Polio Eradication and AFP surveillance Guideline

For Medical Officer

Central Epidemiology Unit

Department of Health

Ministry Of Health

16.1.16

Content

Abbreviation	
AFP	Acute Flaccid Paralysis
CDC	Centers for Disease Control and Prevention, USA
CFR	Case-fatality Ratio (or rate)
CPE	Cytopathic Effect
CSF	Cerebrospinal Fluid
DOH	Department of Health
DTR	Deep Tendon Reflexes
EMG	Electromyography
EPI	Expanded Program Of Immunization
EPID	Number “Epidemiological” number (AFP case identification number)
ERC	Expert Review Committee (for case classification)
GBS	Guillain Barré Syndrome
GPEI	Global Polio Eradication Initiative
IPV	Inactivated Polio Vaccine
ITD	Intratypic Differentiation
MO	Medical Officer
MOH	Ministry of Health
NCCPE	National Committee For The Certification Of Polio Eradication
NCV	Nerve Conduction Velocity
NIDs	National Immunization Days
NPEV	Non-polio Enteroviruses
OPV	Oral Polio Vaccine
ORI	Outbreak Response Immunization
PCR	Polymerase Chain Reaction
PEI	Polio Eradication Initiative
RHC	Rural Health Center
RSO	Regional Surveillance Officer
RU	RU Reporting Unit
SC	Sub Center
SEARO	South East Asia Regional Office (WHO)
SHU	Station Health Unit
SIA	Supplemental Immunization Activities
SNIDs	Sub-National Immunization Days
TCG	Technical Consultative Group (South East Asia Region)
TM	Transverse Myelitis
TN	Traumatic Neuritis
UNICEF	United Nations International Children’s Emergency Fund
VAPP	Vaccine Associated Paralytic Polio
VPD	Vaccine Preventable Disease
VVM	Vaccine Vial Monitor
WHO	World Health Organization
WPV	Wild Poliovirus

Polio Eradication and AFP surveillance Guideline

Poliomyelitis (Polio) is a crippling and potentially fatal infectious disease. There is no cure, but there are safe and effective vaccines. The strategy to eradicate polio is therefore based on preventing infection by immunizing every child until transmission stops and the world is polio-free. The goal of global eradication of poliomyelitis is defined as there is no cases of clinical poliomyelitis associated with wild poliovirus, and no wild polioviruses found worldwide despite intensive efforts to do so. Polio is one of only two diseases currently the subject of a global eradication program, the other being Guinea worm disease. So far, the only diseases completely eradicated by humankind are smallpox, declared so, in 1980 and rinderpest, likewise, in 2011.

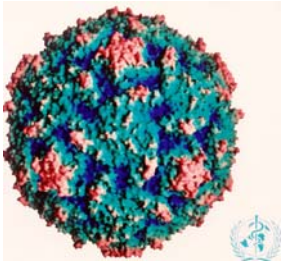
I. Epidemiology of Poliomyelitis

1.1 Causative Agent

The disease Polio is a highly infectious disease caused by a virus, a member of the enterovirus subgroup, family Picornaviridae. It invades the nervous system and can cause irreversible paralysis in a matter of hours. There are three poliovirus serotypes (P1, P2, and P3). And there is minimal heterotypic immunity (i.e immunity to one serotype does not produce significant immunity to the other serotypes.) The poliovirus is rapidly inactivated by heat, formaldehyde, chlorine, and ultraviolet light.

Poliovirus

- Enterovirus (RNA)
- Three serotypes: 1, 2, 3
- Minimal heterotypic immunity between serotypes
- Rapidly inactivated by heat, formaldehyde, chlorine, ultraviolet light



1.2 Pathogenesis

The virus enters through the mouth, and primary multiplication of the virus occurs at the site of implantation in the pharynx and gastrointestinal tract. The virus is usually present in the throat and in the stool before the onset of illness. One week after onset there is less virus in the throat, but virus continues to be excreted in the stool for several weeks. The virus invades local lymphoid tissue, enters the bloodstream, and then may infect cells of the central nervous system. Replication of poliovirus in motor neurons of the anterior horn and brain stem results in cell destruction and causes the typical manifestations of poliomyelitis.

1.3 Transmission

Polio is spread through person-to-person contact. When a child is infected with wild poliovirus, the virus enters the body through the mouth and multiplies in the intestine. It is then shed into the environment through the faeces where it can spread rapidly through a community, especially in situations of poor hygiene and sanitation. If a sufficient number of children are fully immunized against polio (Herd immunity), the virus is unable to find susceptible children to infect, and dies out. Young children who are not yet toilet-trained are a ready source of transmission, regardless

of their environment. Polio can be spread when food or drink is contaminated by faeces. There is also evidence that flies can passively transfer poliovirus from faeces to food.
Most people infected with the poliovirus have no signs of illness and are never aware they have been infected. These symptomless people carry the virus in their intestines and can "silently" spread the infection to thousands of others before the first case of polio paralysis emerges. For this reason, WHO considers a single confirmed case of polio paralysis to be evidence of an epidemic – particularly in countries where very few cases occur.

1.4 The incubation period for nonparalytic poliomyelitis is 3-6 days. For the onset of paralysis in paralytic poliomyelitis, the incubation period usually is 7 to 21 days (range 3-35 days).The response to poliovirus infection is highly variable and has been categorized on the basis of the severity of clinical presentation.

1.5 Outcomes of poliovirus infection

Outcome	Proportion of cases[1]
No symptoms	72%
Minor illness(abortive poliomyelitis)	24%
Nonparalytic aseptic meningitis	1–5%
Paralytic poliomyelitis	0.1–0.5%
— Spinal polio	79% of paralytic cases
— Bulbospinal polio	19% of paralytic cases
— Bulbar polio	2% of paralytic cases

Asymptomatic

Most infected people (90%) have no symptoms or very mild symptoms and usually go unrecognized
Up to 72% of all polio infections in children are asymptomatic.

Abortive poliomyelitis

Infected persons without symptoms shed virus in the stool and are able to transmit the virus to others. Approximately 24% of polio infections in children consist of a minor, nonspecific illness without clinical or laboratory evidence of central nervous system invasion. This clinical presentation is known as abortive poliomyelitis, and is characterized by complete recovery in less than a week. This is characterized by a low grade fever and sore throat.

Nonparalytic aseptic meningitis (symptoms of stiffness of the neck, back, and/or legs), usually following several days after a prodromal similar to that of minor illness, occurs in 1%–5% of polio infections in children. Increased or abnormal sensations can also occur. Typically these symptoms will last from 2 to 10 days, followed by complete recovery.

Paralytic polio

Fewer than 1% (0.1-0.5%) of all polio infections (One in 200-1000 infections) in children result in flaccid paralysis. Paralytic symptoms generally begin 1 to 18 days after prodromal symptoms and progress for 2 to 3 days. Generally, no further paralysis occurs after the temperature returns to normal. The prodromal may be biphasic, especially in children, with initial minor symptoms separated by a 1- to 7-day period from more major symptoms. Additional prodromal signs and symptoms can include a loss of superficial reflexes, initially increased deep tendon reflexes and severe muscle aches and spasms in the limbs or back. The illness progresses to flaccid paralysis with diminished deep tendon reflexes, reaches a plateau without change for days to weeks, and is usually asymmetrical. Strength then begins to return. Patients do not experience sensory losses or changes in cognition. Many persons with paralytic poliomyelitis recover completely and, in most, muscle function returns to some degree. Weakness or paralysis still present 12 months after onset is usually permanent.

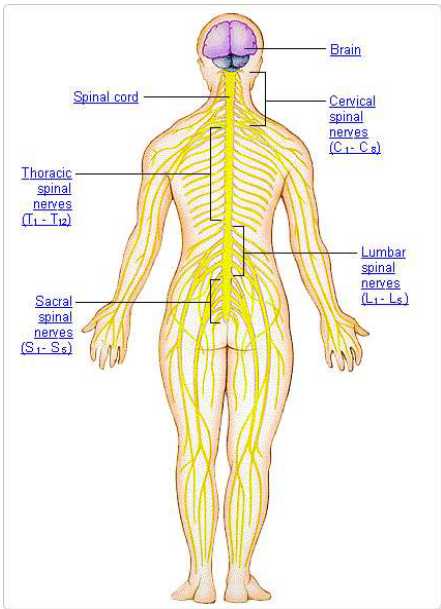
Paralytic poliomyelitis is classified into three types, depending on the level of involvement. Spinal polio is most common, and during 1969–1979, accounted for 79% of paralytic cases. It is characterized by asymmetric paralysis that most often involves the legs. Bulbar polio leads to weakness of muscles innervated by cranial nerves and accounted for 2% of cases during this period. Bulbospinal polio, a combination of bulbar and spinal paralysis, accounted for 19% of cases.

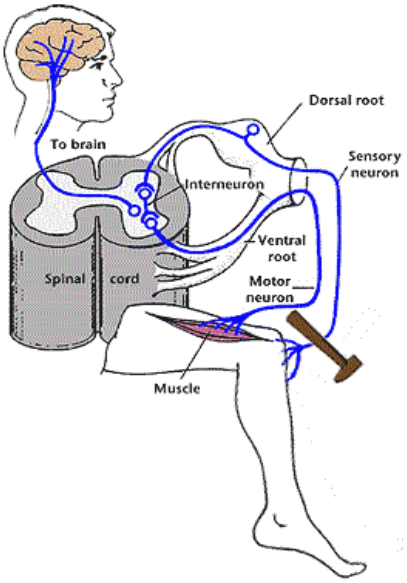
Paralytic poliomyelitis would be occurred by the virus entering the blood stream and invading the central nervous system. As it multiplies, the virus destroys the nerve cells that activate muscles. The affected muscles are no longer functional and the limb becomes floppy and lifeless – a condition known as acute flaccid paralysis (AFP). All cases of acute flaccid paralysis (AFP) among children under fifteen years of age are reported and tested for poliovirus within 48 hours of onset.

The spinal form may present with: fever; meningeal signs; weakness of the extremities; and asymmetrical flaccid paralysis, most frequently of the lower limbs.

Bulbar polio More extensive paralysis, involving the trunk and muscles of the thorax and abdomen, can result in quadriplegia. The bulbar form may present with: pharyngeal paralysis, with accumulation of secretions, inability to swallow and sometimes respiratory arrest. When poliencephalitis occurs, seizures and spastic paralysis may be present.

In the most severe cases **(bulbar polio),** poliovirus attacks the nerve cells of the brain stem, reducing breathing capacity and causing difficulty in swallowing and speaking. Among those paralyzed, 5% to 10% die when their breathing muscles become immobilized





1.6 Reservoir

Humans are the only known reservoir of poliovirus, which is transmitted most frequently by persons with inapparent infections. There is no asymptomatic carrier state except in immunodeficient persons.

1.7 Temporal Pattern

Polio virus infection typically peaks in the summer months in temperate climates. There is no seasonal pattern in tropical climates.

1.8 Communicability

Poliovirus is highly infectious with seroconversion rates among susceptible household contacts of children nearly 100,and greater than 90% among susceptible household contacts of adults. Person infected with poliovirus are most infectious from 7 to 10 days before and after the onsets of symptom , but polio virus may be present in the stool from 3 to 6 weeks.

1.9 Immunity

All unimmunized persons are susceptible to poliomyelitis. Epidemiologic evidence shows that infants born to mothers with antibodies are protected naturally against paralytic polio for a few weeks. However, any immunity conferred during the early neonatal period is short lived highlighting the importance of OPV immunization as early as possible in the newborn. Immunity is obtained through infection with the wild virus and/ or through immunization. Immunity following natural infection (including inapparent and mild infections) or a completed series of immunizations with live oral polio **vaccine (OPV) results in both humoral and local intestinal cellular responses**. Such immunity persists for many years and can serve to block infection with subsequent wild viruses. **Vaccination with the inactivated poliovirus vaccine (IPV) confers humoral immunity, but relatively less intestinal immunity; thus, vaccination with IPV does not provide resistance to carriage and spread of wild polio virus in the community**. There is no cross-immunity between poliovirus types – immunity is type specific.

1.10 CFR

The death-to-case ratio for paralytic polio is generally 2%‑5% among children and up to 15%‑30% for adults (depending on age). It increases to 25%‑75% with bulbar involvement.

1.11 Diagnosis:

- Clinical suspicion

- Stool: Recommended in every case of AFP. Virus usually can be found in the feces from onset to up to 8 or more weeks after paralysis, with the highest probability of detection during the first 2 weeks after paralysis onset.
- Isolation of wild poliovirus from stool is the recommended method for laboratory confirmation of paralytic poliomyelitis

- Cerebrospinal Fluid(CSF): Not recommended for purposes of surveillance. Not likely to yield virus, and therefore, its collection is not recommended for culture . However, the CSF cell count, gram stain, protein, and glucose may be very useful in eliminating other conditions that cause AFP.
  CSF leukocytosis is seen the acute phase, elevated protein may also be seen

- CBC shows leukocytosis Not recommended for purposes of surveillance

1.12 Treatment/ Rehabilitation Of Children With Paralytic Poliomyelitis

Mainly supportive treatment and specific therapeutic techniques should be used from the earliest stage of poliomyelitis to promote recovery, to minimize residual muscle paralysis and disability.

Treatment of the child with paralytic poliomyelitis varies with stage of illness and the severity of paralysis. Children with bulbospinal polio and respiratory paralysis would require hospitalization.

In acute stage children with isolated limb/limbs paralysis can be managed at home.

- They should be advised complete rest, proper positioning of the affected limb and passive range of movement at the joints. Massage and intramuscular injection should be avoided during acute phase of illness. Complete bed rest is essential during acute phase to avoid stress on the paralyzed muscles.
- Warm moist fomentations can be given with soft towels, dipped in warm water & squeezed 2 -3 times/ day for 10-15 minutes each time to relieve pain and spasms.
- Analgesics can also be given to relieve pain and fever. Passive range of movements of all the joints of affected limb/limbs should be given 2 - 3 times / day for 10 times at each joint to prevent joint stiffness. This also helps to stimulate proprioceptive impulses from muscles and tendons thus helping improvement in muscle power.
- As the acute phase of illness subsides, recovery in muscle power is helped by giving physiotherapy in form of active exercises aimed at strengthening weak muscle groups, improvement of functional skills of the child, helping ambulation and prevention of deformities. Physiotherapy plays an important role in management of children during recovery and post polio residual paralysis stage.
- Some children with fixed deformities and contractures may require orthopedic surgery.
- Medical officer can play an important role in advising simple supportive measures in acute stage of illness, which would go a long way to help in prevention of deformities.
  .

1.13 POLIO VACCINES

There are currently two effective polio vaccines, the inactivated poliovirus vaccine (IPV), which was the first vaccine to become available in 1955, and the live attenuated oral polio vaccine (OPV), which was used in mass campaigns in 1959. In developing countries OPV is the vaccine

of choice, not only because of ease of administration but also because it simulates natural infection, induces both circulating antibody and intestinal immunity, and by secondary spread, probably protects susceptible contacts.

OPV is the vaccine recommended for polio eradication

It has been well documented that the use of OPV can successfully interrupt wild poliovirus transmission in both industrialized and developing countries. IPV protects against clinical disease and suppresses pharyngeal excretion of the virus, but has less of an effect on intestinal excretion. In addition, logistic considerations such as the higher cost of IPV, requirement for injection supplies and equipment and waste disposal, and the need for highly trained personnel make IPV less practical for mass campaigns.

The experience in three of the world's six WHO Regions (the Americas, the European and the Western Pacific Regions) shows that OPV is the right choice for stopping wild polio virus transmission. Polio can be eradicated by carrying out mass campaigns to supplement routine vaccine delivery and by placing added emphasis on reducing missed opportunities to a minimum. Under ideal conditions in temperate countries a primary series of three doses of OPV produces seroconversion to all three virus types in more than 95% of vaccine recipients.

Review of data from developing countries has shown that after 3 doses of trivalent OPV-seroconverting with rates of

73% for type 1

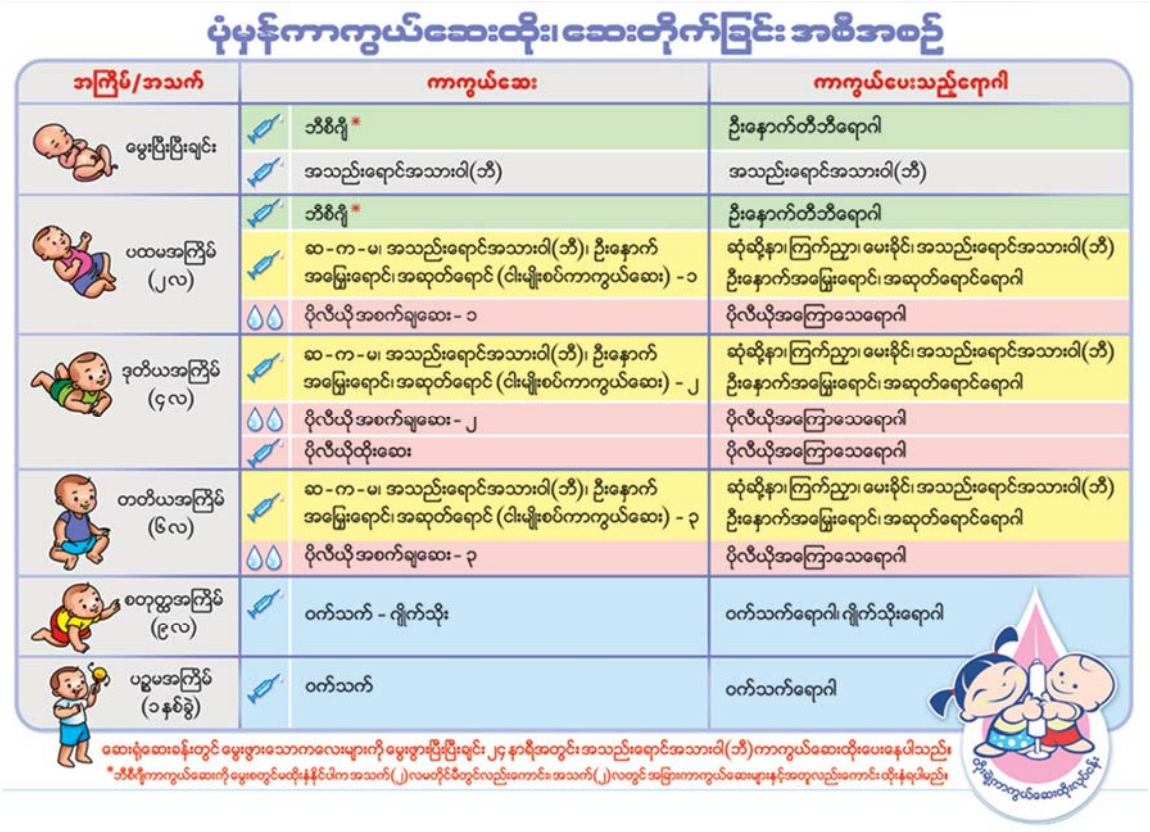
90% for type 2 and

70% for type 3

there is a wide variation in the percentage of children seroconverting with rates of 73% for type 1,. This decrease may be due to recurrent diarrhoeal infections and malnutrition and other factors.

To ensure that all children develop immunity to all three poliovirus serotypes, all <5 years age group of children should receive all doses of OPV that are offered through the routine EPI and through all supplemental Immunization rounds.

Recommended Schedule in new routine EPI schedule



Age	Vaccine	Disease preventing
At birth	BCG* HepB	TB Meningitis Hepatitis B
First visit (2 months)	BCG* Hib containing Pentavalent Vaccine 1 OPV1	TB Meningitis Hepatitis B Diphtheria, Pertussis, Tetanus, Bacterial meningitis , Pneumonia Paralytic poliomyelitis
Second Visit (4 months)	Hib containing Pentavalent Vaccine 2 OPV2 IPV	TB Meningitis Hepatitis B Diphtheria, Pertussis, Tetanus, Bacterial meningitis, Pneumonia Paralytic poliomyelitis
Third Visit (6 months)	Hib containing Pentavalent Vaccine 3 OPV3	TB Meningitis Hepatitis B Diphtheria, Pertussis, Tetanus, Bacterial meningitis, Pneumonia Paralytic poliomyelitis
4th Visit (9 months)	MR	Measles, Rubella
5th Visit (1and 1/2 year)	Measles	Measles

Hepatitis B vaccine would be given for Infant born in hospital or clinic within 24 hours after birth
If BCG could not be given at birth, it could be given at any time before 2 months of age or at 2 months of age together with other vaccines

Infants in Myanmar should receive routine OPV doses at the ages of 2 months, 4 months and 6 months.. Polio vaccine could be given simultaneously and safely with any other childhood vaccines. Myanmar has launched new immunization program on Injection Polio Vaccine for infants at 4 months and above age group in routine EPI since December, 2015.

Dosage, Administration And Formulation
OPV should be administered orally, that is, directly into the mouth. Each single dose consists of two drops of live oral poliovirus vaccine. OPV is most often formulated as a trivalent vaccine, containing antigens for all three poliovirus serotypes (1, 2, and 3); this preparation is called trivalent OPV, or tOPV, and is the vaccine generally in use in India, both for routine immunization of infants as well as
during SI rounds.

OPV is one of the most heat-sensitive vaccines in common use. The vaccine should be stored below 8˙C at all times. Unopened vials of OPV may be stored for up to 6 months at minus 20 degrees Celsius. With the development of the vaccine vial monitor (VVM) in 1996, health orkers can evaluate whether cumulative heat exposure of a vial of vaccine has exceeded a pre-set limit, beyond which the vaccine should not be used.

1.14 Incidence of POLIOMYELITIS In Myanmar

Polio case was found in Yangon since 1927 and according to the survey results done by WHO consultant in Yangon, 19/1000 primary school children and average annual incidence of polio was estimated as 589 per million total population in Yangon city in1975. The magnitude of the polio problem was estimated by lameness survey (last lameness survey was in 1992) and three searo survey in Yangon and one in Mandalay city reveal the pattern of immunity in Myanmar children by age group and it indicated that **type I polio was highly endemic in Yangon** and that 95-100% of the city population were already infected by age 7.

Myanmar established AFP surveillance system in 1996 and conducted laboratory test for polio virus for all AFP cases at NHL in Yangon. Wild poliovirus was not found in Myanmar between the year 1996 and 1998. In 1999 the AFP surveillance system was able to detect seven cases of wild virus positive poliomyelitis in Rakhine state (5) and Shan state (1) and Ayeyarwaddy Division (1). But those wild virus positive cases from Lashio, Sittway and Mawlamyinekyun were proved to be laboratory contamination by genetic sequence analysis.

Table showing detection of confirm wild polio virus cases in Myanmar 1999-2007

Year	Cases	Township	State/Region	Type
1999	4	Butheedauan and Maungdaw	Rakhine	P1 WPV
2000	2	Kyauktaw and Pauktaw	Rakhine	P1 WPV
2007	11	Maungdaw (10) Buthedaung (1)	Rakhine	P1 WPV

Myanmar has maintained polio-free for 3 years (2000-2003) and declared polio free in 2003, only to lose that status in 2006 when another Vaccine Derived case was reported in Pyin Oo Lwin Township in Mandalay Division. In 2007, AFP surveillance system could be able to detect 10 wild poliovirus cases in Maungdaw and one in Buthidaung townships of Rakhine State with the last positive polio case detected on 15 May 2007 in Myanmar. The wild polio-virus type 1 found in Myanmar represented a local spread of the virus introduced from Bangladesh, which in turn was infected by imports from India in 2007.

II. Polio eradication milestone

The World Health Assembly (WHA), the annual meeting of the Ministers of Health of all Member States of the World Health Organization (WHO), first committed to polio eradication in **1988** calling for the worldwide eradication of the disease by the year 2000. That marked the launch of the Global Polio Eradication Initiative (GPEI), spearheaded by national governments, WHO, Rotary International, the US Centers for Disease Control and Prevention (CDC) and UNICEF.

At that time, there was endemic Wild Polio Virus (WPV) transmission in more than 125 countries and each year more than 350,000 children were paralyzed for life by polio. Since 1988, the GPEI has reduced the global incidence of polio by more than 99.9%, three of six WHO Regions have been 'certified' polio-free (the Americas in 1994, the Western Pacific in and the European Region in 2002), and one of the three wild poliovirus serotypes **(type 2) has been eradicated** (last isolated in October **1999**).

By the end of 2014, there were 359 reported cases of wild poliomyelitis, spread over twelve different countries. Pakistan, Ethiopia, Guinea, Madagascar, the Syrian Arab Republic, Nigeria, Afghanistan , Cameroon, Equatorial Guinea, Somalia, Iraq and South Sudan.

The last case of wild polio in the South-East Asia Region was reported in India on 13 January **2011** and the WHO announced the **eradication of poliomyelitis in the South-East Asia Region**, in which the WHO includes eleven countries: Bangladesh, Bhutan, North Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste on **March 27, 2014**. With the addition of this region, the proportion of world population living in polio-free regions has reached 80%.

A public health effort to eliminate all cases of poliomyelitis (polio) infection around the world has reduced the number of annual diagnosed cases from the hundreds of thousands to **fewer than 100 in 2015** and a number of eradication milestones have already been reached and several regions of the world have been certified polio-free.

A concern is the presence of circulating vaccine-derived polioviruses (cVDPV) as it is possible for the OPV mutation and persons given the OPV can acquire acute or chronic infections; or can transmit (circulate) mutated OPV to other people.

Noting India's success using available tools and technology, the threat to the global community of ongoing poliovirus transmission in the last three endemic countries – Afghanistan, Nigeria and Pakistan – and the growing knowledge about and risk of circulating vaccine-derived polioviruses (cVDPVs), which can cause outbreaks of paralytic disease, the World Health Assembly called on the World Health Organization Director-General to develop and finalize a comprehensive polio endgame strategy.

On 26 May 2012 the WHA declared the completion of polio eradication to be a **"programmatic emergency for global public health"** and called for for a comprehensive polio endgame strategy for a marked increase in the intensity of eradication activities in the poorest performing regions.

III. POLIO ERADICATION AND ENDGAME STRATEGIC PLAN (2013-2018)

The goal of the 2013-2018 Polio Eradication and Endgame Strategic Plan is to complete the eradication and containment of all wild, vaccine-related and Sabin polioviruses, such that no child ever again suffers paralytic poliomyelitis.

It was developed to capitalize on this new opportunity to end all polio disease and accounts for the parallel pursuit of wild poliovirus eradication and cVDPV elimination, while planning for the backbone of the polio effort to be used for delivering other health services to the world's most vulnerable children.

The four main objectives of the Strategic Plan (2013-2018)

OBJECTIVE 1: POLIOVIRUS DETECTION AND INTERRUPTION

OBJECTIVE 2: ROUTINE IMMUNIZATION STRENGTHENING & OPV WITHDRAWAL

OBJECTIVE 3: CONTAINMENT AND CERTIFICATION

OBJECTIVE 4: LEGACY PLANNING

OBJECTIVE 1: POLIOVIRUS DETECTION AND INTERRUPTION

THE GOAL

With Objective 1, the GPEI aims to take advantage of this momentum, in order to complete the interruption of wild poliovirus transmission globally and to more rapidly detect and interrupt any new outbreaks due to vaccine-derived polioviruses. The key milestones on the path to this objective are to achieve interruption of WPV type 3 by end-2013 and interruption of WPV type 1 by the end of 2014; and to stop all new outbreaks due to cVDPVs within 120 days of an index case.

WHAT IS REQUIRED TO INTERRUPT TRANSMISSION?

Interruption of wild poliovirus transmission requires rapid detection of all poliovirus transmission (WPV and VDPV) anywhere in the world, overcoming the obstacles to reaching all children with OPV in the three remaining endemic countries, and protecting areas prone to outbreaks and re-importation by maintaining immunity levels above the thresholds needed to interrupt transmission and by rapidly responding to any new outbreaks.

WHAT WILL BE DONE?

MAJOR ACTIVITIES:

1. Strengthening Global Surveillance to Detect Virus Circulation
2. Maintaining an Appropriate Supplementary OPV Immunization Schedule
3. Enhancing OPV Campaign Quality to Interrupt Endemic Transmission
4. Enhancing the safety of OPV campaign operations in insecure areas
5. Preventing and Responding to Polio Outbreaks

Activity 1: Strengthening global surveillance to detect virus circulation

Surveillance for poliovirus is fundamental to achieving and sustaining global polio eradication. Sensitive surveillance is vital for the programme to rapidly detect all circulating poliovirus and to guide eradication activities. Acute flaccid paralysis **(AFP)** surveillance will remain the primary mechanism for the detection of poliovirus, with emphasis on endemic and high-risk countries. In addition, environmental surveillance will be further scaled up as a complement to AFP surveillance for detecting the presence of poliovirus in infected areas and populations. This will facilitate the more rapid identification of outbreaks in high-risk areas, provide additional information to validate the interruption of transmission and help document the elimination of vaccine-related strains after OPV cessation.

IV.AFP Surveillance- Myanmar

. 1. Objective of AFP Surveillance

AFP surveillance system in Myanmar is established in 1996 and the main objective is to detect the exact geographic locations where wild polioviruses are circulating in the human population. All cases of acute flaccid paralysis in children aged <15 years are rigorously investigated by a trained medical officer, with collection of stool specimens to determine if poliovirus is the cause of the paralysis. Analysis of the location of polioviruses isolated from AFP cases allows program managers to plan immunization campaigns (Mopping up and NID) to prevent continuing circulation of virus in these areas.

AFP is a syndrome occurs in many diseases and conditions like Guillian Barre Syndrome (GBS), Transverse Myelitis, Poliomyelitis etc. The polio surveillance system is based upon surveillance for AFP. Acute flaccid paralysis means that paralysis is of acute onset (< 4 days from onset of weakness to paralysis) and the affected limb or limbs are flaccid, i.e. floppy or limp. Tone is diminished as evidenced by examination by palpation or passive movement of joints.

Acute : Rapid evolution from onset of weakness to paralysis.

Flaccid : Floppy, not stiff or spastic.

Paralysis : Inability to move affected part.

This excludes adults, spastic paralysis, old cases or cases with obvious causes (trauma). Surveillance is carried out for all cases of acute flaccid paralysis (AFP) and not only for poliomyelitis. Therefore, all AFP cases should be reported, regardless of the final diagnosis. Because paralytic poliomyelitis is only one cause of AFP, maintaining a high sensitivity of AFP reporting will ensure that all cases of paralytic poliomyelitis are detected, reported, and investigated, resulting in preventive control measures to interrupt transmission of disease.

Occasionally, poliomyelitis may occur in older children. AFP surveillance focuses on children aged <15 years in order to capture the occasional case that may occur in older children. Any case of AFP regardless of age should be reported and investigated if poliomyelitis is a possible cause.

Experience in industrialized countries shows that at least 1 case of AFP (excluding polio) occurs annually for every 100,000 children aged <15 years. This is referred to as the "background" rate of AFP among children The non-polio causes of AFP including (but not limited to) Guillian-Barré syndrome (GBS), Transverse Myelitis and Traumatic Neuritis account for this background rate (it may be higher in developing countries), regardless of whether Acute Poliomyelitis exists in the community and to increase sensitivity of surveillance system, target for **non polio AFP rate is defined for 2 cases per 100,000 under 15years population** as background rate of AFP among children.

2. Case Definition:

In the Global Polio Eradication Initiative (PEI), acute flaccid paralysis is defined as:

Any case of AFP in a child aged <15 years, or any case of paralytic illness in a person of any age when polio is suspected.

Acute: rapid progression of paralysis from onset to maximum paralysis
Flaccid: loss of muscle tone, “floppy” – as opposed to spastic or rigid

Paralysis: weakness, loss of voluntary movement
Any case meeting this definition undergoes a thorough investigation to determine if the paralysis is caused by polio.

3. Components of AFP Surveillance

·The AFP surveillance network and case notification
· Case and laboratory investigation
· Outbreak response and active case search in the community
· 60-day follow-up, cross-notification and tracking of cases
· Data management and case classification
· Virologic case classification scheme
· Surveillance performance indicators

4. The AFP surveillance network and case notification

Establishment and maintenance of reporting sites:
Reporting units (RUs) form the backbone of the AFP surveillance network, and include hospitals and other health facilities -- **in the government or the private sector** -- that are likely to see cases of AFP, as well as informers. Informers comprise pediatricians and other physicians practicing medicine, doctors of indigenous systems of medicine and others who are likely to see AFP cases. The RUs are geographically well distributed to cover all areas in the country, to ensure that there is at least one reporting unit in RHC of every township. Both the RUs and the informers are expected to report AFP cases immediately.

5. Active Surveillance and Weekly reporting

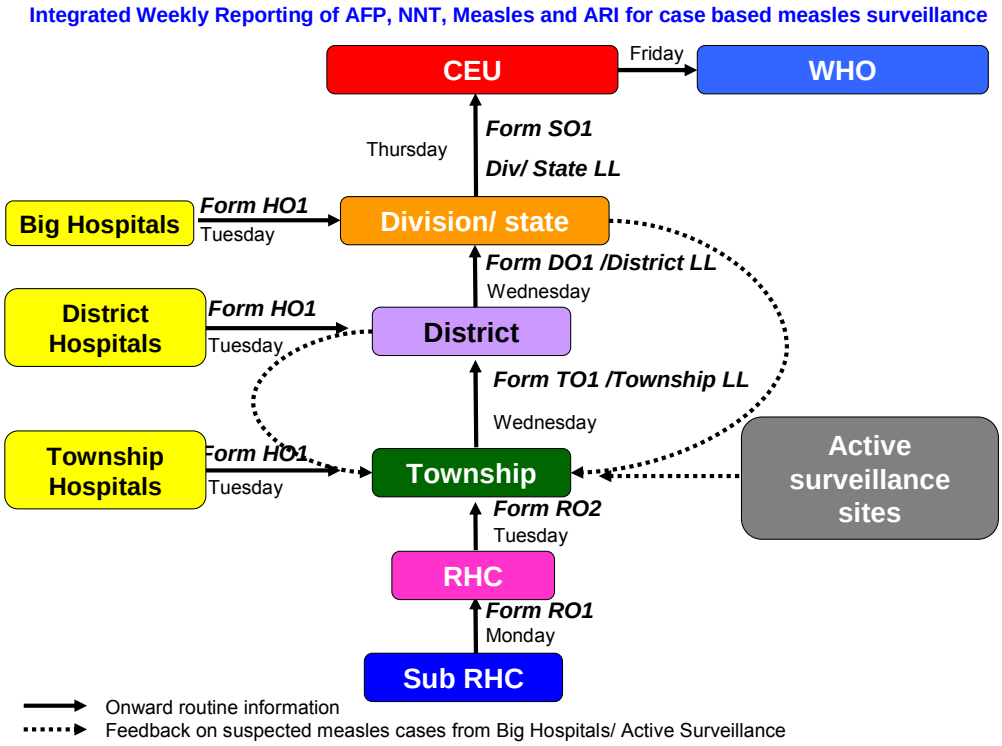
in addition to the reporting from informers, the RUs are visited at **regular intervals by SDCU Team Leader/RSO, AFP focal person (designated health staff from respective health department)** for active surveillance ("active case searches") and are also required to submit a weekly AFP surveillance report to the TMO /State/Region Health Department / CEU respectively at different levels.
This report (**weekly "zero" report**) is sent by the facility even if no AFP case was seen during that week, as a cross-check to ensure that all RUs are reporting all identified AFP cases.
The **active surveillance** visits by SDCU Team Leader/RSO, AFP focal person to major health facilities ensure that any **missed or unreported AFP cases are detected for timely case investigation and stool collection**.
Each RU has a designated focal officer responsible for reporting cases, transmitting surveillance reports and maintaining surveillance records. Both the Team leader/RSO and TMO are involved in establishing and maintaining a sound reporting network, which functions according to established program guidelines. The SMO and the focal person in TMO office regularly visit the RU in their area, providing support such as training, technical material, reporting forms, updates on the status of polio eradication in Myanmar, Region and globally, and feedback on notified cases.
During a visit to a reporting unit the RSO/SDCU Team leader/focal person should meet the head of the reporting unit,
visit all relevant departments and check their inpatient and outpatient registers for any missed or unreported cases since the time of the last visit.

This helps to verify the activity focal person and identify the training needs of the staff of the health facility or hospital. Active case searches followed by training sessions can greatly improve the reporting of AFP cases by the health facilities. The visit should be documented by signing the registers/ records checked.

The approach of repeated visits, giving feedback, solving problems and streamlining the surveillance process builds a high level of participation and program ownership

The activities at the reporting sites are both active and passive. The active component is visits made by designated officials (SDCU TL/R SO) periodically for searching AFP/NNT/measles cases and sensitizing the staff and reporting in form HO2. The passive component is the routine weekly reporting in form HO1.

Integrated Weekly Reporting for AFP, Measles, NNT and ARI



Surveillance Activities and weekly zero reporting procedures at Station Health Unit/RHC level

On a weekly basis the focal officer from each reporting unit report the cases and death of AFP, NNT, Measles and ARI using the appropriate form (RO1 or RO2 or HO1) to TMO office. Before sending the weekly report, the focal person surveillance should visit/enquiry all the wards/contacts, likely to see the cases and ensure that all suspected cases have been identified, notified to the TMO/ THO and included in the weekly report to the next level.

Thus the weekly integrated AFP/Measles/NNT/ ARI form (**Form RO1**) **from the sub centers** should be sent every Monday morning of the week **to the RHC/SHU/MCH/UHC** to reach it on **Monday afternoon**.

The RHC should collate all data received from all the Sub centers under the RHC and send the consolidated data **to reach the Township hospital by Tuesday** using integrated weekly reporting form (**Form RO2**) . Even if no cases of measles have been reported during the week of reporting, a zero report should be sent.

Surveillance Activities and weekly zero reporting procedures at township level

At the township level the Township Medical Officer (TMO) in addition to undertaking the surveillance activities in his/ her own township, should also provide support to the other township medical officers for identifying both AFP and measles outbreaks, investigating outbreaks.
TMO/designated focal person (for weekly report) should collect the information of new cases reported, who reside in the respective townships and investigated from big hospitals in the townships every Tuesday so as to include these cases in the township line list. The CIF may be faxed or communicated to the respective townships on a weekly basis for this purpose.
(S)He should also collate the routine weekly reports received and prepare the merged township report in the **TO1 form** and send the merged linelist with data from all reporting units of township as the township line list on **Wednesday of the same week to the State/Region**. The form TO2 should be used to track completeness and timeliness of reporting from the reporting units. This information should be sent on a weekly basis to the RSO of the respective division/state.

Surveillance Activities and weekly zero reporting procedures at State / Region level

The SDCU Team Leader/ RSO /designated focal person for VPD at State/Region is responsible for updating and maintaining the divisional/ state line list and the divisional/ state CIF of cases residing in the division/ state The RSO/ SDCUTL should collate the line lists of AFP, suspected measles cases from the various townships (ensuring that data from other sources such as big hospitals and cases from active case searches are included) and merge them electronically to create a weekly state/ division line list. At the state/ division level, the multi township data is interpreted to identify VPD cases in townships with special emphasis given to clustering of cases in adjacent villages/wards of 2 or more townships. Feedback on suspected outbreak should be provided to the township officials when adjoining township clustering is identified.

The RSO/ SDCUTL also should inform the townships of new cases reported and investigated from big hospitals who reside in the respective townships so as to include these cases in the township line list. The CIF may be faxed or communicated to the respective townships on a weekly basis for this purpose
As the focal person for AFP/NNT/Measles/ ARI at State/Regional level, he/she should ensure the collation of the weekly routine data in form TO1, form HO1 and form HO2 and the **data should be merged in form SO1** and send the weekly state/ division linelist to the CEU on **Thursday of the same week**.
Note: It is important to keep the State and Regional Health Director updated on the status and the progress of measles cases and outbreaks.

6. AFP case notification:

The Department of Health, MoH Myanmar has instructed that all health facilities, clinicians and other Practitioners are required to **notify AFP cases immediately** to the TMO or RSO**, by the fastest means available**. Because important activities including rapid case investigation with

stool collection, outbreak response immunization, and active searches for additional cases in the community should occur early, immediate notification of AFP cases is essential.

7. Case and laboratory investigation

AFP case investigation:
All AFP cases are immediately investigated, usually within 48 hours of notification, by a trained medical officer – usually the TMO and/or the RSO. After confirming the case as AFP, the investigator takes a detailed medical history, examines the child and proceeds with the other aspects of case investigation.

The complete case investigation includes

- the history (including details of immunization and travel),
- physical examination,
- collection and transportation of stool specimens for laboratory testing,
- search for additional cases and
- outbreak response investigation in the affected community, 60-day follow-up examination,
- analysis of laboratory results and case classification. At all steps of the investigation, standardized case investigation forms are filled out, updated and completed so that laboratory results can be linked to each case; all of these data are entered into the computerized database at State and Divisions and CEU, where they are tracked and analyzed.

Assigning EPID number
Every AFP case investigated should be allotted an epidemiological identification number (EPID or ID number). The code of the ID number should consist of alphabetic characters and digits as follows:

example: MMR-12-29-16-001
Where MMR indicate country code for Myanmar,
12 indicates the Division/State code of Yangon,
29 indicates the Township code of Insein,
16 indicate the year of notification of AFP case and
001 denotes the serial number of the case in 2016 .
Therefore, MMR–12-29-16-001 indicates the code of the first AFP case investigated in the Insein Township of Yangon Division in the year 2016.
If there is 2nd case of AFP in Insein township EPID would be MMR 12-29-16-002

Make sure that same EPID number is used in Lab request form.

လတ်တလောပျော့ခွေအကြောသေရောဂါ စုံစမ်းစစ်ဆေးခြင်းပုံစံ Case Investigation Form **ကို ရေးသားဖြည့်စွက်ခြင်း။**

၁။ Investigation Information

- AFP လူနာများကို ချက်ခြင်း (၄၈ နာရီအတွင်း) စုံစမ်းစစ်ဆေးရမည်။ အကြောသေ စတင်ပြီး (၁၂)ပတ်ကာလအတွင်း ရောဂါအတန်းအစား ခွဲခြားရပါမည်။ Date of Report သည် သတင်းရရှိသောနေ့ ဖြစ်၍ Date of investigation သည် လူနာကို စမ်းသပ်သောရက် ဖြစ်ပါသည်။ စမ်းသပ်ရက်သည် သတင်းရရှိသော ရက် (သို့) ထိုရက်ထက်နောက်ကျသော ရက်ဖြစ်ရပါမည်။

  ဥပမာ– Date of reported - 1-1-01

  Date of Investigation - 1-1-01 (or) 1-1-0, 2-1-01

၂။ Case Indentification

- AFP လူနာတိုင်းကို သေချာစွာ (clinically) စမ်းသပ်စစ်ဆေးရမည်။ AFP ရောဂါစုံစမ်းစစ်ဆေးခြင်းပုံစံတွင်ပါဝင်သော အဆင့်အလိုက်ပြုလုပ်၍ ပုံစံကိုပြည့်စုံစွာ ဖြည့်စွက်ပါ။ နေရပ်လိပ်စာ အပြည့်အစုံအတိအကျယူမှသာ ရက်(၆၀)တွင် ပြန်လည်စစ်ဆေးသောအခါ လူနာအား ရှာဖွေတွေ့ရှိနိုင်မည်ဖြစ်၍ ရက် (၆၀)အတွင်း ၄င်းလူနာအားတွေ့နိုင်မည့် လိပ်စာအတိအကျရရန် လိုအပ်ပါသည်။

❑ လမ်းအမည်၊အိမ်နံပါတ်၊ ရွာတောင်ပိုင်း/မြောက်ပိုင်း စသည်ဖြင့် လိပ်စာအပြည့်အစုံ မေးမြန်းမှတ်သားပါ။

❑ အင်္ဂလိပ် ပြက္ခဒိန်သုံး၍ မွေးရက်မှတ်သားပါ။ အတိအကျမသိလျှင် မှန်းဆပါ။

၃။ Hospitalization

❑ ဆေးရုံတက်ရောက်ကုသခြင်း ရှိ/မရှိ ရေးပါ။

၄။ Immunization

❑ OPV ဆေးရရှိပြီး အကြိမ်ကိုမှတ်သားပါ။ တစ်ကြိမ်မျှမရဘူးလျှင် သုည (၀) (Zero) ဟုမှတ်သားပါ။

❑ OPV ဆေးတိုက်ရာဇဝင် မသိပါက Unknown ဟု မှတ်သားပါ။ နောက်ဆုံး ဆေးတိုက်သော နေ့စွဲကို ရေးပါ။

၅။ Travel History for previous (35) Days

AFP case သည်လွန်ခဲ့သော (၃၅)ရက်အတွင်းက ခရီးသွားခဲ့ပါက သွားရောက် ခဲ့သော မြို့နယ်/ကျေးရွာ၊ရပ်ကွက်ကိုရေးပါ။ ညအိပ်ခဲ့ပါကလည်း မည်သည့်နေ့မှမည်သည့်နေ့အထိ အိပ်ခဲ့သည်ကို ရေးရပါမည်။

ထိုနေရာတွင် AFP case ရှိ/မရှိ စုံစမ်းပါ။ ရှိပါက လိပ်စာအတိအကျ ရေးမှတ် ရပါမည်။ AFP case အသစ် ဖြစ်ပါက ထို case ကို investigation ပြုလုပ်ရမည် ဖြစ်ပါသည်။

၆။ **Symptoms & physical examination**

၄င်းလူနာသွားရောက်ခဲ့သည့် နေရာအားလုံးသည် ရောဂါပိုးစတင်ရရှိရာ နေရာများ ဖြစ်နိုင်ပါသည်။

- Number of days from onset to maximum paralysis အကြောသေခြင်း၊ အားနည်းခြင်း၊ စတင်ဖြစ်ပွားသောနေ့မှ အကြောသေခြင်း၊ အားနည်းခြင်း၊ အဆိုးဝါးဆုံး ဖြစ်၍ ဆက်လက် မတိုးတော့သော အခြေအနေထိ ကြာသောရက်ပေါင်းကို ဆိုလိုပါသည်။ ပိုလီယိုအကြောသေရောဂါတွင် မြန်ဆန်၍ (၁)ရက်မှ(၄)ရက်အတွင်း ဖြစ်တတ်ပါသည်။
- Flaccid ပျော့ခွေဆိုသည်မှာ ဖြစ်ပွားသောလက်/ခြေများတွင် muscle tone ကြွက်သား အားနည်းခြင်း (သို့မဟုတ်) လုံးဝမရှိခြင်း ဖြစ်ပါသည်။
- Asymmetrical အားနည်းခြင်း/အကြောသေခြင်းဘက်မညီခြင်း လက်/ခြေ တစ်ဘက် တည်းသာဖြစ်ခြင်း သို့မဟုတ် နှစ်ဘက်ဖြစ်လျှင် တစ်ဘက်သည် တစ်ခြား တစ်ဘက်ထက် ပို၍ အားပျော့အားနည်းကို ဆိုလိုပါသည်။
- Muscle power (ကြွက်သားအင်အား) ကိုအောက်ပါအတိုင်း အဆင့်ခွဲခြားနိုင်သည်။

Grade 0 = လှုပ်ရှားမှု၊ ကြွက်သားလှုပ်ခြင်း လုံးဝမရှိခြင်း။

Grade 1 = ကြွက်သားလှုပ်ရှားနေမှု မြင်နိုင်သည်။ သို့သော်ခြေ/လက် မလှုပ်ရှားနိုင်ပါ။

Grade 2 = ခြေ/လက် ဘေးတိုက်ပြင်ညီ လှုပ်ရှားနိုင်သည်။အထက်သို့ မ, မနိုင်ပါ။

Grade 3 = လက်/ခြေများ အထက်သို့မနိုင် မြောက်နိုင်သည်။

Grade 4 = အားအနည်းငယ်ဖြင့်ဖိထားသော်လည်းလက်/ခြေအထက်သို့ မနိုင်မြောက်နိုင်သည်။

Grade 5 = အင်အားအပြည့်အဝရှိသည်။

- Proximal muscles ဆိုသည်မှာ - Hip နှင့် shoulder joint ပတ်ဝန်းကျင်မှ ကြွက်သား များကို ဆိုလိုပါသည်။ ပိုလီယိုရောဂါတွင် Proximal muscles များ ပို၍ ဖြစ်တတ်သည်။

- Muscles tenderness ကြွက်သားနာကျင်ခြင်းသည် ပိုလီယိုအကြောသေရောဂါတွင် ဖြစ်ပွားတတ်သည်။ ရောဂါဖြစ်ပွားသောလက်/ခြေ ကြွက်သားပေါ်သို့ အနည်းငယ် ဖိကြည့်ပါ။

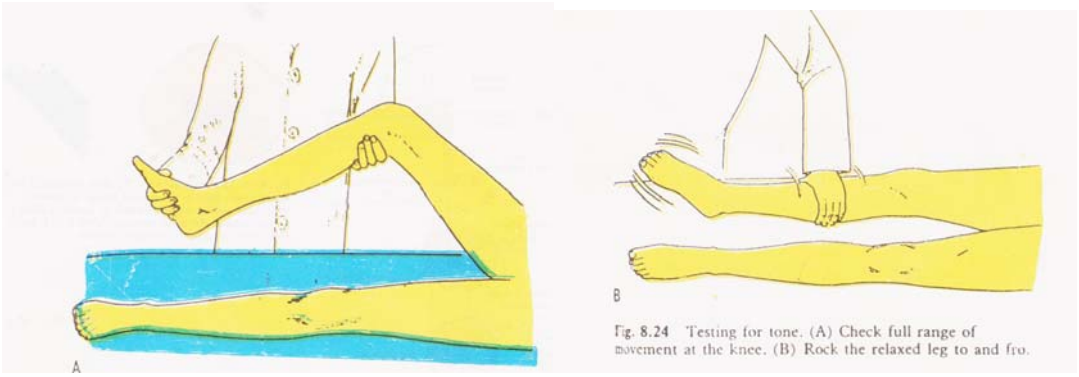


Fig. 8.24 Testing for tone. (A) Check full range of movement at the knee. (B) Rock the relaxed leg to and fro.

လတ်တလောပျော့ခွေအကြောသေရောဂါ စစ်ဆေးမှုပုံစံ

– ပျော့ခွေအကြောသေရောဂါ ဟုတ်သည်/မဟုတ်ပါ။ အကြောသေရောဂါစတင်သည့်

– လတ်တလောပျော့ခွေအကြောသေခြင်း ဟုတ်သည်/မဟုတ်ပါ။ ရက်စွဲ ---/--/--

အကြောသေလက္ခဏာစတင်ချိန်မှ အပြင်းထန်ဆုံး ---------- ကြွက်သားများနာကျင်ခြင်း ရှိ/မရှိ ကာလအထိ ကြာမြင့်သည့်ရက်ပေါင်း

အကြောသေလက္ခဏာမစတင်မီ (၃)ပါတ် အတွင်းဖျားခြင်း ရှိ/မရှိ ကြွက်စွန်းကြောများတုန့်ပြန်မှု(ရုန်းပြန်မှု)

ဘိုင်ဆက် ( ) / ထရိုင်ဆက် ( )

အကြောသေလက္ခဏာစတင်သည့်နေ့တွင် ဖျားခြင်း ရှိ/မရှိ ဆူပိုင်နေတာ ( ) / ဒူး ( )

ခြေကျင်းဝတ်

အကြောသေလက္ခဏာမစတင်မီ ရက်(၃၀) အတွင်းဆေးထိုးခံရဘူးခြင်း ရှိ/မရှိ

ဘာဘင်စကီးတုန့်ပြန်မှု ရှိ/မရှိ

ခြေကျင်းဝတ်ဆတ်တုန်ခြင်း ရှိ/မရှိ

မျက်နှာအကြောသေခြင်း ရှိ/မရှိ

ခြေလက်များကျဉ်ထုံခြင်း ရှိ/မရှိ

ဇက်တောင့်ခိုင်ခြင်း ရှိ/မရှိ

* ဘိုင်ဆက် – လက်မောင်းအရွေ့ကြော/ထိပ်နှစ်ခွကြွက်သား

ထရိုင်ဆက် – တတောင်ဆစ်ကြော/ထိပ်သုံးခွကြွက်သား

ဆူပိုင်နေတာ – လက်ဖျံကြော

ခြေလက်ရင်းကြွက်သားများ ရှိ/မရှိ ထိတွေ့အာရုံခံစားမှုလျော့နည်းခြင်း ရှိ/မရှိ
အားပျော့ခြင်း
ခြေလက်အရင်းပိုင်းကြွက်သားများသည် ရှိ/မရှိ ဆီးဝမ်းမထိမ်းနိုင်ခြင်း
အဖျားပိုင်းကြွက်သားများထက်ပိုမိုအားပျော့ခြင်း ဆီး/ဝမ်း/မရှိပါ
ဘယ်ညာမညီညာအကြောသေခြင်း ရှိ/မရှိ လမ်းလျှောက်နိုင်စွမ်း
(သင့်တော်သည်ကိုပိုင်းပါ)
အကြောသေလက္ခဏာပျံနှံ့ပုံ အဖျားမှအရင်းသို့ မလျှောက်နိုင်/ထော့ကျိုးလျှောက်နိုင်/
အရင်းမှအဖျားသို့ ပုံမှန်လျှောက်နိုင်
တသမတ်တည်း

<u>အကြောသေသည့် အစိတ်အပိုင်း(ကြွက်သားသန်မာမှု)</u>

ညာလက်မောင်း/ဘယ်လက်မောင်း/ညာခြေ/အခြား (ရှင်းပြပါ) ( ) နေရာဖော်ပြပါ။

ကြွက်သားများသိမ်ခြင်း ရှိ/မရှိ ရှိလျှင်နေရာဖော်ပြပါ ( )

<u>မျက်နှာအကြောသေခြင်းရှိ/မရှိ စစ်ဆေးပုံ</u>

မေးမြှင်းရန် – ပါးရွဲခြင်း
- မျက်လုံးပိတ်မရခြင်း
- နှုတ်ခမ်းထောင့်မှ သွားရည်ယိုစီးခြင်း
- အစာစားလျှင် ပါးစောင်၌ အစာများကပ်ကျန်ခြင်း
- လျှာအရသာ ခံစားမှုထုံနေခြင်း
- မျက်နှာထုံခြင်း
- နားတစ်ဘက်မှ အသံများကို ပိုမိုကျယ်လောင်စွာကြားရခြင်း

စမ်းသပ်ရန် – နဖူးကိုတွန့်ခိုင်းပါ/မျက်ခုံးပင့်ခိုင်းပါ(မတွန့်၊မပင့်နိုင်)
- မျက်စိကို တင်းကြပ်စွာမှိတ်ခိုင်းပြီး မျက်စိတစ်လုံးခြင်းကို စမ်းသပ်သူက လက်နှင့်ဖြဲ ဖွင့်ပါ။ (တင်းကြပ်စွာမှိတ်မထားနိုင်)
- မျက်စိမှိတ်လိုက်လျှင် မစေ့ဘဲ မျက်ဖြူလန်ခြင်း ရှိမရှိကြည့်ပါ။ (ဘဲလ်လက္ခဏာ)
- သွားဖြဲပြခိုင်းပြီးနှုတ်ခမ်းထောင့်များဘယ်ညာ ညီမညီကြည့်ပါ။ (နှုတ်ခမ်းထောင့် မညီ)
- လေချွန်တတ်လျှင်ချွန်ခိုင်းပါ။ (လေမချွန်နိုင်)
- ပါးဖောင်းထားခိုင်းပြီး တစ်ဘက်စီကို လက်ညှိုးနှင့် ဖိကြည့်ပါ။ (နှုတ်ခမ်းထောင့်မှ လေမလုံခြင်း)

- ပါရောတစ်တွေးအကြိတ်ကြီးထွားခြင်းရှိ/မရှိကြည့်ပါ။
- နားရွက်ပေါက်ဝတွင် ရေယုန်အနာများ ရှိ/မရှိကြည့်ပါ။

ဇက်တောင့်ခိုင်ခြင်းစမ်းသပ်ရန်

ခေါင်းငုံ့၍ မေးစေ့နှင့် ရင်ပတ်ထိအောင် ကြိုးစားခိုင်းပါ။

စမ်းသပ်ခြင်း

၁။ ခေါင်းမအုံးဘဲ (သို့) ပါးလွှာသောခေါင်းအုံးပေါ်တွင် ပက်လက်အိပ်ပါ။

၂။ ဇက်ကို လျော့ခိုင်းထားပြီး စမ်းသပ်သူက ဦးခေါင်းနောက်ကို လက်နှစ်ဘက်ဖြင့် ကိုင်လျှင် ဇက်ကို ချိုးကွေးရန်ကြိုးစားပါ။

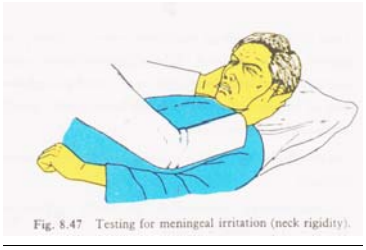


Fig. 8.47 Testing for meningeal irritation (neck rigidity).

၃။ ဇက်တောင့်ခိုင်နေလျှင် – ဇက်ကြောနာကျင်မည်။
– ဇက်ကိုမေးစေ့နှင့် ရင်ပတ်ထိအောင်ချိုးမရပါ။

ကားနစ်လက္ခဏာ(ဦးနှောက်အမြှေးရောင်ခြင်းကို စမ်းသပ်ရန်)

၁။ လူနာအား ပက်လက်အိပ်စေ၍ အကြောများကို လျော့ထားခိုင်းပါ။

၂။ စမ်းသပ်သူက ခြေကို ထောင်ပေးပါ။

၃။ ပေါင်ကိုဝမ်းဗိုက်နှင့် ထိလုသည်အထိကွေးပါ။

၄။ ပေါင်ကိုကွေးလျက်အနေအထားမှ ခြေဆစ်ကိုတတ်နိုင်သမျှ ဆန့်ထုတ်ပါ။

၅။ ခြေခေါက်ကြောများတောင့်တင်းပြီး လူနာမျက်နှာရုံ့မဲ့မည်။

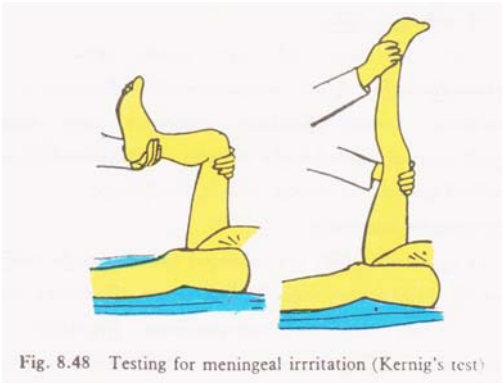


Fig. 8.48 Testing for meningeal irrritation (Kernig's test)

ခြေလက်အရင်းပိုင်းကြွက်သားများအားနည်းမှုကိုစမ်းရန်(ပခုံးနှင့် တင်ပါးဆုံကြွက်သားများ)

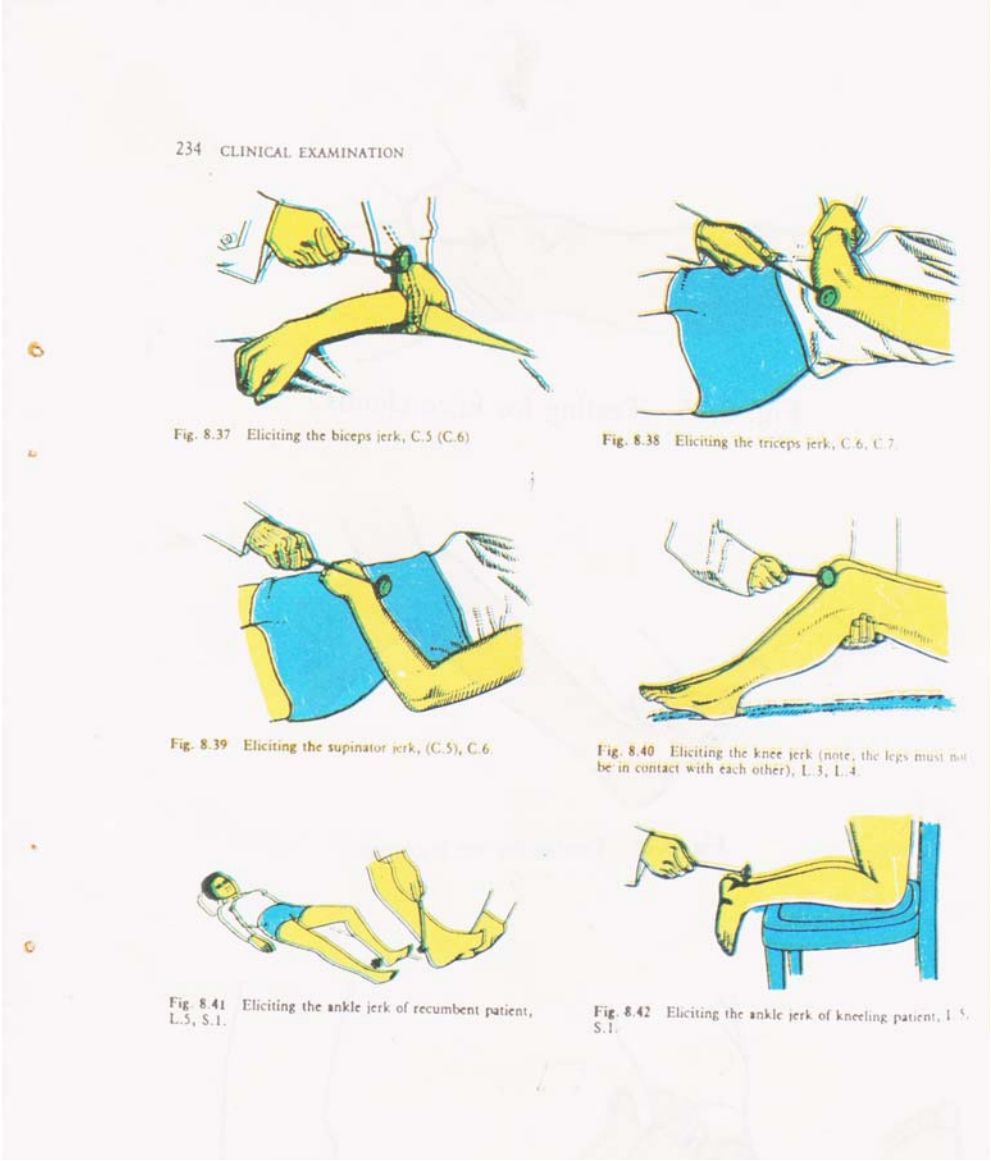
ပခုံးကြွက်သားများ

မေးမြှင့်းရန်	–	လက်မြှောက်ရန်ခက်မခက်
	–	ခေါင်းဖြီးရန်ခက်မခက်
လူနာအားခိုင်းရန်	–	လက်နှစ်ဘက်လုံးကို ခေါင်းပေါ်သို့ မြှောက်ထားပါ။

တင်ပါးဆုံကြွက်သားများ

မေးမြှင်းရန်	–	ဆောင့်ကြောင့်ထိုင်ရာမှ ပြန်ထလျှင် ခက်ခဲခြင်း အတွယ်မရှိဘဲ မထနိုင်ခြင်း။
	–	လှေခါးတက်ဆင်းခက်ခြင်း။
လူနာအားခိုင်းရန်	–	ဆောင့်ကြောင့် ထိုင်ပြီးနောက် အတွယ်မရှိဘဲ မတ်တပ် ပြန် ရပ်ခိုင်းပါ။
	–	ကုလားထိုင်ပေါ်တွင် ထိုင်စေပြီး၊ လက်နှစ်ဘက်ကို ပိုက်လျှက် အနေအထားမှ မတ်တပ်ရပ်ခိုင်းပါ။

ကြွက်သားတုန့်ပြန်မှု စမ်းသပ်ရန်



လက်ပိုင်း

၁။ **ဘိုင်ဆက်**

လူနာအား ပက်လက်အိပ်၍ လက်နှစ်ဖက်ကို ဝမ်းဗိုက်ပေါ်သို့ တင်ပြီး ကြွက်သားများကို လျှော့ခိုင်းထားပါ။

၁-၁။ စမ်းသပ်သူက ဘိုင်ဆက်ကြွက်စွန်းကြောကို စမ်းပြီး လက်ညှိုးဖြင့် အသာဖိထားပါ။

၁-၂။ ဖိထားသော လက်ညှိုးပေါ်သို့ စမ်းသပ်တူကရိယာကို ဆတ်၍ ခေါက်ပါ။

၁-၃။ ဘိုင်ဆတ်ကြွက်သားရုန်းတုန့်ခြင်းရှိ မရှိကြည့်ပါ။

၂။ **ထရိုင်ဆတ်**

၂-၁။ လူနာ၏ လက်ကိုဝမ်းဗိုက်ပေါ်တွင် တင်လျက်အနေအထား၌ စမ်းသပ်သူက လက်ကောက်ဝတ်မှ အသာအယာ ဆွဲထားပါ။

၂-၂။ ထရိုင်ဆတတ်ကြွက်စွန်းကြောကို တံတောင်ဆစ်အပေါ်တွင် စမ်းမိမည်။

၂-၃။ စမ်းသပ်တူကရိယာဖြင့် ယင်းကြွက်စွန်းကြောကို ဆတ်၍ခေါက်ပါ။

၂-၄။ ထရိုင်ဆတ်ကြွက်သားရုန်းတုန့်ခြင်း ရှိမရှိကြည့်ပါ။

၃။ **လက်ဖျံကြော**

၃-၁။ လူနာအား ပက်လက် အိပ်စေ၍ လက်ကို ဝမ်းဗိုက်ပေါ်သို့ တင်စေပြီး ကြွက်သားများ လျှော့ခိုင်း ထားပါ။

၃-၂။ လက်ဖျံကြောနေရာ(လက်ကောက်ဝန်း၏ အထက်၊ လက်ဖျံ၏ လက်မဖက်စောင်း)ကို စမ်းသပ်တူ ကရိယာဖြင့် ခေါက်ပါ။

၃-၃။ လက်ဖျံကြော ရုန်းတုန့်ခြင်း ရှိ/မရှိ ကြည့်ပါ။

ခြေဖိုင်း

၁။ **ဒူးခေါင်း**

လူနာကို ပက်လက်အိပ်စေ၍ သို့မဟုတ် ခြေတွဲလောင်းချထိုင်စေ၍ အကြောများကို လျှော့ထားခိုင်းပါ။ အိပ်လျက်အနေအထားဖြစ်လျှင် စမ်းသပ်သူက တံတောင်ခွက်မှ နေ၍ ဒူးအား အသာ ပင့်ထားပါ။

ဂုံညှင်းအောက် အကြောကို စမ်းသပ်ပါ။

စမ်းသပ်တူ ကရိယာဖြင့် ၄င်းအကြောကို ဆတ်ခေါက်ပါ။

ပေါင်ရှေကြွက်သားများ ရုန်းတုန့်ခြင်း ရှိ/မရှိ ကြည့်ပါ။

၂။ **ခြေကျင်းဝတ်**

- လူနာအား ပက်လက်အိပ်စေ၍ ပေါင်ကို မထောင်စေဘဲ ဒူးခေါင်းကို အသာကွေးထားခိုင်းပါ။
- စမ်းသပ်သူက လူနာ၏ ခြေထောက်ကို ခြေချောင်းများ၏ အရင်းမှ ကိုင်ပြီး ခြေကျင်းဝတ်ကို ကော့(ကွေးလှန်) ထားပါ။
- ခြေကျင်းဝတ်ကြောကို စမ်းသပ်တူကရိယာဖြင့် ခေါက်ပါ။
- ခြေသလုံးကြွက်သားများ ရုန်းတုန့်ခြင်း ရှိမရှိကြည့်ပါ။

မှတ်ချက်။ ။ ဘယ်ညာနှစ်ဘက်လုံးကို စမ်းသပ်ပြီး နှစ်ဘက်ယှဉ်ကြည့်ပါ။

၃။ **ဘာဘင်စကီးလက္ခဏာ**

- လူနာအား ပက်လက်အိပ်၍ ခြေထောက်များကို ဆန့်ထားပြီး၊ ဖြေလျှော့ခိုင်းထားပါ။
- စမ်းသပ်သူက ခြေထောက်ကို ခြေကျင်းဝတ်မှ ဆုပ်ကိုင်ထားပါ။
- သော့၊ တုတ်ချောင်းငယ်၊ စမ်းသပ်တူကရိယာ လက်ကိုင်ရိုးထိပ်ဖြင့် ခြေဖဝါးကို အပြင်နားတစ်လျှောက် ဖနောင့် အနီးမှ ခြေသန်း အောက်နားထိ၊ ထိုမှတဆင့် အတွင်းသို့ ကွေ့၍ ခြေမ အောက်နားထိ အသာဖိ၍ ဆွဲပါ။
- ခြေမကွေးသွားလျှင် ဘာဘင်စကီး လက္ခဏာမရှိတော့ပါ။
- ခြေမ ကော့လန်ပြီးနောက် ကျန် ခြေချောင်းများပါ ဆန့်ကားသွားလျှင် ဘာဘင်စကီး လက္ခဏာ ရှိသည်။

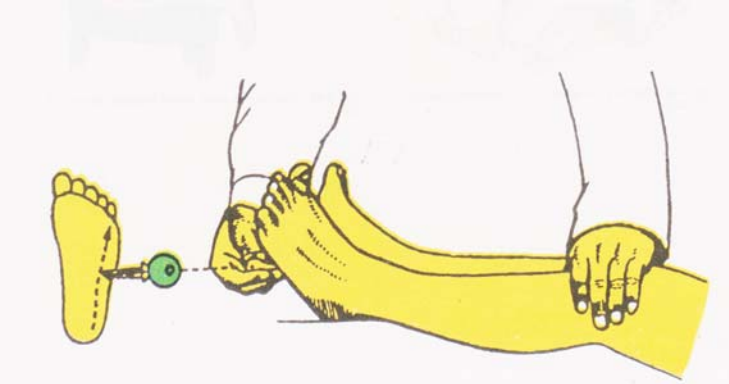


Fig. 8.45 Eliciting the plantar reflex. An extensor response is shown.

Each and every AFP case should be defined as suspected polio case and must take 2 adequate stool specimens for laboratory examination at WHO accredited Lab, NHL, Yangon

House to House Active case search must be done in residence (and travel place) of AFP cases

c. Stool specimen collection and transportation

Collection of stool specimens from every AFP case is a critical aspect of the polio eradication strategy.

Only by examination of the child's stool specimen in a WHO-accredited laboratory that capable of determined whether or not poliovirus is the cause of the child's paralysis.

From every case of AFP-

1. **Two stool specimens** are collected, and must be collected as soon as possible after the onset of paralysis in the child – ideally **within 14 days of onset of paralysis** and at least 24 hours apart.

If poliovirus is present in the child, specimens collected within 14 days are much more likely to yield the virus; the probability of finding poliovirus in the stool diminishes rapidly if stool is collected beyond the 14-days. Although the optimal time period for detection of poliovirus in the stool is within 14 days of paralysis onset, stool specimens should be collected from any late-reported AFP case up to 60 days from the date of paralysis onset. Beyond 60 days after paralysis onset, the likelihood of detecting poliovirus is very low.

2. Each specimen should be around 8 grams – each about the size of one adult thumb – collected in a clean, dry, screw-capped container. The container need not be sterile and no preservative/transport media should be used.

The specimens are collected, labeled and then transported in the **"cold chain**" – **on frozen ice packs or ice**, **in a stool specimen carrier to National Polio Lab at Yangon**.

3. **A standard lab request form (LRF)**, which includes the unique identification number that is assigned to each AFP case, is also filled out by the investigator and accompanies the

stool specimen. The specimens undergo culture and further specialized testing at the laboratory, and results are transmitted as rapidly as possible to CEU and WHO country office so that programme managers at national, state and district level can plan the appropriate actions.

9. Outbreak response and active case search in the community

Outbreak response immunization (ORI):

Following the AFP case investigation and stool specimen collection, ORI is organized in the community and performed as soon as possible. Children aged 0-59 months are given one dose of oral poliovirus vaccine (OPV) regardless of the number of doses received previously. The recipients also include children of the target age group in the village/locality of the AFP case. The travel history of the child with AFP may suggest additional places of stay where ORI should also be conducted. While conducting the house-to-house immunization during ORI, the investigation team searches for additional AFP cases in the community, which – if present – could signal the possibility of a polio outbreak.

For polio free countries, strategies for ORI are being reviewed in consultation with National EPI / Surveillance programme. During active search in the community from where AFP case has been reported, immunization status of <5 years children is evaluated. If many children are found under immunized, ORI is indicated. If the immunization coverage in the area (OPV3>90%) is high, ORI is not necessary.

Active case search in the community:

In the community where an AFP case resides – or where an AFP case has visited during the incubation period for polio (3-35 days before paralysis onset) – a house-to-house active case search is conducted to find additional AFP cases that may have occurred. This activity is carried out immediately. A search is conducted for any children aged <15 years who have had the onset of flaccid paralysis within the preceding 60 days. All cases that are found are investigated immediately, with collection from the case of two stool specimens before administration of OPV. The purpose of the search is to uncover additional AFP cases in the community, if any. Only by investigating each and every case of AFP occurring in children aged 0-15 years can we be certain whether or not wild polioviruses have been eliminated from the community.

10. 60-day follow-up, cross-notification and tracking of cases

60-day follow-up examination:

The TMO or RSO re-visits reported AFP cases at least 60 days after the onset of paralysis to confirm

the presence or absence of residual weakness.

In the following cases the child undergoes a 60-day follow-up exam:

1) cases with inadequate or no stool specimens;
2) cases with isolation of vaccine virus from the stool;
3) cases with isolation of wild poliovirus from the stool; and
4) any case that the investigator thought was strongly suggestive of poliomyelitis on initial examination (“hot case”).

On 60-day follow-up, the child is assessed for weakness, asymmetrical skin folds, and difference in left/right mid-arm/mid-thigh circumference. The child is considered to have residual weakness if any of the above is present, even if minimal. The finding of residual weakness on follow-up is suggestive that the case may actually be polio, and this information is taken into account during final case classification. 60-day follow-up of children from whom wild poliovirus was isolated allows the investigator to assess the community for evidence of ongoing wild virus transmission, by searching for additional AFP cases.

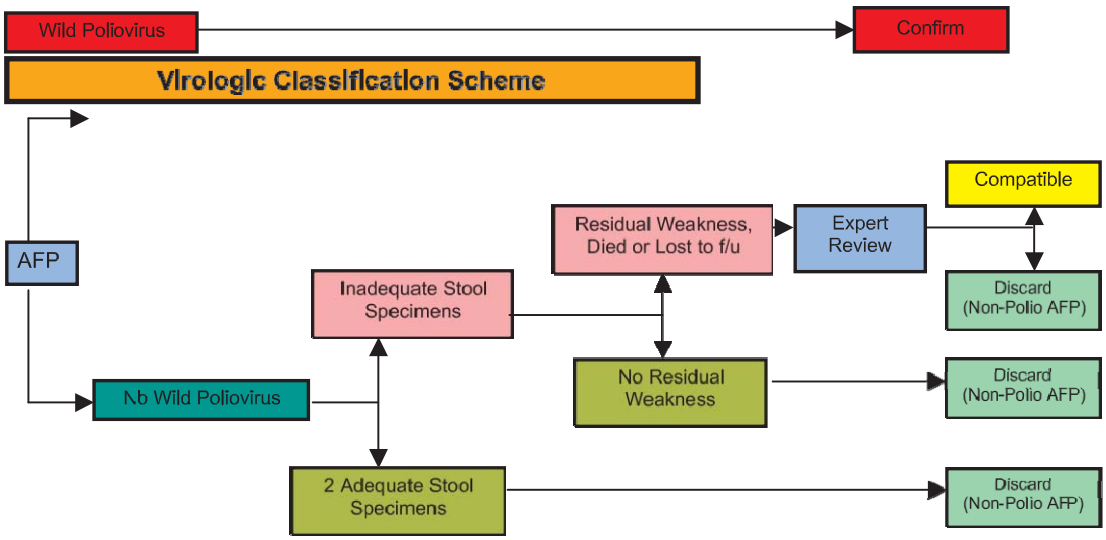
Cross notification and tracking of cases:
AFP cases are investigated anywhere in Myanmar, irrespective of where the child lives. In the event that a child with AFP travels from his/her Resident Township, the case is thoroughly investigated by the TMO/RSO of the State / Regional to which the child has traveled. An efficient communication system (telephone/fax) has been established to send information immediately to the RSO of the resident State / Regional of the AFP case. The AFP case is constantly tracked by the RSO so that the epidemiological investigation and all necessary surveillance activities are completed, and to ensure that no case is "lost." Similar cross-notification and reciprocal case investigation procedures exist with the bordering countries of Bangladesh, India, China and Thailand.

11. Data management and case classification

At the end of each week, the TMO reports to the State / Divisional focal person / RSO the line list of all new AFP cases reported during that week. Reporting takes place even when no cases of AFP were identified; this serves as a check to ensure that reporting has not simply been forgotten. The data are entered into the CEU / WCO database and are analyzed for program monitoring, checking data quality and assessing progress toward eradication. Using geographic information system (GIS) software, the WCO-EPI data management team maps the location of AFP cases, wild poliovirus cases in the actual township where the case occurred, so that appropriate programme action can be planned.

Case classification:
As soon as lab results and (when required) 60-day follow-up reports are available, the cases are classified by AFP case classification committee as polio or non-polio AFP.

Virologic Classification of Acute Flaccid Paralysis



In January 2000 Myanmar shifted to the more advanced and more specific virologic system of case
classification (see Virologic Classification Scheme; countries may advance to this classification system upon reaching a national non-polio AFP rate of at least 1 case/100,000 children aged <15 years; adequate stool collection from at least 80% of AFP cases; all stools tested in a WHO-accredited polio laboratory).
This classification system is used in countries that meet and sustain a high level of AFP surveillance performance, as measured by specific indicators (see WHO Indicators of AFP Surveillance and Laboratory Performance). Cases with inadequate stool specimens and having residual weakness, who have died or are lost to follow-up undergo a dditional investigation and are presented for review by the National Expert Review Committee (ERC), comprising highly skilled pediatricians, neurologists, virologists and epidemiologists who examine all the evidence and make a judgment on the most likely diagnosis. The ERC classifies the case as “compati ble with polio” or “discarded as non-polio AFP.”
The mandate of the ERC is to discard cases as non-polio AFP only if they can be confident that the case is not compatible with polio; if any doubt exists, then the case is classified as *compatible with polio***.** Polio-compatible cases are indicative of a failure of surveillance, and serve as a reminder that all efforts must be made to ensure that cases are reported early enough to enable collection of adequate stool specimens from every AFP case.

12. PREPARATION OF AFP CASES FOR EXPERT REVIEW

All AFP cases with inadequate stool specimens and residual weakness at 60 day follow- up or those who have died or are lost to follow-up are evaluated by the Expert Review committee. For all such cases, RSO/TMO should collect additional clinical and laboratory information, described below. When the National Certification Committee collects data in preparation for certification procedures, the cases evaluated by the Expert Review Committee undergo special scrutiny, as it is these cases that are most likely to be misclassified.
The RSO should therefore ensure that information obtained on these cases is complete and accurate

12. 1 Selection Of Cases

The RSO will identify cases with inadequate specimens and collect detailed supplementary information and as soon as the RSO/TMO realizes that an AFP case has inadequate stool specimens, he/she should initiate processing of the case for expert review

RSO/TL/TMO should send the following technical documents to CEU

Completed CIF

Clinical Record of AFP cases for expert review completed by Paediatrician

Case Summary (Format for AFP Case Summary for Expert Review)

Copy of Hospital case sheets

Interview/ Opinion of attending physician/ pediatrician in a separate sheet/ letter pad

Photograph of the child showing involved parts

60 day follow-up Report
a. If done already – The report should be sent in the standard format
b. If pending – All other documents should be sent to CEU.
The 60 day follow-up should be done when due and the report sent in the standard format. (The case will be classified only on the receipt of the 60 day follow-up report).

Other test as necessary depending on the clinical picture may also be done
(1) CSF Examination
(2) Electromyogram
(3) Nerve conducting tests
(4) CT scan of Body parts x-rays
(5) Other necessary lab and Radiological investigation

If 60-day follow-up examination shows no residual weakness, then EMG and NCV are not required and the result should be communicated to CEU in the 60-day follow-up section of the line list.

13. Data Analysis and monitoring

An important aspect of a successful polio eradication program is a well-developed information system that provides program managers and health workers with the necessary information to take appropriate actions. The surveillance data should be reviewed on a weekly basis at the national, state and district levels to detect and quantify disease occurrence, assess changing disease patterns over time, determine risks for disease, monitor the progress of the polio eradication program and evaluate the performance of the AFP surveillance system itself.

Epidemiologic Analysis

The data needs to be analyzed by time, person, and place.
Time: Number of AFP/WPV/compatible/non-polio AFP cases by month and year should be analyzed for State/Region, Township.
Person: The characteristics of AFP/WPV/compatible/non-polio AFP should be analyzed by State/Region, Township. Key characteristics include age, sex and OPV status.
Place: Distribution of AFP/WPV/compatible/non-polio AFP cases by State/Region, Township

AFP Surveillance Performance Indicators

Indicator	Target	Calculation
1. Non-polio AFP rate	≥ 2/100,000	$\frac{\text{No. of discarded non-polio AFP cases among 15 years of agegroup}}{\text{Total number of children < 15 years of age}}$ X 100000

The non-polio AFP rate is an indicator of surveillance "sensitivity". If it is less than 2 per 100,000 children under 15 years of age, then the surveillance system is probably missing cases of AFP and would probably miss polio if it occurred.

2Reported AFP cases with 2 specimens collected ≤ 14 days since onset.	≥ 80%)	$\frac{\text{No of AFP cases with 2 specimens collected with 14 days of paralysis onset}}{\text{Total no of stool specimens collected from AFP cases}}$
3. Reported AFP cases investigated ≤ 48 hrs of report	≥ 80%	$\frac{\text{No of AFP cases investigated ≤ 48 hrs of notification}}{\text{Total no of AFP cases}}$ X 100
4Timeliness of weekly reporting		$\frac{\text{Number of reports received before a specified deadline}}{\text{Number of weekly reports expected}}$ X 100
5. Completeness of weekly reporting.	≥ 90%	$\frac{\text{Number of weekly reports received}}{\text{number of weekly reports expected}}$ x 100
6. Reported AFP cases with a follow-up exam at least 60 days after paralysis onset to verify the presence of residual paralysis or weakness.	≥ 80%	$\frac{\text{No of AFP cases investigated for follow up examination at least 60 days after paralysis onset}}{\text{Total no of AFP cases}}$ x 100
7. Specimens arriving at National Health Laboratory, Yangon≤ 3 days of being sent	≥ 80%	$\frac{\text{No of Specimens arriving at National Health Laboratory, Yangon≤ 3 days of being sent}}{\text{Total no of stool specimens collected from AFP cases}}$ x 100
8. Specimens arriving at NHL in ⇒good condition	≥ 80%	$\frac{\text{No of Specimens arriving at NHL in good condition}}{\text{Total no of stool specimens collected from AFP cases}}$ x 100

Good condition means that upon arrival:

- there is ice or frozen ice packs in the container
- the specimen volume is adequate (> 8 gms or size of adult thumb)
- there is no evidence of leakage or desiccation
- appropriate documentation (laboratory request form) is completed

Indicator	Target	Calculation
9. Specimens with a turn-around time ≤ 28 days	≥ 80%)	

The turn-around time is the time between receipt of specimens by the National Polio Laboratory and reporting of results to EPI/CEU.

10. Stool specimens from which non-polio enterovirus was isolated	10%	No of stool specimen positive for NPEV / Total no of stool specimen tested	x 100

This is an indicator of the quality of the reverse cold chain and how well the laboratory is able to perform in the routine isolation of enteroviruses.

Certification-standard performance is defined as the achievement of a non-polio AFP rate of at least 2 non-polio AFP cases per 100 000 population aged <15 years, with adequate stool specimens collected from at least 80% of cases. Specimens are defined as "adequate" if two specimens are collected within 14 days of onset of paralysis, at least 24 hours apart, arriving in the laboratory in good condition. All specimens must be analysed in a laboratory accredited by WHO

13. Identification of high risk area / "Hot" Cases

All such cases, look **like Polio are labeled as 'Hot Cases'.**

Characteristics, signs and symptoms, which are most commonly observed in polio case are as follow

- AFP case (Age less than 5 years, history of fever at onset of paralysis, asymmetrical proximal paralysis, <3 OPV doses.)
- There are 2 or more polio compatible case within a two-month period in the same or adjacent Townships.

AFP Cluster

• Occurrence of 2 or more AFP cases (onset of each case would be within 60 days) in same or adjacent townships

During the final stages of polio eradication it becomes increasingly important to identify Hot AFP cases that appear likely to be polio and AFP clustering, so that immediate follow-up action can be taken. All hot AFP case and AFP cluster (not only under 15 years age group and also for all age group) should be reported immediately to State/Regional Health Department and CEU and conducted thorough case investigation including laboratory examination as necessary and ORI as early as possible. For all Hot cases with inadequate specimens, contact stool samples should be collected. Stools can be collected from contacts of the hot index case up to six months following the onset of paralysis in an index case.

V. Vaccine-derived polioviruses (VDPV)

Vaccine-derived polioviruses (VDPVs) are rare strains of poliovirus that have genetically mutated from the strain contained in the oral polio vaccine. The oral polio vaccine contains a live, attenuated (weakened) vaccine-virus. When a child is vaccinated, the weakened vaccine-virus replicates in the intestine and enters into the bloodstream, triggering a protective immune response in the child. Like wild poliovirus, the child excretes the vaccine-virus for a period of six to eight weeks. Importantly, as it is excreted, some of the vaccine-virus may no longer be the same as the original vaccine-virus as it has genetically altered during replication. This is called a vaccine-derived poliovirus.

5.1Types of vaccine-derived poliovirus

There are three types of vaccine-derived poliovirus:

1. circulating vaccine-derived poliovirus (cVDPV)
2. immunodeficiency-related vaccine-derived poliovirus (iVDPV)
3. ambiguous vaccine-derived poliovirus (aVDPV).

(a) Circulating vaccine-derived poliovirus (cVDPV)

On very rare occasions, if a population is seriously under-immunized, there are enough susceptible children for the excreted vaccine-derived polioviruses to begin circulating in the community. These viruses are called circulating vaccine-derived polioviruses (cVDPV). The lower the population immunity, the longer these viruses survive. The longer they survive, the more they replicate, change, and exchange genetic material with other enteroviruses as they spread through a community.
If a population is fully immunized against polio, it will be protected against the spread of both wild and vaccine strains of poliovirus.
Episodes of circulating vaccine-derived poliovirus are rare. Between 2000 and 2011 – a period in which more than 10 billion doses of oral polio vaccine were given worldwide – 20 cVDPV outbreaks occurred, resulting in 580 polio cases. In the same period, wild poliovirus paralysed over 15 500 children.

(b) Immunodeficiency-related vaccine-derived poliovirus (iVDPV)

Prolonged replication of vaccine-derived viruses has been observed in a small number of people with rare immune deficiency disorders. Because they are not able to mount an immune response, these people are not able to clear the intestinal vaccine virus infection, which is usually cleared within six to eight weeks. They therefore excrete immunodeficiency-related vaccine-derived polioviruses (iVDPVs) for prolonged periods.

The occurrence of iVDPVs is very rare. Only 33 cases have been documented worldwide. Of these, most stopped excretion within six months or died.

(c)Ambiguous vaccine-derived poliovirus (aVDPV)

Ambiguous vaccine-derived polioviruses (aVDPVs) are vaccine-derived polioviruses that are either isolated from people with no known immunodeficiency, or isolated from sewage whose ultimate source is unknown. Very little is known about them.

5.2 Testing for vaccines-derived polioviruses

All cases of acute flaccid paralysis (AFP) among children under fifteen years of age are reported and tested for wild poliovirus or vaccine-derived polioviruses within 48 hours of onset.

5.3 Implications and management of vaccine-derived polioviruses

Circulating vaccine-derived polioviruses must be managed in the same way as wild poliovirus outbreaks. The solution is the same for all polio outbreaks: immunize every child several times with the oral vaccine to stop polio transmission, regardless of whether the virus is wild or vaccine-derived. Vaccine-derived polioviruses appear to be less transmissible than wild poliovirus. Outbreaks are usually self-limiting or rapidly stopped with 2–3 rounds of high-quality supplementary immunization activities. Once wild poliovirus transmission has been stopped globally, the vaccine-viruses will be the only source of live polioviruses in the community and could potentially lead to the re-emergence of polio. Use of the oral polio vaccine in routine immunization programmes will therefore be phased out to eliminate the rare risks posed by vaccine-derived polioviruses.

5.4 Surveillance and Response of VDPV in Myanmar

Table showing Occurrence of Vaccine Derived Polio cases in Myanmar 2006-2015

Year	Cases	Township	State/Region	Type
2006	1	Pyinoolwin	Mandalay	P1 VDPV
2007	4	Khayan Pha-An Phyu Chaungson	Yangon Kayin Bago Mon	P1 VDPV
2010	1	Yamethin	Mandalay	**P2** VDPV
2012	1	Lauk kaing	Shan (North)	P1 VDPV
2015	2	Maungdaw	Rakhine	**P2** VDPV

Recently, laboratory confirm VDPV type 2 was isolated from a 16-month old boy who developed acute flaccid paralysis (AFP) with onset of 5 October, 2015. The child had not been previously vaccinated against polio. This strain is from the same VDPV2 strain isolated earlier this year from a polio case (a 28-month-old child) that had developed AFP on 16 April. The two cases are from the same township in Rakhine state. The genetic changes of the isolates detected in April and October suggest that the cVDPV2 may have been circulating for more than one year.

A detailed investigation has been undertaken in the area and stool samples from 28 household / community contacts of the AFP case have been collected and sent for

laboratory investigation. Three additional AFP cases, detected in the area during the active case search, are currently under investigation.

Public health response

The Ministry of Health, supported by WHO and partners of the Global Polio Eradication Initiative, is engaging in implementing an urgent outbreak response plan. From 5 to 7 December, 2015 a first response supplementary immunization activity (SIA) with trivalent oral polio vaccine (tOPV) was conducted in 15 townships targeting nearly 360,000 children under the age of five years. The Ministry of Health plans to conduct at least three more large-scale SIAs in Rakhine and neighbouring provinces as well as other identified 'high risk' areas of the country, between December and the end of February 2016. Active searches for additional AFP and other activities to enhance surveillance for polioviruses are being intensified to more clearly ascertain the extent of circulation of this strain.

VI. OBJECTIVE 2: ROUTINE IMMUNIZATION STRENGTHENING & OPV WITHDRAWAL

This objective seek to hasten the interruption of all poliovirus transmission and help build a stronger system for the delivery of other lifesaving vaccines.

The Polio Eradication and Endgame Strategic Plan which provides a detailed approach and concrete timeline for complete eradication of polio and deals with the eradication and containment of polio caused not just by wild viruses but also cases associated with oral polio vaccine (OPV). The objective 2 seeks to hasten the interruption of all poliovirus transmission and help build a stronger system for the delivery of other lifesaving vaccines.

To address risks associated with OPV use, the Plan calls for a phased withdrawal of OPV globally beginning with removal of the type 2 component of OPV through a switch globally from trivalent OPV (tOPV) to bivalent OPV (bOPV, containing only types 1 and 3) in 2016. The plan aims to ensure that a substantial proportion of the population is protected against type 2 polio after OPV type 2 withdrawal, the WHO's Strategic Advisory Group of Experts (SAGE) has recommended that all countries introduce at least one dose of inactivated polio vaccine (IPV) in their routine immunization programs before end of 2015, prior to the tOPV-bOPV switch.

Success in eliminating cVDPVs depends on the eventual withdrawal of all OPV, beginning with the withdrawal of the type 2 component of trivalent oral polio vaccine (tOPV) and the withdrawal of this type 2 component (OPV2) entails strengthening immunization systems, introducing at least one dose of affordable IPV into the routine immunization schedule in contry.

Considering the globally synchronized withdrawal of type 2 OPV in April 2016 (through the switch from tOPV to bivalent OPV – bOPV), efforts are underway to ensure that transmission of any cVDPV2 is interrupted ahead of that date. Myanmar has developed a national switch plan which was endorsed by the Ministry of Health and the plan is to move from tOPV to bOPV on 29 April, 2016, and Inactivated polio vaccine (IPV) was launched throughout the country on 3 December. (6 months before switch from tOPV to bOPV).

New EPI Schedule in Myanmar

IPV will be provided only one dose at the age of **4 months and above** for all infants in routine EPI schedule. (Infants should receive one dose IPV as early as possible after 4 months)

It will be given together with Pentavalent vaccine.

VII. OBJECTIVE 3: CONTAINMENT AND CERTIFICATION

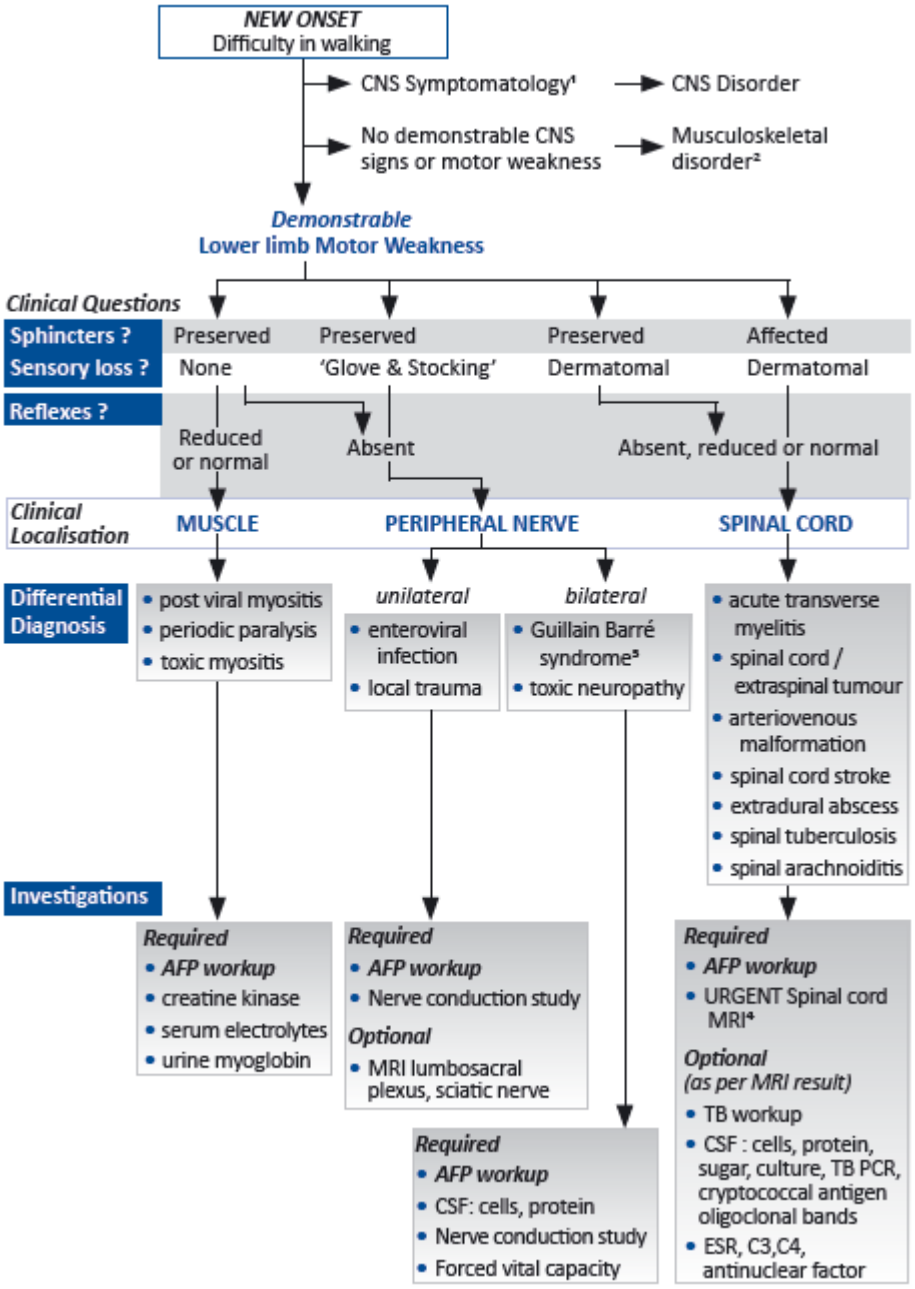
This objective is aims to certify all regions of the world polio-free and ensure that all poliovirus stocks are safely contained by 2018. This work includes finalizing international consensus on long-term biocontainment requirements for polioviruses. Making sure that these standards are applied is a key element of certifying eradication. Through the period of this Plan, all six WHO regions will need to have Regional Certification Commissions in place to review documentation from all countries and verify the absence of WPV in the presence of certification-standard surveillance.

National polio laboratory is performing well with yearly accreditation and performance indicators are good. It is sensitive enough to isolate discordant VDPV with 13 nucleotide changes, confirmed by reference laboratory. In April 2015, there was a case of type II VDPV and all the related specimens had been destroyed by autoclaving. So it is planned to send laboratory survey form to this Rakhine State for storage of stool for laboratory containment of type 2. Laboratory community will be informed about switching of OPV & importance of containment. Containment task force will update the list of laboratory; send Lab survey form to new lab and lab which has deep freezer/refrigerated with freezer compartment before the end of 2015.

VIII. OBJECTIVE 4: LEGACY PLANNING

This objective aims to ensure that the world remains permanently polio-free and that the investment in polio eradication provides public health dividends for years to come. The work involves mainstreaming long-term polio functions such as IPV immunization, containment and surveillance, leveraging lessons for other major health initiatives and transitioning the polio infrastructure as appropriate. At present, polio eradication staff comprise the single largest source of external technical assistance for immunization and surveillance in low-income countries. Polio-funded personnel are responsible for helping countries reach hundreds of millions of the world's most vulnerable children with the polio vaccine and other health interventions such as measles vaccines and anti-malarial bednets. Careful planning is essential to ensure that lessons learnt during polio eradication, as well as the assets and infrastructure built in support of the effort, are transitioned responsibly to benefit other development goals and global health priorities. This will require thorough consultation with a range of stakeholder groups.

Differential Diagnoses of Poliomyelitis



Guillain-Barre syndrome:
the commonest cause of acute flaccid paralysis (AFP) in healthy children
 0.9-1.5 per 100,000 population <15yrs
 Acute inflammatory demyelinating polyradiculoneuropathy (AIDP)
 Symmetrical progressive ascending weakness, areflexia, variable sensory complaints, and elevated CSF protein without pleocytosis

Differential Diagnosis of Poliomyelitis & Guillain-Barre syndrome

Feature	Poliomyelitis	G.B.S
Age	Common < 5 years	Common > 4 years
Respiratory + gastro intestinal Prodrome	Present 3-5 dyas before onset of paralys	Present 7-14 days before onset of paralys
Progression of paralysis	within 1-2 days	within hours to 10 days
Fever at onset of paralysis	Always present at onset	Fever not common
Flaccid paralysis	Acute, asymmetric, proximal in affected limbs	Acute symmetric, distal limbs, often general hypotonia
Deep tendon reflex	Decreased to absent	Generally absent
Sensation	Myalgia possible	Cramps, hypoasthesia, tingling
Cerebrospinal	Inflammatory, upto 100 lymphocytes	Albumin-cytologic dissociation
EMG 3rd week	Abnormal	Normal
Sequelae at 60 days follow up	Residual paralysis, later asymmetrical muscle atrophy and skeletal deformities	No neurological deficit

Other much less common cause of non-polio AFP are:

Traumatic neuritis

If adequate trauma (i.e., im injection) is not reported, traumatic neuritis can be very hard to distinguish from polio because the presentation is very similar.

Transverse myelitis

AFP in transverse myelitis will have onset without fever and will be symmetrical in distribution, affecting the lower limbs.

Table 1. Criteria for the differential diagnosis of poliomyelitis

	Polio	Guillain-Barré syndrome	Traumatic neuritis	Transverse myelitis
Time from onset of paralysis to full progression	Usually from two to three days	From hours to 10 days	From hours to four days	From hours to four days
Fever	Fever with onset of paralysis, usually disappearing within three to four days	Not common	Commonly present before, during, and after flaccid paralysis	Rarely present
Flaccid paralysis	Acute, asymmetrical, principally proximal (upper part of arms and legs)	Generally acute, symmetrical, and distal (lower part of arms and legs)	Asymmetrical, acute, usually affecting only one limb	Acute, lower limbs affected symmetrically
Muscle tone	Reduced or absent in the affected limb	Reduced or absent	Reduced or absent in the affected limb	Deduced in lower limbs
Deep-tendon reflexes	Decreased or absent	Absent	Decreased or absent	Absent in lower limbs
Sensation, pain	Sensation usually normal; severe myalgia, backache	Cramps, tingling, reduced sensation on palms and soles	Pain in buttocks, reduced sensation to cold and heat	Anesthesia of lower limbs with sensory perception
Cranial nerve involvement	Only when bulbar involvement is present	Often present, low and high: Miller/Fisher variant	Absent	Absent
Respiratory insufficiency	Only when bulbar involvement is present	In severe cases, complicated by bacterial pneumonia	Absent	Often thoracic paralysis, with sensory perception
Autonomic signs & symptoms	Rare	Frequent blood pressure alterations, sweating, blushing, body temperature fluctuations	Hypothermia in affected limb	Present
Cerebrospinal fluid	Inflammatory	High protein content with relatively few cells	Normal	Normal or mild increase in cells
Bladder dysfunction	Absent	Transient	Never	Present
Nerve conduction velocity at 3 weeks	Abnormal: anterior horn cell disease (normal during the first 2 weeks)	Abnormal: demyelinization	Abnormal: axonal damage	Normal or abnormal, no diagnostic value
Sequelae at 3 months up to 1 year	Severe, asymmetrical atrophy; skeletal deformities appear later	Symmetrical atrophy of peroneal muscles (outer side of leg)	Moderate atrophy, only in affected lower limb	Atrophy, flaccid diplegia years later

Source: Alcalá H, Olivé J-M, de Quadros C. "The Diagnosis of Polio and Other Acute Flaccid Paralyses: A Neurological Approach." Document presented at the Ninth Meeting of the Technical Advisory Group on Vaccine-preventable Diseases, held in Guatemala City, Guatemala, 12–15 March 1991. (Doc. EPI/TAG/91-10).

Physical Examination

Non-Paralytic Poliomyelitis

Meningeal signs may be present on physical exam:

Nuchal rigidity

Positive Kernig's sign

Positive Brudzinski's sign

Paralytic Poliomyelitis

Spinal Paralytic Poliomyelitis

Temperature

- A fever is often present

Extremities

- Weakness of the extremities, predominantly of the proximal muscles, is characteristic of this form of the disease. Lower extremities are more often involved.
- Asymmetrical flaccid paralysis, predominantly of the proximal muscles, is characteristic of this form of the disease. Lower extremities are more often involved.

Neurologic

- Meningeal signs may be present on physical exam, such as:
    - Nuchal rigidity
    - Kernig's sign
    - Brudzinski's sign

Overview

Meningism is the triad of nuchal rigidity, photophobia (intolerance of bright light) and headache. It is a sign of irritation of the meninges, such as seen in meningitis, subarachnoid hemorrhages and various other diseases. *"Meningismus"* is the term used when the above listed symptoms are present without actual infection or inflammation; usually it is seen in concordance with other acute illnesses in the pediatric population.

Clinical signs

The main clinical signs that indicate meningism are *nuchal rigidity*, *Kernig's sign* and *Brudzinsky's signs*. None of the signs are particularly sensitive; in adults with meningitis, nuchal rigidity was present in 30% and Kernig's or Brudzinsky's sign only in 5%.[2]

Nuchal rigidity

Nuchal rigidity is the inability to flex the head forward due to rigidity of the neck muscles; if flexion of the neck is painful but full range of motion is present, nuchal rigidity is absent.

Kernig's sign

- Kernig's sign (after Vladimir Mikhailovich Kernig, Russian-Baltic German neurologist 1840-1917) is positive when the leg is fully bent in the hip and knee, and subsequent extension in the knee is painful (leading to resistance).[3]. This may indicate subarachnoid haemorrhage or meningitis[4]. Patients may also show opisthotonus—spasm of the whole body that leads to legs and head being bent back and body bowed forward.

Brudzinski's signs

- Josef Brudzinski (1874-1917), a Polish pediatrician, is credited with several signs in meningitis. The most commonly used sign (Brudzinski's neck sign) is the appearance of involuntary lifting of the legs in meningeal irritation when lifting a patient's head.[5][2]

Other signs attributed to Brudzinsky:[6]

- The symphyseal sign, in which pressure on the pubic symphysis leads to abduction of the leg and reflexive hip and knee flexion.[7]
- The cheek sign, in which pressure on the cheek below the zygoma leads to rising and flexion in the forearm.[7]
- Brudzinski's reflex, in which passive flexion of one knee into the abdomen leads to involuntary flexion in the opposite leg, and stretching of a limb that was flexed leads to contralateral extension.[8]

- Initially hyperactive deep tendon reflexes, that later become absent.
- Common combinations of limb involvement include:
    - One lower limb, followed by one upper limb
    - Both lower limbs, followed by both upper limbs
- Quadriplegia is a rare finding in infants.

Bulbar Paralytic Poliomyelitis

Neurologic

- Pharyngeal paralysis, evidenced by accumulation of secretions is often present in this form of the disease.[2]
- Inability to swallow[2]
- In rare severe cases, respiratory centers may be affected, leading to inability to breathe.[2]

Polioencephalitis

Neurologic

- Seizures are often present
- Spastic paralysis may be present

AFP
CASE INVESTIGATION FORM

Case Identification Number:
MMR - __ __ - __ __ - __ __ - __ __ __

PLEASE COMPLETE THIS FORM CAREFULLY. ITS CONTENTS WILL BE REVIEWED DURING CERTIFICATION.

1. Investigation Information:

Name of Investigator (M.O.):_____

Date Case Reported: ____ /____ / ____

Title: _____

Date Case Investigated: ____ / ____ / ____

Office: _____

Place of Investigation: (Village / Ward / Township) _____

2. Case Identification: Patient's Name: _____

Sex: _____ Date of Birth: ____/____/____ Age: years___ months____

Father's Name:_____ Mother's Name:_____

Permanent Address (to find child for followup exam): State/Division: _____

URBAN: Township_____ Ward: _____

Street No. or Name: _____ House No.: _____

RURAL: Township_____ Village Tract_____ Village _____

3. Hospitalization: Yes/No Date of Hospitalization:___/___/___

Name of Hospital:_____ Hospital Record Number: _____

4. Immunization History: Total OPV doses received through routine EPI: _____

Total OPV doses received through NIDs or Mop Ups/Crash _____

Date of last dose of OPV (routine or NID or Mop Ups/Crash): ___/ ___/___

5. Travel History for previous 35 days

(i) Village/Ward _____ Township _____

Night stay Yes/No From_____till_____(date)

Village/Ward_____ Township _____

Night stay Yes/No From_____till_____(date)

(ii) If there are some persons suffering from AFP at visited area, mention the address of the area.

_____street_____village/ward_____Township

(Further investigation must be done and reported.)Mention Case Number of such cases: MMR / __ / __ / __ / ___

Please submit this completed form to CEU and Lab. Request Form to NHL.

AFP
CASE INVESTIGATION FORM

Case Identification Number:
MMR - __ __ - __ __ - __ __ - __ __ __

6. Symptoms and Physical Examination:

Flaccid paralysis: Yes/No/Doubtful — Date of Paralysis Onset:___/___/___

Acute paralysis: Yes/No/Doubtful

Number of days from onset to maximum paralysis:_____ — Muscle tenderness: Yes/ No/ Doubtful

Fever -3 weeks before onset: Yes/No/Unknown — Deep Tendon reflex:***** Bicep( )/ Tricep ( )/

Fever on day of paralysis onset: Yes/No/Unknown — Supinator( )/Knee ( )/Ankle ( )

Any injections during 30 days before paralysis onset: Yes/No — Barbinski's reflex: Yes / No /Doubtful

Facial muscle weakness: Yes / No — Ankle clonus: Yes / No /Doubtful

Neck Stiffness: Yes/No/Doubtful — Paraesthesia in extremities: Yes/No/Doubtful

Proximal muscle weakness: Yes/ No/ Doubtful — Sensation loss: Yes/No/Doubtful

Is proximal weaker than distal? Yes/No — Incontinence: Bladder/Bowel/ No

Asymmetrical paralysis: Yes/No/Doubtful — Ability to walk : (circle) cannot walk/walks with a limp/

Type of paralysis: Ascending/ Decending / Stationary — walks normally

Site(s) of Paralysis: (Muscle Power)****** right arm ( )/ left arm ( )/ right leg ( )/ left leg ( )/ other (describe): ( )

Muscle atrophy: Yes/ No (If Yes, mention site of Muscle atrophy: _____)

7. Stool Specimen Collection:			NHL	Regional Reference Laboratory		
Date Collected	Date Sent	Date of Result	Laboratory Results	Date sent	Date of result	Result
Stool 1 ___/___/___	___/___/___	___/___/___				
Stool 2 ___/___/___	___/___/___	___/___/___				

Signature of Medical Officer _____

8. 60 Days Follow-up Examination: Yes/No — Name of investigator and Title doing 60 days Follow-up: _____

Date of Follow-up — Date: ___/___/___

if there is no follow-up, why?_____

Lost to follow-up: Yes/No — If yes, why? _____

Died? Yes/No — If yes, (1)date: __/__/__ — (2) cause of Death?_____

Follow-up Result

Residual weakness: Yes/No

Paraesthesia in extremities: Yes / No / Doubtful

Sensation lost: Yes/No/Doubtful

Ability to walk : cannot walk/walks with a limp/ walks normally

Deep Tendon reflex:***** Bicep( )/ Tricep ( )/ Supinator( )/ Knee( )/ Ankle( )

Site(s) of Paralysis: (Muscle Power) ****** right arm ( )/ left arm ( )/ right leg ( )/ left leg ( )/ other (describe): ( )

Muscle atrophy: Yes/ No (If Yes, mention site of Muscle atrophy: _____)

Signature of Medical Officer _____

9. Final Classification: Confirmed Polio: Yes/No — Compatible: Yes / No — Discarded: Yes / No

Criteria: (check all that apply) — If discarded, what was the final diagnosis?

1. Virus Isolation: _____ — 1. Guillain-Barre: _____
2. Residual Paralysis: _____ — 2. Transverse Myelitis: _____
3. Died: _____ — 3. Traumatic Neuritis: _____
4. Lost to Followup: _____ — 4. Other: _____
5. Inadequate stool: _____
6. Classification of expert committee : _____ (date): _____

NB: ***** Deep tendon reflex (1.Normal 2.Absent 3.Increased 4.Decreased)

****** Site of Paralysis (muscle power) : (Indicate maximum power only)

0. Can't move 1. Slightly (fasciculation) 2. Horizontally 3. Vertically 4. Against resistance 5. Normal(full strength)

******* Circle the response

Please submit this completed form to CEU and Lab. Request Form to NHL.

Signature of Medical Officer

AFP
LABORATORY FORM
(to accompany stool specimens to laboratory)

Case Identification Number:
__ __ __ / __ __ / __ __ / __ __ / __ __ __
(from AFP Case Investigation Form)

PART I: To Be Filled Out by Case Investigator:

Report/Investigation Information: Name of Investigator:_____
Date Case Reported: ____/____/____ Title:_____
Date Case Investigated: ____/____/____ Office: _____

Case Information:

Patient's Name: _____
Sex: _____ Date of Birth: ____/____/____ Age: years____ months____
Permanent Address: State/Province: _____
URBAN: District_____ Ward: _____
Street No. or Name: _____ House No.: _____
RURAL: District_____ Village Tract_____ Village_____
Date of Onset of Paralysis:___/___/___
Total number of OPV doses received _____
Date of patient's last dose of OPV (routine or SIA): ___/___/___

Stool Specimen Collection:

	Date Collected	Date Sent to Lab
Stool 1	___/___/___	___/___/___
Stool 2	___/___/___	___/___/___

Name of Person to Whom Lab Results Should Be Sent:

Name: _____
Complete Address: _____
_____
Telephone Number:_____

PART II: To Be Filled Out by National Polio Lab

	Stool 1	**Stool 2**
Date specimens received at laboratory:	___/___/___	___/___/___
Condition of Specimens:*	Good _____ Poor _____	Good _____ Poor _____
Results: (circle)	Poliovirus: P1 P2 P3	Poliovirus: P1 P2 P3
	Non-polio Enterovirus	Non-polio Enterovirus
	Negative	Negative
Date Results Reported to EPI:	___/___/___	___/___/___
Isolates Sent to Reference Lab:	Yes / No	Yes / No
Date Isolates sent to Reference Lab:	___/___/___	___/___/___

Comments: _____
_____

PART III: To Be Filled Out by Reference Laboratory

Date isolates received: ___/___/___
Date Results Reported to National Health Laboratory: ___/___/___
Results of Intratypic Differentiation: (circle)
Specimen 1:
P1 Wild/Vaccine **P2** Wild/Vaccine **P3** Wild/Vaccine NPEV Negative
Specimen 2:
P1 Wild/Vaccine **P2** Wild/Vaccine **P3** Wild/Vaccine NPEV Negative
Comments: _____

* Criteria for "good" condition: adequate volume, no leakage, no dessication, and temperature indicator or ice indicating reverse cold chain was maintained.

AFP CASE
OUTBREAK RESPONSE IMMUNIZATION FORM

Case Identification Number:
MMR - __ __ - __ __ - __ __ - __ __ __

PLEASE COMPLETE THIS FORM CAREFULLY. ITS CONTENTS WILL BE REVIEWED DURING CERTIFICATION.

1. Investigation Information:

Name of Investigator (M.O.):_____

Date Case Reported: ____ /____ / ____

Title: _____

Date Case Investigated: ____ / ____ / ____

Office: _____

Place of Investigation: (Village / Ward / Township) _____

2. Case Identification: Patient's Name: _____

Sex: _____ Date of Birth: ____/____/____ Age: years___ months____

Father's Name:_____ Mother's Name:_____

Permanent Address (to find child for followup exam): State/Division: _____

URBAN: Township_____ Ward: _____

Street No. or Name: _____ House No.: _____

RURAL: Township_____ Village Tract_____ Village _____

3. Hospitalization: Yes/No Date of Hospitalization:___/___/___

Name of Hospital:_____ Hospital Record Number: _____

4. Action taken Date ___/___/___

(i) Active case search was done in:_____ (Ward/Township) for:

Total no. of Households visited for active case search _____

Total no. of under 15 yr visited for active case search _____

No. of AFP cases found during active case search _____

(New AFP case investigation form must be used for new AFP case and reported together with detailed information for Epidemiological findings)

(ii) Immunization response (ORI) for that area (Define area:_____)

- No. of households in the _____ area: _____
- No. of children living in the area _____ <1 ____ 1 - 5 Year ____ 6 - 15 Year ____
- No. of children immunized with OPV during ORI _____ <1 ____ 1 - 5 Year ____ 6 - 15 Year ____
- No. of children with OPV zero dose* _____ <1 ____ 1 - 5 Year ____ 6 - 15 Year ____
- No. of children with less than 3 doses* _____ <1 ____ 1 - 5 Year ____ 6 - 15 Year ____

(* Not counting dose given during ORI)

Please submit this completed form to CEU and Lab. Request Form to NHL.

MMR _ _/_ _/_ _/_ _ _

Acute Flaccid Paralysis Cluster Investigation Form

Items marked (*) and in italics are those added by the working group to the EPI Poliomyelitis Case Investigation Form

Country _____ Year _____

SOURCE OF REPORT:

Date reported: _ _/_ _/_ _ Person reporting case : _____

Name and address of institution:_____

_____ Telephone number _____

CASE IDENTIFICATION:

Name *(omitted in Research Surveys): _____ Sex: _____

Name: _____ Sex: _____

Date of Birth: _ _/_ _/_ _ Age at onset of symptoms:_____

Present Address: _____

Village/City: _____ District/Country _____ State/Province _____

Permanent Address: _____

Village/City: _____ District/Country _____ State/Province _____

Mother's name: _____ Father's name: _____

*Rural: _____ *Urban: _____

HOSPITALIZATION:

Hospitalized? Yes _____ No _____ Name of Hospital: _____

Address: _____

Medical Record No: _____ Date Hospitalized _ _/_ _/_ _

SYMPTOMS:

*1. Symptoms in the 4 weeks preceding the onset of paralysis

	yes	no	unk	*if yes, date
fever	___	___	___	_ _/_ _/_ _
constipation	___	___	___	_ _/_ _/_ _
*abdominal cramps	___	___	___	_ _/_ _/_ _
coryza	___	___	___	_ _/_ _/_ _
*paraesthesia	___	___	___	_ _/_ _/_ _
muscle pains	___	___	___	_ _/_ _/_ _
diarrhea	___	___	___	_ _/_ _/_ _
headache	___	___	___	_ _/_ _/_ _
headache	___	___	___	_ _/_ _/_ _
nausea	___	___	___	_ _/_ _/_ _
stiff neck	___	___	___	_ _/_ _/_ _
weakness	___	___	___	_ _/_ _/_ _
sore throat	___	___	___	_ _/_ _/_ _
irritability	___	___	___	_ _/_ _/_ _
vomiting	___	___	___	_ _/_ _/_ _
*diplopia (double vision)	___	___	___	_ _/_ _/_ _
rigidness	___	___	___	_ _/_ _/_ _

MMR _ _/_ _/_ _/_ _ _

*2. Symptoms at the onset of paralysis:

Date of onset of paralysis: _ _/_ _/_ _

	yes	no	unk
*lethargy	___	___	___
*sensory system's deficit	___	___	___
*muscle pain	___	___	___
*headache	___	___	___
*shortness of breath	___	___	___
*paraesthesias	___	___	___

fever of yes _____ degrees

pattern of development of weakness:

ascending ___

descending ___

bulbar ___

other ___

*SIGNS ON INITIAL BEUROLOGIC EXAMINATION

	no	yes
*stiff neck	___	___
*droopy to cough	___	___
*able to cough	___	___
*diplopia if yes: right___left___unk___	___	___
*EOM weakness	___	___
*facial weakness	___	___
*difficulty swallowing	___	___
*weakness neck flexors	___	___
*weakness neck extensors	___	___
*tongue	___	___

*Chest size (cm) inspiration _____ expiration _____

*able to walk: no: _____

yes: independent _____ with help _____

*Limb weakness: no: _____

if yes: right arm: no:____

if yes: can lift arm above head yes ___ no ___

can grip hand tightly yes ___ no ___

left arm: no:____

if yes: can lift arm above head yes ___ no ___

can grip hand tightly yes ___ no ___

right leg: no:____

if yes: can raise leg of bed yes ___ no ___

can bend ankle to head yes ___ no ___

can wiggle toes yes ___ no ___

left leg: no:____

if yes: can raise leg of bed yes ___ no ___

can bend ankle to head yes ___ no ___

can wiggle toes yes ___ no ___

MMR _ _/_ _/_ _/_ _ _

*Fasciculation	yes ___	no ___		
*Symmetric weakness	yes ___	no ___	R>L	L<R
*upper limbs	yes ___	no ___	R>L	L<R
*lower limbs	yes ___	no ___	R>L	L<R

*Reflexes (3 = increased; 2 = normal; 1 = decreased; 0 = absent)

	Right	Left
biceps	___	___
triceps	___	___
supinator	___	___
knee	___	___
ankle	___	___

Banbinski up ___ down ___ no movement ___

*Sensation (2 = normal; 1 = decreased; 0 = absent)

		Right	Left
Hand;	touch	___	___
	pin	___	___
	vibration	___	___
Foot;	touch	___	___
	pin	___	___
	vibration	___	___
Back;	touch	___	___
	pin	___	___

**Autonomic function*

	normal	abnormal	describe
bladder	_____	_____	_____
bowel	_____	_____	_____
sweating	_____	_____	_____

***HISTORY**

*recent vaccination	no _____ yes _____type _____ date _ _/_ _/_ _
*recent vaccination in family	no _____ yes _____type _____ date _ _/_ _/_ _
*animal bite	describe _____
*insect bite	describe _____
*tick bite	describe _____
*drugs	no _____ yes _____type _____ date _ _/_ _/_ _
*exposure to animals	no _____ yes _____type _____ date _ _/_ _/_ _
*exposure to pesticides	no _____ yes _____type _____ date _ _/_ _/_ _
*intramuscular infection	date _ _/_ _/_ _ site _____
*trauma	describe _____
*source of drinking water	describe _____
*other member of family ill	no _____
	if yes, describe _____

MMR _ _/_ _/_ _/_ _ _

*similar illness in: school no _____ yes _____

workplace no _____ yes _____

neighborhood no _____ yes _____

*blood transfusion no _____

if yes date _ _/_ _/_ _

***INTERVAL HISTORY**

*Date if maximal weakness: _ _/_ _/_ _

*Severity at maximal weakness:

quadriplegia with respirator no _____ yes _____

quadriplegia without respirator no _____ yes _____

paraplegia no _____ yes _____

other, describe: _____

*Respirator no _____ yes _____

if yes, date on _ _/_ _/_ _

date off _ _/_ _/_ _

*Death no _____ yes _____ date _ _/_ _/_ _

if yes, describe:_____

_____

IMMUNIZATON HISTORY

Usual Immunization Clinic: _____

				imm. card		date of immunization
	yes	no	unk	yes	no	day/month/year
OPV zero	___	___	___	___	___	_ _/_ _/_ _
OPV1	___	___	___	___	___	_ _/_ _/_ _
OPV2	___	___	___	___	___	_ _/_ _/_ _
OPV3	___	___	___	___	___	_ _/_ _/_ _
OPV4	___	___	___	___	___	_ _/_ _/_ _

PREMINARY CLINICAL CLASSIFICATION

Discarded Case: _____ Probable Case: _____

If not polio, give final diagnosis and comments below.

Date _ _/_ _/_ _

Comments:

_____

_____

_____

TRAVEL AND CONTACT HISTORY

Indicate all places outside present village/city (including other countries) visited by the patient 28 days prior to onset of paralysis/paresthesia.

Location	Person(s) visited	Date visited
_____	_____	_ _/_ _/_ _ to _ _/_ _/_ _
_____	_____	_ _/_ _/_ _ to _ _/_ _/_ _

MMR _ _/_ _/_ _/_ _ _

Did the case come in direct contact with someone who had been immunized with OPV in the previous 75 days?

(This sentence has only been reworded)

yes ___ no ___ ukn ___

Name	Address	Date immunized
_____	_____	_ _/_ _/_ _
_____	_____	_ _/_ _/_ _
_____	_____	_ _/_ _/_ _

LABORATORY DATA

Name of laboratory: _____

Address: _____ Country: _____

Virus * and Bacterial Isolation Studies

date collected from patient	date sent to lab	date of lab result	poliovirus isolated Type 1 type 2 type 3	*Cjejuni	other (specify)
Faeces/Swab 1					
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____
Faeces/Swab 2					
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____
Other					
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____

Serologic studies: Blood Sample (stored)

date collected from patient	date sent to lab	date of lab result	poliovirus isolated Type 1 type 2 type 3	*Cjejuni	*HIV other (specify)
S1* _ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____
S2* _ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____
S3* _ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	____ ____ _____	_____	_____

* acute

** convalescent (14-30 days after onset of weakness)

Interpretation

_____

_____

_____

MMR _ _/_ _/_ _/_ _ _

CSF (Cerebrospinal fluid)

date	red cells	white cells	% lymphocytes	glucose	protein
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____	_____	_____
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____	_____	_____
_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____	_____	_____

Poliovirus strain characterization results:

Poliovirus strain characterization results:

Poliovirus type:	Strain characterization method	Results
_____	_____	_____
_____	_____	_____

Other results and/or comments:

_____

_____

Autopsy? yes ____ no ____ Pathology laboratory: _____

material	date collected	date sent	date of result	histopathology result (attach report)
_____	_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____
_____	_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____
_____	_ _/_ _/_ _	_ _/_ _/_ _	_ _/_ _/_ _	_____

*Electrodiagnostic studies

Date _ _/_ _/_ _ attach

CASE FOLLOW-UP

We case seen 60 days after onset of paralysis? yes _____ Date _ _/_ _/_ _ no _____

If no, why not

_____

Paralysis:

Paralysis present at 60 days or later? yes _____ no _____

If yes, check site of paralysis:

left leg	_____	respiratory muscles	_____
left arm	_____	face	_____
right leg	_____	other cranial nerves	_____
right arm	_____		

*from maximal weakness to follow-up

*improved: no _____ yes _____ if yes, comment on degree _____

_____

*no change: no _____ yes _____

MMR _ _/_ _/_ _/_ _ _

Reflexes (3 = increase; 2 = normal; 1 = decreases; 0 = absent)

	Right	Left	
biceps	___	___	
triceps	___	___	
supinator	___	___	
knee	___	___	
ankle	___	___	
Babinski	up ___	down ___	no movement ___

Disability:

cannot walk _____ walk with assistance _____

limps _____ walk normally _____

other _____

Did case die? yes _____ date_ _/_ _/_ _ no _____

If yes, give details:

_____

Report of neurologist:

(Attach if available, summary of neurologist's report including final diagnosis)

Date_ _/_ _/_ _ Name of reporting physician _____

Neurologist? yes _____ no _____

CONTROL MEASURES:

(include the date started, number of households searched, number of OPV doses given in children less than 5 years of age, date completed)

_____

_____

FINAL DIAGNOSIS:

Discarded _____

Specify diagnosis:

*poliomyelitis	yes _____	no _____
*GBS	yes _____	no _____
*transverse myelitis	yes _____	no _____
*traumatic neuritis	yes _____	no _____
*other, describe	yes _____	no _____

_____

MMR _ _/_ _/_ _/_ _ _

If polio, confirmed:

Check all which apply:

____ Laboratory confirmed – virus
____ Laboratory confirmed – serology
____ Laboratory confirmed – virus and serology
____ Residual paralysis after 60 days
____ Wild virus indigenous
____ Death after compatible illness
____ Epidemiologic linkage
____ No follow up
____ Vaccine associated
____ Imported

Observation:

_____
_____
_____
_____

SIGNATURE:

Name of investigator:	_____	Name of Surveillance Coordinator:	_____
Signature:	_____	Signature:	_____
Title:	_____	Title:	_____
Place of Work:	_____	Place of Work:	_____
Date:	_ _/_ _/_ _	Date:	_ _/_ _/_ _

Date of examination:

EPI/Polio Eradication Program, Myanmar

SUPPLEMENTARY CLINICAL RECORD

Name:	Age:	Sex: Male / Female	**Case EPID No.:**
Father's Name:		Address:	Examined by: Name of RSO (may take help from pediatrician)
Presenting Complaints (with duration): Date of onset of paralysis: _____		1.	2.
3.		4.	5.
Fever on the day of onset: yes/no/Unknown		History of Injections: yes/no/unknown Date of injection: _____ Site of injection: _____	Progression of paralysis: yes/no In how many days did the full paralysis develop: _____
History of Present Illnesses			
History of Previous Illnesses (with focus on cough, cold, fever and diarrhoea). ***History of drug use*** ***History of ingestion of any toxins***			
History of Injury/trauma/falls: yes/no/unknown Body part injured: _____ When: _____		History of birth defects/trauma: yes/no History of delayed development:	

Immunization History:	***Routine:*** BCG yes/no/unknown DPT1 yes/no/unknown DPT2 yes/ no/unknown DPT3 yes/no/unknown Polio1 yes/no/ unknown Polio2 yes/no/unknown Polio3 yes/no/unknown HepB1 yes/no/unknown HepB2 yes/no/unknown HepB3 yes/no/unknown Measles yes/no/unknown	***NIDs/Mop-up/Campaigns/Others (if it applies):***
Travel History: (Should include the period of 30 days prior to onset of paralysis; include child's travel to other locations as well as travel into child's location of anyone who might have come from a polio-endemic area)		

Clinical Examination: ***General Physical exam*:** Consciousness: Temperature: Respiration : Pulse: Nutritional Status: Voice: Difficulty in Swallowing/ Defecation/ Micturition Spine: Any body deformity/swelling (record site of swelling/deformity): Bony tenderness: Neck stiffness: Kernig's sign: Developmental milestones: Others:	

Systemic Examination:	***Right***	***Left***
A. Neurological :		
Cranial nerves:		
I Olfactory		
II. Optic		
III. Oculomotor		
IV. Trochlear		
V. Trigeminal		
Motor:		
Sensory		
VI. Abducent		
VII. Facial		
VIII . Vestibulocochlear		
IX. Glossopharyngeal		
X. Vagus		
XI. Accessory		
XII. Hypoglossal		

Motor Functions:	***Upper limbs***		***Lower limbs***		
	Right	Left	Right		Left
Bulk of muscles:	Mid-upper		Mid-thigh		
	Mid-forearm		Mid-calf		
Tone of muscles:					
Strength of muscles : *(grades of weakness)* (for each muscle groups) (distribution of weakness)					
Tendon Reflexes: (With g*rades*)	Triceps jerk:		Knee jerk:		
	Biceps jerk:		Ankle jerk:		
	Supinator:		Clonus:		
			Plantar refelex:		
			Babinski:	+ve/-ve	+ve/-ve
Coordination of movement:	Finger-nose test		Heel-knee test		
Gait					
Involuntary movements:					
Sensation:					
Tactile sensation					
Pain					
Temprature (any sensory level)					
Other systems (relevant):					
CVS:					
Respiratory:					
Abdomen:					
Others:					

Laboratory Tests: *(List reports whichever available)* Hematology: Urine: Stool: S. Electrolytes: Blood Sugar: CSF: Serology: Others:		
Radiology: *(fill exam. Reports, if available)* X-rays CT scan: Ultrasonography: Nerve Conduction Velocity: Electromyogram: Others:		
Provisional Diagnosis		Signature:

Notes:
1. The clinical examination of the child should be done by RSO (can get assistant from pediatrician if needed) as early as possible, when it is evident that the case will go to Expert Committee for classification, i.e. inadequate stool specimen collection.
2. RSO should provide information on all existing available test reports.
3. This form should be used to overcome the deficiency of clinical information usually observed in field conditions.
4. The copies of hospital/medical records should be obtained in addition.
5. This examination does not replace the specialist clinical evaluation.
6. Special radiology and laboratory examination will be carried upon the decision by expert committee

SUPPLEMENTARY INFORMATION OR COMMENTS

Signature of examiner: _____

Location of exam: _____ **Date:** _____

CHECKLIST FOR SENDING DOCUMENTS TO CENTRAL OFFICE
CASES UNDERGOING EXPERT REVIEW

Name of RSO: _____

EPID No: _____

	Sent Earlier	**Enclosed herewith**	***Remarks***
CIF			
Case Summary			
Standard Clinical Record			
Hospital Records / Reports			
Interview of attending physician / pediatrician			
Specialist Evaluation Report			
Epidemiological information			
Map	***BEING PREPARED BY SURVEILLANCE UNIT(Central Office)***		
Photographs			
Special Test Report			
60 Day FU Result			

Special Test Requested : Yes / No / Not Required

Note: This sheet should accompany any information / documents being sent to central office

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

COUNTRY - STATE -TOWNSHIP - YEAR - NUM

Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Kachin	0 1	0 1	Kamaing	MMR-01-01-YEAR-NUMBER
MMR	Kachin	0 1	0 2	Chipwe	MMR-01-02-YEAR-NUMBER
MMR	Kachin	0 1	0 3	Khawbudai	MMR-01-03-YEAR-NUMBER
MMR	Kachin	0 1	0 4	Tsawlaw	MMR-01-04-YEAR-NUMBER
MMR	Kachin	0 1	0 5	Sumprabum	MMR-01-05-YEAR-NUMBER
MMR	Kachin	0 1	0 6	Tanai	MMR-01-06-YEAR-NUMBER
MMR	Kachin	0 1	0 7	Putao	MMR-01-07-YEAR-NUMBER
MMR	Kachin	0 1	0 8	Nogmung	MMR-01-08-YEAR-NUMBER
MMR	Kachin	0 1	0 9	Bhamo	MMR-01-09-YEAR-NUMBER
MMR	Kachin	0 1	1 0	Machanbaw	MMR-01-10-YEAR-NUMBER
MMR	Kachin	0 1	1 1	Mansi	MMR-01-11-YEAR-NUMBER
MMR	Kachin	0 1	1 2	Mohnyin	MMR-01-12-YEAR-NUMBER
MMR	Kachin	0 1	1 3	Momauk	MMR-01-13-YEAR-NUMBER
MMR	Kachin	0 1	1 4	Mogaung	MMR-01-14-YEAR-NUMBER
MMR	Kachin	0 1	1 5	Myitkyina	MMR-01-15-YEAR-NUMBER
MMR	Kachin	0 1	1 6	Shwegu	MMR-01-16-YEAR-NUMBER
MMR	Kachin	0 1	1 7	Waingmaw	MMR-01-17-YEAR-NUMBER
MMR	Kachin	0 1	1 8	N'Jangyan	MMR-01-18-YEAR-NUMBER
MMR	Kayah	0 2	0 1	Deemawsoe	MMR-02-01-YEAR-NUMBER
MMR	Kayah	0 2	0 2	Prusoe	MMR-02-02-YEAR-NUMBER
MMR	Kayah	0 2	0 3	Phasaung	MMR-02-03-YEAR-NUMBER
MMR	Kayah	0 2	0 4	Bawlake	MMR-02-04-YEAR-NUMBER
MMR	Kayah	0 2	0 5	Shadaw	MMR-02-05-YEAR-NUMBER
MMR	Kayah	0 2	0 6	Loikaw	MMR-02-06-YEAR-NUMBER
MMR	Kayah	0 2	0 7	Mese	MMR-02-07-YEAR-NUMBER
MMR	Kayin	0 3	0 1	Kawkareik	MMR-03-01-YEAR-NUMBER
MMR	Kayin	0 3	0 2	Kyainseikkyi	MMR-03-02-YEAR-NUMBER
MMR	Kayin	0 3	0 3	Papun	MMR-03-03-YEAR-NUMBER
MMR	Kayin	0 3	0 4	Myawaddy	MMR-03-04-YEAR-NUMBER
MMR	Kayin	0 3	0 5	Hpa-an	MMR-03-05-YEAR-NUMBER
MMR	Kayin	0 3	0 6	Hlaingbwe	MMR-03-06-YEAR-NUMBER
MMR	Kayin	0 3	0 7	Thandaung	MMR-03-07-YEAR-NUMBER
MMR	Chin	0 4	0 1	Kanpetlet	MMR-04-01-YEAR-NUMBER
MMR	Chin	0 4	0 2	Tiddim	MMR-04-02-YEAR-NUMBER
MMR	Chin	0 4	0 3	Tonzang	MMR-04-03-YEAR-NUMBER
MMR	Chin	0 4	0 4	Thlant-lang	MMR-04-04-YEAR-NUMBER
MMR	Chin	0 4	0 5	Paletwa	MMR-04-05-YEAR-NUMBER
MMR	Chin	0 4	0 6	Falam	MMR-04-06-YEAR-NUMBER
MMR	Chin	0 4	0 7	Matupi	MMR-04-07-YEAR-NUMBER
MMR	Chin	0 4	0 8	Mindat	MMR-04-08-YEAR-NUMBER
MMR	Chin	0 4	0 9	Hakha	MMR-04-09-YEAR-NUMBER
MMR	Sagaing	0 5	0 1	Kani	MMR-05-01-YEAR-NUMBER
MMR	Sagaing	0 5	0 2	Kalemyo	MMR-05-02-YEAR-NUMBER
MMR	Sagaing	0 5	0 3	Kalewa	MMR-05-03-YEAR-NUMBER
MMR	Sagaing	0 5	0 4	Katha	MMR-05-04-YEAR-NUMBER
MMR	Sagaing	0 5	0 5	Kanbalu	MMR-05-05-YEAR-NUMBER

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

COUNTRY - STATE -TOWNSHIP - YEAR - NUM

Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Sagaing	0 5	0 6	Kawlin	MMR-05-06-YEAR-NUMBER
MMR	Sagaing	0 5	0 7	Kyunhla	MMR-05-07-YEAR-NUMBER
MMR	Sagaing	0 5	0 8	Khin-U	MMR-05-08-YEAR-NUMBER
MMR	Sagaing	0 5	0 9	Khamti	MMR-05-09-YEAR-NUMBER
MMR	Sagaing	0 5	1 0	Chaung-U	MMR-05-10-YEAR-NUMBER
MMR	Sagaing	0 5	1 1		
MMR	Sagaing	0 5	1 2	Sagaing	MMR-05-12-YEAR-NUMBER
MMR	Sagaing	0 5	1 3	Salingyi	MMR-05-13-YEAR-NUMBER
MMR	Sagaing	0 5	1 4	Tamu	MMR-05-14-YEAR-NUMBER
MMR	Sagaing	0 5	1 5	Taze	MMR-05-15-YEAR-NUMBER
MMR	Sagaing	0 5	1 6	Hteegyaint	MMR-05-16-YEAR-NUMBER
MMR	Sagaing	0 5	1 7	Tabayin	MMR-05-17-YEAR-NUMBER
MMR	Sagaing	0 5	1 8	Namyum	MMR-05-18-YEAR-NUMBER
MMR	Sagaing	0 5	1 9	Pale	MMR-05-19-YEAR-NUMBER
MMR	Sagaing	0 5	2 0	Pinlebu	MMR-05-20-YEAR-NUMBER
MMR	Sagaing	0 5	2 1	Paungbyin	MMR-05-21-YEAR-NUMBER
MMR	Sagaing	0 5	2 2	Banmauk	MMR-05-22-YEAR-NUMBER
MMR	Sagaing	0 5	2 3	Budalin	MMR-05-23-YEAR-NUMBER
MMR	Sagaing	0 5	2 4	Mingin	MMR-05-24-YEAR-NUMBER
MMR	Sagaing	0 5	2 5	Monywa	MMR-05-25-YEAR-NUMBER
MMR	Sagaing	0 5	2 6	Mawlaik	MMR-05-26-YEAR-NUMBER
MMR	Sagaing	0 5	2 7	Myinmu	MMR-05-27-YEAR-NUMBER
MMR	Sagaing	0 5	2 8	Myaung	MMR-05-28-YEAR-NUMBER
MMR	Sagaing	0 5	2 9	Yinmabin	MMR-05-29-YEAR-NUMBER
MMR	Sagaing	0 5	3 0	Ye-U	MMR-05-30-YEAR-NUMBER
MMR	Sagaing	0 5	3 1	Shwebo	MMR-05-31-YEAR-NUMBER
MMR	Sagaing	0 5	3 2	Lahe	MMR-05-32-YEAR-NUMBER
MMR	Sagaing	0 5	3 3	Layshi	MMR-05-33-YEAR-NUMBER
MMR	Sagaing	0 5	3 4	Wetlet	MMR-05-34-YEAR-NUMBER
MMR	Sagaing	0 5	3 5	Wuntho	MMR-05-35-YEAR-NUMBER
MMR	Sagaing	0 5	3 6	Homalim	MMR-05-36-YEAR-NUMBER
MMR	Sagaing	0 5	3 7	Ayadaw	MMR-05-37-YEAR-NUMBER
MMR	Sagaing	0 5	3 8	Indaw	MMR-05-38-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 1	Kawthaung	MMR-06-01-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 2	Tanintharyi	MMR-06-02-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 3	Dawei	MMR-06-03-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 4	Palaw	MMR-06-04-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 5	Bokepyin	MMR-06-05-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 6	Kyunsu (Myeik)	MMR-06-06-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 7	Myeik (E)	MMR-06-07-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 8	Yebyu	MMR-06-08-YEAR-NUMBER
MMR	Tanintharyi	0 6	0 9	Launglon	MMR-06-09-YEAR-NUMBER
MMR	Tanintharyi	0 6	1 0	Thayetchaung	MMR-06-10-YEAR-NUMBER
MMR	Bago(East)	0 7	0 1	Kawa	MMR-07-01-YEAR-NUMBER
MMR	Bago(East)	0 7	0 3	Kyaukkyi	MMR-07-03-YEAR-NUMBER
MMR	Bago(East)	0 7	0 4	Kyauktaga	MMR-07-04-YEAR-NUMBER

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

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Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Bago(East)	0 7	0 6	Nyaunglebin	MMR-07-06-YEAR-NUMBER
MMR	Bago(East)	0 7	0 7	Toungoo	MMR-07-07-YEAR-NUMBER
MMR	Bago(East)	0 7	0 8	Htantabin	MMR-07-08-YEAR-NUMBER
MMR	Bago(East)	0 7	0 9	Daik-U	MMR-07-09-YEAR-NUMBER
MMR	Bago(East)	0 7	1 1	Bago	MMR-07-11-YEAR-NUMBER
MMR	Bago(East)	0 7	1 6	Pyu	MMR-07-16-YEAR-NUMBER
MMR	Bago(East)	0 7	1 9	Yedashe	MMR-07-19-YEAR-NUMBER
MMR	Bago(East)	0 7	2 0	Shwegyin	MMR-07-20-YEAR-NUMBER
MMR	Bago(East)	0 7	2 3	Waw	MMR-07-23-YEAR-NUMBER
MMR	Bago(East)	0 7	2 4	Thanatpin	MMR-07-24-YEAR-NUMBER
MMR	Bago(East)	0 7	2 7	Oktwin	MMR-07-27-YEAR-NUMBER
MMR	Bago(West)	0 7	0 2	Gyobingauk	MMR-07-02-YEAR-NUMBER
MMR	Bago(West)	0 7	0 5	Zigone	MMR-07-05-YEAR-NUMBER
MMR	Bago(West)	0 7	1 0	Nattalin	MMR-07-10-YEAR-NUMBER
MMR	Bago(West)	0 7	1 2	Pyay	MMR-07-12-YEAR-NUMBER
MMR	Bago(West)	0 7	1 3	Padaung	MMR-07-13-YEAR-NUMBER
MMR	Bago(West)	0 7	1 4	Paukkhaung	MMR-07-14-YEAR-NUMBER
MMR	Bago(West)	0 7	1 5	Paungde	MMR-07-15-YEAR-NUMBER
MMR	Bago(West)	0 7	1 7	Minhla	MMR-07-17-YEAR-NUMBER
MMR	Bago(West)	0 7	1 8	Monyo	MMR-07-18-YEAR-NUMBER
MMR	Bago(West)	0 7	2 1	Shwedaung	MMR-07-21-YEAR-NUMBER
MMR	Bago(West)	0 7	2 2	Letpadan	MMR-07-22-YEAR-NUMBER
MMR	Bago(West)	0 7	2 5	Thegone	MMR-07-25-YEAR-NUMBER
MMR	Bago(West)	0 7	2 6	Tharawady	MMR-07-26-YEAR-NUMBER
MMR	Bago(West)	0 7	2 8	Okpo	MMR-07-28-YEAR-NUMBER
MMR	Magway	0 8	0 1	Kama	MMR-08-01-YEAR-NUMBER
MMR	Magway	0 8	0 2	Chauk	MMR-08-02-YEAR-NUMBER
MMR	Magway	0 8	0 3	Gangaw	MMR-08-03-YEAR-NUMBER
MMR	Magway	0 8	0 4	Ngape	MMR-08-04-YEAR-NUMBER
MMR	Magway	0 8	0 5	Salin	MMR-08-05-YEAR-NUMBER
MMR	Magway	0 8	0 6	Sadoktaya	MMR-08-06-YEAR-NUMBER
MMR	Magway	0 8	0 7	Saw	MMR-08-07-YEAR-NUMBER
MMR	Magway	0 8	0 8	Sinbaungwe	MMR-08-08-YEAR-NUMBER
MMR	Magway	0 8	0 9	Seikpyu	MMR-08-09-YEAR-NUMBER
MMR	Magway	0 8	1 0	Taungdwingyi	MMR-08-10-YEAR-NUMBER
MMR	Magway	0 8	1 1	Tilin	MMR-08-11-YEAR-NUMBER
MMR	Magway	0 8	1 2	Natmauk	MMR-08-12-YEAR-NUMBER
MMR	Magway	0 8	1 3	Pakokku	MMR-08-13-YEAR-NUMBER
MMR	Magway	0 8	1 4	Pauk	MMR-08-14-YEAR-NUMBER
MMR	Magway	0 8	1 5	Pwintbyu	MMR-08-15-YEAR-NUMBER
MMR	Magway	0 8	1 6	Magway	MMR-08-16-YEAR-NUMBER
MMR	Magway	0 8	1 7	Aunglan	MMR-08-17-YEAR-NUMBER
MMR	Magway	0 8	1 8	Mindon	MMR-08-18-YEAR-NUMBER
MMR	Magway	0 8	1 9	Minbu	MMR-08-19-YEAR-NUMBER
MMR	Magway	0 8	2 0	Minhla	MMR-08-20-YEAR-NUMBER
MMR	Magway	0 8	2 1	Myaing	MMR-08-21-YEAR-NUMBER

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Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Magway	0 8	2 2	Myothit	MMR-08-22-YEAR-NUMBER
MMR	Magway	0 8	2 3	Yesagyo	MMR-08-23-YEAR-NUMBER
MMR	Magway	0 8	2 4	Yenangyaung	MMR-08-24-YEAR-NUMBER
MMR	Magway	0 8	2 5	Thayet	MMR-08-25-YEAR-NUMBER
MMR	Mandalay	0 9	0 1	Kyaukse	MMR-09-01-YEAR-NUMBER
MMR	Mandalay	0 9	0 2	Kyaukpadaung	MMR-09-02-YEAR-NUMBER
MMR	Mandalay	0 9	0 3	Singu	MMR-09-03-YEAR-NUMBER
MMR	Mandalay	0 9	0 4	Singaing	MMR-09-04-YEAR-NUMBER
MMR	Mandalay	0 9	0 5	Nyaung-U	MMR-09-05-YEAR-NUMBER
MMR	Mandalay	0 9	0 6	Tada-U	MMR-09-06-YEAR-NUMBER
MMR	Mandalay	0 9	0 7	Taungtha	MMR-09-07-YEAR-NUMBER
MMR	Mandalay	0 9	0 9	Natoegyi	MMR-09-09-YEAR-NUMBER
MMR	Mandalay	0 9	1 0	Patheingyi	MMR-09-10-YEAR-NUMBER
MMR	Mandalay	0 9	1 1	Pyawbwe	MMR-09-11-YEAR-NUMBER
MMR	Mandalay	0 9	1 3	Mahlaing	MMR-09-13-YEAR-NUMBER
MMR	Mandalay	0 9	1 4	Aung Mye Tha Zan	MMR-09-14-YEAR-NUMBER
MMR	Mandalay	0 9	1 5	Chan Mya Tha Zi	MMR-09-15-YEAR-NUMBER
MMR	Mandalay	0 9	1 6	Chan Aye Tha Zan	MMR-09-16-YEAR-NUMBER
MMR	Mandalay	0 9	1 7	Maha Aung Mye	MMR-09-17-YEAR-NUMBER
MMR	Mandalay	0 9	1 8	Madaya	MMR-09-18-YEAR-NUMBER
MMR	Mandalay	0 9	1 9	Pyin Oo Lwin(Maymyo)	MMR-09-19-YEAR-NUMBER
MMR	Mandalay	0 9	2 0	Mogoke	MMR-09-20-YEAR-NUMBER
MMR	Mandalay	0 9	2 1	Myingyan	MMR-09-21-YEAR-NUMBER
MMR	Mandalay	0 9	2 2	Myittha	MMR-09-22-YEAR-NUMBER
MMR	Mandalay	0 9	2 3	Meiktila	MMR-09-23-YEAR-NUMBER
MMR	Mandalay	0 9	2 4	Yamethin	MMR-09-24-YEAR-NUMBER
MMR	Mandalay	0 9	2 6	Wundwin	MMR-09-26-YEAR-NUMBER
MMR	Mandalay	0 9	2 7	Thazi	MMR-09-27-YEAR-NUMBER
MMR	Mandalay	0 9	2 8	Thabeikkyin	MMR-09-28-YEAR-NUMBER
MMR	Mandalay	0 9	2 9	Amarapura	MMR-09-29-YEAR-NUMBER
MMR	Mandalay	0 9	3 0	PyiGyiTaGun	MMR-09-30-YEAR-NUMBER
MMR	Mandalay	0 9	3 1	Ngazun	MMR-09-31-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	0 8	Tatkon	MMR-09-08-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	1 2	Pyinmana	MMR-09-12-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	2 5	Lewe	MMR-09-25-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	3 2	DakhinaThiri	MMR-09-32-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	3 3	OttaraThiri	MMR-09-33-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	3 4	PobbaThiri	MMR-09-34-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	3 5	ZabuThiri	MMR-09-35-YEAR-NUMBER
MMR	Nay Pyi Taw	0 9	3 6	ZeyaThiri	MMR-09-36-YEAR-NUMBER
MMR	Mon	1 0	0 1	Kyaikto	MMR-10-01-YEAR-NUMBER
MMR	Mon	1 0	0 2	Kyaikmaraw	MMR-10-02-YEAR-NUMBER
MMR	Mon	1 0	0 3	Chaungzon	MMR-10-03-YEAR-NUMBER
MMR	Mon	1 0	0 4	Paung	MMR-10-04-YEAR-NUMBER
MMR	Mon	1 0	0 5	Bilin	MMR-10-05-YEAR-NUMBER
MMR	Mon	1 0	0 6	Mudon	MMR-10-06-YEAR-NUMBER

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Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Mon	1 0	0 7	Mawlamyine	MMR-10-07-YEAR-NUMBER
MMR	Mon	1 0	0 8	Ye	MMR-10-08-YEAR-NUMBER
MMR	Mon	1 0	0 9	Thaton	MMR-10-09-YEAR-NUMBER
MMR	Mon	1 0	1 0	Thanbyuzayat	MMR-10-10-YEAR-NUMBER
MMR	Rakhine	1 1	0 1	Kyauktaw	MMR-11-01-YEAR-NUMBER
MMR	Rakhine	1 1	0 2	Kyaukpyu	MMR-11-02-YEAR-NUMBER
MMR	Rakhine	1 1	0 3	Gwa	MMR-11-03-YEAR-NUMBER
MMR	Rakhine	1 1	0 4	Sittwe	MMR-11-04-YEAR-NUMBER
MMR	Rakhine	1 1	0 5	Taungup	MMR-11-05-YEAR-NUMBER
MMR	Rakhine	1 1	0 6	Ponnagyun	MMR-11-06-YEAR-NUMBER
MMR	Rakhine	1 1	0 7	Pauktaw	MMR-11-07-YEAR-NUMBER
MMR	Rakhine	1 1	0 8	Buthidaung	MMR-11-08-YEAR-NUMBER
MMR	Rakhine	1 1	0 9	Minbya	MMR-11-09-YEAR-NUMBER
MMR	Rakhine	1 1	1 0	Myauk-Oo	MMR-11-10-YEAR-NUMBER
MMR	Rakhine	1 1	1 1	Manaung	MMR-11-11-YEAR-NUMBER
MMR	Rakhine	1 1	1 2	Myebon	MMR-11-12-YEAR-NUMBER
MMR	Rakhine	1 1	1 3	Maungdaw	MMR-11-13-YEAR-NUMBER
MMR	Rakhine	1 1	1 4	Ramree	MMR-11-14-YEAR-NUMBER
MMR	Rakhine	1 1	1 5	Rathedaung	MMR-11-15-YEAR-NUMBER
MMR	Rakhine	1 1	1 6	Thandwe	MMR-11-16-YEAR-NUMBER
MMR	Rakhine	1 1	1 7	Ann	MMR-11-17-YEAR-NUMBER
MMR	Yangon	1 2	0 1	Kamayut	MMR-12-01-YEAR-NUMBER
MMR	Yangon	1 2	0 2	Kyautada	MMR-12-02-YEAR-NUMBER
MMR	Yangon	1 2	0 3	Kyimyindine	MMR-12-03-YEAR-NUMBER
MMR	Yangon	1 2	0 4	Sanchaung	MMR-12-04-YEAR-NUMBER
MMR	Yangon	1 2	0 5	Seikkan	MMR-12-05-YEAR-NUMBER
MMR	Yangon	1 2	0 6	Seikkyi Kanaungto	MMR-12-06-YEAR-NUMBER
MMR	Yangon	1 2	0 7	Tamwe	MMR-12-07-YEAR-NUMBER
MMR	Yangon	1 2	0 8	S. Okkalapa	MMR-12-08-YEAR-NUMBER
MMR	Yangon	1 2	0 9	Dagon	MMR-12-09-YEAR-NUMBER
MMR	Yangon	1 2	1 0	Dallah	MMR-12-10-YEAR-NUMBER
MMR	Yangon	1 2	1 1	Dawbon	MMR-12-11-YEAR-NUMBER
MMR	Yangon	1 2	1 2	Pazundaung	MMR-12-12-YEAR-NUMBER
MMR	Yangon	1 2	1 3	Pabedan	MMR-12-13-YEAR-NUMBER
MMR	Yangon	1 2	1 4	Bahan	MMR-12-14-YEAR-NUMBER
MMR	Yangon	1 2	1 5	Botataung	MMR-12-15-YEAR-NUMBER
MMR	Yangon	1 2	1 6	Mayangone	MMR-12-16-YEAR-NUMBER
MMR	Yangon	1 2	1 7	Mingaladon	MMR-12-17-YEAR-NUMBER
MMR	Yangon	1 2	1 8	Mingala T'N	MMR-12-18-YEAR-NUMBER
MMR	Yangon	1 2	1 9	N. Okkalapa	MMR-12-19-YEAR-NUMBER
MMR	Yangon	1 2	2 0	Yankin	MMR-12-20-YEAR-NUMBER
MMR	Yangon	1 2	2 1	Shwepyithar	MMR-12-21-YEAR-NUMBER
MMR	Yangon	1 2	2 2	Latha	MMR-12-22-YEAR-NUMBER
MMR	Yangon	1 2	2 3	Lanmadaw	MMR-12-23-YEAR-NUMBER
MMR	Yangon	1 2	2 4	Hlaing	MMR-12-24-YEAR-NUMBER
MMR	Yangon	1 2	2 5	Hlaing Thayar	MMR-12-25-YEAR-NUMBER

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

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Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Yangon	1 2	2 6	Thaketa	MMR-12-26-YEAR-NUMBER
MMR	Yangon	1 2	2 7	Thingangyun	MMR-12-27-YEAR-NUMBER
MMR	Yangon	1 2	2 8	Ahlone	MMR-12-28-YEAR-NUMBER
MMR	Yangon	1 2	2 9	Insein	MMR-12-29-YEAR-NUMBER
MMR	Yangon	1 2	3 0	Coco Island	MMR-12-30-YEAR-NUMBER
MMR	Yangon	1 2	3 1	Kawhmu	MMR-12-31-YEAR-NUMBER
MMR	Yangon	1 2	3 2	Kyauktan	MMR-12-32-YEAR-NUMBER
MMR	Yangon	1 2	3 3	Kungyangone	MMR-12-33-YEAR-NUMBER
MMR	Yangon	1 2	3 4	Kayan	MMR-12-34-YEAR-NUMBER
MMR	Yangon	1 2	3 5	Taikkyi	MMR-12-35-YEAR-NUMBER
MMR	Yangon	1 2	3 6	Twante	MMR-12-36-YEAR-NUMBER
MMR	Yangon	1 2	3 7	Htantabin	MMR-12-37-YEAR-NUMBER
MMR	Yangon	1 2	3 8	Hmawbi	MMR-12-38-YEAR-NUMBER
MMR	Yangon	1 2	3 9	Hlegu	MMR-12-39-YEAR-NUMBER
MMR	Yangon	1 2	4 0	Thongwa	MMR-12-40-YEAR-NUMBER
MMR	Yangon	1 2	4 1	Thanlyin	MMR-12-41-YEAR-NUMBER
MMR	Yangon	1 2	4 2	New Dagon South	MMR-12-42-YEAR-NUMBER
MMR	Yangon	1 2	4 3	New Dagon North	MMR-12-43-YEAR-NUMBER
MMR	Yangon	1 2	4 4	New Dagon East	MMR-12-44-YEAR-NUMBER
MMR	Yangon	1 2	4 5	Dagon Seikkan	MMR-12-45-YEAR-NUMBER
MMR	Shan(East)	1 3	0 8	Kengtung	MMR-13-08-YEAR-NUMBER
MMR	Shan(East)	1 3	1 3	Tachileik	MMR-13-13-YEAR-NUMBER
MMR	Shan(East)	1 3	3 0	Mongkhat	MMR-13-30-YEAR-NUMBER
MMR	Shan(East)	1 3	3 1	Monghsat	MMR-13-31-YEAR-NUMBER
MMR	Shan(East)	1 3	3 2	Mongtong	MMR-13-32-YEAR-NUMBER
MMR	Shan(East)	1 3	3 4	Mongping	MMR-13-34-YEAR-NUMBER
MMR	Shan(East)	1 3	3 5	Mongphyak	MMR-13-35-YEAR-NUMBER
MMR	Shan(East)	1 3	3 7	Mongyaung	MMR-13-37-YEAR-NUMBER
MMR	Shan(East)	1 3	3 8	Mongyan	MMR-13-38-YEAR-NUMBER
MMR	Shan(East)	1 3	5 3	Met Mam	MMR-13-53-YEAR-NUMBER
MMR	Shan(North)	1 3	0 4	Kutkai	MMR-13-04-YEAR-NUMBER
MMR	Shan(North)	1 3	0 5	Kyaukme	MMR-13-05-YEAR-NUMBER
MMR	Shan(North)	1 3	0 6	Kunglong	MMR-13-06-YEAR-NUMBER
MMR	Shan(North)	1 3	0 7	Konegyan(Laukkaing)	MMR-13-07-YEAR-NUMBER
MMR	Shan(North)	1 3	1 2	Tangyan	MMR-13-12-YEAR-NUMBER
MMR	Shan(North)	1 3	1 4	Namkham	MMR-13-14-YEAR-NUMBER
MMR	Shan(North)	1 3	1 6	Namhsan (N)	MMR-13-16-YEAR-NUMBER
MMR	Shan(North)	1 3	1 7	Naungkhio	MMR-13-17-YEAR-NUMBER
MMR	Shan(North)	1 3	1 8	Namtu	MMR-13-18-YEAR-NUMBER
MMR	Shan(North)	1 3	1 9	Nahpant	MMR-13-19-YEAR-NUMBER
MMR	Shan(North)	1 3	2 2	Pangyang	MMR-13-22-YEAR-NUMBER
MMR	Shan(North)	1 3	2 3	Panwaing	MMR-13-23-YEAR-NUMBER
MMR	Shan(North)	1 3	2 5	Mabein	MMR-13-25-YEAR-NUMBER
MMR	Shan(North)	1 3	2 7	Momeik	MMR-13-27-YEAR-NUMBER
MMR	Shan(North)	1 3	3 6	Mongmaw	MMR-13-36-YEAR-NUMBER
MMR	Shan(North)	1 3	4 0	Maingye	MMR-13-40-YEAR-NUMBER

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

COUNTRY - STATE -TOWNSHIP - YEAR - NUM

Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Shan(North)	1 3	4 1	Muse	MMR-13-41-YEAR-NUMBER
MMR	Shan(North)	1 3	4 2	Manphant	MMR-13-42-YEAR-NUMBER
MMR	Shan(North)	1 3	4 7	Langkho	MMR-13-47-YEAR-NUMBER
MMR	Shan(North)	1 3	4 8	Lashio	MMR-13-48-YEAR-NUMBER
MMR	Shan(North)	1 3	4 9	Thenni	MMR-13-49-YEAR-NUMBER
MMR	Shan(North)	1 3	5 0	Hsipaw	MMR-13-50-YEAR-NUMBER
MMR	Shan(North)	1 3	5 2	Hopan	MMR-13-52-YEAR-NUMBER
MMR	Shan(North)	1 3	5 5	Manton	MMR-13-54-YEAR-NUMBER
MMR	Shan(South)	1 3	0 1	Kalaw	MMR-13-01-YEAR-NUMBER
MMR	Shan(South)	1 3	0 2	Kunghing	MMR-13-02-YEAR-NUMBER
MMR	Shan(South)	1 3	0 3	Khesimansan	MMR-13-03-YEAR-NUMBER
MMR	Shan(South)	1 3	0 9	Hsiseng	MMR-13-09-YEAR-NUMBER
MMR	Shan(South)	1 3	1 0	Nyaungshwe	MMR-13-10-YEAR-NUMBER
MMR	Shan(South)	1 3	1 1	Taunggyi	MMR-13-11-YEAR-NUMBER
MMR	Shan(South)	1 3	1 5	Namsang (S)	MMR-13-15-YEAR-NUMBER
MMR	Shan(South)	1 3	2 0	Pindaya	MMR-13-20-YEAR-NUMBER
MMR	Shan(South)	1 3	2 1	Pinlaung	MMR-13-21-YEAR-NUMBER
MMR	Shan(South)	1 3	2 4	Pekon	MMR-13-24-YEAR-NUMBER
MMR	Shan(South)	1 3	2 6	Moenai	MMR-13-26-YEAR-NUMBER
MMR	Shan(South)	1 3	2 8	Maukmai	MMR-13-28-YEAR-NUMBER
MMR	Shan(South)	1 3	2 9	Mongkung	MMR-13-29-YEAR-NUMBER
MMR	Shan(South)	1 3	3 3	Mongpan	MMR-13-33-YEAR-NUMBER
MMR	Shan(South)	1 3	3 9	Mongshu	MMR-13-39-YEAR-NUMBER
MMR	Shan(South)	1 3	4 3	Ywa-Nyan	MMR-13-43-YEAR-NUMBER
MMR	Shan(South)	1 3	4 4	Lawksksawk	MMR-13-44-YEAR-NUMBER
MMR	Shan(South)	1 3	4 5	Loilem	MMR-13-45-YEAR-NUMBER
MMR	Shan(South)	1 3	4 6	Laikha	MMR-13-46-YEAR-NUMBER
MMR	Shan(South)	1 3	5 1	Hopone	MMR-13-51-YEAR-NUMBER
MMR	Shan(South)	1 3	5 4	Leechar	MMR-13-54-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 1	Kyangin	MMR-14-01-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 2	Kyaunggone	MMR-14-02-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 3	Kyonpyaw	MMR-14-03-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 4	Kyaiklat	MMR-14-04-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 5	Ngaputaw	MMR-14-05-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 6	Zalun	MMR-14-06-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 7	Nyaungdon	MMR-14-07-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 8	Dedaye	MMR-14-08-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	0 9	Danubyu	MMR-14-09-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 0	Pantanaw	MMR-14-10-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 1	Pathein	MMR-14-11-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 2	Kangyidaunt	MMR-14-12-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 3	Pyapon	MMR-14-13-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 4	Bogale	MMR-14-14-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 5	Maubin	MMR-14-15-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 6	Myaungmya	MMR-14-16-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 7	Mawkyun	MMR-14-17-YEAR-NUMBER

EPID CODE NUMBER for AFP,Measles, NT and other VPDs

COUNTRY - STATE -TOWNSHIP - YEAR - NUM

Country	State/Division	SD Code	Tsp. Code	Township	EPID CODE
MMR	Ayeyarwaddy	1 4	1 8	Myanaung	MMR-14-18-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	1 9	Yegyi	MMR-14-19-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 0	Labutta	MMR-14-20-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 1	Laymyethna	MMR-14-21-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 2	Wakema	MMR-14-22-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 3	Thabaung	MMR-14-23-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 4	Henzada	MMR-14-24-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 5	Ingapu	MMR-14-25-YEAR-NUMBER
MMR	Ayeyarwaddy	1 4	2 6	Eimme	MMR-14-26-YEAR-NUMBER