REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH
Epidemiology Surveillance Program

Acute Flaccid Paralysis surveillance guideline

2015

ممول من الاتحاد الأوروبي
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طبع هذا الدليل بدعم من الاتحاد الأوروبي ومنظمة الصحة العالمية
بالشراكة مع مفوضية الأمم المتحدة العليا لشؤون اللاجئين وذلك في إطار مشروع بإدارة وزارة الصحة العامة.
إن وزارة الصحة العامة ومنظمة الصحة العالمية هما الجهتان الوحيدتان المسؤولتان عن محتوى هذا الدليل ولا يمكن اعتباره بأي
حال من الأحوال على أنه يعكس وجهة نظر الاتحاد الأوروبي.

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MOPH circular no.12 (2015)
This guideline was prepared by the Epidemiology Surveillance Program under the supervision of the Director General. It was prepared based on WHO guidelines.

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الدليل الوطني لترصد حالات الشلل الرخو الحاد

المقدمة

سجل لبنان آخر حالتين محليتين لشلل الاطفال في العام 1994. وبعد 8 سنوات ، اي في عام 2002، اعلنت منظمة الصحة العالمية لبنان بلدا خاليا من فيروس شلل الاطفال. كان ذلك ثمرة جهود وزارة الصحة العامة، واطباء لبنان، والمنظمات الاممية والمجتمع المدني في العمل الدؤوب لتلقيح الاطفال.

في العام 2003، سجلت حالة شلل اطفال في شمال لبنان. وكان الفيروس مستوردا. حينها نجحت حملات التلقيح الوطنية المتلاحقة في احتواء الفيروس بشكل كامل. ولم تسجل حالات اخرى منذ ذلك الحين.

منذ 2013، تشهد المنطقة ظهور لفيروس شلل الاطفال. ففي سوريا والعراق وفلسطين، سجلت حالات مرضية وحالات عدوى. فتضامنت الدول، ومنها لبنان، في حملات التلقيح الواسعة والمتكررة للحد من انتشار الفيروس. في لبنان، ما زال شبح الفيروس قائما. وترتكز مكافحته على نظامين مترابطين: تلقيح الاطفال، وترصد حالات الشلل الرخو الحاد للكشف عن حالات شلل الاطفال.

عند قراءة هذا الدليل، ستتعرفون على ركائز ترصد حالات الشلل الرخو الحاد منذ لحظات الكشف عن الحالة، تقصيها وثم تصنيفها. كما ستواكبون تطور نظام الترصد من النظام الاساسي الى الابلاغ الصفري، والترصد النشط.

نشكر كل طبيب ومؤسسة صحية تقوم بالابلاغ عن حالة شلل رخو حاد. ونشكر لجنة التصنيف الوطنية ولجنة الاشهاد الوطنية على مساهتمها في المضي قدما في استئصال شلل الاطفال، كما نشكر منظمة الصحة العالمية في مساندتها لوزارة الصحة العامة.

كما ننوه بمن قام باعداد هذا الدليل من قبل برنامج الترصد الوبائي، ومراجعته وترجمته وطباعته من قبل منظمة الصحة العالمية بدعم من الاتحاد الاوروبي بالشراكة مع مفوضية الامم المتحدة العليا لشؤون اللاجئين.

مدير عام وزارة الصحة العامة

الدكتور وليد عمّار

1. Historical background

Wild poliovirus is a highly contagious virus and causes morbidity with paralysis and mortality.

Poliovirus is an old virus and acute poliomyelitis is an old disease. 3500 years ago, during the pharaons period, old Egyptians sculptured historical stele, in which a person is depicted with an atrophied and shortened right leg with a stick for support. This picture reflects poliomyelitis sequelae [figure 1].

During the 19th and 20th century, several poliomyelitis outbreaks were observed and described in Europe and USA. In 1961, high incidence of acute poliomyelitis was observed worldwide. In the absence of effective vaccines, it was estimated one child in every 200 could suffer from paralytic poliomyelitis.

Figure1:
Egyptian stela thought to represent a polio victim 18th Dynasty (1403-1365 B.C)

At the end of 1950s and early 1960s, effective vaccines became available in industrialized counties then worldwide.

By 1981, several industrialized countries have succeeded in reducing polio cases and some of them reached zero polio cases.

In 1988, WHO estimated worldwide acute poliomyelitis to 350000 new cases in more than 125 endemic countries. During that year, the World Health Assembly passed a resolution committing WHO and countries to the global eradication of poliomyelitis. This resolution is known as WHA 41.28.

Following the worldwide initiative, polio cases have witnessed decrease in number of cases, where different countries in different regions around the globe started being certified as polio-free countries [figure 2].

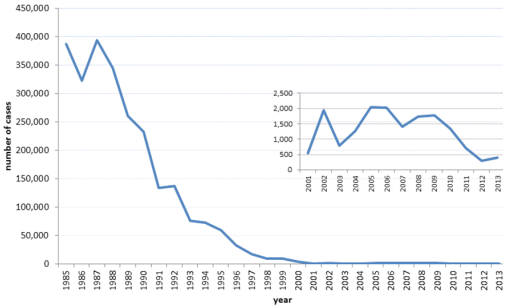


Figure 2:
Worldwide cases of acute poliomyelitis, 1985-2013 (source: WHO)

In 2012, worldwide, the total number of poliomyelitis cases was 223. Out of these cases, 97% were in the 3 polio-endemic countries: Pakistan, Afghanistan and Nigeria. In 2013, the total number of polio was 416 with 38% in the 3 polio-endemic countries, and the other in re-infected countries, among them Syria. In May 2014, the WHO declared the international spread of the wild poliovirus a public health emergency of international concern under the International Health Regulations.

In Lebanon, outbreaks of poliomyelitis were observed during the 60's and in 1983. Following the enhancement of routine polio vaccination and national campaigns, the number of polio cases has dropped. In 1994, the last autochthonous cases were reported. In 2003, an imported virus originated from India was isolated from a case in the North [Figure 3].

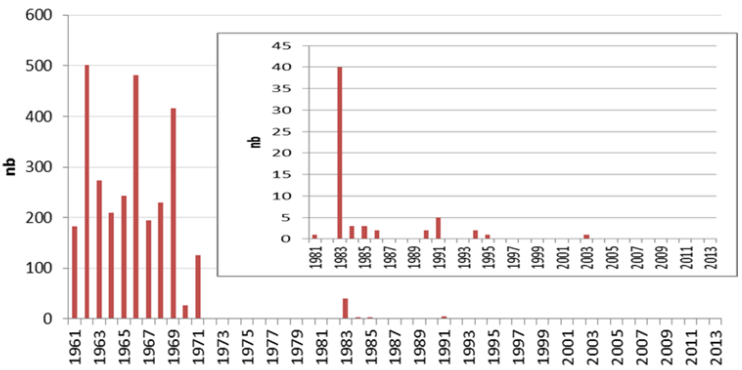


Figure 3:
Acute poliomyelitis cases, Lebanon, 1961-2013 (Source: MOPH)

2. Poliovirus

2.1 Virus

Poliovirus is a member of the enterovirus subgroup, from the family of Picornaviridae. Poliovirus is a small (20-30 nanometers) non-envelopped virus, with a single strand RNA genome.

There are three different antigenic types: P1, P2 and P3. The immunity to one serotype does not produce significant immunity to other serotypes.

2.2 Reservoir

Humans are the only reservoir for poliovirus. The virus does not survive in the environment.
Long-term carrier state is not observed, except in immuno-deficient individuals.

3. Poliovirus infection

3.1 Mode of transmission

The transmission is person-to-person via the fecal-oral route (mainly) or oral-pharyngeal route (rare). The fecal-oral transmission is predominant in the developing countries where sanitation is poor. The oral-pharyngeal transmission is more likely to predominate in industrialized countries.

3.2 Pathogenesis

The virus enters the human body through the mouth. Primary replication occurs in the pharynx and gastro-intestinal tract. Then the virus invades local lymphoid tissue and enters the bloodstream. Later, the virus infects the central nervous system, where the virus replicates in the motor neurons of the anterior horn and destructs them.

3.3 Virus excretion

After infection and before illness onset, the virus can be found in throat and in stool. The virus can be excreted for 2 weeks in saliva and 3 to 6 weeks in the faeces.

3.4 Incubation

The interval from infection to disease onset varies from 7 to 10 days. The wide range is from 4 to 35 days.

3.5 Symptoms: from asymptomatic to paralytis cases

Following the infection, symptoms are variable [Figure 4].

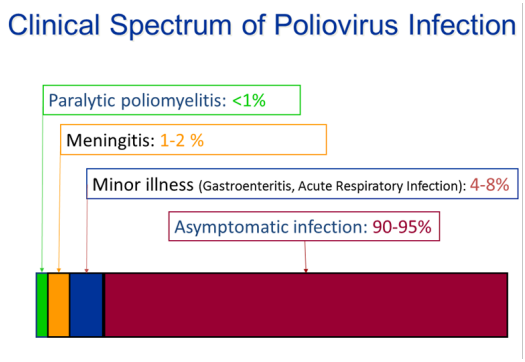


Figure 4:
Spectrum of symptoms following poliomyelitis infection (Source: WHO)

Up to 95% of polio infections remain asymptomatic. Asymptomatic infected persons are able to excrete the virus in stools and transmit it to others.

In 4-8% of polio infections, minor illness occurs. Minor illness can be as upper respiratory tract infection or influenza-like illness, gastro-intestinal disorders (nausea, vomiting, abdominal pain, constipation, and diarrhea). Recovery is observed in less than one week.

In 1-2% of polio infections, non-paralytic aseptic meningitis occurs. It is characterized by 2 phases: prodrome and meningitis. The prodromic period is similar to the minor illness. Some days later, symptoms of meningitis occur. Sensations can be abnormal. Symptoms last from 2 to 10 days then disappear.

In less then 1% of polio infections, paralytic poliomyelitis occurs. Two phases are described: prodrome and paralysis. The prodromic period is similar to the minor illness. One to 10 days after the prodromic period, the paralysis occurs.

The ratio of unapparent infection to paralytic diseases ranges from 100:1 to 1000:1.

3.6 Acute poliomyelitis

The paralysis is acute and flaccid. Fever and muscle pain are usually present. The progression to maximum paralysis is rapid, within 2-4 days, and rarely continues after the patient temperature had returned to normal. Paralysis is more proximally than distally. Deep tendon reflexes are absent or diminished. The patient does not experience sensory loss or changes in cognition.

Depending on the site of paralysis, acute poliomyelitis can be classified as:

1)Spinal form with asymmetric paralysis that most often involves legs
2)Bulbar form with cranial nerves involvement
3)Spino-bulbar form that is a combination of spinal and bulbar paralysis.

3.7 Complications of acute poliomyelitis

a) Respiratory deficiency: Paralysis may affect the respiratory muscles and compromise respiration.

b) Amyotrophy and deformity: As long term complication, the majority of patients will have permanent sequelae and permanent residual paralysis. Because anterior horn cells are destroyed, the motor units supplied by these nerves in the muscle are also destroyed. This is manifested by the patient as mild to severe atrophy of muscle groups with an asymmetrical, haphazard distribution. Weakness of some muscle groups allows functional predominance of others resulting in skeletal deformities. Severely affected limbs remain flaccid, and reflexes are diminished or lost.

3.8 Mortality

The case fatality rate is 2-5 % among children and 15-30% among adults.

3.9 Communicability

Cases are most infectious during the first few days before and one to two weeks after the onset of symptoms.

Among susceptible households contacts, the sero-conversion rate is almost 100% among children and >90% among adults.

3.10 Diagnosis

The diagnosis of acute poliomyelitis is suspected on clinical findings and confirmed by virological culture.

The poliovirus can be isolated in stool, in pharynx or in CSF. The most common is to isolate the virus in stool specimens. To enhance the probability to isolate the virus, it is recommended to collect two stool specimens within the first 14 days from paralysis onset. Once the virus is isolated, the intratypic differentiation can determine whether the poliovirus isolate is wild, Sabin-like or vaccine-derived. The genetic sequencing of wild isolates can determine the geographical source of the virus.

3.11 Differential diagnosis

Acute poliomyelitis appears with acute flaccid paralysis.

Acute flaccid paralysis can also be described in several diseases.
The common differential diagnosis are:

- Guillain Barre syndrome
- Transverse myelitis
- Traumatic neuritis

Other differential diagnosis includes:

- Infectious diseases and toxic agents as:
  - Trichinosis
  - Botulism
  - Other neurotropic viruses: enterovisuses, herpesviruses
  - Neuropathies of infectious diseases: diphtheria, Lyme disease

- Arthropod bites
- Tick bite paralysis
- Snake bite
- Post-viral myositis
- Acute toxic neuropathies: heavy metals, snake toxin
- Insecticide: organophosphate poisoning

• Neurological and neuro-muscular diseases as:
- Peripheral neuropathy
- Acute axonal neuropathy
- Acute myelopathy
- Focal mononeuropathy
- Critical illness neuropathty
- Muscles disorders
- Polymyositis
- Dermatomyositis
- Multiple sclerosis
- Other demyelinating diseases: acute disseminated encephalomyelitis …
- Cord compression: tumor, trauma, paraspinal absces, haematoma, vascular malformation thrombosis/bleeding
- Ischaemic cord damage
- Disorders of neuromuscular transmission
- Myasthenia gravis

• Metabolic and systemic diseases as:
- Periodic paralysis
- Systemic disease
- Acute porphyries
- Mitochondrial diseases (infantile)

• Iatrogenic causes as:
- Acute myopathy in Intensive Care Unit patients
- Vaccine associated paralytic poliomyelitis
- Corticosteroids & blocking agents

3.12 Prevention

Primary prevention to avoid the disease development is ensured by administrating anti-polio vaccine (oral or inactivated polio vaccine) to the people, via the routine expanded program for immunization or vaccination campaign.

Secondary prevention to avoid progression of the disease is ensured by detecting as early as possible any acute poliomyelitis case, and initiating supplementary immunization activities using oral polio vaccine.

Tertiary prevention to reduce the negative impact of an already established disease is ensured by the physical and functional therapy for acute poliomyelitis case.

3.13 Treatment

There is no specific treatment for acute poliomyelitis.

Treatment during the acute phase is supportive to preserve the vital functions.

Treatment after the acute phase is mainly based on physical therapy which is indicated to facilitate recovery of movement and locomotion.

4. Global Polio Eradication Initiative

In 1988, the 41st World Health Assembly committed the countries and WHO to the target of polio eradication.

The objectives of the global polio eradication are:

- To interrupt transmission of the wild poliovirus as soon as possible
- To achieve certification of global polio eradication
- To contribute to health systems development and strengthening routing immunization and surveillance for communicable diseases in a systematic way.

There are 4 pillars for polio eradication:

- High infant immunization coverage with at least 3 doses of poliovirus vaccine in the first year of life
- Supplementary doses of polio vaccine to all children under 5 years of age during Supplemental Immunization Activities (SIA), or targeted mop-up campaigns once wild poliovirus is limited to a specific location
- Surveillance for wild poliovirus through reporting and laboratory testing of all Acute Flaccid Paralysis (AFP) among children under 15 years of age
- Laboratory containment of poliovirus strains.

5. Anti-poliovirus vaccines

There are two types of polio vaccines: oral polio vaccine (OPV) and inactivated polio vaccine (IPV).

5.1 Oral polio vaccine

The Oral Polio Vaccine (OPV) was developed by Dr Albert Sabin and others in the 1950s.

The OPV contains live virus that have been attenuated. It replicates in the intestinal mucosa and the lymph nodes that drain the intestine. It stimulates the production of secretory IgA antibodies and circulating IgGs.

Vaccine viruses are excreted in the stool of vaccinated persons for up to 6 weeks after a dose. Maximum shedding occurs in the first 1-2 weeks after vaccination, particularly after the first dose. Vaccine viruses may spread from recipient to contacts. Persons coming in contact with fecal material of vaccinated person may be exposed and infected with vaccine virus, resulting in acquisition of antibodies. The use of live poliovirus vaccine spreads the vaccine viruses, resulting in transmission of the virus to other individuals, both vaccinated and unvaccinated.

Usually countries use the trivalent OPV that contains the 3 serotypes of vaccine virus. In specific conditions, as the occurrence of huge outbreak, countries may use a monovalent or a bivalent OPV for the circulating poliovirus serotype(s) in the response vaccination campaigns.

5.2 Inactivated polio vaccine

The Inactivated Polio Vaccine (IPV) was developed in the 1950s by Dr Jonas Salk.

IPV is made with inactivated or killed viruses. IPV is trivalent targeting the 3 poliovirus serotypes.It is administered either by subcutaneous or intra-muscular injection. It is non-replicative. It does not colonize lymphoid tissue in the throat. It does not prevent intestinal infection. The virus is not shed in the stool.

5.3 Immunity and vaccine efficacy

Immunity is acquired through infection. All unimmunized persons are susceptible to poliomyelitis.

Infants born to mothers with antibodies are protected naturally against paralytic disease for few weeks.

The primary series of 3 doses of OPV produce humoral immunity to all 3 poliovirus in more than 95% of recipients. The primary series of 3 doses of IPV produce humoral immunity for at least 99% of recipients.

In addition, OPV produces local intestinal immunity, which prevents infection from wild poliovirus. IPV produces less local intestinal immunity, and persons who receive IPV may have asymptomatic infection with wild poliovirus and shed wild poliovirus in their stool.

The duration of immunity is life-long for OPV and is not known for IPV.

5.4 Vaccination schedule

For the routine and systematic vaccination, the vaccine can be OPV or IPV.

It includes:

- Primary series of 3 doses in the first year of life
- Boosters for later ages.

A dose at birth is highly recommended in endemic areas, although it is not counted as part of the primary series and is referred to as dose

zero.
At least 4 weeks period should be respected between two doses. Dose given within 4 weeks from previous dose is not effective for producing immunity. If the interval between the doses is longer than the recommended four to eight weeks, it is not necessary to restart the schedule.

In Lebanon, the national calendar incudes:
- A primary series of trivalent anti-polio vaccine doses given at age of 2 months with IPV dose, 4 months with OPV dose, and 6 months with OPV dose
- Booster OPV doses given at age of 18 months, 4-5 years, 10-12 years, and 16-18 years.

The success of routine immunization depends on the following:
- Integration of immunization within routine health delivery services
- Reducing missed opportunities
- Improved outreach activities conducted by health services
- Cooperation between health services and community.

Vaccination campaigns are intended to supplement routine immunization. The OPV is the used vaccine during campaigns. During mass campaign, OPV should be given regardless of immunization status. Two vaccination rounds should be conducted, allowing an interval of at least 4 weeks and no more than 8 weeks.
Mopping up is a vaccination campaign where vaccination is done house-to-house and where all households in the target area have to be reached. Based on surveillance and vaccination indicators, we can define special groups or communities where there is high risk of poliovirus infection. Those areas should be identified for mopping up vaccination campaigns.

5.5 Contraindications

Severe allergic reaction (anaphylaxis) to a vaccine component or following a prior dose of vaccine is a contraindication for further doses

of that vaccine.
A dose administered (in particular of OPV dose) to a child with diarrhea should not be counted as part of the series. The series should be completed as soon as the diarrhea is over.

5.6 Adverse reactions following IPV

Minor reactions (pain, redness) may occur following IPV. No serious adverse reactions to IPV have been documented.

5.7 Adverse reactions following OPV

Despite the great efficacy of the OPV, in very rare occasions, the virus in OPV can mutate and regain virulence.

Two main adverse reactions are seen:

- The occurrence of Vaccine-Associated Paralytic Poliomyelitis VAPP: rare adverse event following OPV. For recipients of the first dose, the frequency is 1 case in every 1.4 million doses. For the subsequent doses, the frequency is 1 case every 27.2 million doses. The risk factors for VAPP are: first OPV dose, and/or presence of anal/rectal abscess.
- The occurrence of Vaccine-Derived Poliovirus VDPV: The vaccine virus may have mutation or reversion to a more neurotropic form. The mutated virus is called “revertant”. The paralysis that results is identical to that caused by wild virus.
  VAPP and VDPV will be detailed in the case definitions.

5.8 Vaccine cold chain

OPV is heat-sensitive vaccine. At local level, it should be kept at temperature not higher than 8°C. OPV comes with Vaccine Vial Monitor (VVM) – a heat sensitive label indicating when OPV no longer should be used.

In regional or national facilities, it is recommended to store the vaccine at -15°C and -25°C.

6. Acute Flaccid Paralysis surveillance

6.1 Surveillance

"Surveillance is a continuous and systematic collection of data related to health event, their verification, investigation, compiling, analysis and interpretation, and the dissemination of the information to those who need to know in order to reduce mortality and morbidity and enhance the health status of the population"(WHO).

6.2 Objectives of AFP surveillance

The objectives of AFP surveillance are multiple:

- -To detect imported cases of wild poliovirus, the vaccine-derived poliovirus, and to monitor the circulation of the virus
- -To identify high risk area or community for poliovirus infection
- -To provide information on the polio-free status of the country.

6.3 Rationale of syndromic approach: Surveillance for Acute Flaccid Paralysis (AFP)

There is need to detect every single case of acute poliomyelitis. Acute poliomyelitis has become a rare disease. Health care providers are no longer used to see a polio case. On the other hand, acute poliomyelitis is a severe disease. One case is considered as an outbreak, as there is only one case of paralysis for 100-1000 infected persons.

In order to ensure early detection of all cases of acute poliomyelitis and to demonstrate a sensitive surveillance system, syndromic surveillance approach is adopted. Based on clinical syndrome of acute flaccid paralysis, all cases of acute flaccid weakness/paralysis in children <15 years are to be reported to health authorities. Cases are investigated and 2 stool specimens collected within 2 weeks of paralysis onset. This procedure is followed even if doctors are confident on clinical grounds that the child does not have polio.

6.4 Case definitions

a) First presentation: suspected case

A suspected polio case is:

- -Any case of Acute Flaccid Paralysis AFP in a person under 15 years of age for any reason other than severe trauma
- -Or paralytic illness in a person of any age in whom polio is suspected by the physician.

Flaccid is hypotonia ("floppy"- not spastic or rigid). Acute is the rapid progression of the paralysis (from onset to maximum paralysis) within 1 week. Paralysis includes also paresis, weakness, inability or difficulty to walk, loss of voluntary movement …

b) First presentation: AFP hot case

A hot case is an AFP case considered as highly suspicious of acute poliomyelitis. The criteria of hot case are:

- -Child with incomplete vaccination history (< 3 doses of OPV/IPV) and polio clinical presentation (fever and rapid progression of asymmetric paralysis)
- -Or AFP patient for whom the physician is highly suspecting an acute poliomyelitis
- - Or AFP patient who has been in high risk areas in a polio-endemic country or in a country experiencing polio outbreak.

c) Contact

A contact of an index AFP case is defined as a person who had been in direct contact with the index AFP case within one week prior to the onset of paralysis and/or within 2 weeks after onset of paralysis.

During AFP investigation, the target contacts are children less than 15 years of age, and in particular children under 5 years old.

Close contacts are identified within household, playmates, and neighbors.

d) Cluster of AFP cases

Cluster of AFP cases can be defined as:

- At least 2 cases of AFP cases, in same locality or adjacent localities with the date of onset of paralysis within 2 months of each other
- Or at least 2 cases of AFP cases epidemiologically-linked
- Or detection of AFP cases more than expected for specific time, place and person context.

AFP cluster needs careful investigation to rule out polio outbreak.

e) Final classification: polio-confirmed case

A polio-confirmed case is when the laboratory isolates a wild poliovirus from the index AFP case or any of the contacts.

f) Final classification: polio-compatible case

Polio-compatible case is an AFP with inadequate stool specimens and for whom the National Polio Expert Group could not rule out the diagnosis of acute poliomyelitis.

g) Final classification: polio-discarded case

If the AFP case was not classified as polio-confirmed or polio-compatible, then the case is polio-discarded.

h) Final diagnosis: Vaccine-Associated Paralytic Poliomyelitis VAPP

Vaccine-associated paralytic poliomyelitis case is acute paralytic illness caused by the OPV.

VAPP should be distinguished from those caused by wild poliovirus or vaccine-derived poliovirus. VAPP has a sporadic pattern. There is no outbreak, no clustering, and no secondary case of VAPP cases.

In VAPP, the isolated strain in stool is Sabin-like virus (or OPV-like) and the sequence diversity of the VP1 (viral protein 1) in the structural part of the genome is <1% compared with the corresponding parent Sabin strain.

The diagnosis of VAPP is usually done by exclusion and requires a review by the National Polio Expert Group (NPEG).

There are two sources of VAPP:
-"Recipient VAPP": the AFP case is the one who had the OPV dose
-"Contact VAPP": the AFP case is a contact of the person who had the OPV dose.

The criteria of "recipient VAPP" are:
- Isolation of Sabin-like poliovirus from the patient
- Administration OPV dose to the AFP case: 4-30 before paralysis onset.

The criteria of "contact VAPP" are:
- Isolation of Sabin-like poliovirus from the patient
- Absence of OPV administration to the AFP patient within 4-30 days before paralysis onset
- At least one contact had received OPV dose 7-70 days before paralysis onset of the patient. The contact may be from the household, close family, close neighbors, or classmates…
- At least one contact has been documented between the patient and the identified vaccine recipient 4-30 days before paralysis onset.

The OPV dose in question should preferably be the first administered in a series.

The final classification of VAPP cases is polio-discarded AFP case.

i) Final diagnosis: Vaccine-derived poliovirus VDPV

Vaccine Derived Poliovirus is vaccine-related isolates that have diverged from the vaccine strain.

Poliovirus genome evolves at a rate of approximately 1% per year. VDPV is a vaccine-related strain that has replicated for at least 1 year after administration of an OPV dose. In VDPV, the divergence of

the genomic sequencing of the region coding for the major surface protein VP1 is 1-15% compared to the vaccine strain. Beyond 15% of divergence of genomic sequencing, the virus is classified as wild poliovirus.

VDPV cases are classified into 3 groups:

- iVPDV person with primary immuno-deficiency (in particular B-cell immunodeficiency)
- cVDPV that emerges in communities with inadequate OPV coverage. cVDPV can produce localized polio outbreak
- aVDPV: clinical isolates from persons with no known immunodeficiency or environmental isolates whose ultimate source has not been identified. Limited person to person transmission may occur in this group.

j) Outbreak of poliomyelitis

In non-endemic country, an outbreak of poliomyelitis is reached if one case or more of poliomyelitis was/were laboratory confirmed.

In endemic country, polio outbreak means unexpected increase of polio cases more than the regular pattern or the appearance of polio in a polio-free area.

k) Indigenous polio case

Indigenous polio case is a polio-confirmed case which cannot be proven to be imported.

l) Imported polio case

Imported polio case is a polio-confirmed case which has its poliovirus source outside the country:

- Case with onset of paralysis before arrival to the country
- Or case with poliovirus genotyping different from the local ones and related to other country.The paralysis can occur while the person is outside or inside the country.Travel history is present for the case or among close contacts.

6.5 Alternative diagnosis of AFP

Acute Flaccid Paralysis can be caused by several diseases mainly acute poliomyelitis, Guillain Barre syndrome, transverse myelitis, traumatic neuritis, peripheral neuropathy and enterovirus…

a) Guillain Barre Syndrome

Guillain Barre Syndrome is a disease affecting the spinal cord with demyelination.

The prodromes that are present 7 to 15 days prior the paralysis onset, simulate acute respiratory or gastrointestinal infection.

Paralysis is acute and may take up to 2 weeks to gradually progress to its maximum. Usually, paralysis is symmetrical and occurs in ascending fashion, affecting lower limbs first, then the trunk, and then the upper limbs. It may reach the cranial nerves (Miller-Fisher syndrome). Fever may appear several days after onset. Hypoesthesia or anesthesia is often present in a glove-boot distribution. Tingling and burning sensations in palms and soles are frequent as cramps in peroneal muscles. Respiratory insufficiency occurs secondary to demyelination of the intercostals nerves.

CSF shows a rise in protein (up to 200 mg/dl) coupled with white cell count of usually 10 cells per mm^3 or fewer. EMG/ENG shows specific signs of demyelination.

Usually, there is no sequelae. In rare case, paralysis may be present 3 months after onset of flaccid paralysis.

b) Transverse myelitis

Transverse myelitis is a disease affecting the spinal cord. Usually, it occurs in patients ranging from 4 to 18 years of age.
Fever may be present before the onset of AFP, but rarely during onset. Paralysis is symmetrical for the lower limbs and accompanied by

profound anesthesia to all forms of sensation. The level of sensory deficit may vary and can be lumbar, thoracic or cervical. Dysfunction of the autonomic nervous system and the bladder occurs frequently.

Recovery is related to onset. If paralysis took several days to develop, recovery usually begins 1 to 5 days after symptoms peak and most patients recover completely. When onset is fulminant or rapid, recovery usually begins several weeks to months after and neurological deficit may remain.

c) Traumatic neuritis

Traumatic neuritis is secondary to intramuscular injection with nerve injury.

The acute flaccid paralysis occurs in the affected limb from one hour to 5 days after receiving the intramuscular injection in the gluteus muscles area. Fever may occur. Pain is often present in the gluteus muscles area.

Atrophy may appear 40 to 60 days later, accompanied by hyporeflexia. Differences in leg circumstances usually do no exceed 0.5 to 1 cm. Upper limbs and cranial nerves are unaffected. Recovery is usually with physiotherapy and is observed within 3 to 9 months.

d) Peripheral neuropathy

Peripheral neuropathy can be secondary to ingestion of poisonous berries, metabolic defects (diabetes), toxins (poisoning fish), organo-phosphates pesticides, raw metals (lead), pharmacological products, hereditary diseases (Charcot-Marie-Tooth), diphteria toxin, tick bite… Paralysis lasts for 3 to 4 days.

e) Enteroviruses and other viruses

Several enteroviruses, other than poliovirus can cause paralysis. They are: Coxsakie A viruses, Coxsakie B, ECHO, Enterovirus (70 and 71)…

Mumps also can cause paralysis.

f) Other diseases

Other diseases can cause acute flaccid paralysis. Please refer to the list in 3.11.

7. Case detection

7.1 Importance of rapid detection

Rapid detection is critical to identify possible wild poliovirus transmission.

Rapid detection allows:

- Rapid investigation of suspected cases and collection of 2 stool specimens (within 14 days of onset of paralysis with at least 24 hours apart) for poliovirus isolation, which is critical for ruling out or confirming paralytic poliomyelitis. Surveillance quality is linked to the timely detection and investigation of all suspected cases, in order to demonstrate a sensitive surveillance system.
- Timely implementation of control measures to limit the spread of imported wild poliovirus.

Reporting to MOPH can be done through different channels:

- Reporting from health structures: classical surveillance
- Hospital zero-reporting
- Hospital active surveillance
- Screening the MOPH database for hospital admissions.

7.2 Case detection: reporting and classical surveillance system

a) Legal infrastructure

The system is based on the Law on communicable disease issued on the 31st of December 1957. According to the Law, physicians are required to report to health authorities specific communicable diseases.

The list of mandatory notifiable diseases and the reporting form are updated by decision issued by the minister of public health based on international, regional or national needs. The latest version is that of

the MOPH decision # 899/1 issued on the 3rd May 2014 (Annex 1).

b) Target events

41 different events are targeted by the classical surveillance system.

They are divided into two groups:

- The first group that requires immediate notification
- The second group that requires weekly notification.

Acute Flaccid Paralysis is listed among the immediate notifiable diseases that need immediate investigation.

c) Structure

Data sources are physicians in both public and private sectors, whether they are working in hospitals, dispensaries, medical centers, laboratories or private clinics. The reporting system is universal. All physicians are involved in reporting to MOPH.

Reporting is done when physicians or health facilities fill the reporting form and send it to the MOPH caza team. They can also send the reports directly to the mohafaza or central level of the MOPH. Fax communication is the most adopted way in reporting. Physicians can also report through phone communication.

Once the form is received, the peripheral MOPH team starts the investigation and transmits the information to the higher level.

Collected data in the reporting form includes various variables as: patient identification, address, date of birth or age, gender, nationality, disease or event, date of onset, date of hospitalization, hospital name, reporter identification and contact details…

All data is gathered at central level, where data entry takes place. Descriptive analysis is done on weekly basis and published on the MOPH website.

7.3 Case detection: hospital weekly zero-reporting

a) Rationale and legal framework

The classical surveillance system provides information if cases are detected and reported. The absence of reporting in the classical surveillance might be because:

- There is no case detected
- Or there is a case that was not reported.

In order to enhance the awareness of health institutions on the importance of case detection and reporting, zero-reporting system was established.

The MOPH decision # 1162/2 dated on the 5th December 2001 requires from all hospitals to adopt the zero-reporting system. The MOPH decision # 550/2 dated on the 15th June 2006 decentralizes the system so that caza and mohafaza levels are involved in zero-reporting system. The MOPH circular # 60 dated on the 3 July 2014 updates the standard form for zero-reporting (Annex 2).

b) Target events

Hospital zero-reporting system was first established for AFP in 1998. Since 2001, target events for zero-reporting are all immediately notifiable communicable diseases.

c) Structure

Data sources are all hospitals in both public and private sectors.

The system is both passive and active. For the MOPH, it is passive. For the hospital, the system is active.

At hospital level, designated focal person searches for cases in the wards, fills the zero-reporting form and sends it to MOPH surveillance team at caza level. In Beirut, hospitals report directly to the central level. The reporting is done on weekly basis.

The zero-reporting form includes the following data: hospital name, week identification (starting on Monday), number of cases for each target events and reporter identification and contact details.

d) Hospital focal person

The hospital designates one focal person. He/she can be physician, nurse, or administrative employee …

The terms of reference of the hospital focal person are:

- To contact regularly hospital staff asking on any suspected cases
- To visit hospital wards: pediatric, internal medicine, intensive care units, emergency
- To search for target cases among inpatients
- To raise awareness on detection and reporting
- To fill the zero-reporting form
- To send the zero-reporting form to the MOPH
- To coordinate with MOPH for case investigation

e) Zero-reporting follow up

The MOPH team at caza level ensures the follow up with hospital focal points.

In case no report was received, the MOPH team contacts the focal person. If case has occurred, the case investigation is conducted by the MOPH in coordination with the hospital focal person.

The MOPH maintains and updates the list of hospital focal points on annual basis.

7.4 Case detection: active surveillance

a) Rationale and legal framework

Hospital zero-reporting may miss AFP cases if the active search done by the hospital focal point was incomplete.

The active surveillance system was implemented in order to verify and enhance the hospital reporting system.

The MOPH circular # 47 dated on the 13th May 2002 has implemented the hospital active surveillance. The MOPH circular # 26 dated on the 4th April 2003 has revised the hospital active surveillance at mohafaza level. The MOPH decision # 549/2 dated on the 15th June 2006 has decentralized the system at caza level. The MOPH circular # 61 dated on the 3rd July 2014 updates the form to be used in active surveillance (Annex 3).

b) Target events

Target events for hospital active surveillance are:

- Acute Flaccid Paralysis
- Measles/rubella
- Meningitis
- Cholera.

c) Structure

Data sources are hospitals in both public and private sectors. Not all hospitals are included.

In each caza, at least 2 hospitals are selected. If the population caza is more than 100000 inhabitants, at least 3 hospitals are selected. The selection is done by the MOPH caza team based on the volume of the pediatric activity.

During humanitarian crisis/complex emergency, hospitals providing care to displaced populations and refugees are also selected as sites for active surveillance.

d) MOPH officers

For each hospital, a health professional from the MOPH (medical doctor, nurse or epidemiologist) is designated to visit the selected hospitals on weekly basis (preferally).

Bi-weekly or monthly visit can be conducted for hospitals with limited

pediatric activity.

e) Hospital visit

During the field visit, the MOPH health officer:

- Contacts the hospital focal point and hospital staff
- Visits selected wards: pediatric, internal medicine, ICU
- Checks admission registries
- Checks medical files or patients if there are suspected cases for the target events
- Triggers investigation if needed
- Fills the form related to the visit.

Hospital registries can be hospital-based or ward-based. They can be hard copies or electronic database.

If the hospital provides electronic database with diagnosis coded using the 10th version of the International Classification of Diseases (ICD-10), the main target codes are the following for AFP:

Table 1: Target ICD10 codes for active surveillance

Code	Label
A80	Acute Poliomyelitis
G04	Encephalitis, myelitis and encephalomyelitis
G37	Other demyelinating diseases of central nervous system
G54	Nerve root and plexus disorders
G56	Mononeuropathies of upper limb
G57	Mononeuropathies of lower limb
G58	Other mononeuropathies
G61	Inflammatory polyneuropathy
G62	Other polyneuropathies
G72	Other myopathies
G82	Paraplegia and tetraplegia
G83	Other paralytic syndromes

The visit is documented by filling the specific form for active surveillance. The data collected are: MOPH officer name, date of hospital visit, hospital name, number of cases detected in wards or in registries.
If cases are detected, additional information is collected: patient identification, date of hospital admission, gender, age, disease, and specimen collection …
Once the form is filled, the MOPH officer sends it to surveillance team at mohafaza level.

7.5 Case detection: MOPH database

a) Rationale and legal framework

In Lebanon, around 50% of the population have medical coverage by CNSS or other insurance organizations (CAS survey 2007). For the remaining 50% of the population who do not benefit from any medical insurance, the government has implemented a national health system through the MOPH to cover financially their hospital admissions. The information on hospital admissions covered by the MOPH is centralized in a national database, in which the medical information is coded using ICD-10. Such national database may be used to detect AFP cases.

The MOPH circular # 23 dated on the 21 February 2006 and its updates provide the possibility for the epidemiological surveillance program to access the nominative database related to inpatients covered by the MOPH.

st

b) Target events

As the national database for hospital admission covered by the MOPH is coded using the ICD-10, the target codes are those specified in 7.4.e.

c) Structure

Data source is the MOPH informatic unit where the national database for MOPH hospital admissions is maintained and updated. On weekly

basis, a subset of the national database for target ICD-10 chapters is communicated to the epidemiological surveillance program. There, the screening of records is performed for AFP suspected cases.

If a suspected case was detected, verification takes place to check whether the case has been already reported or not. If the case was not reported to MOPH, a request is issued to the caza team to verify the case whether it is AFP or not. If the case is an AFP, investigation is then launched.

8. Case investigation

Case investigation aims to gather information and specimens that are necessary to classify the case as polio-confirmed, polio-compatible or polio-discarded.

The MOPH circular # 76 dated on the 17th June 2006 provides steps for AFP investigation.

8.1 National patient identification number

a) AFP case

In Lebanon, each AFP case has a national identification number.

The format of the national identification number for AFP is as following:

# #	L E B	# #
Last two digits of the year of onset	National code	Index case: national cumulative number

The national identification number is allocated by the person in charge of AFP surveillance at the central unit of the epidemiological surveillance program. Once an AFP case is detected, peripheral team contacts the central team in order to get a national ID number for the new case.

Example: 10LEB02 is the second reported AFP case in Lebanon for the year 2010.

b) Contact of AFP case

If the investigation requires specimen collection from contacts, contacts are designated by national identification number based on the AFP index case number.

The form of the national identification number for AFP contact is as following:

##	L E B	##	-C ##
Last two digits of the year of onset	National code	Index case: national cumulative number	Contact cumulative number for each index

Example: 10LEB02-C03 is the third contact for the AFP case 10LEB02.

8.2 AFP Case investigation: data collection

Clinical investigation aims to have answers for the following questions:
- Does the case meet the case definition of AFP?
- Is the case highly suspected of being acute poliomyelitis, based on physician diagnosis, vaccination status, or travel history?
- Is the case related to importation?
- Is there any time/space cluster of AFP cases?

The clinical investigation includes the collection of several kinds of information:
- Patient identification and demography
- Health care provider identification
- AFP and paralysis characteristics
- Vaccination status
- Medical diagnosis
- Travel history

a) Patient identification and demography

Patient identification includes the following data: patient full name (first name, father name, family name), date of birth (day, month and year), gender, nationality, type of residence (resident, visitor, refugee…), place of residence (caza and locality), full address and phone details.

This information allows:

- To avoid duplicates: one patient may be reported from different hospitals if he/she had been in different hospitals
- To conduct epidemiological analysis by person (age and gender), place and time
- To verify the age under 15 years for AFP cases
- To contact the family in order to collect additional data (vaccination status, travel history…)
- To identify the household for field investigation.

b) Health care information

Health care information includes the following data: name of treating physician and phone details, name of hospital, date of hospital admission, name of reporter and phone details, date of reporting to MOPH (first date of reporting to MOPH whether at caza, mohafaza or central level).

This information allows:

- To contact the treating physician in order to verify the initial and medical diagnosis. Does the physician highly suspect acute poliomyelitis?
- To contact the hospital in order to request stool specimen collection, medical file, CSF findings, EMG/ENG results …
- To visit the hospital.

c) Case definition matching

The case definition of suspected case has two scenarios:

- A child under 15 years old with acute flaccid weakness/paralysis
- A person whatever age, with suspicion of acute poliomyelitis according to the treating physician.

The following are included as AFP cases:
- Case with paralysis following a minor traumatism (ex: fall)
- Case with paresis/weakness
- Case with temporary paralysis or paresis.

The following are not target AFP cases:
- Case with congenital paralysis
- Case with long history of paralysis
- Case with spastic paralysis
- Case with paralysis following a major traumatism.

Example 1: A child of 13 years for whom the physician is suspecting Guillain Barre Syndrome is an AFP case under 15 years old. The case should be reported to MOPH.

Example 2: A child of 16 years for whom the physician is suspecting Guillain Barre Syndrome is not an AFP under 15 years old. There is no need to report the case.

Example 3: An adult of 20 years old who had paralysis onset after returning from Nigeria, and for whom the physician is suspecting acute poliomyelitis, is a suspected polio case. The case should be reported to MOPH.

d) Paralysis aspect and other clinical symptoms

It is important to gather information on weakness/paralysis characteristics and other clinical symptoms in order to highlight suspicions for acute poliomyelitis.

The target data related to paralysis features are the following:
- Date of first onset of paralysis
- Paralysis topography: limbs, proximal/distal, paresis/paralysis, inability to walk, symmetric/asymmetric, motor power, deep tendon reflexes …

- Rapid progression of the paralysis within 4 days
- Sensory loss or not
- Initial medical diagnosis.

Other relevant clinical data is collected as:
- Presence of fever and date of fever onset
- Presence of anal/rectal abscess
- Injection history (any intra-muscular injection before onset of paralysis).

The date of onset used is the date of onset of weakness/paralysis.

e) Vaccination status

Knowing the number of received OPV/IPV doses by the patient allows us:
- To flag an AFP as hot case
- To suspect vaccine-associated paralytic poliomyelitis case
- To understand the laboratory result in case of isolation of Sabin-like virus.

The data to be collected related to anti-polio vaccines are the following:
- Number of doses received in routine based on vaccination calendar
- Number of doses received during vaccination campaigns
- Number of doses of OPV
- Number of doses of IPV
- Dates of last OPV received
- Source of information: vaccination card, health record, medical files.

f) Travel history

Importation of poliovirus from endemic countries or countries experiencing polio outbreak is a major risk for Lebanon.

In 2012, the polio endemic countries are: Afghanistan, Pakistan and

Nigeria. Since 2013, the poliovirus has been re-introduced in the Middle East countries, and cases were detected in Syria (2013-2014) and Iraq (2014). The information on worldwide status on poliovirus is weekly updated on the WHO website: www.polioeradication.org.

The target period for travel history is 1 month prior to weakness/ paralysis onset.Travel history is collected for AFP case and close contacts.

The travel-related data include:
- Dates of departure and arrival
- Visited countries
- Visited cities.

g) Is the case a hot case?

The AFP case is flagged as hot case or not based on the collected information related to:
- Paralysis features: assymetric with rapid progression
- Vaccination status (less than 3 doses)
- Initial medical diagnosis
- Travel history to polio-endemic or epidemic countries

Flagging an AFP case as hot case will give high priority for laboratory testing and result communication.

Example: A child of 4 years old, who received two doses of OPV, and who is presenting a rapid progression of flaccid paralysis of the left leg, is flagged as hot case.

8.3 Case investigation: Virological stool culture

The golden rule to confirm or to discard a case as poliomyelitis is the collection of adequate stool specimens for virological culture.

a) Adequate specimens

Adequate stool specimens are defined as the collection of:

- 2 stool specimens
- Each specimen contains at least 8 g of feces (approximately the size of 2 adult thumb nails)
- Collected as early as possible and within 14 days of paralysis/paresis onset
- With at least 24 hours apart
- Conserved at 4°C.

The chance to isolate the virus is highest during the first 2 weeks from paralysis onset. After that date, there is little chance to isolate the virus [Figure 5]

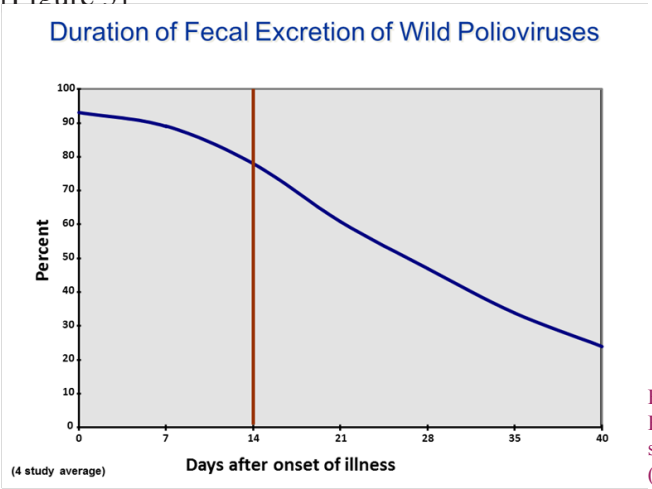


Figure 5:
Excretion of poliovirus in stool in infected persons (Source: WHO)

The infected person shed the virus in the feces with some intermittence. Having at least 2 specimens with at least 24h apart will increase the chance to isolate the virus.

Example 1: An AFP case for whom specimens were collected on day 4 from paralysis onset and day 6, is considered to have adequate specimens.

Example 2: An AFP case for whom specimens were collected

on day 4 from paralysis onset and day 16, is considered to have inadequate specimens.

Example 3: An AFP case for whom specimens were collected on day 4 from paralysis onset at 08:00 pm and on day 5 at 06:00 am, is considered to have inadequate specimens.

b) Place of specimen collection

When the patient is hospitalized, the specimen collection is done by the hospital staff.

If the patient was discharged at the time of investigation, the specimen collection is done by the family.

For both situations, it is important to explain how specimens should be collected and stored in order to be adequate.

c) Specimen container

The container used to collect the specimen has to be clean. The recommended container is screw-capped made of solid plastic material. Once filled, each container is placed in well-sealed plastic bag.

Several clinical specimens from the same patient may be placed in the same plastic bag. Specimens from different patients or contacts should be placed in separate plastic bags.

Specific AFP specimen containers are provided by the MOPH.

d) Labeling

Specimens are labeled at hospital, household and MOPH level.

At hospital level or household level, the needed label includes the following: the name, date and hour of specimen collection, the specimen type ("stool").

Example of label: Stool specimen, Nour Nour, collected on the 12th October at 08:00 am.

At MOPH level, the ID number of the patient or contact is added to the label.

e) Storage

Once collected, specimens must be conserved at 4 to 8° C.

f) Specimen transportation

Transporting specimens from household or hospital to the Epidemiological Surveillance Program is done by the MOPH team.

Upon reception, the MOPH team verifies the following points:

- Labeling: name, date and time of specimen collection, case identification number, type of specimen
- Adequacy: correct date, correct time interval. If the time interval between 2 specimens is <24h, additional specimen is requested
- Quantity: if the quantity is not enough, further specimens are requested
- Container: if the container is not solid or not screw-capped, specimens are replaced in adequate containers.

Specimens should be transported as follow:

- In solid well-labeled containers
- Containers with absorbent material is placed in first well-sealed plastic bag
- First plastic bag is placed in second well-sealed plastic and well-labeled bag.

Collected specimens should be shipped to reference laboratory as soon as possible.

g) Specimen packaging and shipment

Packaging and shipment to reference laboratory is ensured by the epidemiological surveillance program.

The triple packaging system is recommended for shipment, including:

- First receptacle: a labeled primary watertight, leak-proof receptacle

containing the specimen. The receptacle is wrapped with enough absorbent material to absorb all fluid in case of breakage or leakage.

- Second receptacle: a second durable, watertight, leak-proof receptacle to enclose and protect the primary receptacle(s). Several wrapped primary receptacles may be placed in one secondary receptacle. Sufficient additional absorbent material are used to cushion multiple primary receptacles. Documents to identify specimens, sender and receiver are placed in a water proof bag and taped to the outside of the secondary receptacle.

- Outer shipping package: the package around the secondary receptacle which protects the receptacle and contents from outside such physical damage, water and temperature. The third receptacle is labeled as containing biological substances.

h) Reference laboratory

The reference laboratory for polio virological culture is usually the VACSERA laboratory in Cairo, Egypt. It is a WHO accredited laboratory.

i) Laboratory tests

In reference laboratory, the following tests are performed:

- Virus isolation
- Virus characterization to distinguish between “wild” and “vaccine” strain
- Genomic sequencing to distinguish between Sabin-like and vaccine-derived poliovirus, and to trace back the origin of the wild poliovirus.

The absence of poliovirus does not rule out the possibility of poliovirus infection. False negative are observed due to:

- Inadequate specimens (> 14 days of paralysis onset)
- Inadequate quantity of specimens (< 8g)
- Inadequate storage temperature
- Inadequate shipment temperature.

For AFP case flagged as hot case, the laboratory is notified in order to

ensure urgent specimen processing, testing and result communication.

8.4 Case investigation: other laboratory findings

a) CSF findings

In acute poliomyelitis, the Cerebral Spinal Fluid (CSF) is inflammatory. It may be transparent of slightly turbid. Protein is moderately increased to 40-65 mg/100ml. WBC are from 10 to 200 cells per mm3 with lymphocytes predominance.

b) EMG/ENG

Nerve conduction velocity (motor and sensory) and electromyography study is preferably performed 3 weeks after onset of paralysis.
In acute poliomyelitis, the EMG/ENG shows signs of severe denervation and giant action potentials.

c) Polio serology

Serology for poliovirus is not indicated for diagnostic purposes. Serology is only indicated to measure the immunization status of the person. Does he/she has enough antibodies against poliovirus, or is he/she susceptible for poliovirus infection?

8.5 Case investigation: contacts

Contact investigation is a major component for AFP surveillance. It is needed to:

- To confirm the presence of poliovirus if inadequate stool specimens were collected from the AFP case
- To track the circulation of imported virus
- To track the first recipient of OPV in case of suspicion of contact VAPP case.

a) Contact stool specimen collection

Collection of adequate specimens from AFP cases is the golden standard. If specimens are inadequate, additional specimens are

collected from contacts.

The indications for collecting specimen from contacts are:
- Late case notification and collection of specimens beyond 14 days of paralysis onset
- Death or loss of the AFP case before adequate stool collection
- Inadequate cold chain during collection, storage or transportation
- Poor specimen quality due to leakage, dessication or inadequate amount
- AFP case flagged as hot case.

Once the case is eligible for contact specimen collection, there is need to act rapidly in order to collect specimens from at least 3 contacts. For each contact, one specimen is collected. There is no need to collect two specimens per contact.

The priority in selecting the contacts is to identify persons under 15 years old and in particular children < 5 years.

b) Contact polio vaccination

The data on OPV/IPV vaccination is collected in order to:
- Explain laboratory results
- Suspect "contact" VAPP.

For identified contacts, the collected data is:
- Contact identification: name, gender, age, relationship
- Number of OPV dose, date last dose
- Number of IPV dose, date last dose.

c) Contact travel history

Contacts are asked on their previous travel history to polio-endemic countries or to countries experiencing polio outbreaks.

The period to ask for is the 2 months prior to weakness/paralysis onset.

8.6 Case investigation: area survey

In case of AFP hot case or AFP cluster, it is important to collect data related to the area where the case lives.

The target information are:

- Community polio vaccination coverage
- Water safety and sanitation status.

a) Community polio vaccination coverage

Rapid assessment of the OPV/IPV vaccination coverage enables to assess the susceptibility profile of the community for any poliovirus circulation.

The objective is to measure the proportion of the third dose of OPV/IPV coverage in the community where the index case lives.

It is based on field rapid assessment with door to door interview. Parents are interviewed, and vaccination cards/child health records are verified.

The target children are those aged from 6 months to 5 years old. The target size is at least 30 children, living in the community of the AFP index case.

The collected data includes: name, gender, date of birth, number of doses for OPV/IPV in routine and during vaccination campaigns. Once data is collected, the proportion of OPV/IPV3 coverage is = (number of children who received at least 3 doses of OPV/IPV * 100) / number total children included in the survey.

b) Water safety and sanitation status

In case of polio case, there is risk of virus transmission mainly through the oral-fecal route.

It is necessary to assess the water and sanitation status of the case residence.

- What are the sources of water for the household: drinking water, domestic water? Is the water treated, chlorinated?

- What is the sewage infrastructure? Is there a sewage network? Do they use septic tank?

Water samples from sources, reservoirs and households are collected and tested in reference laboratories in order to verify the water safety.

8.7 Case investigation: follow up at day 60

The paralysis in acute poliomyelitis does not regress and remains. In other diseases as Guillain Barre Syndrome, or transverse myelitis, the paralysis usually regresses with no sequelae.

In order to assess the evolution of the paralysis, the AFP patient is reviewed by a physician, 60 days after paralysis onset. Motor power and deep tendon reflexes are tested and compared to the findings at weakness/paralysis onset.

8.8 Case classification and the National Polio Expert Group

Based on investigation findings, AFP cases are classified as polio-confirmed, polio-compatible or polio-discarded.

Automatic classification is done for:
• Cases with collection of adequate stool specimens
• Cases with collection of inadequate stool specimens with no residual weakness.
Based on laboratory results, the automatic classification allows to conclude on:
• Polio-confirmed if positive wild poliovirus culture
• Polio-discarded if negative poliovirus culture.

For the other cases, there is need to assess the case by the National Polio Expert Group [figure 6].

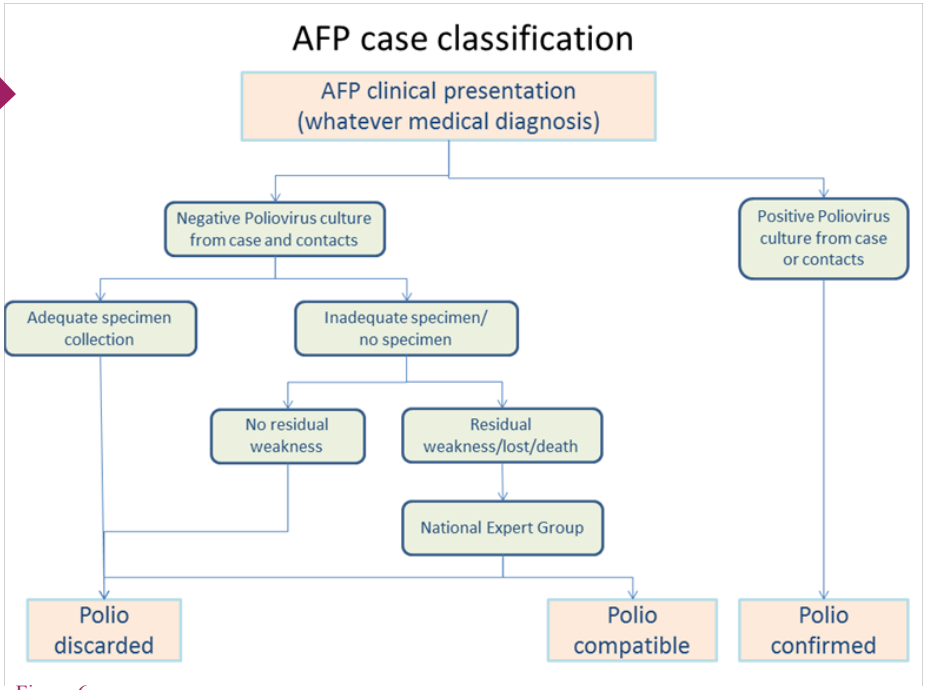


Figure 6:
Case classification of Acute Flaccid Paralysis

The National Polio Expert Group NPEG is an independent group of experts. The composition of the NPEG includes: pediatricians, neuro-pediatricians, infectious diseases specialists from both public and private sectors.

The terms of reference of the NPEG are:

- To classify cases with inadequate specimens collection, in particular if there is residual weakness
- To review cases with suspicion of VAPP
- To review AFP cases documentation when needed.

For that, the NPEG reviews AFP documents, and when necessary, examines the child, and requests additional information or tests.

Based on the file reviews and physical examination, the NPEG classifies cases as:

- Polio-compatible
- Polio-discarded.

Also, the NPEG puts the diagnosis of VAPP if:

- Sabin-like poliovirus was isolated from the patient
- VAPP criteria related to time interval were respected
- The NPEG did rule out other diagnosis.

8.9 Investigation forms

Several forms are used for reporting and investigation. They are summarized in table below:

Anex	Form	Filled by
I	Reporting form	Treating physician or hospital
II	Zero-reporting form	Hospital focal point
III	Active surveillance form	MOPH officer
IV	Investigation: initial presentation form	Treating physician or hospital
V	Investigation: complementary form	MOPH
VI	Investigation: specimen collection form	MOPH
VII	Investigation: rapid assessment for OPV3/IPV3 coverage	MOPH
VIII	Investigation: follow up at 60 days	Treating physician + MOPH
IX	Investigation: classification and review by National Polio Expert Group	National Polio Expert Group and MOPH
X	Specimen form	MOPH

9. Polio laboratory containment

The purpose of laboratory containment of wild polioviruses is to minimize the risk of reintroducing wild polioviruses from the laboratory to the community through laboratory inventories, enhanced bio-security and bio-safety.

The plan for containment is divided into three phases. The implementation of each phase is dependent on the progress towards eradication goals:

Phase I – Countries conduct laboratory survey and inventory related to wild poliovirus infectious materials or potential wild poliovirus infectious materials at the time when the number of polio-free countries is increasing.

Phase II – Countries define and implement laboratory containment requirements at the time when no wild poliovirus was isolated in the world. Once global certification on global polio-free status was declared, containment requirements will remain as long as OPV/IPV universal immunization recommendations remain.

Phase III – Countries and WHO define and implement containment requirements for both wild and Sabin strains at the time of post global certification. Post global certification refers to a time when the world stops routine use of anti-polio vaccine.

Wild poliovirus infectious materials include the following:

- Wild poliovirus stocks (reference strains, isolates, proficiency test panels) or research materials containing capsid sequences derived from wild polioviruses
- Clinical materials (throat, fecal or autopsy specimens) from polio cases or specimens from infected experimental animals

- Animals (non-human primates and transgenic mice) infected with wild polioviruses
- Environmental materials in which wild polioviruses are known to be present
- Vaccine derived polioviruses that have assumed wild virus characteristics of neurovirulance and transmissibility.

Potential wild poliovirus infectious materials include the following:
- Throat or fecal specimens from studies or field surveys performed for any purpose
- Environmental (water and sewage) specimens
- Untyped enterovirus-like or undifferentiated poliovirus isolates.

Serum specimens are not considered potentially infectious.

10. Polio-free certification

10.1 Certification commissions

The Global Commission for the Certification of the Eradication of Poliomyelitis (GCC) was appointed by WHO to oversee polio eradication certification activities at the global level. The GCC establishes basic definitions, principles, and criteria upon which certification would be based, and defines the terms of reference and operating procedures of certification bodies at regional and country levels.

The Regional Certification Commissions (RCCs) are established in all WHO regions. They verify the status of the countries for wild poliovirus eradication and declare if the polio-free status is reached. There are 6 WHO regions: the Americas, the Western Pacific region, the European Region, the Eastern Mediterranean Region, Southeast Asian Region and the African Region.

The National Certification Commissions (NCCs) are established in Member States. They verify the status for wild poliovirus eradication and report to the Regional Certification Commission.

All certification commissions are independents.

10.2 Certification process

At global level, the main criteria as prerequisites for global polio-free certification are:

- First, the absence of wild poliovirus, isolated from cases suspected of poliomyelitis and acute flaccid paralysis, healthy individuals, or environmental samples, in all WHO regions for a period of at least three years in the presence of high-quality certification-standard surveillance

- Second, the containment of all wild poliovirus stocks in laboratories through completion of the requirements of the WHO global action plan for laboratory containment of wild polioviruses.

At regional level, each region can consider regional certification only when all countries of the region demonstrate the absence of wild poliovirus transmission for at least three consecutive years in the presence of excellent surveillance.

a) National documentation

Each country submits annual national report related to certification for polio eradication. That report is prepared by the Expanded Program for Immunization and the Epidemiological Surveillance Program, reviewed and verified by the National Commission for Certification. In addition, the NCC adds an executive summary outlining the polio status in the country. Once the report is finalized, the NCC submits the report to the RCC.

The required national report includes:

- Country background information (demography, population distribution, high-risk groups, migration patterns, health care systems, etc.)
- Structure and responsibilities of national units concerned with polio eradication
- Confirmed polio cases and polio-compatible cases
- Surveillance activities, including AFP surveillance quality
- Information about the polio laboratories serving the country, including documentation of the results of WHO accreditation
- Progress towards laboratory containment
- A plan of action for handling wild poliovirus importations, including their detection, investigation, and intended response procedures
- Routine and supplementary immunization activities.

b) Certification standards for surveillance

The surveillance standards for certification are:

- The ability to detect at least one case of non-polio acute flaccid paralysis (AFP) for every 100 000 children under 15 years of age on annual basis. For countries with high risk of importation, the target is to reach at least two cases of non-polio AFP per 100 000 under 15 years
- Two adequate specimens collected from at least 80% of cases of acute flaccid paralysis
- All specimens should be processed at a WHO accredited laboratory.

11. Performance indicators

Surveillance indicators for Acute Flaccid Paralysis surveillance are critical information showing:

- Absence of polio cases
- Identification of high risk areas or populations
- Identification of gaps in surveillance
- Documentation for the polio-free certification.

Indicator	Formula	Target
Hospital weekly zero-reporting		
Weekly zero-reporting completeness	= (number of received zero-reporting forms for one specific week * 100) / number of expected zero-reporting forms for that specific week	>=80%
Cumulative zero-reporting completeness	= (number of received zero-reporting forms from week 1 up to current week * 100) / number of expected zero-reporting forms from week 1 up to current week	>=80%
Weekly zero-reporting timeliness	= (number of zero-reporting forms received on time for one specific week * 100) / number of expected zero-forms for that specific week	>=80%
Cumulative zero-reporting timeliness	= (number of zero-reporting forms received on time from week 1 up to current week * 100) / number of expected zero-reporting forms from week 1 to current week	>=80%
Active surveillance		

Indicator	Formula	Target
Weekly completeness	= (number of conducted hospital visits for one specific week * 100) / number of included hospitals	>=80%
Cumulative completeness	= (number of conducted hospital visits from week 1 up to current week * 100) / number of expected hospital visits from week 1 up to current week	>=80%
Reporting		
Proportion of AFP cases reported to MOPH within one week from onset	= number of suspected cases reported to MOPH within one week * 100 / total number of AFP cases	>=80%
Annual AFP non–polio rate	= (number of AFP non–polio under 15 years old * 100000) / population under 15 years old	>=2
Annualized AFP non-polio rate at month x	= (number of AFP non–polio under 15 years old * 100000 * 12) / (population under 15 years old * x)	>=2
Investigation		
Proportion of AFP cases investigated by MOPH within 48 hours from notification	= (number of suspected cases investigated by MOPH within 48 hours from notification * 100) / total number of AFP cases	>=80%
Proportion of specimen adequacy	= (number of AFP cases with 2 adequate stool specimens * 100) / total number of AFP cases	>=80%
Contact		

Indicator	Formula	Target
Completeness of contact sampling	= (number of eligible AFP cases with at least 3 contact samples collected * 100) / total number of AFP cases eligible for contact sampling	>=80%
Age distribution under 5 years	= (number of contacts under 5 years old from whom specimens were collected * 100) / total number of contacts from whom specimens were collected	>=80%
Laboratory		
Enterovirus recovery	= (number of persons for whom Enterovirus was isolated * 100) / total number of persons for whom virological culture was conducted. The persons include AFP cases and contacts. This indicator reflects quality of reverse cold chain related to clinical specimens.	>=10%
Sabin-like recovery	= (number of persons for whom Sabin-like was isolated * 100) / total number of persons for whom virological culture was conducted. The persons include AFP cases and contacts. This indicator reflects quality of reverse cold chain related to clinical specimens.	>=5%
Timeliness of specimen shipment	= (number of AFP for whom clinical specimens were sent to reference laboratory within 7 days from specimen collection * 100) / total of AFP cases investigated with specimen collection.	>=80%

12. Feedback

AFP surveillance findings are published on the MOPH website: www.moph.gov.lb (> prevention, > surveillance, > poliomyelitits).

Two types of information are available:

- Descriptive tables of reported cases with weekly updates
- Commented bulletin with monthly updates.

Abbreviations

Abbreviation	Details
AFP	Acute Flaccid Paralysis
CAS	Central Administration for Statistics
CFR	Case Fatality Ratio
CNSS	Caisse Nationale de la Sécurité Sociale
CSF	Cerebral Spinal Fluid
EMG/ENG	Electromyography/ Electroneurography
EMR	Eastern Mediterranean Region
GCC	Global Certification Committee
ICD-10	International Classification of Diseases – 10th version
IPV	Inactivated Polio Vaccine
MOPH	Ministry of Public Health
NCC	National Certification Committee
NPEG	National Polio Expert Group
OPV	Oral Polio Vaccine
RCC	Regional Certification Committee
RNA	Ribonucleic acid
SIA	Supplementary Immunization Activities
VAPP	Vaccine Associated Paralytic Poliomyelitis
VDPV	Vaccine-Derived Poliovirus
VVM	Vaccine Vial Monitor
WBC	White Blood Cells
WHA	World Health Assembly
WHO	World Health Organization

Annex I

الجمهورية اللبنانية
وزارة الصحة العامة

إستمارة إبلاغ عن مرض إنتقالي

إسم المريض (إسم الثلاثي)، إسم الأب، إسم الشهرة:

.....

الجنسية: مقيم ☐ زائر ☐

تاريخ الولادة: .....

الجنس: ذكر ☐ أنثى ☐

الوضع التحصيني: (للمرض المبلغ عنه)

ملقح ☐ غير ملقح ☐

عدد الجرعات: .....

البلدة/الحي: .....

المحافظة/القضاء: .....

رقم الهاتف: .....

تاريخ ظهور عوارض المرض: .....

تاريخ تشخيص المرض: .....

هل دخل المريض المستشفى: نعم ☐ لا ☐

إسم المستشفى: .....

تاريخ دخول المستشفى: .....

هل من تشخيص مخبري: نعم ☐ لا ☐

إذا نعم، حدد: .....

.....

وجود حالات مماثلة في محيط المريض: نعم ☐ لا ☐

يمارس المريض مهنة طبية/صحية: نعم ☐ لا ☐

إسم المستشفى/المركز الصحي/المختبر/عيادة خاصة/غيره:

.....

العنوان: .....

الهاتف: .....

إسم وصفة المبلغ: .....

التاريخ: / / **التوقع**

في الحالات التي تبلغ فوراً إضافة إلى ملء الوثيقة يجب الإتصال مباشرة وخلال ٢٤ ساعة ببرنامج الترصد الوبائي في بيروت والمناطق.
هاتف ٠١/٦١٤١٩٤ , **فاكس** ٠١/٦١٠٩٢٠

Immediately Reportable Cases/الأمراض التي تبلغ فورا
Clinical cases should be reported within 24 hours

- ☐ Acute Flaccid Paralysis / الشلل الرخو الحاد:
  Poliomyelitis, Guillain Barre, Myelitis, Myositis, Neuritis …
- ☐ Anthrax / الجمرة الخبيثة
- ☐ Cholera / الكوليرا
- ☐ Diphtheria / الخانوق
- ☐ Food Poisoning / تسمم غذائي
- ☐ Hemorrhagic Fevers / الحميات النزفية :
  Ebola-Marbrug, Dengue, Crimean Congo HF, Lassa, Yellow fever…
- ☐ Influenza new virus subtypes/ أنفلونزا ناجمة عن نميط جديد:
  Avian influenza A(H5N1), A(H7N9) …
- ☐ Invasive Coronavirus infection:
  SARS, MERS/nCoV
- ☐ Invasive Meningococcal disease
- ☐ Measles / الحصبة
- ☐ Meningitis (All agents) / إلتهاب السحايا
  Including West Nile fever …
- ☐ Mumps / أبو كعب
- ☐ Pertussis / الشاهوق
- ☐ Plague / الطاعون
- ☐ Rabies / السعار – الكلب
- ☐ Rubella / الحصبة الألمانية ☐ Congenital Rubella Syndrome
- ☐ Smallpox / الجدري
- ☐ Tetanus / الكزاز ☐ Neonatal Tetanus/ الكزاز الوليدي
- ☐ Unusual or unexpected event / حدث غير عادي أو غير متوقع
  Specify:

Weekly Reportable Cases/الأمراض التي تبلغ اسبوعيا
Laboratory-confirmed

- ☐ Bilharzia / بلهارسيا
- ☐ Brucellosis / الحمى المالطية
- ☐ Creutzfeldt-Jacob Disease / كروتسفيلد جاكوب
- ☐ Gonorrhea / السيلان ☐ Gonorrheal ophthalmia
- ☐ Hepatitis A, B, C, D, E / إلتهاب الكبد الفيروسي
- ☐ Human T-Cell Lymphotropic Virus type 1 - HTLV1
- ☐ Hydatid Cyst / الكيسيات المائية
- ☐ Intestinal Infection / التهاب معوي
  Amobiasis, Campylobacter, E. coli, Giardiasis, Rotavirus, Salmonellosis, Shigellosis …
- ☐ Legionellosis /داء الفيالقة
- ☐ Leishmaniasis/داء الليشمانيات ☐ Cutaneous ☐ Visceral
- ☐ Leprosy / الجذام
- ☐ Malaria / الملاريا
- ☐ Syphilis / السفلس ☐ Congenital Syphilis
- ☐ Typhoid fever / الحميات التيفية

إن حالات السل او التدرن / Tuberculosis تبلغ على وثائق خاصة وترسل إلى البرنامج الوطني لمكافحة التدرن
إن حالات **السيدا** / HIV تبلغ على وثائق خاصة وترسل في ظرف مختوم مباشرة إلى البرنامج الوطني لمكافحة السيدا.

قرار وزارة الصحة العامة رقم ١/٨٩٩ تاريخ ٣ ايار ٢٠١٤

ANNEX II

الجمهورية اللبنانية
وزارة الصحة العامة

تلفون:

فاكس:

خاص لوزارة الصحة العامة

تاريخ الاستلام
رقم الاستمارة

جانب برنامج الترصد الوبائي

الموضوع: الإبلاغ الصفري الأسبوعي Zero-reporting للأمراض الانتقالية ذات الإبلاغ الفوري

المرجـع: مستشفى ______________________________

الاسبـوع: من الاثنين ____________ إلى الأحد ____________

عدد الحالات المشتبهة / المثبتة هي:

Other immediate notifiable diseases/ **:أمراض انتقالية اخرى ذات إبلاغ فوري** Anthrax, Diphtheria, Food poisoning, Hemorrhagic fever, Mumps, Pertussis, Plague, Rabies, Smallpox, Tetanus, Unusual/unexpected event	**Novel respiratory viruses/** الفيروسات التنفسية المستجدة : Novel Influenza Viruses انفلونزا ناجمة عن نميط جديد Or Novel Coronavirus: SARS, MERS-COV / فيروس التاجي المستجد	**Cholera /** الكوليرا	**Measles & Rubella & Congenital Rubella Syndrome/** الحصبة والحصبة الألمانية والحصبة الالمانية الخلقية	**Meningitis** (Bacterial, viral) التهاب السحايا الحاد **Or** **Invasive meningococcal disease**	**Acute Flaccid Paralysis /** الشلل الرخو الحاد أيا كان التشخيص الطبي لدون ١٥ سنة، بما في ذلك: Guillain Barre syndrome, transverse myelitis, acute neuritis … **Or** **Acute Poliomyelitis /** شلل الاطفال	
						قسم طب الأطفال اسم الطبيب __________
						قسم الطب الداخلي اسم الطبيب __________
						قسم العناية الفائقة اسم الطبيب __________
						قسم الطوارئ اسم الطبيب __________

اسم ضابط الاتصال: ________________ رقم الهاتف: ______________ التوقيع:

ANNEX III

الجمهورية اللبنانية
وزارة الصحة العامة
المديرية العامة

خاص بوزارة الصحة العامة

تاريخ الاستلام:
رقم:

استمارة الترصد النشط / Active Surveillance

١)- معلومات عامة:

اسم طبيب الوزارة	تاريخ الزيارة	الاسبوع المراجع	المستشفى	اسم ضابط الاتصال في المستشفى
		من الى		

٢)- مراجعة الأقسام و السجلات:

الأقسام	مقابلة الأقسام	مراجعة سجل الدخول		حالات			
	اسم الطبيب	من رقم	الى رقم	شلل رخو حاد	التهاب سحايا	حصبة /حصبة المانية	غيره
طب الأطفال							
الطب الداخلي							
العناية الفائقة							
الطوارئ							
العيادات الخارجية							
غيره							

٣)- مراجعة الرموز ICD10 / CIM10

المرض	شلل الاطفال	شلل رخو حاد دون ١٥ سنة	التهاب سحايا	حصبة /حصبة المانية
الرموز	A80	G04, G37, G54, G57, G58, G61, G62, G72, G82, G83	A39, A87, G00, G01, G02, G03	B05, B06
عدد الحالات				

٤)- الحالات التي تم الكشف عنها:

اسم المريض	العمر	المرض	سبب الاستشفاء	تاريخ الدخول	جمع العينات	اسم الطبيب المعالج

توقيع ضابط الاتصال في المستشفى:

توقيع طبيب الوزارة:

ANNEX IV

الجمهورية اللبنانية – وزارة الصحة العامة

إستمارة رقم (١) لتقصي حالة شلل رخو حاد: المعلومات الطبية الأولية
Form no. (1) for Acute Flaccid Paralysis: initial medical information
حالة رقم |____|____|____|

تعبأ الاستمارة من قبل الطبيب المعالج

١)- المريض والعنوان

اسم وشهرة المريض		رقم هاتف العائلة	
اسم الاب		المدينة / القرية	
تاريخ الولادة		القضاء	
الجنس		العنوان	
الجنسية			
الاقامة	☐ مقيم ☐ لاجئ ☐ زائر		

٢)- العناية الطبية والاستشفاء

تاريخ بدء الشلل		اسم المستشفى	
تاريخ التشخيص		اسم الطبيب المعالج	
تاريخ دخول المستشفى		رقم هاتف الطبيب	

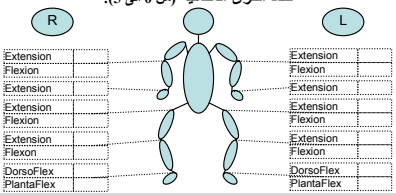
٣) الوضع التلقيحي / مشاكل صحية سابقة

عدد جرعات OPV/IPV		وجود مرض عصبي	☐ نعم ☐ كلا
تاريخ آخر جرعة		حدد:	

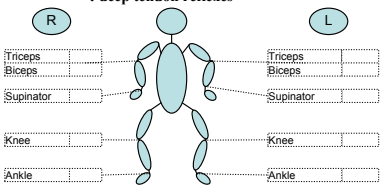
٤)- نوع الشلل / الضعف

هل توجد حمى / fever ؟	☐ نعم ☐ كلا	كم يوم مر منذ بداية الشلل حتى اصبح كاملا؟	
هل الشلل رخو / flaccid ؟	☐ نعم ☐ كلا	هل يوجد فقدان في العصب الحسي؟	☐ نعم ☐ كلا
هل الشلل حاد / acute ؟	☐ نعم ☐ كلا	هل اجرى فحص CSF؟	☐ نعم ☐ كلا
هل الشلل assymmetric ؟	☐ نعم ☐ كلا	هل اجرى فحص EMG؟	☐ نعم ☐ كلا
هل تطور الشلل في اقل من ٤ أيام ؟	☐ نعم ☐ كلا	هل اجرى فحص RMI/Scanner؟	☐ نعم ☐ كلا

حدد القوى العضلية (من 0 الى 5):



حدد حالة deep tendon reflexes :



٥)- التشخيص الطبي / السريري

☐ Acute anterior poliomyelitis	☐ Trichinosis	☐ Dermatomyositis	☐ Mitochondrial diseases (infantile)
☐ Vaccine associated paralytic polio	☐ Botulism	☐ Acute myopathy in ICU patients	☐ Corticosteroids & blocking agents
☐ Peripheral neuropathy	☐ Arthropod bites	☐ Myasthenia gravis	☐ Cord compression: tumor, trauma, paraspinal absc., haematoma, vascular malformation thrombosis/bleeding
☐ Guillain Barre syndrome	☐ Tick bite paralysis	☐ Periodic paralysis	
☐ Acute axonal neuropathy	☐ Snake bite	☐ Systemic disease	
☐ Acute myelopathy	☐ Post-viral myositis	☐ Acute porphyries	☐ Ischaemic cord damage: Anterior, spinal artery syndrome, peri-operative complication
☐ Focal mononeuropathy	☐ Muscles disorders	☐ Transverse myelitis	
☐ Critical illness neuropathy	☐ Polymyositis	☐ Multiple sclerosis	
☐ Other neurotropic viruses enterovisuses, herpesviruses	☐ Acute toxic neuropathies: heavy metals, snake toxin	☐ Other demyelinating diseases: acute disseminated encephalomyelitis…	☐ Other:
☐ Neuropathies of infectious diseases: Diphtheria, Lyme disease	☐ Insecticide: organophosphate poisoning	☐ Disorders of neuromuscular transmission	

٦) – جمع عينات للبراز – يطلب جمع عينتي براز في غضون ١٤ يوم منذ تاريخ بدء العوارض، وبين العينيتن على الاقل ٢٤ ساعة.

تاريخ جمع العينة الاولى		تاريخ جمع العينة الثانية	

٧)- المبلغ

اسم المبلغ وتوقعه		تاريخ الإبلاغ	

شكرا لتعاونكم. بعد تعبئتها، ترسل الاستمارة الى لبرنامج الترصد الوبائي في القضاء أو المحافظة أو بيروت (هاتف: ٠١٦١٤١٩٤ فاكس:٠١٦١٠٩٢٠)
تعميم وزارة الصحة العامة رقم تاريخ

ANNEX V

الجمهورية اللبنانية – وزارة الصحة العامة- برنامج الترصد الوبائي
استمارة رقم (٢) لتقصي حالة شلل رخو حاد: التقصي الوبائي الأولي
Form no. (2) for Acute Flaccid Paralysis: initial epidemiological investigation
حالة رقم |____|____|____|

تعبأ الاستمارة من قبل وزارة الصحة العامة وفريق الترصد الوبائي

أ) - المريض

الاسم الثلاثي	هاتف
تاريخ الولادة	العنوان
تاريخ بدء الشلل الرخو	
حالة hot case ☐ كلا ☐ نعم	

ب)- المعاينات والاستشفاء

#	اسم الوحدة	تاريخ الدخول أو المعاينة	اسم الطبيب	ابلاغ فوري (✓)	ابلاغ اسبوعي (للمستشفيات)	ترصد نشط (في حال وجوده)	تاريخ اول ابلاغ	ملاحظات
1								
2								
3								
4								

ج) ما هو الوضع التلقيحي للمريض ؟

كم جرعة ضد الشلل تلقى المريض ؟ |____| ☐ كافة اللقاحات لعمره ☐ جزء من اللقاحات ☐ صفر ☐غير معروف

هل يوجد بطاقة تلقيح / سجل صحي ؟ ☐ كلا ☐ نعم، حدد التاريخ ونوع اللقاح

OPV/IPV (1)	OPV/IPV (2)	OPV/IPV (3)	Booster (1)	Booster (2)	NID(s)

د)- هل تنقل المريض خلال ٣٠ يوم قبل بدء لشلل خارج لبنان ؟

☐ كلا ☐ نعم، حدد

#	مكان السفر	تاريخ السفر	تاريخ العودة
1			
2			
3			

هـ)- هل توافد زوار الى سكن المريض من بلدان موبوءة بشلل الاطفال (نيجيريا، باكستان وأفغانستان) ؟

☐ كلا ☐ نعم، حدد

#	اسم الزائر	هاتف	مكان السفر	تاريخ السفر	تاريخ العودة
1					
2					
3					

و) هل توجد حالات شلل في المحيط ؟

☐ كلا ☐ نعم حدد:

اسم المحقق: التاريخ:

ANNEX VI

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة رقم (٣) لتقصي حالة شلل رخو حاد: جمع العينات
Form no. (3) for Acute Flaccid Paralysis : specimen collection
حالة رقم |___|___|___|

١) إرشادات	
الحالة	لحالة اشلل الرخو الحاد: تجمع عينتين اثنين: وذلك فى غضون ١٤ يوم منذ تاريخ بدء عوارض الشلل الرخو الحاد. وتجمع العينة الثانية بعد مرور ٢٤ ساعة على الأقل من العينة الأولى. توضع كل عينة فى عبوة منفردة.
المخالطين	تجمع عينات من المخالطين فى حال : - جمع عينات غير ملائمة لحالة الشلل الرخو الحاد - أو فى حال كان الاشتباه بمرض شلل الأطفال شديد. يشمل المخالطين: الإخوة و لجيران من عمر ١٠ سنوات و ما دون. تجمع عينة واحدة من كل طفل مخالط وتوضع فى عبوة منفردة. يحدد عدد المخالطين على الأقل ٣ أو ٥ أطفال.
الكمية	الكمية المطلوبة على الأقل : ٨ جرام أي ما يوازي ضفرين من الابهم
العبوات	يتم جمع العينة فى العبوات التى يتم توفرها من برنامج الترصد الوبائى.
عنوانة	يتم عنونة كل عبوة عبر كتابة اسم الطفل وعمره وتاريخ سحب العينة على ورق لاصق، يلصق على العبوة
طريقة الحفظ:	- توضع كل عبوة فى كيس منفصل. وتوضع قطعة من القطن داخل الكيس، وذلك من اجل امتصاص أي تسرب. يغلق الكيس بإحكام لمنع التسرب. - توضع كافة العبوات وأكياسها فى كيس كبير. - و يحفظ الكيس الكبير فى البراد، حيث تكون درجة الحرارة بين ٤ و ٨ دراجات مئوية.

تعبأ الاستمارة من قبل وزارة الصحة العامة وفريق الترصد الوبائي

٢) عينات من المريض

تاريخ بدء عوارض الشلل	تاريخ جمع العينة الأولى	تاريخ جمع العينة الثانية	العينتين فى غضون ١٤ يوم	بين العينتين ٢٤ ساعة على الأقل	الكمية كافية	عينات ملائمة	عنوانة كاملة
			☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا

تاريخ إرسالها لبيروت	تاريخ إرسالها لمصر	تاريخ استلام النتيجة	النتيجة

٣) عينات من المخالطين: تجمع في حال عينات غير ملائمة أو في حال شدة الاشتباه بشلل الأطفال

#	الاسم	الصلة بالمريض	تاريخ الولادة (يوم/شهر/سنة) اوالعمر	تاريخ آخر جرعة OPV (يوم/شهر/سنة)	عينات البراز			
					تاريخ جمع عينة البراز	تاريخ إرسالها لبيروت	تاريخ إرسالها لمصر	النتيجة
C1								
C2								
C3								
C4								
C5								
C6								
C7								

اسم المحقق: التاريخ:

ANNEX VII

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة رقم (٤) لتقصي حالة شلل رخو حاد: التغطية التلقيحية
Form no. (4) for Acute Flaccid Paralysis : vaccination coverage
حالة رقم |___|___|___|___|

تعبأ الاستمارة من قبل وزارة الصحة العامة وفريق الترصد الوبائي								
لائحة الأطفال من عمر ٥ سنوات و مادون في محيط الحالة								
#	الاسم	تاريخ الولادة (يوم/شهر/سنة)	توفر وثيقة تلقيح (✓)	عدد جرعات OPV / IPV		6 أشهر و ما فوق		القطاع
				routine	NID	أكمل 6 أشهر (✓)	>=3doses (✓)	
1			☐			☐	☐	☐حكومي/خيري ☐خاص
2			☐			☐	☐	☐حكومي/خيري ☐خاص
3			☐			☐	☐	☐حكومي/خيري ☐خاص
4			☐			☐	☐	☐حكومي/خيري ☐خاص
5			☐			☐	☐	☐حكومي/خيري ☐خاص
6			☐			☐	☐	☐حكومي/خيري ☐خاص
7			☐			☐	☐	☐حكومي/خيري ☐خاص
8			☐			☐	☐	☐حكومي/خيري ☐خاص
9			☐			☐	☐	☐حكومي/خيري ☐خاص
10			☐			☐	☐	☐حكومي/خيري ☐خاص
11			☐			☐	☐	☐حكومي/خيري ☐خاص
12			☐			☐	☐	☐حكومي/خيري ☐خاص
13			☐			☐	☐	☐حكومي/خيري ☐خاص
14			☐			☐	☐	☐حكومي/خيري ☐خاص
15			☐			☐	☐	☐حكومي/خيري ☐خاص
16			☐			☐	☐	☐حكومي/خيري ☐خاص
17			☐			☐	☐	☐حكومي/خيري ☐خاص
18			☐			☐	☐	☐حكومي/خيري ☐خاص
19			☐			☐	☐	☐حكومي/خيري ☐خاص
20			☐			☐	☐	☐حكومي/خيري ☐خاص
21			☐			☐	☐	☐حكومي/خيري ☐خاص
22			☐			☐	☐	☐حكومي/خيري ☐خاص
23			☐			☐	☐	☐حكومي/خيري ☐خاص
24			☐			☐	☐	☐حكومي/خيري ☐خاص
25			☐			☐	☐	☐حكومي/خيري ☐خاص
26			☐			☐	☐	☐حكومي/خيري ☐خاص
27			☐			☐	☐	☐حكومي/خيري ☐خاص
28			☐			☐	☐	☐حكومي/خيري ☐خاص
29			☐			☐	☐	☐حكومي/خيري ☐خاص
30			☐			☐	☐	☐حكومي/خيري ☐خاص
31			☐			☐	☐	☐حكومي/خيري ☐خاص
32			☐			☐	☐	☐حكومي/خيري ☐خاص
مجموع الأطفال (a)		المجموع	(b)		المجموع	(c)	(d)	
		نسبة التوثيق	(b/a)		نسبة تغطية 3PV		(d/c)	
اسم المحقق		تاريخ التقصي		الامضاء				

ANNEX VIII

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة رقم (٥) لتقصي حالة شلل رخو حاد: متابعة بعد مرور ستين يوم
Form no. (5) for Acute Flaccid Paralysis: 60-day follow up
حالة رقم |___|___|___|___|

تعبأ من قبل وزارة الصحة العامة - برنامج الترصد الوبائي

١)- المريض

اسم وشهرة المريض		اسم المستشفى	
تاريخ الولادة		اسم الطبيب المعالج	
الجنس	☐ ذكر ☐ انثى	رقم الهاتف	
تاريخ بدء الشلل		رقم الفاكس	

٢)- التقصي المخبري

تاريخ جمع العينة الاولى		المختبر المرجعي	
تاريخ جمع العينة الثانية		تاريخ ورود النتيجة	
عينات ملائمة	☐ نعم ☐ كلا	نتيجة الزرع	☐ للحالة:
عدد عينات من المخالطين			☐ للمخالطين:

تعبأ من قبل الطبيب المعالج

٣) متابعة المريض بعد مرور ٦٠ يوم على بدء ظهور الشلل الرخو الحاد

تم معاينة المريض	☐ نعم، حدد تاريخ المعاينة : ___/___/_____		
اذا كلا، لماذا؟	☐ كلا ، حدد السبب	☐ وفاة تاريخ الوفاة:	☐ سفر الى : ☐ غيره:

٤)- معطيات المتابعة

نتيجة الفحص ☐ ضعف متبق ☐ لا يوجد ضعف متبق

حدد القوى العضلية (من 1 إلى 5)

	R	L
	Extension / Flexion	Extension / Flexion
	Extension / Flexion	Extension / Flexion
	Extension / Flexon	Extension / Flexion
	DorsoFlex / PlantaFlex	DorsoFlex / PlantaFlex

حدد حالة deep tendon reflexes

	R	L
	Triceps / Biceps	Triceps / Biceps
	Supinator	Supinator
	Knee	Knee
	Ankle	Ankle

٥)- التشخيص النهائي

☐ Acute anterior poliomyelitis	☐ Trichinosis	☐ Dermatomyositis	☐ Mitochondrial diseases (infantile)
☐ Vaccine associated paralytic polio	☐ Botulism	☐ Acute myopathy in ICU patients	☐ Corticosteroids & blocking agents
☐ Peripheral neuropathy	☐ Arthropod bites	☐ Myasthenia gravis	☐ Cord compression: tumor, trauma, paraspinal absc., haematoma, vascular malformation thrombosis/bleeding
☐ Guillain Barre syndrome	☐ Tick bite paralysis	☐ Periodic paralysis	
☐ Acute axonal neuropathy	☐ Snake bite	☐ Systemic disease	☐ Ischaemic cord damage: Anterior, spinal artery syndrome, peri-operative complication
☐ Acute myelopathy	☐ Post-viral myositis	☐ Acute porphyries	
☐ Focal mononeuropathy	☐ Muscles disorders	☐ Transverse myelitis	
☐ Critical illness neuropathty	☐ Polymyositis	☐ Multiple sclerosis	
☐ Other neurotropic viruses enterovisuses, herpesviruses	☐ Acute toxic neuropathies: heavy metals, snake toxin	☐ Other demyelinating diseases: acute disseminated encephalomyelitis…	☐ Other:
☐ Neuropathies of infectious diseases: Diphtheria, Lyme disease	☐ Insecticide: organophosphate poisoning	☐ Disorders of neuromuscular transmission	

٦)- الطبيب المعالج

اسم الطبيب		الامضاء	
التاريخ			

شكرا لتعاونكم. ترسل الاستمارة بعد تعبئتها لبرنامج الترصد الوبائي في القضاء أو المحافظة أو بيروت (هاتف: ٠١٦١٤١٩٤ فاكس: ٠١٦١٠٩٢٠)

ANNEX IX

الجمهورية اللبنانية - وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة رقم (٦) لتقصي حالة شلل رخو حاد: تصنيف الحالة
Form no. (6) for Acute Flaccid Paralysis: case classification
حالة رقم |____|____|____|

تعبأ من قبل وزارة الصحة العامة ولجنة التصنيف الوطنية

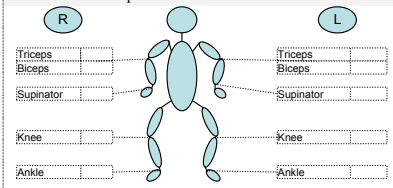
١)- المريض

اسم وشهرة المريض				
اسم الطبيب المعالج				
عينات ملائمة	☐ نعم		☐ كلا، عدد العينات من المخالطين	
نتيجة الزرع	☐ للحالة:		☐ للمخالطين:	
تاريخ المتابعة ٦٠ يوم				
نتيجة متابعة ٦٠ يوم	☐ ضعف متبق	☐ لا ضعف متبق	☐ توفي	☐ سافر

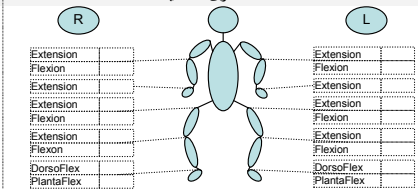
٢) احالة الملف الى لجنة التصنيف

سبب إحالة	☐ عينات غير ملائمة	☐ لا يوجد عينة براز	☐ Hot case	☐ VAPP / VDPV
تاريخ الاجتماع				
الحاضرون				
المستندات	☐ ملف المستشفى	☐ EMG	☐ CSF	☐ غيره، حدد:
تم فحص المريض	☐ نعم	☐ كلا		
نتيجة الفحص	☐ ضعف متبق	☐ لا يوجد ضعف متبق		

حدد حالة deep tendon reflexes



حدد القوى العضلية



٣)- التشخيص النهائي

☐ Acute anterior poliomyelitis	☐ Trichinosis	☐ Dermatomyositis	☐ Mitochondrial diseases (infantile)
☐ Vaccine associated paralytic polio	☐ Botulism	☐ Acute myopathy in ICU patients	☐ Corticosteroids & blocking agents
☐ Peripheral neuropathy	☐ Arthropod bites	☐ Myasthenia gravis	☐ Cord compression: tumor, trauma, paraspinal absc., haematoma, vascular malformation thrombosis/bleeding
☐ Guillain Barre syndrome	☐ Tick bite paralysis	☐ Periodic paralysis	
☐ Acute axonal neuropathy	☐ Snake bite	☐ Systemic disease	
☐ Acute myelopathy	☐ Post-viral myositis	☐ Acute porphyries	☐ Ischaemic cord damage: Anterior, spinal artery syndrome, peri-operative complication
☐ Focal mononeuropathy	☐ Muscles disorders	☐ Transverse myelitis	
☐ Critical illness neuropathty	☐ Polymyositis	☐ Multiple sclerosis	
☐ Other neurotropic viruses enterovisuses, herpesviruses	☐ Acute toxic neuropathies: heavy metals, snake toxin	☐ Other demyelinating diseases: acute disseminated encephalomyelitis…	☐ Other:
☐ Neuropathies of infectious diseases: Diphtheria, Lyme disease	☐ Insecticide: organophosphate poisoning	☐ Disorders of neuromuscular transmission	

٤)- التصنيف النهائي

التصنيف النهائي	☐ مؤكدة / Confirmed	☐ مطابقة/ Compatible	☐ مستبعدة / discarded
التاريخ			
الامضاء			

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