

Polio outbreak preparedness and response plan

Country: BANGLADESH

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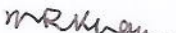
Table of Contents

Endorsement	3-4
Endorsement by Chairperson, NCCPE-Bangladesh.....	3
Endorsement by Director PHC & Line Director MNC&AH	4
1. Introduction.....	5
2. Country Background.....	5-11
2.1. Population demography.....	5
2.2. Surveillance System	6
2.3. Immunization Service.....	7
2.4. Polio history	8
2.5. Population at risk of polio importation.....	9
3. Outbreak of Polio	11-12
3.1. Confirming a poliovirus importation in the country	11
3.2. Reporting a poliovirus importation.....	11
3.3. Activation of the response plan	11
4. Outbreak Response Preparedness Plan	12-16
4.1. National level team	12
4.2. Enhancing AFP Surveillance	12
4.3. Risk assessment and determination of the size of the outbreak.....	13
4.4. Treatment of cases and contacts, rehabilitation	13
4.5. Communication and social mobilization.....	14
4.6. Partner coordination.....	14
4.7. Funding source.....	15
4.7.1. Total amount allocated for the response operation	15
4.7.2. Location of the fund in the government system and responsible officer	15
4.7.3. Mechanism of releasing the fund during outbreak situation	15
4.7.4. Additional funding source if required.....	16
5. Outbreak Control and Containment	16-18
5.1. Determining the vaccine type	16
5.2. Licensing or registration requirement for the vaccine	16
5.3. Vaccine, cold chain and other logistics	16
5.4. Deciding date, age group and areas to be covered in the immunization response	16
5.5. SIA Strategy	17
5.6. Introduction of polio vaccine for the international travelers	17
5.7. Monitoring-Evaluation	17
6. Timeline and Critical Steps.....	18
7. High Quality Surveillance Post Outbreak	19
7. Documentation of Interruption of Polio Transmission	19

Report of Polio outbreak preparedness and response plan, Bangladesh

Bangladesh National Certification Committee for Polio Eradication (NCCPE) critically reviewed the polio outbreak preparedness and response plan in case of any importation of polio virus and/or detection of cVDPV. The NCCPE is confident that Bangladesh will maintain its polio free status with certification standards of AFP surveillance. The committee also convinced that, the polio outbreak preparedness and response plan will be sufficient to respond immediately in case of any importation of wild polio virus and/or detection of cVDPV in order to successfully stop the transmission and contain the outbreak.

Bangladesh NCCPE also thankful to the SEA-RCCPE for providing the support and guidance for preparing the polio outbreak preparedness and response plan for Bangladesh. The NCCPE is optimistic that the region will be certified as polio free in due course of time and would maintain its polio free status till the world becomes polio free.


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Date: 13 February 2014

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- MOH
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1. INTRODUCTION

Bangladesh had been polio free since detection of last indigenous polio case (WPV1) with onset date 22 August 2000. The country was maintaining certification standards of AFP surveillance indicators with the support of WHO-SMO networks. In March 2006, after more than 5 years without polio Bangladesh detected outbreak of wild polio virus (WPV1) following importation from neighboring polio endemic country. During this outbreak Bangladesh detected 18 cases from 12 districts. In response to this outbreak, Bangladesh conducted 6 rounds of NIDs and one round of mop-up in 2006. With these extensive activities coupled with strong routine immunization activities Bangladesh was able to contain the outbreak. The last case of WPV1 following importation was recorded in Bangladesh with onset date 22 November 2006. No WPV3 or VDPV was detected from any areas after 2006.

For more than seven years the certifiable level of AFP surveillance system have not detected any new case, which indicates that it is very likely that Bangladesh has been successful in stopping transmission of imported wild poliovirus. Most probably, any further case of wild poliovirus detected in the future will be caused by an importation. Although incidence of circulating vaccine derived poliovirus (cVDPV) is very rare, cases may be found during the end stage of polio eradication, especially in the pockets where routine OPV3 coverage is relatively low.

Polio is a human disease and it transmits from person to person. Movement of population cannot be stopped, hence some previously polio free countries become re-infected through population movement from polio endemic countries, as happened in Bangladesh in 2006. It is worthwhile to mention that every child will remain at risk until all the countries are polio free. Hence polio free countries like Bangladesh must have an emergency plan to response immediately in order to mitigate and contain polio outbreak if at all in the future.

The polio outbreak preparedness and response plan is intended for national authority to take immediate, prompt and appropriate measures in case of detection of any wild polio virus case or VDPV.

2. COUNTRY BACKGROUND

2.1. Population demography:

Bangladesh is a country in South Asia, bordered by Bay of Bengal, Myanmar and India with a total area of 147,570 sq km.

Most of Bangladesh lies within the broad delta formed by the Ganges and Brahmaputra rivers and is exceedingly flat, low-lying, and subject to annual flooding. The only significant area of hilly terrain, constituting less than one-tenth of the nation's territory, is the Chittagong Hill Tracts Districts in the narrow southeastern panhandle of the country. Small, scattered hills lie along or near the eastern and northern borders with India.

For administrative purposes, the country has been divided into seven divisions (Dhaka, Chittagong, Sylhet, Khulna, Barisal, Rampur and Rajshahi) comprising 64 districts. Districts are further divided into Upazilas (sub-districts), which are 482 in number. Each Upazila has several numbers of unions (average 10; range 5-27) and each union has 3 wards. 11 city corporations and 94 major municipalities administratively represent the urban areas.

Based on the Population Census 2011, considering growth rate 1.37 the projected total population of the country for the year 2013 was 153,904,238 of which approximately 76% live in rural areas. Out of the total population 2.2% under 1 year children (surviving infant) for routine immunization, 10.5% belong to less than 5 years age group for SIAs (NIDs) and 34.6% belong to under 15 years age group children for AFP surveillance.

2.2. Surveillance system:

Bangladesh has established surveillance system and sustaining certification standards AFP surveillance and in case of any importation of wild polio virus will respond as per international requirements.

AFP Surveillance has improved consistently from 1998 through 2013. Bangladesh has achieved and sustaining certifiable standards in terms of 10 performance indicators of AFP surveillance since 2001. The annualized non-polio AFP rate is 2.60 and adequate stool sample collection rate for the year 2013 is 96%¹. At present there are 144 active surveillance sites and 765 passive surveillance sites. WHO-SMOs visit these active sites, at least once in each epidemiological week to find out AFP cases if any and also sensitize health personnel of those facilities. Government health official also sends weekly passive report from all active and passive facilities to district and then to national level. If there are no AFP cases, weekly 'zero' report are sent from all active and passive surveillance sites.

Once any AFP case is detected, government health official and WHO-SMOs do the investigation, ensure collection of stool samples (also contact samples if necessary) including timely shipment to national polio and measles laboratory maintaining reverse cold chain. WHO accredited NPML process and provides result as per WHO standard protocol. In case of any positive isolates of wild polio virus, NPML notify national EPI and also sends part of the original stool sample including the positive isolates to regional reference laboratory in Mumbai, India for further confirmation.

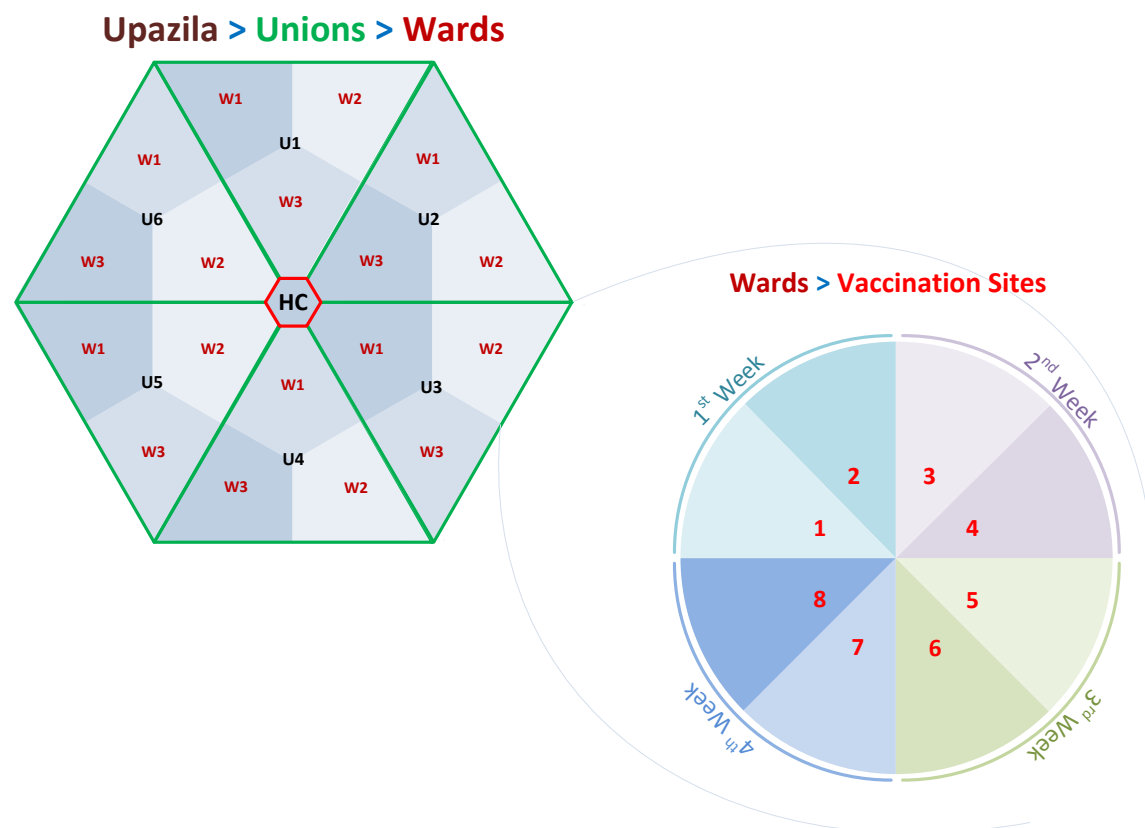
Surveillance data is monitored and analyzed at national as well as sub-national level with the assistance from WHO to monitor surveillance standards and performance indicators in order to guide the programme.

¹ Data as of epidemiological week 04, January, 25, 2014 and NPAFP rate annualized up to EPI Wk 52, 2013.

2.3. Immunization service:

The responsibility for providing Primary Health Care (PHC) including EPI in urban areas has been assigned to the Ministry of Local Government and Rural Development (LGRD) in collaboration with NGOs and the private sector. Two large City Corporations (Dhaka and Chittagong) have been divided into several zones, which are again subdivided into smaller wards. Other city corporations are divided into wards where vaccinations take place according to pre-planned schedule. In urban areas vaccination is mainly done by municipal and city corporation vaccinators and NGO workers.

The present system for providing EPI services in rural areas relies on a system of 64 districts, 482 upazilas, 4,587 unions, 13,761 wards, and 110,000 sub-blocks within the wards. Each sub-block has an EPI outreach site where routine EPI services are provided monthly for a catchment population of approximately 1000 persons. Vaccination at rural wards is provided primarily by the Health Assistant (HA), an employee of health wing of MoH&FW, and is usually assisted by Family Welfare Assistant (FWA), an employee of family planning wing of MoH&FW. The government FWs does registration of newborn, women of child bearing age by visiting households in their own catchment areas. Also conduct health promotional activities like health education session with the mothers/guardians. Currently EPI service provides antigen against nine vaccine preventable diseases throughout the country.



Immunization Service Delivery System Components in Rural Area

Now EPI is considered as a success story of the health services in Bangladesh because of its remarkable progress during the last 20 years. It provides almost a universal access to immunization services since 99% of children less than one year receiving BCG, has increased from a mere 2% in 1985. However, the percentage of the under-one year children receiving all doses of vaccines at the right time and right interval has reached 81% nationally².

Above mentioned human resources in routine immunization are involved with volunteers for conduction National Immunization days.

The Bangladesh Immunization program with the support of development partners has taken a number of measures since EPI intensification during late 1980s to improve utilization of EPI services and injection safety. The key interventions and achievements include:

- Providing training for supervisors and field workers; at all levels in the country;
- Mid-level managers' training - conducted to improve quality service;
- Monthly EPI Review sessions – conducted by Upazila, City Corporation, Municipality and District managers to identify problems and solutions at the local level;
- Strengthening of supportive supervision and monitoring at all level;
- Periodic NT campaigns - conducting in high risk areas;
- Measles catch-up campaign; Measles follow up campaign;
- NIDs/SNIDs/Mop-up for polio;
- Annual CES evaluations - to monitor Division/ District/ City Corporation specific coverage, dropout rates and other performance issues;

The high coverage of routine immunization especially 92% OPV3 (CES 2013) developed high level of immunity in the community to prevent the re-infection/ re-introduction of the polio virus into the population.

2.4 Polio history:

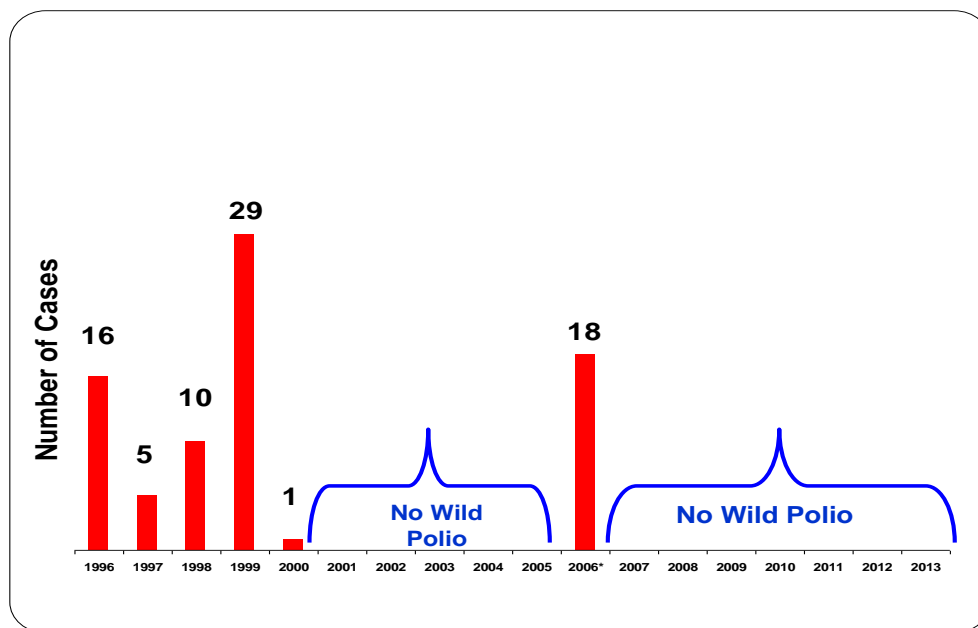
Bangladesh is committed to eradicate poliomyelitis as a co-signatory of 1988 WHA resolution for global polio eradication. The countdown for polio eradication began in 1995, when Bangladesh pioneered in the region by conducting the first NID in March and April 1995 in the country. This historical event was supported by Rotary International, BASICS, USAID, SIDA, the Government of Japan, the US Centres for Disease Control and Prevention (CDC), UNICEF and WHO.

Bangladesh conducted 21 NIDs, one Sub-National Immunization Day (SNID) and one mop-up campaign since 1995 - 2014. In 1996, Bangladesh conducted training for all field

² Source: National Coverage Evaluation Survey 2013.

workers, vaccinators, NGO workers and Mid Level Managers of all upazilas, districts, municipalities and city corporations on AFP and VPDs surveillance. After completion of training AFP, measles and NT surveillance was introduced in the health facilities weekly through active and passive surveillance. EPI also conducted training of 40 key informants from each rural and urban ward for creating awareness among the community, to detect and notify AFP cases to nearby health workers or health facilities in 1997. As a result of accelerated and intensified NIDs and certification standard AFP surveillance, 16 wild polio cases were identified in 1996, 5 cases in 1997, 10 cases in 1998 and 29 cases in 1999. The number of laboratory confirmed cases decreased from 29 in 1999, to only 1 in Dhaka City Corporation in 2000.

The Country interrupted wild poliovirus transmission where the last indigenous case of Wild Polio Virus (WPV) was reported on 22 August 2000. In March 2006, after more than 5 years without polio Bangladesh detected outbreak of wild polio virus (WPV1) following importation from Western Uttar Pradesh (UP) in India. During this outbreak Bangladesh detected 18 cases from 12 districts. In response to this outbreak, Bangladesh conducted 6 rounds of NIDs and one round of mop-up in 2006. With these extensive activities coupled with strong routine immunization activities, Bangladesh successfully contained the outbreak. The last case of WPV1 following importation was recorded in Bangladesh on 22 November 2006. Since then Bangladesh is maintaining polio free status.



Wild Polio Cases by Year (1996-2013)

2.5. Population at risk of polio importation:

Bangladesh has achieved and maintaining certification standards of AFP surveillance indicators. Among the two major primary indicators Bangladesh is maintaining annualized Non-Polio AFP rate more than 2 per 100,000 under 15 years population and rate of adequate stool sample collection is more than 80% since 2001. Timeliness of laboratory result with 14 days up on receipt is more than 80% since National Polio and

Measles Laboratory started new algorithm in 2007. For the year 2013, annualized NPAFP rate, adequate stool sample collection rate and timeliness of laboratory result are 2.60; 96% and 96%³.

Expanded Programme on Immunization (EPI) is the success story of the health sector in Bangladesh. Almost every year country is assessing the coverage of routine vaccination as well as SIAs engaging independent third party. Last three coverage evaluation survey results (2010, 11 & 13) revealed that the routine OPV3 coverage among children less than one year was more than 90%⁴. As a co-signatory of 1988 WHA resolution for global polio eradication, Bangladesh pioneered in the region by conducting the first NID in March and April 1995. Since 1995, Bangladesh has conducted 21 numbers of NIDs, one Sub-National Immunization Day (SNID) and one mop-up campaign. The administrative coverage since 10th NIDs through the most recent 21st NIDs (2013-14) was 100%. Government of Bangladesh usually conducts coverage evaluation survey to assess OPV coverage after NIDs. The coverage for the last five NIDs was more than 95%⁵. Henceforth the high OPV coverage both in routine immunization and NIDs is expected to developed high level of population immunity that may prevent re-infection/re-introduction of polio virus into the community.

Bangladesh has refugee camps near Myanmar boarder. UNHCR with the vaccine and other logistic support from government provides immunization through routine and mass vaccination campaign. People who live around these camps receive immunization services by INGOs and local NGOs with government support. During micro-planning exercise, prior to each NIDs, special plans are in practice in order to vaccinate high/hard to reach population groups like snake-charmers, people living in islands within rivers, minority groups, children of working mothers, floating population including population on the move etc.

To identify population at risk of polio importation, risk analysis is done using “risk analysis for SEAR countries for transmission following WPV importation in to polio free areas” considering three indicators for the year 2013: Susceptibility, Surveillance and Population/Programme Evaluation Indicators (Annex-1). The analysis reveals the country and all seven divisions fall under ‘low risk’ category for polio importation. Furthermore, using Susceptibility and Surveillance indicators, as was suggested by SEARO, district level risk analysis also done which reveals five districts and one city corporation under four divisions fall under ‘medium risk’ category. These are listed in below table:

Sl. No.	Division	District	Risk Category/Level
1.	Chittagong	Rangamati	Medium Risk
2.	Dhaka	Netrokona; Sherpur	Medium Risk
3.	Khunla	Khulna City Corporation (KCC)	Medium Risk
4.	Sylhet	Sylhet (non-cc); Moulvibazar	Medium Risk

³ Data as of epidemiological week 04, January 25, 2014 and NPAFP rate annualized up to EW 52, 2013.

⁴ Source: National Coverage Evaluation Survey for routine vaccination.

⁵ Source: National Coverage Evaluation Survey for NIDs.

The country has international boundaries with India and Myanmar. There are nine land immigration points with the two neighbor countries where all the children aged less than 5 years are administered an additional dose of OPV whenever they cross the immigration points. The international airport in Dhaka also provides additional dose of OPV to children aged less than 5 years. Bangladesh has developed a draft immunization policy where international travelers to and from the polio endemic or re-infected countries will be offered an additional dose of polio vaccine irrespective of age and previous vaccination status.

3. OUTBREAK OF POLIO

3.1 Confirming a poliovirus importation in the country:

Following isolation of any Wild Polio Virus from samples of AFP case, WHO accredited National Polio and Measles Laboratory (NPML) immediately informs Director PHC & Line Director MNC&AH and Programme Manager EPI & Surveillance and WHO. NPML also sends part of the original stool sample including the positive isolates of wild polio virus within 24 hours to regional reference laboratory in Mumbai, India for further confirmation. With the technical assistance from WHO, Director PHC & Line Director MNC&AH and Programme Manager EPI & Surveillance confirms poliovirus importation and immediately inform the honorable minister, MoH&FW, who is also the chairperson of National Steering Committee for Polio Eradication and Measles Control. After quick and critical reviewing of relevant documents the honorable minister, MoH&FW will declare the Polio Outbreak in the country and to launch immediate response. Director PHC & Line Director MNC&AH and Programme Manager EPI & Surveillance also inform other partner organizations, IHR focal person, WHO regional office and others. Bangladesh usually, in situation like this, takes technical assistance and guidance from WHO country office, regional office and head quarter for risk assessment, epidemiological data analysis, nature and type of response, target group selection and extent of areas to be covered.

To rule out of laboratory contamination, NPML follow the WHO laboratory protocol. Major precautionary activities those are strictly considered by NPML are:

- a) Maintain BSL-2 status.
- b) Decontamination of work surface before and after laboratory procedures and lab isolate every day.
- c) Follow personal safety protocol by using PPE.
- d) Decontamination of all unnecessary specimens and isolates by chemical treatment, autoclaving and finally destroy by burning/incineration.
- e) Decontamination of laboratory environment by using ultra-violet light at least an hour after completion of laboratory activities each day.

If a positive wild polio virus is detected the above processes will be reviewed by the virologist with the help of National Certification Committee.

3.2. Reporting a poliovirus importation:

Highly sensitive and efficient surveillance network ensures timely collection and shipment of specimens of confirmed AFP cases maintaining reverse cold chain and in good condition. WHO accredited NPML process the specimen following WHO laboratory protocol and provides results within 14 days up on receipt to the concern health authority including Director PHC, National EPI manager and WHO. In case of any positive result (WPV), Director PHC and National EPI manager in coordination with WHO informs partner organizations including IHR focal point within the country.

3.3. Activation of the response plan:

National Steering Committee under the chairmanship of honorable Minister, Ministry of Health and Family Welfare (MoH&FW) make decision to address the issue. National EPI under the leadership of Director PHC with technical assistance of WHO and in collaboration with other partner organizations initiate implementation of response plan.

4. OUTBREAK RESPONSE PREPAREDNESS PLAN

4.1. National level team:

National steering committee for Polio Eradication and Measles Control (NSC-PE & MC) is the highest level national forum to finalize the strategy of response that includes date of campaign, pre-campaign and implementation activities and funding sources. The national steering committee is composed of members from align ministries, partner and development agencies, associated social organizations, professional organization, national NGOs and different donor agencies etc. There are 58 committee members headed by honorable minister, Ministry of Health and Family Welfare. In addition to NSC-PE & MC there is National Core Committee headed by the Director General of Health Services with 41 members from different government, non-government autonomous bodies, donors and partner organizations. This national core committee develops the guideline for implementing different activities relating to the NIDs or any other forms of SIAs. Besides the aforesaid two committees, there is communication sub-committee of national core committee with 16 members, headed by Programme Manager, EPI & Surveillance. This committee deals with the development of all sorts of communication materials for community sensitization and ensures participation of peoples of all walks of life.

4.2. Enhancing AFP surveillance:

Taking in to consideration the epidemiological aspects of poliomyelitis (about 200 hidden cases around a paralytic patient), the population density and intensity of population movement in Bangladesh it is very important that the news of detection of wild polio virus and/or of cVDPV detection be communicated to all district, city corporations, upazila and municipal managers, to all surveillance units and to all stakeholders including the pediatricians, neurologists and other clinicians. Being aware about the importation or detection of cVDPV should encourage them to be more vigilant and to report and investigate all cases of AFP, which may or may not be linked to the

index case. Active search for new cases of AFP, especially in the area of immunization response, which takes place in the district of the index case and in the surrounding districts, may be coupled with the mop-up campaign itself.

- All cases of AFP will be immediately investigated and two stool samples will be collected from each case for virus culture at the National Polio Laboratory according to the WHO standard protocol. Any specimen positive for poliovirus will further be evaluated at the reference laboratory.
- Stool samples from at least 200 healthy contacts of the index case, 0-14 years of age, will be obtained within 72 hours after detection of the wild poliovirus and/or cVDPV, and before providing OPV.
- District and national staff begin immediate enhanced active surveillance by visiting all districts surrounding the case(s).
 - Conduct active searches by reviewing records and interviewing staff for unreported AFP cases at health facilities, beginning at pediatric departments, emergency rooms, neurology and medicine departments of hospitals.
- Monitoring of reports at national level.
 - Daily telephone reports from districts surrounding case.
 - Weekly telephone and written reports from all districts; district reports must include all upazilas and municipalities.
 - Weekly review of situation by experts using mapping and other means of actively documenting the extent of the surveillance response.

4.3. Risk assessment and determination of the size of the outbreak:

For risk assessment and determination of the outbreak, surveillance data to be carefully reviewed and in depth investigation of the outbreak including collection of epidemiological information to be carried out. Extensive additional AFP/polio case search to be done in and around the community, health facilities both retrospectively and prospectively. To identify low grade transmission, if any, contact specimens to be collected as per national surveillance guideline.

Bangladesh usually, in situation like this, takes technical assistance and guidance from WHO country office, regional office and head quarter for risk assessment, epidemiological data analysis, nature and type of response, target group selection and extent of areas to be covered.

4.4. Treatment of cases and contacts, rehabilitation:

Specific therapeutic techniques are being used from the earliest stages of poliomyelitis to minimize muscle paralysis and disability. Treatment is targeted to maintain and restore as much muscle strength as possible in the affected limbs and will benefit the child for the rest of the life. For recent infected cases, health personnel also explain to the family that proper positioning and movement of the affected limbs several times

each day will not only prevent deformities but can also help the child's limbs to get stronger.

4.5. Communication and social mobilization:

Social mobilization and advocacy take place at national, divisional, district, city corporation, upazila, municipality and union level. To promote the SIA/Mop-up campaign and to encourage full participation of National and local leaders, teachers, students, families and individuals, mass communication as well as person-to-person communication technique will be used. Following activities will be carried out before the supplementary immunization activity:

- a. Radio and television spots will be developed and aired as well as newspapers advertisement.
- b. Inter-personal communication at household level during house to house visits to communicate the campaign date and identify and register the target children for the campaign.
- c. Advocacy meeting with Union Parishad member, local and religious leaders to ensure participation and also to mobilize local resource such as volunteers and facilitation of transportation of logistics and materials.
- d. Involve the NGOs workers, social clubs, civil society organizations like scouts and adolescent groups for community mobilization.
- e. Miking before and on the day of supplementary immunization activities using vans, rickshaws and mosque miking.
- f. Banners and Moni flag at the vaccination sites for easy identification of sites.
- g. In any resistant family and community, field workers, supervisors and local health manager should visit and take special initiative to ensure their participation.
- h. Local level rally and other cultural activities will be undertaken to motivate the community people.

Experience from previous NIDs and Mop Up-up campaigns have shown that interpersonal communication is an effective strategy for reaching families and individuals. Special focus will be given to train the community volunteers to disseminate key messages to their community, families and friends.

4.6. Partner coordination:

Immediately after notification of wild polio virus, the Ministry of Health and Family Welfare (MOH&FW) / national EPI should inform the national and international partner agencies about the importation. The ministry of health should organize an emergency meeting with the partner agencies to finalize the action plan to interrupt the transmission of polio virus. The MOH&FW/ national EPI in consultation with partner agencies should decide on the following issues:

- a. Level of supplementary immunization and number of rounds of SIAs

- b. Duration of SIAs from the identification of index case based on expert opinion and type of vaccine to be used (mon-valent/tri-valent)
- c. Ensure vaccine availability
- d. Ensure additional funding source from development partners
- e. Ensure logistics and communication materials
- f. Arrangement of Operational cost
- g. Management of human resources
- h. Post campaign monitoring of the situation by strengthening surveillance-whether virus circulation stopped or not

If the index case is in a bordering district, the authorities in the neighboring country and the international agencies like WHO, UNICEF should be informed immediately so that mop-up campaigns can be planned simultaneously across the border.

4.7. Funding source:

Budget for mop-up in case of wild polio virus outbreak due to importation or detection of cVDPV is included in the MNC&AH operation plan under existing HPNSDP of MoH&FW for two financial years (2013-14 and 2014-15). Approximately 94% of the total cost would be provided by the government of Bangladesh and development partners like WHO, UNICEF would contribute about 6%.

4.7.1. Total amount allocated for the response operation:

Total amount allocated is Tk332,580,000.00 (Three Hundred and Thirty-two Million Five Hundred and Eighty Thousand BDT); equivalent to USD 4,308,031.00 @ the conversion rate Tk77.20. Government allocation is Tk312,580,000.00 (Three Hundred and Twelve Million Five Hundred and Eighty Thousand BDT); equivalent to USD 4,048,964.00 @ the conversion rate Tk77.20. Another Tk20,000,000.00 (Twenty Million BDT); equivalent to USD 259,067.00 @ the conversion rate Tk77.20 is expected to be contributed by the development partners like WHO, UNICEF. This is for each financial year as reflected in the MNC&AH operation plan under existing HPNSDP of MoH&FW for two financial years (2013-14 and 2014-15).

4.7.2. Location of the fund in the government system and responsible officer:

Fund is in the MNC&AH operation plan under existing HPNSDP of MoH&FW for two financial years (2013-14 and 2014-15). Director PHC and Line Director MNC&AH is the officer concern of this operational plan.

4.7.3. Mechanism of releasing the fund during outbreak situation:

As per approved outbreak response plan and events budget is allocated for sub-national level health authorities and accordingly fund is transferred from national level to sub-national level.

4.7.4. Additional funding source if required:

In case of additional fund requirement government request the development and partner organizations like WHO, UNICEF, Rotary International etc.

5. OUTBREAK CONTROL AND CONTAINMENT

5.1. Determining the vaccine type:

Considering serotype of virus causing the outbreak, type-specific vaccine will be used for the outbreak response. In the event type specific vaccine is not available bivalent or trivalent vaccine will be used. The decision will be taken by Technical sub-committee of National Steering Committee in collaboration with WHO.

5.2. Licensing or registration requirement for the vaccine:

- a. Vaccine is procured by UNICEF
- b. WHO pre-qualified vaccines when procured by UNICEF do not need to undergo country's usual licensure process for drugs and medicines and is allowed to use for the national immunization programme.

5.3. Vaccine, cold chain and other logistics:

A working committee should be formed that composed of experts from EPI, UNICEF and WHO immediately, which would be known as "**Emergency Response Committee for poliovirus importation and cVDPV.**"

- As a first step, the Committee prepares a contingency plan, budget, inventory of cold chain equipments and makes a provision of adequate OPV supply ready for such an emergency involving all districts with a target of 20 million children. An operational guide along with necessary cold chain equipments, logistics like forms, tally sheets and communications materials also designed and kept ready.
- This committee prepares an estimate of OPV needed for campaign and ensures availability of this OPV. Vaccines to be procured through UNICEF within 15 days at national level.
- OPV to reach the target districts/ City Corporation one week prior to the campaign. EPI should keep a ready stock of needed OPV at the central cold room.
- Logistics to the upazilas/municipalities/ city corporations should reach within 1 week of confirmation of the case. To ensure this, EPI should develop necessary tally forms, checklists and a simple guide book and keep ready for printing on a short notice.

5.4. Deciding date, age group and areas to be covered in the immunization response:

National steering committee, headed by honorable minister, Ministry of Health and Family Welfare decide about the date of the campaign. An expert group (national and international) also helps national team in risk assessment, epidemiological data analysis

to determine time to respond, type and nature of response (type of vaccine to be used, number of rounds, target population, extent of areas to be covered etc.).

A large-scale intensive house-to-house mop-up immunization campaign will immediately be planned and implemented in the district with the index case and in all the surrounding districts as well, to administer one additional OPV dose to all children less than 5 years irrespective of their previous vaccination status in each of the three rounds, which will be held with an interval of at least 4 weeks.

Additionally AFP surveillance data will be analyzed and routine immunization coverage, especially OPV3 coverage, will be reviewed to determine vulnerable age group and extent of area to be covered in the immunization response.

5.5. SIA Strategy:

Bangladesh implements SIAs over a period of five days which is a combination of fixed post and house-to-house search for missed children. In the first day of SIAs OPV is administered at fixed post followed by four days house-to-house (child-to-child) search is carried out. In addition special teams and vaccination sites are operated for travelling population, children of working mothers/parents. Three rounds of SIAs will be conducted with 4 weeks interval. Additional rounds may be considered assessing the situation in collaboration with WHO and technical expert group (national and international).

5.6. Introduction of polio vaccination for the international travelers:

Currently Bangladesh does not have plan for polio vaccination requirement for international travelers. However, the country has nine land immigration points with the two neighboring countries where all the children aged less than 5 years are administered an additional dose of OPV whenever they cross the immigration points. The international airport in Dhaka also provides additional dose of OPV to children aged less than 5 years.

Bangladesh has developed a draft immunization policy where international travelers to and from the polio endemic or re-infected countries will be offered an additional dose of OPV irrespective of age and previous vaccination status.

In situation like polio outbreak following WPV importation and/or detection of cVDPV, to mitigate the risk of further spread in other polio free countries, Bangladesh will offer an additional dose of OPV to all international travelers from within the country or outside irrespective of age and previous vaccination status.

5.7. Monitoring-Evaluation:

Independent Observers Checklists will be used by Independent supervisory staff to conduct Child to Child search Surveys among hard to reach populations. The purpose of these surveys is to identify pockets of unvaccinated children. At least seven children of border or hard-to-reach houses with children <5 years old will be surveyed in a sub-

block/area where Child-to-Child search should have already been conducted according to micro plan. If more than two unvaccinated children are identified in an area, unvaccinated children will be referred to a health post for immunization.

A short pre-campaign check lists country use in NIDs will be used to assess the pre-campaign activities including micro-plan, logistics and cold chain status. A supervisory check list will be used by the 1st line supervisors on the day of SIAs and child to child search to assess number of OPV drops provided stage of VVM, status of icepacks and organization of sessions. If problems are identified then correction will be made immediately.

During the campaign, Rapid Convenient Assessment (RCA) will be done using simple RCA form that was during the NIDs and other forms of SIAs.

After the completion of the SIA national wide coverage evaluation survey will be conducted to evaluate the SIA coverage.

6. TIMELINE AND CRITICAL STEPS

Sl. No.	Activity	Timeline	Responsibility
1	Epidemiological Investigation: <ul style="list-style-type: none"> Active case search Stool samples from healthy contacts Review by National Expert Committee 	Within 72 hrs of notification	GoB; WHO; UNICEF
2	Issuance of Nationwide Alertness of Polio Outbreak	4 th day of notification	GoB
3	Core Committee Meeting to: <ul style="list-style-type: none"> Identify and allocate funding Vaccine procurement 	5 th day of Notification	GoB; WHO; UNICEF
4	National Advocacy Meeting	6 th day of notification	GoB; WHO; UNICEF
5	Divisional/ City Corporation/ District/ Zone/ Upazila/ Municipality Level Advocacy Meeting	8 th -15 th day of notification	GoB; WHO; UNICEF
6	Upazila/ Zone/ Municipality (HWs & Volunteers) Orientation & Planning Meeting including finalization of Micro-planning	14 th -22 nd day of notification	GoB
7	Interpersonal Communication, Miking	18 th -27 th day of notification	GoB
8	National and District Press Briefing	22 nd -24 th day of notification	GoB; WHO; UNICEF
9	Inauguration of Campaign at National Level	27 th day of notification	GoB
10	NID for Polio	28th day of notification	GoB
11	House to House; Child to Child search for missed children	29 th -32 nd day of notification	GoB

7. HIGH QUALITY SURVEILLANCE POST OUTBREAK

Government health official and WHO-Surveillance Medical Officers (SMO) are carrying out AFP surveillance. Currently there are 144 active surveillance sites and 602 passive surveillance sites. WHO-SMOs visit these active sites, at least once in each epidemiological week, to find out AFP cases, if any and also sensitize health personnel of those facilities. Government health official also sends weekly passive report from all active and passive facilities to district and then to national level.

Once any AFP case is detected, government health official and WHO-SMOs do the investigation, ensure collection of stool samples (also contact samples if necessary) including timely shipment to national polio and measles laboratory maintaining reverse cold chain. WHO accredited NPML process and provides result as per WHO standard protocol. If any positive isolates, NPML notify national EPI and WHO; also sends part of original stool sample and positive isolates to regional reference laboratory in Mumbai, India.

Surveillance data is monitored at national as well as sub-national level with assistance from WHO to monitor surveillance data and analyze surveillance indicators.

At present WHO is providing resources required to maintain the surveillance structure and is in a transitional stage where government is taking over the responsibility gradually. However, during any outbreak situation following importation or detection of cVDPV WHO would provide necessary support to strengthening surveillance network.

8. DOCUMENTATION OF INTERRUPTION OF POLIO TRANSMISSION

An equally important part of the response to imported wild poliovirus is the documentation of the interruption of transmission of wild poliovirus.

As the detection of any wild poliovirus is considered a national emergency, detailed and comprehensive documentation is required to describe the epidemiological background, findings of case investigation and surveys including laboratory results, description of immunization response and results of enhanced surveillance.

The report will be completed by national EPI programme. This will be reviewed by the National Certification Committee for Polio Eradication (NCCPE).