978 – 1999.

Fig. 5 Polio cases in Kenya 1978-1999



SOURCE: KEMRI Polio Virus Research centre

2.1.1 Graph or table of polio incidence **Not Applicable**

Please provide a bar graph or a table showing the number of confirmed polio cases per year since 1990, if data is available before 1997 please give details only as far back as 1990.

There has not been any confirmed polio case(Fig 5) in the country since 1984, which is the last case of clinically confirmed poliomyelitis.

2.1.2. Please provide the information on all virologically and clinically confirmed poliomyelitis cases reported since 1990, if data is available, but at least from 1997, in a table with headings as suggested below.

Table 4: Confirmed Polio Cases

Year	Clinically confirmed	Virus-confirmed*		Total confirmed
		Indigenous	Imported	
↑				
1997	**0**	**0**	**0**	**0**
1998	**0**	**0**	**0**	**0**
1999	**0**	**0**	**0**	**0**
2000	**0**	**0**	**0**	**0**
2001	**0**	**0**	**0**	**0**
2002	**0**	**0**	**0**	**0**

* For virus-confirmed cases, please list those considered as 'indigenous' separate from 'imported' cases

2.1.3 Maps of confirmed poliomyelitis cases since 1997

Please provide annual maps showing the location of all confirmed poliomyelitis cases since 1997, differentiating between clinically and virologically confirmed cases. (Clinically confirmed cases only before switching to virological classification)

No Confirmed Poliomyelitis

2.1.4 Details of last reported <u>indigenous</u> case of poliomyelitis due to wild poliovirus :

Date of onset (day/month/year) : **None**

Geographical location of case: **Not Applicable**

Brief description of case (age, vaccination status, travel history) :

Not Applicable

Virological findings, including virus type and data on genetic sequencing if available): **Not Applicable**

2.1.5 Describe the frequency and intensity of supplementary immunization activities (SIAs), such as NIDs, SNIDs, mop-up activities, or synchronized cross-border SIA rounds conducted following the last known case of indigenous wild poliovirus.

Please add any available data and information on the quality of the SIAs following the last indigenous case - i.e. post-SIA coverage surveys, other measurements of SIA quality, and give details of the quality and sensitivity of surveillance during the year following the last case.

Not Applicable

2.1.6 Dates of onset of polio cases confirmed by last known indigenous wild poliovirus, by virus type:

Last wild poliovirus type I Day / Month / Year _____ **Not Applicable**

Polio virus type 2 was isolated in KEMRI in 7th March 1984 but was not taken for intratypic diferrentiation.

Last Wild poliovirus type III Day / Month / Year **Not Applicable**

Section 2.2 Importation of wild poliovirus into recently endemic or polio-free countries

As long as wild virus transmission continues anywhere in the world, polio-free countries are at risk of wild poliovirus importation and subsequent spread / outbreaks. Surveillance systems must be sensitive enough to detect importations, to which countries must rapidly respond with immunization and surveillance activities, following a detailed plan of preparedness for importation.

2.2.1 Plan of action for preparedness for wild poliovirus importation

Please describe here the main elements of the national plan of preparedness for importations; also attach the national plan itself.

The country has a national plan for preparedness for importation of wild poliovirus. The plan addresses the following key elements;

- *Monitoring and detection;***,monitoring of the performance of AFP surveillance for early detection of any imported cases**
- *Rapid investigation;* **Full investigation of any imported case**
- *Enhancing Surveillance ;* **identification of surveillance coordinators at all major cross border points, conducting sensitization of health workers and community leaders, conducting active case search to detect any new cases reported,notify WHO and other patners.**
- *Immunisation Response by;* **Emergency meeting of experts ,formation of response teams, determining the resources for campaign,conduct**

two rounds of SIAs immediately targeting all children below five years who are more vulnerable.

- *Document Cessation of Transmission;* **Weekly reporting through fax and telephone on the number of cases newly detected cases; monitoring and analysis of the trend of the outbreak using the epidemic curve and response activities instituted..**

2.2.2 Previous wild poliovirus importations

Please list below each poliovirus isolate classified as 'imported'.

a) Have any importations of wild poliovirus been identified? Yes/ ✔ no

b) If yes, how many wild-virus associated cases were categorized as 'imported', since 3 years before the last indigenous case? **Not Applicable**

2.2.3 Details of wild virus importation episodes, since 3 years before last indigenous case (Please use one line for each case) **None**

Table : 5 Wild virus importation episodes

Year	Geographical location of 1st case of importation episode	Age of 1st case (mo), date of onset, virus type	Probable origin of virus / virol. and/or epid. Evidence	Any other case? No. of other cases found, d/onset of last case	No. <5s targeted for case response SIA (rd 2)	No. <5s immunized (rd 2)
		No cases				

2.2.4 Comments on importation episodes

Please comment in more detail on all episodes of wild poliovirus importation that occurred after the last known indigenous case (descriptive epidemiology, groups involved, possible origin, investigation, lab result, immunization and surveillance response).

No importation episodes

Please attach the detailed comments with the full report of investigations and response undertaken there after

Not Applicable

Section 2.3 Wild polioviruses from sources other than confirmed polio cases or contacts

If applicable, provide data on wild polioviruses isolated in the country from sources other than AFP cases or their contacts (i.e. from environmental samples, healthy children, etc.). **Not Applicable**

If there were wild poliovirus isolations from other sources (at any time), please give additional details: **No Isolations from other sources done in the country .**

2.3.1 Details of last wild poliovirus isolate from other sources found in the country (only if isolated after the last virus-confirmed indigenous polio case in 2.1.4)

Date of specimen (day/month/year) : **Not Applicable**

Type and source of specimen : **Not Applicable**

Geographical location of source of specimen : **Not Applicable**
Virological findings: **Not Applicable**

2.3.2 For each wild poliovirus, if any, isolated from other sources after the last virologically confirmed indigenous wild poliovirus case, please summarize results of all investigations following the wild virus isolation (i.e. verification of laboratory results, field investigation and enhancement of AFP surveillance in the area etc.,) as well as the final conclusions from the investigations.

no isolations from other sources

PART 3: PERFORMANCE OF ACUTE FLACCID PARALYSIS (AFP) SURVEILLANCE

Purpose :

To demonstrate to the ARCC that Acute Flaccid Paralysis (AFP) surveillance in the country is of a sufficient standard to rapidly detect all cases of paralysis due to indigenous and imported wild polioviruses

Data Required *:*

Section 3.1 should describe the AFP surveillance system in detail, including information on reporting sites and on both ZERO reporting and active surveillance for AFP, as well as on efforts to involve communities in reporting AFP.

Section 3.2 should include data on the number of reporting sites in the country (both for routine / ZERO reporting and for active surveillance) and document the completeness and timeliness of reporting through each system.

Sections 3.3 to 3.5 should describe the performance of the national AFP surveillance system, using data on standard AFP surveillance quality indicators. Particular attention should be given to demonstrating that the non-polio AFP rates and stool specimen collection rates have reached the standards for the certification of polio-free status set by the Global Certification Commission (i.e. at least 1 case of non-polio AFP per 100, 000 population aged less than 15 years and 2 *adequate stool samples collected from at least 80% of cases). The quality of AFP surveillance at the sub-national level (i.e. region, province or district level) should also be documented.

Section 3.6 should provide details on all AFP cases that were reviewed in detail by the National Polio Expert Committee. The reasons for classification of AFP cases as 'polio-compatible' must be explained. Country maps (by year) will be required for all polio-compatible cases. It will be particularly important to document the results of any additional investigations that were conducted to further characterize and investigate AFP cases classified as 'polio-compatible', with special scrutiny of any clusters of 'compatible' cases, should these occur.

**Adequate stool specimens : 2 stool specimens collected 24-48 hours apart, within 14 days of the onset of paralysis,* and arriving in the laboratory within 72 hours of shipment with proper documentation, ice or cold ice packs present, and sufficient quantity for laboratory analysis.

NB : stool samples must be kept under reverse cold chain condition between collection and shipment

Standard Documentation Form # 3:

Performance of Surveillance for Polio Eradication

Section 3.1 National AFP surveillance system

Active Disease surveillance for Poliomyelitis was initiated in 1996 with emphasis on AFP surveillance. Disease surveillance is coordinated at four levels.

3.1.1 When was the Acute Flaccid Paralysis (AFP) surveillance system established?

(give date / year): **January 1996**

Describe how the AFP surveillance system functions, commenting on the interaction between all components of the system.

Functions of Disease Surveillance Teams at various levels

1. ***National Disease Surveillance Team***

At the National Level KEPI Manager is the overall supervisor of EPI Programme including disease surveillance. She provides guidance and mobilize resources for the programme and diseases surveillance activities. The KEPI Manager is assisted by the national Disease Surveillance

Coordinator (NDSC) in carrying out disease surveillance in the country. The national level disease surveillance teams are composed of disease surveillance focal point officers and data managers. The functions of the national level are;
Provide overall coordination, monitoring and evaluation, development of tools,training materials,Database management, reporting analysis and interpretation of data on EPI disease surveillance.

2. ***Provincial Disease Surveillance Team***

Coordination of EPI disease surveillance activities for all districts within the Province.Conducting of support supervision of disease surveillance activities at district levels.
Conduct training and sensitisation of health workers on disease surveillance
Appoint and orientate district disease surveillance coordinators.
Coordinate sixty day follow up for the AFP cases.

3. *District Disease Surveillance Team*

Training and sensitisation of health workers,sensitisation of community health workers and assist in the sixty day follow up. Ensuringe that AFP cases are notified and investigated appropriately using the case investigation form

4. *Health Facility Level*

AFP Cases are identified by health workers who notify the district disease surveillance coordinators; doctors, clinical officers, nurses and physiotherapist are responsible for investigating AFP cases. In all these activities the emphasis is on teamwork and not individualized line of duties.

5. *Community Level*

At the community level trained health workers intergrate with community health workers and report any cases for appropriate investigation at the health facilty.

Interaction of the various surveillance components is done through;

- **National EPI meetings between the KEPI Programme components viz; Data Management, routine immunization, cold chain and social mobilization. In these meetings the officers review activities on EPI and ways of improving immunization coverage in the country.**
- **National level interact with the Provincial disease surveillance teams and feedback is given for them to monitor progress on disease surveillance activities.**
- **Forums like the quarterly meeting for DDSCs and Provincial coordinators is used to provide feedback on progress of disease surveillance in all districts within the provinces.**
- **Community level; the community health workers have been sensitised to notify any cases reported within the community. Regularly meetings are held at the health facilties where community health workers participate and are updated on new issues of disease surveillance.**

Section 3.2 Routine AFP surveillance - completeness of routine reporting

3.2.1 What are the reporting sites for routine AFP surveillance system at each level?

Please provide details:

National hospitals: ✔ yes/no/not applicable

Provincial hospitals : ✔ yes/no/not applicable

District hospitals : ✔ yes/no/not applicable

Private practitioners : ✔ yes/no/not applicable

3.2.2 Completeness of routine reporting from reporting sites since 1997:

Table 6: Completeness of Reporting

Year	Number of reporting Sites	Completeness of routine reporting			Comment (i.e. areas with poor reporting)
		Number of reports expected*	Number of reports received	% Reports received	
2004	**3154**	**37,848**	**33,884**	**90**	
2003	**3154**	**37,848**	**35,958**	**95**	
2002	**2761**	**33,132**	**26,506**	**80**	
2001	**2412**	**28,944**	**22,489**	**78**	
2000	**2290**	**27,480**	**18,885**	**69**	
1999	**2180**	**26,160**	**16,164**	**62**	
1998	**2100**	**25,200**	**15,203**	**60**	
1997	**2075**	**24,900**	**14,347**	**58**	

*number of routine reporting sites multiplied by number of reporting periods in 1 year

(i.e.if monthly reporting, periods = 12 ; if weekly reporting, periods = 52)

Low reporting in 1997 to 2000 was due to weak data management systems at the regional levels

3.2.3 Additional comments on completeness of ZERO reporting :

Weekly Zero reporting was initiated in 1997 however since 2001 this has been incorporated to the monthly IDSR system. If any cases is found it is immediately reported and investigated but it is still captured in the routine IDSR form. Health Records and Information personnel receive reports from inpatients and out patient departments daily and peruse for cases of AFP.

Section 3.3 Active surveillance for AFP

3.3.1 Is active surveillance[1] conducted for AFP cases? : ✔ Yes/no

(1) Please specify

a) The types of facilities targeted for active surveillance,

All Hospitals, Health centres and nursing homes

b) Whether all high-priority facilities (those most likely to see AFP cases) are included in the targeted facilities ✔ Yes/No

c) If the network of active surveillance sites covers the population adequately, taking into account population density.

Active Disease surveillance sites cover the population taking into account the density because more active sites are located in densely populated areas.

d) How completeness and timeliness of active surveillance visits is monitored at provincial and national level:

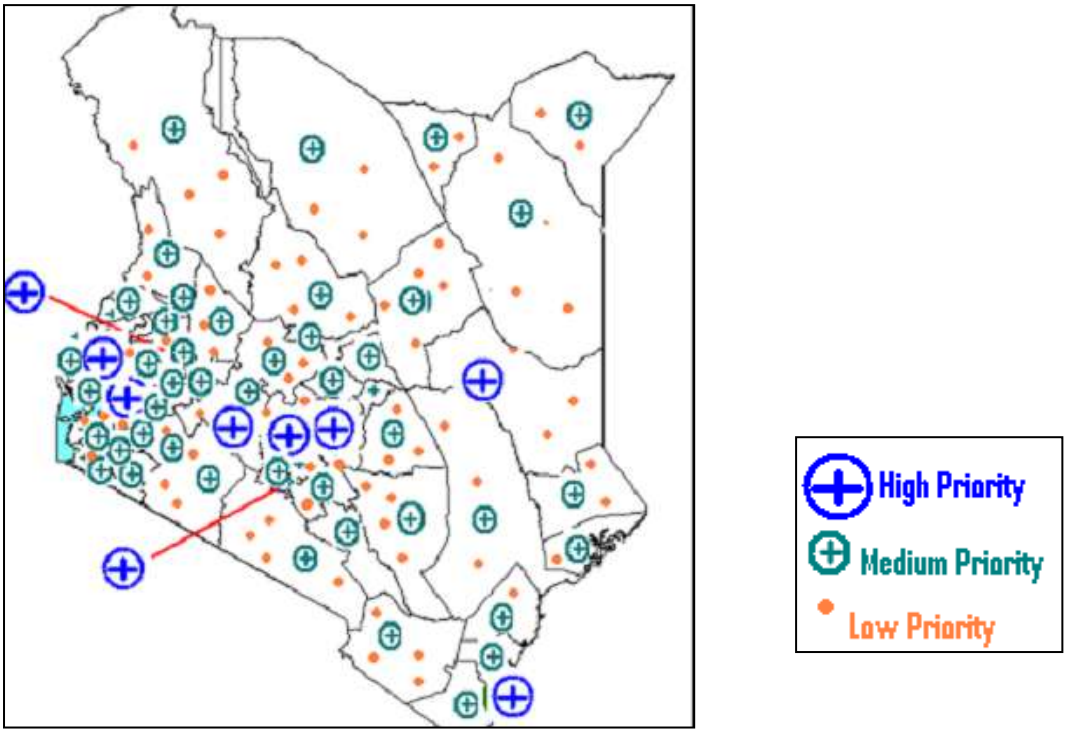
Using the disease surveillance plans that are developed active surveillance is monitored through; Presentations of reports in quarterly review meetings by national and provincial disease surveillance teams; Support supervisory visits by the National and Provincial Disease surveillance conducted on quarterly and monthly basis;while EPI Supervisory books are cross checked to determine the visits by disease surveillance teams.

[2]*Active Surveillance:: active surveillance for AFP is defined as regular visits (i.e. weekly or bi-weekly) to priority health care facilities to search for and investigate unreported AFP cases through admission records, physician interviews, paediatric and neurological ward visits, etc.*

(2) What is the total number of active surveillance sites in the country? **1070**

Attach a map showing the distribution with different symbol for each priority if applicabe

Fig 6. Map of active surveillance sites considered as High, Medium and Low Priority.



(3) Is AFRO policy followed to prioritize active surveillance sites in three groups - high, medium and low priority? ---------- ✔ Yes/No

(3a) If yes, give numbers of active surveillance sites in each category

Table7: Active Surveillance Sites

No. of active surveillance sites considered as:			
High priority	Medium priority	Low priority	Total no. Of sites
10	**295**	**765**	**1070**

(3b.) If no, explain; **Not Applicable**

(4) Is there an active surveillance site in every district? ✔ Yes/no

If no, please explain: **Not Applicable**

5) Frequency of active surveillance visits to priority health facilities? :

✔ Weekly/ ✔ biweekly/ ✔ monthly/other (specify)

(6) Is there a designated, trained person visiting each active surveillance site?

Yes Hospital and District disease surveillance coordinators are trained to conduct active surveillance in these sites.

(7) Is the completeness and timeliness of active surveillance visits to each site monitored? : ✔ Yes/no

a) If yes how is it monitored?

Active Disease surveillance is monitored through;

- **Plan for active surveillance made by disease surveillance officers Reports.**
- **Reports submitted to the district District Health Management teams (DHMT)meetings**
- **Support supervisory visits by the National and Provincial disease surveillance teams quarterly to districts and major health facilities**
- **Use of disease surveillance supervisory checklists.**
- **Use of EPI Supervisory books to monitor frequency of visits to health facilities by surveillance officers**

b) If no how is it verified? **Not Applicable**

Section 3.4 Management and use of AFP data

Comment on the management, routine analysis, use and feedback of AFP surveillance data at national and provincial (first sub-national) level.

3.4.1 Accuracy and completeness of documentation (i.e. case investigation and follow-up forms, laboratory results) at national and provincial (first sub-national) level. Is AFP surveillance quality (i.e., non-polio AFP rates, % AFP with adequate specimens) analyzed only at national or also at provincial (first sub-national) level?

Analysis and validation of core AFP surveillance indicators is done by focal point officer at national level and Provincial disease surveillance coordinator. Checking for accuracy and for proper documentation in the case investigation and on follow up forms is done at all levels. The national level and KEMRI polio laboratory team cross check the case investigation and AFP surveillance and laboratory results form for any errors or inconsistencies. Forms for each case are filed at each level.

3.4.2 National level: is routine AFP data analysis adequate, i.e. does it at least include main AFP quality indicators to check for sub-national surveillance gaps (i.e. 'silent' areas), monitoring for clusters of 'polio-compatible' cases and for high-risk ('hot'[2]) cases? Is simple descriptive analyses of AFP cases done (i.e. AFP age distribution and vaccination status) ?

Yes; Analysis of AFP surveillance data is done for all major AFP surveillance indicators at National and Provincial level to identify AFP surveillance gaps. Simple descriptive analysis is done to include age sex, date of onset and vacciniation status.

3.4.3 Are results of routine AFP data analysis used timely for programmatic action - i.e. targeting of surveillance gaps, investigation of clusters of 'compatibles', prioritization of investigation and laboratory work for 'hot' cases?

Yes; results of analysis of AFP surveillance data is used for programmatic action to;

- **Intervene in the areas identified perfoming poorly and discussion of the results or findings with provincial and district disease surveillance coordinators for example in Isiolo district.**

[2] Hot case: AFP case more likely to be paralytic polio, either on clinical grounds ('polio' or 'suspect polio' based on history and clinical impression), and/or AFP case with direct contact to a confirmed case; investigation, stool collection and laboratory processing of specimens should be prioritized for 'hot' cases.

3.4.4 Briefly describe how feedback of surveillance data and laboratory results are provided. From national to lower levels.(national to province, province to district and district to community) What is the frequency and regularity of this feedback?

The national level provide feedback of disease surveillance data and laboratory results on weekly basis.laboratory data results are mailed to the districts immediately they are received and line list of AFP cases emailed to the provincial disease surveillance coordinators.

District notifying the cases are advised to relay the laboratory results to the parents or caregivers through the facilities reporting.

On quarterly basis a detailed analysis is shared through the provincial disease surveillance quarterly review meetings.

Section 3.5 Performance of AFP surveillance and case investigation

Table 8 3.5.1 Performance of AFP surveillance since 1997

Year	Pop. <15 years	Expected Number of non-polio AFP cases*	Total AFP cases reported	No of confirmed polio cases	Total non-polio AFP cases reported	Non-polio AFP rate**	AFP cases with adequate stool samples	
							Number	%
2004	**13,065,060**	**131**	**247**	**0**	**247**	**1.88**	**220**	**89%**
2003	**14,064,896**	**140**	**309**	**0**	**309**	**2.19**	**252**	**82%**
2002	**13,693,547**	**137**	**252**	**0**	**252**	**1.71**	**191**	**76%**
2001	**13,304,650**	**133**	**272**	**0**	**272**	**2.0**	**175**	**64**
2000	**12,913,610**	**129**	**345**	**0**	**345**	**2.67**	**147**	**43%**
1999	**12,536,673**	**125**	**276**	**0**	**276**	**2.20**	**82**	**30%**
1998	**12,182,748**	**122**	**137**	**0**	**137**	**1.12**	**10**	**7%**
1997	**11,839,405**	**118**	**26**	**0**	**26**	**0.22**	**8**	**31%**

*Based on 1 case per 100,000 population aged less than 15 years

** Non-polio AFP rate is calculated as number of non-polio AFP cases reported per 100,000 population < 15 yrs

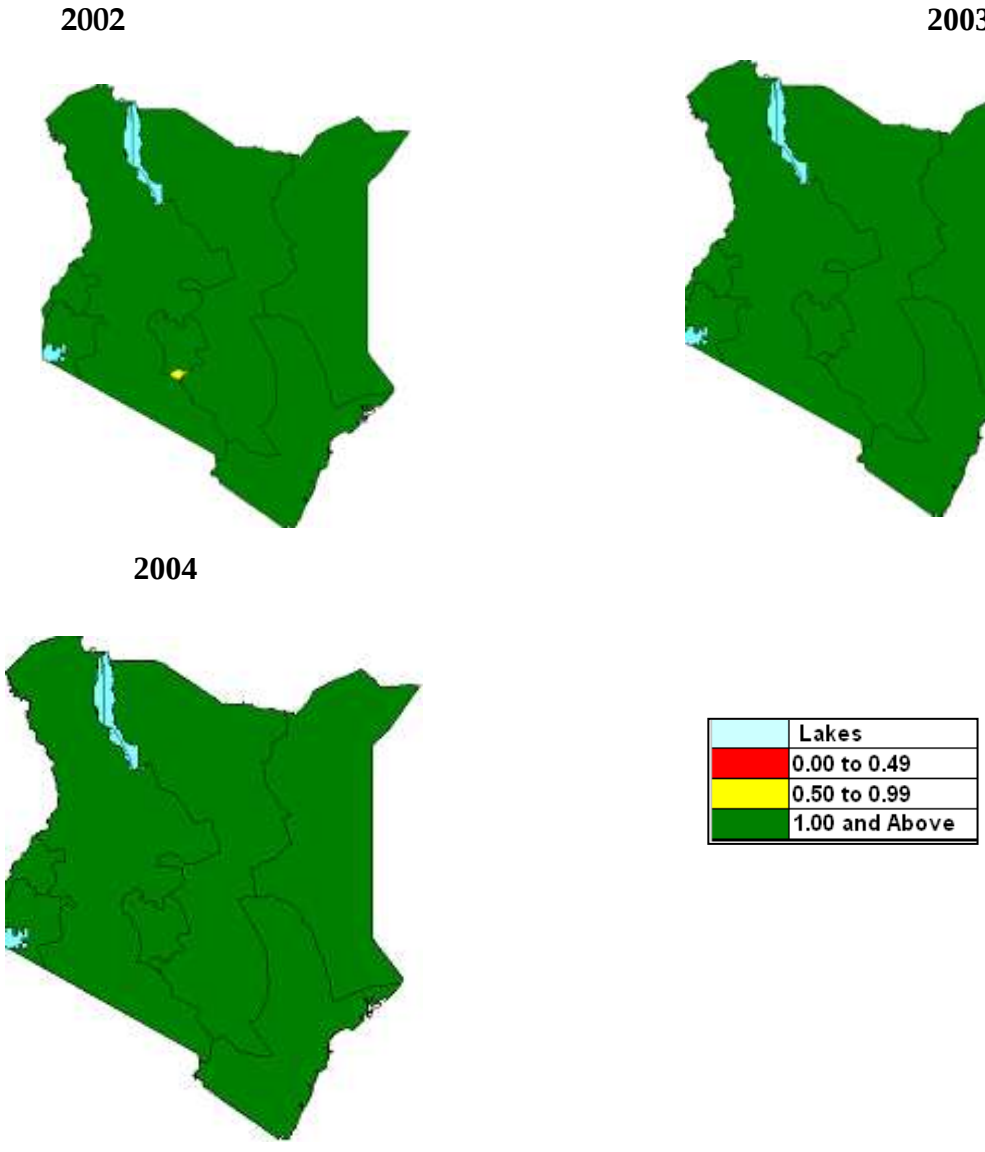
Perfomance of AFP surveillance was below the target on the stool adequacy indicator between 1997-2002.During this period disease surveillance structures were still in the process of being established therefore was still weak.The establishment of NPEC in 2001 assisted in offering guidance and ways of enhancing disease surveillance in Kenya resulting in achievement of the stool adequacy indicators in 2003.

3.5.2 AFP performance by appropriate administrative level. Please attach the following :

(1) A table with the non-polio AFP rate and stool specimen collection rate by appropriate administrative level (i.e. always 1st level - state, region, province, sometimes - ie. for large countries - also 2nd level - district, local government area, etc.) for each of the previous 3 years (see Annex 1.3.5.1.1a-c). Please note that for most African countries surveillance quality indicators will be calculated and mapped for only two administrative levels (national and province/state), adding a third level only for large countries. **(see Annex 1.3.5.1.1a-c)**

(2) *Shaded country maps showing the non-polio AFP rate, using different shading and three categories (< 0.5, 0.5 to <1, <=1), by appropriate administrative level (see above) for each of the previous 3 years; comment on and explain reasons for any 'silent areas' (i.e. geographical areas with no reported AFP or a low reported rate).*

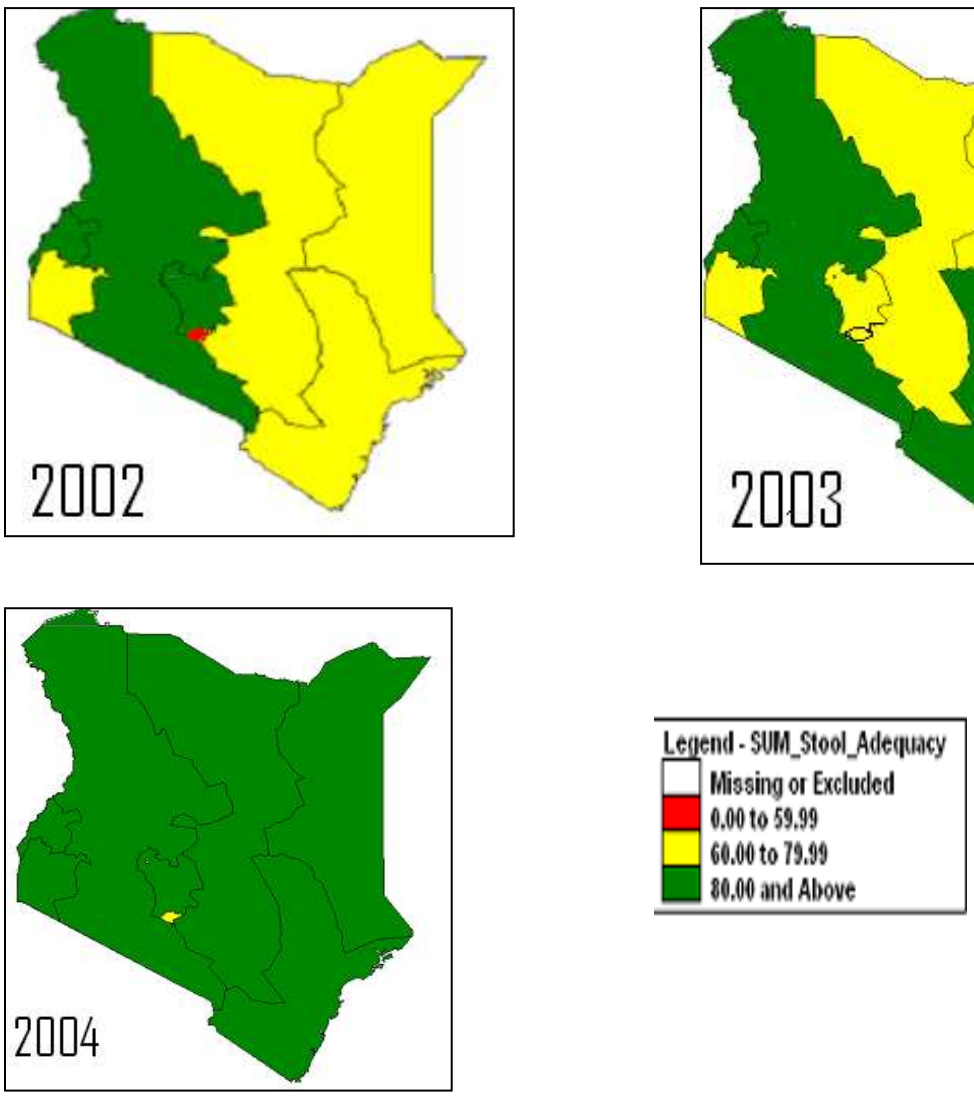
Fig 7 : Non Polio AFP Rate 2002-2004



Nairobi had not attained the non polio AFP rate by 2002.The health infrastructure in nairobi is manned by the Ministry of Local goverment (city council) and Provincial medical office.Cordination of health services was not yet streamlined however in 2003 services were streamlined through the intervention of the ministry of health. This resulted into accelerated and improved disease surveillance indicators in the province. There are two disease surveillance teams in Nairobi working closely on AFP disease surveillance.

(2) *Shaded country maps showing the % of AFP cases with 'adequate stool specimens' for each of the previous 3 years, and using three categories (< 60%, 60% to < 80%, >=80%), with an explanation of any 'silent areas' ie. Areas where very few or no stool specimens have been collected.*

Fig 8: Stool Adequacy 2001-2004



3.5.3 Areas with low AFP and specimen collection rates (surveillance 'gap' areas)

(1) Please summarize the results of special activities conducted to investigate reasons for surveillance gaps in certain areas / districts / provinces (low non-polio AFP rates[3], low stool specimen adequacy rates, clusters of 'polio-compatible' cases) during any of the past 3 years.

In Nairobi and north Eastern Province poor perfomimg districts wereidentified and strengthening of the provincial and district teams.

(3) Outline any activities undertaken to strengthen surveillance in silent or low performing areas (retrospective: - active case searches, retrospective record reviews; prospective: strengthening surveillance field activities in the area). *Please give details on a separate sheet or attach a report if available.*

- **Field visits conducted in these areas by NPCC/NPEC members and KEPI Disease surveillance officers.**
- **Concern letters were sent to Medical officers of Health in the provinces with poor performance for immediate action.**
- **Retrospective record search in out and inpatient registers during supervisory visits.**
- **Sharing of information and experiences between provincial teams during review meetings.**
- **Reorientation of disease surveillance coordinators and strengnthening staff capacity.**

SUMMARY OF VISITS BY NPEC/KEPI TO THE PROVINCES

[3] 'Low' non-polio AFP rates: < 1/100.000 or considerably below the average compared to other districts / provinces; i.e., 1/100.000 in a district would be considerably lower than average if most other districts reach 2.5 or higher

Occasionally, the NEPC members conduct field visits to the provinces to monitor the quality of AFP surveillance and routine immunization activities. The NPCC also occasionary pay visits to hospitals to validate the data at the national level. During these visits, strengths, opportunities, weakness and threats for surveillance for polio are identified and addressed.

Strengths

- PMOs/PHMTs are supportive on Polio eradication initiative.
- Motivated and committed health workers.
- Community participation making positive difference where this is in place.

Opportunities

- Courier services, Internet communication improving timeliness of reports and facilitation of feedback.
- Presence of NGOs willing to support surveillance and immunization activities.

Weaknesses

- High Staff turnover and shortage of staff in some facilities, occasional vaccine stock outs and non- reporting from some private facilities were the main weaknesses that were identified.

Threats

- The reliance on donor support in immunization activities in some of the districts.
- Other competing problems like HIV/ AIDs pandemic.
- Poor ecomic satus of some communities.

Section 3.6 Results of AFP case classification

3.6.1 National Polio Expert Committee (NPEC)

(1) When was the NPEC established? **May 2001**

(2) How frequently does the NPEC meet: **Five times a year.**

Please indicate below the year in which the country switched from using 'clinical' to 'virological' AFP case classification criteria. **May 2001**

Summary of AFP case classification since 1997

Table9: Classification of AFP cases.

Year	Total number of AFP cases reported	No. of AFP cases confirmed as			No. of cases discarded as non-polio AFP	No. of cases classified as polio-compatible
		TOTAL	clinically confirmed	virus confirmed		
2004	**247**	**0**	**0**	**0**	**247**	**0**
2003	**309**	**0**	**0**	**0**	**309**	**0**
2002	**252**	**0**	**0**	**0**	**252**	**0**
2001	**272**	**0**	**0**	**0**	**272**	**10**
2000	**345**	**0**	**0**	**0**	**345**	**9**
1999	**276**	**0**	**0**	**0**	**276**	**0**
1998	**137**	**0**	**0**	**0**	**137**	**0**
1997	**26**	**0**	**0**	**0**	**26**	**0**

NB ; Virological clasification established on 1st July 2000 while 1997 to 1999 AFP cases were clinically classified.

3.6.3 AFP cases classified as 'polio-compatible'.

For each of the previous 3 years, please attach a line listing of all cases classified as polio-compatible by the expert review committee. The line listing should include the main reasons for classification as 'compatible' for each case, i.e.

No polio compatible cases for the previous 3 years

- Inadequate specimens and no follow-up - classified as compatible because of 'ZERO evidence', or by 'default' (i.e., failure of surveillance, majority of polio-compatible cases in most countries may fall in this category),

vs.

- Inadequate specimens and residual paralysis compatible with polio clinically, i.e. cases for which polio could not be ruled out on clinical grounds.

The NCC should feel free to attach more detailed documentation such as copies of the NPEC meeting minutes, for individual 'polio-compatible' AFP cases for which classification was particularly difficult.

No polio compatible cases for the previous 3 years

3.6.4 Spot map of polio-compatible* cases.

Please attach a spot map showing the geographical location of all polio- compatible cases during the previous 3 years *(a single map can be used if different symbols / colors are used to differentiate the polio-compatible cases from each.*

Not Applicable

3.6.5 Information about probable non-polio causes of AFP for discarded AFP cases.

The NPEC, supported by the national polio team, should try to establish the probable non-polio cause of AFP (probable non-polio diagnosis) for as many cases discarded as non-polio AFP as possible. Possible sources for this information include the case investigation form (initial diagnosis), possibly available medical records, and the results of 60-day follow-up examination, if done.

Even if this information may not be available for all discarded cases, it is still useful to review the distribution of the most common non-polio diagnoses (see table) for cases for which this can be established. This section should document the probable causes of AFP (non-polio diagnoses) for all discarded AFP cases for which this data is available, during the period since the NPEC was established.

Please comment on the spectrum of non-polio causes, particularly if this is different from the expected (i.e proportion of GBS much smaller than 50%, large proportion of AFP caused by traumatic neuritis).

Table 10; Summary of non-polio cases for Discarded AFP cases

Year	Total AFP Discarded as non-polio	DiscardedAFP w. Unknown non-polio diagnosis	GBS *	Traumatic neuritis	Transverse Myelitis	Vaccine-associated paralytic polio (VAPP)**	Other (pls specify)
2004	**247**	**247**	**1**	**0**	**0**	**0**	**11 Not AFP**
2003	**309**	**309**	**2**	**0**	**0**	**0**	**1 Spina Bifida**
2002	**252**	**252**	**2**	**0**	**0**	**0**	**0**

Table 10 indicate the summary of AFP cases reviewed and classified by the NPEC from the year 2001 using the information in the AFP case investigation forms and the chart used in the AFP classification process. A number of these cases were found not to be AFP and appropriately discarded. However, a few of these non-AFPcases were mistakenly retained as AFP cases especially during the initial period in classification. Also until after the middle of 2004, the NPEC only concentrated on finding out whether a suspected AFP case was due to polio or not and did not concern themselves in trying to make a diagnosis of these cases which were discarded, using the information on the charts, including the follow up review form. Consequently, diagnosis of discarded cases was not really made and most cases were simply classified as discarded.

*Guillain-Barré Syndrome

** NCCs are reminded that 'VAPP' is an extremely rare condition which tends to be over-diagnosed because AFP cases with vaccine virus isolation are often wrongly diagnosed as 'VAPP. This has potentially negative consequences for the credibility and acceptance of immunization programmes. 'VAPP' is a diagnosis of exclusion which the Expert Committee should only make if all official WHO VAPP classification criteria are met: a) SABIN virus was isolated from adequate specimens in a WHO-accredited laboratory, b) reliable clinical follow-up examination at 60 days after onset of paralysis or later shows the presence of polio-like neurological sequelae, and c) there is a history of exposure to OPV during 4 to 30 days (in the case) or during 7 to 70 days (in a contact) before onset of paralysis. VAPP cases are discarded as non-polio because wild poliovirus was ruled out as a cause; for the same reason VAPP cases are not classified as 'polio-compatible'.

3.6.6 Difficult-to-classify cases discarded as non-polio by the NPEC.

NPECs do not need to review / classify all AFP cases, but should concentrate on the detailed review of those AFP cases that are 'difficult to classify' because of limited available data (i.e. those with inadequate specimens and either no FUP or with residual paralysis), with the goal to either discard them or classify them as 'polio-compatible'.

As stool collection adequacy rates increase to 80% or higher, classification is straightforward for the majority of cases, and only a small number of AFP cases will need to be reviewed in detail by the NPEC. However, even with very good quality surveillance some cases will always remain which lack sufficient evidence to discard them easily.

NPECs should be careful not to 'over-discard' AFP cases with limited data; these cases should only be discarded as non-polio if there is conclusive additional evidence ruling out polio (such as additional data from medical records ruling out anterior horn cell disease).

NCCs should ask for a line-list of all AFP cases reviewed in detail by the NPEC (because of limited data, see above) but then discarded as non-polio, covering the period since the NPEC began to function. The reasons, for which each case was discarded, despite the absence of adequate specimens, should be clearly stated.

Main reasons for discard of AFP Cases

- **Adequate stool specimens and negative laboratory results**
- **No residual paralysis at 60 day follow up**
- **Laboratory confirmation of AFP specimens as Sabin polio virus**
- **Polio Expert Review decision on complete immunization status more than 3 doses**
- **Availability of clinical notes for the cases**

Table 11: Discarded AFP cases with inadequate specimens and no FUP or residual paralysis

EPID-No.	Date of onset	Date of 2nd specimen	60-day FUP result	Main reason why case was discarded as 'non-polio'	Non-polio cause of AFP / probable final diagnosis
		see (Annex5.)			

AFP cases with inadequate specimens and no follow up were only discarded after exhaustive findings by the NPEC.The members reviewed clinical notes and where necessary did physical examination of the children (for Table 11 refer to Annex 5 for the detailed linelist of the cases).

3.6.7 Summary of special investigations conducted in response to clusters* of polio-compatible cases, detected in the previous 3 years.

Table 12: Summary of special investigations conducted

Date of onset of first and last case of cluster, number of cases in cluster	**Location of cluster	Summary of additional investigations, conclusions and activities to improve surveillance ***(Please attach additional details)***
No polio compatible in the previous 3 years.		

- Please note that polio-compatible cases, especially clusters of compatible cases, indicate areas of weak surveillance, possibly of undetected ongoing virus transmission. Clusters of 'compatible' cases are defined as ***two or more cases in one district or adjacent districts, occurring within a 2-month period***. These clusters usually indicate area of weak surveillance; they should be further investigated and scrutinized to assess and rapidly improve surveillance quality. The NCC should thoroughly document any follow-up activities in response to such clusters.

** *Clearly demonstrate the location of the clusters in a map.*

No polio compatible cases

3.7 <u>Supplementary surveillance activities</u>

Some countries in other WHO Regions which have been polio-free for 30 or more years did not use AFP surveillance but employed other, alternative methods (i.e. retro-species record searches for AFP at health facilities, data from entero -virus laboratory networks) to demonstrate that they are free of wild virus transmission and that wild virus importations would be readily detected.

All countries of the African Region rely on AFP surveillance as the 'gold standard' and main strategy to document progress towards interrupting wild poliovirus transmission. Alternative, supplementary surveillance methods such as described above - mainly retrospective record reviews at health facilities - may have a role, however, mainly to cross-check the sensitivity of existing AFP surveillance in the following situations:

- *assessing 'silent' areas (surveillance gap areas):* retrospective record searches at main health facilities to check for missed AFP cases in areas (usually district level) that have not reported any AFP case for prolonged periods;
- *assessing clusters of polio-compatible cases:* clusters of 'compatibles' usually indicated areas of weak surveillance and may indicate undetected ongoing transmission; record searches will be useful to rapidly check for missed AFP cases;
- *as part of the 'surveillance response' to wild poliovirus importations* - to enhance surveillance sensitivity in areas where imported wild poliovirus was found, in the period following the last indigenous case;

Available evidence from any record reviews conducted or any other alternative method used should be added to this documentation because they will add weight to the country's claim for polio-free status.

3.7.1 Retrospective record reviews conducted (if any):

1) Total number of done since 1997: **3 record reviews**

2) Reasons for record reviews done since 1997:

- **Surveillance teams conducted review of record for AFP cases in silent areas in Isiolo 2004, Embu 2005, Kakuma refugees camps following outrbreak of polio in sudan.**

- Assessing 'silent' areas - **2 Record reviews**

- Assessing clusters of polio-compatible cases - **Not applicable**

Surveillance response to importation – **Not applicable**

Other (specify and give No.) **Inflow of refugees in the northern part of the Rift Valley prompted intensive surveillance in these areas. 2 late AFP cases detected in the record search in the IRC Refugee camp Kakuma Turkana District in 2005 were classified and discarded by the NPEC.(Table 14)**

3.7.2 Main results of retrospective record reviews conducted since 1997

(One line is one search; add additional information / reports to Annexes)

Table 13; Results of retrospective record reviews

Date of search	Reason for search	Place	Facility(s) searched	Period covered	No. of AFP cases found	No. of AFP which had not been reported through routine AFP surveillance
2004	**Silenct District**	**Isiolo**	**Isiolo District Hospital and Major Health Centres**	**2003/2004**	**0**	**0**
2005	**Silenct District**	**Embu**	**Embu Provincial Gen.Hospital and major Health Centres**	**2004/2005**	**0**	**0**
2005	**Kakuma Refugee Mission Hospital**	**Turkana**	**Kakuma Refugee Mission Hospital**	**2004/2005**	**2**	**2**

PART 4 : LABORATORY SURVEILLANCE ACTIVITIES FOR POLIO ERADICATION

Purpose:

To demonstrate to the Regional Commission the reliability of poliovirus laboratory support to this country, and that any circulating wild poliovirus would be detected timely. The documentation should allow an accurate determination of whether wild polioviruses are still circulating in any area of the country, and the time when wild virus transmission was interrupted.

This section of the documentation should identify and describe the 'national laboratory', (whether in the country itself or in another country), that is responsible for primary virus isolation. Laboratory performance should be demonstrated using the results of the most recent WHO accreditation visit. WHO will assist NCCs to obtain copies of accreditation reports of the national laboratory serving the country. The regional reference laboratory that performs intratypic differentiation of polioviruses for the country should also be identified.

It should further reflect the quality of laboratory support to the country. If a laboratory serves as 'national laboratory' for more than one country, only results related to the country submitting this documentation should be reflected. For most countries in the African Region, only stool specimens from AFP cases will have been submitted. However, if the country sent material from other sources for poliovirus studies (i.e. AFP contacts, healthy children, environmental samples), these results should also be reflected.

Data required:

Only results from laboratories that are accredited by WHO as part of the Global Polio Laboratory Network will be considered in the certification process.

The following documentation of laboratory work and results for the country submitting this national documentation only will be required from each 'national laboratory' for a minimum of three years:

The number of AFP cases from which stool specimens were received.

- The total number of stool specimens from AFP cases received.
- The number of stool specimens from other sources.
- The total number of stool specimens that were processed.
- The number of polioviruses that were isolated.
- The number of isolates that were sent for intratypic differentiation
- The reasons for which laboratory processing of AFP case specimens was incomplete or delayed (i.e., if not all specimens received in the lab were processed, or if any poliovirus isolates were not sent for intratypic differentiation.

The National Certification Committees will review and comment on the data management system in the national laboratory to assess the frequency and quality of communication between the laboratory and the programme.

Standard Documentation Form #4 :

Laboratory Activities for Polio Eradication

Section 4.1 Laboratory accreditation

4.1.1 National polio laboratory

(1) Is there a national poliovirus laboratory in the country? (Circle)
✔ yes/no

If yes : Name and Location

Kenya Medical Research Institute (KEMRI) –Nairobi

(2) If there is no national polio laboratory in the country, which laboratory serves as the 'national laboratory' for poliovirus isolation and identification?

Not Applicable

(3) Is the laboratory serving the country accredited as part of the Global Polio Laboratory Network ✔ *yes*/no

If yes, give dates of the most recent accreditation : **May 2004.**

(4) Are all poliovirus isolates, regardless of source, sent to a WHO-accredited regional reference laboratory for intratypic differentiation?
✔ yes/no

If no, please explain which isolates are not sent and why: **Not Applicable**

4.1.2 Summary of annual WHO accreditation results, since 1997, for the laboratory serving as 'national laboratory' for the country

Table 14: Summary of annual WHO accreditation results

Year	Score of onsite review (≥ 80%)	Proficiency test score (≥ 80%)	Annual number of specimens processed (≥ 150)	Correct polio typing results (≥ 90%)	Results reported on time (≥ 80%)	Fully accredited (yes/no)
2004	**94**	**100**	**1070**	**100**	**100**	**YES**
2003	**91**	**100**	**982**	**100**	**100**	**YES**
2002	**93**	**100**	**1076**	**100**	**86.5**	**YES**
2001	**91**	**100**	**1109**	**100**	**100**	**YES**
2000	**86**	**82**	**971**	**98.1**	**96**	**YES**
1999	**90**	**50*, Passed**	**184**	**100**	**93**	**Yes**

Section 4.2 Laboratory process

- Please note that all information should be country- not laboratory-specific

4.2.1 Were any stool or other specimens from sources other than AFP cases sent to the National Laboratory for poliovirus isolation and identification? yes/ ✔ no

If yes, please specify the sources: **Not Applicable**

4.2.2 Summary of specimens submitted to the National Laboratory for poliovirus studies from Kenya since 1997

Table 15: Summary of Specimens Submitted

Year	No. of AFP case stool specimens	No. of specimens from AFP contacts*	No. of other stool specimens (not from AFP cases)	No. of other clinical specimens (i.e. CSF)	No. of environ-mental specimens	Total no. of specimens submitted for poliov. studies
2004	**504**	**None**	**None**	**None**	**None**	**504**
2003	**600**	**None**	**None**	**None**	**None**	**600**
2002	**505**	**None**	**None**	**None**	**None**	**505**
2001	**544**	**None**	**None**	**None**	**None**	**544**
2000	**585**	**None**	**None**	**None**	**None**	**585**
1999	**490**	**None**	**None**	**None**	**None**	**490**
1998	**73**	**None**	**None**	**None**	**None**	**73**
1997	**46**	**None**	**None**	**None**	**None**	**46**

There is variation in no of specimen as a result of ;
- Laboratory recording the specimens during that current year of arrival in laboratory and not as per date of onset.
- During the first few years of active surveillance, many cases of AFP were investigated without collection of stools.

4.2.3 Timeliness of providing laboratory results to the programme ; focus on the last three years and comment on possible reasons for delays in processing and reporting results at the levels of both the National and Reference Laboratories.

1) Does the National Laboratory communicate results of primary isolation to the programme (EPI Manager, National Surveillance Officer) within 28 days of receiving specimens in the laboratory, for at least 80% of AFP cases?

✔ Yes/No

If no, please comment : **Not Applicable**

2) Does the National Laboratory report all poliovirus isolates to the programme immediately? ✔ Yes/No

If no, please comment : **Not Applicable**

3) Are poliovirus isolates sent for intratypic differentation within one week after final results are available at National Laboratory?

✔ Yes/No

If no,please comment : **Not Applicable**

4) Are ITD results reported to the programme (EPI manager, surveillance officer) within 28 days of receipt of isolate in ITD laboratory?

✔ Yes/No

If no,pleasecomment : **Not Applicable**

4.2.4 Timeliness of AFP stool specimen processing at the National and Regional Reference Laboratories since 1997

Table 16 ;Timeliness of AFP stool specimen

	National Laboratory				RR Lab
Year	Total no. of AFP stool specimens* received	No. (%) of spec. w. results communicated within 28 days of receipt in the lab	No. (%) of specimens positive for wild poliovirus	No. (%) of PVs sent to RRL within 1 wk of NL result	No. (%) of PVs with ITD results comm. within 14 days of receipt in the RR lab
2004	**504**	**99.4**	**0**	**100**	**100**
2003	**600**	**100**	**0**	**100**	**100**
2002	**505**	**90.9**	**0**	**100**	**100**
2001	**544**	**91.9**	**0**	**100**	**100**
2000	**585**	**92.3**	**0**	**100**	**100**
1999	**490**	**95.8**	**0**	**100**	**100**
1998	**73**	**100**	**0**	**100**	**100**
1997	**46**	**91.3**	**0**	**0**	**0**

All Isolates sent to South Africa regional Laboratory were Sabin Type.

* Note that data in this table is based on the number of specimens, not on the number of AFP cases

4.2.5 Summary of reasons for untimely reports of ITD results : **Not Applicable**

4.2.6 Poliovirus isolates without intratypic differentiation in past 5 years :

Every effort must be made to ensure that all poliovirus isolates, particularly from the last 5 years, have been subjected to intratypic differentiation. If there are any undifferentiated poliovirus isolates from this country dating back to the last 5 years, the original isolates should be obtained and sent for intratypic differentiation before the NCC submits the certification documentation to the ARCC.

Information on these initially undifferentiated polioviruses, from the last 5 years, should be provided on a separate sheet.

Not Applicable

PART 5 : IMMUNIZATION ACTIVITIES FOR POLIO ERADICATION

Purpose :

To demonstrate to the Regional Commission the quality of routine immunization and routine OPV coverage levels achieved, as well as the scope and quality of supplementary immunization activities implemented to interrupt wild poliovirus circulation.

Data required:

This section should contain full information on both the routine and supplementary polio immunization activities that have been conducted in the country. The history of polio immunization is described earlier under historical background of KEPI should be outlined, including the routine immunization schedule, the polio vaccines that have been used, and the immunization coverage that has been reported.

National reported OPV immunization coverage figures should be provided for as many years as possible (at least since 1990). Immunization coverage should be provided by appropriate administrative level (i.e. Region, province, state, district) for the previous 3 – year period. In those geographical areas or population sub-groups with low immunization rates, there should be evidence of targeted measures taken to improve coverage.

Data on supplementary polio immunization should include :

- All national and sub-national OPV immunization days
- All mopping-up* immunization activities (see below)

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* Mopping-up immunization refers specifically to 2 rounds of house-to-house immunization with oral polio vaccine (OPV) targetting all children in a specified age group, regardless of prior immunization status. Mop-up activities are conducted over a wide geographical area (at least multiple districts) to interrupt the last foci of wild poliovirus transmission.

Standard Documentation Form #6 : **Polio Immunization Activities**

Section 5.1 Routine polio immunization schedule

Please indicate the current routine polio immunization schedule in the country :

Immunization contact	Age	Vaccine
0	**Birth**	**OPV __0__**
1	**6 Weeks**	**OPV __1__**
2	**10 Weeks**	**OPV __2__**
3	**14 Weeks**	**OPV __3_**

Any additional OPV doses other than NIDs (Please specify) **None**

Section 5.2 Routine polio immunization coverage

5.2.1 What method is used to estimate routine OPV coverage achievements (usually infant coverage with 3 doses of OPV)?

a) so-called 'administrative' method, using numbers of doses administered over the estimated birth cohort ✔ **yes** / no

b) Coverage surveys etc. yes / no

c) a combination of a) and b) ✔ **yes**/ no

Please comment on method and reliability of estimating routine OPV3 coverage, specifically on coverage surveys if these were used (methodology, timing, sample size).

The methods used in these surveys are the WHO EPI 30 Cluster sample survey, National Sample Survey and Evaluation Programme (NASSEP) clusters sample derived from CBS Master Sample frames. These methods are reliable since they are based on comparison with the routine immunization method, which show variations before 2003 because of poor documentation in health facilities. To adress this KEPI carried out training on data management and documentation of Immunization services in 2003. Inorder to increase the sample size coverage surveys was done in the provinces 210 children instead of 210. Immunization Surveys are included in the Kenya Demographic Health surveys done every four years.

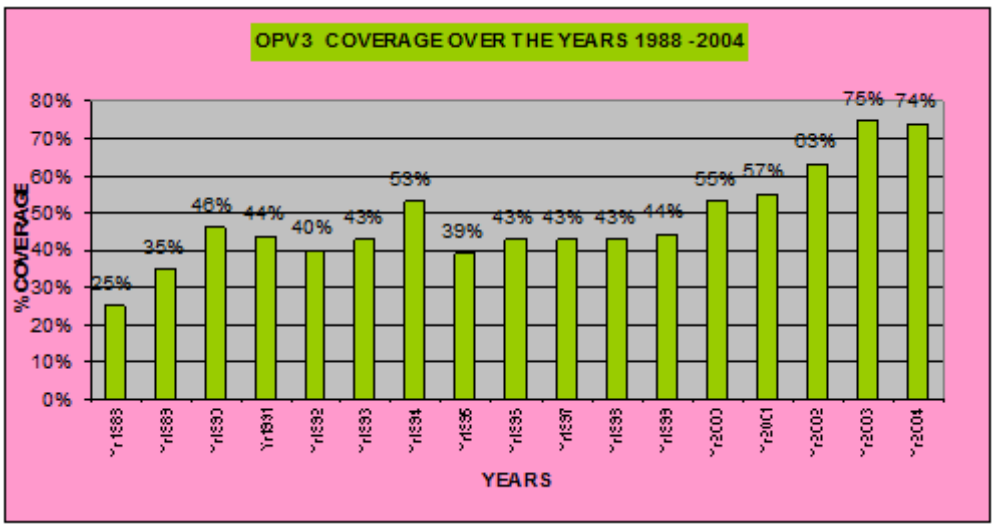
5.2.2 Reported annual national OPV3 immunization coverage

Please attach a bar graph and table showing the reported annual infant coverage with 3 doses of OPV at the national level for as many years back as data is available.

Table 17 : OPV3 Coverage In Kenya 1988-2004 Adminstrative method

Year	OPV 3 % Cov
1988	25%
1989	35%
1990	46%
1991	44%
1992	40%
1993	43%
1994	53%
1995	39%
1996	43%
1997	43%
1998	43%
1999	44%
2000	55%
2001	57%
2002	63%
2003	75%
2004	74%

Fig9: Kenya OPV3 Coverage 1988-2004



Source: KEPI Administrative coverage Data

Fig. 9 shows that there has been a gradual increase in Immunization coverage for OPV3 from 1988-2001. However, there was a much higher increase between 2002 and 2003 (57%-75%). This was attributed to;
Provision of GAVI funding for routine immunization from the year2001
Training of health workers on defaulter tracing, data management, proper documentation and monitoring using GAVI resources.
CDC technical suport to KEPI data management office with the EPI Info software for National and Provincial level resulting in better documentation of coverage.

5.2.4 Summary of reported national coverage with 3 doses of OPV for infants from birth to 11 months of age, for the last 5 years from year of reporting:

Table 18; Summary of reported national coverage with 3 doses

Year	Estimated no. of infants targeted	Number of infants vaccinated	OPV3 immunization coverage (%)
2004	**1,259,340**	**923,307**	**74%**
2003	**1,221,219**	**915,544**	**75%**
2002	**1,189,684**	**754,310**	**63%**
2001	**1,156,272**	**660,908**	**57%**
2000	**1,105,343**	**607,590**	**55%**

Source: KEPI Administrative coverage Data

5.2.5 Immunization coverage by appropriate administrative level.

Please attach a table with the reported OPV3 immunization coverage by appropriate administrative level (i.e. usually first sub-national administrative level such as region, province, state or district etc.) for the last 5- year period

Table19 : OPV3 Immunization coverage by Province 2000

Provinces	**Infant target population Surviving Infants**	**No Immunized**	**Percentage (%)**
NAIROBI	**70,238**	**27878**	**40**
CENTRAL	**119,056**	**93975**	**79**
COAST	**89,922**	**65363**	**73**
EASTERN	**168,050**	**93857**	**56**
N/EASTERN	**23,774**	**8126**	**34**
NYANZA	**190,821**	**94049**	**49**
RIFT VALLEY	**294,538**	**147778**	**50**
WESTERN	**147,313**	**76564**	**52**
KENYA	**1,105,343**	**607590**	**55**

Source: KEPI Administrative coverage Data

Table20 : OPV3 Immunization Coverage by Province 2001

Provinces	Infant target population (Surviving Infants)	No Immunized	Percentage (%
NAIROBI	82,018.00	53359	65.1
CENTRAL	121,027.00	99568	82
COAST	103,027.96	68052	66
EASTERN	176,437.84	107814	61
N/EASTERN	27,228.79	17994	66
NYANZA	190,214.40	83354	44
RIFT VALLEY	299,536.51	153677	51
WESTERN	158,783	77090	49
KENYA	1,156,272.5	660908	57

Source: KEPI Administrative coverage Data

There was an improvement compared to the previous year but Nyanza and Western province below 50%. This is due to poor documentation,problems with targets and low per capita income.

Table21 : OPV3 Immunization coverage by Province 2002

Province_ Name	Infant target population Surviving Infants	No Immunized	Percentage % Cov
CENTRAL	124309	92743	75
COAST	105822	66588	63
EASTERN	181223	138250	76
NAIROBI	84240	60437	72
NORTH EASTERN	27967	16978	61
NYANZA	195374	93878	48
RIFT VALLEY	307660	195502	64
WESTERN	163089	90133	55
National Coverage	1189684	754509	63

Source: KEPI Administrative coverage Data

Central ,Nairobi and Eastern provinces perfomed well compared to others because of accessibilty to immunization services, high knowledge and awareneess, high per capita income.

Table22: OPV3 Immunization coverage by Province 2003

Province_ Name	Infant target population Surviving Infants	No Immunized	Percentage % Cov
CENTRAL	127682	105792	83
COAST	108692	82619	76
EASTERN	186136	143467	77
NAIROBI	86527	87101	101
NORTH EASTERN	28725	21556	75
NYANZA	200670	129802	65
RIFT VALLEY	315276	221764	70
WESTERN	167511	121898	73
National_ Coverage	1221219	913999	75

Source: KEPI Administrative coverage Data

Nairobi province had the highest coverage during the year due to unpredictable population changes.Overall there is a marked improvement in immunization coverage attributed to GAVI and Ministry of Health support to immuinzation services.

Table23 : OPV3 Immunization coverage by Province 2004

Province_ Name	Surviving Infants	OPV3_L1	% CovOPV3
CENTRAL	120912	110180	91
COAST	111264	79142	71
EASTERN	187120	150706	81
NAIROBI	96155	82570	86
NORTH EASTERN	32872	18954	58
NYANZA	199628	132806	67
RIFT VALLEY	328053	229250	70
WESTERN	177182	128580	73
National Coverage	1253186	932188	74

Source: KEPI Administrative coverage Data

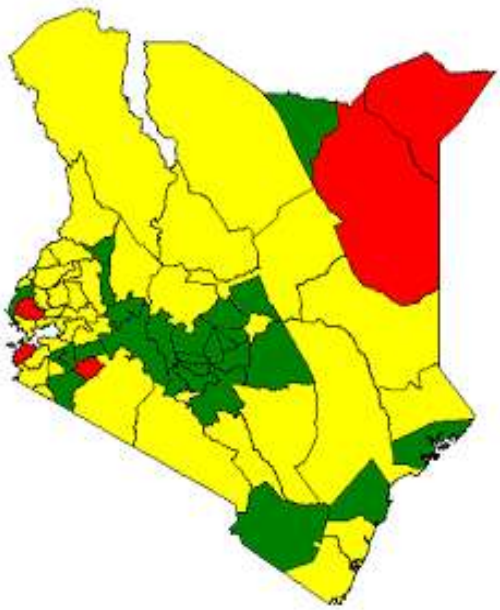
North Eastern Province had a drop compared to the previous year because of the high staff turnover and migratory nature of the population.There was a general improvement of immunization coverage comparatively in all the provinces.

5.2.6 Mapping routine coverage.

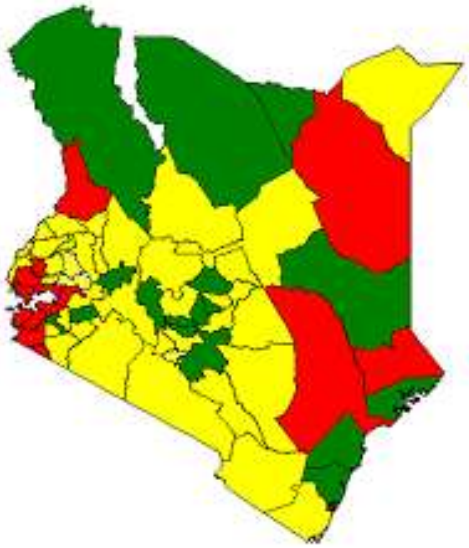
Please attach three shaded maps, for the previous 3 years, which show reported OPV3 coverage levels by appropriate sub-national administrative level using three different cut-off points: <= 50%, 50 to <=80%, and > 80%.

Fig10:OPV3 Coverage 2004, 2003, 2002

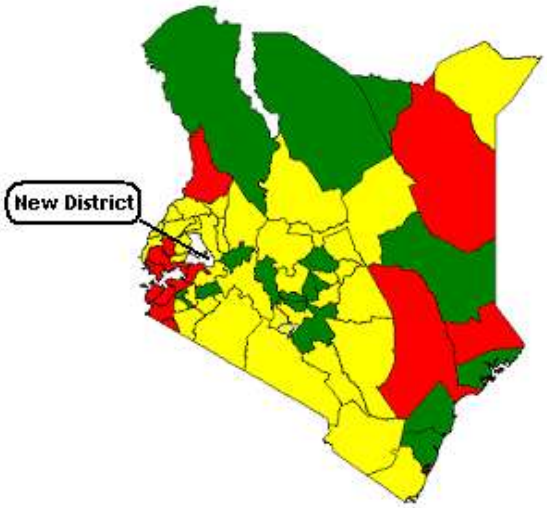
2004

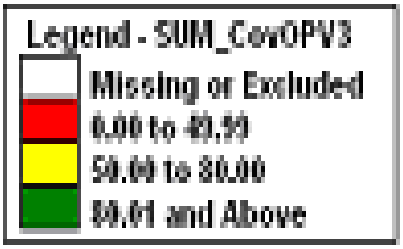


2003



2002





5.2.6 Use of routine immunization coverage data.

Please describe how immunization coverage data is used, on a routine basis, to improve coverage (i.e. ongoing review and targeting of low-performing areas with corrective action).

Data analysed is shared with programme officers who review the performance and institute corrective action for instance:

-Routine Immunization coverage performance used in assisting low coverage districts (Migori, Busia, Pumwani) through CDC support.- defaulter tracing, proper documentation, outreach services and social mobilization activities.

-UNICEF supported Immunization Plus Programme in Garissa and Ijara through outreach services, on job training guided by data analysis.This data is to guide the ministry of Health through KEPI to identify high risk districts as part of the criteria for SNIDs.

-Guiding the Ministry of Health through Kenya Immunization programme to identify high risk Regions / Districts for sub NIDs

Section 5.3 Immunization in high-risk areas and among high-risk populations

5.3.1 Please describe any 'high-risk' population groups in the country whose children are at risk of being missed by routine or supplementary immunization and/or at risk of wild poliovirus infection (especially in polio-free areas), such as:

- refugees or internally displaced persons

There are various high-risk groups in the country namely:

- **Refugee population displaced through conflicts in neighbouring Somalia, Sudan and Uganda in refugee camps at Dadaab and Kakuma.**

- migrants nomads or other groups with high mobility

- **Migrants and pastoralist communities in North Eastern, Eastern and Rift Valley Provinces. These have terrain and hard to access populations.**

- groups which are at risk of being underserved by existing services or who may refuse or not comply with OPV vaccination, such as ethnic or religious minority groups,

- groups in border areas, remote areas, or areas difficult to access for other reasons,

___ groups with regular contact to polio-endemic areas;

___ other high-risk groups, please specify

- **Districts and communities with internal conflicts in Marsabit, Isiolo, Tana River, West Pokot ,Marakwet and Turkana.(see Table 26)**

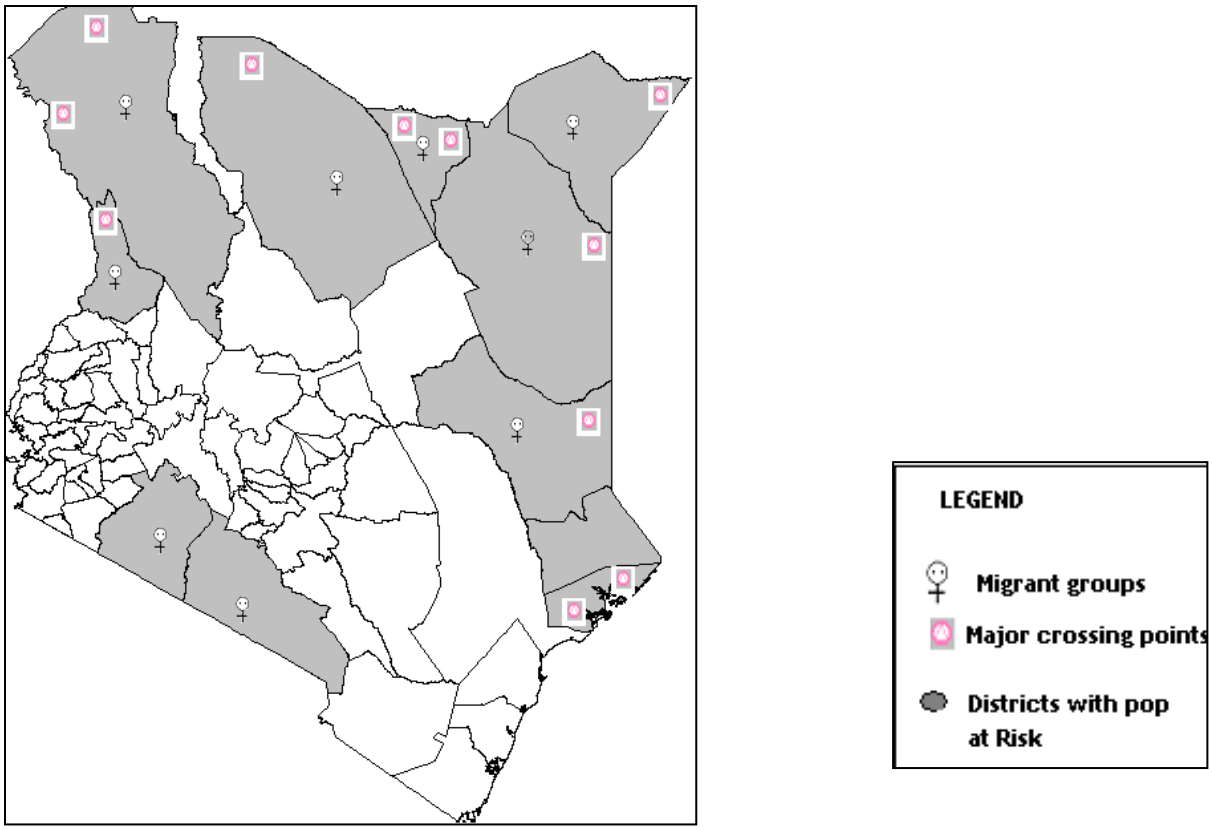
5.3.2 For each group identified above, please provide additional information in the summary table below: ***(Attach a map showing location of high-risk groups)***

Table 24: High- Risk groups identified

Group **(District)**	Size of group(Under 5 Pop)	Location of group **(Province)**	Action taken to improve coverage
Marsabit	**4,944**	**Eastern Province**	**Mobile Immunization outreach services implemented.**
Isiolo	**4,502**	**Eastern Province**	**Mobile Immunization outreach services implemented.**
Tana River	**8710**	**Coast Province**	**Mobile Immunization outreach services implemented.**
Turkana	**12376**	**Rift Valley Province**	**Mobile Immunization outreach services implemented.**
Marakwet	**6358**	**Rift Valley Province**	**Mobile Immunization outreach services implemented.**
West Pokot	**16780**	**Rift Valley Province**	**Mobile Immunization outreach services implemented.**
Ijara	**2349**	**North Eastern Province**	**Mobile Immunization outreach services implemented.**
Garissa	**12370**	**North Eastern Province**	**Mobile Immunization outreach services implemented.**
Mandera	**8012**	**North Eastern Province**	**Mobile Immunization outreach services implemented.**
Wajir	**11341**	**North Eastern Province**	**Mobile Immunization outreach services implemented.**

5.3.2 For each group identified above, please provide additional information in the summary table below: ***(Attach a map showing location of high-risk groups)***

Fig 11. Map of Population at High Risk, Major Cross Border Points and Location of Migratory Groups



Despite these hardships, access to immunization service is provided through mobile outreach services by government and NGOs supervised and supported by District Medical officers of Health.

Section 5.4 Supplementary immunization activities (SIAs) for polio eradication

Please list the type of SIAs conducted in the country, indicating the first year an activity was done, and the total number of rounds conducted since then:

Table 25: no of NIDs,SNIDs and Mop-Up Rounds conducted

Type of SIA	*First year conducted*	*No. of rounds ever conducted since then*
National Immunization Days (NIDs)	**1996**	**10**
Sub-national Immunization Days (SNIDs)	**2001**	**6**
Mopping-up activities[4]	**0**	**0**

[4] [5]*Mopping-up immunization refers* ***specifically*** *to 2 rounds of house-to –house immunization with oral polio vaccine (OPV) targeting all children in a specified age group, regardless of prior immunization status. Mopping-up activities are conducted, over a wide geographical area (at least multiple districts) to interrupt the last foci of wild poliovirus transmission.*

5.4.1 Summary of all NID and SNID rounds ever conducted (note that there is a separate table for mopping-up activities). - Since many countries have conducted more than one two-round NIDs / SNIDs in a year, please use a separate line for each SIA round conducted in the following table. (*See Table 28, Fig14 and Fig 15).*

Table 26: Summary of all NIDs rounds in 8 provinces since 1997

Year	NID or SNID round	Date / month conducted	House-to-house imm. used (yes/no)	No. of < 5 yr olds targeted	No. of <5yrs reached with OPV	Reported coverage (%)
1996	**NIDs 1st Round**	**10th – 11th Aug 1996**	**No, Fixed Post**	**4,849,000**	**3,485,897**	**72%**
	NIDs 2nd Round	**14th - 15th Sept. 1996**	**No, Fixed Post**	**4,849,000**	**3,947,333**	**81%**
1997	**NIDs 1st Round**	**9th and 10th Aug. 1997**	**No, Fixed Post**	**4,743,000**	**3,737,793**	**79 %**
	NIDs 2nd Round	**13th and 14th Sept 1997**	**No, Fixed Post**	**4,743,000**	**3,905,813**	**82%**
1998	**NIDs 1st Round**	**15th to 16th Aug 1998**	**No, Fixed Post**	**5,912,612**	**4,245,480**	**78%**
	NIDs 2nd Round	**12th to 13th Sept. 1998**	**No, Fixed Post**	**5,912,612**	**4,052,322**	**82%**
1999	**NIDs 1st Round**	**23rdand 24th Oct 1999**	**No, Fixed Post**	**5,335,859**	**4,910,169**	**83%**
	NIDs 2nd Round	**27th and 28th Nov 1999**	**No, Fixed Post**	**5,335,859**	**4,842,947**	**81%**
2000	**NIDs 1st Round**	**23rd–29th Oct 2000**	**House to House and fixed Post**	**4,663,387**	**4,096,552**	**88%**
	NIDs 2nd Round	**20th-26th Nov.2000**	**House to House and fixed Post**	**4,663,387**	**4,493,343**	**96%**

5.4.2 NID/SNIDs coverage at the sub-national level**;**

Please attach a set of tables with the reported coverage at the sub-national level (1st sub-national administrative level - states, provinces, regions, depending on the country) for all NID / SNID rounds conducted since 1997 (please see attached sample form Annex 4). **See ANNEX 4.a 1997-2000 NIDs** coverage by appropriate administrative level conducted since 1997 (5.4.2) Pages 99-108

5.4.3 Criteria for selection of SNIDs target areas, SNIDs maps, and SNIDs coverage

a) Selecting areas for SNIDs.

Please state the criteria used for deciding the areas to include in sub-national OPV Immunization Days (SNIDs) since three years before the last indigenous wild poliovirus found in the country. Please comment on whether / how selection criteria may have changed over the years.

***SNIDs were conducted due to;**

- **Risk of importation and not due to existence of indigenous wild poliovirus.**

- Low routine immunization coverage in hard to reach districts.

- Areas with refugee population displaced through conflicts in neighbouring Somalia, Sudan and Uganda

- Refugee camps populations in Dadaab and Kakuma camps.

- Areas with migrants and pastoralist communities in difficult terrain and hard to reach populations in North Eastern, Eastern and Rift Valley provinces.

- Districts and communities with internal conflicts.

- Districts bordering countries that have reported polio cases

- Districts with international sea and air points of entry

- Municipalities and Towns with slum and densely populated locality areas.

The selection criteria has changed slightly over the years particularly due to the polio threat due to outbreaks in neighbouring countries

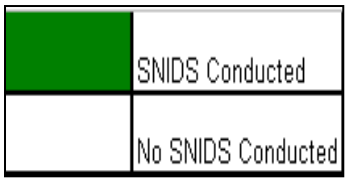
b) SNIDs maps. *Please attach a map showing the geographical areas included for the last 5 SNIDs (maximum) conducted in the country.*

Fig 12: SNIDS in Kenya 2001 -2005

2001

2002

2005



Please attach a table with the SNIDs coverage by appropriate administrative level (i.e. region, province, state, district, etc) for each of the last 5 SNIDs

SNIDs coverage ***in 2001, 2002 and 2005.***

Table 27: SNIDs Year 2001

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	304,815	19th to 25th August 2001	326,814	107.2
	2nd Round	304,815	23rd to 25th September 2001	404,523	132.7
COAST	1st Round	137,318	19th to 25th August 2001	181,935	132.5
	2nd Round	137,318	23rd to 25th September 2001	211,940	154.3
EASTERN	1st Round	46,849	19th to 25th August 2001	49,707	106.1
	2nd Round	46,849	23rd to 25th September 2001	50,124	107.0
N/EASTERN	1st Round	152,102	19th to 25th August 2001	170,974	124.8
	2nd Round	152,102	23rd to 25th September 2001	189,828	124.8
NYANZA	1st Round	332,691	19th to 25th August 2001	441,140	132.6
	2nd Round	332,691	23rd to 25th September 2001	497,318	149.5
R/VALLEY	1st Round	225,244	19th to 25th August 2001	281,053	124.8
	2nd Round	225,244	23rd to 25th September 2001	290,235	128.9
WESTERN	1st Round	308,338	19th to 25th August 2001	356,741	115.7
	2nd Round	308,338	23rd to 25th September 2001	398,020	129.1
National Level	1st Round	1507357	19th to 25th August 2001	1808364	120
	2nd Round	1507357	23rd to 25th September 2001	2041988	135

Source: KEPI NIDS and SNIDs Reports

Table 28; SNIDs Year 2002

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	465,539	17th –23 June 2002	328,319	70.5
	2nd Round	465,539	17th-23rd July 2002	397,460	85.4
COAST	1st Round	50,349	17th –23 June 2002	49,023	97.4
	2nd Round	50,349	17th –23 July 2002	54,329	107.9
EASTERN	1st Round	52,865	17th –23 June 2002	57,865	109.5
	2nd Round	52,865	17th-23rd July 2002	49,711	94
N/EASTERN	1st Round	174,214	17th –23 June 2002	198,721	114.1
	2nd Round	174,214	17th-23rd July 2002	201,518	115.7
R/VALLEY	1st Round	161,504	17th –23 June 2002	143,894	89.1
	2nd Round	161,504	17th-23rd July 2002	118,184	73.2
National	1st Round	904,471	17th –23 June 2002	777,822	86
	2nd Round	904,471	17th-23rd July 2002	821,202	90.8

Source: KEPI NIDS and SNIDs Reports

Table 29; SNIDs in 3 High Risk Districts 2005

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
West Pokot	1st Round	69009	2nd –4th Feb.	67302	98
	2nd Round	69009	26th –28th April	67025	97
Turkana	1st Round	81,495	2nd –4th Feb.	60694	74.5
	2nd Round	81,495	April26th – 28th	84759	104.0
Marsabit	1st Round	22,530	2nd –4th Feb.	18,529	83%
	2nd Round	22,530	April	24,127	108%

Source: KEPI NIDS and SNIDs Reports

5.4.4 Monitoring of NID / SNID quality

Many countries have extensively monitored the quality of supplementary immunization rounds in recent years. Monitors were often in the field for several weeks before, during and after each campaign to monitor SIA process and outcome (post-NID surveys). Please summarize here the most pertinent findings of recent SIA monitoring reports. Attach full reports if appropriate.

evaluation and monitoring reports during the NIDs compiled for supplementary immunization had the following findings;

-The reports indicate that over 80% of children were reached with the OPV antigen ranging from 72%-83% in both rounds.

-House to house strategy was more effective than fixed post

-Good micro planning contributed to successful NIDs

-Effective social mobilization was essential for the successful campaigns

-Being too busy and child being ill were cited as major reasons for not bringing children for immunization

5.4.5 Mopping up activities, maps and summary reports

a) Please include in the following summary table only SIAs as mopping-up activities that were conducted in response to the last known foci of indigenous wild poliovirus; SIAs conducted to boost immunity levels but not to target the last known focis of transmission are SNIDs (include under 5.4.1).

Table 30 : Summary of all mopping-up activities conducted

Year	Date / month conducted	House-to-house imm. used (yes/no)	No. of < 5 yr olds targeted	No. of < 5yr olds immunised	Reported coverage (%)
	No Mop up conducted in the country				

*a)Please attach a map showing areas in which mop-ups were conducted****; Not applicable***

*b)Please attach a summary report of any mop-ups conducted****; Not applicable***

Part 6: LABORATORY CONTAINMENT OF WILD POLIOVIRUSES AND POTENTIALLY INFECTIOUS MATERIALS

As the Global Polio Eradicaton Initiative progresses toward certification of wild poliovirus eradicaton, the safe handling and eventual containment (safe storage) of existing stocks of wild polioviruses has become increasingly important. The control of laboratory stocks of wild poliovirus is essential to the global eradication of poliomyelitis.

Wild poliovirus is currently held in many virological laboratories worldwide, for a diversity of reasons ranging from basic research, to vaccine quality control, to the manufacturing of inactivated polio vaccine (IPV). These poliovirus stocks could present a formidable threat to the ultimate success of the eradication initiative unless strict guidelines for their safe handling and a plan of action for their eventual containment is established and implemented as soon as possible.

Prior to Regional Certification, National Certification Committees should demonstrate to the Regional Commission that any stocks of wild poliovirus infectious and potentially infectious materials at any laboratory in the country have been properly contained.

Purpose

To demonstrate that all laboratory stocks (public and private) of wild poliovirus and potentially infectious materials have been properly contained.

Data Required

Pre-Eradication phase of containment

Three tasks are critical to this phase:

1. Countries must provide an inventory for all National laboratories that maintain or hold stocks of wild polioviruses, infectious or potentially infectious materials.

   The country is in the process of developing an inventory of all laboratories that hold stocks of wild polioviruses, infectious or potentially infectious materials. The following activities have been initiated

   - **National task force appointed**
   - **Survey form was developed**
   - **laboratory survey form was Pre-tested.**
   - **Survey form was accepted by NPCC**
   - **Training manual for laboratory survey was completed and will used to train DDSCs and District Laboratory Technologists who will administer the survey in September 2005.**

2. Laboratories must institute enhanced biosafety level – 2 (BSL-2) procedures for safe handling of all such infectious or potentially infectious materials*.

   Not yet done

3. Countries must begin planning for implementation of biosafety requirements for Post-Global eradication.

   In the process of implementing biosafety requirements for Post-Global eradication.

Completion of all Pre-Eradication containment tasks is a prerequisite for countries to be considered polio free.

Standard Documentation Form #7 :

Containment Activities

7.0 Containment Activities

7.1 Pre-eradication phase

(1) Does the country have any laboratories holding stocks of wild poliovirus, infectious materials or potentially infectious materials? ✔ **yes** / no.

(2) List all these laboratories:

List being compiled with the initiation of NTF activities.

- **-survey form Developed**
- **survey form pre-tested**
- **Training manual for laboratoty survey developed**

(3) Which of the above laboratories listed has biosafety level 2 (BSL 2) facility?

Not yet Established

(4) Is there a functional National Task Force (subcommittee of NCC) for containment of wild polivirus infectious materials or potentially infectious materials? ✔ ***yes***/no

(5) Have all the laboratory stocks been contained at biosafety level 2 (BSL2)?

yes/ ✔ no

Not yet done

(6) *Is there a National report for containment of polioviruses and potentially infectious materials? yes / ✔ **No in the process of developing one**

a) If yes, please attach the full report.

b) If no please explain

The NTF was formed and inaugurated by the minister of health in October 2004.The task force has planned its activities for the coming months.So far it has developed and pre-tested a survey form which will be used to survey the laboratories looking for those containing material of wild polio.The team of staff that will carry out the survey will include district disease surveillance coordinators and Laboratory technologist will be trained using at the end of September using a training manual which wascompleted three weeks ago.

4. SUPPORTING DOCUMENTATION FOR CERTIFICATION OF POLIO ERADICATION.

As noted in the Standard Documentation Forms above, a number of pieces of supporting documentation are required for certification of polio eradication in a country.

The specific supporting documents needed for certification are referred to in the relevant sections of the Standard Documentation Forms and are summarized in the attached checklist. Each item on the checklist has a reference number that relates it to the Standard Documentation Forms.

Additional supporting documents may be submitted at the discretion of the National Certification Committee. The Africa Regional Certification Commission (ARCC) may also request other information upon review of the country documentation presented for certification.

Each country is requested to go through the check-list below to ensure that all the required documentation is forwarded to the ARCC.

SUPPORTING DOCUMENTATION

Checklist of Supporting Documentation for Certification of Polio Eradication

Checklist : Supporting Documentation for Certification of Polio Eradication. The exact details of what is required to be attached is reflected in each section.

NB: PLEASE REMEMBER TO ATTACH ALL DOCUMENTS IN BALD AND ITALICS

Standard Documentation Forms Completed ✔ **yes**/no/NA

Country Background Information

1.1.2 Map(s) of Country ✔ yes/no/NA

History of poliomyelitis cases and wild polioviruses

2.1.1 Bar graph or table of polio incidence: ✔ yes/no/NA

2.1.3 Maps of confirmed poliomyelitis cases since 1997: yes/no/ ✔ NA

2.1.5 Control activities conducted on the last case yes/no/ ✔ NA

2.2.1 National preparedness plan for importation yes/no/NA

2.2.4 Reports of investigation and response following importation yes/no/ ✔ NA

Performance of Surveillance for Polio Eradication

3.3.1(2) Map of distribution of active surveillance sites ✔ yes / no /NA

3.5.2(1) Table with non-polio AFP rate and stool specimen collection rate by appropriate administrative level. ✔ yes/no/NA

3.5.2(2) Shaded country maps showing the AFP rate by appropriate administrative level for each of the previous 3 years. ✔ yes/no/NA

3.5.2 (3) Shaded country maps showing distribution of % of AFP cases with adequate stool specimen for each of the previous 3 years. ✔ yes/no/NA

3.5.3 (2) Report of activities to strengthen surveillance insilent or low performing areas. ✔ yes/no/NA

3.6.2 Line listing of Polio Compatible cases reviewed by the National Polio Expert Committee in the previous 3 years. ✔ yes/no/NA

3.6.4 Spot map of polio compatible cases : yes/no/NA ✔

3.6.7 Summary of special investigation conducted in response to clusters of compatible and/or high-risk AFP cases detected in the previous 3 years. Include map of location of clusters yes/no/ ✔ NA

3.7.1 Report of any retrospective review done ✔ yes/no/NA

Laboratory Activities for Polio Eradication

4.2.6 Summary of polio isolates without intratypic differentiation yes/no/ ✔ NA

Immunisation activities for Polio Eradication

5.2.2 Bar graph and table of national polio immunization coverage ✔ yes/no/NA

5.2.4 Table of OPV3 coverage by appropriate administrative level ✔ yes/no/NA

5.2.5 Shaded map showing districts with OPV3 % coverage. ✔ yes/no/NA

5.3.2 Map showing high-risk areas/location of high-risk groups ✔ yes/no/NA

5.4.2 Table of NIDs coverage by appropriate administrative level ✔ yes/no/NA

5.4.3(b) Map showing geographical areas included in SNIDs ✔ yes/no/NA

5.4.3(c) Table of SNIDs coverage by appropriate 1st administrative level ✔ yes/no/NA

5.4.5 **(**b**)** Map showing geographical areas included in Mop-up immunization activities. Yes/no/ ✔ NA

5.4.5(c) Summary report of mop-ups conducted yes/no/ ✔ NA

7.1(6) Report of Containment activities yes/no/ ✔ NA

ADDITIONAL DOCUMENTATION SUBMITTED BY NPCC

1. NIDS and SNIDS Reports 1996-2005
2. NIDS and SNIDs Evaluation reports
3. Disease Surveillance Review findings in Kenya
4. NPCC and NPEC progress reports
5. Minutes of the NPCC and NPEC deliberations over the years
6. Technical Reports by Provincial disease surveillance teams (PDSTs)
7. Guidelines and Posters on AFP surveillance in Kenya
8. Reports from STOP team members visits to Kenya on Polio Eradication Initiative (PEI)
9. Standard Operating Procedures for AFP surveillance data management
10. Laboratory register extract last polio case in 1984
11. Report of outbreak of Poliomyelitis TypeI in Non human primates

Anexes

Annex1a ;Performance of AFP surveillance by appropriate administrative level **(3.5.1) (1)by Year____2002**

Appropriate administrative level	*Estimated population (<15 yrs)*	*Expected number of AFP cases*	*Total AFP cases reported (<15 yrs)*	*Total number of confirmed polio cases*	*Total number of non-polio AFP cases*	*Non-polio AFP rate (Per 100,000 population <15 yrs)*	*AFP cases with adequate stool samples**	
							Number	*%*
Central	**1,777,727**	**18**	**48**	**0**	**48**	**2.52**	**35**	**73**
Coast	**1,187,295**	**12**	**20**	**0**	**20**	**1.56**	**16**	**80**
Eastern	**2,210,976**	**22**	**49**	**0**	**49**	**2.07**	**35**	**71**
Nairobi	**1,023,082**	**10**	**7**	**0**	**7**	**0.62**	**4**	**57**
North Eastern	**459,279**	**5**	**14**	**0**	**14**	**2.66**	**10**	**71**
Nyanza	**2,096,614**	**21**	**25**	**0**	**25**	**1.11**	**16**	**64**
Rift Valley	**3,335,260**	**33**	**70**	**0**	**70**	**1.94**	**59**	**84**
Western	**1,603,311**	**16**	**19**	**0**	**19**	**1.10**	**16**	**84**
National	**13,693,547**	**137**	**252**	**0**	**252**	**1.71**	**191**	**76**

Annex1b ;Performance of AFP surveillance by appropriate administrative level **(3.5.2) (2) Year____2003**

Appropriate administrative level	*Estimated population (<15 yrs)*	*Expected number of AFP cases*	*Total AFP cases reported (<15 yrs)*	*Total number of confirmed polio cases*	*Total number of non-polio AFP cases*	*Non-polio AFP rate (Per 100,000 population <15 yrs)*	*AFP cases with adequate stool samples**	
							Number	*%*
Central	**1,825,936**	**18**	**42**	**0**	**42**	**2.3**	**39**	**93**
Coast	**1,219,493**	**12**	**22**	**0**	**22**	**1.8**	**16**	**73**
Eastern	**2,270,937**	**23**	**43**	**0**	**43**	**1.8**	**33**	**77**
Nairobi	**1,050,826**	**10**	**12**	**0**	**12**	**1.2**	**9**	**75**
North Eastern	**471,734**	**5**	**31**	**0**	**31**	**6.2**	**24**	**77**
Nyanza	**2,153,471**	**21**	**52**	**0**	**52**	**2.4**	**39**	**75**
Rift Valley	**3,425,708**	**34**	**71**	**0**	**71**	**2.08**	**63**	**89**
Western	**1,646,791**	**16**	**35**	**0**	**35**	**2.18**	**29**	**83**
National	**14,064,896**	**140**	**309**	**0**	**309**	**2.19**	**252**	**82**

Annex1c; Performance of AFP surveillance by appropriate administrative level (3.5.2) (3) Year___2004

Appropriate administrative level	*Estimated population (<15 yrs)*	*Expected number of AFP cases*	*Total AFP cases reported (<15 yrs)*	*Total number of confirmed polio cases*	*Total number of non-polio AFP cases*	*Non-polio AFP rate (Per 100,000 population <15 yrs)*	*AFP cases with adequate stool samples**	
							Number	*%*
Central	**1,393,670**	**14**	**24**	**0**	**24**	**1.71**	**21**	**88%**
Coast	**1,158,458**	**12**	**20**	**0**	**20**	**1.67**	**19**	**95%**
Eastern	**2,157,901**	**22**	**36**	**0**	**36**	**1.63**	**30**	**83%**
Nairobi	**817,043**	**8**	**15**	**0**	**15**	**1.87**	**10**	**68%**
North Eastern	**598,347**	**6**	**25**	**0**	**25**	**4.17**	**21**	**84%**
Nyanza	**2,030,972**	**20**	**33**	**0**	**33**	**1.65**	**33**	**100%**
Rift Valley	**3,241,972**	**32**	**72**	**0**	**72**	**2.25**	**66**	**92 %**
Western	**1,666,740**	**17**	**22**	**0**	**22**	**1.29**	**20**	**91%**
National	**13,065,060**	**131**	**247**	**0**	**247**	**1.88**	**220**	**89%**

* Two stool samples collected 24-48 hours apart, 0-14 days after onset of paralysis, and arriving in the laboratory within 72 hours of shipment with proper documentation, ice or cold ice packs present, and sufficient quantity for laboratory analysis

Annex 2(3.6.3): Polio Compatible Cases

S/N	Epid. Number	Age	Date of onset of paralysis	District. of onset of paralysis	Stool specimen 1st	Stool specimen 2nd	Lab result			60-Day Follow Up			Reasons for classification as compatible	
					Date collected		P1	P2	P3	Residual paralysis (Limb)	No Residual paralysis (Mark X)	Not Done (Mark X)	Polio like paralysis (Mark X)	No Data (Mark X)
1	KEN-CEN-MUR-00-006	4	24/08/2000	Muranga	24/10/2000	25/10/2000	2	2	2	1	N/A	N/A	X	N/A
2	KEN-COA-TAN-00-004		17/07/2000	Tana River	No specimens collected beyond 60 days					1	N/A	N/A	X	N/A
3	KEN-EAS-MAC-00-004	1	15/08/2000	Machakos	No specimens collected					N/A	N/A	N/A	X	X
4	KEN-EAS-THA-01-002	4	08/12/2001	Tharaka	02/01/2002	04/01/2002	2	2	2	1	N/A	N/A	X	N/A
5	KEN-NAI-NAI-01-008	4/12	10/09/2001	Nairobi	01/10/2001	02/10/2001	2	2	2	N/A	N/A	X	N/A	X
6	KEN-NAI-NAI-01-009	3	20/08/2001	Nairobi	20/09/2001	21/09/2001	2	2	2	N/A	N/A	X	N/A	X
7	KEN-NOR-MAN-00-001	2	04/07/2000	Mandera	10/07/2000	10/07/2000	2	2	2	N/A	N/A	X	N/A	X
8	KEN-NOR-MAN-01-007	3	05/08/2001	Mandera	08/09/2001	.	2	2	2	N/A	N/A	X	N/A	X
9	KEN-NOR-WAJ-01-002	7	16/07/2001	Wajir	06/08/2001	07/08/2001	2	2	2	N/A	N/A	X	N/A	
10	KEN-NYA-BON-00-008	1/12	10/11/2000	Bondo	No specimens collected					N/A	N/A	X	N/A	X
11	KEN-NYA-HOM-00-006	11	25/11/2000	Homa Bay	No specimens collected					N/A	N/A	X	N/A	X
12	KEN-NYA-HOM-01-003	9	25/05/2001	Homa Bay	11/07/2001	12/07/2001	2	2	2	1	N/A	N/A	X	N/A
13	KEN-NYA-HOM-01-004	13	12/08/2001	Homa Bay	02/09/2001	03/09/2001	2	2	2	1	N/A	N/A	X	N/A
14	KEN-NYA-MIG-01-007	1	20/10/2001	Migori	12/11/2001	13/11/2001	2	2	2	1	N/A	N/A	X	N/A
15	KEN-RIF-TUR-00-004	3	15/09/2000	Turkana	21/10/2000	22/10/2000	1	2	1	1	N/A	N/A	X	N/A
16	KEN-RIF-TUR-00-005	3	15/09/2000	Turkana	21/10/2000	22/10/2000	2	1	1	1	N/A	N/A	X	N/A
17	KEN-WES-BUN-00-007	6	14/11/2000	Bungoma	01/01/2001	02/01/2001	2	2	2	1	N/A	N/A	X	N/A
18	KEN-WES-KAK-01-006	5	24/10/2001	Kakamega	13/11/2001	14/11/2001	2	2	2	1	N/A	N/A	X	N/A

ANNEX 4a .NIDs coverage by appropriate administrative level conducted 1997 (5.4.2)

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Cov.(%)
Nairobi	1st Round	226,000	9th and 10th August 1997	186,070	82.3
	2nd Round	226,000	13th and 14th Sept.1997	228,980	101.3
Central	1st Round	525,000	9th and 10th August 1997	246,639	47.1
	2nd Round	525,000	13th and 14th Sept. 1997	246,560	47.1
Coast	1st Round	364,000	9th and 10th August 1997	317,932	75.2
	2nd Round	364,000	13th and 14th Sept. 1997	309,062	84.7
Eastern	1st Round	788,000	9th and 10th August 1997	571,966	72.6
	2nd Round	788,000	13th and 14th Sept. 1997	605,428	76.8
N/Eastern	1st Round	116,000	9th and 10th August 1997	65,392	56.4
	2nd Round	116,000	13th and 14th Sept. 1997	68,404	59
Nyanza	1st Round	901,000	9th and 10th August 1997	733,031	81.4
	2nd Round	901,000	13th and 14th Sept. 1997	812,066	90.1
R/Valley	1st Round	1,179,000	9th and 10th August 1997	1,076,534	91.2
	2nd Round	1,179,000	13th and 14th Sept. 1997	1,086,988	92.1
Western	1st Round	643,000	9th and 10th August 1997	540,299	84
	2nd Round	643,000	13th and 14th Sept. 1997	548,325	85.3
National	1st Round	4,742,005	9th and 10th August 1997	3,737,793	78.8
	2nd Round	4,741,000	13th and 14th Sept. 1997	3,905,813	82.3

Source: KEPI NIDS and SNIDs Reports

ANNEX 4a .cont..d NIDs Coverage by appropriate administrative level conducted 1998 (5.4.2)

Appropriate admin. Level	Rounds	No. of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	226,450	15th to 16th August 1998	226,572	100.1
	2nd Round	226,450	12th to 13th September 1998	173,770	76.7
CENTRAL	1st Round	629,795	15th to 16th August 1998	266,293	42.3
	2nd Round	629,795	12th to 13th September 1998	276,542	43.9
COAST	1st Round	412,435	15th to 16th August 1998	334,196	81.0
	2nd Round	412,435	12th to 13th September 1998	345,736	83.8
EASTERN	1st Round	867,215	15th to 16th August 1998	627,902	72.4
	2nd Round	867,215	12th to 13th September 1998	649,456	74.9
N/EASTERN	1st Round	136,325	15th to 16th August 1998	102,264	75.3
	2nd Round	136,325	12th to 13th September 1998	120,059	88.1
NYANZA	1st Round	882,742	15th to 16th August 1998	799,043	90.5
	2nd Round	882,742	12th to 13th September 1998	889,691	100.8
R/VALLEY	1st Round	1,379,430	15th to 16th August 1998	1,106,473	80.2
	2nd Round	1,379,430	12th to 13th September 1998	1,151,834	83.5
WESTERN	1st Round	662,220	15th to 16th August 1998	589,219	89.0
	2nd Round	662,220	12th to 13th September 1998	638,392	96.4
National	1st Round	5,196,612	15th to 16th August 1998	4,052,322	78.0
	2nd Round	5,196,612	12th to 13th September 1998	4,245,480	81.7

Source: :KEPI NIDS and SNIDs Reports

ANNEX 4a . cont..d NIDs coverage by appropriate administrative level conducted 1999 (5.4.2)

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	227,000	23rd to 24th Sept 1999	245,863	108.3
	2nd Round	227,000	27th to 28th November 1999	228,931	100.9
CENTRAL	1st Round	647,054	23rd to 24th Sept 1999	326,102	50.4
	2nd Round	647,054	27th to 28th November 1999	292,228	45.2
COAST	1st Round	425,760	23rd to 24th Sept 1999	347,238	81,6.3
	2nd Round	425,760	27th to 28th November 1999	350,289	82.3
EASTERN	1st Round	892,040	23rd to 24th Sept 1999	648,129	72.7
	2nd Round	892,040	27th to 28th November 1999	651,412	73.0
N/EASTERN	1st Round	119,366	23rd to 24th Sept 1999	76,654	64.2
	2nd Round	119,366	27th to 28th November 1999	92,262	77.3
NYANZA	1st Round	909,000	23rd to 24th Sept 1999	682,097	90.2
	2nd Round	901,184	27th to 28th November 1999	831,977	91.5
R/VALLEY	1st Round	1,434,846	23rd to 24th Sept 1999	1,246,678	86.9
	2nd Round	1,434,846	27th to 28th November 1999	1,190,202	82.9
WESTERN	1st Round	680,609	23rd to 24th Sept 1999	668,851	98.3
	2nd Round	680,609	27th to 28th November 1999	697,501	102.5
National	1st Round	5,335,859	23rd to 24th Sept 1999	4,427,139	83.0
	2nd Round	5,335,859	27th to 28th November 1999	4,427,139	81.2

Source: KEPI NIDS and SNIDs Reports

ANNEX 4a. cont..d NIDs coverage by appropriate administrative level conducted 2000 (5.4.2)

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	299,734	23rd –29th October	289,364	96.5
	2nd Round	299,734	20th –26th November	387,930	129.4
CENTRAL	1st Round	515,896	23rd –29th October	363,848	70.5
	2nd Round	515,896	20th –26th November	440,275	85.3
COAST	1st Round	408,420	23rd –29th October	394,940	96.7
	2nd Round	408,420	20th –26th November	420,125	102.9
EASTERN	1st Round	731,811	23rd –29th October	572,454	78.2
	2nd Round	731,811	20th –26th November	557,240	76.1
N/EASTERN	1st Round	149,568	23rd –29th October	142,884	95.5
	2nd Round	149,567	20th –26th November	162,943	108.9
NYANZA	1st Round	727,645	23rd –29th October	628,946	86.4
	2nd Round	727,645	20th –26th November	769,222	109.4
R/VALLEY	1st Round	1,212,056	23rd –29th October	1,124,346	92.8
	2nd Round	1,212,056	20th –26th November	1,139,491	94
WESTERN	1st Round	618,358	23rd –29th October	579,770	93.8
	2nd Round	618,358	20th –26th November	589,117	95.3
National	1st Round	4,663,387	23rd –29th October	4,096,552	87.8
	2nd Round	4,663,387	20th –26th November	4,493,343	96.4

Source: :KEPI NIDS and SNIDs Reports

ANNEX 4 b. SNIDs coverage by appropriate administrative level conducted 2001 (5.4.2) **Year: 2001**

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	304,815	19th to 25th August 2001	326,814	107.2
	2nd Round	304,815	23rd to 25th Sept. 2001	404,523	132.7
COAST	1st Round	137,318	19th to 25th August 2001	181,935	132.5
	2nd Round	137,318	23rd to 25th Sept. 2001	211,940	154.3
EASTERN	1st Round	46,849	19th to 25th August 2001	49,707	106.1
	2nd Round	46,849	23rd to 25th Sept. 2001	50,124	107.0
N/EASTERN	1st Round	152,102	19th to 25th August 2001	170,974	124.8
	2nd Round	152,102	23rd to 25th Sept. 2001	189,828	124.8
NYANZA	1st Round	332,691	19th to 25th August 2001	441,140	132.6
	2nd Round	332,691	23rd to 25th Sept. 2001	497,318	149.5
R/VALLEY	1st Round	225,244	19th to 25th August 2001	281,053	124.8
	2nd Round	225,244	23rd to 25th Sept. 2001	290,235	128.9
WESTERN	1st Round	308,338	19th to 25th August 2001	356,741	116
	2nd Round	308,338	23rd to 25th Sept. 2001	398,020	129
National	1st Round	1507357	19th to 25th August 2001	1808364	120
	2nd Round	1507357	23rd to 25th Sept. 2001	2041988	135

Source: KEPI NIDS and SNIDs Reports **2001 Campaign Conducted in 30 districts based on; Low routine immunization, High population density& in Border districts of Somalia, Ethiopia and Sudan*

ANNEX 4 b. cont...d SNIDs coverage by appropriate administrative level conducted 2002 (5.4.2)

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
NAIROBI	1st Round	465,539	17th –23 June 2002	328,319	70.5
	2nd Round	465,539	17th – 23 rd July 2002	397,460	85.4
COAST	1st Round	50,349	17th –23 June 2002	49,023	97.4
	2nd Round	50,349	17th – 23 rd July 2002	54,329	107.9
EASTERN	1st Round	52,865	17th –23 June 2002	57,865	109.5
	2nd Round	52,865	17th – 23 rd July 2002	49,711	94
N/EASTERN	1st Round	174,214	17th –23 June 2002	198,721	114.1
	2nd Round	174,214	17th – 23 rd July 2002	201,518	115.7
R/VALLEY	1st Round	161,504	17th –23 June 2002	143,894	89.1
	2nd Round	161,504	17th – 23 rd July 2002	118,184	73.2
National	1st Round	904,471	17th –23 June 2002	777,822	86
	2nd Round	904,471	17th – 23 rd July 2002	821,202	90.8

Source: KEPI NIDS and SNIDs Reports **2002 Polio Campaign conducted during the Measles catch up campaign;*

ANNEX 4. b cont..d SNIDs coverage by appropriate administrative level conducted 2005 (5.4.2)

Appropriate administrative level	Rounds	Number of children <5 yrs targeted	Dates of the NIDs Round	Number of children vaccinated	Coverage (%)
West Pokot District	1st Round	69009	February	67302	98
	2nd Round	69009	April	67025	97
Turkana District	1st Round	81,495	February	60694	74.5
	2nd Round	81,495	April	84759	104.0
Marsabit District	1st Round	22,530	February	18,529	83%
	2nd Round	22,530	April	24,127	108%

Source: KEPI NIDS and SNIDs Reports

Annex 5 : Discarded AFP with Inadequate Specimens and No Follow up or Residual Paralysis

	EPID NO.	Date of onset	Date 2nd stool	Date Follow up	Results on follow up	Main Reasons for Discard
No	**2001**					
1	KEN-EAS-MER-01-002	11/05/2001	29/06/2001	18/01/2002	Died before follow up	Gullain Barre Syndrome
2	KEN-NAI-NAI-01-011	01/09/2001	01/11/2001	03/11/2001	Died before follow up	Medical history Encephalitis
	2002					
8	KEN-NYA-KSM-02-003	19/11/2002	19/12/2002		No follow up	Gullain Barre Syndrome
9	KEN-NYA-KUR-02-002	24/02/2002	24/06/2002		No follow up	Gullain Barre Syndrome
10	KEN-NYA-SIA-02-002	04/07/2002	23/07/2002	17/09/2002	Died before follow up	Disseminated Burkits Lyphoma
	2003					
15	KEN-COA-KIL-03-006	25/12/2003	13/02/2004	16/03/2004	Died before follow up	Medical History TB of Spine
16	KEN-EAS-MWI-03-004	23/05/2003	08/06/2003	14/08/2003	Died before follow up	Menengitis
17	KEN-NAI-EMB-03-002	05/05/2003		16/05/2003	Died before follow up	Menengitis
18	KEN-NAI-MAK-03-001	01/12/2003	17/12/2003	08/04/2004	Lost to follow up	Gullain Barre Syndrome
19	KEN-NYA-KIS-03-002	30/06/2003		05/07/2003	Died before follow up	Gullain Barre Syndrome
	2004					
20	KEN-EAS-MAC-04-008	09/08/2004	25/08/2004	28/10/2004	No follow up	PTB
21	KEN-RIF-BOM-04-002	17/07/2004		17/09/2004	Died before follow up	Gullain Barre Syndrome
22	KEN-RIF-TUR-04-005	10/12/2004	30/01/2005		No follow up	spastic paralyis
23	KEN-RIF-WES-04-002	10/06/2004		18/06/2004	Died before follow up	Medical history from clinical notes

GLOSSARY OF WORDS

1. **Adequate stool specimen :**

   Adequate stool specimens : 2 stool specimens collected 24-48 hours apart, within 14 days of the onset of paralysis, and arriving in the laboratory within 72 hours of shipment with proper documentation, ice or cold ice packs present, and sufficient quantity for laboratory analysis.

   NB : stool samples must be kept under reverse cold chain condition between collection and shipment

2. **Active surveillance :**

   Active surveillance for AFP is defined as regualr visits (i.e. weekly or bi-weekly) by designated person to principal health care facilitieslikely to have cases of acute plio to search for and investigate unreported AFP cases through admission records, physician interviews, paediatric and neurological ward visits, etc.

3. **Reverse cold chain :** is maintaining the cold chain system in the specimen handling and transportation to the laboratory

4. **Polio compatibles :** Refers to Cases of AFP in which a diagnosis for Polio myelitis cannot be excluded with confidence based on the available information in the absence of good viral cultures i.e cases with inadequate specimens(stools collected 14 days after onset or only 1 specimen collected) and no sixty day follow up examination carried out or death or lost before follow up.

5. **Zero reporting :** When no case of AFP is detected, reporting units should still send a monthly report indicating « zero cases ».

6. **AFP contact :** These are stool specimen collected from children below 5 years of age either in the family of a confirmed case of poliomyelitis or from children in the immediate neighbourhood. This could even apply to those who visited at the time the case was taken ill.

*Echantillons de selles des enfants de moins de 5 ans habitant la même maison ou dans le voisinage immédiat. Ces échantillons seront également prélevés chez les enfants qui ont visité la PFA au cours de sa maladie

7. **Mopping up :** Refers specifically to 2 rounds of house-to –house immunization with oral polio vaccine (OPV) targeting all children in a specified age group, regardless of prior immunization status. Mopping-up activities are usually conducted after NIDs, over a wide geographical area (at least multiple districts) to interrupt the last foci of wild poliovirus transmission.

8. **Potential infectious materials:** refers to any materials that may contain or harbour wild polio virus