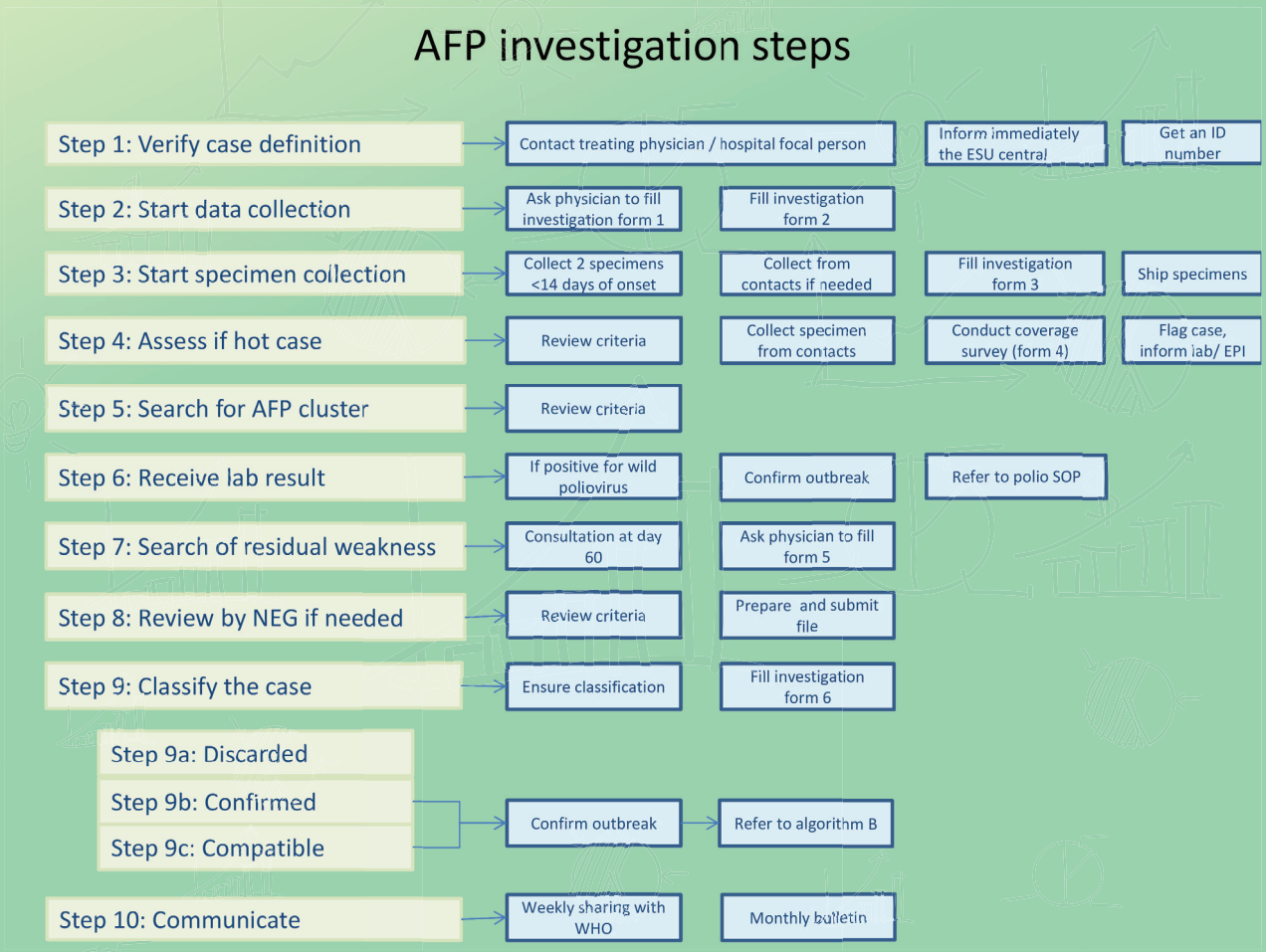
REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH
Epidemiology Surveillance Program

Surveillance Standard Operating Procedures

Part (1): Immediately notifiable communicable diseases



2015

ممول من الاتحاد الأوروبي
Funded by the European Union

تنفيذ
Implemented by

UNHCR
The UN
Refugee Agency

World Health
Organization
Lebanon Office

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 هي الجهة الوحيدة المسؤولة عن محتوى هذا الدليل ولا يمكن اعتباره بأي
حال من الأحوال على أنه يعكس وجهة نظر الاتحاد الأوروبي.

This guideline has been printed with the support of the European Union and the World Health Organization
in partnership with the United Nations High Commissioner
for Refugees in the context of a project led by the Ministry of Public Health.
The content of this guide are the sole responsibility of the Ministry of Public Health
and can in no way be taken to reflect the views of the European Union.

This guideline was prepared by the Epidemiology Surveillance Program, with the contribution of the Communicable Diseases Department for the sections related to response, and under the supervision of the Director General of the Ministry of Public Health.

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This guideline is available on the website of the Ministry of Public Health:
www.moph.gov.lb - (→ prevention → surveillance)

Reference: MOPH circulars

REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH
Epidemiology Surveillance Program

Surveillance Standard Operating Procedures

Part (1): Immediately notifiable communicable diseases

2015

Introduction

المقدمة

قامت وزارة الصحة العامة في العام 2001، باصدار التعميم رقم 81 الذي يقدم دلائل ارشادية حول تقصي حالات التسمم الغذائي. وكان بمثابة المستند الرسمي الاول الذي يفسر للعاملين لدى وزارة الصحة العامة على مختلف المستويات في الادارة المركزية والمحافظات والاقضية كيفية تقصي هذه الحالات شاملا تعريف الحالات، وطرق تقصي الاصابات واهمية فحص المواد الغذائية، والكشف على المؤسسات التجارية والصناعية، ومقارنة نتائج الفحوص المخبرية.

ثم قامت الوزارة في العام 2005، باصدار تعميم رقم 49 الذي يتناول الارشادات الفنية لتقصي الحالات البشرية لداء الكلب. وقد شكل هذا التعميم المستند الرسمي الثاني الذي يوضح لفرق الوزارة كيفية تقصي الحالة وأهمية القيام بزيارات ميدانية: زيارة المستشفى حيث المريض، زيارة المريض ومحيطه، زيارة بلدية المحلة، ومراجعة برنامج مكافحة داء الكلب في المنطقة.

ثم تلاها اصدار العديد من التعاميم المماثلة في السنوات اللاحقة التي تناولت الامراض الانتقالية الاخرى ذات الاهمية على المستوى الوطني.

تقوم الوزارة حاليا باصدار الارشادات الفنية لكافة الامراض الانتقالية المستهدفة في نظام الابلاغ الاساسي. وتوضح هذه المنهجية (Standard Operating Procedures) تعريف العتبات الوبائية للكشف عن الانذارات والفاشيات، كيفية جمع المعلومات الخاصة بالمرضى، وتثبيت الحالات مخبريا، اضف الى البحث عن حالات اضافية، وتحديد مكونات التحليل الوصفي، كما تسليط الضوء على أهمية تبادل المعلومات بين وحدات الوزارة من جهة ومع الجهات الاخرى ذات العلاقة.

تم وضع الصيغة الاولى لهذه الارشادات باللغة الانكليزية على ان يتم ترجمتها بالعربية في وقت لاحق.

نشكر كل من شارك باعداد هذا الدليل من قبل برنامج الترصد الوبائي، 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

Contents

1

Surveillance Standard Operating Procedure: Acute Flaccid Paralysis (AFP)

Version 1
MOPH circular no. 26
(19th Jan 2015)

Contents

I. Purpose

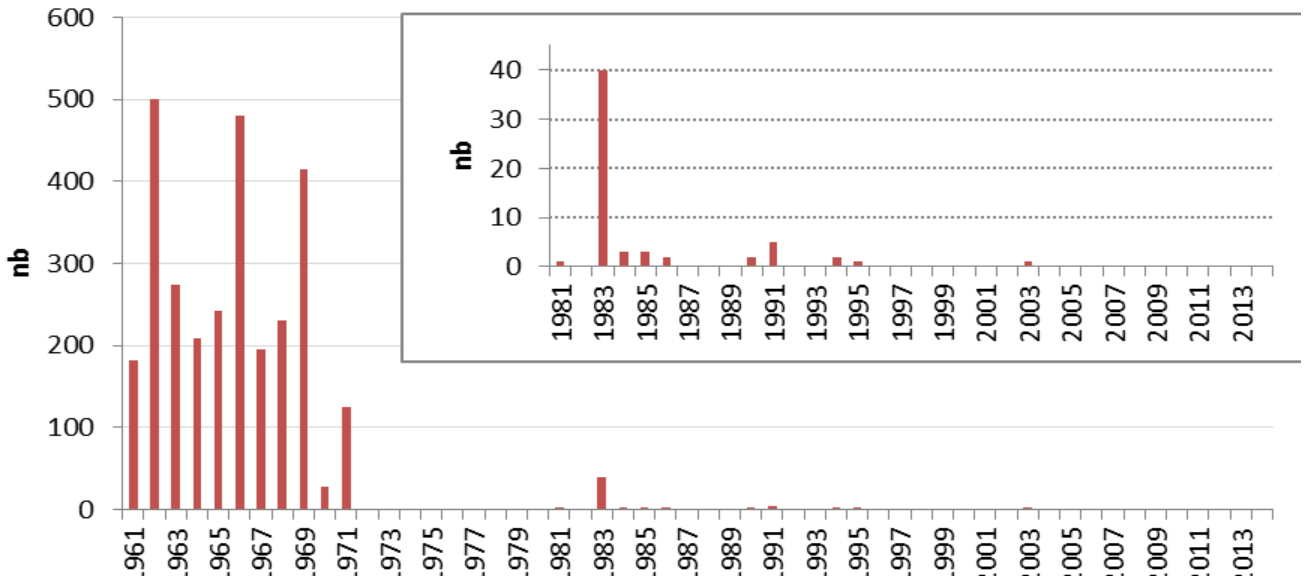
The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of alert of AFP or polio.

II. Generalities

Acute Faccid Paralysis	
Agent	Poliovirus (genus Enterovirus), with 3 serotypes: 1, 2 and 3
Incubation	7-14 days (3-35 days)
Period of communicability	- 7-10 days before onset, up to 3-6 weeks after onset - Virus present in throat 36 hours after infection, up to 1 week - Virus present in feces 72 hours after infection, up to 3-6 weeks
Reservoir	Humans
Modes of transmission	- Person-to-person: fecal-oral route, and rarely pharyngeal - Rarely through water and food
Clinical presentation	- 90-95% asymptomatic infection - 4-8% mild illness (influenza-like illness or gastro-intestintal illness) - 1-2% aseptic meningitis - <1% paralytic poliomyeltis
Worldwide	- Endemic countries in 2015: Nigeria, Pakistan, and Afghanistan. - In May 2014, WHO declared polio as public health event of international concern
Lebanon	Last local cases in 1994. Last imported case in 2003. Lebanon declared “polio-free” in 2002.
Control objective	Worldwide eradication initiative (in 1988). Since 1999, the poliovirus type 2 has been eradicated worldwide.
Surveillance and Investigation	
Surveillance approach	Syndromic-based surveillance: acute flaccid paralysis
Collect data about case	Clinical findings, medical diagnosis, CSF/EMG results, vaccination status, travel history, follow-up at 60 days for residual weakness
Collect specimen from case	2 stool specimens from case within 14 days from paralysis onset, with at least 24 hours apart
Collect data about contacts	If polio or highly suspicion of polio: rapid survey on vaccination status (OPV3/IPV3 coverage) at the community level
Collect specimen from contacts	- If delay in collection specimens from case or highly suspicion, stool specimens are collected from at least 3 contacts among children (preferably under 5 years) - If polio case: stool specimens are collected from siblings, neighbors and inpatients
Test	Virological culture
Laboratories	WHO accredited laboratories: Vacsera in Egypt, and National Jordanian laboratory
Outbreak level	At least 1 confirmed case of polio
Notification to WHO	- To notify to WHO on confirmed and compatible cases - Routine weekly dataset sharing
Control	
Primary prevention	Immunization: 3 doses under 1 year, and 2 boosters > 1 year

Case management	Symptomatic
Isolation	Enteric precautions
Mass prevention	Immunization
Poliomyelitis case definition (MOPH circular no. 34 dated on the 5th May 2012)	
Confirmed case	A confirmed case is suspected case with isolation of wild poliovirus in stool specimens collected from the suspected case or from a close contact of the suspected case.
Suspected case	A suspected case is defined as: - A child under 15 years of age presenting with acute flaccid paralysis AFP whatever was the medical diagnosis - Or any person at any age with paralytic illness if poliomyelitis is suspected by the physician.
Forms	
Reporting	Standard reporting form
Investigation	For case, contacts and neighborhood: specific polio investigation forms (MOPH circular no. 100 dated on the 21st June 2007) - Form (1): case reporting and investigation - Form (2): case investigation - Form (3): specimen collection - Form (4): rapid coverage survey - Form (5): follow up at 60 days - Form (6): final classification.
National figures	

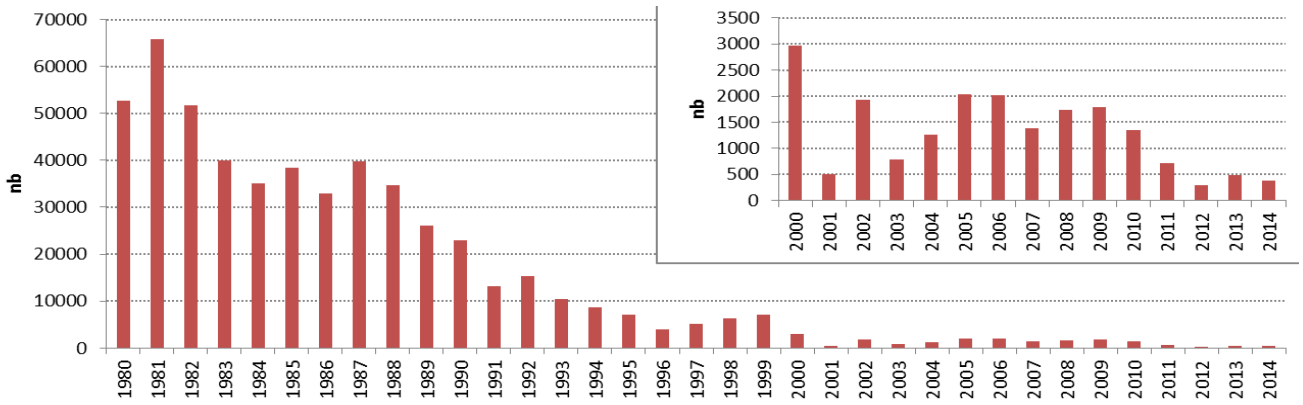
Figure 1: Reported acute poliomyelitis cases in Lebanon, 1961-2014 (Source: MOPH)



The last local cases were reported in 1994 (one in the North and one in the South).
In 1995, an imported case from Africa was reported (the child has the onset in Africa and came to Lebanon for case management).
In 2003, a confirmed polio was reported in the North. The case did not travel. The virus was identified as from Indian source. Two other persons were infected by the virus (1 sibling and 1 cousin). Two national campaigns were conducted. No additional cases were found despite active search.

International figures

Figure 2: Reported acute poliomyelitits cases in the world, 1980-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of AFP surveillance are:

- To detect and confirm rapidly any polio case
- To document “polio-free” status in case of absence of polio cases in the country
- In case of presence of polio cases:
  - Ensure rapid detection
  - Monitor and document containment / re-establishment of “polio-free” status.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case of acute poliomyelitis:

- Any patient less than 15 years old presenting acute flaccid paralysis and suffering from sudden onset of weakness, paresis, or paralysis, irrespective of medical diagnosis
- Or any patient, regardless of age, if the treating physician suspects acute poliomyelitis

An **outbreak** is defined by at least one laboratory confirmed acute poliomyelitis case.

V. Procedural steps

The steps detailed below are those to follow in case of any alert. They are summarized in figure (5).

Step 1: Verify case definition

Upon the notification of an AFP case, the Esumoh caza/mohafaza team contacts the treating physician or the hospital focal person to verify if the case met the case definition: onset of acute flaccid weakness.

Once case definition is verified, the Esumoh peripheral team informs the Esumoh central level immediately.

At the central level, the national coordinator of the AFP surveillance provides a national ID number for the new case.

Step 2: Start data collection

The Esumoh caza/mohafaza team asks the hospital or treating physician to fill the investigation form no. 1 related to the patient.

Simultaneously, the Esumoh caza/mohafaza team contacts the patient’s parents and fills the investigation form no. 2.

The investigation forms includes information on the following:

- Demography
- Illness: date of onset, medical diagnosis, fever, asymmetry, rapid progression, motor power...
- Laboratory results
- Vaccination status
- Risk: travel to polio countries
- Presence of similar cases.

Step 3: Identify hot case

Each AFP case is assessed if meeting the following criteria of a hot case:

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

When a case is flagged as hot case, the EPI and reference laboratory are informed. The laboratory ensures then rapid testing and rapid sharing of results.

Step 4: Collect clinical specimen

To confirm any polio case, there is need to conduct virological culture on stool specimens collected from case and contacts.

a) From the case

The Esumoh caza/mohafaza team coordinates with the physician, the hospital focal person or the head nurse at pediatrics floor to collect stool specimens from the patient. If patient is discharged, coordination is done with the parents at household level and the physician.

The needed specimens are:

- Nature: stool specimens
- Number and time: Two stool specimens are requested within 14 days from paralysis onset, representing optimum period to isolate virus in stools
- Interval between specimens: A minimum of 24 hours due to intermittent shedding of virus in the stools
- Conservation: at 4-8^{o}C which means that specimens are transported in ice box with ice-packs from hospitals/households to MOPH.

b) From the contacts

Stool specimens are collected from contacts of the AFP case, in the following situations:

- Absence of collection of specimens from case
- Delay in collection specimens from case > 14 days from paralysis onset
- Death or loss of the AFP case before adequate stool collection
- Inadequate cold chain during collection, storage or transportation
- Poor quality of specimen due to leakage, desiccation or inadequate amount
- High suspicion of acute poliomyelitis or AFP case flagged as hot case.

Specimens from contacts are collected according to the following criteria:

- Number of contacts: 3 contacts, preferably less than 5 years old
- Number of specimen: one stool specimen from each contact
- Conservation: at 4-8^{o}C.

c) Specimen labelling and documentation

Once specimens are collected, the Esumoh peripheral team labels the specimens specifying the following:

- The name
- The ID number
- The date and time of collection
- The nature of specimens: stool.

Also the Esumoh peripheral team fills investigation form no. 3.

d) Specimen packaging

The triple packaging is used:

- Specimens are placed in screw-capped first containers.
- The first containers with absorbent material (cotton) are placed in a second container: small well-sealed plastic bag
- The second container (small well-sealed plastic bag) is placed into a third container: bigger well-sealed plastic bag
- Finally the third container is placed in cool-box with enough ice packs.

Specimens are referred to the Esumoh central team, who is in charge to ship them to the reference laboratory.

e) Specimen shipment

Once specimens reach central level, the Esumoh central level verifies the following:

- Labelling of specimens: case identification number, date and time of specimen collection
- 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 (<8 grams), further specimens are requested.
- Container: if the container is not solid or not screw-capped, specimens are replaced in adequate container.

Specimens are shipped as soon as possible to reference laboratories.The Esumoh central level liaises with an authorized shipping company to send specimens following category B, triple packaging specification.
Specimens are sent to WHO accredited laboratory in Egypt or in Jordan for virological isolation.

f) Laboratory results

Results are communicated by the reference laboratory to Esumoh central level. The Esumoh central team shares the information with:

- The Esumoh peripheral teams
- The hospital focal person / treating physician
- The parents.

In case of positive results, the Esumoh central team informs immediately the MOPH concerned units and the EPI. The MOPH informs officially the WHO, based on the IHR (2005).

Step 5: Search for AFP cluster

Cluster of AFP cases represents a high suspicion of poliomyelitis outbreak.

An AFP cluster is defined by one of the following:

- At least 2 cases of AFP, 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 polio-compatible AFP, in same locality or adjacent localities with the date of onset of paralysis within 2 months of each other.

The search of cluster is based on:

- The review of the reported/detected AFP cases by time and place
- The search of additional cases via the interview of the patient or patient parents
- The community-based surveillance.

Step 6: Conduct rapid coverage survey

In case of hot case or AFP cluster, the Esumoh peripheral team conducts a rapid coverage survey.
The rapid coverage survey is conducted in the neighbourhood of the case, where 30 children between 6 months and 5 years (excluded) are assessed for their vaccination status. The procedure is based on field interview with the parents and vaccination card/ child health record verification. During the rapid survey, the investigation form no. 4 is filled.

The survey aims to measures the 3OPV/IPV coverage. The result is communicated to the Caza team and to the EPI team.

Step 7: Conduct stool and environmental surveillance

In case of cluster of AFP cases, the Esumoh team initiates the following:

- Stool surveillance: collecting stool specimens from inpatients aged < 5 years old in the caza of the cluster
- Environmental surveillance: collecting sewage in coordination with local municipalities. Stool and sewage specimens are sent to the WHO-accredited laboratory for virological culture.

Step 8: Conduct follow up at 60 days

All AFP cases are followed up to 60 days from paralysis onset, to assess the presence of residual weakness.
In order to assess the evolution of the paralysis, the AFP patient is reviewed by his/her treating physician 60 days after paralysis onset. The child may also be seen by a MOPH physician.
Paralysis and reflexes are tested and compared to the findings at paralysis onset.
The results of the follow up are documented in the AFP investigation form no. 5.

Step 9: Classify the case

a) Review by the National Expert Group NEG

The national expert group reviews specific cases as:

- Cases with inadequate specimens collection
- Cases with suspicion of VAPP.

Based on the review of the file and / or the child, the case is classified.

b) Case classification algorithm

Based on the investigation, case is classified as polio-confirmed, polio-compatible or polio-discarded. The figure (3) summarizes the classification schema.

AFP cases are polio-discarded cases in the following conditions:

- If adequate specimens are collected and are negative, the AFP case is classified as polio-discarded.
- For AFP cases whose specimens are negative but inadequate or absent, the case is classified as polio-discarded if
    - The NEG can rule out acute poliomyelitis based on clinical and para-clinical findings
    - Or there is no residual weakness at 60 days from paralysis onset.

AFP cases are polio-confirmed if wild poliovirus was isolated from the case or any contact. The isolation of wild poliovirus from a contact while the case is negative is an evidence of wild poliovirus circulation in the community. The index case is then classified as polio-confirmed.

AFP cases are polio-compatible if:

- The specimens are negative but inadequate or there are no specimens collected
- And the NEG cannot rule out acute poliomyelitis based on clinical and para-clinical findings.

When cases are classified, the investigation form no. 6 is filled.

Step 10: Describe cases

a) Descriptive analysis

Cases are described by:

- Time: week, month and year of onset
- Place: locality, caza and mohafaza of residence
- Person: age group, gender, nationality, vaccination status
- Disease: disease classification, final diagnosis.

b) Indicators

Two main indicators are monitored:

- Annual rate of non-polio AFP cases per 100000 children under 15 years. The target is to reach at least 2/100000.
- Proportion of AFP with adequate specimen. The target is to reach at least 80%.

Step 11: Write summary report

On weekly basis, the Esumoh central team shares the AFP datafile with WHO regional office. On monthly basis, the Esumoh central team prepares a summary bulletin on the findings of the AFP surveillance and shared with MOPH units and health professionals.

Figure 3: AFP case classification

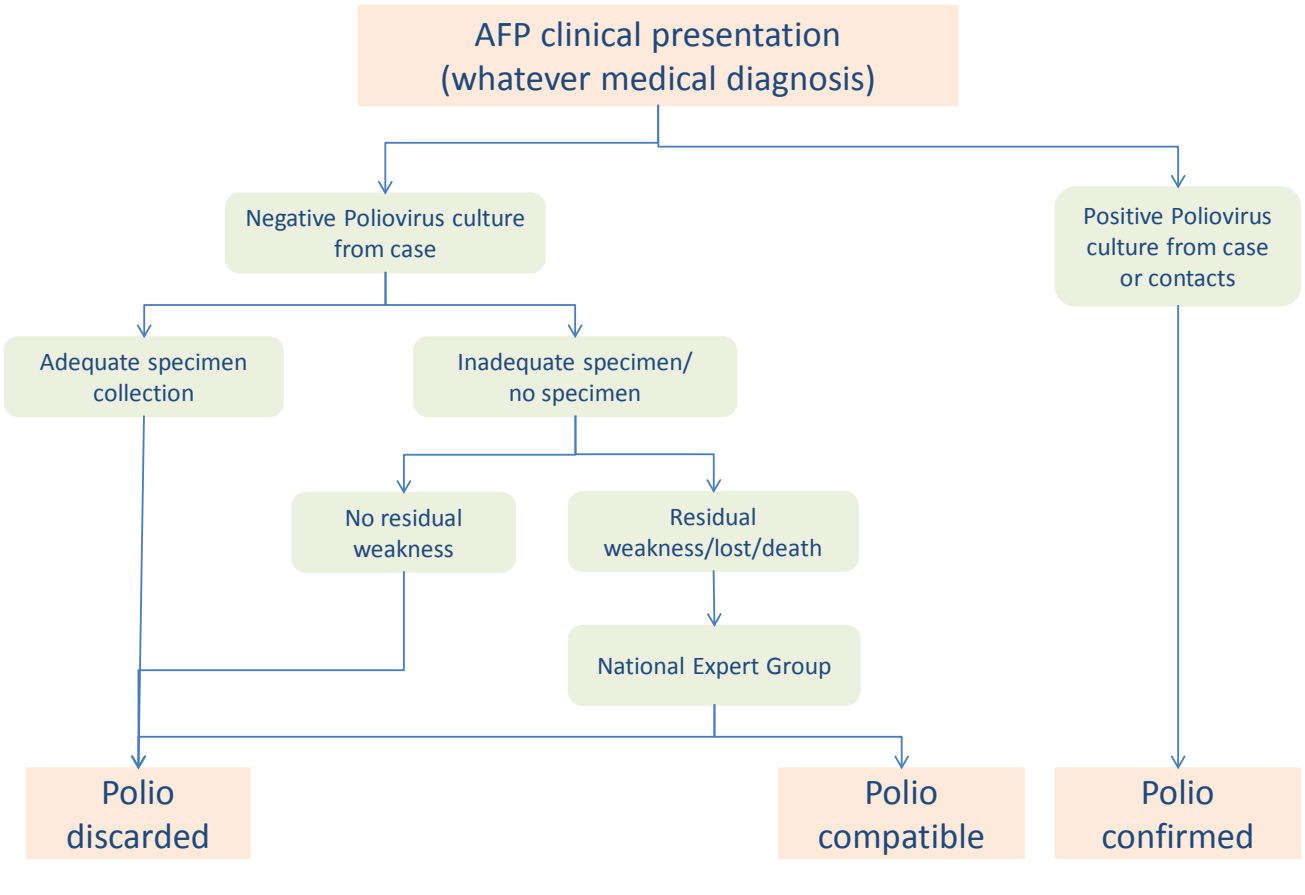


Figure 4: AFP hot case classification

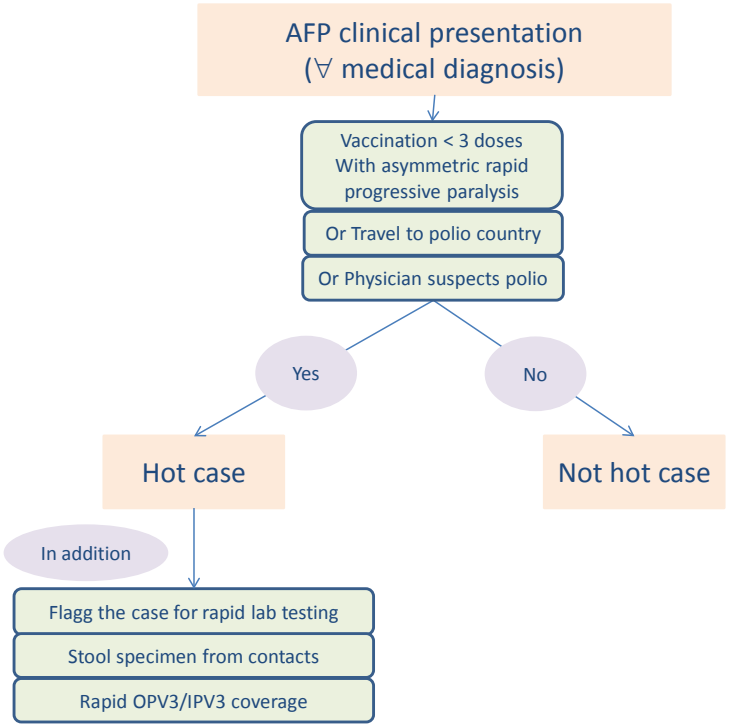
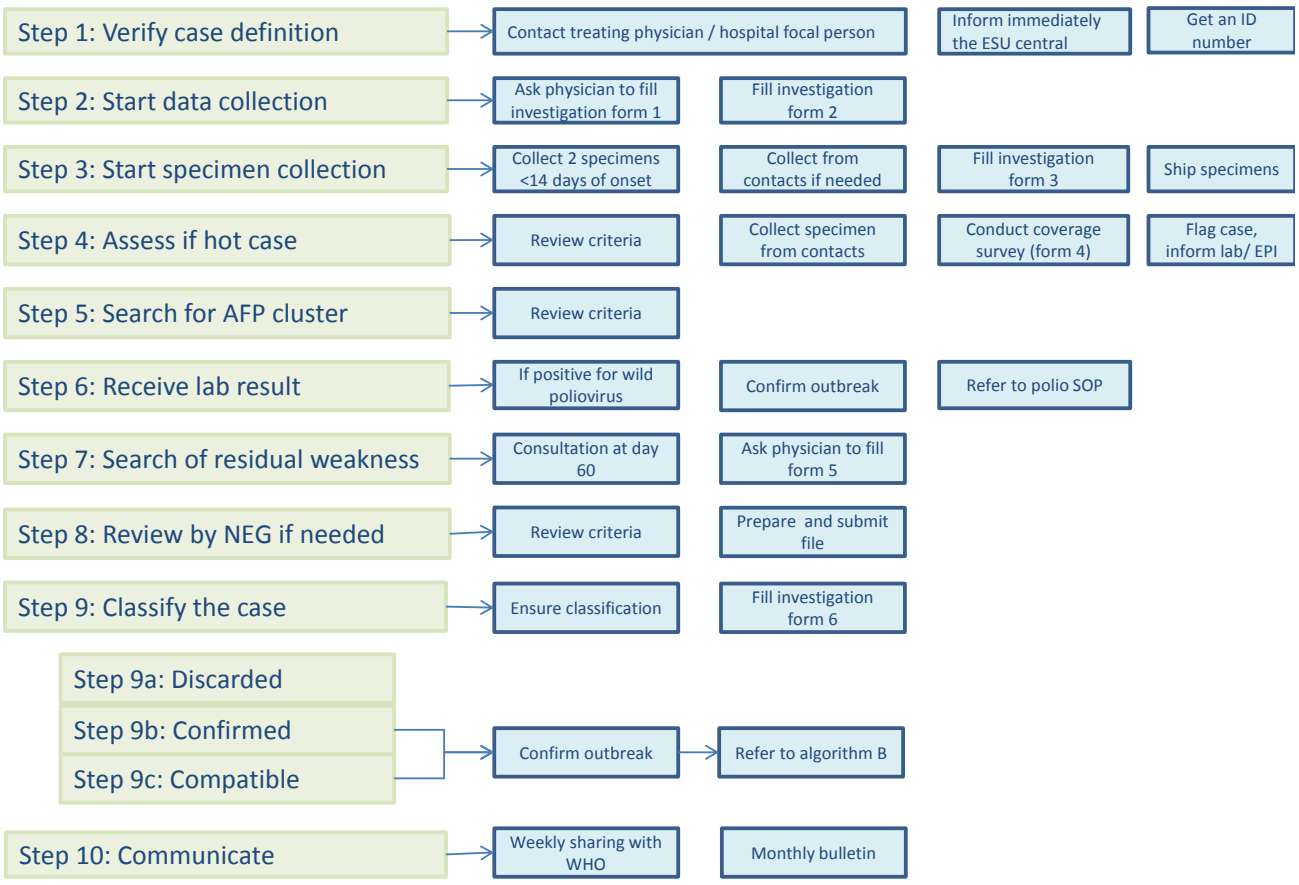


Figure 5: AFP investigation steps



الجمهورية اللبنانية – وزارة الصحة العامة

إستمارة رقم (1) 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

1)- المريض والعنوان

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

2)- العناية الطبية والاستشفاء

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

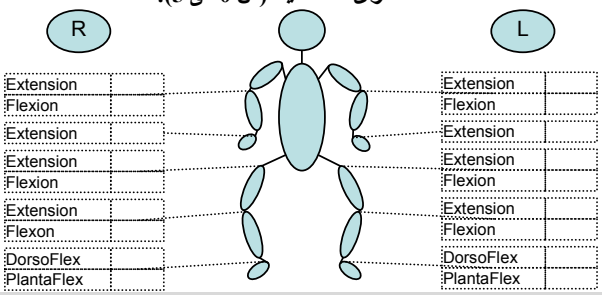
3) الوضع التلقيحي / مشاكل صحية سابقة

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

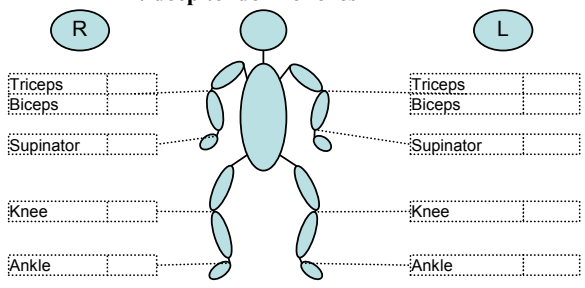
4)- نوع الشلل / الضعف

هل توجد حمى / fever ؟	☐ نعم	☐ كلا	كم يوم مر منذ بداية الشلل حتى أصبح 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 4 أيام ؟	☐ نعم	☐ كلا	هل اجرى فحص RMI/Scanner؟	☐ نعم	☐ كلا

حدد القوى العضلية (من 0 الى 5):



حدد حالة deep tendon reflexes :



5)- 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 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	

6) – جمع عينات للبراز – يطلب جمع عينتي براز في غضون 14 يوم منذ تاريخ بدء العوارض، وبين العينيتن على الاقل 24 ساعة.

تاريخ جمع العينة الاولى		تاريخ جمع العينة الثانية	

7)- المبلغ

اسم المبلغ وتوقعه		تاريخ الإبلاغ	

شكرا لتعاونكم. بعد تعبئتها، ترسل الاستمارة الى لبرنامج الترصد الوبائي في القضاء أو المحافظة أو بيروت (هاتف: 01614194 فاكس:01610920)

MOPH circular no.100 (21/6/2007)

الجمهورية اللبنانية – وزارة الصحة العامة- برنامج الترصد الوبائي

استمارة رقم (2) 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

ا) - 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 30 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 موبؤة 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:

الجمهورية اللبنانية – وزارة الصحة العامة- برنامج الترصد الوبائي

استمارة رقم (2) 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
ز) – اقوال الاهل

اسم المحقق: التاريخ:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

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

1) إرشادات	
الحالة	لحالة اشلل الرخو الحاد: تجمع عينيتين اثنين: وذلك في غضون 14 يوم منذ تاريخ بدء عوارض الشلل الرخو الحاد. وتجمع العينة الثانية بعد مرور 24 ساعة على الأقل من العينة الأولى. توضع كل عينة في عبوة منفردة.
المخالطين	تجمع عينات من المخالطين في حال : - جمع عينات غير ملائمة لحالة الشلل الرخو الحاد - أو في حال كان الاشتباه بمرض شلل الأطفال شديد. يشمل المخالطين: الإخوة و لجيران من عمر 10 سنوات و ما دون. تجمع عينة واحدة من كل طفل مخالط وتوضع في عبوة منفردة. يحدد عدد المخالطين على الأقل 3 أو 5 أطفال.
الكمية	الكمية المطلوبة على الأقل : 8 جرام أي ما يوازي ضغرين من الابهم
العبوات	يتم جمع العينة في العبوات التي يتم توفرها من برنامج الترصد الوبائي.
عنوانة	يتم عنونة كل عبوة عبر كتابة اسم الطفل وعمره وتاريخ سحب العينة على ورق لاصق، يلصق على العبوة
طريقة الحفظ:	- توضع كل عبوة في كيس منفصل. وتوضع قطعة من القطن داخل الكيس، وذلك من اجل امتصاص أي تسرب. يغلق الكيس بإحكام لمنع التسرب. - توضع كافة العبوات وأكياسها في كيس كبير. - و يحفظ الكيس الكبير في البراد، حيث تكون درجة الحرارة بين 4 و 8 دراجات مئوية.

تعبأ الاستمارة من قبل وزارة الصحة العامة وفريق الترصد الوبائي

2) عينات من المريض

تاريخ بدء عوارض الشلل	تاريخ جمع العينة الأولى	تاريخ جمع العينة الثانية	العينتين في غضون 14 يوم	بين العينتين 24 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				

3) 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:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة رقم (4) 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 5 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	

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة رقم (5) 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

1)- المريض

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

2)- 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

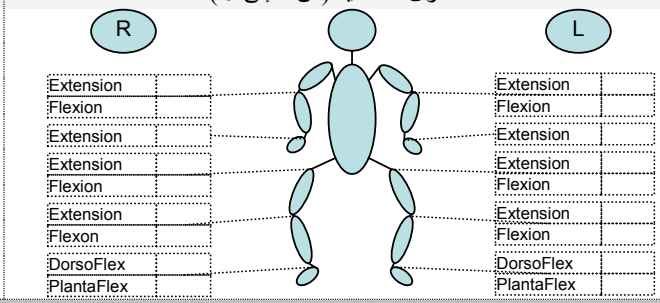
3) متابعة المريض بعد مرور 60 يوم على بدء ظهور الشلل الرخو الحاد

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

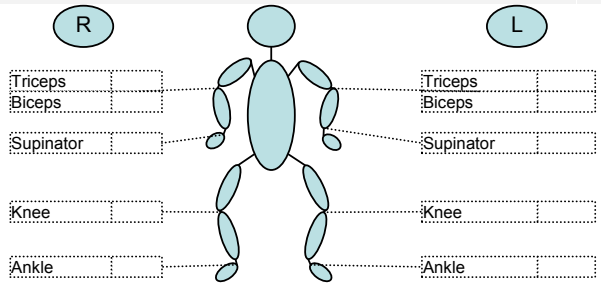
4)- معطيات المتابعة

نتيجة الفحص ☐ ضعف متبق ☐ لا يوجد ضعف متبق

حدد القوى العضلية (من 1 إلى 5)



حدد حالة deep tendon reflexes



5)- 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	

6)- الطبيب المعالج

اسم الطبيب		الامضاء	
التاريخ			

شكرا لتعاونكم. ترسل الاستمارة بعد تعبئتها لبرنامج الترصد الوبائي في القضاء أو المحافظة أو بيروت (هاتف: 01614194 فاكس:01610920)

الجمهورية اللبنانية ـ وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة رقم (6) 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

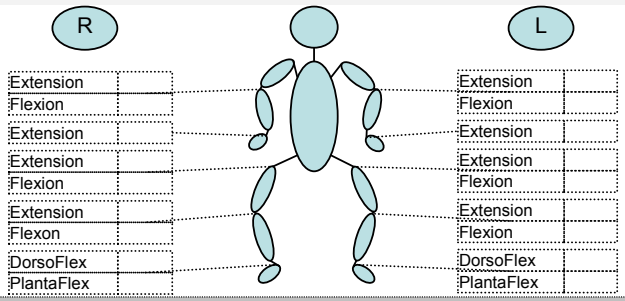
1)- المريض

اسم وشهرة المريض				
اسم الطبيب المعالج				
عينات ملائمة	☐ نعم	☐ كلا، عدد العينات من المخالطين		
نتيجة الزرع	☐ للحالة:	☐ للمخالطين:		
تاريخ المتابعة 60 يوم				
نتيجة متابعة 60 يوم	☐ ضعف متبق	☐ لا ضعف متبق	☐ توفى	☐ سافر

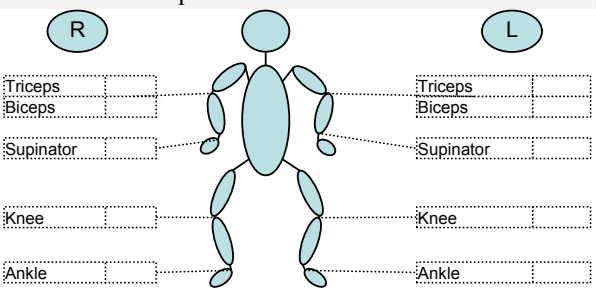
2) احالة الملف الى لجنة التصنيف

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 القوى العضلية



حدد حالة deep tendon reflexes



3)- 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	

4)- التصنيف النهائي

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

AFP - Annex 7

Republic of Lebanon. Ministry of Public Health. Epidemiological Surveillance Program

YEAR |__|__|__|__|

Acute Flaccid Paralysis Surveillance
LINE LISTING (1)

|_____|

ID	Name	Sex	Age (month /year)	Date onset	Caza	Commune	Nb OPV/IPV	Date last dose	Vacc. Card	Fever	Asymetric	Rapid (<=4d)	Hot case
<##LEB##>		<M,F>	<# m/y>	<dd/mm/yyyy>			<##>	<dd/mm/yyyy>	<Y,N>	<Y,N>	<Y,N>	<Y,N>	<Y,N>

SET No. |__|

Republic of Lebanon. Ministry of Public Health. Epidemiological Surveillance Program
Acute Flaccid Paralysis Surveillance
LINE LISTING (2)

YEAR |__|__|__|__|

|_____|

ID	Date first contact physician	Date notification	Date investigation	Date 1st stool	Date 2nd stool	Adequate	Nb contacts with stool sp	Date sent to Lab	Stool culture result	Date stool result	Days from onset to notificat.	Days from notificat. to investigat.	Days from 2nd stool to Lab.
<##LEB##>	<dd/mm/yy>	<dd/mm/yy>	<dd/mm/yy>	<dd/mm/yy>	<dd/mm/yy>	<Y,N>	<##>	<dd/mm/yy>		<dd/mm/yy>	<#>	<#>	<#>

SET No. |__|

Republic of Lebanon. Ministry of Public Health. Epidemiological Surveillance Program
Acute Flaccid Paralysis Surveillance
LINE LISTING (3)

YEAR |__|__|__|__|

|_____|

ID	First diagnosis	Hospital	Completed form	CSF	EMG	Discharge summary	Study vaccine coverage	% Vaccine coverage	Date follow up	Follow up results	NEG	Date NEG	Final classification	final diagnosis
<##LEB##>			<Y,N>	<Y,N>	<Y,N>	<Y,N>	<Y,N>	<##%>	<dd/mm/yy>		<Y,N>	<dd/mm/yy>		

SET No. |__|

AFP - Annex 8

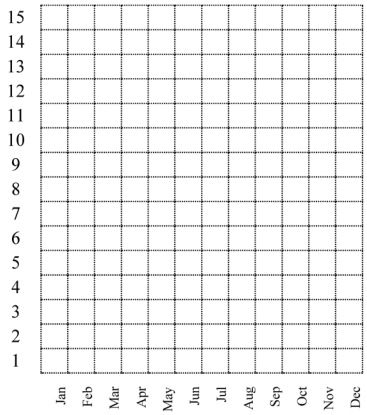
Republic of Lebanon
Ministry of Public Health
Epidemiological Surveillance Program

Acute Flaccid Surveillance Findings, Area: _____, Year _____
As on |_____|

1 Cases of AFP : ID

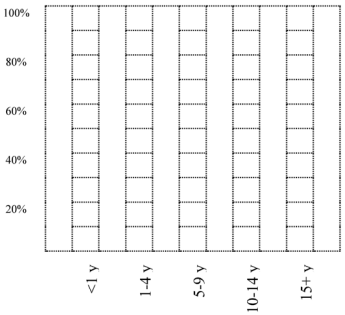
---

2 Cases by month

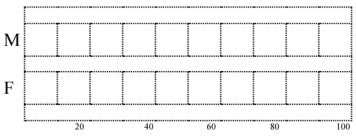


3 Cases by place: caza (map)

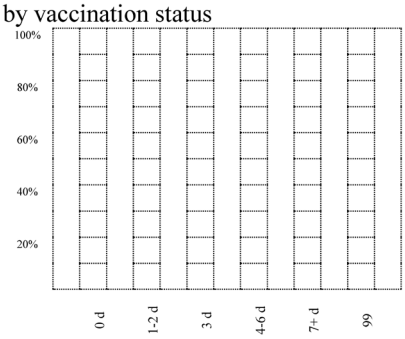
4 Cases by age group (%)



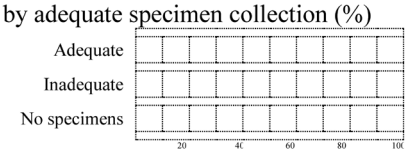
5 Cases by gender (%)



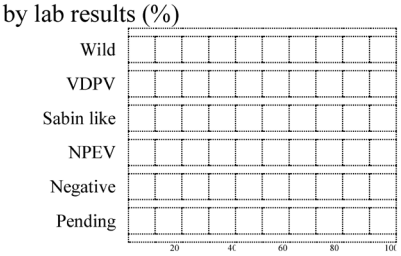
6 Cases by vaccination status



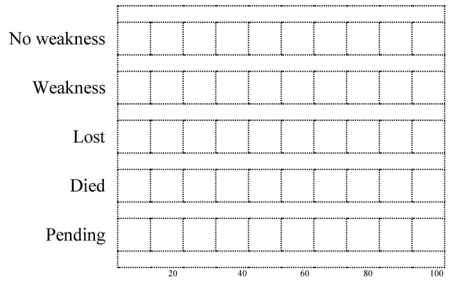
7 Cases by adequate specimen collection (%)



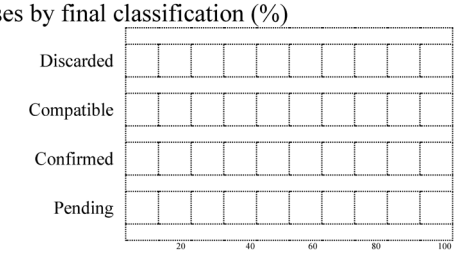
8 Cases by lab results (%)



9 Cases by follow up findings (%)



10 Cases by final classification (%)



Done by, signature and date:

Notes

Notes

2

Surveillance Standard Operating Procedure: Imported poliomyelitis

Version 1
MOPH circular no. 28
(19th Jan 2015)

Contents

I. Purpose

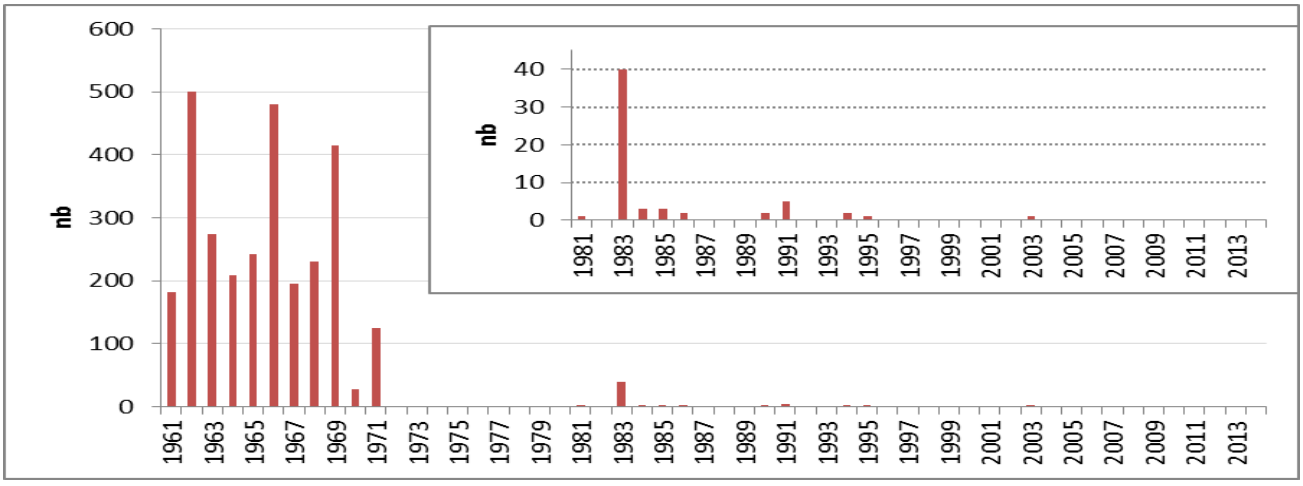
The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of an outbreak of polio.

II. Generalities

Acute Poliomyelitis	
Agent	Poliovirus (genus Enterovirus), with 3 serotypes: 1, 2 and 3
Incubation	7-14 days (3-35 days)
Period of communicability	- 7-10 days before onset, up to 3-6 weeks after onset - Virus present in throat 36 hours after infection, up to 1 week - Virus present in feces 72 hours after infection, up to 3-6 weeks
Reservoir	Humans
Modes of transmission	- Person-to-person: fecal-oral route, and rarely pharyngeal - Rarely through water and food
Clinical presentation	- 90-95% asymptomatic infection - 4-8% mild illness (influenza-like illness or gastro-intestintal illness) - 1-2% aseptic meningitis - <1% paralytic poliomyeltis
Worldwide	Endemic countries in 2015: Nigeria, Pakistan, and Afghanistan. In May 2014, WHO declared polio as public health event of international concern.
Lebanon	Last local cases in 1994. Last imported case in 2003. Lebanon declared “polio-free” in 2002.
Control objective	Worldwide eradication initiative (in 1988). Since 1999, worldwide, the poliovirus type 2 has been eradicated.
Surveillance and Investigation	
Surveillance approach	Syndromic-based surveillance: acute flaccid paralysis
Collect data about case	Clinical findings, medical diagnosis, CSF/EMG results, vaccination status, travel history, follow-up at 60 days for residual weakness.
Collect specimen from case	2 stool specimens from case within 14 days from paralysis onset, with at least 24 hours apart.
Collect data about contacts	If polio or highly suspicion of polio: rapid survey on vaccination status (OPV3/IPV3 coverage) at the community level.
Collect specimen from contacts	- If delay in specimens collection from case or highly suspicion of polio, stool specimens are collected from at least 3 contacts among children (preferably under 5 years) - If polio case: stool specimens are collected from siblings, neighbors and inpatients
Test	Virological culture
Laboratories	WHO accredited laboratory in Egypt or in Jordan.
Outbreak level	At least 1 confirmed case of polio
Notification to WHO	- To notify to WHO on confirmed and compatible cases - Routine weekly dataset sharing

Control	
Primary prevention	Immunization: 3 doses under 1 year, and 2 boosters > 1 year
Case management	Symptomatic
Isolation	Enteric precautions
Mass prevention	Immunization
Poliomyelitis case definition (MOPH circular no. 34 dated on the 5th May 2012)	
Confirmed case	A confirmed case is suspected case with isolation of wild poliovirus in stool specimens collected from the suspected case or from a close contact of the suspected case.
Suspected case	A suspected case is defined as: - A child under 15 years of age presenting with acute flaccid paralysis AFP whatever was the medical diagnosis - Or any person at any age with paralytic illness if poliomyelitis is suspected by the physician
Forms	
Reporting	Standard reporting form
Investigation	For case, contacts and neighborhood: specific polio investigation forms (MOPH circular no. 100 dated on the 21st June 2007) Form (1): case reporting and investigation Form (2): case investigation Form (3): specimen collection Form (4): rapid coverage survey Form (5): follow up at 60 days Form (6): final classification
National figures	

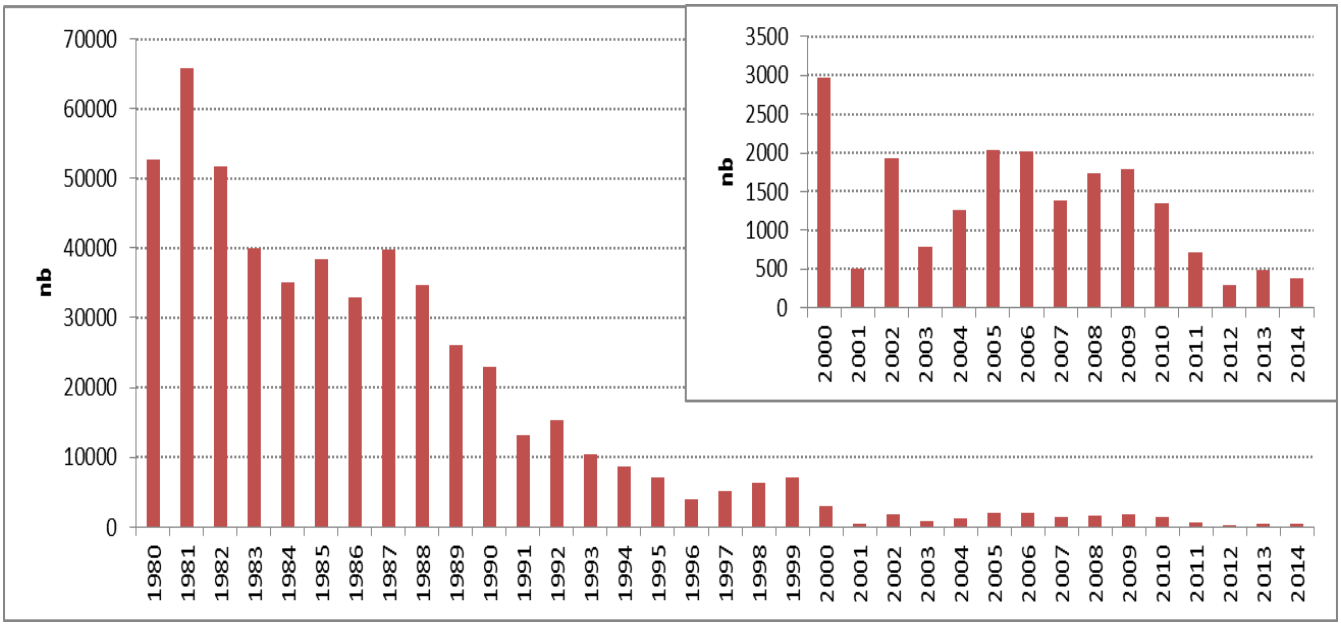
Figure 1: Reported acute poliomyelitis in Lebanon, 1961-2014 (Source: MOPH)



The last local cases were reported in 1994 (one in the North and one in the South)
In 1995, an imported case from Africa was reported (the child has the onset in Africa and came to Lebanon for case management).
In 2003, a confirmed polio was reported in the North. The case did not travel. The virus was identified as from India source. Two other persons were infected by the virus (1 sibling and 1 cousin). Two national campaigns were conducted. No additional cases were found despite active search.

International figures

Figure 2: Reported acute poliomyelitits cases in the world, 1985-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of AFP/Polio surveillance are:

- To detect and confirm rapidly any polio case
- To document polio-free status in case of absence of polio cases in the country
- In case of presence of polio cases:
  - Ensure rapid detection
  - Monitor and document containment/re-establishment of “polio-free” status.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case of poliomyelitis:

- Any patient less than 15 years old suffering from sudden onset of weakness, paresis, or paralysis, irrespective of medical diagnosis
- Or any patient, regardless of age, if the treating physician suspects poliomyelitis.

An **outbreak** is defined by at least one laboratory-confirmed polio case. It dictates immediate rigorous response plan to contain the outbreak and prevent viral circulation.

V. Procedural steps

In case of poliovirus outbreak, the Epidemiological Surveillance Program proceeds with the following steps summarized in figure (3).

Step 1: Verify the laboratory confirmation

a) Polio laboratory-confirmed

Based on the AFP investigation, polio case is detected if culture was positive. The poliovirus can be isolated from the case or the contacts.

Upon the notification by the laboratory, the Esumoh central team verifies the nature of the poliovirus isolated:

- Is it wild poliovirus?
- Is it Sabin-like poliovirus?
- Is it vaccine-derived poliovirus?

The virological culture detects the presence of poliovirus.
The intratypic differentiation informs on the presence of wild or vaccine virus (Sabin-like or originating from the vaccine).
The nucleotide sequencing informs on the level of diversity of the VP1 (viral protein 1) in the structural part of the genome. Compared to vaccine virus, 3 levels are identified:
- < 1%: vaccine virus
- 1-15%: vaccine-derived poliovirus
- >15%: wild poliovirus.

Also, the genotype sequencing informs on the source of the virus.

b) Polio compatible case

If the classification turned to be polio-compatible, the Esumoh will proceeds as the case was laboratory-confirmed.
Special considerations will be taken if the polio-compatible case is associated with an OPV dose.

Step 2: Declare outbreak and inform

The Esumoh central team informs immediately the concerned units at the MOPH: MOPH/DG, EPI, and CD.
The MOPH notifies the event as potential PHEIC to WHO, based on IHR (2005).
The MOPH issues official memos, informing the following:
- Health professionals: Order of Physicians, Syndicate of Private hospitals, Order of Nurses, hospitals…
- Partners: Ministry of Education and High Education, Ministry of Social Affairs, Ministry of Defense…
- Public via the media.

Step 3: Assess OPV/IPV3 coverage

There is need to assess the susceptibility profile of the area where the polio case is confirmed. The Esumoh team conducts a field study to measure the vaccine coverage. The survey is conducted door-to-door verifying vaccination documents for children aged 6 months to 5 years. The objective is to measure OPV/IPV3 coverage for targeted age group. If the case lives in a small locality: all the households are visited. If the case lives in a city of large locality: all the households in the sector of the case are visited.The minimal sample size is 100 households with children < 5 years.The survey is conducted by the Esumoh caza team with the support from the mohafaza and central levels (if needed).The results of the survey are shared with the MOPH/DG, and EPI.

Step 4: Search for additional cases of paralytic poliomyelitis

One case of polio indicates the presence of poliovirus circulation in the community and the possibility to have other polio cases.

a) At health settings

Health facilities (hospitals, medical centers, private physicians) are informed on the event.
Passive reporting is enhanced. The MOPH issues memos. The Esumoh central team conducts sessions in affected mohafaza(s) targeting the health professionals. The sessions focus on case definition, importance of rapid notification, importance of high quality of weekly zero-reporting.
Active surveillance is enhanced. All hospitals in the area of the case are included in the active surveillance. The quality of the active surveillance is revised.
Retrospective search is conducted by the Esumoh mohafaza/central teams. All hospitals in the affected area are visited, and the admission logbooks are revised. The target period is 6 months prior to the onset of the first polio case.

b) At community level

At the community level, cases are searched via various approaches:

- Municipalities are gathered and informed. They are requested to notify the MOPH on any rumour of AFP or polio.
- NGOs are informed and requested to notify MOPH.
- Specific settings are visited and searched for any AFP case.
- The vicinity of the case is visited and asked for any AFP case:
  - Neighbourhood
  - School / kindergarden …

c) Hotline

The hotline 1214 is tested for AFP/polio reporting.
The Esumoh central team conducts a refreshment course targeting the hotline team.

Step 5: Conduct stool and environmental surveillance

a) Stool surveillance

Stool specimens are collected from children to detect the presence of poliovirus.
Two groups are targeted:

- The children and contacts of the case, including the neighbourhood
- The children < 5 years admitted to the hospitals of the caza or mohafaza of the case.

For each person, one stool specimen is collected and preserved at 4-8 °C.
Specimens are sent to the WHO-accredited laboratory for virological culture.

b) Water and sanitation

The area where the case lives is assessed for:

- Water safety: sources of drinking and domestic water are listed. Water samples are collected and tested for microbial and chemical parameters.
- Sanitation infrastructure is explored. What system is in place for sewage: networks or septic tanks?

c) Sewage surveillance

In coordination with the municipalities and the WHO-accredited laboratory, sewage specimens are collected and sent for virological culture.

Step 6: Investigate source

The polio case or parents are interviewed to identify any potential source of infection:

- Travel to polio countries
- Travel of relatives to polio countries
- Travel of other contacts in neighbourhood, school… to polio countries.

The laboratory‘s genotype results will orient to the source of the virus.

Step 7: Enhance monitoring

During the outbreak, the Esumoh central team monitors closely the epidemiological data.

a) Description of cases

AFP and polio cases are described by:

- Time: week, month and year of onset
- Place: locality, caza and mohafaza of residence
- Person: age group, sex, nationality, vaccination status
- Disease: classification, outcome.

A weekly bulletin is generated and shared.

b) Monitoring indicators

All districts are monitored in terms of:

- Non-polio AFP rate /100000
- Proportion of specimen adequacy
- Proportion of notification of AFP within 7 days of onset
- Timeliness of zero-reporting
- Completeness of active surveillance
- Completeness of stool and sewage surveillance.

Step 8: Assess containment

Containment is assessed at 6 months from confirmation of polio outbreak by:

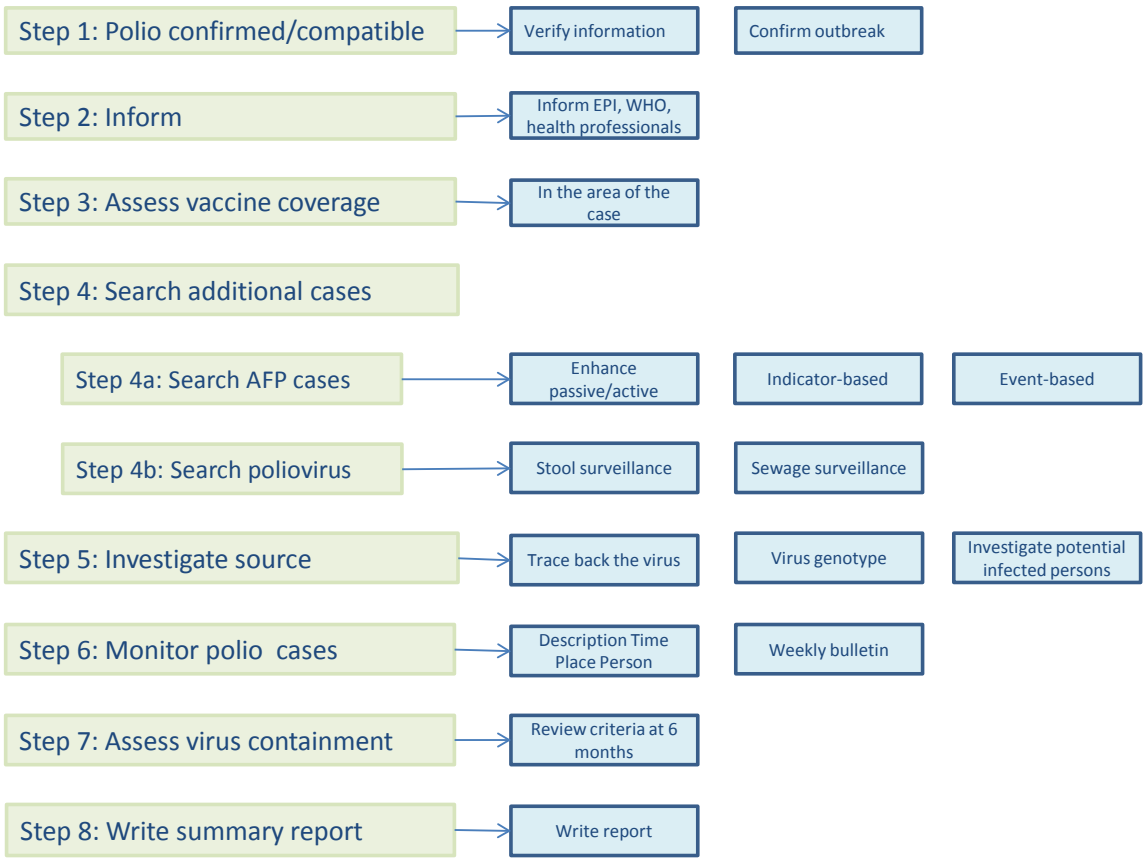
- Description of polio cases by time, place and person
- Findings of stool and sewage surveillance
- Quality of AFP surveillance.

There is need to have at least 6 months free of new cases of polio to declare the end of the outbreak.

Step 9: Write summary report

At the end of the outbreak, the Esumoh central team prepares a summary report. It is communicated with partners.

Figure 3: Polio investigation steps



الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي
دراسة رجعية لحالات الشلل الرخو الحاد
Etude retrospective des cas de paralysie flasque aigue

اسم الطبيب المحقق	تاريخ المراجعة	اسم المستشفى	ترصد نشط	الفترة الزمنية	نوع السجل	سجل ممكنن	التشخيص الاولي	التشخيص النهائي
			☐ نعم ☐ كلا		☐ سجل الدخول ☐ سجل قسم :	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا

السجل							الملف الطبي		
#	تاريخ الدخول	اسم المريض	العمر	اسم الطبيب	رقم الملف	التشخيص في السجل	تم مراجعة الملف	التشخيص والمعطيات في الملف	شلل رخو حاد
							☐ نعم ☐ كلا		☐ نعم ☐ كلا
							☐ نعم ☐ كلا		☐ نعم ☐ كلا
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صفحة رقم ( )

الجمهورية اللبنانية
وزارة الصحة العامة
مديرية الوقاية الصحية
برنامج الترصد الوبائي

إستمارة دراسة التغطية التلقيحية
ضد شلل الأطفال

تاريخ المقابلة	اسم المحقق	القضاء	المدينة / الحي	اسم رب الأسرة	عدد الأفراد في المنزل	عدد الأطفال ولدوا ابتداء من:

	1	2	3	4	5
خاص للممكننة					
1) الأطفال ولدوا ابتداء من:					
الاسم الأول للطفل					
الجنس	☐ ذكر ☐ أنثى	☐ ذكر ☐ أنثى	☐ ذكر ☐ أنثى	☐ ذكر ☐ أنثى	☐ ذكر ☐ أنثى
تاريخ الولادة (يوم/شهر/سنة)					
العمر (حدد عدد السنوات أو الأشهر)					
2)- التلقيح الروتيني ضد الشلل: (حدد : OPV او IPV)					
وجود بطاقة تلقيح أو سجل صحي	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا
تاريخ الجرعة الأولى للشلل (شهرين)					
تاريخ الجرعة الثانية للشلل (4 أشهر)					
تاريخ الجرعة الثالثة للشلل (6 أشهر)					
تاريخ التذكير الأول للشلل (15-18 شهر)					
تاريخ التذكير الثاني للشلل (4-6 سنوات)					
3)- حملة تلقيح ضد الشلل سنة _ _ _ _ :					
وجود بطاقة	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا
تاريخ جرعة الشلل (_ _ _ _ _)					
تاريخ جرعة الشلل (_ _ _ _ _)					
4)- جمع عينة براز:					
تسليم عبوة	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا
تاريخ العينة					

5)- معلومات أخرى:

وجود حالات شلل في المحيط	☐ نعم ☐ كلا	اذا نعم، حدد من وعنوانه:	
سفر إلى إحدى البلدان التالية	باكستان ☐ نعم ☐ كلا أفغانستان ☐ نعم ☐ كلا _ _ _ _ _ _ ☐ نعم ☐ كلا	_ _ _ _ _ _ ☐ نعم ☐ كلا _ _ _ _ _ _ ☐ نعم ☐ كلا _ _ _ _ _ _ ☐ نعم ☐ كلا	اذا نعم، حدد من ومتى:
ملاحظات			
خاص للممكننة			

Notes

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3

Surveillance Standard Operating Procedure:
Anthrax

Version 1
MOPH circular no. 31
(19th Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of alert/outbreak of anthrax.

II. Generalities

Anthrax	
Agent	- Bacteria: Bacillus anthracis, Gram positive, aerobic, rod-shaped, encapsulated, spore-forming, and non-motile. - Can be used in biological warfare.
Incubation	1-7 days (up to 60 days for inhalation form)
Period of communicability	No person-to-person transmission
Reservoir	- Animals (herbivores both livestock and wildlife) who shed the bacilli in terminal hemorrhages or blood at death - Soil and environment where spores may remain viable for years - Dried or processed skins and hides of infected animals, that may harbor spores for years
Modes of transmission	- Cutaneous form: contact with tissues, hair, wool, hides, products of infected animals; contact with soil containing spores or contaminated with bone meal; possible flies bite that fed on infected animals - Inhalation form: inhalation of aerosolized spores in industries (tanning hides, processing wool or bone products…); accidental inhalation in laboratory; intentional release of spores using aerosol devices including mail-items - Digestive form: ingestion of contaminated undercooked meat - Injection form: injection of contaminated heroin...
Clinical presentation	- Cutaneous form (95% of cases) on exposed skin: evolutive lesions from itchiness, to papular, vesicular then eschar with or without surrounding redness with extensive oedema. Untreated lesions may progress to regional lymph nodes and/or to septicemia. Case fatality is 5-20%. - Inhalation form (rare): mild respiratory infection that evolves in 3-6 days to acute respiratory distress. At Chest XR, a mediastinal widening (with or without pleural effusion) is observed. Meningitis may occur. The case fatality is almost 100% with delayed or no treatment. - Intestinal form (rare): fever with intestinal symptoms (abdominal pain and diarrhea). Case fatality rate is 25-75%. - Oropharyngeal form: a painless mucosal lesion in the oral cavity or oropharynx, with cervical adenopathy, edema, pharyngitis, fever, and possibly septicemia - Injection form: similar to cutaneous form, but there may be infection deep under the skin or in the muscle. Complications: septicemia, meningitis, death.
Worldwide	- Worldwide zoonosis, with accidental infection for humans - Intentional release: USA in 2001 - Accidental release: Ex-URSS (Sverdlovsk) in 1979 - Injectable form: in Europe since 2000
Lebanon	Intestinal form observed in the 1960s

Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Collect data about case	Clinical presentation, complications, occupation, exposure to infected animals, consumption of undercooked meat, intra-venous drug user, intentional or accidental release, contaminated mail...
Collect specimen from case	Blood, clotted blood, skin, lesions, respiratory specimens (sputum, pleural fluid, lung aspirate…), CSF
Collect data about contacts	Similar cases among contacts, identification of exposed persons to contaminated items...
Collect specimen from contacts	No
Test	- Demonstration of Bacillus anthracis using polychrome methylene blue - Isolation of Bacillus anthracis in clinical specimens
Laboratories	Supranational reference laboratories (ex: Namru3...)
Outbreak level	At least 1 case
Notification to WHO	Yes if intentional release and /or injectable form and /or inhalation form
Anthrax case definition (MOPH circular no. 98 dated on the 5th May 2015)	
Confirmed case	A case with one of the following laboratory confirmation: - Culture and identification of Bacillus anthracis from clinical specimens in reference laboratory - Detection of Bacillus anthracis by nucleic acid testing (PCR) - Demonstration of Bacillus anthracis antigens in clinical specimen by immunofluorescence - Seroconversion of antibodies to Bacillus anthracis on paired specimens
Probable case	- A suspected case with demonstration of Bacillus anthracis by microscopic examination of stained smears - Or a suspected case with positive ELISA test or RedLine Alert test or lethal factor by mass spectrometry in clinical specimen - Or a suspected case with epidemiological-linked with a confirmed case - Or a suspected case with documented anthrax environmental exposure

Suspected case	Suspected case is a case with clinical presentation and a history of exposure. The clinical presentation includes one of the following: - Cutaneous form: papular or vesicular lesion, or depressed black eschar with surrounding oedema - Pulmonary form: fever with acute respiratory distress or radiological evidence of mediastinal widening - Gastro-intestinal form: fever with severe abdominal pain or diarrhea - Injection form - Meningitis form: fever with convulsions, loss of consciousness or meningeal signs. The exposure history includes any exposure to animal cases, common source, or contaminated food /drinking water.
Forms	
Reporting	Standard reporting form
Investigation	Anthrax investigation form (MOPH circular no. 2 dated on the 7th January 2015)
National figures	
Gastro-intestinal cases were reported from 1960-1974. Source: Z. A. Kanafani, A. Ghossain, S. S. Kanj. Endemic gastrointestinal anthrax in 1960s Lebanon: clinical manifestations and surgical findings. EID, May 2003; 9(5): 520-525.	

III. Objectives of surveillance

The objectives of surveillance for anthrax are:
- To detect and confirm any case of anthrax
- To identify source of infection
- To activate the CBRN national committee in case of bioterrorism attack
- To ensure necessary contact tracing of exposed persons
- To document containment after accidental / intentional release.

IV. Alert and outbreak thresholds

An **alert** is defined by at least one suspected case of anthrax.
An **outbreak** of anthrax is defined by at least one confirmed case of anthrax.

V. Procedural steps

The following standard operating procedure is triggered by any alert of anthrax. Every suspected case of anthrax needs to be investigated according to the steps summarized in figure (2).

Step 1: Verify alert

Once an anthrax case is reported (by phone or fax), the peripheral Esumoh staff contacts immediately the treating physician or the hospital focal point to verify the diagnosis: Do they really mean anthrax?
If yes, the peripheral Esumoh staff immediately informs the Esumoh central staff who will contact the treating health care providers to collect minimal data on the following clinical presentation:
- Cutaneous signs (underlying a cutaneous mode of transmission): lesions, stages of lesions, redness, edema, treatment

- Infection deep under the skin or in the muscle (underlying an injection mode of transmission)
- Respiratory sings (underlying an inhalation mode of transmission): respiratory infection, acute respiratory distress, pleural effusion, mediastinal widening
- Intestinal signs (underlying a digestive mode of transmission): fever, intestinal symptoms
- Oropharyngeal signs (underlying digestive mode of transmission): mucosal lesion in the oral cavity or oropharynx, with cervical adenopathy, edema, pharyngitis, fever, and possibly septicemia
- Complications: septicemia, meningitis, death.

If the suspected anthrax case was admitted to more than one health setting (hospital, medical center, private clinician), all treating physicians are contacted and copies of the medical files are requested.

Also, the Esumoh central staff forwards the information to the DG who will decide to inform the minister, the CBRN national committee, and WHO.

Step 2: Collect data

The peripheral and central Esumoh staff will visit the health premise where the patient is and fill the investigation form (Annex 1).

The investigation form includes the following information:

- Identity of the patient(s)
- Clinical presentation and complications
- Exposure factors: occupation, exposure to infected animals, consumption of undercooked meat, intra-venous drug use, exposure to contaminated items
- Identifying contacts and similar cases among contacts
- Identification of contacts to contaminated items.

It is very important to identify the clinical form of the anthrax and the suspected exposure environment which will guide the following steps.

Step 3: Confirm the case

Upon suspicion and identification of the clinical form, there is need to confirm the case by laboratory testing. Supranational laboratory is contacted to ensure readiness to receive the samples.

Specimens are collected by the attendant medical professionals and the Esumoh central staff.

a) Clinical specimen collection

To confirm anthrax diagnosis, the following specimens can be collected: Blood, vesicular fluid, respiratory specimens (nasal swabs, sputum, pleural fluid, lung aspirate…) and CSF.

Table 1: Needed specimens and tests for anthrax

Clinical form	Clinical specimens	Quantity	Container	Target tests
Cutaneous anthrax	Vesicular fluid	3	Sterile swabs	M'Faydean capsule test, culture, antigen detection
Inhalational/ pulmonary anthrax	Blood	10 mL	Sterile tubes	M'Faydean capsule test, culture, antigen detection
	CSF	0.5 mL	Sterile screw-capped container	M'Faydean capsule test, culture
	Nasal swab	2	Sterile swabs	Culture

Clinical form	Clinical specimens	Quantity	Container	Target tests
Gastrointestinal anthrax	Blood	10 mL	Blood culture bottles	M'Faydean capsule test, culture, antigen detection
	Ascitic fluid	2 mL	Sterile screw-capped container	M'Faydean capsule test, culture, antigen detection
Anthrax meningitis	CSF	0.5 mL	Sterile screw-capped container	M'Faydean capsule test, culture
	Blood	10 mL	Blood culture bottles	M'Faydean capsule test, culture, antigen detection

The selection of specimen types depends on the health condition of the patient:

- Vesicular fluid is not appropriate for treated patient and for cutaneous form older than 3-4 days
- For deceased patients: B. anthracis cannot be isolated from blood until the last few hours of life.

Specimens are stored at 2-8 °C, and transported in cool boxes.

b) Environmental specimen collection

Collection of environmental samples is needed to identify the source of the infection. Samples are collected by the partners (MOA, CBRN task force) from exposed surfaces, water, food and soil. Collection of samples is potentially dangerous and should be handled with a certain biosafety level. Therefore, it is supervised by the CBRN taskforce.

c) Specimen shipment

Specimens are shipped within 24 hours to supranational laboratories (Namru-3...). Shipment follows IATA requirements.

d) Personal protective equipment

The professional collecting the specimens should be equipped with the following personal protective equipment before getting in contact with the anthrax case or any contaminated environmental:

- Double disposable gloves
- Gown or overall, depending on the situation
- Full-face respirator
- Eye protection.

Step 4: Describe and classify the case

Based on the available information, cases are described by:

- Time: time of onset, time of suspected exposure, time of starting case management
- Place: place of residence, place of work, place of suspected exposure
- Person: age, gender, occupation, nationality...
- Disease: clinical form, outcome.

The cases are classified as confirmed, probable, suspected or discarded (figure 1). The classification is dynamic, updated with any new information.
Medical treatment is started once the case is suspected. Treatment is stopped only if the case is discarded.
If one case is confirmed, the outbreak is declared. Such information is shared by the MOPH to partners: CBRN national committee, WHO and health professionals...

Step 5: Specific steps for non-respiratory form

When cutaneous, digestive or oropharyngeal forms are identified, it reflects accidental exposure.
The following steps are conducted in coordination with the CBRN national committee.

a) Investigate the source

If the exposure is suspected to be in professional setting (ex: laboratory…), the Esumoh staff with involved professionals conducts biosafety assessment at workplace setting.
If the exposure is suspected to be of animal origin, the Ministry of Agriculture is informed and requested to conduct animal investigation.

b) Find additional cases

One case of anthrax may reflect the release of the bacteria and the occurrence of other cases. The MOPH informs officially the health professionals (hospitals, syndicates of physicians, syndicate of private hospitals, and syndicate of laboratories…) on the event and requests them to report immediately any suspected cases. Specific official memos are issued including summary of the event, case definitions, and how to report.
Active surveillance teams are also mobilized to include in their field rounds the search of suspected anthrax.

c) Conduct contact/exposure tracing

For any suspected contaminated environment, or source, all persons who have been at the place at the time of exposure are listed.
The line listing includes the following: name, contact details, occupation, link with the contaminated environment…
Identified contacts are assessed for their exposure and followed up daily for a duration of 7 days to detect new cases among them. Also suspected contacts are oriented for chemoprophylaxis treatment.

Step 6: Specific steps for respiratory form

When inhalation form is suspected, the intentional release is suspected.

a) Coordinate with the CBRN committee

The MOPH ensures reception of the information by the leader of the CBRN committee. The former activates the CBRN plan.Once activated, the Esumoh staff will report jointly to MOPH/DG and to CBRN/leader committee.

b) Find additional cases

Additional cases are searched via the indicator-based (IBS) and event-based system (EBS).
The IBS includes issuing specific memos for national health partners (hospitals, laboratories, physicians…), conducting sessions for hospitals on disease presentation, case definition, reporting and lab confirmation…
The EBS incudes activating the hotline 1214 and training the 24-hours/7-days team trained on anthrax.

c) Conduct contact/exposure tracing

The Esumoh teams (peripheral and central) ensure:
- Identification of contacts and exposed persons
- Assesment of exposure
- Daily follow up of exposed persons for symptoms onset and prophylaxis observance.

The daily follow up is documented for 7 days for cutaneous/digestive form and 60 days for inhalational form.

d) Enhance monitoring

The Esumoh central level, monitor on daily basis:
- Cases: number of cases by time, place, person and outcomes
- Exposed: number of daily follow up and outcomes.

A weekly bulletin is edited and shared with MOPH/DG and CBRN national committee.

Step7: Write summary report

Once the event is contained, the Esumoh central staff writes a report summarizing important findings. Summary report mainly contains the following information: description of the case by time, place, person, laboratory findings, and exposure history. This summary report is shared with involved partners.

Figure 1: Anthrax case classification

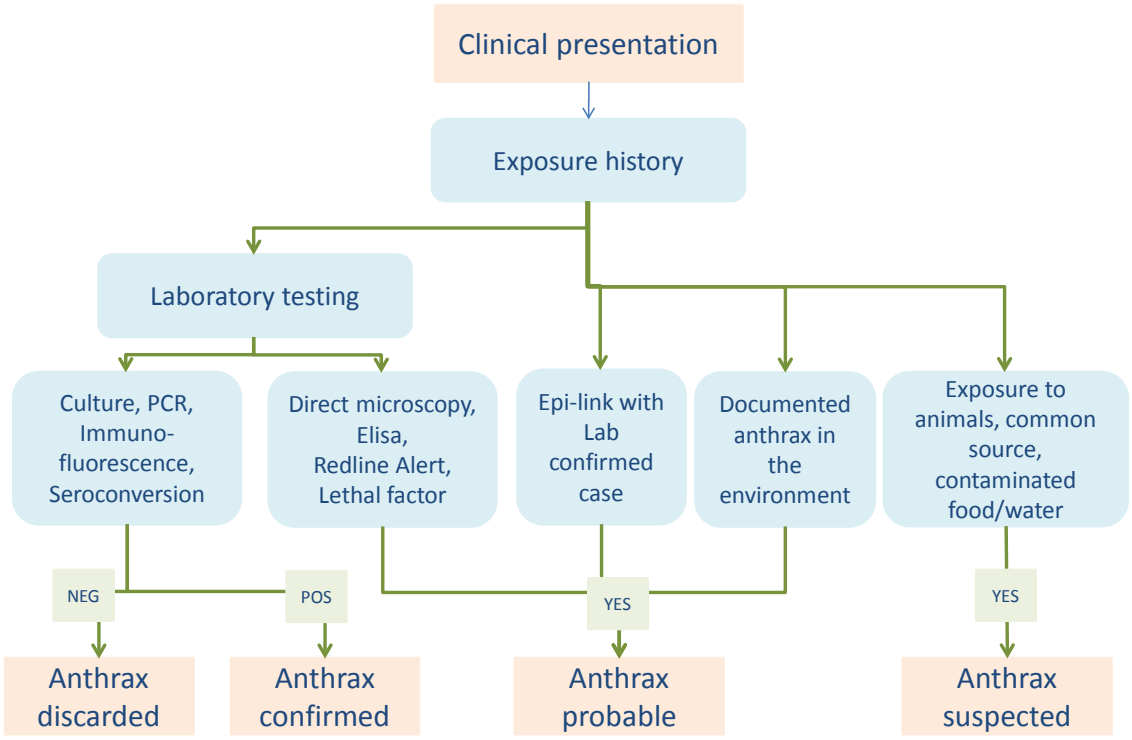
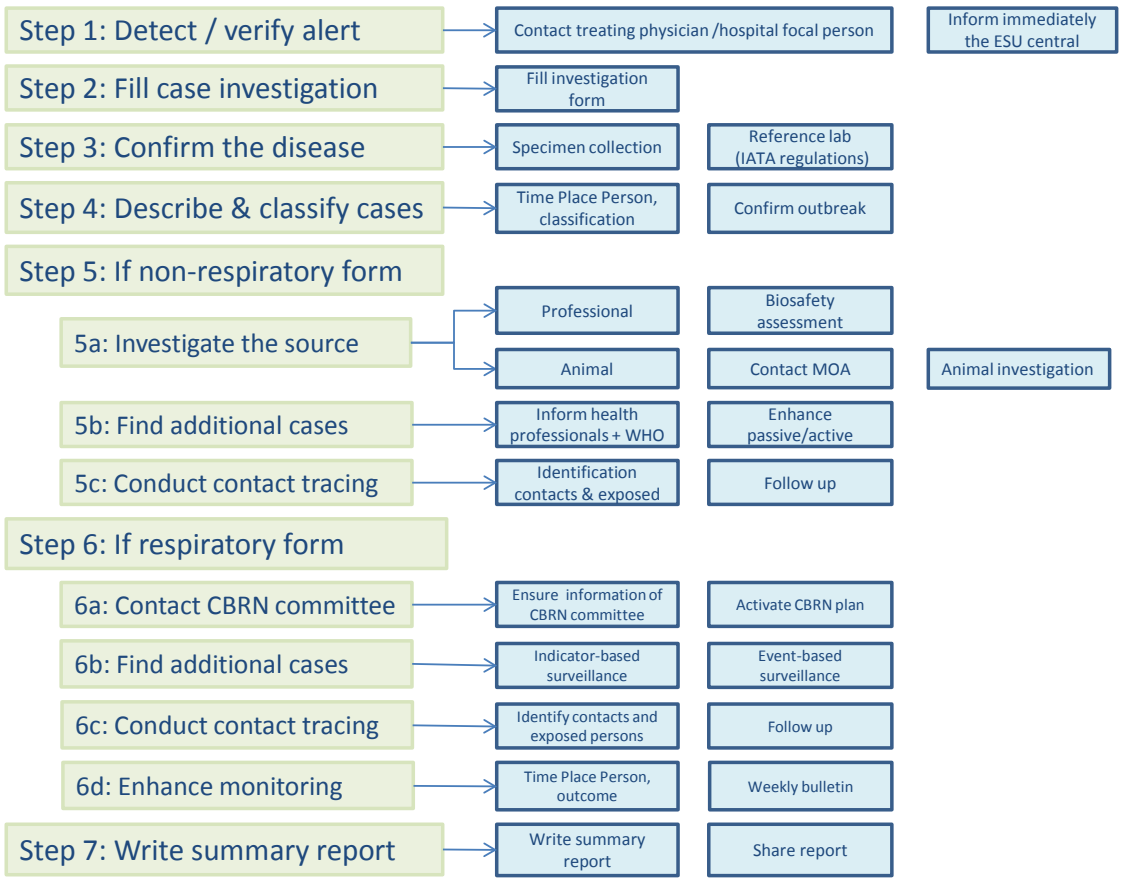


Figure 2: Anthrax investigation steps



Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Unit

Anthrax Investigation form

Case ID |_____|

I. Reporting

Date of reporting: _____/_____/_____ Health facility: _____

Reported name: _____ Phone: _____

Treating physician: _____ Phone: _____

**

II. Patient identification

Patient full name: _____ Address, Caza: _____

Date of birth: _____/_____/_____ City/locality: _____

Sex: ☐ Male ☐ Female Detailed address: _____

Nationality: _____

Phone number: _____

**

III. Occupation

Occupation: _____ Institution name: _____

Activity: ☐ Active ☐ Unemployed Occupation phone: _____

Anthrax vaccination ☐ Yes, date: ☐ No Institution address: _____

Date last dose: _____/_____/_____

**

IV. Clinical presentation

Date of onset of 1st symptoms: _____/_____/_____

General	Gastrointestinal or Oropharyngeal	Cutaneous or Injection	Inhalation	Meningeal
☐ Fever ☐ Malaise/fatigue ☐ Anorexia ☐ Hypoxia ☐ Cyanosis ☐ Other:	☐ Abdominal pain/tenderness ☐ Abdominal swelling ☐ Vomiting ☐ Diarrhea (not bloody) ☐ Bloody diarrhea ☐ Neck swelling ☐ Pharyngitis ☐ Oropharyngeal lesions ☐ Other:	☐ Pruritis ☐ Erythema ☐ Edema ☐ Vesicles ☐ Eschar ☐ Cellulitis ☐ Fasciitis ☐ Lymphadenopathy ☐ Lymphangitis ☐ Other:	☐ Chest pain ☐ Cough ☐ Dyspnea ☐ Hemoptysis ☐ Acute respiratory distress ☐ Abnormal chest x-ray ☐ Other:	☐ Headache ☐ Photophobia ☐ Neck pain/stiffness ☐ Convulsions ☐ Altered mental status ☐ Coma ☐ Other:

**

V. Laboratory testing

Specimen type	Nb	Date of collection	Date of shipment	Test	Laboratory	Result
Blood						
CSF						
Vesicular fluid						
Swab						
Peritoneal fluid						
Ascitic fluid						
Other:						

**

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Unit

Anthrax Investigation form

Case ID |_____|

VI. Case management

a) Health facility

Name	Treating MD	Admission	Admission date	ICU	Date discharge

b) Antibiotics

Name	Date started	Date ended	Posology	Notes

**

VII. Cutaneous / injection form

In the past 14 days prior to disease onset, did the patient:

- Work with or around livestock/wild mammals or their body fluids? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location of exposure:
  Animal type:
- Had any contact with animal skins, furs, hair, or bone products? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location of exposure:
  Product type:
- Garden or work with soil? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location of exposure:
- Work in a clinical or microbiological laboratory? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location of exposure:
- Receive an injection: ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of injection: _____/_____/_____
  Drug type: ☐ Medicinal ☐ Illicit
  Drug name:
  Injection site:
  Conducted by:

**

VIII. Gastro-intestinal / oropharyngeal form

In the past 7 days prior to disease onset, did the patient:

- Consume or was exposed to undercooked or raw meat? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location of exposure:
  Consumed items:
  Source:
- Consumed same food/drink as lab-confirmed anthrax case? ☐ Yes ☐ No ☐ Unknown
  If yes, specify: Date of exposure: _____/_____/_____
  Location:
  Consumed items:
  Source:

**

Anthrax Investigation form

Case ID |_____|

IX. Inhalation form

In the past 60 days prior to disease onset, did the patient:

▪ Receive unusual letters or packages?	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of exposure: Location of exposure: Country source:	_____/_____/_____
▪ Open mails or packages for others:	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of exposure: Location of exposure: Details:	_____/_____/_____
▪ Had contact with unusual powders, dusts or aerosols?	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of exposure: Location of exposure: Details:	_____/_____/_____

**

X. Exposure

In the past 6 weeks prior to disease onset, did the patient:

▪ Attend large gatherings or special events?	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of event: Location of event:	_____/_____/_____
▪ Travel outside the country?	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of travel: Country: Date of return:	_____/_____/_____ _____/_____/_____
▪ Get in contact with undiagnosed similar illness in friends, family, coworkers, or other contacts?	☐ Yes If yes, specify:	☐ No ☐ Unknown Date of contact: Contact's name: Contact's location: Contact's phone:	_____/_____/_____

**

XI. Outcome and classification

Dates	Status (alive, recovered, death)	Classification	Notes (date of death if death)

**

XII. Environmental investigation

Dates	Partner	Inspection/Sampling	Results

**

XIII. Investigator

Form filled by: (name and signature) Date: _____/_____/_____

Notes

Notes

Notes

4

Surveillance Standard Operating Procedure: Cholera

Version 1
MOPH circular no. 32
(19th Jan 2015)

Contents

I. Purpose

This Standard Operating Procedure (SOP) is intended to assist the Epidemiological Surveillance Program teams on how to proceed in case of cholera case.

II. Generalities

Cholera is an acute bacterial enteric disease characterized by sudden onset of profuse watery stool with or without vomiting. The stool of cholera patients typically becomes a clear liquid flecked with white mucus, known as “rice –water” stool. It is usually odorless or has a mild fishy smell. Vomiting, which can be severe, and painful leg cramps are common symptoms. If untreated it may led to rapid dehydration, acidosis, circulatory collapse, renal failure, hypoglycemia and death. More information about the disease is presented in the table below.

Cholera	
Agent	- Bacteria: Vibrio cholera, serogroup O1 (biotype classical or El Tor, subtype Ogawa or Inaba), or serogroup O139. - Enterotoxin producer.
Incubation	2-5 days (can be few hours)
Period of communicability	As long as the bacteria is excreted in feces, up to few days after recovery
Reservoir	Humans, brackish waters and estuaries
Modes of transmission	- Consumption of contaminated water - Consumption of contaminated food: by water, by human feces, by soiled hands, raw or undercooked seafood - Person-to-person transmission: fecal-oral route
Clinical presentation	- Acute abundant watery diarrhea (rice-water) - Asymptomatic infection is common - Complications: dehydration and death. Case fatality can reach 5% if untreated and <1% if treated
Worldwide	Worldwide. The 7th pandemic started since 1961 with O1 El Tor biotype in particular in Asia and Africa.
Lebanon	Last outbreak in 1993
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease (cholera) and syndromic (watery diarrhea)
Collect data about case	Complications, water exposure, food exposure, travel history...
Collect specimen from case	Stool specimens or rectal swab (in AMIES or Carry Blair media)
Collect data about contacts	- Search of cases among contacts - Interview of meal companions for the 5 days prior to onset
Collect specimen from contacts	Stool specimen or rectal swab from household members and close contacts
Test	Coproculture, and identification of the serogroup
Laboratories	- Clinical laboratories for isolation - RHUH for serogroup identification
Outbreak level	At least 1 confirmed case
Notification to WHO	Yes

Cholera case definition (MOPH circular no. 99 dated on the 5th May 2015)	
Confirmed case	Isolation of Vibrio cholerae O1 or O139 from stools in any patient with diarrhea
Suspected case	- In area where the disease is not known to be present: severe dehydration or death from acute watery diarrhea - In area where cholera is endemic: acute watery diarrhea with or without vomiting - In an area where there is a cholera epidemic: acute watery diarrhea, with or without vomiting in any patient
Forms	
Reporting	Standard reporting form
Investigation	Cholera investigation form (MOPH circular no. 151 dated on the 15th October 2007)
National figures	
Last outbreak in 1993	
International figures	

Figure 1: Reported cases of cholera worldwide, 2000-2014 (Source: WHO, WER no. 40, 2015, 90, 517-544)

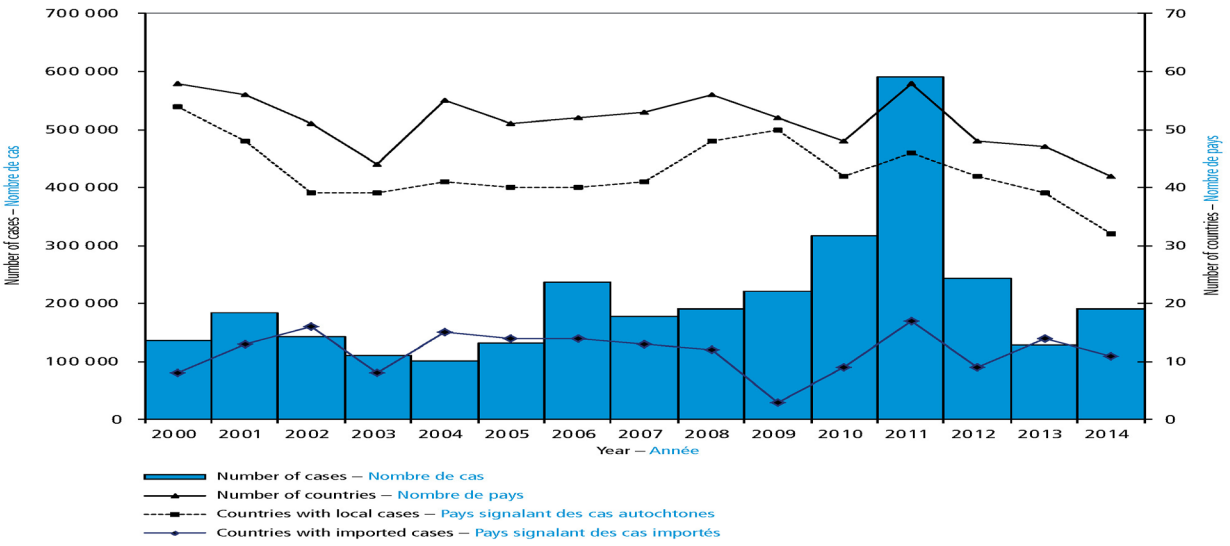
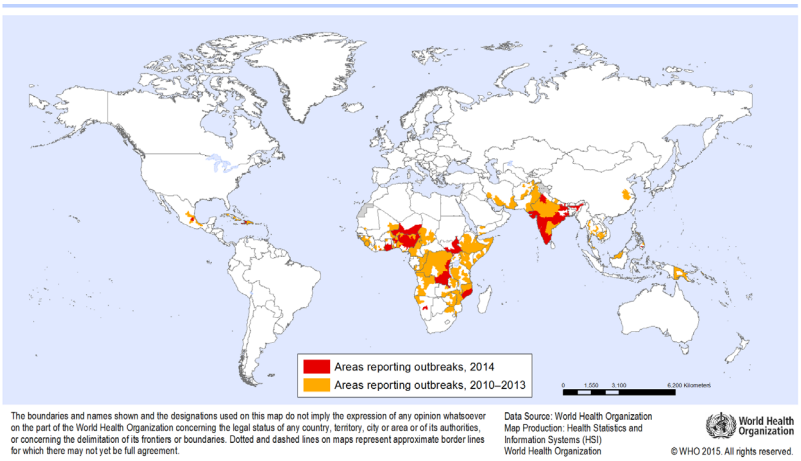


Figure 2: Distribution of cholera cases, worldwide, 2010-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance of cholera are:

- To promptly detect and confirm cholera cases
- To identify risk factors and sources of infection
- To document containment in case of outbreak.

IV. Alert and outbreak thresholds

An **alert** is defined by one of the following:

- At least 1 suspected case of cholera
- A cluster of severe acute watery diarrhea cases in the same settlement of refugees or internally displaced persons (IDP) camp or in the same village
- Doubling of cases of “acute watery diarrhea” for two consecutive weeks
- Isolation of vibrio cholera in one clinical specimen.

Alerts are detected at caza, mohafaza and central levels. Alerts are communicated between the three levels within 24 hours.

An **outbreak** is defined whenever a single strain of Vibrio Cholera type O1 or O139 has been isolated.

V. Procedural steps

The steps described below are recommended for the verification and investigation of chlolera alert/outbreak. They are summarized in figures (4) and (5).

Step1: Verify alert

a) Suspected case of Cholera

If the notification originates from a health facility, the Esumoh team (caza, mohafaza or central) contacts within 24 hours the treating physician or hospital focal person. If the patient is a suspected case of cholera? Is there any isolate?
If the notification comes from the community, the information is verified with the health facilities who diagnosed or treated the patients.

b) Cluster of cases

If a cluster is notified in particular setting, the Esumoh caza/mohafaza teams verifies the information. The setting is visited.

Step 2: Verify diagnosis

a) Clinical specimens

In case of suspected case of cholera, stool specimens are collected from the case. If the case passed away, stool specimens are collected from all household members. The needed test is microbiological culture. This test can be done in any clinical laboratory.
It is recommended to collect specimen from the case:

- Within 4 days from onset
- During the phase of acute watery diarrhea
- Before the administration of antibiotics.

b) Isolates

In case the clinical laboratory identifies Vibrio Cholera, there is need to collect the isolate and refer it to a reference laboratory in order:

- To confirm the isolate
- To identify serotype: O1 or O139.

Usually, isolates are referred to RHUH.

Step 3: Collect Data

If Vibrio cholera is isolated, the Esumoh mohafaza/central team contacts the patient or proxy to collect additional information. The investigation form for cholera is provided in Annex 1.

The investigation form includes the following information:

- Demographic data: age, gender, nationality, place of residence
- Illness: onset, outcome
- Case management
- Laboratory findings: specimen, laboratory results
- Risk factors: cluster, travel history, consumption of seafood, source of drinking water, occupation
- Preexisting conditions...

In case of death, a copy of the medical file is reqyested by an official letter.

Step 4: Confirm the outbreak

In case the isolate is O1 or O139, the outbreak of cholera is confirmed.
The Esumoh central team informs the MOPH units. The MOPH issues official letters to inform various partners:

- Health professionals
- Other governmental institutions
- WHO, and other UN agencies...

Step 5: Search for additional cases

a) Field search

Immediately after confirmation, the Esumoh team conducts field visits where cases of cholera are confirmed. Additional cases are searched in the immediate surroundings of the case.
A specific line listing is used (Annex 2).
During the field visits, the cholera rapid kits can be used (if available).

b) Indicator-based surveillance

Additional cases are searched from various surveillance systems:

- Classical surveillance
- Medical centers
- Schools
- Hospital-based mortality surveillance...

The passive reporting system is enhanced. Health facilities are informed on the presence of the outbreak and are asked to report any suspected case immediately to MOPH.

The active surveillance is also enhanced to detect any suspected case of cholera.

c) Event-based surveillance

The community is informed on the presence of the outbreak, including municipalities and NGOs.
Specific sessions are done for NGOs and municipalities to inform them on the disease.
The hotline 1214 is also used for reporting from any source.
Any suspected case reported by the community is to be verified by the Esumoh caza team.

Step 6: Describe cases

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of work, place of school, in term of locality, caza and mohafaza
- Person: age, gender, nationality

- Disease: classification, outcome, case management
- Agent : serotype, antimicrobial resistance, pattern.

Indicators include counts and incidence rates.

Step 7: Assess risks factors

a) Water testing

In concerned localities or institutions, the municipalities are contacted to describe the water sources and networks. Based on that information, the critical water points are identified for water sampling.
A date is arranged with the locals and the designated laboratory to conduct water sampling and referral to the laboratory.
Water samples should include samples from network water and non-network water.
The water is tested for fecal contamination.

b) Food inspection and testing

If the investigation forms point the presence of suspected meal in same locality, area or institution, the food is suspected to be contaminated.

The identified food premises are inspected. During the inspection, the conditions are reviewed, the available food is sampled, and the food handlers are checked for their medical cards, hygienic presentation and presence of illness of acute diarrhea in the previous 2 weeks.

In case of history of acute diarrhea among food handlers, stool is collected from suspected food handlers for bacteriological culture.

c) Hygiene assessment

If the cholera is in a specific setting, as a refugee settlement, the site is inspected. During the field inspection the following is assessed:
- Availability of safe drinking water
- Availability of domestic water
- Sanitation infrastructure
- Hygiene behavior.

d) Further studies

Based on the needs, the Esumoh central level will conduct advanced studies as:
- Analytic studies: case control or retrospective cohort
- Microbiological studies
- Antimicrobial resistance
- Access to treatment...

Step 8: Enhance monitoring

During an outbreak a regular epidemiological report will be prepared by Esumoh central team and shared with partners on weekly basis.

Step 9: Write summary report

Once the outbreak is ended, the Esumoh central tram prepares a summary report on the outbreak.

Figure 3: Cholera case classification

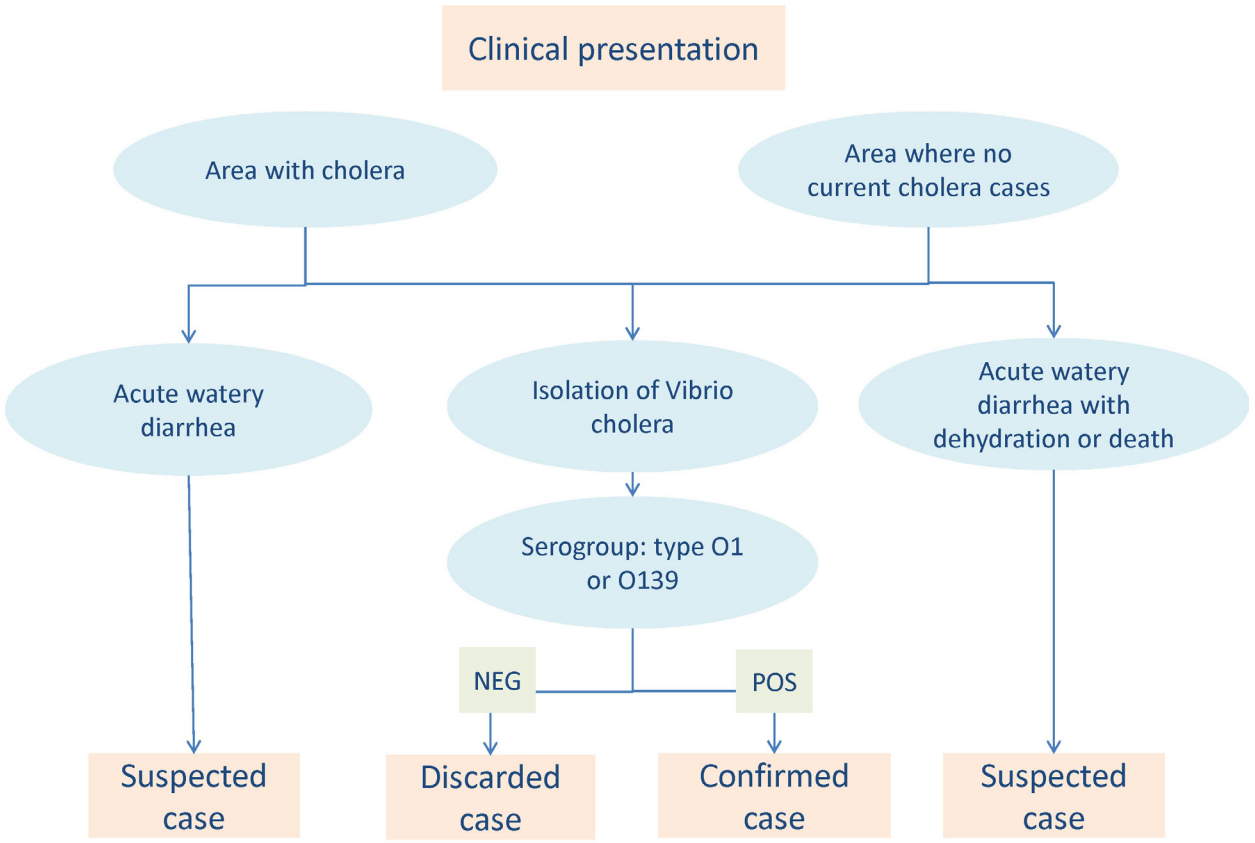


Figure 4: Cholera investigation steps in case of isolation of Vibrio cholera

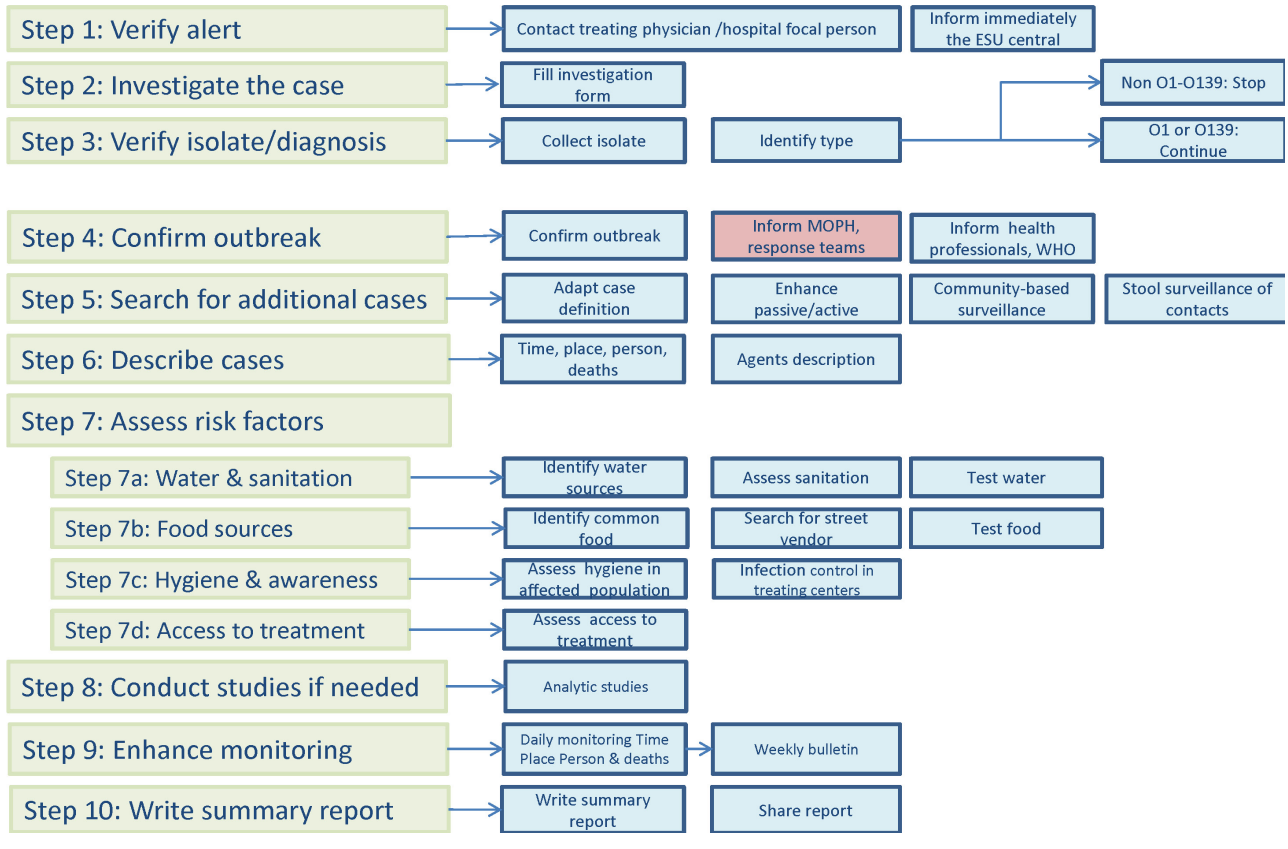
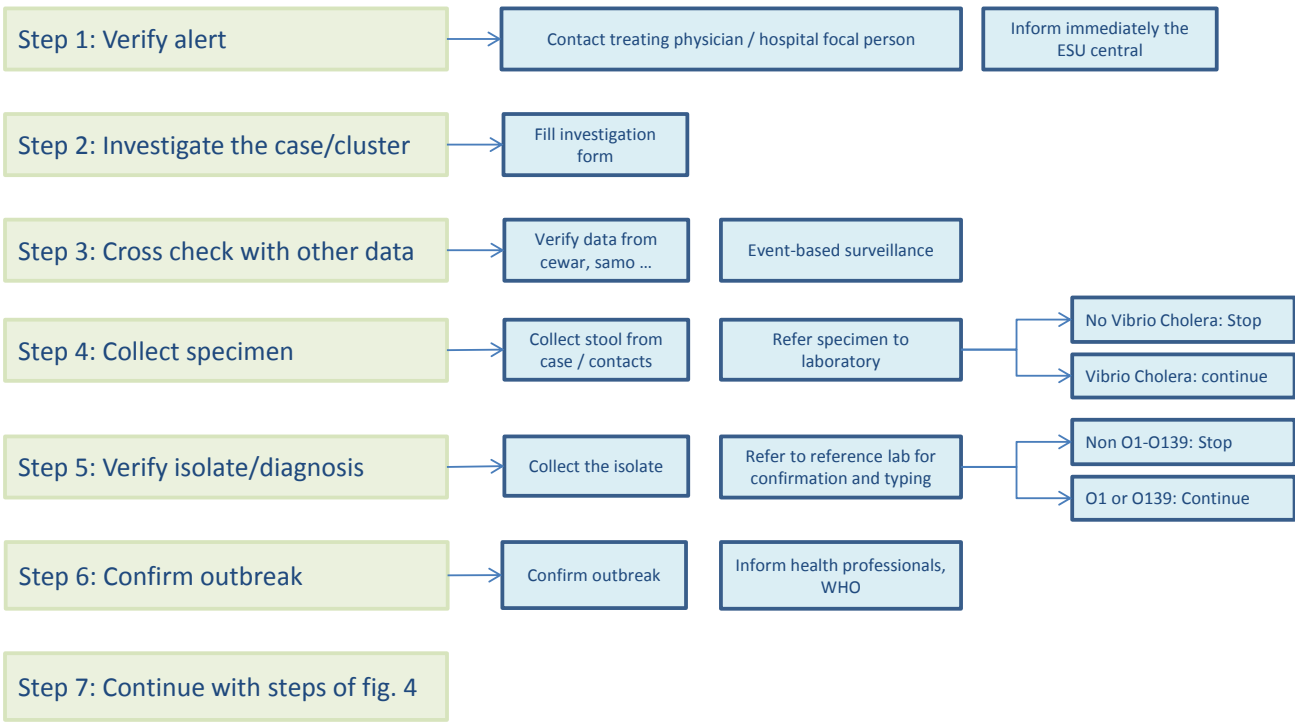


Figure 5: Cholera investigation steps in case of clinical alert



Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program
Vibrio surveillance report

LEB-A00-|__|__|__|__|-|__|__|

I. Patient information

1. *Patient ID*

ID **LEB-A00-**|__|__|__|__|-|__|__|
Patient name |_____|
Date of birth |__|__|-|__|__|-|__|__|__|__|
Age (years) |__|__|
Gender ☐ Male ☐ Female
Nationality |_____|

2. *Principal place of residence*

Country	
Mohafazat	
Caza	
Locality	
Street	
Building	
Floor	
Phone 1	
Phone 2	

3. *Place of work*

Occupation	
Country	
Mohafazat	
Caza	
Locality	
Address	
Institution	
Phone	

4. *Secondary place of residence*

Country	
Mohafazat	
Caza	
Locality	
Address	
Phone	

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LEB-A00-|__|__|__|__|-|__|__|

II. LABORATORY FINDINGS

IV. *Specimen*

Date of specimen collection [1]

Specimen ☐ Stool ☐ Blood ☐ Wound ☐ Other

If wound or other, specify:

	Local laboratory	Reference laboratory
Name		

Species	Local laboratory	Reference laboratory
	☐ *V. alginolyticus* ☐ *V. cholerae O1* ☐ *V. cholerae O139* ☐ *V. cholerae non-O1, non-O139* ☐ *V. cincinnatiensis* ☐ *V. damsella* ☐ *V. fluvialis* ☐ *V. furnissii* ☐ *V. hollisae* ☐ *V. metschnokovii* ☐ *V. mimicus* ☐ *V. parahaemolyticus* ☐ *V. vulnificus* ☐ *Vibrio species – not identified* ☐ *Other*	☐ *V. alginolyticus* ☐ *V. cholerae O1* ☐ *V. cholerae O139* ☐ *V. cholerae non-O1, non-O139* ☐ *V. cincinnatiensis* ☐ *V. damsella* ☐ *V. fluvialis* ☐ *V. furnissii* ☐ *V. hollisae* ☐ *V. metschnokovii* ☐ *V. mimicus* ☐ *V. parahaemolyticus* ☐ *V. vulnificus* ☐ *Vibrio species – not identified* ☐ *Other*

7. If *Vibrio cholerae* O1 or O139, complete:

	Local laboratory	Reference laboratory
Serotype	☐ Inaba ☐ Ogawa ☐ Hikojima ☐ Unsp	☐ Inaba ☐ Ogawa ☐ Hikojima ☐ Unsp
Biotype	☐ El Tor ☐ Classical ☐ Unsp	☐ El Tor ☐ Classical ☐ Unsp
Toxigenic	☐ Yes ☐ No ☐ Unsp	☐ Yes ☐ No ☐ Unsp
Test	☐ ELISA ☐ Latex agglutination ☐ Other	☐ ELISA ☐ Latex agglutination ☐ Other

LEB-A00-|__|__|__|__|-|__|__|

8. MicroAntibioResistance

Antibio-susceptibility		Local laboratory				Reference laboratory			
		S	I	R	Unsp	S	I	R	Unsp
	Ampicillin	☐	☐	☐	☐	☐	☐	☐	☐
	Chloramphenicol	☐	☐	☐	☐	☐	☐	☐	☐
	Furazolidone	☐	☐	☐	☐	☐	☐	☐	☐
	Nalidixic acid	☐	☐	☐	☐	☐	☐	☐	☐
	Ciprofloxacin	☐	☐	☐	☐	☐	☐	☐	☐
	Tetracycline	☐	☐	☐	☐	☐	☐	☐	☐
	Trimethoprim-Sulfamethoxazole	☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐	☐

9. Other

Were other organisms isolated from the same specimen that yielded Vibrio? ☐ Yes ☐ No ☐ Unsp

If yes, specify: |_____|

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program
Vibrio surveillance report

LEB-A00-|__|__|__|__|-|__|__|

III. CLINICAL INFORMATION

10. Onset

Date of onset |__|__|-|__|__|-|__|__|__|__|
Time of onset |__|__| □ am / □ pm

11. Signs

	Yes	No	Unsp			Yes	No	Unsp
Fever	□	□	□	1	Abdominal cramps	□	□	□
Max: |__|__| °C				2	Headache	□	□	□
Nausea	□	□	□	3	Muscle pain	□	□	□
Vomiting	□	□	□	4	Cellulitis	□	□	□
Diarrhea	□	□	□	5	Bullae	□	□	□
Nb / day: |__|__|				6	Shock	□	□	□
Visible blood in stools	□	□	□	7	Other	□	□	□

12. Hospital, case management

Admitted □ Yes □ No □ Unsp
Hospital name |_____|
Date of admission |__|__|-|__|__|-|__|__|__|__|
Antibiotic

13. Issue

	Yes	No	Unsp			Yes	No	Unsp
Death	□	□	□	1	Sequelae	□	□	□
Date of death |__|__|-|__|__|-|__|__|__|__|				2	Specify:			

14. Pre-existing conditions

	Yes	No	Unsp			Yes	No	Unsp
Alcoholism	□	□	□	1	Immunodeficiency	□	□	□
Diabetes	□	□	□	2	Liver disease	□	□	□
Peptic ulcer	□	□	□	3	Malignancy	□	□	□
Gastric surgery	□	□	□	4	Renal disease	□	□	□
Heart disease	□	□	□	5	Other	□	□	□
Hematologic disease	□	□	□	6				

15. Previous medications

	Yes	No	Unsp			Yes	No	Unsp
Antibiotics	□	□	□	1	Immunosppressants	□	□	□
Chemotherapy	□	□	□	2	Antiacids	□	□	□
Radiotherapy	□	□	□	3	H2 blocker/ulcer medication	□	□	□
Systemic steroids	□	□	□	4				

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program
Vibrio surveillance report

LEB-A00-|__|__|__|__|-|__|__|

IV. EPIDEMIOLOGICAL INFORMATION

16. Outbreak: did the case occur as part of an outbreak?

Place	Yes	No	Unsp	Nb
Family	☐	☐	☐	|__|__|
Working place	☐	☐	☐	|__|__|
Informal setting	☐	☐	☐	|__|__|
Other, specify:	☐	☐	☐	|__|__|

17. Travel in the 7 days prior to onset

Country	Date entered	Date left
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|

18. Consumption of seafood in the 7 days prior to onset

	Consumption			Eaten raw		
	Yes	No	Unsp	Yes	No	Unsp
Clams / Praire / بطلينوس	☐	☐	☐	☐	☐	☐
Mussels / Moule / بلح بحري	☐	☐	☐	☐	☐	☐
Oysters / Huitre / محار	☐	☐	☐	☐	☐	☐
Crab / Crabe / سلطعون	☐	☐	☐	☐	☐	☐
Lobster / Homard / الـ بحري سرطان جراد او	☐	☐	☐	☐	☐	☐
Shrimp / Crevettes / قريدس	☐	☐	☐	☐	☐	☐
Crawfish / Ecrevisse / اربـ يان الـ بحري ، جراد	☐	☐	☐	☐	☐	☐
Fish / Poisson / سمك	☐	☐	☐	☐	☐	☐
Other, specify	☐	☐	☐	☐	☐	☐

19. Source of drinking water

	Yes	No	Unsp
Public water system	☐	☐	☐
Shared well	☐	☐	☐
Public well	☐	☐	☐
Individual well	☐	☐	☐

	Yes	No	Unsp
Bottled water	☐	☐	☐
Cittern water	☐	☐	☐
Other	☐	☐	☐

20. Sanitation infrastructure

	Yes	No	Unsp
Sewage network	☐	☐	☐
Septic tanks	☐	☐	☐

	Yes	No	Unsp
Contact with sewage	☐	☐	☐
Contact with human excreta	☐	☐	☐

21. Personal risk

	Yes	No	Unsp
Foreign travel	☐	☐	☐
Street-vended food	☐	☐	☐
Other person(s) with cholera or cholera-like illness	☐	☐	☐
Contact with recent foreign arrival (immigrant, refugee, visitor …)	☐	☐	☐
Refugees setting	☐	☐	☐

22. Exposed skin in the 7 days prior to illness onset

	Yes	No	Unsp	Where
Exposed skin in the 7 days prior to illness onset				
Fresh water	☐	☐	☐	
Salt water	☐	☐	☐	
Water, other:	☐	☐	☐	
Exposure to other marine / freshwater life:	☐	☐	☐	
Drippings from raw or live seafood	☐	☐	☐	
Handling/cleaning seafood	☐	☐	☐	
Swimming /diving/wading	☐	☐	☐	
Walking on beach/shore/	☐	☐	☐	
Fell on rocks/shells	☐	☐	☐	
Boating/skiing/surfing	☐	☐	☐	
Biting/stung	☐	☐	☐	
Wound(s):				
Presence of wound	☐	☐	☐	
New wound	☐	☐	☐	
Old wound	☐	☐	☐	
Specify location:				

23. Family and household members

Name	Relation	Year of birth	Nationality	Ill	Date of illness	Notes
				☐		
				☐		
				☐		
				☐		
				☐		
				☐		
				☐		
				☐		
				☐		
				☐		

V. Patient information

Date of notification |__|__|-|__|__|-|__|__|__|__|
Date of investigation |__|__|-|__|__|-|__|__|__|__|
Date of specimen sent to reference lab |__|__|-|__|__|-|__|__|__|__|
Investigator |_____|

إستمارة تقصي حول حالات الاسهال المائي الحاد

البلدة	القضاء	اسم المحقق	التاريخ

#	المريض						العوارض			الفحوص			العلاج	
	الاسم	الجنسية	العمر	الجنس	العنوان	الهاتف	تاريخ بدء العوارض	العوارض	تطور المرض	تاريخ جمع عينة البراز	نتيجة الزرع	فحوص اخرى	ORS	استشفاء
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						
				☐ ذكر ☐ انثى				☐ حمى ☐ غثيان ☐ قيء ☐ تجفاف						

Notes

Notes

5

Surveillance Standard Operating Procedure: Diphtheria

Version 1
MOPH circular no. 63
(23rd Jan 2015)

Contents

I. Purpose

The purpose of this Standard Operating Procedure (SOP) is to assist the Epidemiological Surveillance program in verifying and investigation any alert/outbreak of diphtheria.

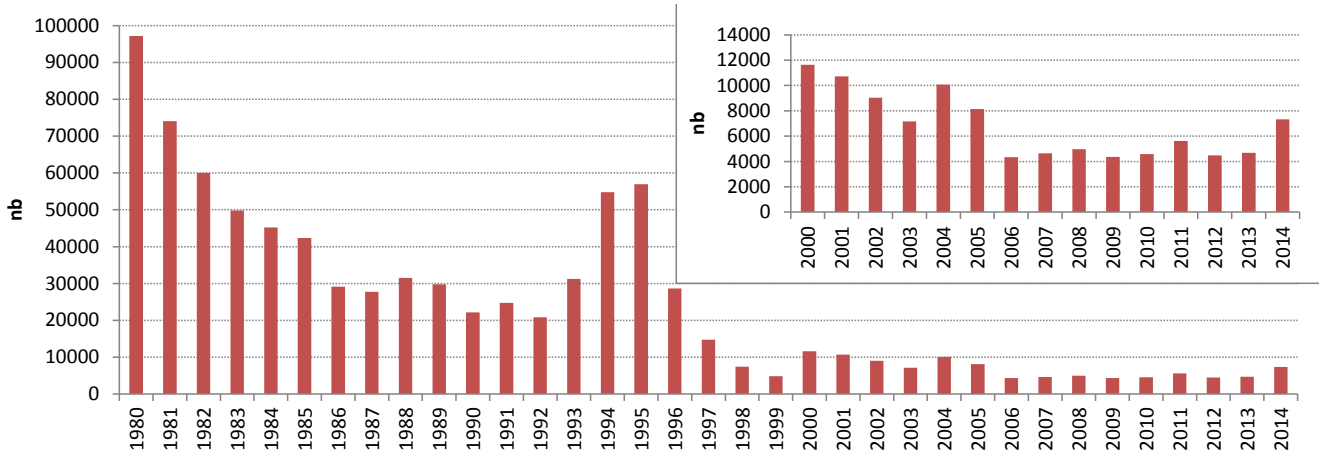
II. Generalities

Diphtheria	
Agent	- Bacteria: Corynebacterium diphtheria (4 biotypes: gravis, mitis intermedius and belfani), and Corynebacterium ulcerans - Toxin producer (DTX)
Incubation	2-4 days (1-10 days)
Period of communicability	Usually 2 weeks
Reservoir	- For Corynebacterium diphtheria: humans - For Corynebacteirum ulcerans: bovins
Modes of transmission	- For Corynebacterium diphtheria: person-to person via droplets (respiratory secretions), skin lesions or fomites; and rarely through indirect contact - For Corynebacterium ulcerans: through contaminated raw milk
Clinical presentation	- Anterior nasal, pharyngeal and tonsillar (pseudo-membranes), laryngeal (stridor) forms - Cutaneous diphtheria (vesicles and later ulcers) - May be asymptomatic - Main complications: myocarditis, neuropathy from mild weakness to total paralysis
Worldwide	Worldwide. Major outbreaks: URSS and Mongolia (1990), Ecuador (1993-1994)
Lebanon	Last local case in 2002
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease-based approach
Collect data about case	Clinical findings (signs), complications, outcomes, vaccination status...
Collect specimen from case	- Nose/throat swab - Skin swab for cutaneous form
Collect data about contacts	- Search for similar cases among contacts - Vaccination status profile for close contacts - Search of food handler or KG/school staff..
Collect specimen from contacts	Nose/throat swab from close contacts: search for carrier
Test	- Bacteriological culture in special media (blood and tellurite agar) - If positive: identify biotype and toxigenicity (toxinproducing) by Elek test or PCR
Laboratories	RHUH
Outbreak level	At least 1 confirmed case
Notification to WHO	To notify confirmed cases to WHO if outbreak, case with travel history or case during humanitarian crisis

Control	
Primary prevention	Active immunization (three primary doses and booster at 18 months to 4 years; booster with an adult formulation at 11-18 years of age; Td every 10 years)
Case management	- Diphtheria antitoxin (sensitivity testing before administering the antitoxin) - Antibiotics: procaine penicillin (IV), erythromycin, or oral penicillin V.
Isolation	- Contact and droplet precautions for 14 days while on antibiotherapy; or up to two negative cultures 24 hours apart at least 24 hours after cessation of antibiotherapy - Disinfection of the patient belongings
Contact prevention	- Single dose of benzathin penicillin or 7-10 days course of erythromycin - Previously immunized: booster dose if more than five years elapsed from the last booster - Unimmunized: a primary series should be initiated
Contact quarantine	- Surveillance for seven days - Those who are in contact with un-immunized children or handle food should be excluded from work.
Mass prevention	Active immunization
Diphtheria case definition (MOPH circular no. 107 dated on the 6th September 2006)	
Confirmed case	- Probable case confirmed by laboratory with of Corynebacterium diphteria isolation from a clinical specimen - Or probable case epidmiologically linked to a laboratory-confirmed case
Carrier	Presence of Corynebacterium diphteria in nasopharynx with no symptoms
Probable case	- Case presenting with laryngitis, pharyngitis or tonsillitis with presence of adherent membranes of tonsils or nasopharynx
Forms	
Reporting	Standard reporting form
Investigation	- For case: diphtheria investigation form (MOPH circular no. 190 dated on the 2nd November 2007) - For contacts: diphtheria contacts investigation form (MOPH circular no. 192 dated on the 2nd November 2007)
National figures	
The last confirmed diphtheria case was reported in 2002, in a Lebanese pupil in the North.	

International figures

Figure 1: Reported diphtheria in the world, 1980-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance are to:

- Detect and confirm any case of diphtheria
- Conduct needed contact tracing to identify secondary cases
- Investigate outbreak and identify risk factors
- Document containment.

IV. Alert and outbreak definitions

One suspected case of diphtheria is considered an **alert** and necessitates a investigation.

One confirmed case of diphtheria is considered an **outbreak**.

V. Procedural steps

The steps described below are recommended for investigation of any alert/outbreak of diphtheria. The steps are summarized in figure (3).

Step 1: Verify alert

In case of suspected case, the Esumoh caza team contacts the treating physician. Why does he/she suspecting diphtheria? Is there a laboratory confirmation? Is the patient status critical?

Upon verification, the Esumoh caza team informs the mohafaza and central teams immediately.

Step 2: Collect data

The Esumoh mohafaza/central team conducts field visits where patient is. An investigation form is filled via patient/parents and physician interview (Annex 1).

The investigation form includes the following information:

- Demography
- Illness: onset, lesions description …
- Vaccination status
- Exposure: occupation…

Step 3: Confirm the case

Diphtheria needs to be laboratory confirmed.

a) Detection / Isolation of C. diphtheria

Various specimens can be collected. They are summarized in table (1).
Clinical specimens for bacterial isolation can be collected from patients or close contacts.
For bacterial culture, it is needed to have the specimens collected before treatment. Specific swabs are used with specific media for bacteria. At the laboratory, the culture needs specific media (ex: containing tellurite...)

Table 1: Needed specimens and tests for diphtheria confirmation

Specimens	Tests	Laboratory	Notes
Nasal swab, nasopharyngeal swab, throat swab, membranes	Culture	Clinical laboratory	- To collect before starting antibiotics - Swab is preserved in adequate media for bacteria growth - Need of specific media containing tellurite
Nasal and throat swabs, pieces of membranes, biopsy	PCR	Reference laboratory	To detect the presence of C. diphtheria even after starting antibiotics
Serum	Serology (antibodies to diphtheria toxin)	Reference laboratory	Informs on the level of immunity - <0.01 IU/ml: immunity is absent - 0.01-0.09 IU/ml: limited immunity
C. diphtheria isolate	Toxigenicity testing: Elek test	Reference laboratory	To confirm the pathogenicity of the strain

The PCR detects the presence of C. diphtheria even after starting antibiotics.

The detection needs to identify the biotype of C. diphtheria: intermedius, belfanti, mitis, or gravis.

b) Toxigenicity testing

Not all C. diphtheria strains are toxic. There is need to confirm the toxigenicity of isolated bacteria. Specific test is performed, the Elek test.

Step 4: Confirm outbreak

Based on the available clinical, epidemiological and laboratory results, the case is classified (Figure 2). The outbreak is declared if meeting the needed criteria.

If the outbreak is confirmed, the Esumoh informs the concerned units at the MOPH. The MOPH informs the concerned local health professionals. The WHO is informed if the outbreak mets the IHR criteria.

Step 5: Investigate close contacts

a) Data collection

All close contacts are identified:
- Household
- Neighborhood
- Work place
- Study place.

The needed information for the contacts includes:
- Identification
- Age
- Demography
- Relation with the case
- Vaccination status
- Presence of symptoms
- Collection of specimen: date of collection and results.

This list is needed to be shared with the response team in charge to ensure antibioprophylaxis and vaccination. A specific line listing is used (Annex 2).

b) Specimen collection

From close contacts in particular the household and classroom, clinical specimens are collected: nasal swab, nasopharyngeal swab or throat swab for bacterial culture.

Step 6: Investigate source of infection

If possible, the source of infection is searched.

a) Time

The source is found in the 10 days prior to illness onset.

b) Person

The patient is asked on previous contacts with persons with respiratory illness. The person may not be identified.

For each suspected person, the following information is collected:
- Name
- Contact details
- Relationship with the patient
- Diagnosis (if known)
- Place and time of exposure
- Case management: medical consultation, hospital admission, laboratory testing…

d) Place

The patient is asked on previous places visited within 10 days prior to illness onset.
Specific places are listed:
- Countries: travel history
- Within the country:
  - Health facilities
  - Refugees settings
  - Schools
  - Social events…

For each place, the following information is collected:
- Type of visit
- Date and time
- Presence of persons with respiratory symptoms.

Step 7: Describe cases

Cases are described by:
- Time: day, week and year of onset
- Place: place of residence, place of work, place of school, in term of locality, caza and mohafaza. Also travel history is described.
- Person: age group, gender, nationality, vaccination status …
- Disease: classification, outcome…
- Laboratory results: from patient and contacts.

Step 8: Search for additional cases

Additional cases are searched via:
- Enhanced passive surveillance
- Including diphtheria in the active surveillance for hospitals
- Search among the contacts of the patient
- Community-based surveillance.

Step 9: Enhance monitoring

During the outbreak, daily monitoring of cases is done by time, place, person and disease. A weekly report is issued and shared with partners.

Step 10: Write summary report

Once the outbreak was confined, the Esumoh central staff prepares a summary report describing the outbreak in term of time, place and person, and outcomes.

Figure 2: Diphtheria case classification

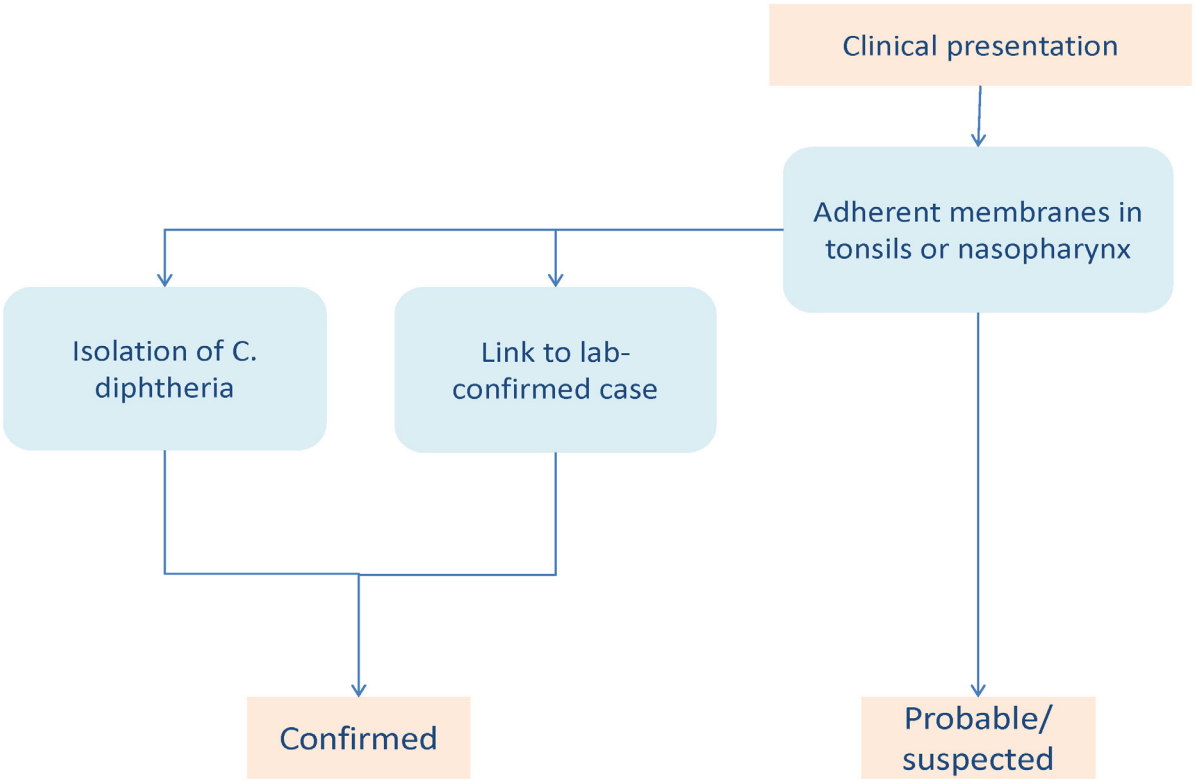
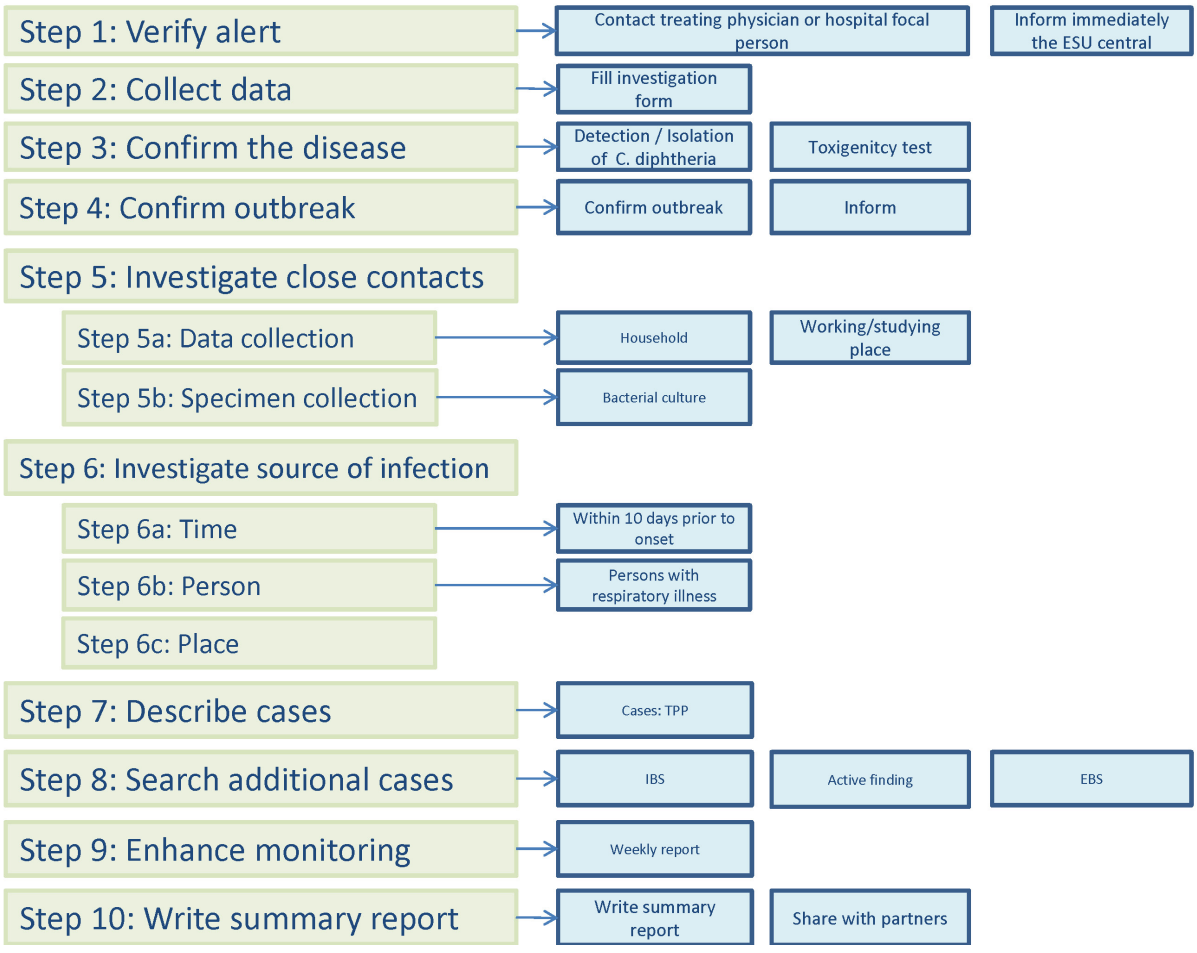


Figure 3: Diphtheria investigation steps



Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Diphtheria surveillance report: The case
LEB-A36-|__|__|__|__|-|__|__|

1 *Patient ID*

Patient ID LEB-A36-|__|__|__|__|-|__|__|
Patient initial |__|__|-|__|__|
Gender ☐Male ☐Female
Date of birth |__|__|dd-|__|__|mm-|__|__|__|__|yyyy
Age |__|__|years-|__|__|months

2 *Care Provider*

Hospital name |_____|
Clinician name |_____|
Clinician Order No. |__|__|-|__|__|__|__|
Clinician Tel |__|__|-|__|__|__|__|__|__|__|

3 *Patient Residence*

Address: Mohafazat |_____|
Address: Caza |_____|
Address: Locality |_____|
Tel |__|__|-|__|__|__|__|__|__|__|

4 *Patient Occupation*

Occupation |_____|
Institution |_____|
Institution type ☐Educational ☐Health care ☐Day care
Address: Mohafazat |_____|
Address: Caza |_____|
Address: Locality |_____|
Tel |__|__|-|__|__|__|__|__|__|__|

5 *Patient Vaccination Status*

Vaccination documentation ☐Health document ☐Vaccination card ☐No document

	Y/N			*Date*	*Dose type*	*Where*
	Yes	*No*	*Unsp*			
Primary immunization:						
First	☐	☐	☐			
Second	☐	☐	☐			
Third	☐	☐	☐			
Boosters:						
First	☐	☐	☐			
Second	☐	☐	☐			

Diphtheria. Agent: toxins produced by Corynebacterium diphtheriae. Reservoir: Humans. Transmission: contact with a patient or a carrier; rarely indirect through contact with articles soiled with discharges from lesions of infected patient; raw milk. Incubation: 2-5 days. Communicability: variable, until bacilli disappeared from discharges and lesions, usually 2 weeks, seldom 4 weeks.

Diphtheria surveillance report: The case
LEB-A36-|__|__|__|__|-|__|__|

6 *Preliminary History*

Onset date of symptoms |__|__|-|__|__|-|__|__|__|__|
Date first seen by doctor |__|__|-|__|__|-|__|__|__|__|

Was patient hospitalized? ☐Yes ☐No ☐Unsp
If yes, date hospitalized |__|__|-|__|__|-|__|__|__|__|

Has the patient been admitted to intensive care? ☐Yes ☐No ☐Unsp
If yes, date admitted |__|__|-|__|__|-|__|__|__|__|

Has the patient been placed on a ventilator? ☐Yes ☐No ☐Unsp
If yes, date intubated |__|__|-|__|__|-|__|__|__|__|

7 *Clinical History*

Briefly describe history and general symptom progression

8 *Specific Symptom History*

Fever	☐Yes	☐No	☐Unsp
Sore throat	☐Yes	☐No	☐Unsp
Difficulty swallowing	☐Yes	☐No	☐Unsp
Change in voice	☐Yes	☐No	☐Unsp
Shortness of breath	☐Yes	☐No	☐Unsp
Weakness	☐Yes	☐No	☐Unsp
Fatigue	☐Yes	☐No	☐Unsp
Other	☐Yes	☐No	☐Unsp

Paralysis ☐Yes ☐No ☐Unsp
If yes, describe paralysis

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Diphtheria surveillance report: The case
LEB-A36-|__|__|__|__|-|__|__|

9 *Vital Signs on Admission*

Temperature	|__|__|.|__|°C
Blood pressure	|__|__|__|/|__|__|__| mmHg
Heart rate	|__|__|__|/mn
Respiratory rate	|__|__|/mn

10 *Physical Examination Findings*

Membrane present	☐Yes	☐No	☐Unsp
If yes, specify site: Tonsils	☐Yes	☐No	☐Unsp
Soft palate	☐Yes	☐No	☐Unsp
Hard palate	☐Yes	☐No	☐Unsp
Larynx	☐Yes	☐No	☐Unsp
Nares	☐Yes	☐No	☐Unsp
Nasopharynx	☐Yes	☐No	☐Unsp
Conjunctiva	☐Yes	☐No	☐Unsp
Skin	☐Yes	☐No	☐Unsp
Neck edema	☐Yes	☐No	☐Unsp
If yes, specify: Bilaterality	☐Bilateral	☐Left	☐Right
Extension	☐Submandibular only ☐Below clavicle	☐Midway to clavicle ☐To clavicle	☐Unsp
Stridor	☐Yes	☐No	☐Unsp
Wheezing	☐Yes	☐No	☐Unsp
Palatal weakness	☐Yes	☐No	☐Unsp

11 *Complications*

Airway obstruction	☐Yes	☐No	☐Unsp
Myocarditis	☐Yes	☐No	☐Unsp
If yes, specify: EKG abnormalities	☐Yes	☐No	☐Unsp
Polyneuritis	☐Yes	☐No	☐Unsp
If yes, specify: Lower limbs	☐Yes	☐No	☐Unsp
Upper limbs	☐Yes	☐No	☐Unsp
Troncus	☐Yes	☐No	☐Unsp
Respiratory command	☐Yes	☐No	☐Unsp
Other	☐Yes	☐No	☐Unsp

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Diphtheria surveillance report: The case
LEB-A36-|__|__|__|__|-|__|__|

12 Laboratory Results

a) **Was specimen for diphtheria culture obtained?** ☐Yes ☐No ☐Unsp
If yes, Date |__|__|-|__|__|-|__|__|__|__|
Specimen site and type |_____|
Local laboratory |_____|
Culture result ☐Positive ☐Negative ☐Unsp

b) **If positive culture:**

Biotype	☐Mitis	☐Gravis	☐Intermedious
	☐Belfanti	☐Unsp	
Toxigenicity testing result	☐Yes	☐No	☐Not done

c) **Was specimen sent to reference laboratory?** ☐Yes ☐No ☐Unsp
If yes, reference lab |_____|
Date |__|__|-|__|__|-|__|__|__|__|
Specimen type ☐Isolate ☐Clinical sawb ☐Membrane
Specimen details |_____|

Confirmation	☐Yes	☐No	☐Unsp
Biotype	☐Mitis	☐Gravis	☐Intermedious
	☐Belfanti	☐Unsp	
Toxigenicity testing result	☐Yes	☐No	☐Unsp
PCR	☐Yes	☐No	☐Unsp

13 Treatment

a) **ATB**
Date starting ATB |__|__|-|__|__|-|__|__|__|__|
ATB used
☐Erythromycin
☐Penicillin
☐Amoxicillin/Amipicilin/Augmentin/Ceclor/Cefixime
☐Clarithromycin
☐Cotrimoxazole
☐Tetracycline/Doxycyline
☐Other, specify:

b) **Was Antitoxin given?** ☐Yes ☐No ☐Unsp
If yes, Date |__|__|-|__|__|-|__|__|__|__|
Quantity |_____|

c) **Was the patient isolated?** ☐Yes ☐No ☐Unsp
If yes, Date starting isolation |__|__|-|__|__|-|__|__|__|__|

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Diphtheria surveillance report: The case

LEB-A36-|__|__|__|__|-|__|__|

14 Exposure risk

a) Has the patient traveled away from Lebanon in the last month? ☐Yes ☐No ☐Unsp

If yes, specify:

<table>
<tr><th>Country</th><th>From</th><th>To</th></tr>
<tr><td></td><td>|_|_|-|_|_|-|_|_|_|_|</td><td>|_|_|-|_|_|-|_|_|_|_|</td></tr>
<tr><td></td><td>|_|_|-|_|_|-|_|_|_|_|</td><td>|_|_|-|_|_|-|_|_|_|_|</td></tr>
<tr><td></td><td>|_|_|-|_|_|-|_|_|_|_|</td><td>|_|_|-|_|_|-|_|_|_|_|</td></tr>
</table>

b) Has the patient traveled in the country (different mohafazats) in the last month? ☐Yes ☐No ☐Unsp

If yes, specify:

<table>
<tr><th>Mohafazat (caza)</th><th>From</th><th>To</th></tr>
<tr><td></td><td>|_|_|-|_|_|-|_|_|_|_|</td><td>|_|_|-|_|_|-|_|_|_|_|</td></tr>
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<tr><td></td><td>|_|_|-|_|_|-|_|_|_|_|</td><td>|_|_|-|_|_|-|_|_|_|_|</td></tr>
</table>

c) Has the patient been a contact of a known diphtheria case ? ☐Yes ☐No ☐Unsp

If yes, specify, ID of the known case |________________________________|

d) Has the patient been a contact of a known diphtheria carrier or contact? ☐Yes ☐No ☐Unsp

If yes, specify, carrier name |________________________________|

Related to known diphtheria case ID |________________________________|

e) Has the patient been in the last month, a contact of the following? ☐Yes ☐No ☐Unsp

Similar case	☐Yes	☐No	☐Unsp
Foreign case	☐Yes	☐No	☐Unsp
Health care center / hospital	☐Yes	☐No	☐Unsp

15 Summary

Differential Diagnosis by Clinician	

Patient Outcome/Status ☐Still admitted ☐Discharged ☐Died, date:

Classification: ☐Confirmed ☐Probable

Diphtheria. Agent: toxins produced by Corynebacterium diphtheriae. Reservoir: Humans. Transmission: contact with a patient or a carrier; rarely indirect through contact with articles soiled with discharges from lesions of infected patient; raw milk. Incubation: 2-5 days. Communicability: variable, until bacilli disappeared from discharges and lesions, usually 2 weeks, seldom 4 weeks.

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Diphtheria surveillance report: The close contacts
LEB-A36-|__|__|__|__|-|__|__|

#	Name	Date of birth	Gender	Relation	Immunization			Symptoms	Clinical swab			ATB Prophylaxy	Diphth. Toxoid
					Document	Nb doses	Year last dose		Done	Date	Result		
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No
			☐ Male ☐ Female		☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No		☐Pos. ☐ Neg.	☐Yes, |__| ☐ No	☐ Yes ☐ No

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Diphtheria. Agent: toxins produced by Corynebacterium diphtheriae. Reservoir: Humans. Transmission: contact with a patient or a carrier; rarely indirect through contact with articles soiled with discharges from lesions of infected patient; raw milk. Incubation: 2-5 days. Communicability: variable, until bacilli disappeared from discharges and lesions, usually 2 weeks, seldom 4 weeks.

ATB: 1 Erythromycin; 2 Penicillin; 3 Amoxicillin/Ampicillin/Augmentin/Ceclor/Cefixime; 4 Clarithromycin/azithromycin; 5 Cotrimoxazole; 6 Tetracyclin; 7 Other

MOPH Circular no. 192 dated on the 2nd November 2008

Notes

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Surveillance Standard Operating Procedure: Food poisoning

Version 1

MOPH circular no. 33

(19th Jan 2015)

Contents

I. Purpose

The purpose for this SOP is to highlight the major steps to be undertaken by the epidemiological surveillance program in case of a food poisoning alert or outbreak.

II. Generalities

Food poisoning	
Agents	Several agents: 1) Bacteria: - Bacillus Cereus, toxin producing, spore forming - Brucella - Clostridium botulinum, spore forming, toxin producer - Campylobacter jejuni and Campylobacter coli - Clostridium perfringes, spore-forming, toxin producing - Escherichia coli - Listeria monocytogenes - Salmonella typhi - Non-typhi Salmonella - Shigella dysenteriae, S. flexneri, S. boydii, S. sonnei - Staplyococcus aureus, toxin producer - Vibrio Cholera - Vibrio parahaemolyticus - Vibrio vulnificus - Yersinia enterocolitica… 2) Virus: - Adenovirus, coronavirus, rotavirus, parvovirus, calicivirus, astro virus… - Poliovirus and enterovirus - Viral hepatitis A - Viral hepatitis E... 3) Parasites: - Entamoeba histolytica - Giardia intestinalis - Toxoplasma gondii - Trichinella spiralis... 4) Natural toxins: - Scomboid fish poisoning: following the consumption of fish of the family Scombroidea or Scomberesocidae (tuna, mackerel, skipjack, bonito) containing high levels of free histamine. This occur when the fish undergoes bacterial decomposition after capture. - Paralytic shellfish poisoning: caused by the presence of saxitoxins and gonyautoxins in the shellfish (Alexandrium sp., and other dinoflagelates) - Tetrodotoxin poisoning: caused by the tetrodotoxin, non-protein neurotoxin concentrated in the skin and viscera of puffer fish, porcupine fish, ocean sunfish… - Mushroom toxins - Plant toxins…

	5) Chemicals - Pesticides (Organophosphates, antimony...) - Toxic metals (cadmium, copper, lead, mercury, tin...) - Polychlorinated biphenyls - Fluoride - Zinc - Nitrites (food preservatives) - Sodium hydroxide - Monosodium glutamate… The information below will present the information related to Bacillus cereus, Clostridium botulinum, Clostridium perfringes, Staplycoccus aureus, Vibrio parahaemolyticus, Vibrio vulnificus, Yersinia enterocolitica, Adenovirus, Norovirus, Trichinella spiralis, Toxoplasma gondii, Tetrodotoxin poisoning, Histamine poisoning / scombroid, and Paralytic shellfish. The other agents were exposed in other sections: Brucella, Campylobacter jejuni, Campylobacter coli, Cholera, Escherichia coli, Listeria monocytogenes, Salmonella, Shigella, Coronavirus, viral hepatitis A, viral hepatitis E, Rotavirus, Poliovirus, Entamoeba histolytica, and Giardia intestinalis.
Incubation period	The incubation varies with the agent.

Agent	Incubation period
Bacteria	
Bacillus cereus	24-36 hours
Clostridium botulinum	12-36 hours (several hours to 8 days)
Clostridium perfringes	8-24 hours
Staplyococcus aureus	2-6 hours
Vibrio parahaemolyticus	9-25 hours, up to 3 days
Vibrio vulnificus	12 hours-3 days
Yersinia enterocolitica	24-36 hours
Virus	
Adenovirus	1-10 days
Norovirus	12-48 hours
Parasites	
Trichinella spiralis	8-15 days (5-45 days)
Toxoplasma gondii	5-23 days
Chemicals and toxins	
Tetrodotoxin poisoning	< 1 hour
Histamine poisoning	Minutes to few hours
Paralytic shellfish	< 1 hour
Organophosphates	Within minutes to hours

<table>
<tr><td>Period of communicability</td><td>The period of communicability varies with the agent.

<table>
<tr><th>Agent</th><th>Period of communicability</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Bacillus Cereus</td><td>No person-to-person transmission</td></tr>
<tr><td>Clostridium botulinum</td><td>No person-to-person transmission</td></tr>
<tr><td>Clostridium perfringes</td><td>No person-to-person transmission</td></tr>
<tr><td>Staplyococcus aureus</td><td>No person-to-person transmission</td></tr>
<tr><td>Vibrio parahaemolyticus</td><td>Usually no person-to-person transmission</td></tr>
<tr><td>Vibrio vulnificus</td><td>No person-to-person transmission</td></tr>
<tr><td>Yersinia enterocolitica</td><td>Bacteria excreted in feces for 2-3 weeks</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Norovirus</td><td rowspan="2">As long as the virus is excreted, in particular during the acute phase</td></tr>
<tr><td>Adenovirus</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Trichinella spiralis</td><td>No person-to-person transmission</td></tr>
<tr><td>Toxoplasma gondii</td><td>No person-to-person transmission</td></tr>
<tr><td colspan="2">Chemicals and toxins</td></tr>
<tr><td>Tetrodotoxin poisoning</td><td>No person-to-person transmission</td></tr>
<tr><td>Histamine poisoning</td><td>No person-to-person transmission</td></tr>
<tr><td>Paralytic shellfish</td><td>No person-to-person transmission</td></tr>
<tr><td>Organophosphates</td><td>No person-to-person transmission</td></tr>
</table></td></tr>
<tr><td>Reservoir</td><td>The reservoir vary with the agent.

<table>
<tr><th>Agent</th><th>Reservoir</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Bacillus Cereus</td><td>Widely distributed in nature (soil)</td></tr>
<tr><td>Clostridium botulinum</td><td>Soil, marine, freshwater sediments, intestinal tracts of fishes, animals, birds, and insects</td></tr>
<tr><td>Clostridium perfringes</td><td>Soil, sewage, dust, feces of animals and humans, animal-origin feedstuffs</td></tr>
<tr><td>Staplyococcus aureus</td><td>Humans (skin, nose, throat)</td></tr>
<tr><td>Vibrio parahaemolyticus</td><td>Coastal seawater, estuarine brackish waters, marine fish and shellfish</td></tr>
<tr><td>Vibrio vulnificus</td><td>Coastal and estuarine waters</td></tr>
<tr><td>Yersinia enterocolitica</td><td>Animals</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><th colspan="2">Virus</th></tr>
<tr><td>Adenovirus</td><td>Humans</td></tr>
<tr><td>Norovirus (Norwalk-like virus)</td><td>Humans</td></tr>
<tr><th colspan="2">Parasites</th></tr>
<tr><td>Trichinella spiralis</td><td>Swine, dogs, cats, horses, bears</td></tr>
<tr><td>Toxoplasma gondii</td><td>- Cats and other felines
- Intermediate hosts: sheep, goats, rodents, pigs, cattle, and birds</td></tr>
<tr><th colspan="2">Chemicals and toxins</th></tr>
<tr><td>Tetrodotoxin poisoning</td><td>Puffer fish, porcupine fish, ocean sunfish</td></tr>
<tr><td>Histamine poisoning</td><td>Fish of the family Scombroidea or Scomberesocidae (tuna, mackerel, skipjack, bonito)</td></tr>
<tr><td>Paralytic shellfish</td><td>Shellfish (Alexandrium sp., and other dinoflagelates)</td></tr>
<tr><td>Organophosphates</td><td>- Accidental: Food sprayed with insecticides containing organophosphates
- Intentional poisoning</td></tr>
</table>
</td></tr>
<tr><td>Modes of transmission</td><td>The modes of transmission are mainly by consumption of contaminated food or toxic food.
<table>
<tr><th>Agent</th><th>Modes of transmission</th></tr>
<tr><th colspan="2">Bacteria</th></tr>
<tr><td>Bacillus Cereus</td><td>Consumption of contaminated food (usually stored at ambient temperature after cooking) as: fried rice, spices, dried foods, milk, dairy products, vegetable dishes, sauces…</td></tr>
<tr><td>Clostridium botulinum</td><td>- Ingestion of toxin pre-formed in food stored in anaerobic conditions as: vegetables, condiments, fish, meat…
- Honey may transmit the bacteria.</td></tr>
<tr><td>Clostridium perfringes</td><td>Ingestion of contaminated food inadequately cooled as meat and poultry</td></tr>
<tr><td>Staplyococcus aureus</td><td>Consumption of food containing the toxin, and contaminated by food handlers as ham, chicken, egg salads, creams, ice creams, cheese…</td></tr>
<tr><td>Vibrio parahaemolyticus</td><td>Consumption of raw or undercooked fish or fishery products, or foods subject to cross-contamination from raw fish</td></tr>
<tr><td>Vibrio vulnificus</td><td>Consumption of seafood and raw oysters</td></tr>
<tr><td>Yersinia enterocolitica</td><td>Consumption of contaminated food: pork products, milk products…</td></tr>
</table>
</td></tr>
</table>

Virus	
Adenovirus	- Person-to-person transmission: fecaloral route - Ingestion of contaminated food: by foodhandler or harvested from contaminated water (seafood and vegetables) - Ingestion of contaminated water or drinks
Norovirus (Norwalk-like virus)	
Parasites	
Trichinella spiralis	Consumption of raw or undercooked infected animal
Toxoplasma gondii	Ingestion of occysts: - By playing/ handling with cats - By consumption of raw / undercooked meat - By consumption of food/water contaminated by feline feces
Chemicals and toxins	
Tetrodotoxin poisoning	Ingestion of puffer fish, porcupine fish, ocean sunfish
Histamine poisoning	Ingestion of shellfish
Paralytic shellfish	Ingestion of fish of the family Scombroidea or Scomberesocidae
Organophosphates	Consumption of food sprayed with organophosphates

Clinical presentation

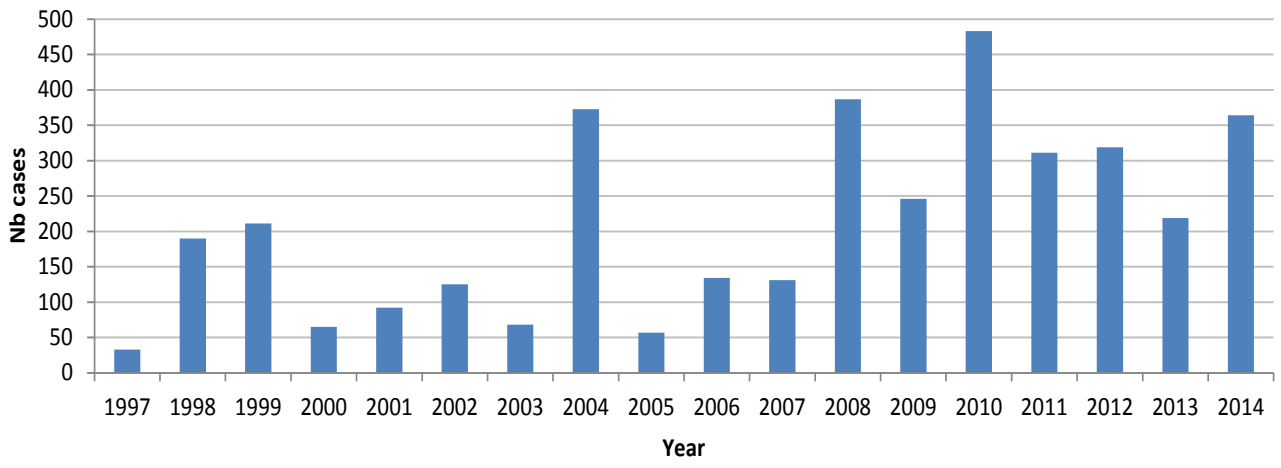
The clinical presentation includes gastro-intestinal symptoms, neurological symptoms, respiratory illness, general symptoms…

Agent	Clinical presentation
Bacteria	
Bacillus Cereus	Gastro-enteritis
Clostridium botulinum	Paralytic manifestations: ocular disturbance, dry mouth, difficulty in swallowing and speaking, limb paralysis, respiratory paralysis
Clostridium perfringes	Gastro-enteritis
Staplyococcus aureus	Upper gastro-intestinal tract symptoms with no fever
Vibrio para-haemolyticus	Gastro-enteritis
Vibrio vulnificus	- Gastro-enteritis with bloody stool - Complications: septicaemia in persons with chronic liver diseases or immune-suppression
Yersinia enterocolitica	Gastro-enteritis
Virus	
Adenovirus	Fever, vomiting, watery non-inflammatory diarrhea
Norovirus (Norwalk-like virus)	Watery diarrhea, vomiting, nausea
Parasites	
Trichinella spiralis	- Symptoms depend on the number of larvae ingested and location - May include facial oedema and hypereosinophilia
Toxoplasma gondii	- Acute lympho-adenopathy - May be asymptomatic - Complications during pregnancy: abortion, congenital chorioretinitis, congenital brain damage - Complications in immune-compromised persons: cerebritis, chorioretinitis, pneumonia, myocarditis

<table>
<tr><td></td><td>
<table>
<tr><th colspan="2">Chemicals and toxins</th></tr>
<tr><td>Tetrodotoxin poisoning</td><td>- Neurological manifestations: paresthaesias, ataxia, para-lysis, death
- Case fatality: 60%</td></tr>
<tr><td>Histamine poisoning</td><td>Tingling and burning sensations around the mouth, facial flushing, sweating, nausea, vomiting, headache, palpitations, dizziness, rash...</td></tr>
<tr><td>Paralytic shellfish</td><td>Neurological manifestations: paresthaesias of the mouth and extremities with gastro-intestinal symptoms</td></tr>
<tr><td>Organophos-phates</td><td>Cholinergic syndrome: excess respiratory and oral secretions, diarrhea and vomiting, diaphoresis, convulsions, altered mental status, miosis, bradycardia, and generalized weakness that can progress to paralysis, respiratory arrest and death</td></tr>
</table>
</td></tr>
<tr><td>Worldwide</td><td>- Most of the agents are found worldwide.
- Tedrodotoxin poisoning is usually known in Japan: in the past years, cases were also observed in the Middle East.</td></tr>
<tr><td>Lebanon</td><td>In the past 10 years, investigated food poisoning episodes showed the following agents: Escherichia coli, non-typhoid Salmonella, Shigella, Staplyococcus aureus, Trichinella spiralis, tetrodotoxin poisoning, Organophosphates...</td></tr>
<tr><td>Control objective</td><td>Control</td></tr>
<tr><th colspan="2">Surveillance and Invesigation</th></tr>
<tr><td>Surveillance approach</td><td>Syndromic</td></tr>
<tr><td>Investigation: data about case</td><td>Demographic, clinical presentation, incubation period, consumed food items, place of food consumption and source</td></tr>
<tr><td>Investigation: clinical specimen from case</td><td>- Clinical specimens: stool or other depending on the infectious agent</td></tr>
<tr><td>Investigation: data about contacts</td><td>Search of similar cases</td></tr>
<tr><td>Investigation: clinical specimen from contacts and environment</td><td>- Clinical specimens from contacts: if similar cases
- Clinical specimens from food handlers
- Food specimens: left over food items, similar food items or ingredients in food premises</td></tr>
<tr><td>Test</td><td>- Bacterial agents: culture
- Viral agents: virus detection, PCR…
- Parasitic agents: direct exam, histopathology
- Organophosphates: decreased plasma or red blood cell cholinesterase activity might indicate a nerve agent or organophosphate exposure</td></tr>
<tr><td>Laboratories</td><td>- Clinical specimens: clinical laboratories
- Food specimens: reference laboratories</td></tr>
<tr><td>Outbreak level</td><td>The occurence of at least 2 patients following a food consumption reflects food poisoning episode.</td></tr>
<tr><td>Notification to WHO</td><td>If meeting the criteria of the International Health Regulations (2005)</td></tr>
</table>

Food poisoning case definition (MOPH circular no. 81 dated on the 27th December 2001)	
Suspected case	At least two patients experiencing same illness following the consumption of common meal or food item
Confirmed Case	At least two patients experiencing same illness following the consumption of common meal or food item, with laboratory confirmation or confirmed link between food and illness
Forms	
Reporting	Standard reporting form
Investigation	- Food poisioning investigation form (MOPH circular no.80 dated on 14th October 2011) - Food premises inspection form (MOPH memo no.121 dated on 5th August 2015) - Trichinella investgation form (MOPH circular no.79 dated on 6th August 2013) - Botulism inestigation form (MOPH circular no.153 dated on 15th November 2007) - Isolate form (MOPH circular no.163 dated on 28th November 2015)
National Figures	

Figure 1: Reported food poisioning cases, Lebanon,1997-2014 (Source: MOPH)



III. Objectives of surveillance

The objectives of food poisoning surveillance are to:

- Detect and investigate food poisoning episodes and outbreaks
- Identify microbial agents and contaminated food items
- Investigate sources of contamination.

IV. Alert and outbreak thresholds

An **alert** is when two and/or more suspected cases had same illness following common meal or food item.

An **outbreak** is when two and/or more cases had same illness following common meal or food item with laboratory confirmation and/or confirmed link between food and illness.

Table 1: Thresholds for alert and outbreak	
Alert	- At least 2 cases with same illness - Common meal/food item
Outbreak	- At leasrt 2 cases with same illness - Common meal/foot item - Laboratory confirmation or link between food and illness

V. Procedural steps

The steps below are recommended for food poisoning investigation. They are summarized in figure (3)

Step 1: Collect data

Food poisoning is among the immediate notifiable diseases. Upon reception, the Esumoh caza team contacts the patient or the family and fills the food poisoning investigation form.
The investigation form is provided in annex (2).
The investigation form is filled for each household or group. It includes the following variables:

- Household / group exposed: composition
- Illness: date and time of onset, symptoms, stool culture…
- Exposure: meal, source, date of consumption …

Step 2: Confirm the case

The Esumoh caza team collects the results of any stool culture done for the patients.
In case the patient was not tested yet, the Esumoh team requests to perform stool culture.
Stool culture is done at any clinical laboratory.

Step 3: Test suspected household food

In case there are household food leftovers, the Esumoh caza team collects them and sends them to the designated reference laboratory (Agriculture Research Institute of the Ministry of Agriculture).

The food items are sent with an official request specifying the following:

- Reference number of the request at the caza level
- Food item: type, place of collection, date of collection, household

Step 4: Search for additional cases

During the investigation of the patient/family/group, the Esumoh caza team asks whether other member(s) developed the same illness (family, friends … etc) following the common meal.
A case definition is formulated in order to find additional cases at the community level if any.
Passive and active surveillance are reinforced to find additional cases based on the case definition formulated.
Another method of finding cases is through the event-based surveillance (EBS) including the community-based approach.

Step 5: Inspect food premises

In case the suspected food item originates from a food premise, the premise is identified.
Once identified, the premise is inspected by the caza team in coordination with Esumoh team.
Samples from the suspected food (end-items and ingredients), water (drinking, cooking and domestic), and food handlers (stool samples...) are taken.
The food samples are referred to the Agriculture Research Institute of the Ministry of Agriculture.
The sampled food items are labeled and numbered, and a request form is filled with the food item details (number, type, place of collection, date of collection).
The water samples are tested in the laboratories of the public hospitals in the mohafaza.
The food handlers' stool samples are sent to Rafik Hariri Governmental Hospital for testing.

Step 6: Describe cases

The basic descriptive analysis is done once the data is collected.

Cases are described by:

- Time: time of symptom onset, incubation period
- Place: of residence, of exposure...
- Person: age group, sex, nationality

- Disease: symptoms, classification, outcome, inpatient
- Agent: type, serotype, antimicrobial resistance…

Describing the symptoms experienced and the incubation period (time between food intake and symptom onset) orients towards suspecting the infectious agent involved in the illness.

Step 7: Conduct microbial surveillance

In case of positive bacteriological culture in stool or food, the isolates of the below agents are collected:

- Salmonella
- Shigella
- Escherichia coli
- Campylobacter...

The Esumoh central team coordinates the collection of isolates from the clinical laboratories to the designated reference laboratories (Pulse-Net laboratory).
At the reference laboratory, the isolates are tested for:

- Confirmation and serotypes identification
- Identification of subtypes by molecular testing
- Antimicrobial resistance.

This process helps to:

- Assess the link between the cases and the consumed food
- Compare isolated strains
- Trace back the origin of contamination.

Step 8: Conduct further studies

In case of an outbreak, further analytical studies are conducted to find association between disease and food agent. The type of the study depends on the context of the outbreak.

Table 2: Indications for cohort and case/control studies	
Study	**Context**
Retrospective Cohort Study	Closed setting such as a wedding, prom, camp…
Case-Control Study	Open setting with undefined borders such as eating in a restaurant or consuming commercial food item...

The outbreak can be confirmed by:

- Laboratory findings
- Or by the positive results of analytical studies.

Once the source has been identified, traceability to the source can be conducted, in coordination with the involved partners (Ministry of Agriculture…).

Step 9: Write summary report

During the course of the outbreak investigation, preliminary reports are generated by the Esumoh teams.
Once the investigation is completed, a summary report is finalized and shared with the MOPH involved units.

The summary report should include the following sections:

- Background of the situation
- What was done, i.e. methods
- Results of laboratory tests
- Results of investigation
- Conclusion
- Recommendations.

Figure 2: Food poisoning case classification

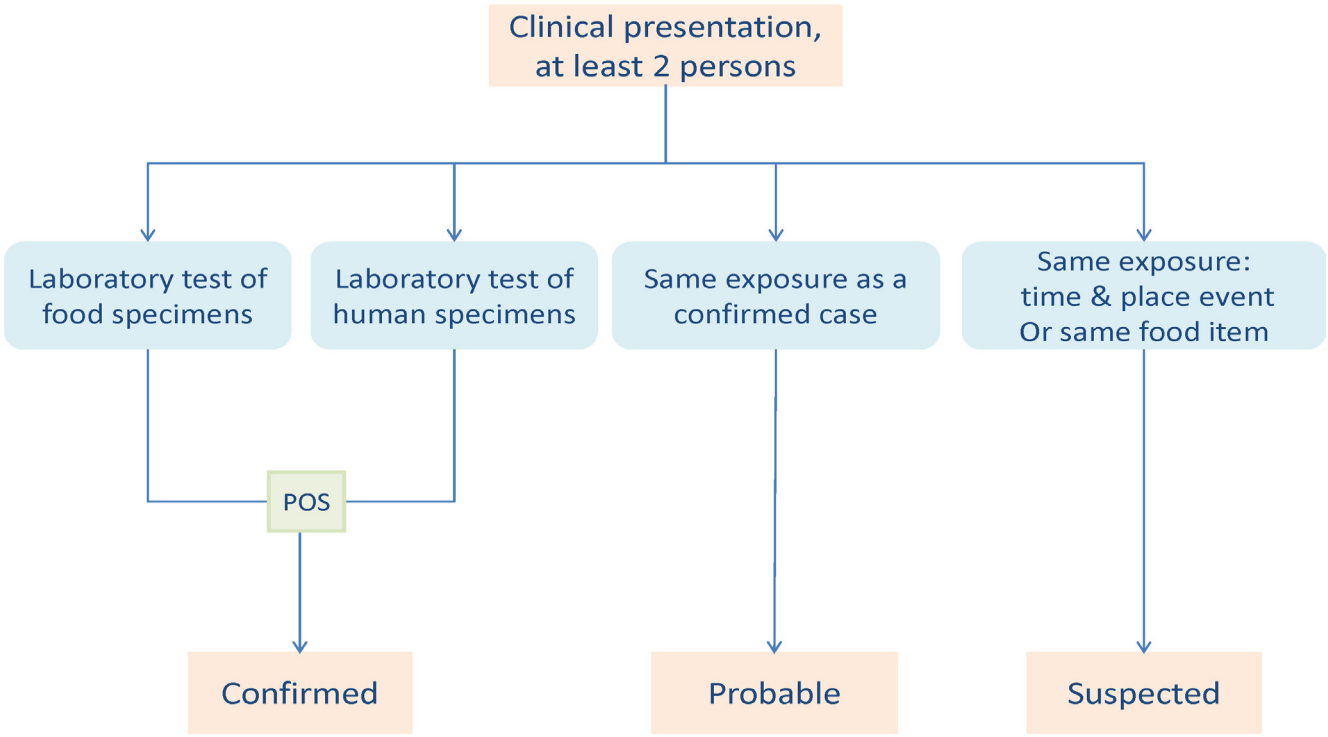
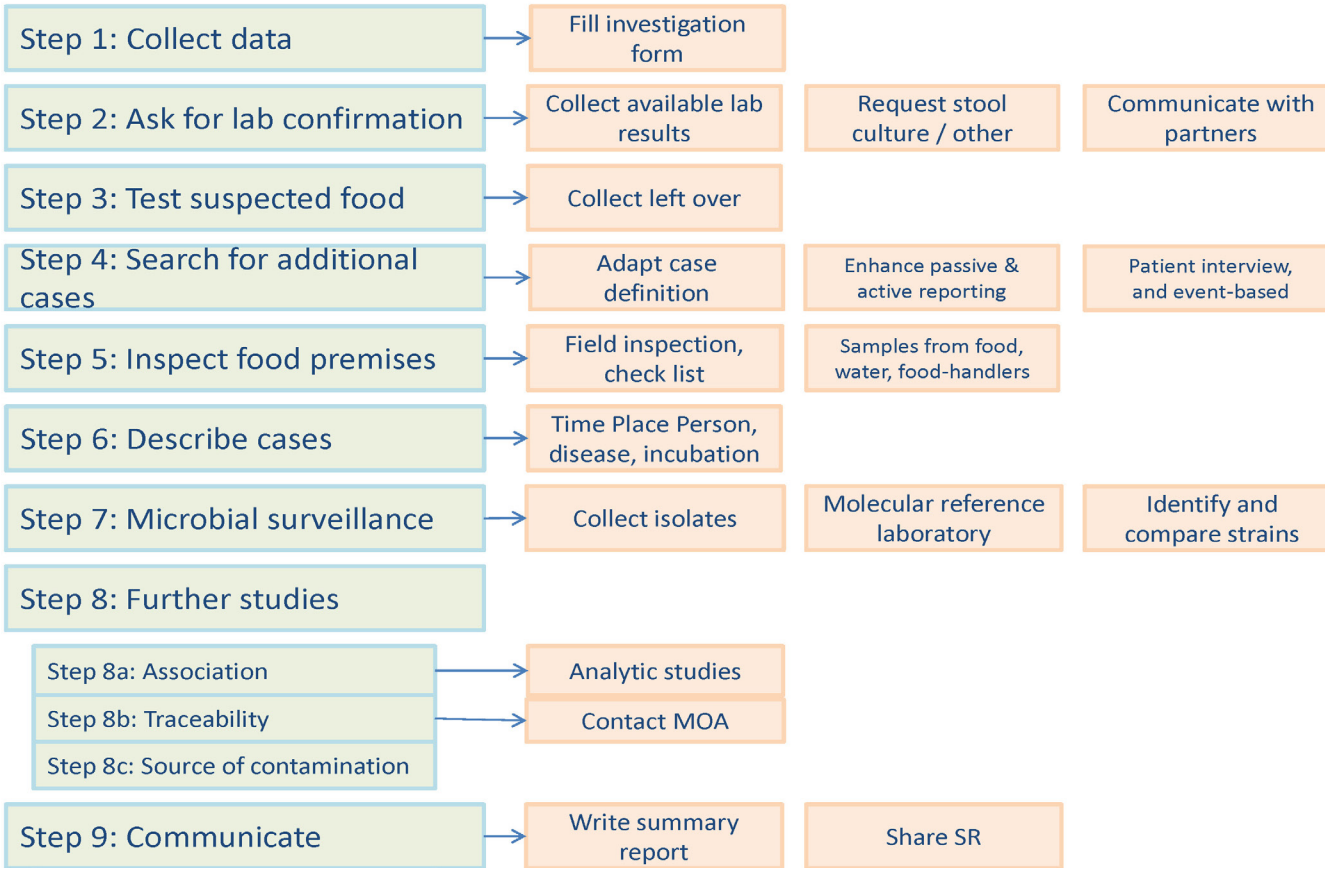


Figure 3: Food poisoning investigation steps



Major Foodborne Hazards: predominant clinical features

Source: WHO Foodborne Disease Outbreaks: Guidelines for Investigation and Control

Approximate time to onset of symptoms	Predominant symptoms	Associated organism or toxin	Appropriate samples from cases (food-handlers)
Upper gastrointestinal tract symptoms (nausea, vomiting) occur first or predominate			
Less than 1 hour	Nausea, vomiting, unusual taste, burning of mouth.	Metallic salts	Vomit, urine, blood, stool
1–2 hours	Nausea, vomiting, cyanosis, headache, dizziness, dyspnea, trembling, weakness, loss of consciousness.	Nitrites	Blood
1–6 (mean 2–4) hours	Nausea, vomiting, retching, diarrhea, abdominal pain, prostration	*Staphylococcus aureus* and its enterotoxins	Stool, vomit, (swabs from nostril, skin lesions)
8–16 hours (2–4 hours if emesis predominant)	Vomiting, abdominal cramps, diarrhea, nausea.	*Bacillus cereus*	Rectal swab, stool
6–24 hours	Nausea, vomiting, diarrhea, thirst, dilation of pupils, collapse, coma.	Mycotoxins (*Amanita* sp. Fungi)	Urine, blood (SGOT, SGPT),vomit
12–48 (median 36) hours	Nausea, vomiting, watery non-bloody diarrhea, dehydration.	Norovirus	Stool
Sore throat and respiratory symptoms occur			
12–72 hours	Sore throat, fever, nausea, vomiting, rhinorrhea, sometimes a rash.	*Streptococcus pyogenes*	Rectal swab, stool
2–5 days	Inflamed throat and nose, spreading greyish exudate, fever, chills, sore throat, malaise, dysphagia, oedema of cervical lymph node.	*Corynebacterium diphtheriae*	Swabs of skin lesions, nose, oropharynx, blood for toxin testing
Lower gastrointestinal tract symptoms (abdominal cramps, diarrhoea) occur first or predominate			
2–36 (mean 6–12) hours	Abdominal cramps, diarrhea, putrefactive diarrhea (Clostridium *perfringens*), sometimes nausea and vomiting.	*Clostridium perfringens, Bacillus cereus, Streptococcus faecalis, S. faecium*	Rectal swabs, stool
6–96 hours (usually 1–3 days)	Fever, abdominal cramps, diarrhea, vomiting, headache.	*Salmonella* spp, *Shigella, Aeromonas, enteropathogenic E. coli*	Rectal swabs, stool
6 hours to 5 days	Abdominal cramps, diarrhea, vomiting, fever, malaise, nausea, headache, dehydration. Sometimes bloody or mucoid diarrhea, cutaneous lesions associated with *Vibrio vulnificus*.	*Vibrio cholerae* (O1 and non-O1), *V. vulnificus*, *V. fluvialis, V. parahaemolyticus*	Stool
1–10 (median 3–4) days	Diarrhea (often bloody), abdominal pain, nausea, vomiting, malaise, fever (uncommon with *E. coli* O157).	Enterohaemorrhagic *E. coli* (including *E. coli* O157), *Campylobacter*	Stool, rectal swabs

3–5 days	Fever, vomiting, watery non-inflammatory diarrhea.	Rotavirus, astrovirus, enteric adenovirus	Stool, vomit
3–7 days	Fever, diarrhea, abdominal pain. Can mimic acute appendicitis.	*Yersinia enterocolitica*	Stool
1–6 weeks	Mucoid diarrhea (fatty stools), abdominal pain, flatulence, weight loss.	*Giardia lamblia*	Stool
1 to several weeks	Abdominal pain, diarrhea, constipation, headache, drowsiness, ulcers, variable – often asymptomatic.	*Entamoeba histolytica*	Stool
3–6 months	Nervousness, insomnia, hunger pains, anorexia, weight loss, abdominal pain, sometimes gastroenteritis.	*Taenia saginata, T. solium*	Stool, rectal swab
Neurological symptoms (visual disturbances, vertigo, tingling, paralysis)			
Less than 1 hour	Neurological and/or gastrointestinal symptoms.	Shellfish toxin (see final section of this table)	Gastric washing
	Gastroenteritis, nervousness, blurred vision, chest pain, cyanosis, twitching, convulsions.	Organic phosphate	Blood, urine, fat biopsy
	Excessive salivation, perspiration, gastroenteritis, irregular pulse, pupils constricted, asthmatic breathing.	Muscaria-type mushrooms	Vomit
	Tingling and numbness, dizziness, pallor, gastric haemorrhage, and desquamation of skin, fixed gaze, loss of reflexes, twitching, paralysis.	Tetradon (tetrodotoxin) toxins	
1–6 hours	Tingling and numbness, gastroenteritis, temperature reversal, dizziness, dry mouth, muscular aches, dilated pupils, blurred vision, paralysis.	Ciguatera toxin	
	Nausea, vomiting, tingling, dizziness, weakness, anorexia, weight loss, confusion.	Chlorinated hydrocarbons (insecticides, pesticides)	Blood, urine, stool, gastric washing
2 hours to 6 days, usually 12–36 hours	Vertigo, double or blurred vision, loss of light reflex, difficulty in swallowing, speaking and breathing, dry mouth, weakness, respiratory paralysis. Characteristic syndrome is descending bilateral flaccid paralysis, starting with cranial nerves ad with preserved sensorium.	*Clostridium botulinum* and its neurotoxins	Blood, stool, gastric washing
More than 72 hours	Numbness, weakness of legs, spastic paralysis, impairment of vision, blindness, coma.	Organic mercury	Urine, blood, hair
	Gastroenteritis, leg pain, ungainly high-stepping gait, foot and wrist drop.	Triorthocresyl phosphate (oil substitute)	Muscle tissue

Allergic symptoms (facial flushing, itching)			
Less than 1 hour	Headache, dizziness, nausea, vomiting, peppery taste in mouth, burning of throat, facial swelling and flushing, stomach pain, itching of skin.	Histamine (scombroid)	Vomit
	Numbness around mouth, tingling sensation, flushing, dizziness, headache, nausea.	Monosodium glutamate	
	Flushing, sensation of warmth, itching, abdominal pain, puffing of face and knees.	Nicotinic acid (food additive, preservative)	
Generalized infection symptoms (fever, chills, malaise, prostration, aches, swollen lymph nodes)			
4–28 (mean 9) days	Gastroenteritis, fever, oedema around eyes, perspiration, muscular pain, chills, prostration, laboured breathing.	*Trichinella spiralis*	Serum, muscle tissue (biopsy)
7–28 (mean 14) days	Malaise, headache, fever, cough, nausea, vomiting, constipation, abdominal pain, chills, rose spots, bloody stools.	*Salmonella typhi*	Rectal swab, stool
10–13 days	Fever, headache, myalgia, rash.	*Toxoplasma gondii*	Lymph node biopsy, blood
Varying periods (depends on specific illness)	Fever, chills, headache, arthralgia, prostration, malaise, swollen lymph nodes and other specific symptoms of disease in question.	*Bacillus anthracis, Brucella melitensis, B. abortus, B. suis, Coxiella burnetii, Francisella tularensis, Listeria monocytogenes, Mycobacterium tuberculosis, Mycobacterium* spp, *Pasteurella multocida, Streptobacillus moniliformis, Campylobacter jejuni, Leptospira* spp	
Gastrointestinal and/or neurological symptoms			
0.5–2 hours	Tingling, burning, numbness, drowsiness, incoherent speech, respiratory paralysis.	Paralytic shellfish poisoning (PSP) (saxitoxins) – mussels, clams	Gastric washing
2–5 minutes to 3–4 hours	Reversal of hot and cold sensation, tingling, numbness of lips, tongue and throat, muscle aches, dizziness, diarrhea, vomiting.	Neurotoxic shellfish poisoning (NSP) (brevetoxins)	Gastric washing
30 minutes to 2–3 hours	Nausea, vomiting, diarrhea, abdominal pain, chills, fever.	Diarrhoeal shellfish poisoning (DSP) (dinophysis toxin, okadaic acid, pectonotoxin, yessotoxin)	Gastric washing
24 hours (gastrointestinal) to 48 hours (neurological)	Vomiting, diarrhea, abdominal pain, confusion, memory loss, disorientation, seizure, coma.	Amnesic shellfish poisoning (ASP) (domoic acid)	Gastric washing

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة تقصي تسمم غذائي

تعبئ من قبل وزارة الصحة العامة / فريق الترصد الوبائي

1) عن المجموعة :

المجموعة	مع من تم الاتصال؟	رقم الهاتف	القضاء	البلدة	تاريخ الاتصال	عدد أفراد المجموعة	عدد المصابين
☐ عائلة ☐ غيره، حدد:							

2) عن الأشخاص المعرضين والمصابين

#	الاسم	الجنس	سنة الولادة	هل تناول الوجبة المشتركة ؟	هل مرض ؟	تاريخ وساعة تناول الوجبة المشتركة	تاريخ وساعة ظهور العوارض	فترة الحضانة (بالساعات)	العوارض	نوع العناية الطبية	تم زرع براز	نتيجة زرع البراز	أرسال السلالة إلى مختبر مرجعي؟	تطور الحالة
				☐ كلا ☐ نعم	☐ كلا ☐ نعم	تاريخ: ساعة:	تاريخ: ساعة:		☐ حمى ☐ اسهال مائي ☐ اسهال دموي ☐ استفراغ ☐ الم بطن ☐ غيره:	☐ منزل ☐ مستوصف/مركز ☐ طبيب: ☐ طوارئ: ☐ استشفاء:	☐ كلا ☐ نعم	☐ سلبي ☐ ايجابي:	☐ كلا ☐ نعم، رقم:	☐ حي ☐ توفى
				☐ كلا ☐ نعم	☐ كلا ☐ نعم	تاريخ: ساعة:	تاريخ: ساعة:		☐ حمى ☐ اسهال مائي ☐ اسهال دموي ☐ استفراغ ☐ الم بطن ☐ غيره:	☐ منزل ☐ مستوصف/مركز ☐ طبيب: ☐ طوارئ: ☐ استشفاء:	☐ كلا ☐ نعم	☐ سلبي ☐ ايجابي:	☐ كلا ☐ نعم، رقم:	☐ حي ☐ توفى
				☐ كلا ☐ نعم	☐ كلا ☐ نعم	تاريخ: ساعة:	تاريخ: ساعة:		☐ حمى ☐ اسهال مائي ☐ اسهال دموي ☐ استفراغ ☐ الم بطن ☐ غيره:	☐ منزل ☐ مستوصف/مركز ☐ طبيب: ☐ طوارئ: ☐ استشفاء:	☐ كلا ☐ نعم	☐ سلبي ☐ ايجابي:	☐ كلا ☐ نعم، رقم:	☐ حي ☐ توفى
				☐ كلا ☐ نعم	☐ كلا ☐ نعم	تاريخ: ساعة:	تاريخ: ساعة:		☐ حمى ☐ اسهال مائي ☐ اسهال دموي ☐ استفراغ ☐ الم بطن ☐ غيره:	☐ منزل ☐ مستوصف/مركز ☐ طبيب: ☐ طوارئ: ☐ استشفاء:	☐ كلا ☐ نعم	☐ سلبي ☐ ايجابي:	☐ كلا ☐ نعم، رقم:	☐ حي ☐ توفى

3) عن الوجبات المشتركة

#	الاطباق	مصدرها	تاريخ شرائها	تاريخ تحضيرها	طريقة حفظها	وجود عينة في المنزل	ارسال عينة الى مختبر مرجعي	نتيجة الزرع	ارسال السلالة الى مختبر مرجعي

اسم المحقق و توقيعه:

تعميم وزارة الصحة العامة رقم 80 تاريخ 14 تشرين الاول 2011

Republic of Lebanon – Ministry of Public Health – Epidemiology Surveillance Program

Trichinellosis Investigation Form

Case |_____| Year |_____|

Section 1. Personal Data

Name	Gender ☐ M ☐ F	Date of birth ___/___/_____
Nationality	Occupation	Institution
Caza	Locality	Phone

Section 2. Diagnostic Data

Date of illness	___/___/_____			Thirst	☐ Yes	☐ No	☐ Unk
Fever	☐ Yes	☐ No	☐ Unk	Sweating	☐ Yes	☐ No	☐ Unk
Periorbital edema	☐ Yes	☐ No	☐ Unk	Nausea	☐ Yes	☐ No	☐ Unk
Photophobia	☐ Yes	☐ No	☐ Unk	Diarrhea	☐ Yes	☐ No	☐ Unk
Myalgia	☐ Yes	☐ No	☐ Unk	Other:			

Laboratory Testing:

	Date	Laboratory	Results
Eosinophilia			Count /mm3:
Muscle biopsy			☐ Positive ☐ Negative ☐ Not done
Serology			☐ Positive ☐ Negative ☐ Equivocal ☐ Not done
Serology			☐ Positive ☐ Negative ☐ Equivocal ☐ Not done
Other			☐ Positive ☐ Negative ☐ Equivocal ☐ Not done

Outcome:

☐ Recovered	☐ Died, date ___/___/_____	☐ Unknown

Section 3. Food product Data

Suspected food:	☐ Type Pork (specify): ☐ Store bought pork ☐ Pork from farm-raised pig ☐ Wild boar ☐ Other: ☐ Not specified	☐ Type non Pork (specify): ☐ Bear meat ☐ Hamburger (Ground meat) ☐ Horse meat ☐ Other: ☐ Not specified	☐ Unknown
Date of consumption:	___/___/_____		
Left over:	☐ Yes	☐ No	☐ Unknown
Storage method:			
Where meat obtained:	☐ Supermarket/grocery store ☐ Restaurant ☐ Other (specify):	☐ Butcher shop ☐ Direct from farm	☐ Hunted /trapped ☐ Unknown
Preparation after purchase:	☐ No further processing ☐ Smoked ☐ Other (specify):	☐ Ground cow meat ☐ Dried Jerky	☐ Marinated ☐ Unknown
Method of cooking:	☐ Uncooked ☐ Unknown	☐ Fried ☐ Other (specify):	☐ BBQ

Food Laboratory Testing:

Tested food item	Date	Laboratory	Result
			Larvae in food: ☐Yes ☐No ☐Unk. ☐Not done
			Larvae in food: ☐Yes ☐No ☐Unk. ☐Not done

Investigator: Date:

MOPH circular no.79 (6/8/2013)

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Botulism surveillance report: The case
LEB-A051-|__|__|__|__|-|__|__|

1 *Patient ID*

Patient ID LEB-A051-|__|__|__|__|-|__|__|
Patient initial |__|__|-|__|__|
Gender ☐Male ☐Female
Date of birth |__|__|dd-|__|__|mm-|__|__|__|__|yyyy
Age |__|__|years-|__|__|months
Address: Mohafazat |_____|
Address: Caza |_____|
Address: Locality |_____|
Tel |__|__|-|__|__|__|__|__|__|__|
Occupation |_____|

2 *Risk Exposure*

Has the patient been involved in any activities that might expose wounds to soil e.g. gardening, carpentry, etc? ☐Yes ☐No ☐Unsp
If yes, specify:
|_____|
|_____|

Has the patient traveled away from home or overseas in the last month? ☐Yes ☐No ☐Unsp
If yes, specify:

Place	From	To
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|
	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|

3 *Care Provider*

Hospital name |_____|
Clinician name |_____|
Clinician Order No. |__|__|-|__|__|__|__|
Clinician Tel |__|__|-|__|__|__|__|__|__|

4 *Preliminary History*

Onset date of symptoms |__|__|-|__|__|-|__|__|__|__|__|__|
Date first seen by doctor |__|__|-|__|__|-|__|__|__|__|__|__|

Was patient hospitalized? ☐Yes ☐No ☐Unsp
If yes, date hospitalized |__|__|-|__|__|-|__|__|__|__|__|__|

Has the patient been admitted to intensive care? ☐Yes ☐No ☐Unsp
If yes, date admitted |__|__|-|__|__|-|__|__|__|__|__|__|

Botulism. Agent: toxins produced by Clostridium botulinum. Reservoir: spores of C. Botulinum are ubiquitous. Transmission: food borne (consumption of food in which toxin has been formed); wound (contamination of wounds); ingestion of spores. Incubation: 12-36 hours (2 hours-8 days). Communicability: no person – to –person transmission.

Botulism surveillance report: The case
LEB-A051-|__|__|__|__|-|__|__|

Has the patient been placed on a ventilator?	☐Yes	☐No	☐Unsp
If yes, date intubated	|__|__|-|__|__|-|__|__|__|__|__|__|		

Was the patient on any of the following medications in the month prior to onset?

Phenothiazine	☐Yes	☐No	☐Unsp
Aminoglycoside	☐Yes	☐No	☐Unsp
Anticholinergic	☐Yes	☐No	☐Unsp

5 *Clinical History*

Briefly describe history and general symptom progression

6 *Specific Symptom History*

Abdominal pain	☐Yes	☐No	☐Unsp
Nausea	☐Yes	☐No	☐Unsp
Vomiting	☐Yes	☐No	☐Unsp
Diarrhoea	☐Yes	☐No	☐Unsp
Constipation	☐Yes	☐No	☐Unsp
Blurred vision	☐Yes	☐No	☐Unsp
Diplopia	☐Yes	☐No	☐Unsp
Dizziness	☐Yes	☐No	☐Unsp
Slurred speech	☐Yes	☐No	☐Unsp
Thick tongue	☐Yes	☐No	☐Unsp
Change in sound of voice	☐Yes	☐No	☐Unsp
Hoarseness	☐Yes	☐No	☐Unsp
Dry month	☐Yes	☐No	☐Unsp
Difficulty swallowing	☐Yes	☐No	☐Unsp
Shortness of breath	☐Yes	☐No	☐Unsp
Subjective weakness	☐Yes	☐No	☐Unsp
Fatigue	☐Yes	☐No	☐Unsp

Botulism surveillance report: The case
LEB-A051-|__|__|__|__|-|__|__|

Paraesthesia	☐Yes	☐No	☐Unsp
If yes, describe paraesthesia			

Does the patient have a wound, boil or abscesses, no matter how trivial? ☐Yes ☐No ☐Unsp

If yes, describe site and nature

#	Site	Nature

7 *Vital Signs on Admission*

Temperature	|__|__|.|__|°C
Blood pressure	|__|__|__|/|__|__|__| mmHg
Heart rate	|__|__|__|/mn
Respiratory rate	|__|__|/mn

8 *Physical Examination Findings*

Altered mental state	☐Yes		☐No	☐Unsp
Extraocular palsy	☐Yes	☐Bilateral	☐No	☐Unsp
Ptosis	☐Yes	☐Bilateral	☐No	☐Unsp
Pupils Dilated	☐Yes	☐Bilateral	☐No	☐Unsp
Pupils constricted	☐Yes	☐Bilateral	☐No	☐Unsp
Pupils fixed	☐Yes	☐Bilateral	☐No	☐Unsp
Pupils reactive	☐Yes	☐Bilateral	☐No	☐Unsp
Facial paralysis	☐Yes	☐Bilateral	☐No	☐Unsp
Palatal weakness	☐Yes	☐Bilateral	☐No	☐Unsp
Impaired gag reflex	☐Yes	☐Bilateral	☐No	☐Unsp
Sensory deficit(s)	☐Yes	☐Bilateral	☐No	☐Unsp
If yes, describe deficit				

9 *Deep Tendon Reflexes*

Abnormal deep tendon reflexes	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp
Biceps	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp
Triceps	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp
Brachial	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp
Patellar	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp
Ankle	☐Brisk	☐Normal	☐Reduced	☐Absent	☐Unsp

10 Weakness and Paralysis

	Upper extremities	☐Yes	☐No	
If yes :	Distal weakness/paralysis	☐Yes ☐Bilateral	☐No	☐Unsp
	Proximal weakness/paralysis	☐Yes ☐Bilateral	☐No	☐Unsp
	Lower extremities	☐Yes	☐No	
If yes:	Distal weakness/paralysis	☐Yes ☐Bilateral	☐No	☐Unsp
	Proximal weakness/paralysis	☐Yes ☐Bilateral	☐No	☐Unsp
	If yes to any of the above, Ascending (beginning in the lower extremities, moving to upper extremities and then cranial nerves)	☐Yes ☐Bilateral	☐No	☐Unsp
	Descending (beginning with the cranial nerves, moving to upper then lower extremities)	☐Yes ☐Bilateral	☐No	☐Unsp

11 Laboratory Results

a)	**Was a lumbar puncture done?**	☐Yes ☐No	☐Unsp
	If yes, Date	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|
	RBC		
	WBC		
	Protein		
	Glucose		

b)	**Was a tensilon test (Edrophonium chloride) done?**	☐Yes ☐No	☐Unsp
	If yes, Date	|__|__|-|__|__|-|__|__|__|__|	
	Results		

c)	**Was electromyography (EMG) done?**	☐Yes ☐No		☐Unsp
	If yes, Date	|__|__|-|__|__|-|__|__|__|__|	|__|__|-|__|__|-|__|__|__|__|	
	Muscle group			
	Nerve conduction results			
	Was rapid repetitive stimulation conducted?			
	If yes, Hertz	☐Yes ☐No	☐Yes	☐No
	Results			

الجمهورية اللبنانية - وزارة الصحة العامة - مصلحة الطب الوقائي

نموذج تفتيش حول سلامة الغذاء

معلومات عامة :

اسم المؤسسة:.....اسم المالك:.....

نوع المؤسسة: □ مطعم □ سناك □ سوبرماركت □ مخبز □ مصنع حلويات

□ مصنع البان واجبان □ ملحمة □ مسلخ □ غيره حدد:

العنوان:.....رقم الهاتف:.....

القضاء:..... المحافظة:..... رقم الترخيص:.....

التاريخ:..... الوقت: .....

اسم المفتش الصحي: ..... رقم الهاتف:.....

نوع الزيارة: □ تفتيش روتيني □ تسمم غذائي □ شكوى □ غيره حدد:

أولاً- أماكن تحضير الطعام:

1. الأرض:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
مغطاة بمواد عازلة سهلة التنظيف ومانعة للإنزلاق				
ذات أسطح ملساء، خالية من التشققات				
مجهز بمصفاة لمياه الصرف				

2. الجدران والأسقف:

مغطاة بمواد عازلة، سهلة التنظيف وذات لون فاتح				
ذات أسطح ملساء، خالية من التشققات				
أسقف أوأسقف مستعارة نظيفة وبحالة جيدة				

3. المعدات والاوانى:

مصنوعة من أسطح ملساء ، نظيفة / سهلة التنظيف				
استعمال معدات وأواني غير قابلة للصدأ ولا تحتوي على مادة الميلامين				
استعمال معدات وأواني مصنوعة من الستانلس ستيل				
وجود ألواح تقطيع مختلفة بحسب اختلاف الأطعمة				
وجود مسافة كافية بين المعدات لمنع التلوث وتسهيل عملية التنظيف				

4. الأبواب والنوافذ:

نظيفة وبحالة جيدة				
مقفلة دائما او مجهزة بشباك فعالة لمكافحة الحشرات				

5. التهوئة:

جميع الأقسام خالية من الروائح والبخار				
المراوح، أجهزة التهوئة وشفط الهواء نظيفة وفعالة				

6. الإضاءة:

توفر الإضاءة الطبيعية أو الاصطناعية بشكل وافٍ				

7. غرفة طعام الموظفين:

وجود غرفة طعام للموظفين نظيفة وبحالة جيدة				
وجود: مغسلة، ماء ساخن، صابون ومحارم لتجفيف اليدين				

ثانياً- الموظفون و مجهزو الطعام:

1. النظافة الشخصية:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
ملابس العمل مناسبة ونظيفة				
الأظافر قصيرة واليدان نظيفتان				
احترام الحظر المفروض على الموظفين (المجوهرات وطلاء الاظافر)				
الشعر مغطى كليا				
غسل اليدين بطريقة صحيحة وعند الحاجة				
استعمال القفازات وتبديلها عند الحاجة				

2. المراقبة الطبية:

توفر معاينة طبية سريرية نصف سنوية للعاملين				
وجود شهادات صحية صالحة التاريخ				
تغطية تامة مقاومة للماء لأي جرح أو خدش لدى العاملين				

3. التدريب والمعلومات:

تنفيذ دورات تدريبية بشكل دائم من قبل أشخاص متخصصين حول العادات الصحية الجيدة للعاملين بالأغذية وحول سلامة الغذاء				
وجود توثيق للتدريبات				

ثالثاً- استلام وتحضير الطعام

1. استلام وتخزين المواد الأولية، المنتجات شبه المصنعة والمنتجات النهائية

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
استلام المنتجات في مكان نظيف ومنفصل عن اماكن تحضير الطعام				
المنتجات الواردة تخضع لمراقبة عند استلامها والمواد الغذائية صالحة للاستهلاك البشري ويتم معاينة وتسجيل حرارة الطعام المبرد والمثلج والمعلومات الضرورية				
هناك ما يكفي من أماكن التخزين المحلي				
التخزين في أماكن مرتفعة عن الأرض				
مراقبة وتسجيل حرارة المخزن (حرارة اقل من $25^{0}C$)				
المواد المخزنة معبأة ومعنونة بشكل سليم في المخازن؛ وجود تاريخ التصنيع وتاريخ الانتهاء على جميع المنتجات				
دوران المخزون بشكل مناسب وعدم وجود مواد غذائية منتهية الصلاحية (Adequate stock rotation, First In First Out)				
تخزين المواد الغذائية بشكل منفصل (حسب النوع)				
تحديد مكان مخصص ومعنون للمنتجات المتلفة والمنتهية الصلاحية				

2. مرافق التجميد والتبريد:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
المرافق نظيفة وبحالة جيدة				
جميع البرادات والثلاجات (الفريزر) مزودة بأجهزة قياس للحرارة تعمل بصورة صحيحة				
تتم مراقبة وتسجيل حرارة البرادات والثلاجات يوميا (يجب ان تكون حرارة البراد اقل من $5^{0}C$ والثلاجة اقل من $-18^{0}C$)				
الأطعمة مخزنة على رفوف معدنية مقاومة للصدأ				
الأطعمة النيئة منفصلة عن الأطعمة المطبوخة والجاهزة للتقديم (تخزين الطعام المطبوخ والجاهز للتقديم على الرفوف العليا، والطعام النيء والبيض على الرفوف السفلى)				
تغطية الأطعمة بشكل مناسب				

استخدام صناديق بلاستيكية لتخزين الخضار والفاكهة				
المواد المخزنة معنونة بشكل سليم في البرادات والثلاجات؛ وجود تاريخ الصنع وتاريخ الانتهاء على جميع المنتاجات				
عدم وجود مواد غذائية منتهية الصلاحية				

3. الوقاية من التلوث ما بين المواد المختلفة:

سير العمل بطريقة منظمة تمنع التلوث بين الاقسام (عدم وجود تقاطع بين اقسام تحضير الطعام النيء واقسام تحضير الطعام المطبوخ / الجاهز للتقديم)				
تنظيف وتطهير المعدات والأدوات المستعملة في المواد الأولية قبل إعادة استخدامها في المنتجات النهائية (المعدة أو المطبوخة)				
عدم إعادة تقديم بقايا الطعام				
غسل وتطهير الخضار والفاكهة قبل الاستعمال				

رابعاً- التنظيف والتطهير:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
وجود بروتوكول وآلية معروضة بوضوح (عبر ملصق مثلاً) يتعلق بالتنظيف والتطهير، وهل يتم اتباع البروتوكول				
وجود معدات تنظيف خاصة بكل منطقة				
مواد التنظيف الكيميائية معنونة بشكل صحيح ومخزنة بعيدا عن اماكن الطعام				

خامساً- أماكن المرافق الصحية وغرف تبديل الملابس:

1. دورات المياه وغرف تبديل الملابس:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
وجود مراحيض نظيفة مجهزة بمضخة للماء صالحة للاستعمال (سيفون)				
وجود مراحيض بعيدة نسبياً عن أماكن تحضير الطعام				
وجود إشعار في حمام الموظفين حول إلزامية غسل اليدين بعد استعمال المرحاض وطريقة غسل اليدين الصحيحة				
وجود تهوئة مناسبة في المراحيض (نافذة، شفاط، مروحة...)				
وجود مستوعبات نفايات تفتح بالقدم **ومغطاة**				
وجود إنارة كافية في المراحيض				
وجود غرف نظيفة مخصصة لتبديل الملابس				

2. المغاسل

وجود مغاسل في دورات المياه مجهزة بالمياه الجارية، الصابون السائل، محارم ورقية لتجفيف الأيدي، ومستوعبات للنفايات تفتح بالقدم **ومغطاة**				
وجود حنفيات مغاسل تفتح بالمرفق (الكوع) او بالقدم، أو مجهزة بـ sensor				
تسكير حنفيات المغاسل بالمحارم الورقية في حال وجود مسكات للحنفيات				
عدم وجود مجففات الأيدي القاذفة للهواء				

3. أجهزة غسل الأطعمة

وجود إمدادات كافية من مياه الشرب موصولة بمكان غسل الأطعمة منفصلة عن المغاسل				
أجهزة غسل الأطعمة نظيفة وفي حالة جيدة				

سادساً- المرافق الصحية الأساسية:

1. إمدادات مياه الشرب:

نقاط التفتيش	نعم	جزئياً	لا	ملاحظات
إمدادات المياه متصلة بشبكة مياه الشرب				
وجود خزان للمياه محكم الإغلاق يمكن إفراغه وتنظيفه دورياً				
وجود بئر (ارتوازي، تجميع مياه الأمطار...)				
وجود مياه آبار مخصصة فقط للصيانة او للسقي				
تعبئة مياه من مصدر نقال (صهاريج)				
وجود فلاتر				
صيانة دورية موثقة للفلاتر في حال وجودها				

2. التخلص من المياه المبتذلة:

متصلة بشبكة الصرف الصحي المحلية (البلديات)				
وجود نظام مستقل للتخلص من مياه المجاري				
وجود حفرة صحية				
قرب الحفرة الصحية من البئر في حال وجودهما				

3. التخلص من النفايات الصلبة:

استخدام مستوعبات نفايات نظيفة، مجهزة بأكياس بلاستيكية لا ترشح، تفتح بالقدم ومغطاة				
وجود مكان معزول لتخزين النفايات، ذي تهوئة مناسبة (نافذة، شفاط، مروحة...) ويتم تنظيفه باستمرار				

4. مكافحة النواقل / الحشرات (Vector /Pest Control):

وجود شهادات تؤكد رش مبيدات للحشرات والقوارض كل 3 - 6 أشهر على الاقل				
عمليات مكافحة النواقل / الحشرات منفذة من قبل شركة خاصة مرخصة، تحت إشراف المؤسسة الغذائية أو غيرها				
عدم وجود حشرات او اشارات تدل على وجودها في اماكن تحضير وتخزين الطعام				
استعمال أجهزة التقاط الحشرات الطائرة في الاماكن المناسبة				

امضاء المفتش الصحي:

Notes

Notes

7

Surveillance Standard Operating Procedure: Hemorrhagic fever

Version 1
MOPH circular no. 66
(23rd Jan 2015)

Contents

I. Purpose

This Standard Operating Procedure (SOP) is intended to assist the Epidemiological Surveillance program in verifying and investigation any alert or outbreak of hemorrhagic fever.

II. Generalities

<table>
<tr><th colspan="2">Hemorrhagic fever</th></tr>
<tr><td>Agents</td><td>Several agents:
1) Bacteria:
Mainly Neisseria meningitidis …

2) Virus:
- Dengue virus: genus Flavivirus, family Flaviviridae. It includes 4 serotypes 1-4.
- Yellow fever virus: genus Flavivirus, family Flaviviridae
- Chikungunya: genus Alphavirus, family Togaviridae
- Rift Valley fever virus: genus Phlebovirus, family Bunyaviridae
- Lassa virus: Arenavirus
- Crimean-Congo hemorrhagic fever virus: genus Nairovirus, family Bunyaviridae
- Ebola Disease virus: genus Ebolavirus, family Filoviridae. It includes several subtypes.
- Marburg virus: genus Marburgvirus, family Filoviridae…

The following tables will focus on viral hemorrhagic fevers.</td></tr>
<tr><td>Incubation period</td><td>The incubation period varies with the agent.

<table>
<tr><th>Agent</th><th>Incubation period</th></tr>
<tr><th colspan="2">Virus</th></tr>
<tr><td>Dengue</td><td>3-14 days (4-7 days)</td></tr>
<tr><td>Yellow fever</td><td>3-6 days</td></tr>
<tr><td>Chikungunya</td><td>3-11 days</td></tr>
<tr><td>Rift Valley fever</td><td>2-6 days</td></tr>
<tr><td>Lassa</td><td>6-21 days</td></tr>
<tr><td>Crimean-Congo hemorrhagic fever</td><td>5-6 days</td></tr>
<tr><td>Ebola</td><td>2-21 days</td></tr>
<tr><td>Marburg</td><td>2-21 days</td></tr>
</table>
</td></tr>
<tr><td>Period of communicability</td><td>The period of communicability varies with the agent. Only the viral agents are mentioned in the table below. The other agents are mentioned in other sections.</td></tr>
</table>

Agent	Period of communicability
Virus	
Dengue	No person-to-person transmission. Patients are infective for mosquitoes from shortly before fever to the end (3-5 days).
Yellow fever	No person-to-person transmission. Human can infect mosquitoes shortly after onset and for 3-5 days.
Chikungunya	No person-to-person transmission
Rift Valley fever	No person-to-person transmission. Viremia occurs during early clinical illness.
Lassa	During the acute phase, person-to-person may occur, since the virus is present in the throat. Virus is excreted in urines up to 3-9 weeks from onset.
Crimean-Congo hemorrhagic fever	Highly infectious, in particular in hospital setting
Ebola	Patient is infective from clinical onset to 60-90 days.
Marburg	Patient is infective from clinical onset to 60 days.

Reservoir

The reservoir varies with the agent. Only the viral agents are mentioned in the table below.

Agent	Reservoir
Virus	
Dengue	- Humans, mosquitoes (Aedes aegypti) - Monkeys, mosquitoes in South-East Asia and Western Africa
Yellow fever	Humans, mosquitoes (Aedes)
Chikungunya	Mosquitoes
Rift Valley fever	Animals, mosquitoes
Lassa	Wild rodents
Crimean-Congo hemorrhagic fever	Wild and domestic animals
Ebola	Gorillas, chimpanzees, monkeys, forest duikers, porcupines
Marburg	Gorillas, chimpanzees, monkeys, forest duikers, porcupines

<table>
<tr><td>Modes of transmission</td><td>The modes of transmission vary with the agent.

<table>
<tr><th>Agent</th><th>Modes of transmission</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Dengue</td><td>Bite of infected Aedes mosquitoes</td></tr>
<tr><td>Yellow fever</td><td>Bite of infected Aedes mosquitoes</td></tr>
<tr><td>Chikungunya</td><td>Bite of infected Aedes mosquitoes (A. aegypti, Aedes albopictus…)</td></tr>
<tr><td>Rift Valley fever</td><td>- Bite of infected mosquitoes: Aedes or Culex
- Direct/indirect contact with infected animal blood or organs: skin inoculation or aerosols</td></tr>
<tr><td>Lassa</td><td>- Aerosol or direct contact with excreta of infected rodents deposited on surfaces
- Laboratory acquired infections
- Person-to-person: contact with pharyngeal secretions, urine, or sexual contact</td></tr>
<tr><td>Crimean-Congo hemorrhagic fever</td><td>- Bite or crushing infected adult tick (Hyalomma genus)
- Nosocomial infection following exposure to blood or secretions
- Butchering infected animals</td></tr>
<tr><td>Ebola</td><td>Person-to-person: direct contact with infected blood, secretions, organs or semen</td></tr>
<tr><td>Marburg</td><td>Person-to-person: direct contact with infected blood, secretions, organs or semen</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Clinical presentation</td><td>The clinical presentation varies with the agent.

<table>
<tr><th>Agent</th><th>Clinical presentation</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Dengue</td><td>- Dengue: acute febrile illness, with or without rash, and minor bleeding
- Dengue hemorrhagic fever/dengue shock syndrome: increased vascular permeability with hypovolaemia and abnormal blood clotting mechanisms.
- Case fatality rate is 40-50% if not treated, and 1-2% if well treated.</td></tr>
<tr><td>Yellow fever</td><td>- Usually febrile jaundice
- Some cases, after brief remission, may evolve to intoxication with hemorrhagic fever with liver and renal failure.
- The case fatality may be 5-40%.</td></tr>
<tr><td>Chikungunya</td><td>- Self-limiting febrile illness with fever, arthralgia/arthritis, cervical lympho-adenopathy
- Maculopapular rash may appear later.
- Rarely minor hemorrhage.</td></tr>
<tr><td>Rift Valley fever</td><td>- Usually mild illness as dengue-like
- Conjunctivitis is common.
- Complications: retinitis, hemorrhage, encephalitis, hepatitis, lower limbs weakness</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Lassa</td><td>- Acute mild or asymptomatic viral illness in 80% of the cases
- Inflammation and exudation of the pharynx and conjunctiva
- Complications: multisystem disease, abortion, pleural effusion hemorrhage, encephalopathy,seizures, hypotension or shock,oedema of the face and neck, deafness…
- The case fatality rate is 1-15%.</td></tr>
<tr><td>Crimean-Congo hemorrhagic fever</td><td>- Sudden febrile illness
- Flush on face and chest with conjunctival injection
- Hemorrhagic fever with liver damage. The case fatality is 2-50%.</td></tr>
<tr><td>Ebola and Marburg</td><td>- Sudden onset of fever, followed by pharyngitis, vomiting, diarrhea and maculopapular rash
- Complications: hepatic and renal dysfunction, CNS involvement, shock and multi-organ dysfunction, severe thrombocytopenia. The case fatality is 50-90% for Ebola and 5-80% for Marburg.</td></tr>
</table>
</td></tr>
<tr><td>Worldwide</td><td>The agents of viral hemorrhagic fever have various geographical distributions.
<table>
<tr><th>Agent</th><th>Profile</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Dengue</td><td>Endemic in the tropics</td></tr>
<tr><td>Yellow fever</td><td>- Sylvatic (jungle) cycle: accidental human infection in tropical regions (Africa and latin America), with Aedes and Haemagogus mosquitoes
- Urban cycle, with Aedes Aegypti: in endemic countries of tropical Africa and Central/South America</td></tr>
<tr><td>Chikungunya</td><td>Africa, South-East Asia, Philippines</td></tr>
<tr><td>Rift Valley fever</td><td>Africa, Arabia</td></tr>
<tr><td>Lassa</td><td>Endemic in Guinea, Nigeria, Sierra Leone</td></tr>
<tr><td>Crimean-Congo hemorrhagic fever</td><td>Africa, Central Asia, Europe, Middle East</td></tr>
<tr><td>Ebola/Marburg</td><td>Africa</td></tr>
</table>
</td></tr>
<tr><td>Lebanon</td><td>Viral hemorrhagic fevers are rare in Lebanon, and usually, they are imported cases (Ex: dengue).</td></tr>
<tr><td>Control objective</td><td>Control</td></tr>
<tr><td colspan="2">Surveillance and Investigation</td></tr>
<tr><td>Surveillance approach</td><td>Syndromic approach</td></tr>
<tr><td>Investigation: data about case</td><td>Demography, clinical presentation, travel history, contact with cases...</td></tr>
</table>

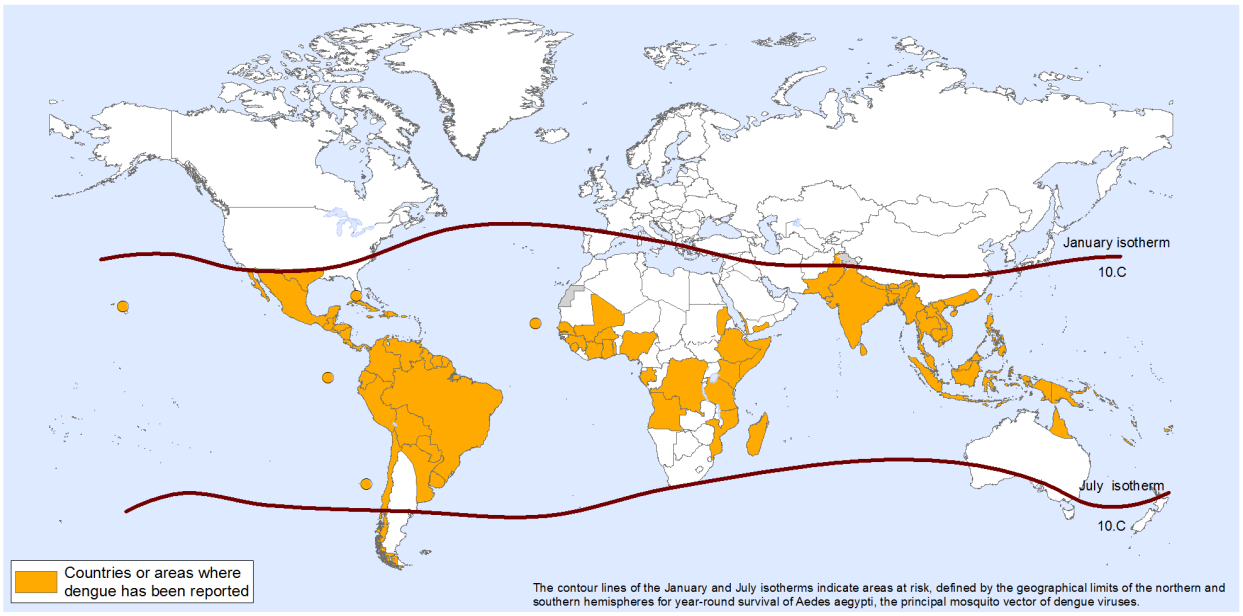
Investigation: specimen from case	Blood
Investigation: data about contacts	Identification, follow up
Investigation: specimen from contacts	If symtpoms
Test	Viral agents: serological test, PCR, culture
Laboratories	For viral agents: reference laboratories in Lebanon or abroad
Outbreak level	At least one confirmed case of viral hemorrhagic fever
Notification to WHO	Yes
Case definitions	
Hemorrhagic fever (MOPH circular no. 49 dated on the 10th April 2007)	
Clinical presentation	Case presenting: - Acute onset of fever of less than 3 weeks duration in a severely ill patient - And any 2 of the following: haemorrhagic or purpuric rash, epistaxis, haemoptysis, blood in stools, other haemorrhagic symptom - And no known predisposing host factors for haemorrhagic manifestations.
Confirmed case	Case presenting an haemorrhagic fever with laboratory confirmation for one of the following agents: Neisseria meningitidis infection, dengue, Ebola-Marbrug viral diseases, Lassa fever, Yellow fever, Rift valley fever virus, hantavirus virus infections, Crimean-Congo haemorrhagic fever, and other viral, bacterial ou rickettsial diseases...
Ebola (MOPH circular no. 70 dated on the 11th August 2014)	
Confirmed case: Ebola	Any suspected or probable case with laboratory confirmation: - Positive antigen or IgM detection (ELISA …) - Or positive PCR with sequence confirmation - Or positive virus isolation (only in laboratory of biosafety 4).
Probable case: Ebola	Any suspected person or suspected death who has an epidemiological link with a confirmed or probable case
Suspected case: Ebola	Case presenting: - Acute onset of fever with any one of the following: haemorrhagic or purpuric rash, epistaxis, haemoptysis, blood in stools, other haemorrhagic symptom; and no known predisposing host factors for haemorrhagic manifestations - Acute onset of fever with any 3 of the following: headache, myalgia/arthralgia, abdominal pain, anorexia, hiccup, vomiting, diarrhea, dyspnea and dysphagia, and coming from a country who reported confirmed cases among humans and/or animals (arrival in the 2 days before onset) - Acute onset of fever with any 3 of the following: headache, myalgia/arthralgia, abdominal pain, anorexia, hiccup, vomiting, diarrhea, dyspnea and dysphagia; and having a contact with animals coming from a country who reported cases among humans and/or animals (contact in the 1 days before onset). The list countries with confirmed cases is available on the WHO website: http://www.who.int/csr/disease/ebola/en

Contact	A person with no symptoms who had in the previous 21 days, contact with confirmed or probable case. The contact with confirmed or probable case is defined by at least one of the following: - Having slept/stayed in the same household - Has had direct physical contact with the case (alive or dead) during the illness - Has had direct physical contact with the deceased at the funeral - Has touched his/her blood or body fluids during the illness - Has touched his/her clothes and/or linens - Has been breastfed by the patient (for baby) - Has touched his/her clinical specimens.
Marburg (MOPH circular no. 50 dated on the 10th April 2007)	
Confirmed case: Marburg	Any suspected (haemorrhagic fever) or probable case that is laboratory-confirmed: - Positive ELISA antigen detection or IgM capture - Or positive virus isolation (only in laboratory of biosafety level 4) - Or positive skin biopsy (immunohistochemistry) - Or positive PCR with sequence confirmation.
Probable case: Marburg	In epidemic situation: - Any person having had contact with a clinical case and presenting with acute fever - Or any person presenting with acute fever and 3 of the following: headache, vomiting/nausea, loss of appetite, diarrhea, intense fatigue, abdominal pain, general or articular pain, difficulty in swalling, difficulty in breathing, hiccoughs - Or any unexplained death.
Contact of Marburg case	In epidemic situation: - An asymptomatic person who had physical contact within the past 21 days with a confirmed or probable case or his/her body fluids (care for patient, participation in burial ceremony, handling of potentially infected laboratory specimens).
Yellow fever (MOPH circular no. 132 dated on the 22nd September 2006)	

Confirmed case: Yellow fever	An acute onset of fever followed by jaundice within 2 weeks of onset of first symptoms with possible haemorrhagic manifestations and signs of renal failure with:
	- Laboratory confirmation (in reference laboratory):
	  - Isolation of yellow fever virus
	  - Or presence of yellow fever specific IgM or a 4-fold or greater rise in serum IgG levels in paired sera (acute and convalescent)
	  - Or positive post-mortem liver histopathology
	  - Or detection of yellow fever antigen in tissues by immunohisto-chemistry
	  - Or detection of yellow fever virus genomic sequences in blood or organs by PCR
	- Or epidemiologically-linked to a confirmed case or outbreak.

Other agents	
Confirmed case: Lassa, CCHF, Rift Valley fever, Chikungunya	Case with at least one of the following: - Isolation of the virus from clinical or autopsy specimens - Detection of specific virus nucleic acid in a clinical or autopsy specimen - Positive serological test: demonstration of increase in IgG antibody titres in paired sera or detection of IgM antibody in clinical or autopsy specimen.
Forms	
Reporting	- Standard reporting form - Hemorrhagic fever reporting form (MOPH circular no. 157 dated on the 16th October 2014)
Investigation	- Hemorrhagic fever investigation form for hemorrhagic fever (MOPH circular no. 158 dated on the 16th October 2014) - Ebola contacts follow up (MOPH circular no.155 dated on 16th October 2014)
International figures	

Figure 1: Countries at risk of dengue (Source: WHO, 2014)



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization

World Health Organization

Figure 2: Countries at risk of yellow fever in Africa (Source: WHO, 2015)

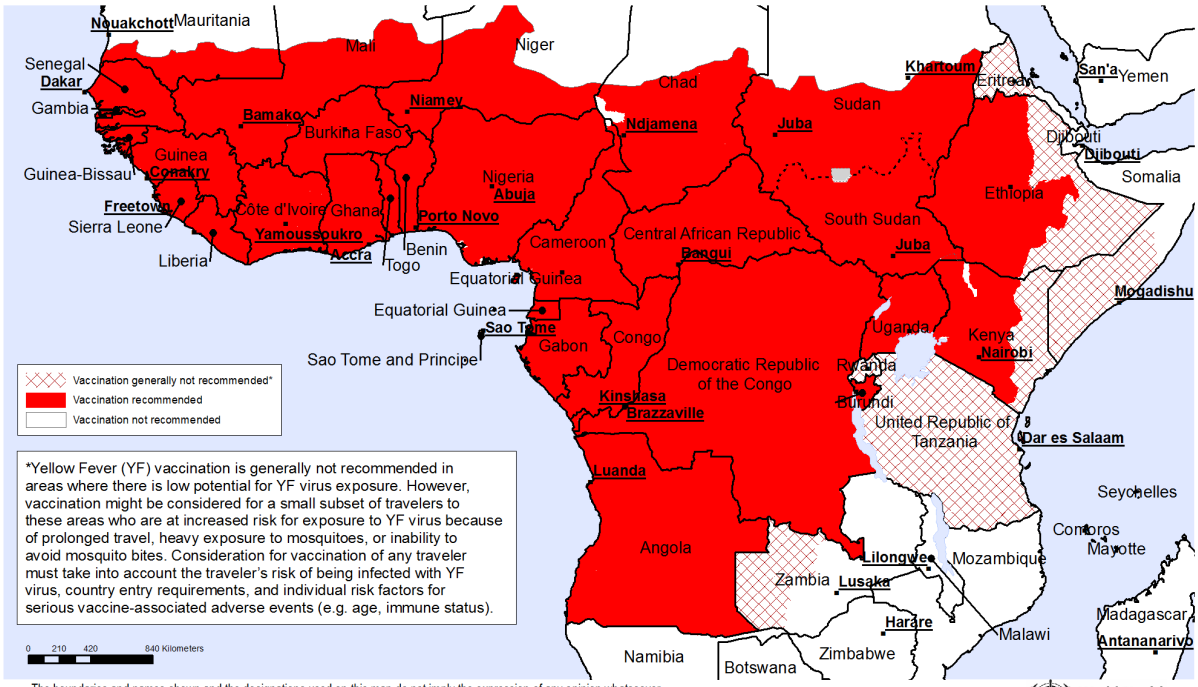
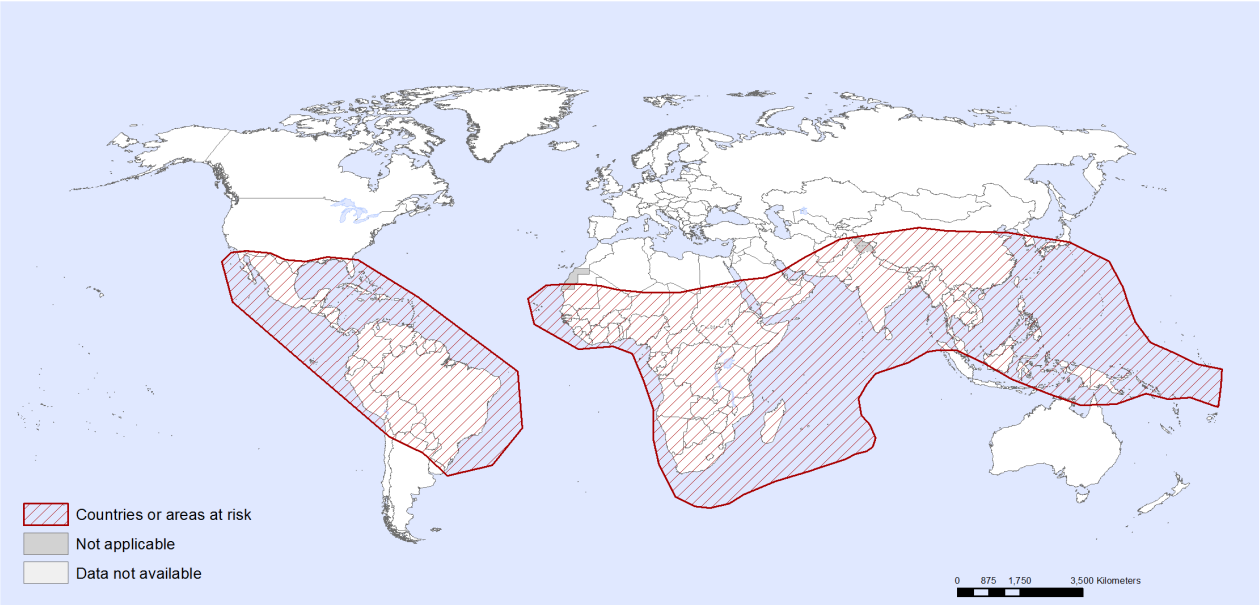


Figure 3: Countries at risk of yellow fever in America (Source: WHO, 2013)

Figure 4: Countries at risk of Chikungunya (Source: WHO, 2014)



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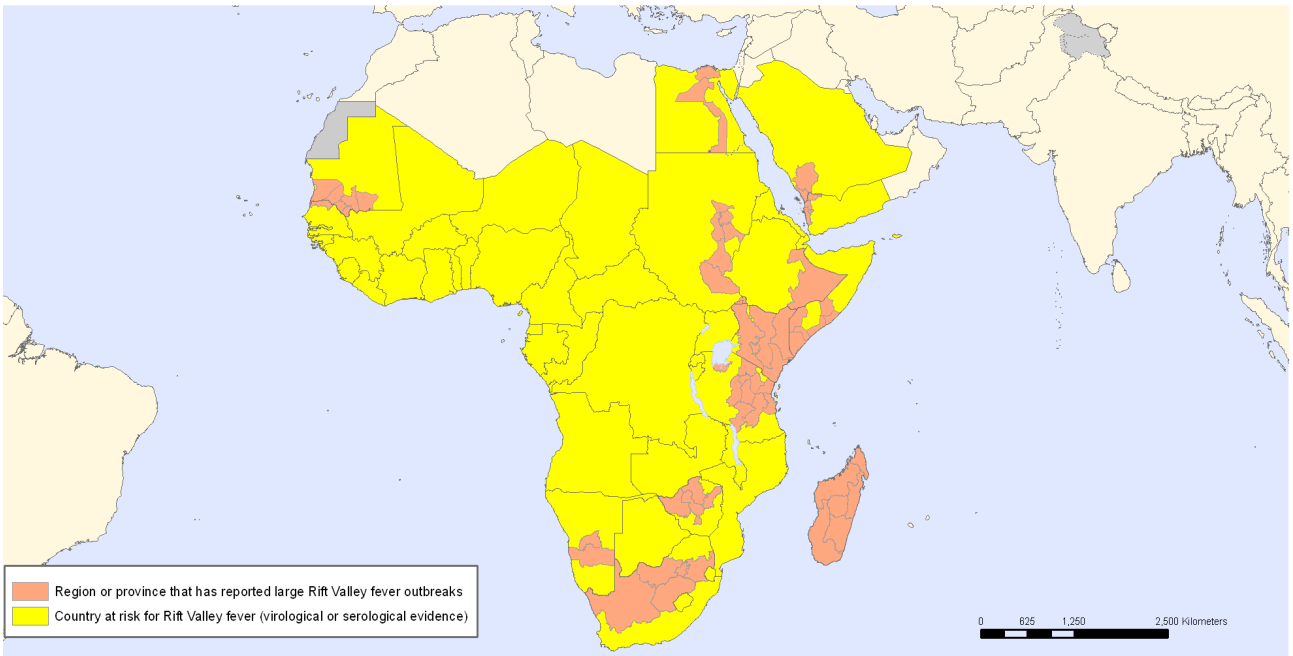
Data Source: Adapted from Fields virology
5th ed. Vol. 1. Philadelphia,
Lippincott Williams & Wilkins, 2006:1047.
Map Production: International Travel and Health (ITH)
World Health Organization

World Health Organization

Figure 5: Countries reporting Rift valley fever cases and outbreaks (Source: WHO, 2009)



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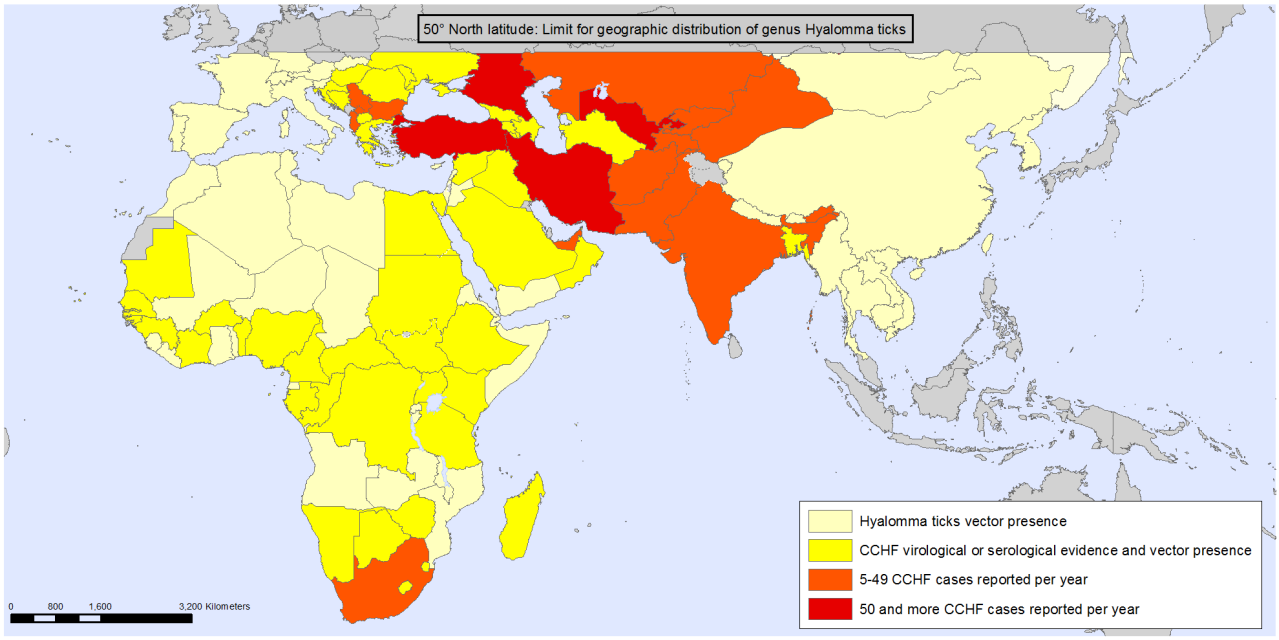
Data Source:Global Alert and Response Department
World Health Organization
Map Production: Public Health Information
and Geographic Information Systems (GIS)
World Health Organization

World Health Organization

Figure 6: Countries reporting CCHF cases and outbreaks (Source: WHO, 2012)



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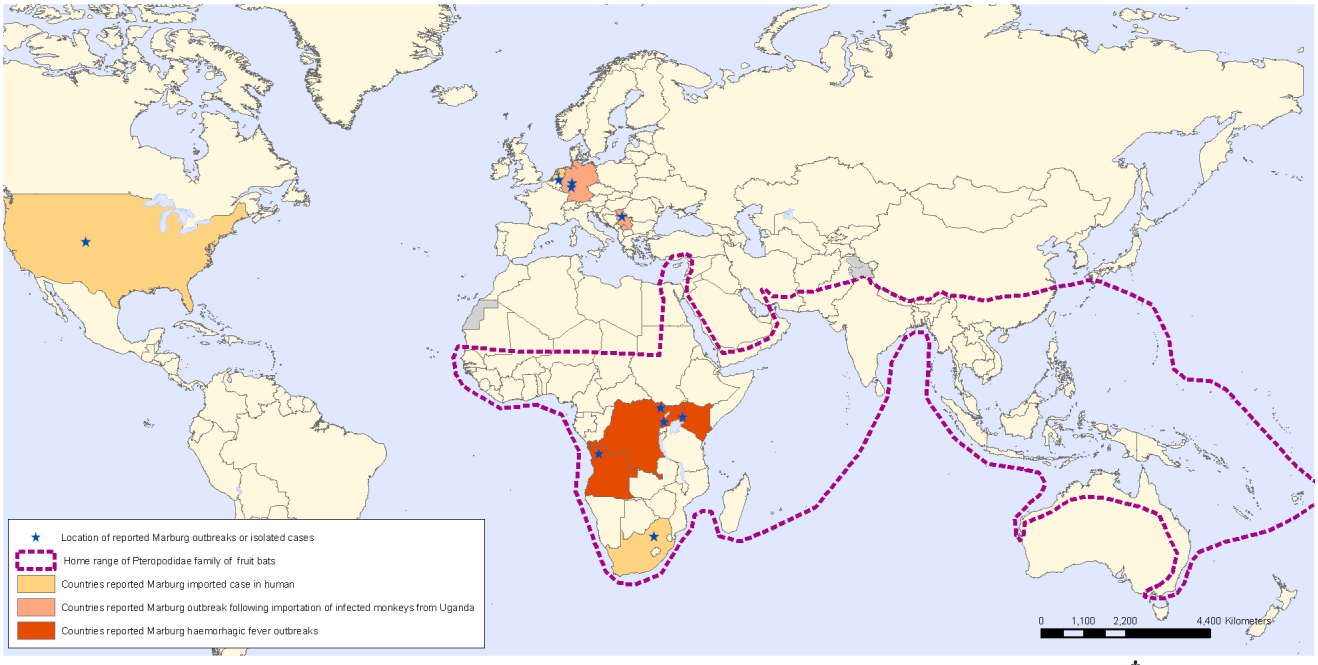
Data Source: World Health Organization
International Travel and Health
World Health Organization

World Health Organization

Figure 7: Countries at risk of Marburg hemorrhagic fever (source: WHO, 2009)



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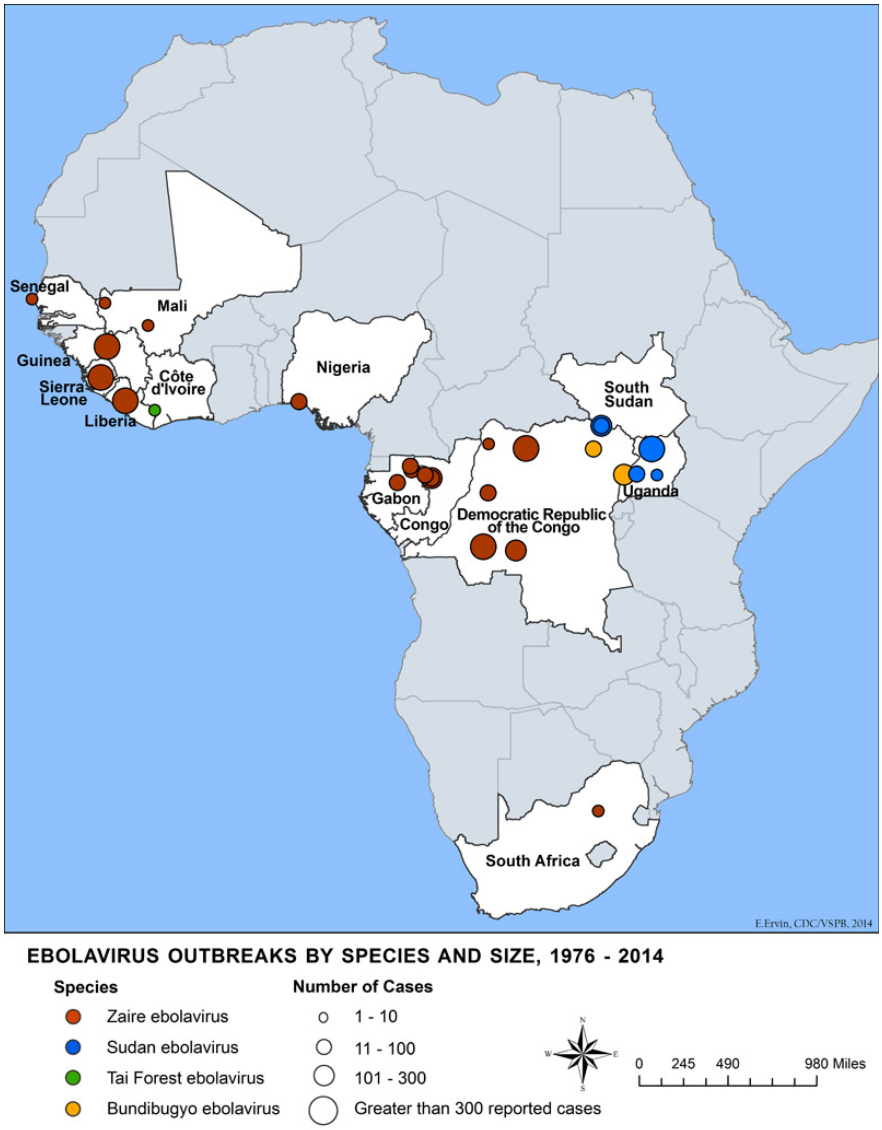
Data Source: Global Alert and Response Department
World Health Organization
Map Production: Public Health Information
and Geographic Information Systems (GIS)
World Health Organization

World Health Organization

Figure 8: **Countries reporting Ebola and Marburg cases and outbreaks, 1997-2014 (Source: US-CDC)**



III. Objectives of surveillance

The objectives of surveillance are to:

- Detect and confirm any case of viral hemorrhagic fever
- Investigate and identify the infectious agent
- Detect and investigate alerts and outbreaks
- Document containment.

IV. Alert and outbreak thresholds

An **alert** is any suspected case of hemorrhagic fever.

An **outbreak** is defined by one of the following:

- At least one confirmed case of viral hemorrhagic fever with person-to-person transmission
- At least one confirmed case due to local transmission of viral hemorrhagic fever with vector-borne transmission.

V. Procedural steps

The steps described below are recommended for investigation of any alert or outbreak of hemorrhagic fever. The steps are summarized in figure (8).

Step 1: Verify alert

In case of suspected case, the Esumoh caza team contacts the treating physician. Is there fever? What are the hemorrhagic signs? Is there any medical condition leading to hemorrhage? Is there any travel history? Is malaria ruled out? Is Neisseria meningitidis ruled out?

The treating physician is asked to fill specific reporting form for hemorrhagic fever (Annex 1).

If verified, the Esumoh central team is informed immediately.

If there is suspicion of viral hemorrhagic fever due to human-to-human transmission, strict infection control procedures are applied.

Step 2: Collect data

The Esumoh mohafaza or central team conducts field visits where patient is. An investigation form is filled via patient, family and physician interview (Annex 2).

The investigation form includes the following information:

- Demography
- Illness: onset, clinical presentation…
- Travel history
- Exposure: occupation, travel, contact with animals…

The case is checked if meeting the case definition. Initial case classification is done.

The case is assessed for potential infectious agents based on:

- Contact with other hemorrhagic fever cases
- Travel history
- Animal contact.

Step 3: Communicate alert

Upon verification and assessment of the case, the Esumoh team informs immediately the DG and the concerned units at the MOPH, in particular the department for communicable diseases. The MOPH informs WHO if there is risk of human-to-human transmission.

Step 4: Confirm the case

Cases need to be laboratory investigated to identify the infectious agent.

a) Virus with human-to-human transmission

For virus with human-to-human transmission, blood is collected with high infection control precautions. Clinical specimens are handled as following:

- Non-deactivated: handled in biosafety cabinet III and shipped as IATA category A to reference laboratory
- Inactivated: handled as normal specimen and shipped as IATA category “Exempt”

Some tests can be done in national reference laboratories. In case of positive test for human-to-human transmission, clinical specimens are sent to WHO reference laboratories for further confirmation.

Routine laboratory testing (CBC, electrolytes…) are conducted in specific mini-laboratory.

b) Virus with vector-borne transmission

For virus with vector-borne transmission, blood is collected with adequate infection control precautions.
Tests can be done in national reference laboratories. If not available, the specimens are sent to WHO reference laboratories.

c) Other agents

For bacterial and parasitic agents, cultures and other tests are done in the hospital laboratory.

Step 5: Confirm the outbreak

If viral hemorrhagic fever is laboratory confirmed, the Esumoh central team informs the MOPH/DG and concerned units.
Based on the clinical, epidemiological and laboratory findings, the outbreak is declared.

If outbreak is declared, the MOPH informs:
- National health professionals
- Governmental institutions as MOA (if animal-related), municipalities…
- WHO
- The public.

The MOPH informs the health professionals on case definition and importance of early notification of any suspected case.

Step 6: Search for additional cases

Additional cases are searched through various methods:
- Notification from health professionals:
  - Immediate notification from physicians and healthcare facilities
  - Hospital zero-reporting
  - Hospital active surveillance
  - Hospital mortality surveillance
  - Search in the vicinity of the case…
- Notification from the community:
  - Hotline 1214
  - Medias news
  - Community rumors …

Memos and press releases are issued by the MOPH. Informative sessions are conducted for health professionals…

Step 7: Describe cases

Cases are described by:
- Time: day, week and month of onset
- Place: place of residence, place of work, place of school, in term of locality, caza and mohafaza. Also travel history is described.
- Person: age group, gender, nationality.
- Disease: classification, agent, outcomes…

Step 8: Conduct contact tracing

Contact tracing is conducted for viral hemorrhagic fever with human-to-human transmission. The containment relies on early detection and confirmation and on adequate contact tracing.

Information about contacts can be obtained from interviews of the patient, family members, workplace, school, or others with knowledge about the patient's recent activities and travels.

Contact tracing is done by the Esumoh teams at caza, mohafaza and central level.

a) Contact identification

Contacts are defined by the following:
- All persons who lived with the case (alive/dead) in the same households since onset of illness
- All persons who visited the patient (alive/dead) either at home or in the health facility since onset of illness
- All places and persons visited by the patient since onset of illness

- All health facilities visited by the patient since onset of illness and all health workers who attended to the patient (alive/dead) without appropriate infection prevention and control procedures
- All persons who had contact with the dead body from the time of death, through the preparation of the body and the burial ceremonies.

b) Contact identification

Since fever onset, all persons being in contact with the patient in daily life are listed.
Additional information is collected on the contacts:

- Household contact (yes or no)
- Contact while having symptoms as fever (yes or no)
- Contact with body fluids (yes or no)
- Physical contact (yes or no)
- Date of exposures (first and last).

A line listing is filled.

c) Contact identification: Transportation use

Since fever onset, all common transport means used by the patient are listed.
Additional information is collected on those transports:

- Type of transportation mean (car, bus, train, plane …)
- Date and time of travel
- Transporter name
- Itinerary (origin and destination)
- Duration of travel.

d) Contact identification: Health facilities

Since fever, all health facilities visited or consulted or admitted in are listed.
For each, the following information is collected:

- Type of health facility
- Type of visit (visitor, outpatient, inpatient…)
- Date and time
- Waiting in waiting room and duration
- Infection control measures applied for the patient.

e) Contact identification: Social events

Since fever, all social events with mass gathering attended by the patient are listed.
For each, the following information is collected:

- Type of social event (social, family, sport, meeting/conference…)
- Date and time
- Duration in social event...

f) Contact assessment

Based on the information, the contacts are assessed as high risk, close contact and casual contact.

Table 1: Contact exposure assesment

Risk	Exposure	Follow up
High risk	Contact with body fluids	Started immediately
Close contact	- Physical contact with patient - Or conversation with patient	Started if the index case is probable or confirmed
Casual contact	Being in the environment of the patient	No need for follow up

g) Follow up

For all identified contacts, a follow up is conducted for a period equivalent to the incubation period.

Contacts are provided with the information on the disease, modes of transmission, prevention, and who to contact in case of fever (with contact details).

Two approaches for follow up are adopted:
- Phone interview with the patient or the parents
- Visit to the patient household.

For each day, the patient is asked if fever or other symptom has appeared.
If fever appears, the person is isolated and specimen is collected.
Follow up information is recorded in specific form.

Step 9: Conduct vector investigation

For the viral hemorrhagic fever with vector-borne transmission, entomological and animal investigation is conducted.

a) Entomological investigation

For virus transmitted by mosquitoes, field visits are conducted to:
- Assess the focus for mosquitoes bread
- Capture mosquitoes (adults and larva)
- Identify present mosquitoes species
- Characterize the mosquitoes
- Generate map for mosquitoes distribution
- Confirm mosquitoes infection
- Assess insecticides susceptibility.

b) Animal investigation

For virus transmitted by contact with animals (directly or indirectly), the Ministry of Agriculture is asked to:
- Assess the prevalence of the virus in animals
- Explore farming practices.

Step 10: Investigate source of infection

The investigation aims to identify potential sources of infection. Is the transmission imported or local? The source may be obvious or not.

a) Time

The source is found in the period of time equivalent to the incubation period prior to fever onset.

b) Person

For virus with human-to-human transmission, the patient is asked on previous contact with persons with hemorrhagic fever or fever with mild illness.
For each suspected person, the following information is collected:
- Name
- Contact details
- Fever
- Diagnosis (if known)
- Place and time of exposure...

c) Place: Health facilities

The patient is asked on previous contact with health facilities.
For each health facility, the following information is collected:
- Type of health facility (hospital, medical center, private clinic, laboratory …)
- Type of visit (staff, visitor, outpatient, inpatient…)
- If staff: type of work
- Date and time
- Waiting in waiting room and duration
- Infection control practice in place

- Contact with person with fever...

d) Place: Travel and transportation use

The patient is asked on previous travel and use of common transportation means.

For each travel history, the following information is collected:
- Country of origin
- Country of destination
- Date and duration
- Visited cities
- Contact with person with fever...

For each common transport use, the following information is collected:
- Type of transportation mean (car, bus, train, plane …)
- Date and time of travel
- Transporter name
- Itinerary (origin and destination)
- Duration of travel
- Contact with person with fever...

e) Place: Social events

The patient is asked on any participation to social event, in particular to funerals.
For each social event, the following information is collected:
- Type of social event (social, family, sport, meeting/conference…)
- Date and time
- Duration in social event
- Contact with person with fever...

f) Vector and animal interface

The patient is asked on any contact with animals.

For each type of animal contact, the following information is collected:
- Type of animal
- Type of contact (taking care…)
- Date and time
- Duration in social event
- Disease in animals...

The patient is asked on previous preventive measures against mosquito-borne diseases:
- Vaccination status
- Use of repellent
- Mosquito bites …

Step 11: Enhance monitoring

During the outbreak, daily monitoring of cases is done by time, place, person and disease.
A regular bulletin is prepared and shared with CBRN national committee and partners.
The bulletin includes figures related to:
- Patients
- Follow up of contacts.

Step 12: Write summary report

Once the outbreak is confined, the Esumoh central staff prepares a summary report describing the outbreak in term of agent time, place and person, in addition to the outcomes.

Figure 7: Ebola case classification

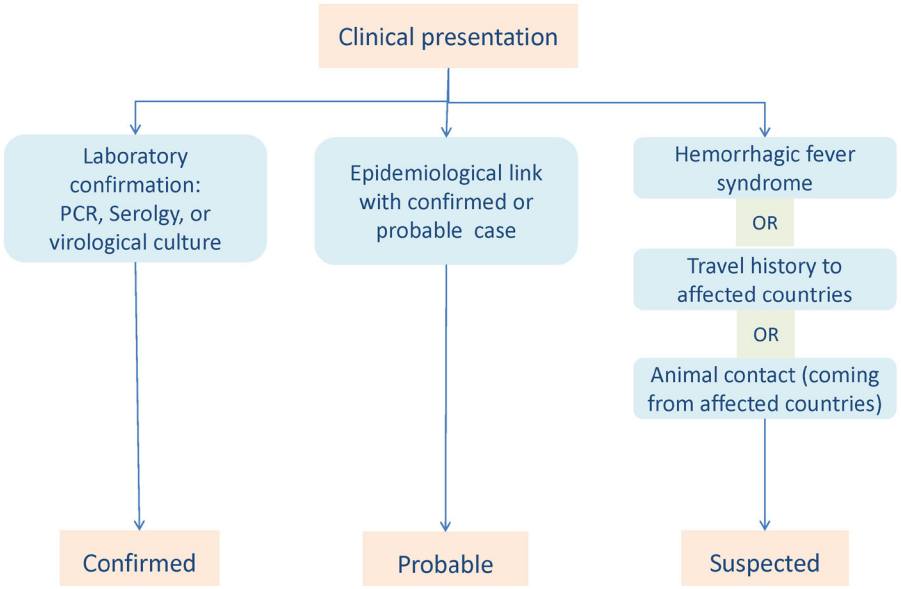
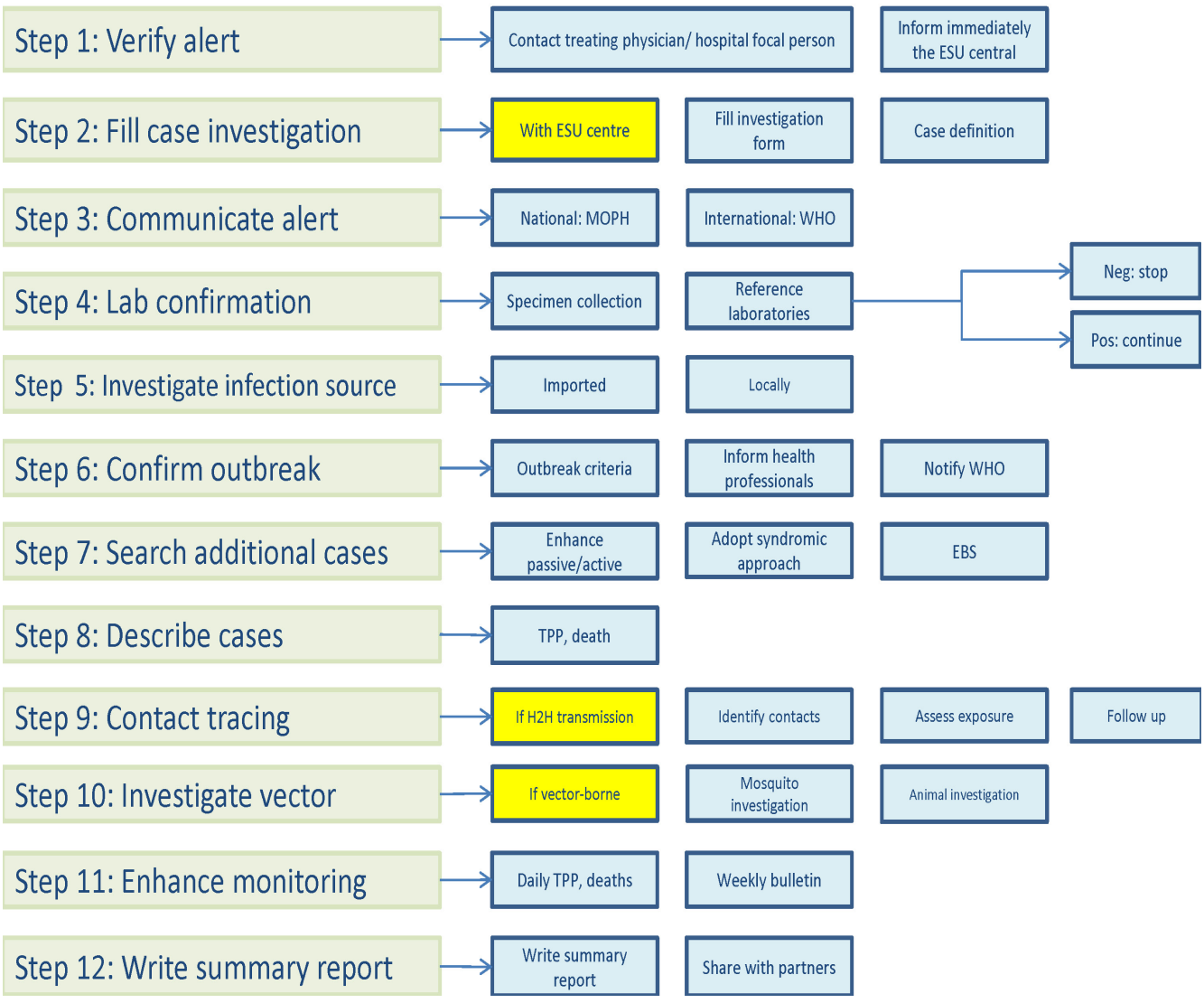


Figure 8: Hemorrhagic fever investigation steps



Hemorrhagic fever - Annex 1

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Viral Hemorrhagic Fever (VHF): Reporting form / Laboratory Request form

** LB-VH-|_____|-|____|

1) Health facility

Hospital name ..... Contact person .....
Ward/Unit ..... Phone .....
Treating physician ..... Date of admission .....
Phone ..... Date of reporting .....

**

2) Patient

Name ..... Phone .....
Date of birth ..... Address .....
Gender .....
Nationality .....
Occupation .....

**

3) Clinical presentation

Date of onset: |___|___|_____| Date of fever onset: |___|___|_____|

General:	☐Fever	☐Headache	☐Myalgia	☐Arthralgia
Digestive:	☐Nausea	☐Vomiting	☐Abdominal pain	☐Diarrhea
Respiratory:	☐Cough	☐Dyspnea	☐Pulmonary lesions	
CNS:	☐Meningitis	☐Encephalitis		
Bleeding:	☐Cutaneous	☐Mucosal	☐Internal bleeding	
	Specify:			
Other, specify:				
Evolution:	☐ Death, date:			

**

4) Travel history in 30 days prior onset

Country	Dates (from/to)	Cities/villages	Notes

**

5) Exposure in 30 days prior onset

VHF cases:	☐Confirmed	☐Probable	☐Suspected	☐Death
	Specify disease:			
Animals:	☐Pets	☐Zoo	☐Reserve/Cave	☐Other:
	Specify animals and source:			
Occupation:	☐Health care worker	☐Laboratory-related	☐Animal-related	☐Other:

**

6) Laboratory results

Malaria test ..... Platelets .....
Blood/CSF culture ..... Other .....

**

7) Specimen collection for VHF diagnosis

#	Type	Date of collection	Conservation	Notes

**

8) Suspected disease:

**

9) Reporter (name, signature and date):

LB-HF-Year _ _ _ _ -Nb _ _

Hemorrhagic fever
Investigation form

A. Case notification

**

Case ID _____ Date of case detection _____

Health facility _____ Contact person _____

Treating physician _____ Phone _____

Form filled in by _____ Date filling the form _____

**

B. Patient identity

**

Name _____ Date of birth _____

Gender _____ Nationality _____

I residence: Country _____ **II residence**: Country _____

Governorate _____ Governorate _____

City/village _____ City/village _____

Contact details _____ Contact details _____

**

C. Patient profession

**

I occupation: Country _____ **II occupation:** Country _____

Occupation _____ Occupation _____

Institution type _____ Institution type _____

Institution name Institution name

Specific profile:

Health care _____ Hunter _____

Laboratory worker _____ Mineworker _____

**

D. Vital status

**

Status at reporting ☐ Alive ☐ Dead

If death: Date of death _____ Country of death _____

Place of death ☐ House ☐ Other: _____

Burial country _____ Burial city/village _____

**

E. Onset of signs

**

Date of onset _____ Date of fever onset _____

Country of onset _____ First symptoms _____

Fever ☐DK ☐No ☐Yes, specify: _____

Headaches ☐DK ☐No ☐Yes, specify: _____

Diarrhoea ☐DK ☐No ☐Yes, specify: _____

Stomach pain ☐DK ☐No ☐Yes, specify: _____

Vomiting ☐DK ☐No ☐Yes, specify: _____

Lethargy ☐DK ☐No ☐Yes, specify: _____

Anorexia	☐DK ☐No ☐Yes, specify:
Muscular pain	☐DK ☐No ☐Yes, specify:
Difficulty swallowing	☐DK ☐No ☐Yes, specify:
Difficulty breathing	☐DK ☐No ☐Yes, specify:
Intense coughing	☐DK ☐No ☐Yes, specify:
Skin rash	☐DK ☐No ☐Yes, specify:
Bleeding at injection	☐DK ☐No ☐Yes, specify:
Bleeding gums	☐DK ☐No ☐Yes, specify:
Conjunctival injection	☐DK ☐No ☐Yes, specify:
Dark or bloody stool	☐DK ☐No ☐Yes, specify:
Vomiting of blood	☐DK ☐No ☐Yes, specify:
Nose bleed (epistaxis)	☐DK ☐No ☐Yes, specify:
Unusual vaginal bleeding	☐DK ☐No ☐Yes, specify:
Other:	

**

F. Exposure risk in the 3 weeks preceding the onset of symptoms

**

Contact with:		*Specify name*	*Specify date of contact*
Suspected HFV	☐DK ☐No ☐Yes, specify:		
Probable HFV	☐DK ☐No ☐Yes, specify:		
Confirmed HFV	☐DK ☐No ☐Yes, specify:		
Funerals	☐DK ☐No ☐Yes, specify:		
Animals pets	☐DK ☐No ☐Yes, specify:		
Animals in zoo	☐DK ☐No ☐Yes, specify:		
Wild animals reserve	☐DK ☐No ☐Yes, specify:		
Cave/mine bats	☐DK ☐No ☐Yes, specify:		

Contact Health care:	
Admitted to hospital	☐DK ☐No ☐Yes, specify:
Visited hospital	☐DK ☐No ☐Yes, specify:
Traditional healer	☐DK ☐No ☐Yes, specify:

**

G. Medical history

**

Chronic diseases	
Infectious diseases	
Chronic treatment	
Other	

**

H. Travel to Lebanon

**

#	*Date flight*	*Company*	*From airport*	*To airport*	*Seat*	*Symptoms present*
1						
2						
3						
4						

**

I. Travel history 3 weeks before onset: outside country/city/village

**

#	*Country*	*City/village*	*Means*	*Dates*	*Visited places*
1					
2					
3					
4					

**

J. Travel history after onset

**

**

K. Case management to notification

**

#	*Health facility*	*Physician*	*Date consultation*	*Date admission*	*Date discharge*	*IPC practice*	*Isolation*	*Notes*
1								
2								
3								
4								
5								

**

L. Patient transportation

**

#	*Date*	*Mean*	*From*	*To*	*Infection control*
1					
2					
3					
4					

**

M. Specimen collection

**

#	*Type*	*Date of collection*	*Place of collection*	*Conservation*
1				
2				
3				
4				

**

N. Specimen shipment

**

Courrier _____ Ref _____

Date of packaging _____ Date of shipment _____

UN 3373 _____ Problems _____

**

O. Laboratory results

**

Ref laboratory _____ IgM _____

Date of arrival _____ PCR _____

Date of results _____ Other _____

**

P. Final classification

**

Date	*Classification*	*Notes*	*Evolution*

**

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

الملحق (1)

جدول تحديد المخالطين لفيروس الايبولا

تعريف الحالة / رقمها الوطني |_____| تاريخ ظهور العوارض عند المريض |_____|

#	الاسم	العمر	الجنس	الجنسية	رقم الهاتف	العنوان	الصلة	تاريخ آخر لقاء	طريقة التعرض	مستوى التعرض	المهنة
C											
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C											

اسم المحقق: التاريخ:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

الملحق (2)

جدول تقييم المخالطين لمستوى التعرض

تعريف الحالة / رقمها الوطني |_____| تاريخ ظهور العوارض عند المريض |_____|

#	الاسم	احتك مع المريض منذ بدء العوارض	تاريخ آخر لقاء مع المريض	لامس سوائل المريض	لامس جسم المريض	لامس و/او قام بتنظيف بطانيات المريض	بات او تناول طعاما في منزل المريض	رضع من المريض	عاملين الصحيين تعرضوا لجرح خلال العناية بالمريض	عاملين في المختبر تداولوا عينات المريض	مرضى متازمين في المستشفى قبل التشخيص الايبولا	غيره	مستوى التعرض
C													
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اسم المحقق: التاريخ:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

الملحق (3)

جدول متابعة المخالطين لفيروس الايبولا

تعريف الحالة / رقمها الوطني |_____| تاريخ ظهور العوارض عند المريض |_____|

#	الاسم	مستوى التعرض	تاريخ آخر تعرض	تاريخ انتهاء المتابعة	التاريخ												ملاحظات

ضع العلامات التالية لتحديد نوع المتابعة (ز): زيارة منزلية ، (هـ): متابعة هاتفية

ضع العلامات التالية لتحديد ظهور عوارض مرضية : نعم، كلا، غائب

Notes

Notes

8

Surveillance Standard Operating Procedure: Novel influenza

Version 1
MOPH circular no. 34
(19th Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance team in case of an alert or outbreak of novel Influenza.

II. Generalities

Novel Influenza	
Agent	Virus: novel subtypes of Influenza A virus due to antigenic shift. Types B and C do not have subtypes and cannot cause pandemics.
Incubation period	1-3 days (1-7 days)
Period of communicability	3-5 days before onset and until 7 days after onset
Reservoir	Humans, birds, mammalian (swine, horses …)
Modes of transmission	- Person-to-person: • Direct and/or indirect contact with droplets of infected person • Airborne (in case of aerosol-generated procedures) from an infected person - Animal-to-person: • Airborne, while slaughtering, defeathering, handling carcasses of infected poultry • Consumption of raw contaminated poultry
Clinical presentation	- Upper respiratory infection - Complications: lower respiratory infection
Worldwide	Known past pandemics: - 1918-1919: A(H1N1) - 1957-1958: A(H2N2) - 1968-1969: A(H3N2) - 2009-2010: Influenza A(H1N1)/2009 Current novel Influenza with pandemic potential: - A(H5N1) - A(H7N9)
Control objective	- Preparedeness: inter-pandemic phases - Containment: At early phase with no community transmission - Mitigation: If community transmission of new virus
Surveillance and Investigation	
Surveillance approach	Syndromic approach (acute respiratory infection)
Investigation: data about case	Clinical presentation, contact with cases, contact with animals and/or death animals, travel history…
Investigation: specimen from case	Throat swab or nasal swab in viral transport media (VTM)
Investigation: data about contacts	Similar cases among contacts
Investigation: clinical specimen from contacts	If symptoms
Test	PCR test
Laboratories	National Influenza Center at Rafic Hariri University Hospital
Outbreak level	At least one confirmed case of novel Influenza infection
Notification to WHO	Yes based on IHR (2005)

Novel Influenza virus infection case definition (MOPH circular no. 38 dated on the 5th May 2012)	
Confirmed case	Any laboratory-confirmed case of a recent human infection caused by an Infleunza A virus with the potential to cause a pandemic. An Influenza A virus is considered to have the potential to cause a pandemic if: - The virus has demonstrated the capacity to infect a human - And if the heamagglutinin gene (or protein) is not a variant or mutated form of those circulating widely in the human population. An infection is considered recent if it has been confirmed by: - Positive results from PCR - Or virus isolation - Or paired acute and convalescent serologic tests.
Novel Influenza virus A(H5N1) infection case definition (MOPH circular no. 66 dated on the 24th April 2007)	
H5N1: Confirmed case	A suspected or probable case and one of the following results conducted in a national, regional or international reference laboratory: - Isolation of an H5N1 virus - Positive H5 PCR results from tests using two different PCR targets, e.g. primers specific for Influenza A and H5 HA - A fourfold or greater rise in neutralization antibody titer for H5N1 based on testing of an acute serum specimen (collected 7 days or less after symptom onset) and a convalescent serum specimen. The convalescent neutralizing antibody titer must also be 1:80 or higher - A microneutralization antibody titer for H5N1 of 1:80 or greater in a single serum specimen collected at day 14 or later after symptom onset and a positive result using a different serological assay (for example, a horse red blood cell haemagglutination inhibition titer of 1:160 or greater or an H5-specific western blot positive result).
H5N1: Probable case	- A suspected case with one of the following criteria: • Infiltrates or evidence of an acute pneumonia on chest radiograph plus evidence of respiratory failure (hypoxemia, severe tachypnea) • Or positive laboratory confirmation of an Influenza A infection but insufficient laboratory evidence for H5N1 infection - Or a person dying of an explained acute respiratory illness who is considered to be epidemiologically-linked by time, place, and exposure to a confirmed or probable or H5N1 case.

H5N1: Suspected case	- A person presenting with unexplained acute lower respiratory illness with fever (>38ºC) and cough, dyspnea - And one or more of the following exposures in the 7 days prior to symptom onset: • Close contact (within 1 meter) with a person (e.g. caring for, speaking with, or touching) who is a confirmed, probable or suspected, H5N1 case • Exposure (e.g. handling, slaughtering, defeathering, butchering, preparation for consumption) to poultry or wild birds or their remains or to environments contaminated by their faeces in an area where H5N1 infection in animals or humans has been confirmed or suspected in the last month • Consumption of raw or undercooked poultry products in an area where H5N1 infection in animals or humans has been confirmed or suspected in the last month • Close contact with a confirmed H5N1 infected animal other than poultry or wild birds (e.g. cat or pig) • Handling samples (animal or human) suspected of containing H5N1 virus in a laboratory or other setting.
Novel Influenza virus A(H7N9) infection case definition (MOPH circular no. 60 dated on the 6th June 2013)	
H7N9: confirmed	A person with laboratory confirmation of a recent infection caused by the A(H7N9) virus
H7N9: probable	A person with an acute respiratory infection and a history of close contact, in the 2 weeks before illness, with a laboratory-confirmed case of A(H7N9) virus infection
H7N9: suspected	A person with a severe acute respiratory infection (requiring hospital admission) and a history of recent travel, within 2 weeks before illness onset, to a risk area [known to have A(H7N9) circulation]
Forms	
Reporting	Standard reporting form
Investigation	Novel Influenza investigation form for novel Influenza virus infection (MOPH circular no. 4 dated on the 7th January 2015)
National figures	
No case of H5N1 neither of H7N9 was reported up to Dec 2015.	
International figures	

Table 1: Influenza A(H5N1) - Cumulative number of confirmed human cases, worldwide, 2003-Nov.2015 (Source: WHO)

Country	2003-2009*		2010		2011		2012		2013		2014		2015		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	8	5	0	0	0	0	0	0	0	0	0	0	0	0	8	5
Bangladesh	1	0	0	0	2	0	3	0	1	1	0	0	0	0	7	1
Cambodia	9	7	1	1	8	8	3	3	26	14	9	4	0	0	56	37
Canada	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
China	38	25	2	1	1	1	2	1	2	2	2	0	5	1	52	31
Djibouti	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Egypt	90	27	29	13	39	15	11	5	4	3	37	14	136	39	346	116
Indonesia	162	134	9	7	12	10	9	9	3	3	2	2	2	2	199	167
Iraq	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Myanmar	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Nigeria	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pakistan	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1
Thailand	25	17	0	0	0	0	0	0	0	0	0	0	0	0	25	17
Turkey	12	4	0	0	0	0	0	0	0	0	0	0	0	0	12	4
Viet Nam	112	57	7	2	0	0	4	2	2	1	2	2	0	0	127	64
Total	468	282	48	24	62	34	32	20	39	25	52	22	143	42	844	449

Figure 1: Influenza A(H7N9) - Areas with confirmed cases from 2013W07 to 2015W47 (Source: www.ecdc.europa.eu)

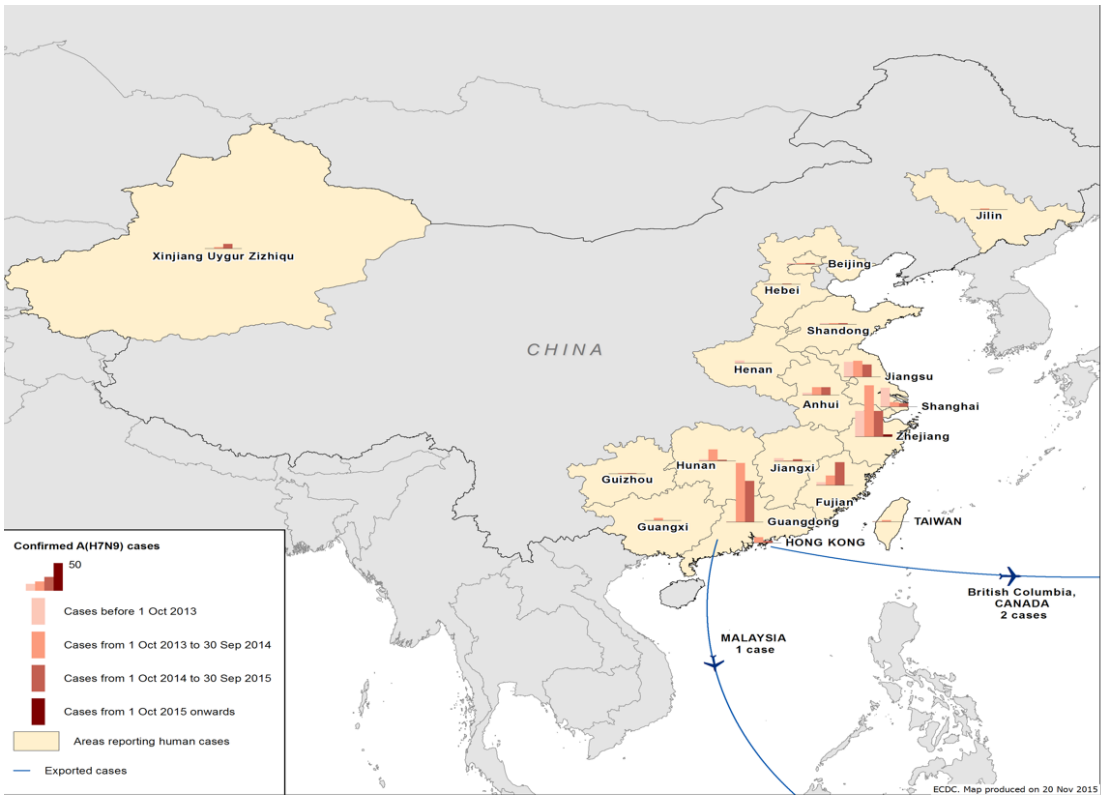
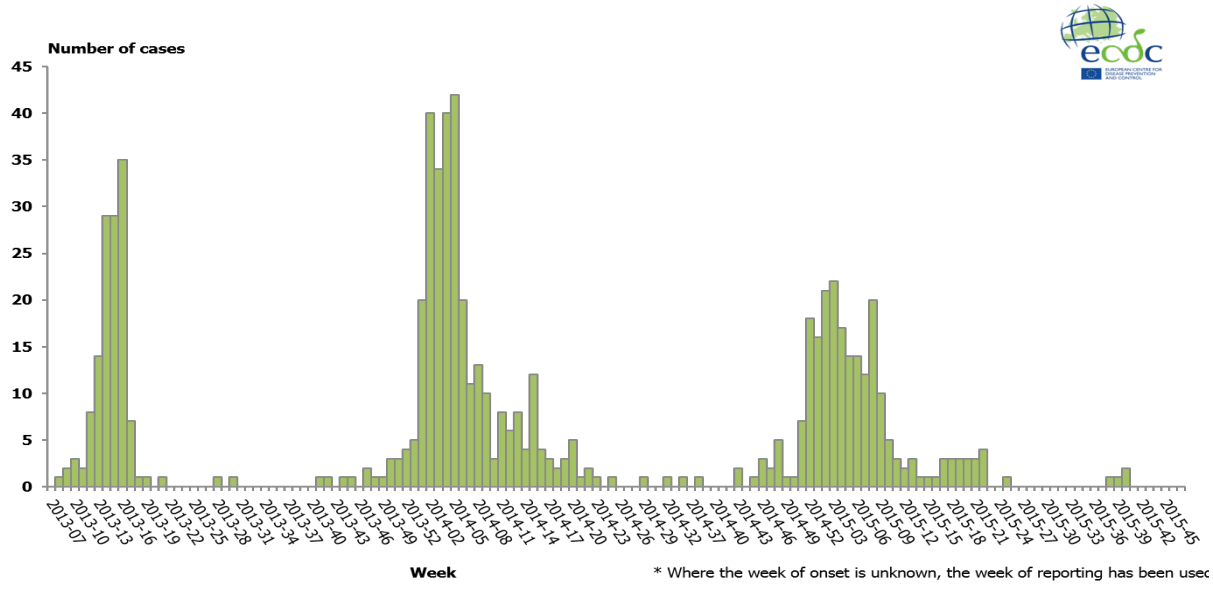


Figure 2: Influenza A(H7N9) - Weekly count of confirmed cases from 2013W07 to 2015W47 (Source: www.ecdc.europa.eu)



III. Objectives of surveillance

The objectives of surveillance of novel influenza surveillance are:

- To detect and confirm human cases of novel influenza
- To identify close contacts and conduct needed follow up
- To detect secondary cases among contacts
- To document containment
- To contribute to the global influenza surveillance.

IV. Alert and outbreak thresholds

An **alert** is defined by one of following:

- Suspected case of novel Influenza
- A cluster of severe acute respiratory infection
- A cluster of acute respiratory infection with link with animal/bird link
- A cluster of acute respiratory infection with non typable influenza A.

An **outbreak** is defined by at least 1 case of confirmed infection with novel Influenza virus.

V. Procedural steps

In case of an alert or outbreak of novel Influenza virus, the following steps are recommended. They are summarized in the figure (5).

Step 1: Verify the alert

Upon notification, the Esumoh caza team verifies with the treating physician and/or the hospital focal person: Is the physician suspecting a novel Influenza? Is the case meeting the case definition?
Also the caza team informs the Esumoh central level immediately.

Step 2: Investigate the case

The Esumoh mohafaza/central team starts to collect data related to the case. The investigation form is filled by the Esumoh. Data is collected by interviewing the patient, the parents and the treating physician. The investigation form is provided in Annex 1.

The investigation form includes the following information:

- Demography: age, gender, nationality
- Disease: onset, respiratory symptoms, chest X ray findings…
- Exposure: occupation, travel history, contact with confirmed cases, contact with animal or birds...

Step 3: Collect specimen

Any case of suspected novel influenza needs to be laboratory confirmed.

Clinical specimens are collected from the patient by the treating physician or the Esumoh team, using specific swabs. Needed specimens are nasopharyngeal and oro-pharyngeal swabs. Once collected, swabs are conserved in Viral Transport Media (VTM).

Specimens are collected within 5 days from onset and before starting antiviral treatment.

If specimens are tested within 48-72 hours, storage is at 4°C, otherwise specimens are stored at -70°C.

Table 2: Needed specimens and tests for novel Influenza virurses

Specimen	Tests
Oropharngeal swab	PCR, viral culture
Nasopharyngeal swab	PCR, viral culture
Bronchoalveolar labage	PCR
Tracheal aspirate	PCR
Lung biopsy	PCR

Specimens are sent to the National Influenza Center (NIC) at Rafik Hariri University Hospital. If the result is negative or shows seasonal influenza, investigation is stopped.

If the result shows novel Influenza, or un-typable Influenza A, the investigation continues. Specimens of un-typable virus are sent to supranational reference laboratories.

Step 4: Classify the case and confirm the outbreak

Based on the clinical, epidemiological and laboratory findings, the case is classified as shown in the figures (3) and (4).
One confirmed case of novel Influenza is considered as an outbreak. And the investigation is continued.

Step 5: Inform

Upon confirmation of novel Influenza, the MOPH informs:

- The WHO
- The health professionals
- The MOA...

The WHO is informed as this represents a potential public health event of international concern. The health professionals are informed by official MOPH memos to Orders and Syndicates. Also, the Ministry of Agriculture is informed as this will trigger to enhance animal and bird surveillance and initiate investigation.

Step 6: Conduct contact tracing

Any containment of novel influenza virus relies on good practices for contacts identification and follow up.

All close contacts with the case while symptomatic are listed. Information about close contacts can be obtained from interviews of the patient, the family members, the workplace or school associates, or others with knowledge about the patient's recent activities and travels.

Then, contacts are assessed for their exposure to the case. Close contacts who have been exposed to the droplets or aerosol of the patients are monitored daily up to 7 days.

A line-listing of all contacts and co-exposed persons is maintained. The line list includes the following: identity, demographic information, date of last common exposure or date of contact with the case patient, daily temperature, date of onset of symptoms.

Step 7: Search for additional cases

Additional cases are searched via various methods:

- Enhanced passive surveillance: health professionals are asked to report any suspected case.
- Active surveillance is enlarged to include the suspected cases of novel Influenza.
- Active case-finding among the persons who may have been co-exposed to the same source as the case patient
- Active follow up of the contacts.

Step 8: Describe cases

Cases are described in terms of:

- Time: epidemic curve by day and week of onset
- Place: mapping cases by place of residence...
- Person: age group, gender, occupation
- Disease: classification, outcome
- Exposure: travel or domestic.

Step 9: Identify risk factors

a) Travel-related

Cases classified as travel-related are the ones with travel history to a country known to have novel Influenza virus, in the 7 days preceding the onset of symptoms.

b) Domestic animal and bird related

Cases classified as animal/bird-related are the ones who in the 7 days preceding the onset of symptoms had:

- No travel history to a country known to have novel Influenza virus
- And contact with animal/bird...

The field investigation team includes staff from Esumoh and the Ministry of Agriculture to assess any infection in wild or domestic birds or animals, and to assess the human-animal interface. Animal health surveillance is enhanced. Information about local housing, feeding and bird handling practices, recent poultry/bird movement (e.g. introduction of new poultry/birds into a flock) is collected.

c) Further studies

If no obvious risk factor is identified linked to travel or animal/bird, further studies (as analytic studies) are conducted to identify the sources of infection.

Step 10: Enhance monitoring

During the investigation, daily situation reports are produced and shared with relevant authorities at local, national and international levels and other stakeholders (e.g. the public and the media).The numbers of cases and followed contacts are monitored on daily basis. The report provides information on the cumulative number of cases and contacts by time, place and person. The report is shared with involved partners.

Step 11: Write summary report

At the end of the outbreak, a final report summarizing the outbreak and the investigation findings is written and shared with partners.

Figure 3: Novel Influenza A(H5N1) case classification

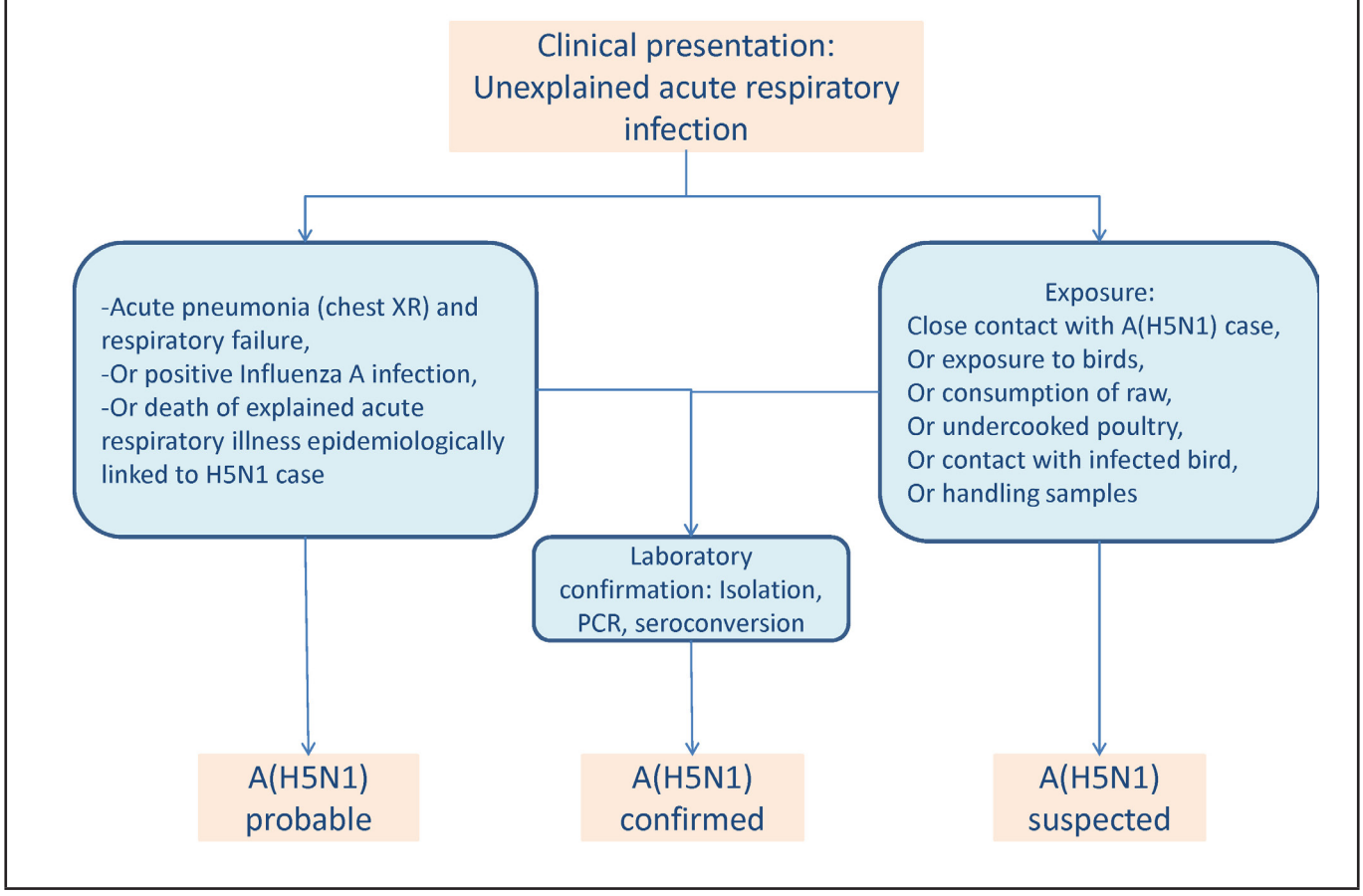


Figure 4: Novel Influenza A(H7N9) case classification

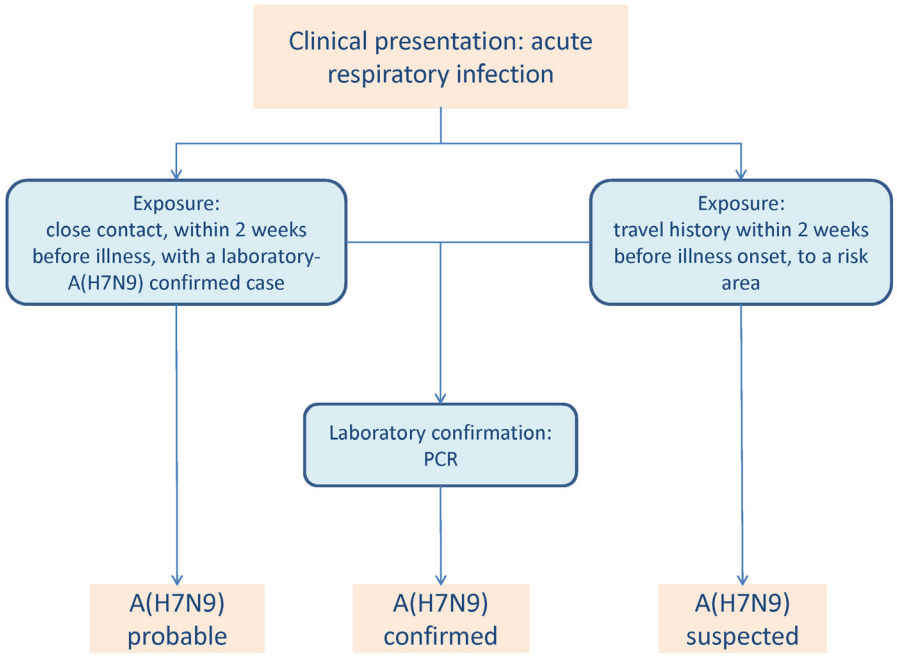
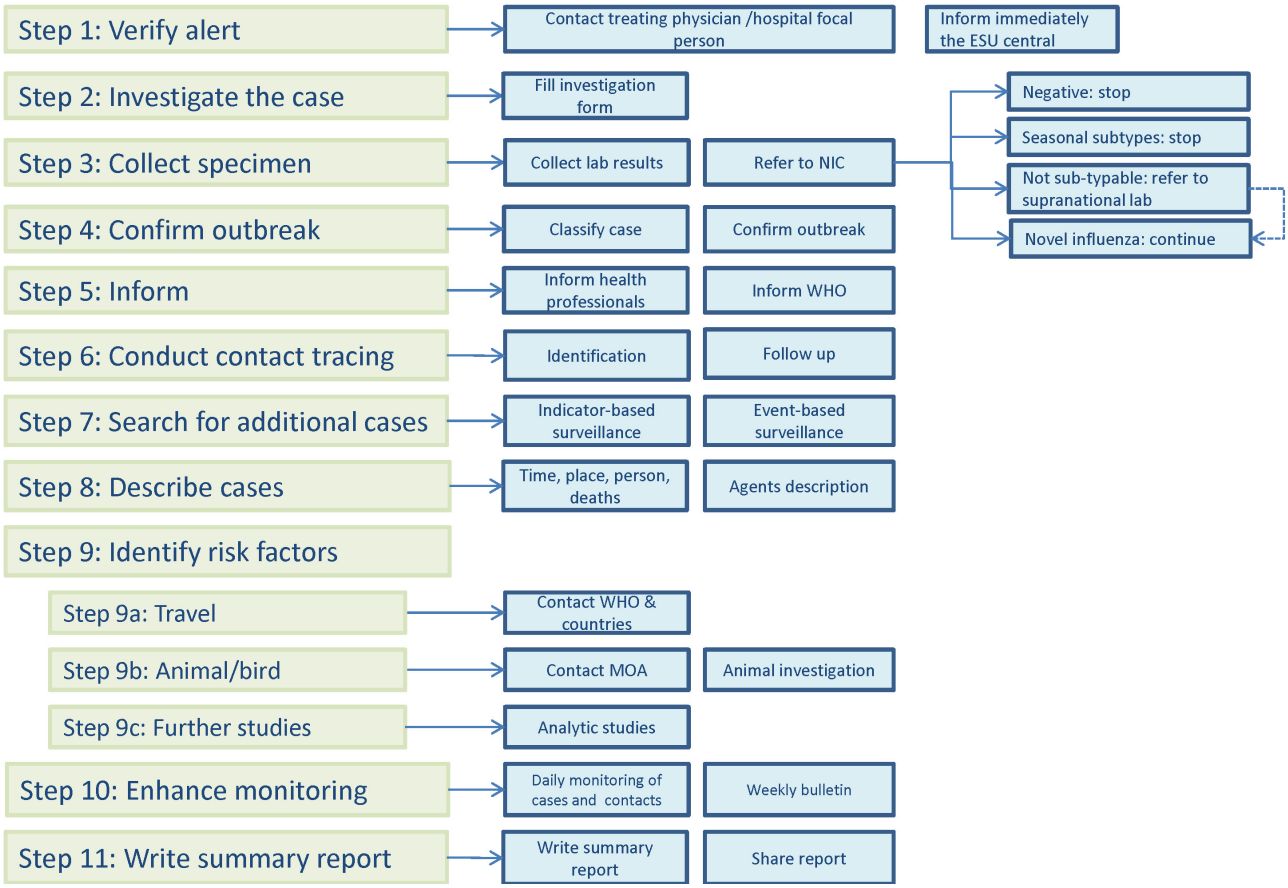


Figure 5: Novel Influenza investigation steps



Novel Influenza - Annex 1

ID |__|__|__|__|__|__|
Patient:

REPUBLIC OF LEBANON
Ministry of Public Health

Case Investigation form
Novel Influenza

Investigator:
Investigation date:

1. Reporting details

Name	Date of report	Institution	Telephone

2. Patient identity

Name	Sex	Date of Birth	Nationality
	☐male ☐female		
Full address		**Caza/Locality**	**Telephone**

3. Signs and symptoms

Date of onset of illness	Body temperature >= 38° C	Cough	Sore throat	Shortness of breath
	☐yes ☐no	☐yes ☐no	☐yes ☐no	☐yes ☐no

4. History of admission to hospital. Admission to hospital? ☐yes ☐no

If yes,

	Name of hospital	Caza	Date of admission	Patient isolated or cohorted?	Date of isolation/ cohorted	Admitted to ICU?	Mechanical ventilation?	Date of discharge
Hospital1				☐yes ☐no		☐yes ☐no	☐yes ☐no	
Hospital2				☐yes ☐no		☐yes ☐no	☐yes ☐no	
Hospital3				☐yes ☐no		☐yes ☐no	☐yes ☐no	
Hospital4				☐yes ☐no		☐yes ☐no	☐yes ☐no	

5. Travel history.

During the 7 days prior to the onset of symptoms, did the person travel or reside abroad? ☐yes ☐no

Place				Primary means of transport	Risk			
Country	City	Date of departure	Date of departure		Novel influenza in humans reported	Novel influenza in animals reported	Contact with human cases	Contact with animals/ birds
				☐plane ☐boat ☐road			☐yes ☐no	☐yes ☐no
				☐plane ☐boat ☐road			☐yes ☐no	☐yes ☐no
				☐plane ☐boat ☐road			☐yes ☐no	☐yes ☐no
				☐plane ☐boat ☐road			☐yes ☐no	☐yes ☐no

6. Occupational exposure. During the 7 days prior symptoms onset, has the person been working:

		If yes, specigy institution:
In animal-related occupation? (farm/plant worker, chef working with live or recently killed domestic fowls, dealer/trader of pet birds)?	☐yes ☐no	
As a worker in laboratory where samples are tested for influenza?	☐yes ☐no	o
As a health care worker?	☐yes ☐no	

ID |__|__|__|__|__|__|
Patient:

7. History of exposure to animal populations. During the 7 days prior to symptoms onset, has the person:

	Contact within 1 meter with any live or dead animal of species listed?	Entered settings where animal species were confined or had been confined in the previous 6 weeks	In yes, list countries and regions where these exposures occurred:
Domestic fowl (birds commonly reared for flesh, eggs, feathers, including chickens, ducks, geese, turkeys, guinea-fowls)	□yes □no	□yes □no	
Wild birds	□yes □no	□yes □no	
Swine	□yes □no	□yes □no	
Horses	□yes □no	□yes □no	

8. History of exposure to human cases. During the 7 days prior to the onset of symptoms, has the person been in contact (within touching or speaking distance) with:

	Yes/No	If yes, specify Influenza subtype	If yes, specify patient name
A confirmed human case of novel influenza A infection?	□yes □no		
A death from an unexplained acute respiratory illness?	□yes □no		
Any person suspected to have novel influenza A infeection?	□yes □no		
Any cluster of severe acute respiratory infection?	□yes □no	If yes, specify setting: □household □extended family	□hospital □recreational camps □residential institution □other, specify □military barracks

9. Laboratory investigation results for influenza A/H5

#	Type of specimen[1]	Date of collection	Test[2]	Laboratory	Result	Date of result	Subtypes

(1) Specimens: nasopharyngeal swab, oropharyngeal swab, nasal wash, tracheal aspirate, bronchoalveolar lavage, serum, paired sera…
(2) Tests: rapid test, single serology, paired serology, IFA, PCR, virus culture,Virsu subtyping

10. Prophylaxis against influenza

	Yes/No	If yes, specify	
6 months prior to symptoms onset: Influenza vaccine?	□yes □no	Vaccine name:	Country of administration:
7 days prior to symptoms onset: antiviral treatment	□yes □no	Drug name:	Taken regularly:

11. Final disposition& classification

Date	Clinical status	Classification
	□recovered □deceased, date: □lost to follow-up	□confirmed □possible □probable □discarded

Novel Influenza - Annex 2

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Laboratory Request Form for Influenza Virus Testing

I. Requester	Hospital name:
	SARI focal person name:
	Telephone:
	Fax number:
	Email address:
II. Patient Identification	Year Site # Patient ID number: |_____|_____|_____|
	Name:
	Age:
	Gender: ☐ Male ☐ Female
	Date of symptom onset: ___/___/_____
III. Antiviral treatment	☐ No ☐ Yes, specify starting date: ___/___/_____ , Name: Tamiflu®, Viriflu® …
IV. Specimen collection	Specimen collection date: ___/___/_____
	Specimen type: ☐ Naso-pharyngeal swab ☐ Oral-pharyngeal swab ☐ Nasal wash ☐ Tracheal aspirate ☐ Broncho-alveolar lavage ☐ Other, specify:
V. Reception at NIC	Date of reception: ___/___/_____
	Specimen condition: ☐ Adequate ☐ Inadequate, specify:
VI. Results	Date of result: ___/___/_____
	PCR testing:
	Laboratory director: (name, signature, stamp)

Notes

Notes

Notes

9

Surveillance Standard Operating Procedure: Invasive Coronavirus

Version 1
MOPH circular no. 59
(22nd Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance team in case of an alert or outbreak of Invasive Coronavirus.

II. Generalities

<table>
<tr><th colspan="2">Invasive Coronavirus</th></tr>
<tr><td>Agent</td><td>Coronavirus is a large family of viruses that can cause diseases ranging from common cold to Severe Acute Respiratory Syndrome.

1) Classical coronavirus: viruses that can infect humans and animals:
- Human coronavirus HCoV: causing mild illness (229E, OC43, NL63, HKU1...)
- Animal coronavirus: may infect pigs, domestic and wild birds, bats, rodents, dogs, cats and cattle. They cause acute and chronic diseases in animals such as respiratory, gastro-enteric diseases, neurologic diseases and liver disease.

2) Novel coronavirus:
- Severe Acute Respiratory Syndrome – SARS-CoV who caused a large outbreak in 2002-2003
- Middle East Respiratory Syndrome–Novel Coronavirus MERS-CoV: first identified in 2012</td></tr>
<tr><td>Incubation period</td><td>Short for the classical virus, and may be longer for the novel coronavirus.

<table><tr><th>Agent</th><th>Incubation period</th></tr><tr><td>Classical human coronavirus</td><td>2-4 days</td></tr><tr><td>SARS-CoV</td><td>3-10 days</td></tr><tr><td>MERS-CoV</td><td>2-14 days</td></tr></table></td></tr>
<tr><td>Period of communicability</td><td>Usually during active phase.

<table><tr><th>Agent</th><th>Period of communicability</th></tr><tr><td>Classical human coronavirus</td><td>During the active disease</td></tr><tr><td>SARS-CoV</td><td>From onset to 21 days</td></tr><tr><td>MERS-CoV</td><td>During the illness period. The duration of infectivity after resolution of symptoms is unknown.</td></tr></table></td></tr>
</table>

<table>
<tr><td>Reservoir</td><td>The reservoir can be human or animal.

<table>
<tr><th>Agent</th><th>Reservoir</th></tr>
<tr><td>Classical human coronavirus</td><td>Humans</td></tr>
<tr><td>SARS-CoV</td><td>Animals are suspected to be reservoir. Himalayan masked palm civet (Paguma larvata), the Chinese ferret badger (Melogale moschata), the raccoon dog (Nyctereutes procyonoides), cats (domestic), ferrets (Mustela furo) were found to be infected with SARS-CoV.</td></tr>
<tr><td>MERS-CoV</td><td>Camels seems to act as reservoir.</td></tr>
</table></td></tr>
<tr><td>Modes of transmission</td><td>Known for some, and not clarified for the novel ones.

<table>
<tr><th>Agent</th><th>Modes of transmission</th></tr>
<tr><td>Classical human coronavirus</td><td>- Person-to-person: direct or indirect contact with infected droplets
- Airborne in confined place</td></tr>
<tr><td>SARS-CoV</td><td>Person-to-person via:
- Respiratory secretions
- Body fluids as fomites
- Airborne (aerosolized sewerage, mechanical ventilation...)</td></tr>
<tr><td>MERS-CoV</td><td>- Limited person-to-person transmission: close contact, when providing unprotected care to a patient
- Suspected animal-to-person transmission</td></tr>
</table></td></tr>
<tr><td>Clinical presentation</td><td>Coronavirus can cause mild to severe illness.

<table>
<tr><th>Agent</th><th>Clinical presentation</th></tr>
<tr><td>Classical human coronavirus</td><td>Gastroenteritis, encephalitis</td></tr>
<tr><td>SARS-CoV</td><td>- Acute respiratory distress
- The global case fatality in 2002-2003 was 10%.</td></tr>
<tr><td>MERS-CoV</td><td>- Acute lower respiratory infection with or without gastrointestinal symptoms. The illness may be severe in people with chronic medical conditions. It may evolve to respiratory failure, organ failure (as renal failure), septic shock...
- The global case fatality rate is estimated to be 27%.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Worldwide</td><td>
<table>
<tr><th>Agent</th><th>Worldwide</th></tr>
<tr><td>Classical human coronavirus</td><td>Worldwide. It is causing 10-15% of common cold cases. It has seasonal pattern with main occurrence in winter.</td></tr>
<tr><td>SARS-CoV</td><td>Global outbreak in 2002/2003 with cases reported in China, Canada, Singapore, Vietnam, and imported cases in several countries.</td></tr>
<tr><td>MERS-CoV</td><td>Since 2012, the virus appears to be circulating in the Arabian Peninsula.
Cases reported outside the Middle East are travel-related with limited human-to-human transmission.</td></tr>
</table>
</td></tr>
<tr><td>Lebanon</td><td>Rarely detected.

<table>
<tr><th>Agent</th><th>In Lebanon</th></tr>
<tr><td>SARS-CoV</td><td>No case reported in Lebanon in 2002-2003</td></tr>
<tr><td>MERS-CoV</td><td>1 case detected in May 2014</td></tr>
</table>
</td></tr>
<tr><td>Control objective</td><td>Control</td></tr>
<tr><td colspan="2">Surveillance and Investigation</td></tr>
<tr><td>Surveillance approach</td><td>Disease approach or syndromic approach</td></tr>
<tr><td>Investigation: data about case</td><td>Clinical presentation, demography, travel history, occupation, contact with cases, contact with animals and camels or consumption of camel milk...</td></tr>
<tr><td>Investigation: clinical specimen from case</td><td>Respiratory specimens (deep respiratory specimens)</td></tr>
<tr><td>Investigation: data about contacts</td><td>For SARS-CoV and MERS-CoV: contact identification and follow up</td></tr>
<tr><td>Investigation: clinical specimen from contacts</td><td>If symptoms</td></tr>
<tr><td>Test</td><td>PCR test</td></tr>
<tr><td>Laboratories</td><td>RHUH</td></tr>
<tr><td>Outbreak level</td><td>At least 1 confirmed case</td></tr>
<tr><td>Notification to WHO</td><td>Yes</td></tr>
</table>

Case definitions	
SARS-CoV case definition (MOPH circular no. 35 dated on the 5th May 2012)	
SARS-CoV: Confirmed case	A person with laboratory confirmation of infection with SARS coronavirus (SARS-CoV) who: • Either fulfills the clinical case definition of SARS • Or has worked in a laboratory with live SARS-CoV or storing clinical specimens infected with SARS-CoV. SARS is laboratory confirmed by one of the following 3 methods: a) Conventional reverse transcriptase polymerase chain reaction (RT-PCR) and real-time reverse transcriptase PCR (real-time RT-PCR) assay detecting viral RNA present in: • At least two different clinical specimens (e.g. nasopharyngeal and stool) • Or the same clinical specimen collected on two or more occasions during the course of the illness (e.g. sequential nasopharyngeal aspirates) • Or in a new extract from the original clinical sample tested positive by two different assays or repeat RT-PCR/real-time RT-PCR on each occasion of testing b) Enzyme Linked Immunosorbent Assay (ELISA) and immunofluorescent assay (IFA): • Negative antibody test on serum collected during the active phase of illness followed by positive antibody test on convalescent phase serum, tested simultaneously • Or four fold or greater rise of antibody titre against SARS-CoV between an acute serum specimen and a convalescent serum specimen (paired sera), tested simultaneously c)Virus culture: from any clinical specimen
SARS-CoV: Clinical definition	A person presenting picture of lower respiratory infection with: • Fever • And one or more symptoms of lower respiratory tract illness (cough, difficulty breathing, shortness of breath) • And radiographic evidence of lung infiltrates consistent with pneumonia or acute respiratory distress syndrome (ARDS) or autopsy findings consistent with the pathology of pneumonia of ARDS without an identifiable cause • And no alternative diagnosis can fully explain the illness
MERS-CoV case definition (MOPH circular no. 37 dated on the 7th May 2014)	
MERS-CoV: Confirmed case	Any person with positive laboratory confirmation of infection with novel coronavirus
MERS-CoV: Probable case	Any possible case with close contact during the last 10 days before onset of illness with a symptomatic confirmed case of novel coronavirus infection. Close contact is defined as: • Anyone who provided care for a MERS-CoV patient • Or anyone who stayed at the same place while a MERS-CoV patient was ill.

MERS-CoV: Suspected case	Any person with severe acute respiratory infection, with: a) Symptoms of fever (>= 38°C), cough, and evidence of pulmonary parenchymal disease (pneumonia or acute respiratory distress syndrome) based on clinical and/or radiological evidence b) And not already explained by any other infection or etiology c) And admitted to hospital d) And one of the following: • With history travel within 14 days before symptoms onset in a country who reported local cases • Or contact history with a person with acute respiratory infection who traveled in a country who reported local cases • Or healthcare worker caring for patients with severe acute respiratory infection • Or the case occurs as part of a cluster. Cluster is defined as at least 2 persons with severe acute respiratory infection, with onset of symptoms within the same 2 weeks, and who are associated with a specific setting.
Forms	
Reporting	Standard reporting form, or MERS-CoV reporting form (MOPH circular no.56 dated on 3rd June 2013)
Investigation	- Specific investigation form for SARS-CoV (MOPH circular no.46 dated on 17th May 2003) - Specific investigation form for MERS-CoV
International figures	

Figure 1: SARS-CoV - Countries who reported cases, worldwide, 2002-2003 (Source: WHO)

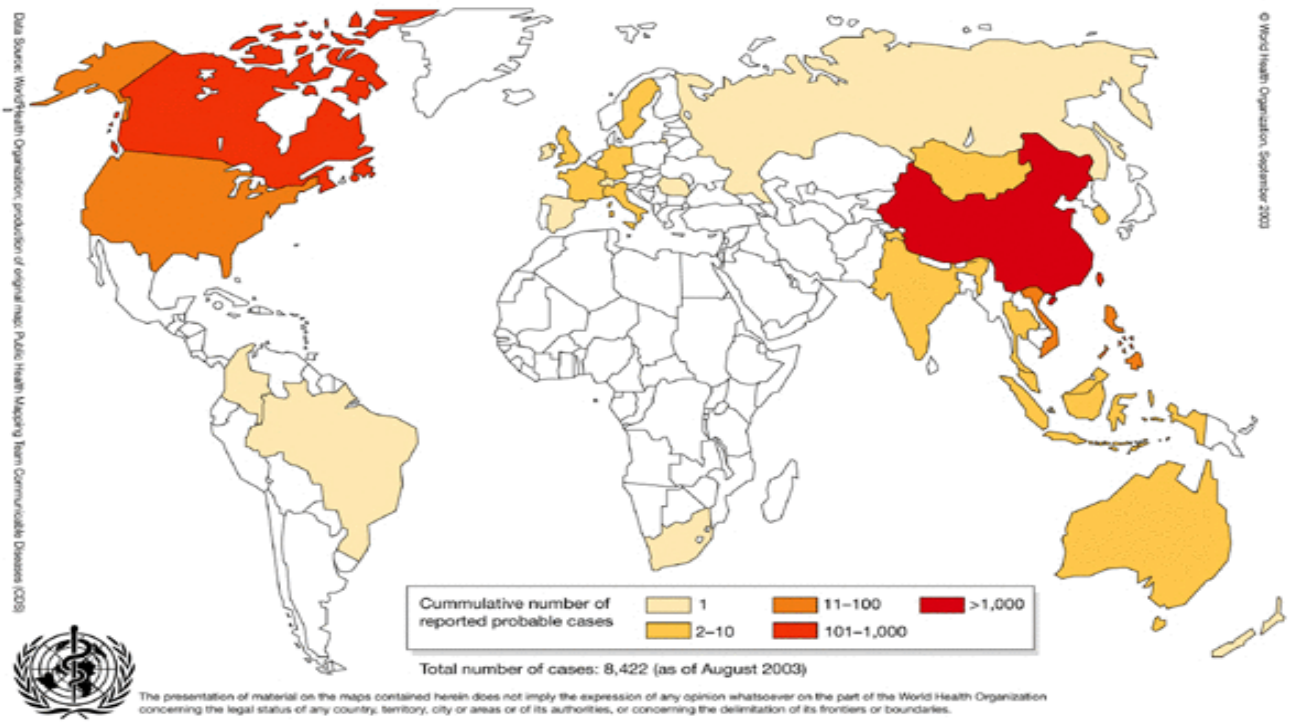
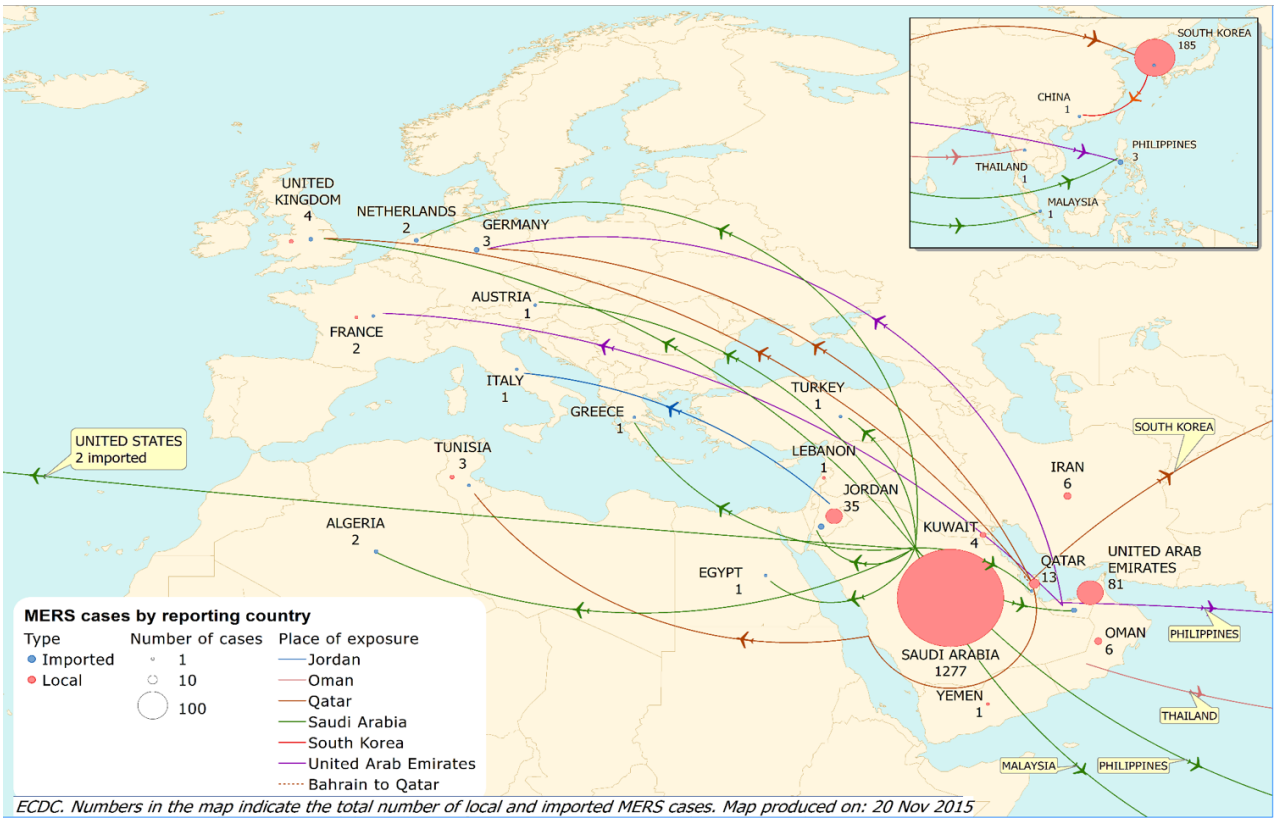
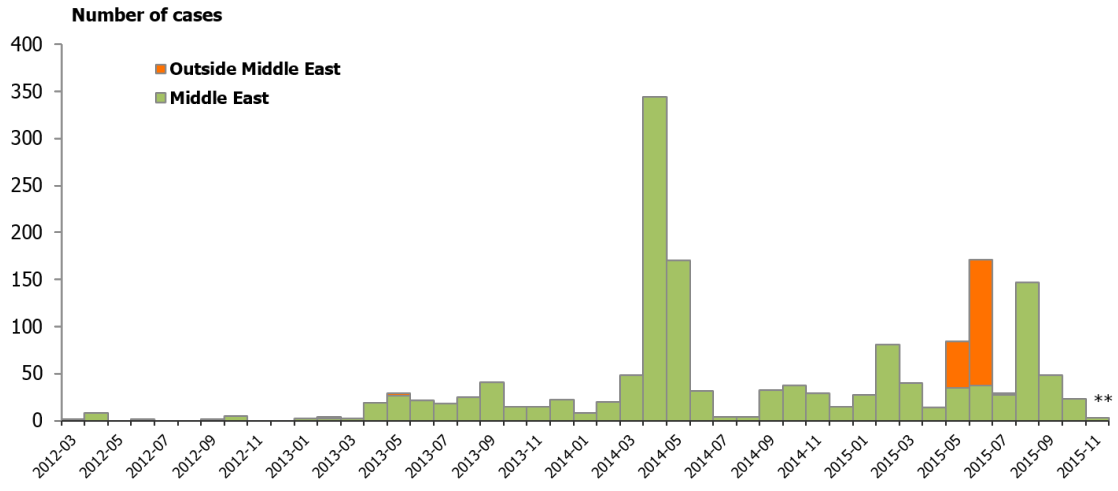


Figure 2: MERS-COV - Confirmed Cases by country of infection, worldwide, Mar. 2012 - Nov. 2015 (Source: www.ecdc.europa.eu)



ECDC. Numbers in the map indicate the total number of local and imported MERS cases. Map produced on: 20 Nov 2015

Figure 3: MERS-COV: Weekly confirmed cases, worldwide, Mar. 2012 - Nov. 2015 (Source: www.ecdc.europa.eu)



III. Objectives of surveillance

The objectives of surveillance for invasive coronavirus are:

- To detect and confirm human cases of invasive coronavirus infection
- To identify close contacts and conduct needed follow up
- To detect secondary cases among contacts
- To document containment.

IV. Alert and outbreak thresholds

An **alert** is defined by one of following:

- Suspected case of invasive coronavirus
- A cluster of severe acute respiratory infection.

An **outbreak** of invasive coronavirus is defined by at least 1 case of confirmed infection with invasive coronavirus.

V. Procedural steps

In case of an alert of invasive coronavirus, the following steps are recommended. They are summarized in the figure (6).

Step 1: Verify the alert

Upon notification, the Esumoh caza team verifies with the treating physician and the hospital focal person: Is the physician suspecting SARS-CoV or MERS-CoV? Is the case meeting the case definition?
Also the caza team informs the Esumoh central level.
For MERS-CoV, the health facility reports the case using specific reporting form (Annex 1).

Step 2: Investigate the case

The Esumoh mohafaza/central team starts to collect data related to the case. The investigation form is filled by Esumoh team. Data is collected by interviewing the patient, the parents and the treating physician. The investigation form is provided in Annex 2.

The investigation form includes the following information:

- Demography: age, gender, nationality
- Disease: onset, respiratory symptoms, chest X ray results…
- Exposure: occupation, travel history, contact with confirmed cases, contact with animal (camels …)

Step 3: Collect specimen

Any case of suspected SARS-CoV or MERS-CoV needs to be laboratory-confirmed.

Clinical specimens are collected from the patient by the treating physician or the Esumoh team, using specific swabs. Lower respiratory tract specimens are collected: deep tracheal aspirate, bronchoalveolar lavage or deep sputum. The specimens are collected in sterile tube without additive.

If lower respiratory tract specimens cannot be collected, naso-pharyngeal and oro-pharyngeal swabs are collected and conserved in Viral Transport Media (VTM).

Specimens are collected within 5 days from onset. If specimens are to be tested within 48-72 hours, storage is at 4°C, otherwise specimens are stored at -70°C.

Specimens are sent to the clinical laboratory at Rafik Hariri University Hospital.

Details on needed specimens and tests for MERS-CoV are presented in annex (4).

Step 4: Confirm the outbreak

a) Classify the case

Based on the clinical, epidemiological and laboratory findings, the case is classified as shown in the figures (2) and (3).

b) Declare the outbreak

One confirmed case of invasive coronavirus is considered as an outbreak. The investigation is continued.

c) Inform

Upon confirmation of SARS-CoV or MERS-CoV, the MOPH informs:

- The health professionals
- The WHO...

The health professionals are informed by official MOPH memos via the Orders and the Syndicates.
The WHO is informed as this represents a potential public health event of international concern.

Step 5: Conduct contact tracing

Any containment of SARS-CoV or MERS-CoV relies on good practices for infection control and good practice for contacts identification and follow-up.

All close contacts with the case while symptomatic are listed. Information about close contacts can be obtained from interviewing the patient, the family members, the workplace or school associates, or others with knowledge about the patient's recent activities and travels.

Then, contacts are assessed for their exposure to the case. Close contacts that have been exposed to the droplets or aerosol of the patient are monitored daily up to 10 days.

A line-listing of all contacts and co-exposed persons is established and updated. The line list includes the following: contact identity, demographic information, date of last common exposure or date of contact with the index case, daily temperature, and date of onset of symptoms (if any symptom appears).

Step 6: Search for additional cases

Additional cases are searched via various methods:

- Enhanced passive surveillance: health professionals are asked to report any suspected case.
- Active surveillance is enlarged to include the suspected cases of SARS-CoV or MERS-CoV.
- Active case-finding among the persons who may have been co-exposed to the same source as the index case
- Active follow up of the contacts...

Step 7: Describe cases

Cases are described in terms of:

- Time: epidemic curve by day and week of onset
- Place: mapping cases by place of residence or place of exposure, travel history
- Person: age group, gender, occupation, co-morbidities
- Disease: classification, outcome
- Exposure: travel or domestic...

Step 8: Identify risk factors

a) Travel-related

Cases classified as travel-related are the ones with travel history to a country known to have SARS-Cov or MERS-CoV, in the 10 days preceding the onset of symptoms.

b) Animal-related

Cases classified as animal-related are the ones who in the 10 days preceding the onset of symptoms had:

- No travel history to a country known to have SARS-CoV or MERS-CoV
- And contact with domestic or wild animals.

In case of local cases of MERS-CoV, special attention is given to camels and bats. The MOPH informs the MOA and asks for a seroprevalence of MERS-CoV in animals.

c) Healthcare-related

Cases classified as healthcare-related are the ones who in the 10 days preceding the onset of symptoms had:

- Provided healthcare to patients or been admitted to a healthcare facility
- And no travel history to a country known to have SARS-CoV or MERS-CoV.

In such context, the suspected health facility is identified. An audit of infection control practice is conducted in suspected health facility. Search for additional cases are conducted in coordination with the health facility.

d) Conduct further studies

If no obvious risk factors are identified linked to travel or contact with animals, further studies (as analytic studies) are conducted to identify the source of infection.

For MERS-CoV, if the number of local cases increases, a case control study is conducted.

Also, attempts are conducted to isolate and identify the virus. Such identification will enables:

- Comparing strains
- Identifying the source.

Step 9: Enhance monitoring

The number of cases is monitored on daily basis, and the contacts are followed on daily basis.

During the investigation, weekly situation reports and their timely communication with relevant authorities at local, national and international levels and other stakeholders (e.g. the public and the media) are critical.

The report provides information on the cumulative number of cases and contacts by time, place and person. The report is shared with involved partners.

Step 10: Write summary report

At the end of the outbreak, a final report summarizing the outbreak investigation findings is written and shared with partners.

Figure 4: SARS-CoV case classification

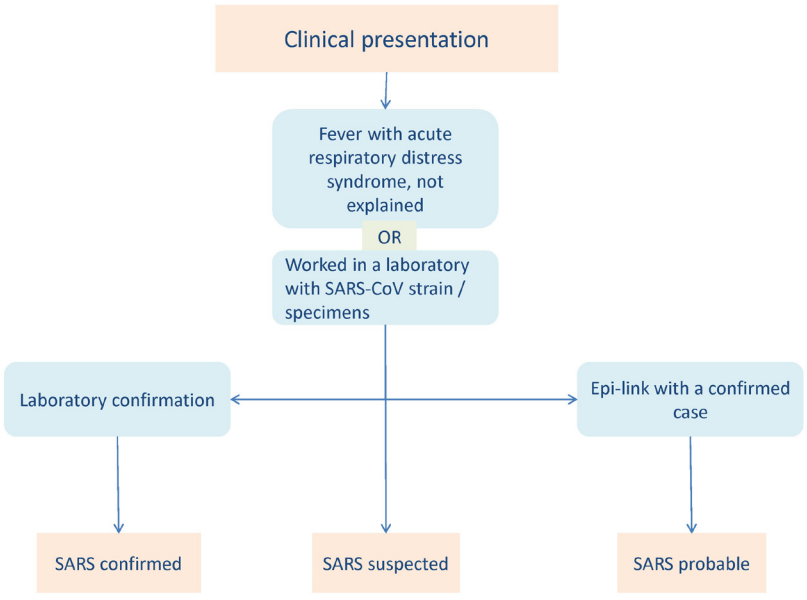


Figure 5: MERS-CoV case classification

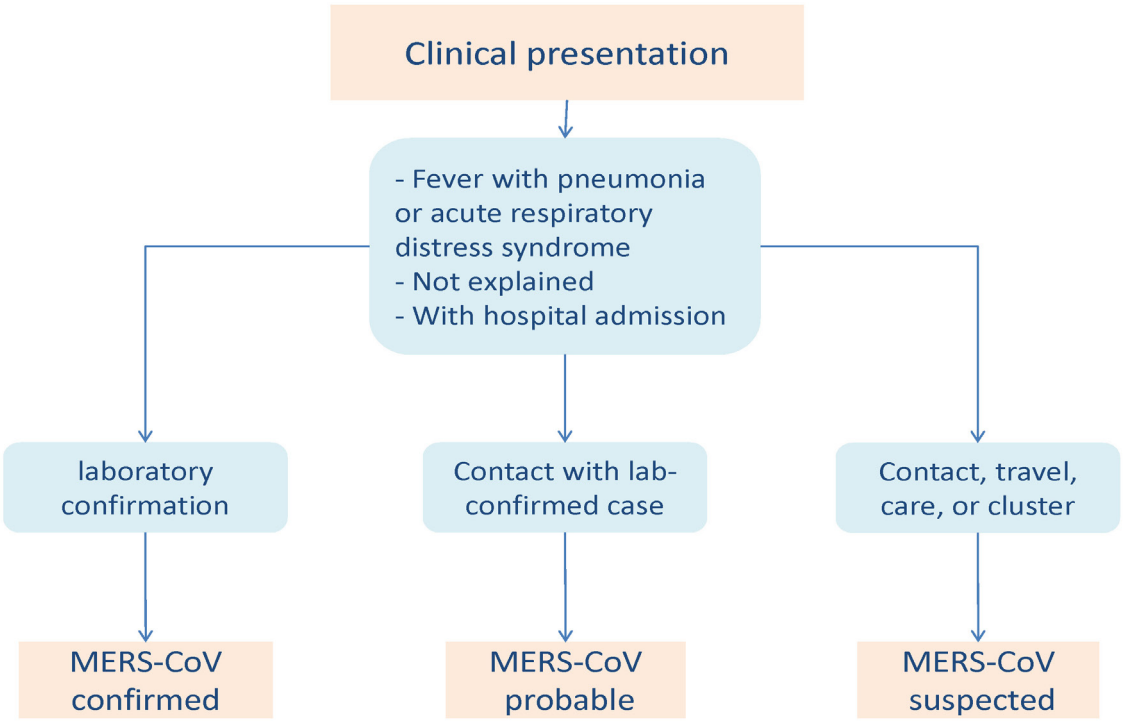
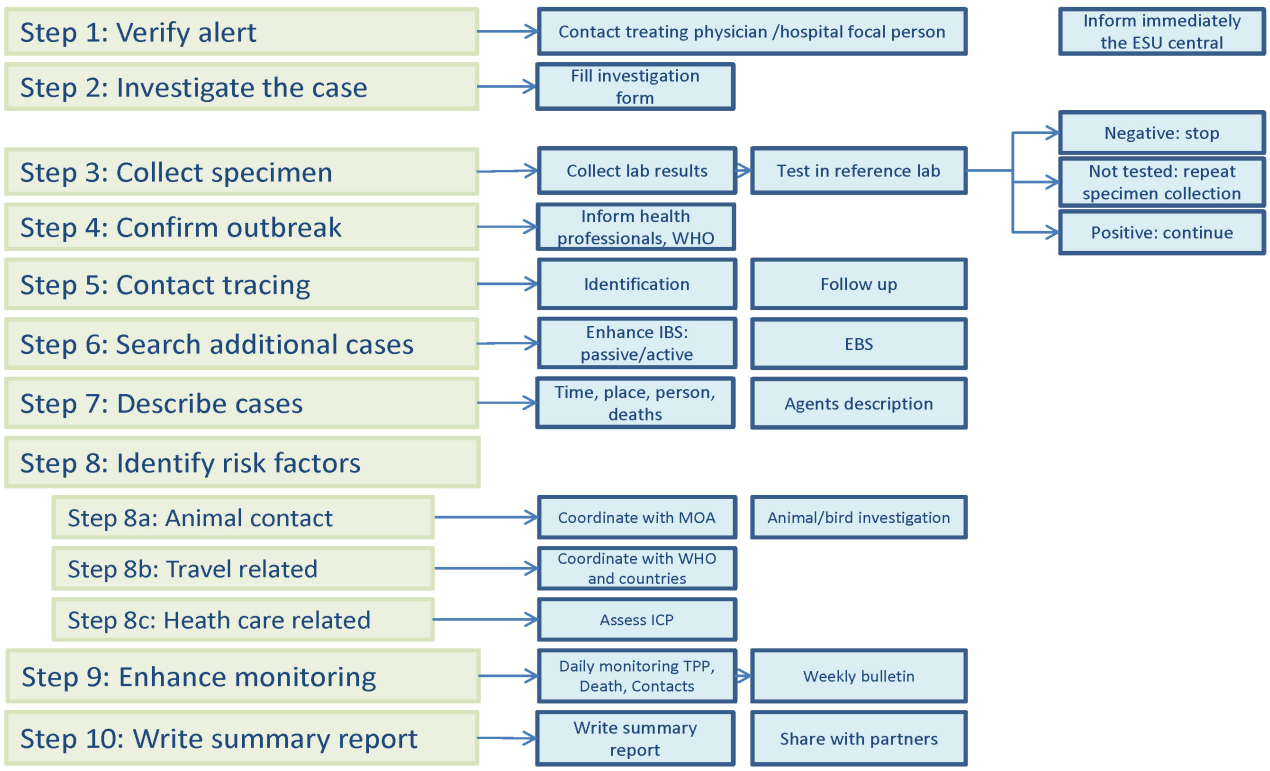


Figure 6: Invasive coronavirus investigation steps



Invasive Coronavirus - Annex 1

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Novel Coronavirus Infection Reporting Form
ESU number: LB-nCoV- |_____|

A.Reporter

Hospital ..... Physician .....
Date of |___|___|_____| Mobile .....

B.Patient information

Name: ..... Gender: ☐ M ☐ F
Date of Birth: |___|___|_____| Nationality: .....
Caza of ..... Residence: ☐ Resident ☐ Visitor ☐Refugee
Locality of ..... Occupation: .....
Phone number: ..... Institution: .....

C.Signs and symptoms

Symptom |___|___|_____|
Fever (≥ ☐ Dyspnea ☐
Cough ☐ Pathologic chest X-ray ☐
If other, ☐ .....

D.Hospitalization

Hospitalized for ☐ since
Patient admitted to ☐ since
Mechanical ☐ since

E.Clinical and paraclinical presentation

Diagnosis of ☐ Cardiac arrest ☐
ARDS ☐ Hypotension requiring vasopressors ☐
Acute Renal Failure ☐ Pregnancy ☐ .....
Multi-organ failure ☐ Other, specify ☐

F.Risk factors/Exposure in the 10 days prior to illness onset

Travel ☐ Where .....
Travel of Family member ☐ Where .....
Contact with confirmed nCoV ☐ Who .....
Contact with non confirmed nCoV ☐ Who .....
Contact with SARI ☐ Who .....
Health Care Worker ☐ Where .....

G.Comorbidities

Cancer ☐ Kidney failure ☐
Diabetes ☐ Chronic liver disease ☐
Chronic lung ☐ Heart disease ☐
Asthma ☐ Deficient immune system ☐
Hematogical ☐ Other, specify ☐ .....

H.Outcome

☐ Remission ☐ Still Ill ☐ Death, date of death

I.Specimens

Sputum ☐ date |____|____|_____| Broncholavealar ☐ date
Tracheal aspirate ☐ date |____|____|_____| Nasal/throat ☐ date
Serum (paired sera) ☐ date |____|____|_____| Blood EDTA ☐ date

H.Date and signature:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

Republic of Lebanon - Ministry of Public Health - Epidemiology Surveillance Program

Person Under Observation FORM
For Severe Acute Respiratory Syndrome SARS
Part I - Case first investigation

A. Reporter

Reporting date	Reporting institution	Reporting physician phone number

B. Demographic Details

Name	Date of birth	Sex ☐ M ☐ F
Nationality	Occupation	Is he/she a health/lab worker? ☐ Yes ☐ No ☐ Unk

C. History of Exposure

Did the person have close contact with a known SARS case before the onset of symptoms? ☐ Yes ☐ No

SARS case	Country	Hospital where SARS case	Date of contact

Did the person travel to "affected areas" during the 10 days before the onset of symptoms? ☐ Yes ☐ No

Country	Region	From	To

Did the person work in laboratory during the 10 days before the onset of symptoms? ☐ Yes ☐ No

Country	Laboratory	Laboratory type	Type of work

Or has worked in a laboratory with live SARS-CoV or storing specimens infected with SARS? ☐ Yes ☐ No

Country	Laboratory	Laboratory type	Type of work

D. Symptoms and signs at onset

Date of onset of initial symptoms	Body temperature	Cough ☐ Yes ☐ No ☐ Unk
Dyspnea ☐ Yes ☐ No ☐ Unk	Respiratory distress ☐ Yes ☐ No ☐ Unk	Other symptoms:
Chest X ray: ☐ Yes ☐ No Date: Results:	CBC: ☐ Yes ☐ No Date: White cell count: Segmented count: Platelet count:	Other lab findings:

E. Decision

☐ Suspected SARS		
☐ Suspected SARS	☐ Isolation at hospital: Hospital name: Admission date:	☐ Isolation at home:

Date and Signature:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

Republic of Lebanon - Ministry of Public Health - Epidemiology Surveillance Program

Person Under Observation FORM
For Severe Acute Respiratory Syndrome SARS
Part II –Laboratory testing

A. Identification

Reporting Institution	Reporting Physician Phone Number	Case Name

B. Clinical specimen collection – To be filled at the hospital

Specimen(s)	Date of collection
☐ Throat swab ☐ Sputum ☐ Deep tracheal aspirate ☐ Broncho-alveolar lavage ☐ Blood ☐ Stool ☐ Urine ☐ Other:	

Person in charge: Phone Number:
Date and Signature: Email Address:

C. Clinical specimen shipment - To be filled by the MOPH

Specimen, ref	Date of Shipment	Shipment References

Person in charge: Phone Number:
Date and Signature: Email Address:

D. Clinical specimen arrival - To be filled by WHO reference laboratory

Specimen, ref	Date of Arrival	Condition on Arrival

Person in charge: Phone Number:
Date and Signature: Email Address:

E. Laboratory results - To be filled by WHO reference laboratory

Tests	Results	Comments

Person in charge: Phone Number:
Date and Signature: Email Address:

Invasive Coronavirus - Annex 3

Ministry of Public Health
Epidemiological surveillance unit
Tel: 961-1-614194 ; Fax : 961-1-610920
E-mail: esumoh@cyberia.net.lb

الجمهورية اللبنانية

وزارة الصحة العامة

Novel Coronavirus - INVESTIGATION FORM
ESU number: _____

1- Patient information	
Name :	Residence: □ Permanent □ Visitor
Gender: □ M □ F	Caza of residence:
Date of Birth: Age:	locality of residence:
Nationality:	Phone number:
Occupation:	

2- Signs and symptoms			
Symptoms onset date _____/_____/_____ (dd/mm/yyyy) ***OR*** □ Asymptomatic			
	Yes	**No**	**Don't know/ Unsure**
Fever (≥ 38°c)	□	□	□
Runny nose	□	□	□
Sneezing	□	□	□
Cough	□	□	□
Sore throat	□	□	□
Shortness of breath	□	□	□
If other signs/symptoms, please indicate:			

3- Hospitalization					
Was the patient hospitalized for this illness?			□ Yes	□ No	□ Unknown
	Hospital name		**Admission date**		**Discharge date**
Hospital 1					
Hospital 2					
Died from illness	□ Yes	□ No	□ Unknown	Death date	
Autopsy	□ Yes	□ No	□ Unknown	Result	

4- Clinical findings			
Diagnosis of pneumonia	□ Yes	□ No	□ Unknown
If Yes: □ Clinical □ Radiographic □ Other			
If other please indicate:			
Patient admitted to ICU	□ Yes	□ No	□ Unknown
ICU start date:			
ICU discharge date:			
Mechanical Ventilation:	□ Yes	□ No	□ Unknown
If Known, Start Date:			
Duration (days):			
Acute Respiratory Distress Syndrome	□ Yes	□ No	□ Unknown
If yes, date:			
Acute Renal Failure	□ Yes	□ No	□ Unknown
Fatality	□ Yes	□ No	□ Unknown

5- Risk factors/Exposure

Did patient travel to Middle east in the 10 days prior to illness onset?

□ Yes □ No □ Unknown; If yes, which country: □ KSA □ Qatar □ Other (please indicate) .....

Country	Departure date	Return date

Did patient have contact with someone else who traveled to Middle east in the 10 days prior to illness onset?

□ Yes □ No □ Unknown

If yes, what is the relation?

Which country: □ KSA □ Qatar □ Other (please indicate) .....

Country	Departure date	Return date

In the 10 days before onset did the case have close contact with any of the following

□ Cows □ bats □ Goats □ Camels □ Sheep □ Other animals (please indicate) .....

Does patient work as a health care worker?

□ Yes □ No □ Unknown If yes, name and city of facility:

Did patient have contact with a person with Acute Respiratory Infection on the 10 days prior to illness onset?

□ Yes □ No □ Unknown If yes, describe:

6- Laboratory tests

Did patient have any tests performed for respiratory viruses/bacteria? □ Yes □ No □ Unknown

Specimen type	Date of collection	Laboratory name	Type of test	Result of test

7- Case classification	
Classification	Date
□ Unknown	
□ Confirmed	
□ Suspected	
□ Probable	

8- Investigator information				
Name	Institution	Date	Phone number	Signature

Specimen collection for MERS-CoV

(Source: WHO)

Presentation	Test	Type of specimen	Timing	Storage and transportation	Remarks
Symptomatic	PCR	Lower respiratory tract: –sputum –aspirate –lavage	Collect on presentation To confirm clearance of the virus, sample collection to be repeated until the results are negative on 2 sequential samples	If the specimen will reach the laboratory in less than 72 hours, store and ship at 4°C, if longer than 72 hours, store at - 80°C and ship on dry ice or liquid nitrogen	Follow international regulations and triple package system.
		Upper respiratory tract: –naso-pharyngeal and –oro-pharyngeal swabs –naso-pharyngeal wash/naso- pharyngeal aspirate			
		Serum for virus detection (the Acute sample for serology can be used for virus detection by PCR)			
	Serology	Serum for serological testing.	Paired samples are necessary for confirmation with the initial sample collected in the first week of illness and the second ideally collected 2–3 weeks later. A single serum sample should be collected at least 14 days after onset of symptoms for determination of a probable case.	As above	As above
Presentation	Test	Type of specimen	Timing	Storage and transportation	Remarks
Asymptomatic Contact (routine testing of asymptomatic contacts is not recommended)	PCR	Nasopharyngeal and oropharyngeal swabs; sputum if possible.	Within 14 days of last documented contact	As above	As above
	Serology	Serum	Baseline serum taken within 14days of last documented contact and convalescent serum taken 2-3 weeks later. If only a single sample is possible, collect at least 14	As above	As above

Notes

Notes

Notes

10

Surveillance Standard Operating Procedure: Meningococcal Infection

Version 1
MOPH circular no. 35
(19th Jan 2015)

Contents

I Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of meningococcal alert or outbreak.

II. Generalities

Meningococcal meningitis and meningococcal septicaemia are systemic infections caused by the bacteria Neisseria meningitidis. Humans are the only known reservoir for N. meningitidis, which is a normal inhabitant of the nasopharynx and is transmitted from person-to-person by droplets or secretions from the upper respiratory tract. Disease usually presents septicaemia, meningitis or both:

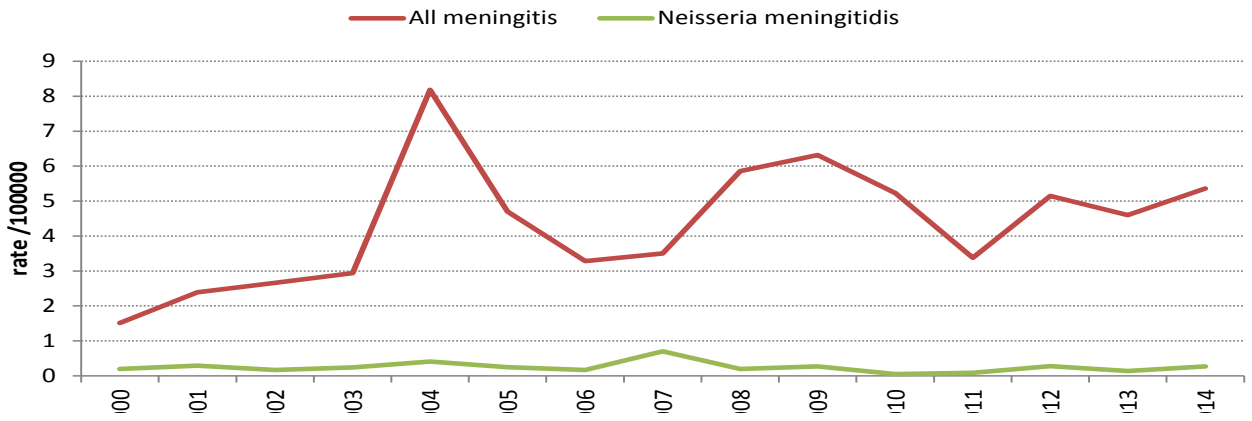
- Meningitis: inflammation of meninges (lining of the brain)
- Septicaemia: bacteria enters the bloodstream resulting in blood poisoning.

Early signs and symptoms of meningococcal disease may be non specific and therefore difficult to distinguish from influenza or other diseases. Early symptoms include fever, vomiting, malaise and lethargy with photophobia, neck stiffness and classical purpuric rash. Detailed information about the disease is presented in the table below.

Neisseria meningitidis	
Agent	Gram-negative diplococcal bacteria
Serogroups	12 serogroups of N. meningitidis have been identified, six of which can cause epidemics: A, B, C, W135, X and Y
Incubation period	2-10 days, with an average of 4 days
Period of communicability	Cases should be considered infectious from the time they are exposed until 24 hours after initiation of treatment or chemoprophylaxis with appropriate antibiotics.
Reservoir	- Humans - Asymptomatic carriage in nasopharynx is common.
Modes of transmission	- Person-to-person by direct contact with respiratory droplets of infected people - Most cases acquired through exposure to asymptomatic carriers.
Carrier	- 1-10% asymptomatic carriage during normal period - 10-25% during outbreaks
Vaccine	- Meningococcal A conjugate vaccine, C conjugate vaccine, tetravalent A, C, Y and W135 conjugate vaccines and meningococcal polysaccharide vaccines - No vaccine available for serogroup B
Clinical presentation	- Bacterial meningitis - Septicemia: rare and severe with purpura - Complications: cerebral lesion, hearing loss, learning disorders among 10-20% of survivors - Case fataliry rate: 5-10% within 24-48 hours after the onset of symptoms
Worldwide	- The meningitis belt of sub-Saharan Africa, from Senegal in the west to Ethiopia in the east, has the highest rates of the disease. - 80–85% of all cases in the meningitis belt are due to group A \ meningococcus, with epidemics occurring at 7–14 years interval. - In the 2009 epidemic season, 88199 suspected cases, including 5352 deaths were reported from 14 African countries.
Lebanon	Sporadic cases
Control objective	To control and reduce the occurrence of secondary cases

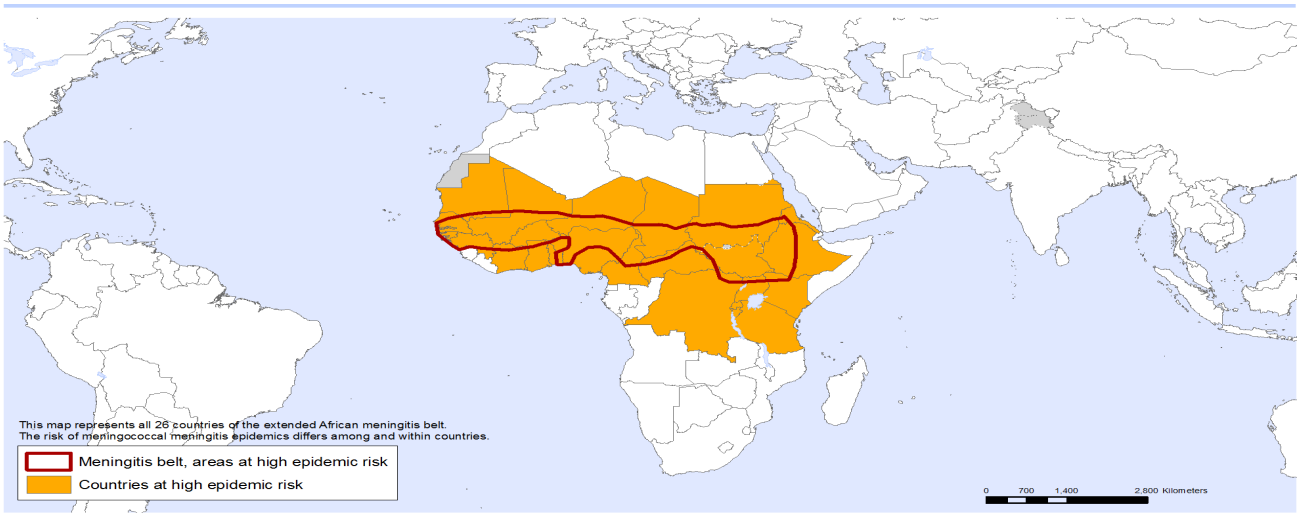
Surveillance and Investigation	
Investigation: data about case	Patient identification, demographic data, clinical symptoms, nationality, hospitalization, laboratory results, immunization status, travel history, occupational status...
Investigation: clinical specimen from case	CSF, blood, isolates
Investigation: data about contacts	Identify close contacts and their age, search for similar cases among contacts...
Investigation: clinical specimen from contacts	No
Test	- Culture - Soluble antigen detection - Serogroup identification - PCR
Laboratories	- Culture: clinical laboratories - Serogroup identification: RHUH, AUB-MC
Outbreak level	At least three confirmed cases epi-linked with same agents / types
Notification to WHO	To notify confirmed cases to WHO if outbreak
Meningococcal infection case definition (MOPH circular no. 63 dated on the 14th April 2007)	
Suspected case	A case of meningitis or septicemia with petechial or purpural rash
Probable case	- A case of meningitis or a suspected case of meningococcal disease with demonstration of gram-negative diplococci - Or ongoing epidemic or epidemiological link to a confirmed case
Confirmed cases	A case of meningitis or a suspected or probable case of meningococcal disease with laboratory confirmation: - Isolation of N. meningitidis from normally sterile fluids (CSF or blood) - Or detection of N. meningitidis antigens from normally sterile fluids (CSF or blood) - Or positive test with PCR
Forms	
Reporting	Standard reporting form or specific meningitis reporting form (MOPH circular no. 53 dated on the 27th May 2002)
Investigation	Meningitis investigation form (MOPH circular no. 76 dated on the 31st July 2013)
National figures	

Figure 1: Reported meningitis incidence rates, Lebanon, 2000–2014 (Source: MOPH)



International figures

Figure 2: Countries at risk of meningococcal meningitis, worldwide, 2014 (Source: WHO)



III. Objectives of surveillance

The objectives of meningococcal surveillance are:

- To detect any case of meningococcal invasive infection
- To detect outbreak of meningococcal invasive infections
- To monitor cases and describe cases by time and place and person
- To identify serotypes and strains
- To provide information for proper meningococcal control.

IV. Alert and outbreak thresholds

An alert is defined by any suspected case of meningococcal disease.
An outbreak is defined by at least three confirmed cases epi-linked, with the same serotype.

V. Procedural steps

The below steps are recommended for the verification and investigation of meningococcal disease alerts and outbreaks. Figure (4) includes an algorithm that summarizes those steps.

Step 1: Detect and verify alert

Cases of suspected meningococcal disease need to be notified to the MOPH immediately, without waiting for microbial confirmation.
The treating physician or the hospital focal person notifies by phone or by fax (by filling out and sending the reporting form or the meningitis reporting form). The meningitis reporting form is provided in annex (1).
Upon reception of the form, the Esumoh caza team contacts the hospital to verify the information: presence of petechial or purpural rash and/or laboratory results. Also the caza team informs within 24 hours the mohafaza and the central teams.

Step 2: Investigate the case

The Esumoh caza team checks the completeness of reporting. For each case, the needed information is:

- Demography variables: age, gender, nationality, place of residence (caza and locality)
- Illness: date on onset

- Vaccination status
- Laboratory results: CSF cytology, CSF biochemistry, CSF Gram staining, CSF culture, CSF soluble antigen detection, blood culture and other
- Occupation: student, military staff…
- Travel history: case or family...

In case of death, a copy of the medical file is requested. An official letter may be issued for the hospital.
Once the information is completed, the Esumoh caza teams sends all the documents to the Esumoh central level.
Based on the clinical, laboratory and epidemiological data, the meningitis investigation form is filled. The investigation form is provided in annex (2).
The case is classified based on the algorithm as shown in figure (3).

Step 3: Collect isolates

In case of positive isolate at CSF or blood culture, the Esumoh central team coordinates the collection of any isolate to reference laboratory.
At designated reference laboratories, the isolates are confirmed, typed and tested for antimicrobial resistance.

Step 4: Identify close contacts

a) Identification

Meningococcal disease can spreads to close contacts via droplet transmission.
Close contacts are identified among:
- Household and family members living under the same roof
- School classmates and those sharing the bus with the patient
- Kindergarden children and employees
- Military barrack staff sharing the same dormitory room with the case
- Health care providers caring for the patient and in contact with his/her respiratory secretions without using appropriate personal protective equipment.

The Esumoh caza team lists all close contacts, and specifies their age. Also, pregnant women among close contacts are flagged.

b) Assessment of illness onset

Contacts that are experiencing symptoms compatible with meningococcal disease (fever, rash, lethargy, irritability, headache, stiff neck, vomiting, and rash) are referred to health care provider immediately for evaluation.

c) Antibiotic prophylaxis

Chemoprophylaxis is recommended for all close contacts regardless of their immunization status. Prophylaxis is initiated as soon as possible till 14 days from identification of the index patient. Chemoprophylaxis is provided by the caza health physician in coordination with the department for communicable diseases at MOPH.

Step 5: Search for additional cases

Surveillance should be intensified to confirm the presence of an outbreak.
Additional cases are searched via:
- The health sector, via passive reporting and active surveillance
- The community where the case lives, in particular the household and any specific setting.

Cases are investigated. Summary line listing is updated regularly. A template of line listing is provide in annex (3).

Step 6: Describe cases

Cases are described by:

- Time: day, week, month of onset
- Place: residence, specific setting
- Person: age group, gender, nationality
- Disease: classification, outcome
- Agent: serotype

Indicators are presented as counts and rates per 100000 inhabitants.
The annex 4 provides a template for descriptive analysis.

Step 7: Confirm the outbreak

Based on the clinical, laboratory and epidemiological data, the outbreak is declared. The Esumoh central team informs the MOPH units.
Upon declaration, the MOPH informs health partners:

- Health professionals
- UN agencies: WHO
- Other governmental institutions: Ministry of Education and High Education, Ministry of Defense, Ministry of Social Affairs…

Step 8: Enhance monitoring

During the outbreak, the cases are monitored on daily basis. A weekly report is generated by the Esumoh central team.

Step 9: Write summary report

At the end of the event, the Esumoh central team prepares a summary report. The report is shared with partners.

Figure 3: Meningococcal infection case classification

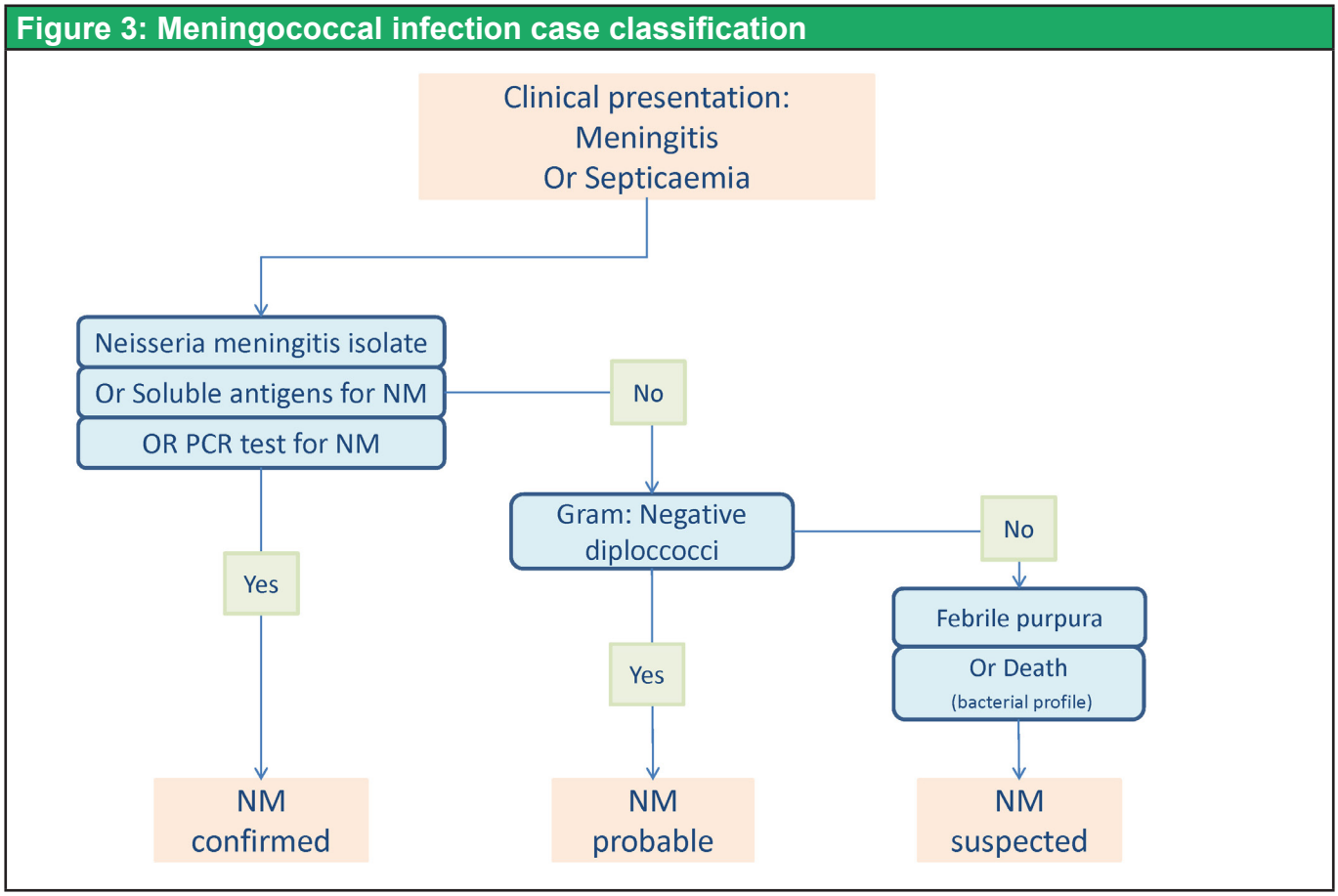
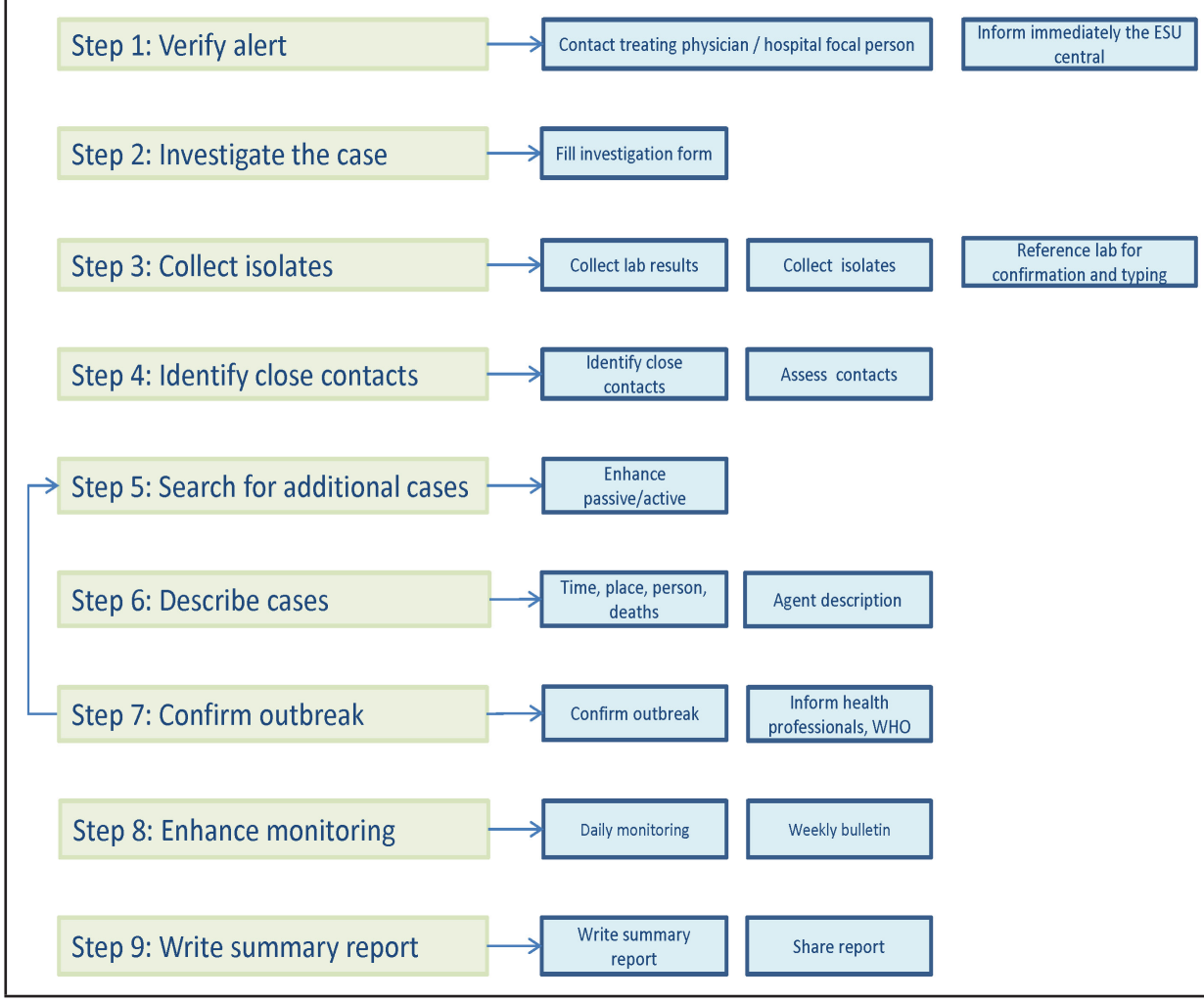


Figure 4: Meningococcal infection investigation steps



الجمهورية اللبنانية

وزارة الصحة العامة

استمارة إبلاغ عن التهاب السحايا الحاد

رقم ESU: _ _ _ _ _ _ _ _ رقم M: _ _ _ _

1)- المريض

اسم المريض	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
اسم الأب	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الشهرة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
تاريخ الولادة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الجنس	: ☐ ذكر ☐ انثى

2)- عنوان المريض

الجنسية	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
	☐ مقيم ☐ زائر
العنوان	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
القرية / المدينة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
القضاء	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:

3)- عن الاستشفاء

تاريخ ظهور العوارض	: _ _ _ _ _ _ _ _ _ _ _ _
تاريخ دخول المستشفى	: _ _ _ _ _ _ _ _ _ _ _ _
تاريخ التشخيص	: _ _ _ _ _ _ _ _ _ _ _ _
اسم المستشفى	: _ _ _ _ _ _ _ _ _ _ _ _
اسم الطبيب المعالج	: _ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:

4)- نتائج الفحوصات المخبرية - في حال إجراء الفحوصات المخبرية ، ترفق النتائج.

	أجريت، ضع x	مرفقة، ضع x
CSF- direct		
CSF - chemical		
CSF - culture		
CSF - antigens		
Blood - CBC		
Blood - culture		

هل عولج المريض بالمضادات الحيوية قبل دخوله إلى المستشفى ؟

☐ نعم ☐ كلا

إذا نعم، ماذا : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ومنذ متى : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

الجرثومة المسببة : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ملاحظات :

5)- العوارض الإكلينيكية للمريض

	ضع علامة x
Fever	
Neck stiffness	
Vomiting	
Bulging fontanel	
Purpura	
Septic choc	
Gangrene	
غيره ، حدد :	

6)- عن الوضع التلقيحي

	عدد الجرعات ونوعه	تاريخ آخر جرعة
Neisseria meningitidis		
Haemophilus influenzae b		
Pneumococcus		

7)- هل سافر المريض أو أحد المقربين إلى الخارج، مؤخرا ؟

من سافر ؟	إلى أي البلد؟	تاريخ العودة الى لبنان؟

8) - ما هي مهنة المريض ؟

المهنة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
نوع المؤسسة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
اسم المؤسسة / المدرسة / دار الحضانة / الثكنة	:
	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الصف	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
العنوان	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:

9) - عن أهل الدار

عدد الأفراد في البيت	: _ _ _ _ _ _ _ _ _ _ _ _
هل يوجد أطفال دون 5 سنوات : نعم / كلا	

10)- عن المبلغ

اسم المبلغ	:
التاريخ	:
التوقيع	:

تبلغ الاستمارة إلى وحدة الترصد الوبائي فور الاشتباه بالحالة لأخذ التدابير اللازمة للمخالطين.

تلفون: 01/614195 فاكس: 01/610920

تعميم وزارة الصحة العامة رقم 53 تاريخ 27 أيار 2002

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي
استمارة تقصي لحالة التهاب السحايا الحاد

تعبئ الاستمارة من قبل فريق وزارة الصحة العامة

1) المريض

الاسم الثلاثي	الجنس □ ذكر □ انثى	تاريخ الولادة	الجنسية	العنوان
نوع الاقامة □ مقيم □ زائر □ عامل اجنبي □ لاجئ	القضاء	البلدة	رقم الهاتف	

2) الاستشفاء

#	اسم المستشفى	تاريخ الدخول	اسم الطبيب المعالج	رقم هاتف الطبيب

3) العوارض السريرية

تاريخ ظهور العوارض	طفح جلدي	مضاعفات	عوارض اخرى
	□ None □ Purpura □ Maculo-papular □ Vesicular	□ Septic choc □ Gangrena	

4) فحص السائل النخاعي

CSF appearance	WBC /mm3	Segmented %	Lymphocytes %	Soluble antigens
Proteins	Glucose	Gram Stain	Culture	Other

5) فحوص اخرى

Platelets	Blood culture	Other tests

6) جمع عينات اضافية من المريض لزوم التقصي

نوع العينة	تاريخ جمع العينة	المختبر المرجعي	الفحص	النتيجة
□ سلالة جرثومية				
□ مصل				
□ سائل نخاعي				

7) نوع التهاب السحايا الحاد

□ جرثومية	□ فيروسية	□ غيره
□ Neisseria meningitis □ Haemophilus influenza □ Streptococcus pneumonia □ Listeria monocytogenes □ Mycobacterium tuberculosis □ Other: □ Not identified	□ Herpes □ Mumps □ West Nile Virus □ Other: □ Not identified	□ Parasitic: □ Fungus: □ Unspecified:

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي
استمارة تقصي لحالة التهاب السحايا الحاد

8) الوضع التلقيحي

	Haemophilus inf	Pneumococcal	Meningococcal	MMR
عدد الجرعات				
تاريخ آخر جرعة				

9) سفر الى الخارج خلال شهر قبل ظهور العوارض

المسافر	البلد / المدينة	تاريخ العودة الى لبنان	ملاحظات
□ المملكة السعودية	□ المريض □ المقربين :		
□ افريقيا	□ المريض □ المقربين :		

10) مهنة المريض

وضع المريض	نوع المؤسسة	القضاء والبلدة	العنوان	اسم المدير ورقم الهاتف
□ طفل في البيت □ طفل في دار الحضانة □ تلميذ، صف: □ طالب جامعي □ عسكري □ مدرس □ غيره:				

11) وقاية المخالطين

	عدد المستهدفين	عدد الذين تلقوا الوقاية	ملاحظات
□ المنزل			
□ دار الحضانة			
□ مدرسة			
□ ثكنة عسكرية			
□ المستشفى			
□ غيره			

12) تطور حالة المريض (يتم الاتصال بالمريض بعد مرور شهر من تاريخ ظهور العوارض)

تاريخ الاتصال	□ شفاء	□ اشتركات	□ وفاة
		□ Hearing loss □ Paralysis □ Other:	□Date of death:

13) وجود حالات اخرى في المحيط (خلال فترة شهر قبل وشهر بعد الحالة)

	عدد الحالات	تاريخ ظهور العوارض	نوع السحايا
□ المنزل			
□ دار الحضانة			
□ مدرسة			
□ ثكنة عسكرية			
□ المستشفى			
□ غيره			

عند الانتهاء من تعبئة استمارة التقصي، ترسل نسخة الى المحافظة، نسخة الى برنامج الترصد الوبائي ونسخة الى دائرة مكافحة الامراض الانتقالية.

Republic of Lebanon. Ministry of Public Health. Epidemiological Surveillance Program

YEAR |__|__|__|__|

MENINGITIS Surveillance
LINE LISTING

|_____|

ID	Name	Sex	Age (month/year)	Date onset	Week	Caza	Commune	Form completed	Purpura	CSF						Blood		Bacterial	Causative agent if identified	Prophylaxis if Nm ot Hib	Evolution	Hospital
										appearance	WBC (%PN)	Pro (g/l)	Gram	culture	soluble antigens	Gram	culture					
<M###>		<M,F>	<# d/m/y>	<dd/mm/yyyy>	<##>			<Y,N>	<Y,N>	<T,C,B>	<##>	<##>								<Y,N>	<R,D,S>	

Page No. |__|

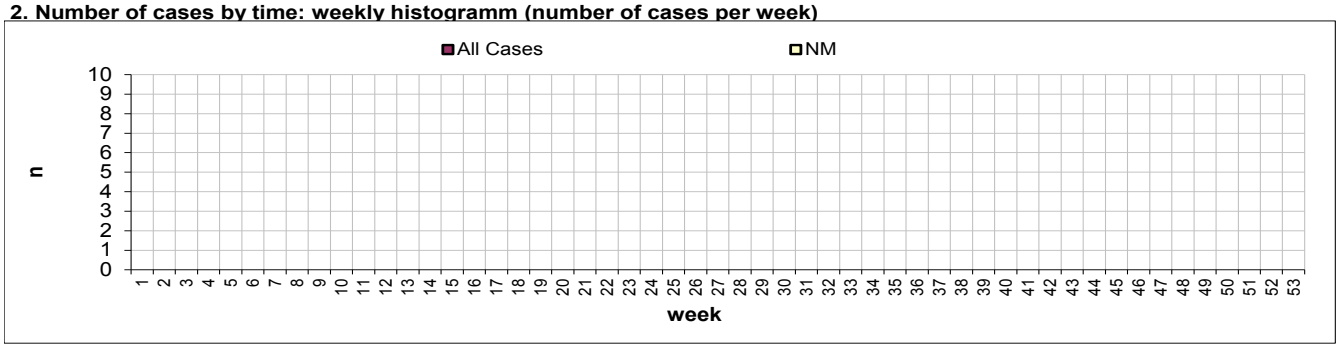
Meningococcal Infection - Annex 4

Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program
Descriptive Surveillance Findings

Event	Level	Year	Week	As on
Meningitis		**20___**		

1. Cumulative number =

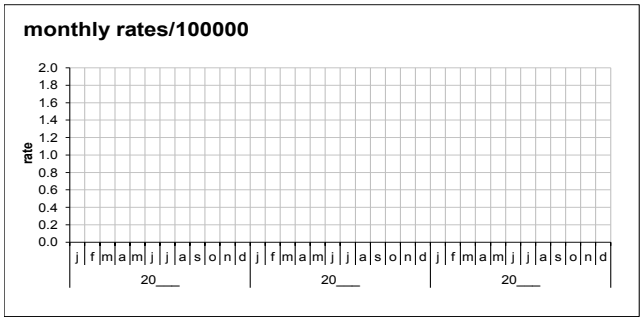
2. Number of cases by time: weekly histogramm (number of cases per week)



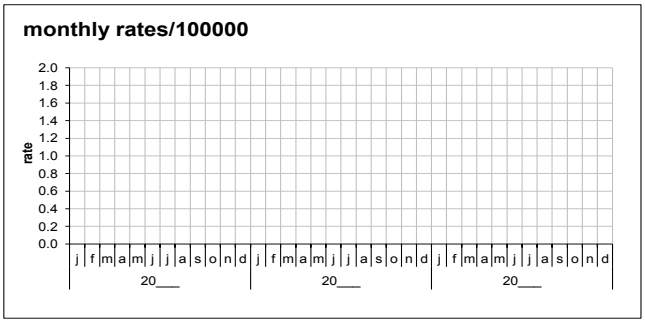
3. Cases by time: counts and rates (/100000)

		Pop20__	All meningitis				Bacterial meningitis				*Neisseria meningitidis*			
			N20__	R20__	R20__	R20__	N20__	R20__	R20__	R20__	N 20__	R20__	R20__	R20__
by month of onset	Jan													
	Feb													
	Mar													
	Apr													
	Mai													
	Jun													
	Jul													
	Aug													
	Sep													
	Oct													
	Nov													
	Dec													
	Total													

4. Monthly incidence for all meningitis



5. Monthly incidence for bacterial meningitis



6. Cases by infectious agent

Etiology	Cases		Deaths	
	N 20__	% 20__	D 20__	CFR 20__
Nm				
Hi				
SP				
Bact Other				
BNOS				
Viral				
Unsp.				
Total, N				

7. By commune

Commune	N	Commune	N

8. By age group

	N 20__	% 20__
0-4 y		
5-14 y		
15-24 y		
25-64 y		
65+ y		
Unsp		
Total		

Notes

Notes

Notes

11

Surveillance Standard Operating Procedure: Measles

Version 1
MOPH circular no. 36
(19th Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of measles alert or outbreak.

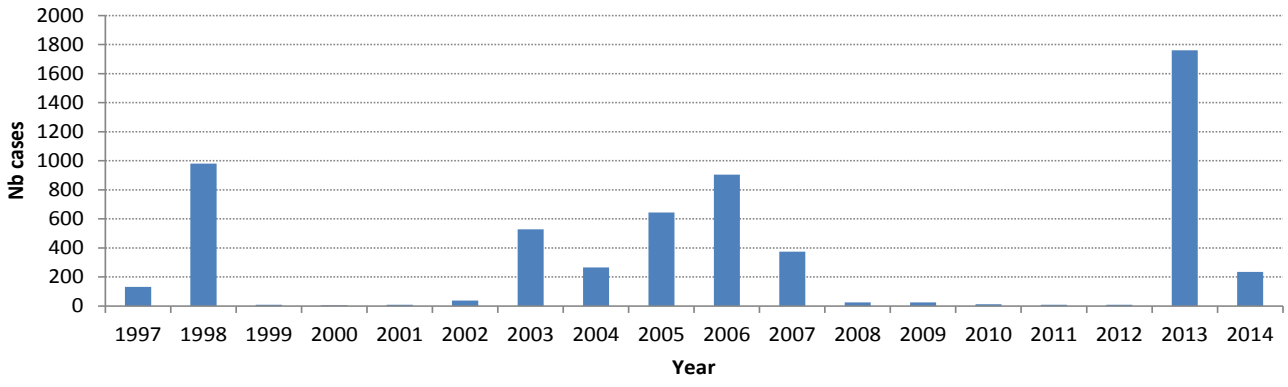
II. Generalities

Measles is a highly contagious, serious disease caused by a virus. In 1980, before widespread vaccination, measles caused an estimated 2.6 million deaths each year. The disease remains one of the leading causes of death among young children globally, despite the availability of a safe and effective vaccine. Approximately 145700 people died from measles in 2013 – mostly among children under the age of 5.
More information about the disease are presented in the table below.

Measles	
Agent	Measles virus, genus Morbillivirus, family Paramyxoviridae
Incubation	10 days (7-18 days, may be to 21 days)
Period of communicability	4 days before rash and 4 days after rash onset
Reservoir	Humans
Modes of transmission	- Person-to-person: direct contact with droplets, rarely indirect contact - Airborne (in confined place)
Clinical presentation	- Febrile maculo-papular rash - Complications: otitis media (7-9%), pneumonia (1-6%), gastro-enteritis (8%) and dehydration, blindness, convulsions (1/200), encephalitis (1/1000) - Encephalitis: post-infectious encephalitis (1 week from onset) or acute encephalitis of delayed type (weeks and months after onset) - Long term complication: sub-acute sclerosing pan-encephalitis (SSPE) 7 years or more after onset (1/25000 case, and 1/8000 if onset under 2 years old) - Case fatality: 3-6% in developing countries, 1-3/1000 in developed countries
Worldwide	- Worldwide - In high coverage area: outbreak every 7-8 years - In low coverage area: outbreak every 3-4 years
Lebanon	Annual outbreaks from 2003 to 2007, and in 2013
Control objective	Elimination goal
Surveillance and Investigation	
Surveillance approach	Syndromic (febril macuplo-papular rash) with laboratory confirmation
Investigation: data about case	Signs, vaccination status, travel history, contact tracing, pregnancy...
Investigation: clinical specimen from case	Serum, urine, oral fluid, dried blood, throat swab, (CSF)
Investigation: data about contacts	Cases among contact, travel history, vaccination status, pregnancy...
Investigation: clinical specimen from contacts	If cases among contact

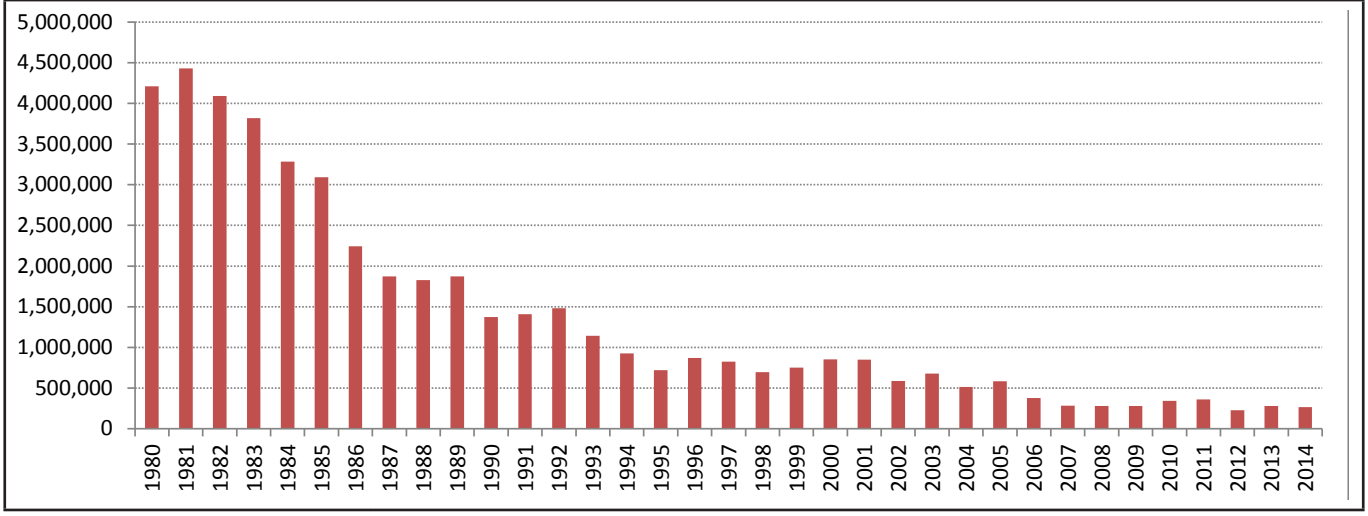
Test	- IgM: 1-28 days from rash onset (serum, oral fluid, urine, CSF, dried blood) - PCR: 1-7 days from rash onset (oral fluid, dried blood) - Culture: 1-5 days from rash onset (urine, throat swab)
Laboratories	- Serology and PCR: RHUH (clinical laboratory) - Virus isolation: Tunis Pasteur and Central Public Health of the Sultanat d'Oman
Outbreak level	At least 3 confirmed cases epidemiologically (or virologically) linked.
Notification to WHO	- To report to WHO if outbreak - Routine monthly dataset sharing
Control	
Control	Immunization with at least 2 doses after 1 year
Case management	Symptomatic
Isolation	- Droplet isolation - If hospitalized: airborne isolation
Contact prevention	MMR within 72 hours of first contact with the patient
Mass prevention	Vaccination campaign
School eviction	4 days after rash onset
Measles case definition (MOPH circular no.11 dated on the 23rd February 2013)	
Laboratory-confirmed case	A suspect case with laboratory confirmation with presence of measles-specific IgM antibodies or positive PCR
Epidemiologically-confirmed case	A suspect case who has not had a laboratory test, and who is epidemiologically-linked to a laboratory-confirmed case in which rash onset occurred 7-18 days earlier
Suspected case / clinical case	- Any person with: • Fever • And maculo-papular (non vesicular) rash - Or any person in whom a clinician suspects measles infection
Forms	
Reporting	Standard reporting form or specific measles/rubella reporting form (MOPH circular no. 13 dated on the 23rd February 2013)
Investigation	Measles/rubella investigation form (MOPH circular no. 75 dated on the 31st July 2013)
National figures	

Figure 1: Reported measles cases in Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported measles cases worldwide, 2008-2012 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance are:

- Detect and confirm measles cases
- Detect and investigate measles outbreaks
- Identify risk factors
- Identify circulating genotypes
- Document the process towards measles elimination.

IV. Alert and outbreak definitions

An **alert** is defined by any suspected case of measles.

An **outbreak** is defined by the occurrence of at least three confirmed measles cases which are epidemiologically and/or virologically-linked.

V. Procedural steps

The steps described below are recommended for investigation of any alert/outbreak of measles. The steps are summarized in figure (5).

Step 1: Verify alert

Any case of measles is verified by the Esumoh caza team within 24 hours.
The treating physician or hospital focal person is contacted: Is it really fever and maculo-papular rash?
If yes, the information is shared with the Esumoh mohafaza and central levels and the investigation is initiated immediately.

Step 2: Investigate the case

Upon verification of any case of measles, data is collected by using specific measles/rubella investigation form (Annex 1). The investigation is done by the Esumoh peripheral team.
The data is collected by interviewing the patient or the parents.
The investigation form includes the following information:

- Demography
- Disease
- Vaccination status
- Case management
- Risk factors: cases among contacts, travel history…

Vaccination status is collected from available data recorded in vaccination card or personal health record, medical file. If no document is available with the patient or the parents, the treating physician or the medical center where vaccination is done is contacted to collect the needed information.

Copy of the filled investigation form is sent to the Esumoh mohafaza and central levels.

If the case died, a copy of the hospital medical file is requested for the Esumoh central team.

Step 3: Confirm the case

Any suspected measles case needs to be confirmed.
If the case seems to be sporadic, the case has to be laboratory-confirmed.
If the case occurres among a cluster or a chain of transmission, at least 3 cases need to be laboratory-confirmed.

The needed specimens are summarized in the table (1) below:

Table 1: Specimens and tests for measles confirmation

Specimen	Test	Timing (from rash onset)	Notes
Oral fluid	IgM	1-28 days	If sample is taken within 72 hours after rash onset and results are negative, a second sample is is requested.
	PCR	1-14 days	
Serum	IgM	1-28 days	
Dried blood	IgM	1-28 days	
	PCR	1-7 days	
Throat swab	Culture	1-5 days	Swab in VTM
	PCR	1-5 days	
Urine	Culture	1-5 days	
	PCR	1-5 days	

Once collected, the specimen is sent by the Esumoh caza team to the Esumoh central team in charge to verify labelling before sending it to the reference laboratory.

The IgM serology and PCR tests are done at RHUH clinical laboratory. Virus isolation is done at Central Public Health Laboratory in Sultanat of Oman or at Pasteur Institute in Tunis.

If the case is suspected of being vaccine-associated, with a rash occurring in 7-14 days following vaccination, specimen for virus isolation is collected.

Step 4: Classify the case

Based on the clinical, epidemiology and laboratory findings, cases are classified according to the algorithm provided in figure (3).

The classification is done by the Esumoh central team, with the support of a technical group. That group also classifies the vaccine–associated cases (Figure 4).

Step 5: Communicate

Any confirmed case of measles is communicated to the EPI program, for proper response.
At caza level, the Esumoh staff informs the caza physician and he EPI focal person. At central level, the Esumoh staff informs the EPI central team.

Step 6: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of work, place of school, in terms of locality, caza and mohafaza. Also travel history is described.
- Person: age group, gender, nationality, vaccination status. Vaccination status is displayed by age group and nationality.
- Disease: classification, complications, case-fatality, inpatient proportion…

Indicators include counts and incidence rates (per 100000 or per 1000000).

b) Chains of transmission

Cases are described by chain of transmission. A chain of transmission is defined by at least 2 epi-linked cases. Any chain of transmission needs to have at least 3 laboratory-confirmed cases, and at least 3 specimens collected for virus isolation.

c) Circulating genotypes

The circulating measles genotypes are identified via virus isolation and virus sequencing.
For 2004-2007, the local circulating genotype was D4.
In 2013, the dominant genotype was D8, in addition to sporadic cases of B3 (confirmed in supranational lab) and H1.

Step 7: Confirm the outbreak

Based on the epidemiology and laboratory findings, an outbreak is declared.

Once declared, official memos are issued by the MOPH to:

- Health professionals: physicians, hospitals, medical centers...
- WHO
- MEHE and schools
- Kindergartens
- Media...

Step 8: Search for additional cases

a) Enhance notification from health professionals

The health professionals are asked to be more aware about measles and to report any suspected case.
The official memos issued by the MOPH will include updated case definition and updated contact details of the MOPH teams for any case reporting.
Sessions may be conducted based on the extend of the outbreak.

b) Active surveillance

Measles is already targeted in the active surveillance. During field visits, additional wards will be visited as ER, and outpatients clinics.
Also, specimens will be requested from all inpatients.

c) School surveillance

Schools are informed on the confirmation of the outbreak and they are asked to immediately notify any case reported by the physicians or the parents.
If measles case is notified in school, the Esumoh staff will visit the school, and record all suspected cases in specific line listing and collect clinical non-invasive specimens (oral fluid).

d) Community search

Around the confirmed cases, the Esumoh staff will visit the neighbors and ask for any measles case. A specific line listing is filled. Clinical specimens are collected from suspected cases.

Also any rumor of measles case is verified.

Step 9: Identify susceptible contacts

The risk of confirmed measles case is to spread the virus to his/her contacts.
There is need to identify all close contacts of the case:

- In the family
- In the neighbors
- At workplace
- In school or kindergarden
- In the health care facilities (if visited)...

Contacts are assessed for their vaccination status.
The unvaccinated contacts are listed and the list is communicated to the EPI, who will be in charge to vaccinate them via medical centers or private physicians.

Step 10: Enhance monitoring

During a measles outbreak, weekly measles bulletin is edited by the Esumoh central staff and shared with partners.

Step 11: Write summary report

Once the outbreak was confined, the Esumoh central staff in coordination with the RHUH and EPI, prepares a summary report describing the outbreak, the confirmation and the response. Such report is needed to document the epidemiology history of measles in Lebanon.

Figure 3: Measles case classification

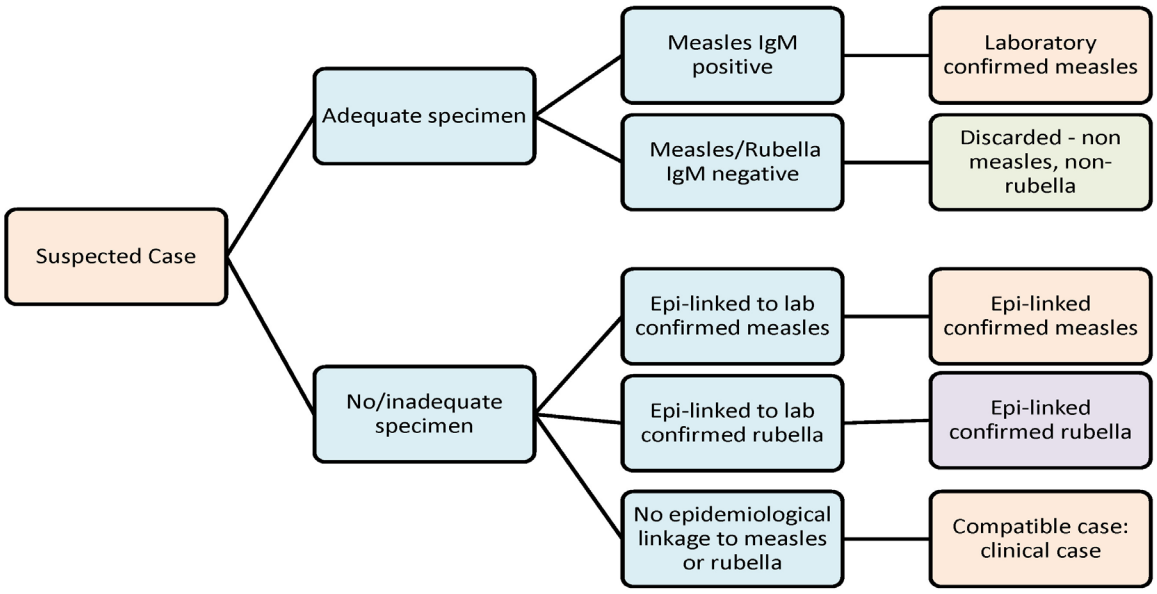


Figure 4: Vaccine-associated measles classification

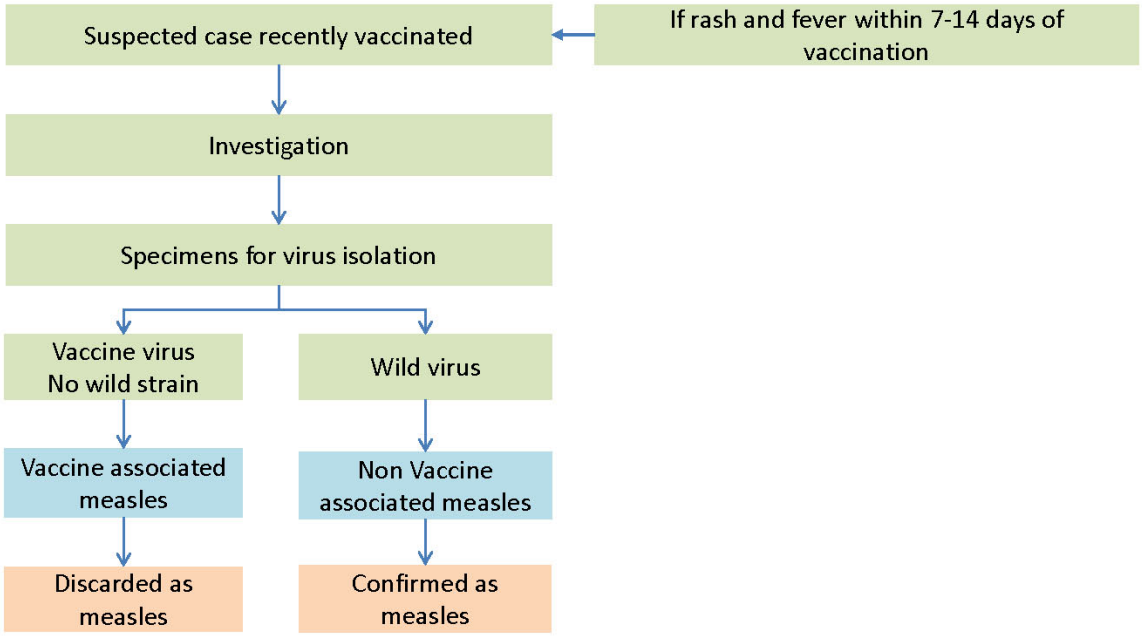
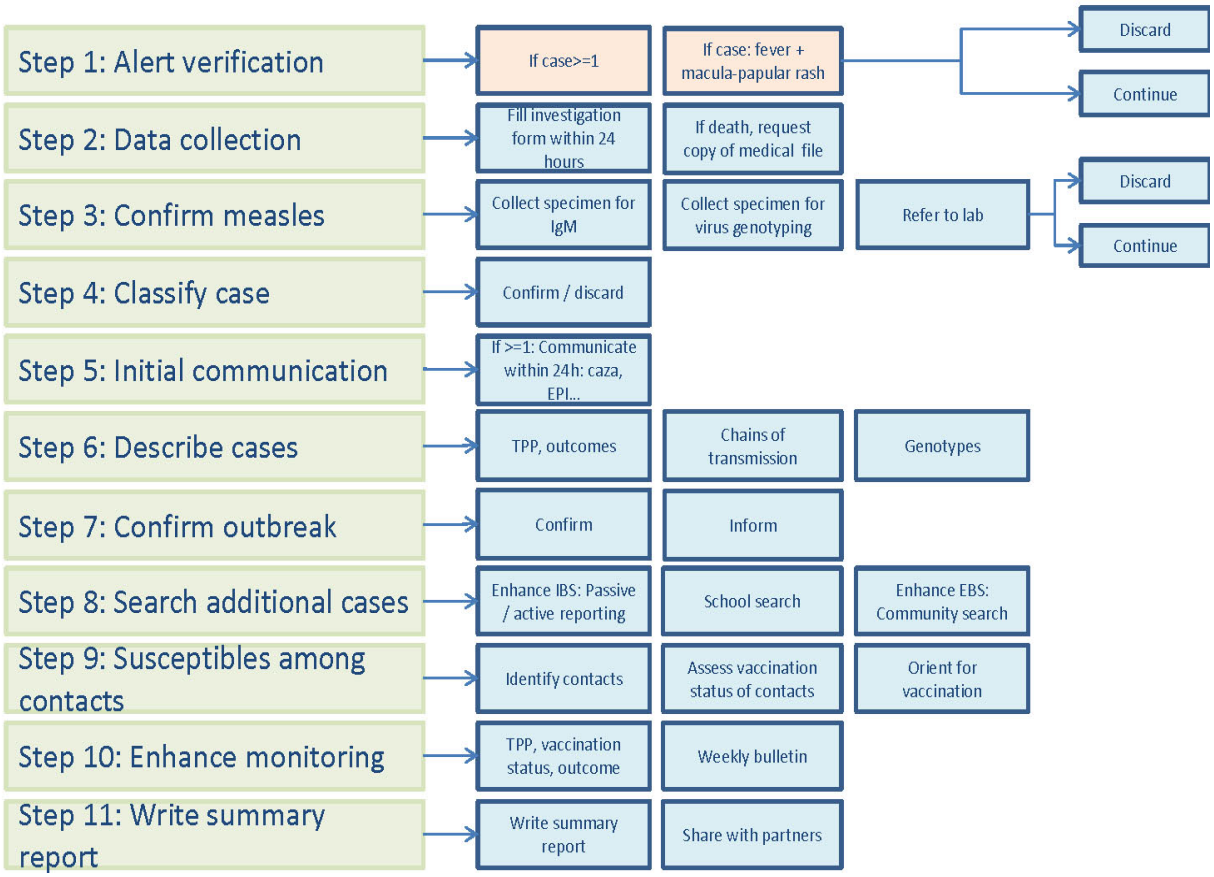


Figure 5: Measles investigation steps



الجمهورية اللبنانية

وزارة الصحة العامة

استمارة إبلاغ عن حالة حصبة أوحصبة ألمانية

١ ـ اسم وعنوان المريض

الاسم الثلاثي للمريض : ..... العنوان : .....

تاريخ الولادة : ....

الجنس : ☐ذكر ☐أنثى المدينة / البلدة : .....

الجنسية : ☐ لبناني ☐غير لبناني..... القضاء : .....

الاقامة : ☐مقيم ☐زائر ☐نازح/لاجئ رقم الهاتف : .....

٢ ـ المعطيات الطبية

المرض المشخص : ..... دخول مستشفى : ☐نعم ☐كلا

تاريخ ظهورالطفح : ..... اسم المستشفى : .....

تاريخ المعاينة : ..... تاريخ الدخول : .....

نوع الطفح الجلدي : ☐بقعي *Maculopapular* تضخم العقد اللمفوية : ☐خلف الأذن *Post-auricular*

☐مع حويصلات *Vesicular* ☐خلف العنق *Cervical*

☐من نوع اخر *Other rash* ☐ خلف الرقبة *Sub-occipital*

عوارض مختلفة : ☐حرارة *Fever >= 38°C* مضاعفات : ☐التهاب رئوي *Pneumonia*

☐التهاب ملتحمة العين *Conjunctivitis* ☐التهاب معوي *Gastroenteritis*

☐نزلة أنفية *Coryza* ☐غيره، حدد: .....

☐سعال *Cough* وجود حمل : ☐نعم ☐كلا

☐ألم في المفاصل *Arthralgia/ Arthritis* حدوث وفاة : ☐نعم، تاريخ الوفاة:.....☐كلا

٣ ـ معطيات التقليح

نوع اللقاح	عدد الجرعات	تاريخ آخر جرعة	معلومة مدونة
الحصبة / *Measles*			
الحصبة والحصبة الالمانية / *Measles Rubella*			
الحصبة والحصبة الالمانية وابو كعب/ *MMR*			
الحصبة الالمانية / *Rubella*			

٤ ـ عينات للفحص المصلي و عزل الفيروس

	تاريخ جمع العينة	نوع العينة		
عينة أولى		☐ مصل *Serum*	☐ مسحة لثوية *Oral fluid*	☐ مسحة دم *Dried blood*
عينة ثانية		☐ مصل *Serum*	☐ مسحة لثوية *Oral fluid*	☐ مسحة دم *Dried blood*
عينة لعزل الفروس		☐ بول	☐ مسحة من الزلعوم *Throat swab*	

تعريف حالة الحصبة / الحصبة الألمانية المشتبهة:

طفح جلدي بقعي maculo-papular + حرارة

تثبت الحالة مخبريا بفحصي IgM للحصبة والحصبة الالمانية، عبر جمع :

-عينة مصل serum

-أو مسحة لثوية oral fluid

-أو مسحة دم dried blood

وذلك في غضون ٢٨ يوم من تاريخ ظهور الطفح.

وتحفظ العينة بين 8° C-4.

بالإضافة يحدّد نمط الفيروس عبر جمع عينة بول (urine) او مسحة من الزلعوم (throat swab) في غضون اسبوع من الطفح.

لمزيد من المعلومات :هاتف 01-614194

فاكس01-610920، موقع ww.moph.gov.lb

٥ـ معلومات اخرى

اسم الطبيب المعالج : ..... التاريخ : .....

العنوان : ..... التوقيع والختم:

رقم الهاتف : .....

تعميم وزارة الصحة العامة رقم ١٣ تاريخ ٢٣ شباط ٢٠١٣

Measles - Annex 2

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة تقصي حالة حصبة /حصبة الألمانية

تعبأ الاستمارة من قبل وزارة الصحة العامة / فريق الترصد الوبائي

رقم الحالة |_____|

1. معلومات عن التقصي

اسم المحقق	المحافظة	القضاء	تاريخ التقصي	مع من تمّ التقصّي/الاتصال؟
			...../...../.....	☐ المريض نفسه ☐ الأم ☐ الأب ☐ غيره، حدّد.

2. المريض وعنوانه

اسم المريض الثلاثي	الجنس	تاريخ الولادة	الجنسية	الاقامة
	☐ ذكر ☐ أنثى	...../...../..... العمر:	☐ لبناني ☐ غير لبناني، حدّد:	☐ مقيم ☐ زائر ☐ عامل اجنبي ☐ لاجئ من أقّل من 10 سنوات ☐ لاجئ منذ 10 سنوات او اكثر

القضاء	البلدة	العنوان الكامل	رقم الهاتف

3. العوارض

- هل ظهرت حمى (38<) ؟ ☐ كلا ☐ نعم
- هل ظهر طفح جلدي ؟ ☐ كلا ☐ نعم، حدد **نوع الطفح:** ☐ *Maculopapular* ☐ *Vesicular* ☐غيره، حدّد: **تاريخ ظهور الطـفـح** : ...../...../.....
- هل دخل المريض المستشفى؟ ☐ كلا ☐ نعم، حدد اسم المستشفى: تاريخ دخول المستشفى: ...../...../.....
- هل المريضة حامل؟ ☐ كلا ☐ نعم، حدد شهر الحمـل: تاريخ الولادة المتوقـع: ...../...../.....
- كيف أصبح المريض؟ ☐ شفاء ☐ ما زال مريض ☐ وفاة، السبب: تاريخ الوقـــــــاة: ...../...../.....

4. الوضع التلقيحي للمريض

- هل المعلومات موثّقة في السجل الصحّي/البطاقة الصحية؟ ☐ كلا ☐ نعم
- هل أخذ المريض لقاح ؟

				عدد الجرعات	تاريخ آخر جرعة	المكان
حصبة measles	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حصبة /حصبة المانية /ابو كعب MMR	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حصبة / حسبة المانية MR	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حسبة المانية / rubella	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	

- في حال عدم التطعيم، اذكر السبب: ☐ المركز الطبي بعيد ☐ توقيت المركز الطبي غير مناسب ☐ لا قدرة مالية ☐ الطفل دائماً مريض ☐ غير مقتنع بالتلقيح ☐ وضع أمني غير مستقر ☐ إهمال ☐ غيره، حدّد:

5. مهنة المريض

ما وضع/مهنة المريض؟ ☐ في البيت ☐ في الحضانة ☐ طالب ☐ عامل/موظف ☐ عامل في مجال الصحة ☐ عسكري ☐غيره:

اسم الحضانة/المدرسة/ المؤسسة	الصف/القسم	القضاء	البلدة	العنوان	رقم الهاتف

6. الاختلاط مع حالات في المحيط

- اختلاط مع امرأة حامل ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد من ؟ الاسم: شهر الحمل: |__| رقم الهاتف:
- وجود حالات مشابهة في المحيط ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد اين؟ ☐ المنزل ☐ دار حضانة ☐ مدرسة ☐ جامعة ☐ مستشفى ☐ مؤسسة ☐ الحي/البلدة ☐غيره:
- **هل اختلط المريض <u>في الأسابيع الثلاثة السابقة لظهور الطفح</u> مع شخص يعاني من طفح جلدي <u>أو</u> حرارة ؟** ☐ كلا ☐ نعم، حدد من ؟

اسم الشخص	الجنس	تاريخ الولادة	العمر	الصلة	تاريخ ظهور العوارض	تاريخ آخر لقاء مع الحالة	رقم الهاتف
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						

7. السفر الى الخارج خلال الأسابيع الثلاثة قبل ظهور الطفح

- هل سافر المريض ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد البلد: تاريخ العودة:
- هل اختلط المريض مع أحد العائدين من السفر؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد البلد: من: الهاتف:

إستمارة تقصي حول حالات غياب في المدارس بسبب الطفح الجلدي

من تاريخ ------- الى ---------

المدرسة	اسم المبلّغ	صفة المبلّغ	رقم الهاتف

#	الإسم Name	الجنس Sex	تاريخ الولادة DOB	الصف/ الشعبة/ Class Section	الجنسية	الطفح الجلدي rash		هل عانى(ت) الطالب(ة) من				هل لقح(ت) الطالب(ة) ضد				رقم الهاتف
						تاريخ ظهور الطفح Date of onset	نوع الطفح Rash type	حرارة Fever	إلتهاب تنفسي Respiratory Infection	إلتهاب معوي Gastro-enteritis	التهاب الملتحمة (conjunctivitis)	الحصبة (Measles)	الحصبة الألمانية (Rubella)	الحصبة و الحصبة الألمانية (Measles rubella)	الحصبة و الحصبة الألمانية و ابو كعيب (MMR)	
												تاريخ أخر جرعة	تاريخ أخر جرعة	تاريخ أخر جرعة	تاريخ أخر جرعة	
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة تقصي حول حالات طفح جلدي في حي/بلدة
تاريخ ----------

الحي		البلدة	القضاء	اسم المحقق

#	الاسم الثلاثي	الجنس Sex	تاريخ الولادة او العمر	الجنسية	هاتف	العوارض			هل لقح(ت) الطالب(ة) ضد					جمع عينات		ملاحظات استشفاء، وفاة،
						تاريخ ظهور الطفح	نوع الطفح Rash :type MP Or Vs	حرارة Fever	موثقة	الحصبة (Measles)	الحصبة و الحصبة الألمانية (MMR1)	الحصبة و الحصبة الألمانية (MMR2)	حملة تلقيح	تم جمع عينة حدد النوع والتاريخ	نتيجة الفحص	
		☐ذكر ☐أنثى						☐ كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، سنة			
		☐ذكر ☐أنثى						☐كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، سنة:			
		☐ذكر ☐أنثى						☐كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، سنة:			
		☐ذكر ☐أنثى						☐كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:			
		☐ذكر ☐أنثى						☐كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، سنة:			
		☐ذكر ☐أنثى						☐كلا ☐نعم	☐كلا ☐نعم	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، التاريخ:	☐كلا ☐نعم، سنة:			

Measles - Annex 5

Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program

Measles and Rubella Surveillance

LINE LISTING

YEAR |__|__|__|__|

								ID	Case identification
								M/R	
								Name	
								Caza	
								Age	
								Form completed	Case reporting
								Investigation form	
								Rash onset	
								Reported on	
								Health Facility	
								Type	1st serology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Result	
								Type	2nd serology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Result	
								Type	Virology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Final classification	

Measles - Annex 6

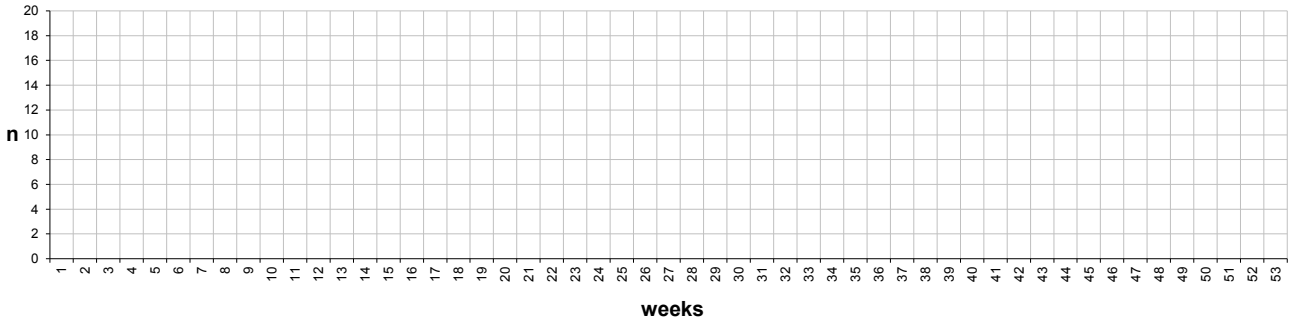
Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program

Descriptive Surveillance Findings

Event	Level	Year	Week	Period	As on
		20___			

1. Cumulative number =

2. Number of cases by time: weekly histogramm



3a. By time: monthly cases and rates (/100000)

Month	R20__	R20__	R20__	Pop20__	N20__	R20__
Jan						
Feb						
Mar						
Apr						
Mai						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
Total						

4a. By place: commune

Commune	N	Commune	N

3b. By time: curve of monthly rate (/100000)

4b. By place: dot map

1 dot = 1 case

5. By age group, gender and vaccination status: cases and rates (/100000) and %

Age	Pop	Nb	Rate	Male	Female	Unsp
0-4 y						
5-9 y						
10-14 y						
15-19 y						
20-44 y						
45+ y						
Unsp	-					
Total						

0d	1+d	Unsp	0d %

6. By classification

Lab	Epi	Clin	Total

7. By hospital admission

In	Out	Unsp.	Total

8. By occupation

Interviewed	Education	DayCare

Notes

Notes

12

Surveillance Standard Operating Procedure: Meningitis

Version 1
MOPH circular no. 64
(22nd Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of meningitis alert or outbreak.

II. Generalities

This document compiles background information and resources for the investigation of bacterial meningitis (mainly Neisseria meningitidis, Haemophilus influenzae type B, Streptococcus pneumonia, Mycobacteruim tuberculosis, Listeria monocytogenes...) and aseptic meningitis.

Meningitis is a disease caused by the inflammation of the fluid and membranes that surround the spinal cord and brain. It has many potential infectious agents including bacterial, fungal, tuberculous, and viral pathogens. The severity of illness and the treatment for meningitis differ depending on the cause.

Meningitis	
Agents	Several agents: 1) Bacteria: - Neisseria meningitidis (meningococcus): the serotypes responsible of invasive infection are A, B, C, W135, Y - Haemophilus influenza: there are 6 serotypes from (a) to (f). The serotype (b) is responsible of invasive infection. - Streptococcus pneumonia (pneumococcus): there are more than 90 serotypes. - Other bacterial agents: Listeria, Staphylococcus, enteric bacteria, group B Streptococci, Mycobacterium tuberculosis… 2) Virus: - Mumps - Measles - West Nile virus: a flavivirus - Enterovirus: including Coxsackie viruses A (1-11, 14, 16-18, 22, 24), Coxsackie viruses B (1-6), Echoviruses (1-7, 9-23, 25, 27, 30-33), Enterovirus 71, Poliovirus (1-3) - Herpes Simplex virus: with 2 types 1 and 2 - Varicella / Chicken-pox: Human (alpha) herpesvirus 3 (varicella-zoster) from the group Herpesvirus - Adenovirus: several types (1, 2, 3, 4, 5 and 7), genus Mastadenovirus, family Adenoviridae - Lymphocytic choriomeningitis: Lymphocytic choriomeningitis virus (Arenavirus) - Sandfly fever viruses: genus phlebovirus, family Bunyaviridae. They include more than 60 antigenically distinct virus serotypes. Two main groups are identified: the sandfly fever group including the Naples serocomplex (Karimabad virus, Arabia virus, Massilia virus, Punique virus, Tehran virus, Toscana virus …) and Sicilian serocomplex; and the Uukuniemi group. - Other virus: Arboviruses… 3) Parasites: - Leptospirosis: Spirochetes, Leptospira interrogans (25 serogroups) - Other: Candida albicans, Cryptococcus, Treponema pallidum (syphilis)...

<table>
<tr><td>Incubation period</td><td>The incubation varies with the agent.<table>
<tr><th>Agent</th><th>Incubation period</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>3-4 days (2-10 days)</td></tr>
<tr><td>Haemophilus influenza</td><td>2-4 days</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>1-4 days</td></tr>
<tr><td>Listeria monocytogenes</td><td>3-70 days (median of 3 weeks)</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>3-12 days</td></tr>
<tr><td>Enterovirus</td><td>7-14 days (2-35 days)</td></tr>
<tr><td>Herpes</td><td>2-12 days</td></tr>
<tr><td>Varicella / Chicken-pox</td><td>2-3 weeks</td></tr>
<tr><td>Lymphocytic choriomeningitis virus</td><td>8-13 days (15-21 days for meningitis)</td></tr>
<tr><td>Adenovirus</td><td>1-10 days</td></tr>
<tr><td>Sandfly fever viruses</td><td>3-4 days (up to 6 days)</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Leptospira</td><td>2-30 days (10 days)</td></tr>
</table></td></tr>
<tr><td>Period of communicability</td><td>The period of communicability varies with the agent.<table>
<tr><th>Agent</th><th>Period of communicability</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>From onset and up to 24 hours after starting antibiotherapy that has effective concentrations in nasopharynx</td></tr>
<tr><td>Haemophilus influenza</td><td>From onset and up to 24-48 hours of starting effective antibiotherapy</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>As long as the bacteria is present in the upper respiratory tract</td></tr>
<tr><td>Listeria monocytogenes</td><td>- Mothers of infected newborns can shed the bacteria in vaginal discharges and urine 7-0 days after delivery.
- Infected patients can shed the bacteria in stool for several months.</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>No person-to-person transmission.</td></tr>
<tr><td>Enterovirus</td><td>- Virus is excreted in stools for several weeks.
- Virus is excreted in pharynx for the first 2 weeks post infection.</td></tr>
<tr><td>Herpes</td><td>2-7 weeks after skin lesions onset</td></tr>
<tr><td>Varicella / Chicken-pox</td><td>2 days before until the skin lesions are crusted (5 days)</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Lymphocytic choriomeningitis virus</td><td>No person-to-person transmission</td></tr>
<tr><td>Adenovirus</td><td>Shortly prior to and for the duration of the active disease</td></tr>
<tr><td>Sandfly fever viruses</td><td>Virus is present in blood of infected patients 1 day before and 1 day after onset of illness.</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Leptospira</td><td>Excreted in urine for 1 month</td></tr>
</table>
</td></tr>
<tr><td>Reservoir</td><td>The reservoir varies with the agent.
<table>
<tr><th>Agent</th><th>Reservoir</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>Humans</td></tr>
<tr><td>Haemophilus influenza</td><td>Humans</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>Humans with possible carriage</td></tr>
<tr><td>Listeria monocytogenes</td><td>Soil, forage, water, mud and silage</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>Birds</td></tr>
<tr><td>Enterovirus</td><td>Humans</td></tr>
<tr><td>Herpes</td><td>Humans</td></tr>
<tr><td>Varicella / Chicken-pox</td><td>Humans</td></tr>
<tr><td>Lymphocytic choriomeningitis virus</td><td>House mouse (Mus musculus), hamster colonies. The mouse excretes the virus in saliva, feces and urine.</td></tr>
<tr><td>Adenovirus</td><td>Humans</td></tr>
<tr><td>Sandfly fever viruses</td><td>Humans and rodents</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Leptospira</td><td>Wild and domestic animals</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Modes of transmission</td><td>The modes of transmission vary with the agent.
<table>
<tr><th>Agent</th><th>Modes of transmission</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>Person-to-person transmission: direct contact with droplet, nasal and throat discharge</td></tr>
<tr><td>Haemophilus influenza</td><td>Person-to-person transmission: direct contact with respiratory, nasal and throat discharge</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>Person-to-person transmission: direct contact with respiratory discharge</td></tr>
<tr><td>Listeria monocytogenes</td><td>- Food-borne: ingestion of raw or contaminated milk, soft cheese vegetables and ready-to-eat meats (Pate)
- Direct contact with infectious material
- Neonatal: from mother to fetus or from mother to newborn (through the infected birth canal)
- Nosocomial transmission in nursery: via contaminated equipment or material</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>Bite by infected mosquitoes (Culex sp, or Anophele sp)</td></tr>
<tr><td>Enterovirus</td><td>- Person-to-person:
• Fecal-oral
• Contact with respiratory secretions
• Contact with conjunctival secretions
- Contaminated water/swimming pools
- Flies</td></tr>
</table></td></tr>
</table>

	Herpes	Person-to-person: - Contact with saliva - Sexual contact - Soiled hands - Neonatal (infected birth canal)
	Varicella / Chicken-pox	Person-to-person: - Contact with droplets - Contact with vesicle fluid - Indirect contact - Airborne
	Lymphocytic choriomeningitis virus	- Airborne: contaminated dust - Food-borne: ingestion of contaminated food - Direct contact: skin contamination or cuts
	Adenovirus	- Person-to-person: • Fecal-oral route • Respiratory transmission • Inoculation with conjunctival secretions • Nosocomial - Contaminated water and swimming pools
	Sandfly fever viruses	Bite of infective phlebotomine (Phlebotomus papatasi, P. perfiliewi , P. perniciosus, P. major sensu lato)
	Parasites	
	Leptospira	- Contact with abraded skin or mucous membranes with soil, vegetation or water contaminated with urine of infected animals - Direct contact with urine or tissues of infected animals - Ingestion of food or water contaminated with urine of infected animals

<table>
<tr><td>Clinical presentation</td><td>The symptoms vary with the agent.
<table>
<tr><th>Agent</th><th>Clinical picture</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>Meningitis, septicaemia</td></tr>
<tr><td>Haemophilus influenza</td><td>Meningitis, epiglottitis, pneumonia …</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>Meningitis, pneumonia, septicaemia</td></tr>
<tr><td>Listeria monocytogenes</td><td>Meningitis, septicaemia</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>- Usually asymptomatic
- Complications: meningitis and encephalitis</td></tr>
<tr><td>Enterovirus</td><td>- Asymptomatic
- Gastro-enteritis, flu-like illness, aseptic meningitis, paralysis</td></tr>
<tr><td>Herpes</td><td>- Gingivostomatitis (type1), genital infection (type 2)
- Complications:meningoencephalitis
- Reactivation is possible</td></tr>
<tr><td>Varicella / Chicken-pox</td><td>- Skin eruption: first maculo-papular then vesicular
- Complications: pneumonia, hemorrhage, meningoencephalitis</td></tr>
<tr><td>Lymphocytic choriomeningitis virus</td><td>- Influenza-like illness
- Complications: meningitis, parotiditis, arthritis, myocarditis…</td></tr>
<tr><td>Adenovirus</td><td>- Epidemic herato-conjunctivitis, gastro-enteritis, pharyngo-conjunctival fever, acute respiratory infection
- Complications:meningoencephalitis</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Sandfly fever viruses</td><td>- Usually self-limited disease: fever, myalgia, headache, photophobia …
- Complications: Aseptic meningitis and meningoencephalitis (Toscana)</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Leptospira</td><td>Rash, hemolytic anemia, hemorrhage, hepato-renal failure, mental confusion, myocarditis…</td></tr>
</table>
</td></tr>
<tr><td>Worldwide</td><td>
<table>
<tr><th>Agent</th><th>Profile</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Neisseria meningitidis</td><td>Endemic in the African meninigitis belt (from Senegal to Ethiopa)</td></tr>
<tr><td>Haemophilus influenza</td><td>Worldwide under 5 years</td></tr>
<tr><td>Streptococcus pneumoniae</td><td>Worldwide</td></tr>
<tr><td>Listeria monocytogenes</td><td>Worldwide</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>West Nile virus</td><td>Widespread in Africa, Middle East, North America, India</td></tr>
<tr><td>Enterovirus</td><td>Worldwide</td></tr>
<tr><td>Herpes</td><td>Worldwide</td></tr>
<tr><td>Varicella / Chicken-pox</td><td>Worldwide</td></tr>
<tr><td>Lymphocytic choriomeningitis virus</td><td>America, Europe</td></tr>
<tr><td>Adenovirus</td><td>Worldwide</td></tr>
<tr><td>Sandfly fever viruses</td><td>In Mediterranean counties, Europe and Middle East</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Leptospirose</td><td>Worldwide</td></tr>
</table>
</td></tr>
<tr><td>Lebanon</td><td>The annual average of reported cases of meningitis is 192.
Among them:
- Meningitis due to Neisseria meningitis occurs with annual average of 6 (2-12) cases per year
- Meningitis due to Haemophilus influenza occurs with annual aver age of 1 (0-2) cases per year.
- Meningitis due to Streptococcus pneumoniae occurs with annual average of 19 (16-21) cases per year.</td></tr>
<tr><td>Control objective</td><td>Control</td></tr>
<tr><td colspan="2">Surveillance and Investigation</td></tr>
<tr><td>Surveillance approach</td><td>Syndromic approach: meningitis</td></tr>
<tr><td>Investigation: data about case</td><td>Demography, clinical presentation, complications, vaccination status, travel history…</td></tr>
<tr><td>Investigation: clinical specimen from case</td><td>CSF, serum...</td></tr>
</table>

Investigation: data about contacts	Age, travel history
Investigation: clinical specimen from contacts	If symptoms
Test	- CSF: cytology, biochemistry, soluble antigens, culture, PCR - Blood: CBC, culture
Laboratories	- Clinical laboratories - Reference laboratories: serotypes, virus detection and isolation
Outbreak level	At least 3 epidemiologically-linked cases with same agent and type
Notification to WHO	If outbreaks
Meningitis case definitions	
Meningitis (MOPH circular no. 52 dated on the 10th April 2007)	
Suspected case	Case presenting fever >= 38.5ºC with: - Neck stiffness - And/or other meningeal sign: severe altered consciousness, unexplained headache, photophobia, nausea, vomiting - And/or petechial/purpural rash or other rash. For children under 2 years of age, a case presenting fever (>= 38.5ºC) with: - Bulging fontanelle - And/or irritability - And/or lethargy.
Neisseria meningitidis: refer to meningococcal infection chapter	
Haemophilus influenzae (MOPH circular no. 54 dated on the 10th April 2007)	
Confirmed case: HIb	A case of bacterial meningitis that is laboratory-confirmed: - Isolation of Haemophilus influenzae type b (CSF or blood) - Or identification of Hib antigen from normally sterile fluids (CSF or blood)
West Nile virus (MOPH circular no. 36 dated on the 5th May 2012)	
Confirmed case: West Nile	A case with meningitis or encephalitis with laboratory confirmation: - IgG antibody sero-conversion (or significant increase in antibody titers) in two serial specimens collected at a one week interval by enzyme-linked immunosorbent assay (ELISA) - Or IgM antibody capture enzyme-linked immunosorbent assay (ELISA) - Or neutralisation assays - Or viral detection by reverse transcription polymerase chain reaction (RT-PCR) assay - Or virus isolation by cell culture
Other meningitis	
Confirmed cases	Meningitis with laboratory confirmation of the causative agent by culture, soluble antigens, PCR or other confirmatory tests
Forms	
Reporting	Specific meningitis reporting form (MOPH circulat no.53 dated on 27th May 2002) or standard reporting form
Investigation	Specific investigation form for meningitis (MOPH circulat no.76 dated on 31st July 2013)

National figures

Figure 1: Reported meningitis incidence rate (/100000), Lebanon, 1997-2014 (Source: MOPH)

International figures

Figure 2: Incidence of Haemophilus Influenza b infection (per 100000) for the under 5 years, 2000 (Source: www.who.int)

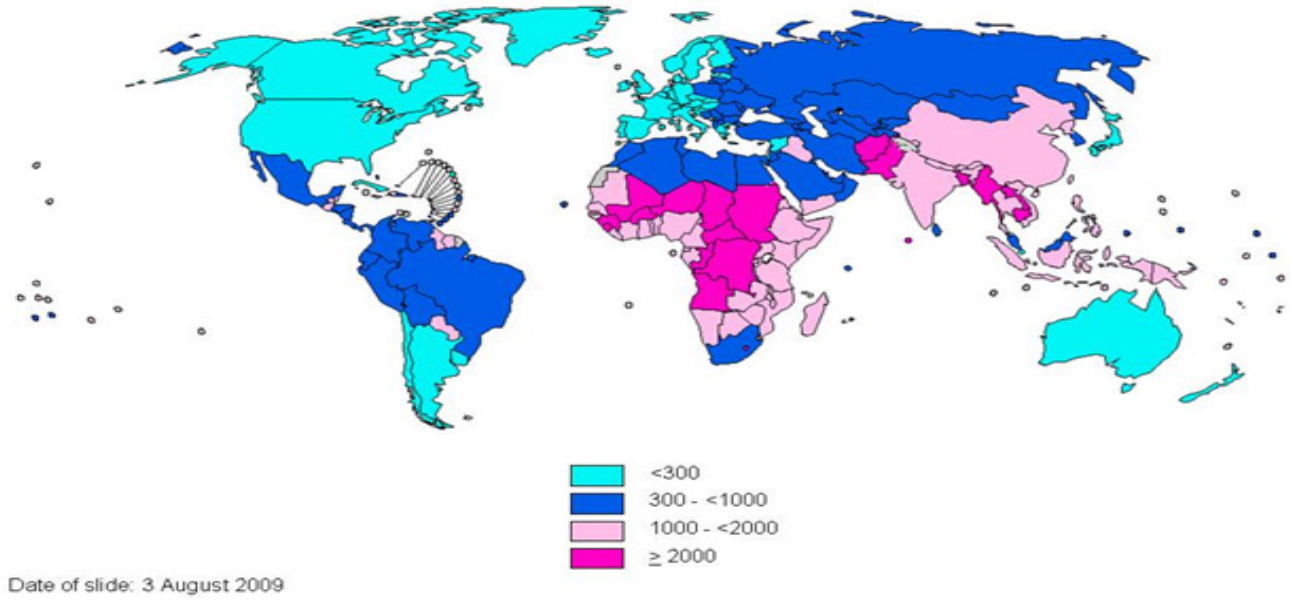


Figure 3: Incidence of pneumococcal infection (per 100000) for the under 5 years, 2000 (Source: www.who.int)

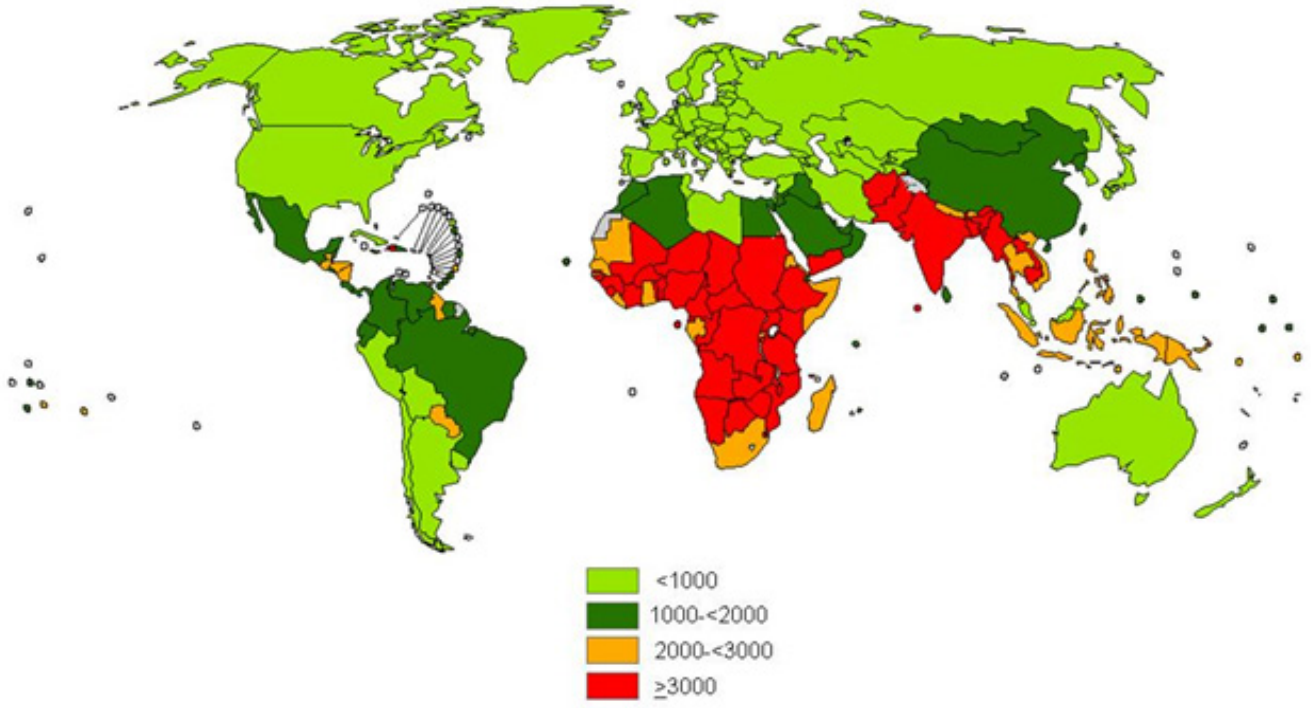


Figure 4: Distribution of West Nile fever cases in the region, season 2015 up to 19 Nov 2015 (Source: ECDC)

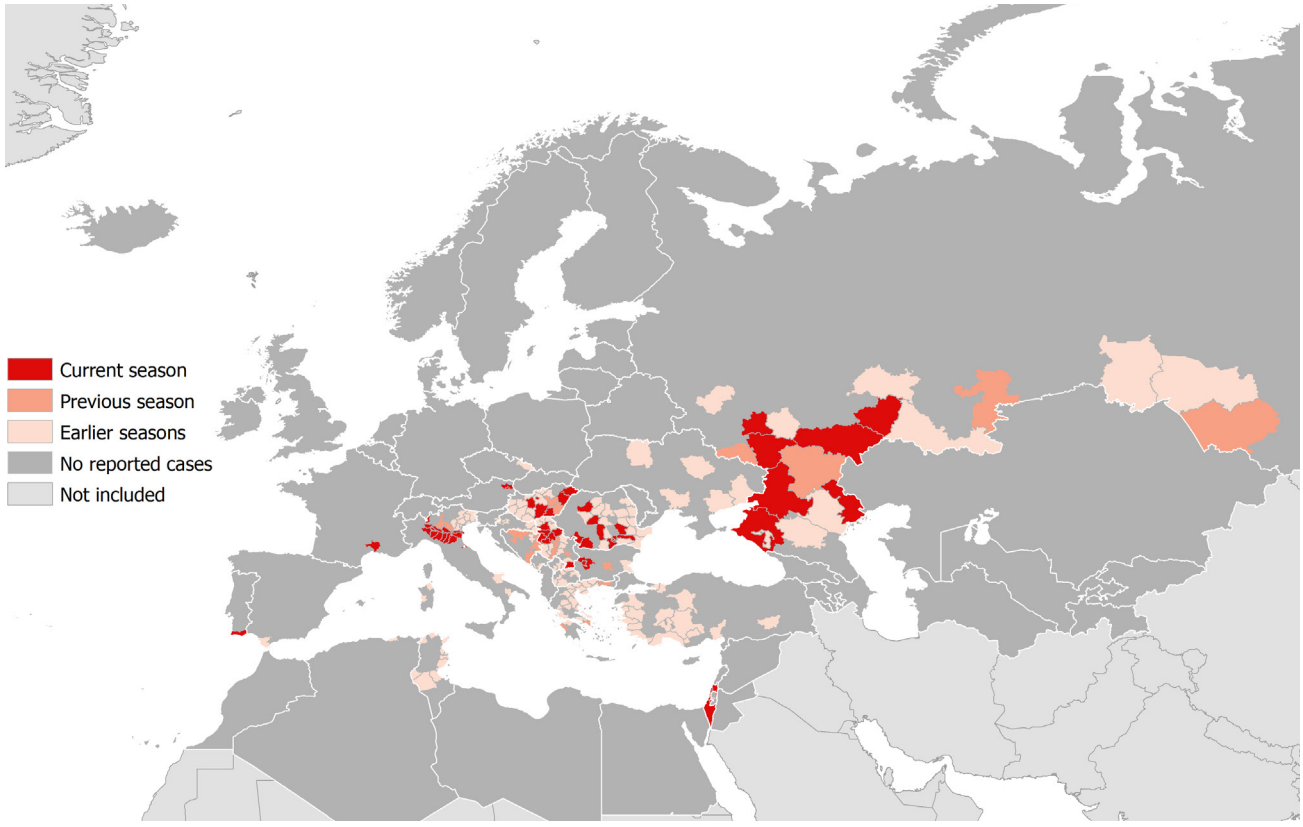
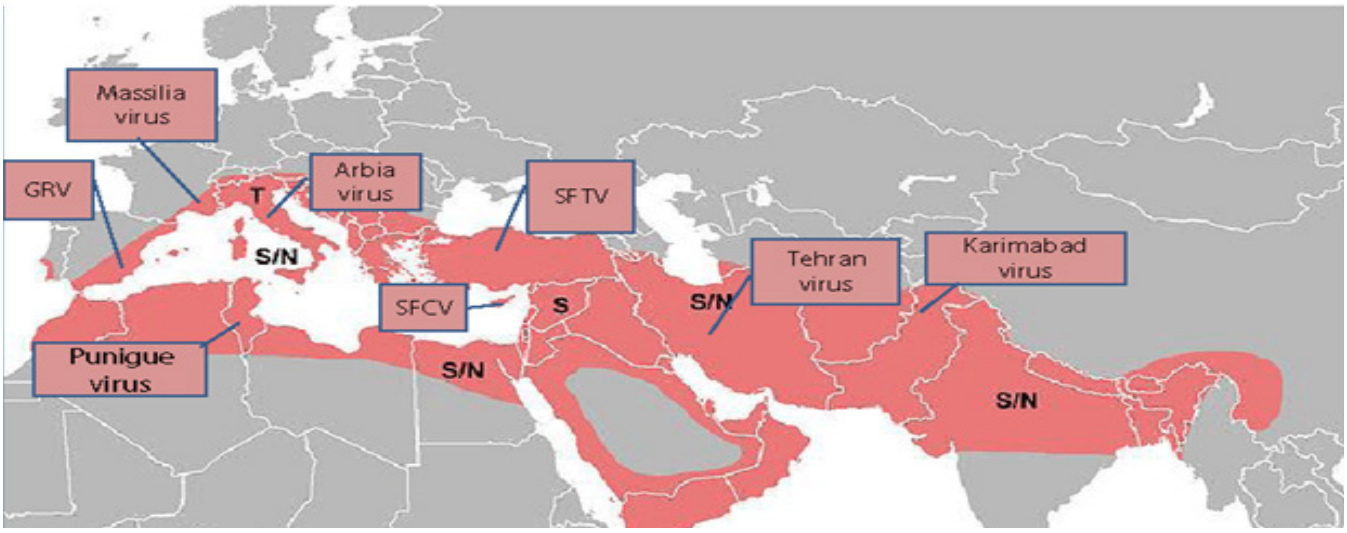


Figure 5: Distribution of sandfly fever viruses by serotype.
Abbreviations: S: Sandfly Sicilian Virus, N: Sandfly Naples Virus, T: Toscana virus, SFTV: Sandfly Fever Turkey Virus; SFCV: Sandfly Fever Cyprus Virus; GRV: Granada Virus.
(Source: Kocak Tufan Z, Tasyaran MA, Guven T (2013) Sandfly Fever: A Mini Review. Virol Mycol 2: 109)



III. Objectives of surveillance

The objectives of meningitis surveillance are:

- To monitor incidence of meningitis
- To identify and monitor circulating infectious agents (species and types) of meningitis
- To detect alert and outbreak
- To detect meningitis due to Neisseria meningitidis, Haemophilus influenzae b and ensure needed preventive measures.

IV. Alert and outbreak thresholds

An **alert** is defined by any reported case of meningitis. All reported cases of meningitis need to be investigated.

High alert is defined by one of the following:

- A cluster of acute meningitis (>=3 cases same time and place)
- Relative increase.

An **outbreak** is defined by one of the following:

- At least of 3 confirmed cases in same district, within 2 incubation periods, and with same agent and type
- At least of 3 confirmed cases epi-linked or in same setting within 2 incubation periods, and with same agent and type
- At least one confirmed case of West Nile Fever.

V. Procedural steps

The below steps are recommended for the verification and investigation of meningitis cases, alerts and outbreaks. Figure (6) summarizes those steps.

Step 1: Verify alert

Cases of suspected meningitis are notified to the MOPH immediately, without waiting for microbial confirmation.
Upon notification, the hospital is asked to fill the meningitis reporting form provided in annex (1).

Step 2: Complete data collection

The Esumoh caza team checks the completeness of the reporting form. For each case, the needed information is:

- Demography variables: age, gender, nationality, place of residence (caza and locality)
- Illness: date on onset, presence of purpura...
- Vaccination status
- Laboratory results: CSF findings (culture, cytology, biochemistry soluble antigens), blood culture …
- Occupation: student, military staff…
- Travel history of the case or family members.

It is very important to collect CSF results and blood culture results. In case of death, a copy of the medical file is requested.
Once the information is completed, the Esumoh caza teams sends all the documents to the Esumoh mohafaza and central levels.
Once data is collected, the meningitis investigation form is filled. The investigation form is provided in annex (2).

Step 3: Identify the agent

Based on available clinical, epidemiological and laboratory findings, the causal agent is suspected and/or identified.

a) Bacterial agents

In case of positive culture, CSF soluble antigens, or PCR, the case is then confirmed.

In case of positive isolate at CSF or blood culture for Neisseria meningitis or Haemophilus influenza, the Esumoh central team coordinates the collection of any isolate to reference laboratory.

At designated reference laboratories, the isolates are confirmed, typed and tested for antimicrobial resistance. It is important to identify the types:

- Of Neisseria meningitidis as some are not covered by vaccines (type B is not covered)
- Of Strepotococcus pneumonia (SP) as used vaccines do not cover all types of SP
- Of Haemophilus influenza.

b) Viral agents

In case of aseptic meningitis, collection of specimens to be tested in reference laboratories to identify the agents is indicated in the following circunstances:

- Cluster for cases
- Relative increase in aseptic meningitis
- Testing for West Nile Virus.

Step 4: Search for additional cases

Additional cases are searched via:

- Passive reporting
- Active surveillance: meningitis is included in the weekly visits to hospitals
- Review of the MOPH hospital admission database
- Laboratory-based surveillance
- Hospital-based mortality surveillance
- Community-based surveillance...

Step 5: Describe cases

a) Description

Cases are described by:

- Time: day, week, month and year of onset
- Place: residence, specific setting
- Person: age group, gender, nationality
- Disease: classification, outcome
- Agent: species and types

Indicators are presented as counts and rates per 100000.
The annex (4) provides a template for descriptive analysis.

b) Outbreak confirmation

Based on the clinical, laboratory and epidemiological findings, the outbreak is declared if the outbreak criteria are met.

c) Results dissemination

The Esumoh central team informs the MOPH units.

The MOPH shares the information related to the outbreak with:

- Health professionals
- WHO
- Other governmental institutions: Ministry of Education and High Education, Ministry of Defense, Ministry of Social Affairs…

Step 6: Specific approaches

a) Close contacts targeted for chemoprophylaxis or follow up

Neisseria meningitis, Haemophilus influenza and Mycobacteruim tuberculosis can spreads to close contacts via droplet and/or air transmission.

Close contacts are defined by:
- Household members
- Classmates in school
- Persons sharing same bus school
- All children in kindergarden
- Military sharing same barraks
- Healthcare staff providing care to the patient...

Close contacts are listed in a line listing. The line listing includes the following:
- Name
- Age
- Presence of pregnancy
- Relationship with the patient
- Vaccination status (Hib)...

Prophylaxis with antibiotics is provided to close contacts of Neisseria meningitis, and Haemophilus influenza cases. It is initiated as soon as possible till 14 days from identification of the index patient. Chemoprophylaxis is provided by the caza health physician in coordination with the department for communicable diseases.

Refer to SOP meningococcal meningitis for Neisseria meningitis.

Close contacts of TB meningitis are screened for illness, IDR, sputum exam, and Chest-X ray.

b) Vaccine preventable disease

If there is a cluster or increase in meningitis due to vaccine preventable diseases (Hib, mumps…), there is need to verify the vaccination coverage, the vaccine efficacy and the genotypes.

vaccination coverage is verified via rapid survey. The objective is to measure the proportion of adequately vaccinated persons in a population sample. The target children can be defined as under 5, 10 or 15 years in the vicinity of the case. Vaccination cards or personal health records are checked.

Vaccine efficacy is conducted via case control studies or retrospective cohort studies.

Genotypes of strains if identified are compared with used vaccines in the country.

c) Source of infection

For Mycobacterium tuberculosis, there is need to identify potential sources. All close contacts are screened to identity other cases. The screen includes:
- IDR test twice with 2 months interval
- Chest X ray if symptoms or positive IDR
- Sputum exam if symptoms or positive IDR.

d) Food safety

In case of Listeria monocytogenes, specific investigation on potential food items is conducted:
- Identification of suspected food items
- Food sampling in the market
- Food inspection (if possible).

e) Vector borne diseases

Meningitis can due to virus with vector-borne transmission.
In such case, entomological investigation is conducted, including:

- Assessing the environment
- Collection of vectors (mosquitoes and sandflies)
- Identify vector species
- Confirm infection of the vectors
- Mapping the vectors
- Assess susceptibility for insecticides.

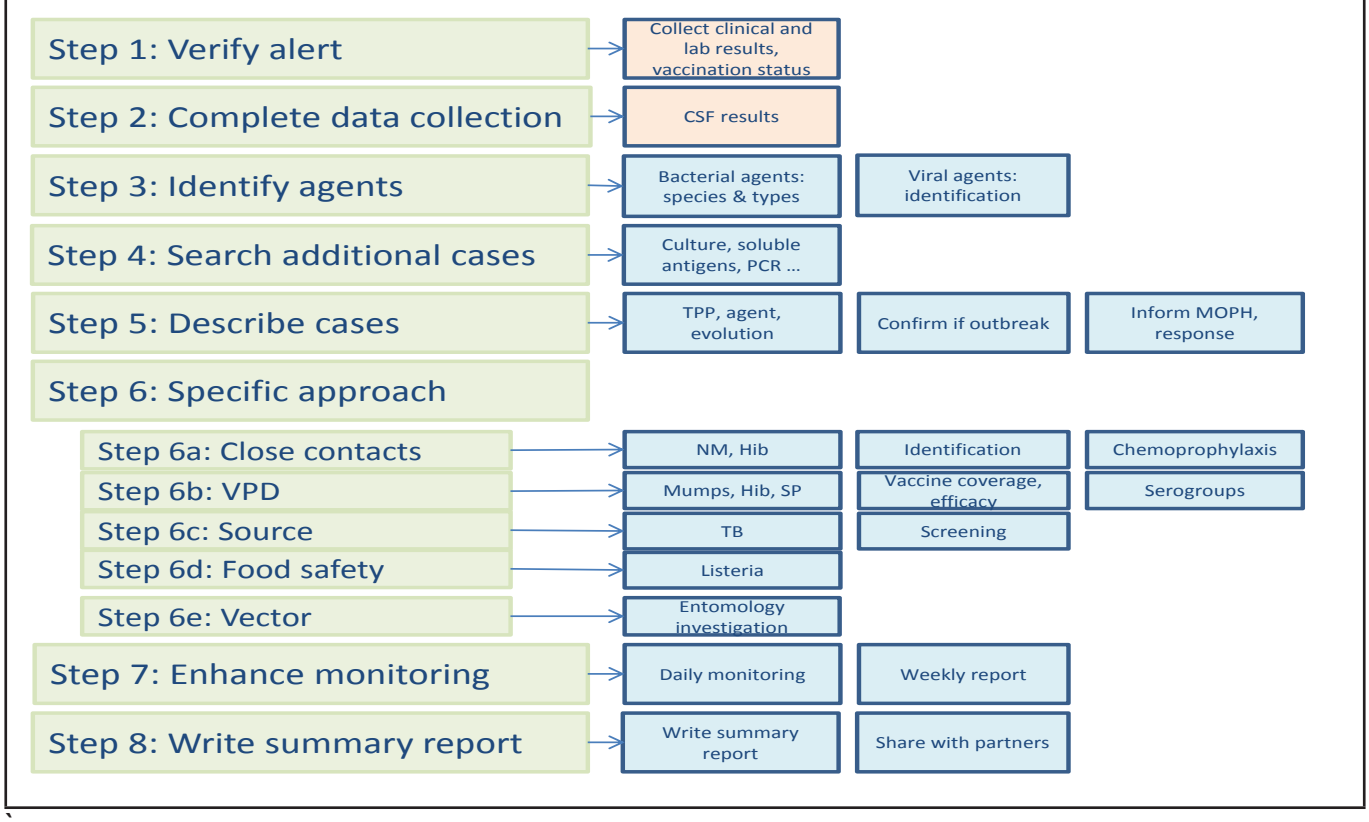
Step 7: Enhance monitoring

During the outbreak, cases are monitored on daily basis. Weekly report is prepared and shared with partners.

Step 8: Write summary report

At the end of the event, the Esumoh central team prepares a summary report. The report is shared with partners.

Figure 6: Meningitis investigation steps



الجمهورية اللبنانية

وزارة الصحة العامة

استمارة إبلاغ عن التهاب السحايا الحاد

رقم ESU: _ _ _ _ _ _ _ _ _ _ رقم M: _ _ _ _

1)- المريض

اسم المريض	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
اسم الأب	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الشهرة	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
تاريخ الولادة	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الجنس	:	☐ ذكر ☐ انثى

2)- عنوان المريض

الجنسية	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
		☐ مقيم ☐ زائر
العنوان	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
القرية / المدينة	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
القضاء	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:	

3)- عن الاستشفاء

تاريخ ظهور العوارض	:	_ _ _ _ _ _ _ _ _ _ _ _
تاريخ دخول المستشفى	:	_ _ _ _ _ _ _ _ _ _ _ _
تاريخ التشخيص	:	_ _ _ _ _ _ _ _ _ _ _ _
اسم المستشفى	:	_ _ _ _ _ _ _ _ _ _ _ _
اسم الطبيب المعالج	:	_ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:	

4)- نتائج الفحوصات المخبرية - في حال إجراء الفحوصات المخبرية ، ترفق النتائج.

	أجريت، ضع x	مرفقة، ضع x
CSF- direct		
CSF - chemical		
CSF - culture		
CSF - antigens		
Blood - CBC		
Blood - culture		

هل عولج المريض بالمضادات الحيوية قبل دخوله إلى المستشفى ؟

☐ نعم ☐ كلا

إذا نعم، ماذا : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ومنذ متى : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

الجرثومة المسببة	: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
ملاحظات	:

5)- العوارض الإكلينيكية للمريض

	ضع علامة x
Fever	
Neck stiffness	
Vomiting	
Bulging fontanel	
Purpura	
Septic choc	
Gangrene	
غيره ، حدد :	

6)- عن الوضع التلقيحي

	عدد الجرعات ونوعه	تاريخ آخر جرعة
Neisseria meningitidis		
Haemophilus influenzae b		
Pneumococcus		

7)- هل سافر المريض أو أحد المقربين إلى الخارج، مؤخرا ؟

من سافر ؟	إلى أي البلد؟	تاريخ العودة الى لبنان؟

8) - ما هي مهنة المريض ؟

المهنة	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
نوع المؤسسة	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
اسم المؤسسة / المدرسة / دار الحضانة / الثكنة	:	
		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
الصف	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
العنوان	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
رقم الهاتف	:	

9) - عن أهل الدار

عدد الأفراد في البيت	:	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
هل يوجد أطفال دون 5 سنوات : نعم / كلا		

10)- عن المبلغ

اسم المبلغ	:
التاريخ	:
التوقيع	:

تبلغ الاستمارة إلى وحدة الترصد الوبائي فور الاشتباه بالحالة لأخذ التدابير اللازمة للمخالطين.

تلفون: 01/614195 فاكس: 01/610920

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي
استمارة تقصي لحالة التهاب السحايا الحاد

تعبئ الاستمارة من قبل فريق وزارة الصحة العامة

1) المريض

الاسم الثلاثي	الجنس □ ذكر □ انثى	تاريخ الولادة	الجنسية	العنوان
نوع الاقامة □ مقيم □ زائر □ عامل اجنبي □ لاجئ	القضاء	البلدة	رقم الهاتف	

2) الاستشفاء

#	اسم المستشفى	تاريخ الدخول	اسم الطبيب المعالج	رقم هاتف الطبيب

3) العوارض السريرية

تاريخ ظهور العوارض	طفح جلدي	مضاعفات	عوارض اخرى
	□ None □ Purpura □ Maculo-papular □ Vesicular	□ Septic choc □ Gangrena	

4) فحص السائل النخاعي

CSF appearance	WBC /mm3	Segmented %	Lymphocytes %	Soluble antigens
Proteins	Glucose	Gram Stain	Culture	Other

5) فحوص اخرى

Platelets	Blood culture	Other tests

6) جمع عينات اضافية من المريض لزوم التقصي

نوع العينة	تاريخ جمع العينة	المختبر المرجعي	الفحص	النتيجة
□ سلالة جرثومية				
□ مصل				
□ سائل نخاعي				

7) نوع التهاب السحايا الحاد

□ جرثومية	□ فيروسية	□ غيره
□ Neisseria meningitis □ Haemophilus influenza □ Streptococcus pneumonia □ Listeria monocytogenes □ Mycobacterium tuberculosis □ Other: □ Not identified	□ Herpes □ Mumps □ West Nile Virus □ Other: □ Not identified	□ Parasitic: □ Fungus: □ Unspecified:

8) الوضع التلقيحي

	Haemophilus inf	Pneumococcal	Meningococcal	MMR
عدد الجرعات				
تاريخ آخر جرعة				

9) سفر الى الخارج خلال شهر قبل ظهور العوارض

	المسافر	البلد / المدينة	تاريخ العودة الى لبنان	ملاحظات
□ المملكة السعودية	□ المريض □ المقربين :			
□ افريقيا	□ المريض □ المقربين :			

10) مهنة المريض

وضع المريض	نوع المؤسسة	القضاء والبلدة	العنوان	اسم المدير ورقم الهاتف
□ طفل في البيت □ طفل في دار الحضانة □ تلميذ، صف: □ طالب جامعي □ عسكري □ مدرس □ غيره:				

11) وقاية المخالطين

	عدد المستهدفين	عدد الذين تلقوا الوقاية	ملاحظات
□ المنزل			
□ دار الحضانة			
□ مدرسة			
□ ثكنة عسكرية			
□ المستشفى			
□ غيره			

12) تطور حالة المريض (يتم الاتصال بالمريض بعد مرور شهر من تاريخ ظهور العوارض)

تاريخ الاتصال	□ شفاء	□ اشتركات	□ وفاة
		□ Hearing loss □ Paralysis □ Other:	□Date of death:

13) وجود حالات اخرى في المحيط (خلال فترة شهر قبل وشهر بعد الحالة)

	عدد الحالات	تاريخ ظهور العوارض	نوع السحايا
□ المنزل			
□ دار الحضانة			
□ مدرسة			
□ ثكنة عسكرية			
□ المستشفى			
□ غيره			

عند الانتهاء من تعبئة استمارة التقصي، ترسل نسخة الى المحافظة، نسخة الى برنامج الترصد الوبائي ونسخة الى دائرة مكافحة الامراض الانتقالية.

Meningitis - Annex 3

Republic of Lebanon. Ministry of Public Health. Epidemiological Surveillance Program

YEAR |__|__|__|__|

MENINGITIS Surveillance
LINE LISTING

|____________________|

ID	Name	Sex	Age (month/year)	Date onset	Week	Caza	Commune	Form completed	Purpura	CSF						Blood		Bacterial	Causative agent if identified	Prophylaxis if Nm ot Hib	Evolution	Hospital
										appearance	WBC (%PN)	Pro (g/l)	Gram	culture	soluble antigens	Gram	culture					
<M##>		<M,F>	<# d/m/y>	<dd/mm/yyyy>	<##>			<Y,N>	<Y,N>	<T,C,B>	<##>	<##>								<Y,N>	<R,D,S>	

Page No. |__|

Meningitis - Annex 4

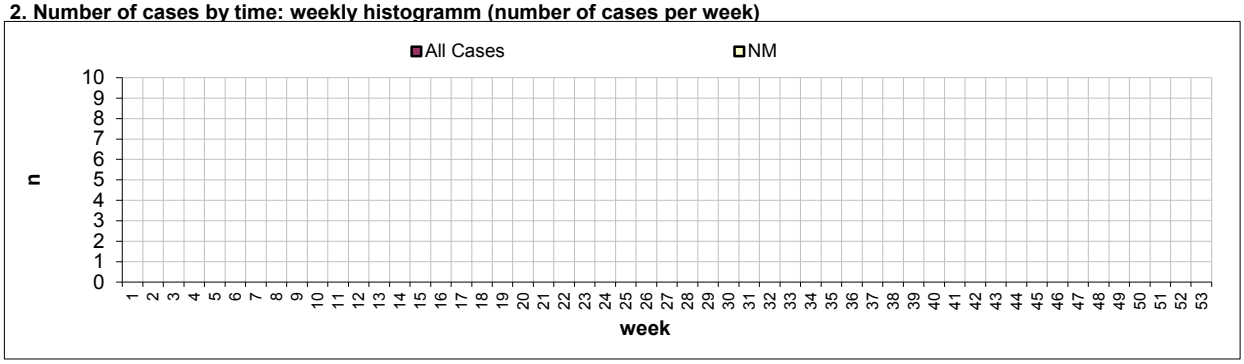
Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program

Descriptive Surveillance Findings

Event	Level	Year	Week	As on
Meningitis		**20___**		

1. Cumulative number =

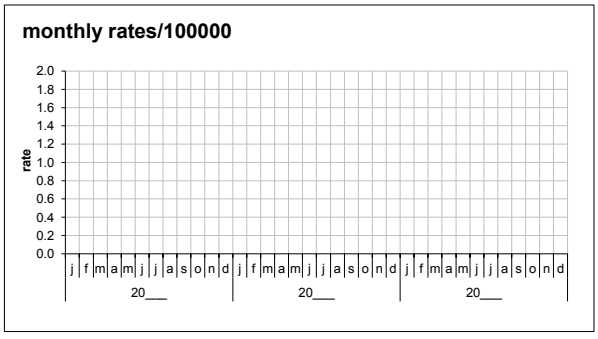
2. Number of cases by time: weekly histogramm (number of cases per week)



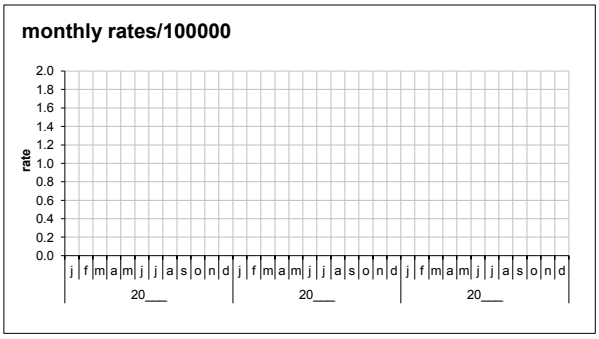
3. Cases by time: counts and rates (/100000)

		Pop20__	All meningitis				Bacterial meningitis				*Neisseria meningitidis*			
			N20__	R20__	R20__	R20__	N20__	R20__	R20__	R20__	N 20__	R20__	R20__	R20__
by month of onset	Jan													
	Feb													
	Mar													
	Apr													
	Mai													
	Jun													
	Jul													
	Aug													
	Sep													
	Oct													
	Nov													
	Dec													
	Total													

4. Monthly incidence for all meningitis



5. Monthly incidence for bacterial meningitis



6. Cases by infectious agent

	Cases		Deaths	
Etiology	N 20__	% 20__	D 20__	CFR 20__
Nm				
Hi				
SP				
Bact Other				
BNOS				
Viral				
Unsp.				
Total, N				

7. By commune

Commune	N	Commune	N

8. By age group

	N 20__	% 20__
0-4 y		
5-14 y		
15-24 y		
25-64 y		
65+ y		
Unsp		
Total		

Notes

Notes

13

Surveillance Standard Operating Procedure: Mumps

Version 1
MOPH circular no. 51
(19th Jan 2015)

Contents

I. Purpose

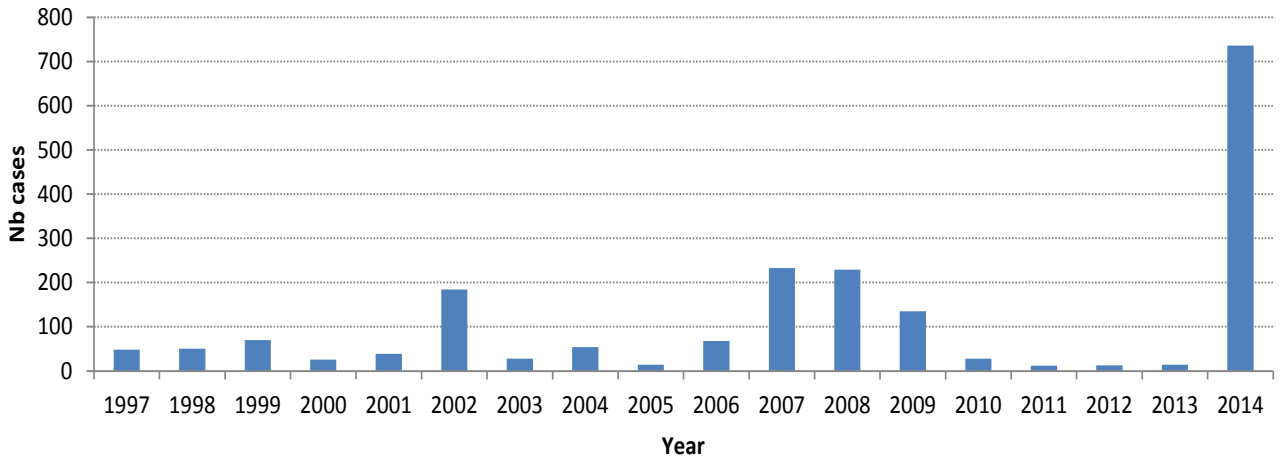
The present Standard Operating Procedure is to guide the Epidemiological Surveillance Program on how to proceed in case of alert or outbreak of Mumps.

II. Generalities

Mumps	
Agent	Mumps virus, genus Rubulavirus, family Paramyxoviridae
Incubation	17 days (14-25 days)
Period of communicability	- Virus present in saliva 7 days prior and 9 days after parotiditis onset - Virus present in urine 6 days prior and 15 days after onset - Max 2 days prior and 4 days after onset
Reservoir	Humans
Modes of transmission	Person-to-person transmission: droplet and can be airborne
Clinical presentation	- Common manifestation: parotiditis (30-40%) - Asymptomatic in 20% - Complications: orchitis, oophoritis, sensoneuronal loss, hearing loss, pancreatitis (4%), aseptic meningitis/encephalitis. Rarely nephritis, arthropathy, cardiac abnormalities, death
Worldwide	Worldwide. Usually no outbreaks
Lebanon	- Annual average of reported cases 73 (14-233) from 1997 to 2013 - National outbreak in 2014-2015
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease
Investigation: data about case	Symptoms, complications, vaccination status, setting, profession...
Investigation: clinical specimen from case	- Serum, urine, oral fluid (1-6 weeks after onset) - CSF if meningitis
Investigation: data about contacts	- Cases among contact
Investigation: clinical specimen from contacts	Specimen if the contact developes symptoms
Test	IgM, PCR, virological culture
Laboratories	- IgM serology at RHUH - Virus culture: supranational laboratories
Outbreak level	At least 3 confirmed cases epidemiologically-linked
Notification to WHO	To notify to WHO if outbreak
Mumps case definition (MOPH circular no. 110 dated on the 6th September 2006)	
Confirmed case	A suspected case confirmed by laboratory by one of the following tests: - Isolation of mumps virus from clinical specimen (throat swab, urine or CSF) - Seroconversion or significant rise (at least fourfold) in serum mumps IgG titre (in the absence of mumps immunization in the preceding 6 weeks) - Positive serological test for mumps–specific IgM antibodies (in the absence of mumps immunization in the preceding 6 weeks).

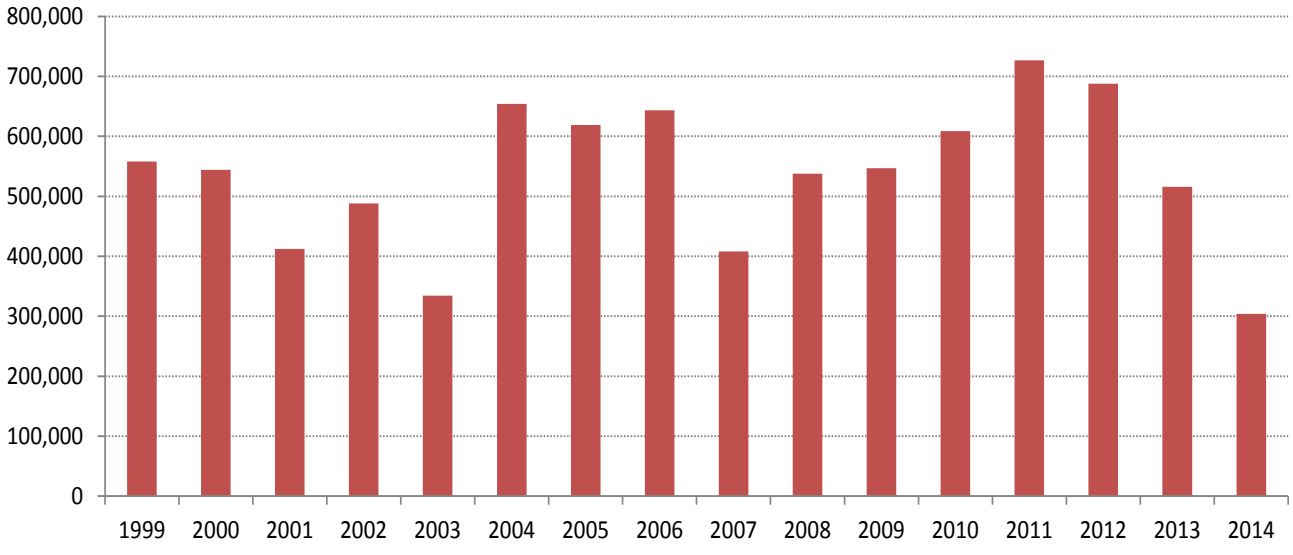
Probable case	A suspected case with link with laboratory-confirmed case
Suspected case	Acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting 2 or more days without other apparent cause.
Forms	
Reporting	Standard reporting form
Investigation	For case: specific mumps investigation form (MOPH circular no. 152 dated on the 15th October 2007)
National figures	

Figure 1: Reported cases of mumps, Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported mumps cases, worldwide, 1999-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance of mumps are:

- To monitoring mumps incidence in Lebanon and descibe characteristics
- To detect and investigate outbreaks
- To identify risk factors
- to identify circulating mumps virus.

IV. Alert and outbreak thresholds

An **alert** is defined by one of the following:
- A cluster of mumps cases
- At least 3 reported cases in an institution/setting
- Relative increase.

An **outbreak** is defined by one of the following:
- At least 3 confirmed cases in an institution/setting
- Observed incidence > expected incidence of cases.

V. Procedural steps

In case of alert, the following steps are recommended. They are summarized in figure (4).

Step 1: Verify alert

Alerts are detected by the Esumoh teams at caza, mohafaza and central levels.
Upon the detection of an alert, the Esumoh team verifies the following:
- The suspected diagnosis
- The real increase of the number of cases
- The presence of cluster.

Verification is done by:
- Checking the real increase in the database
- Contacting the healthcare providers.

Step 2: Collect data

Upon verification of an alert, the Esumoh caza team collects data on all mumps cases.
The Esumoh team interviews the patient or the parents, and fills the investigation form (Annex 1). The investigation form includes the following information:
- Demography: age group, gender, nationality…
- Disease: clinical presentation, complications, case management…
- Vaccination status
- Risk factors: occupation, institution...

The information on vaccination status is collected from the vaccination cards or personal health records. If such document is not available, the treating physician or the medical center is contacted to have the needed information.

Step 3: Collect specimen

For each cluster, there is need to have laboratory confirmation.
The collection of specimens for mumps is done by:
- The healthcare facility: medical center, hospital, laboratory…
- Or by Esumoh staff for outpatients.

The needed specimens include: oral fluid, serum, CSF, urine... The tests include: serology (IgM, IgG), PCR, virus isolation. Tests are done at RHUH or at supranational laboratory.

Based on clinical, laboratory and epidemiological findings, case is classified as shown in figure (3).

Step 4: Identify contacts

The investigation includes the identification of close contacts in particular at household and school.
Contacts are assessed for their vaccination status.

Step 5: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence or work in terms of locality, caza and mohafaza
- Person: age group, sex, nationality, and vaccination status. Vaccination status is displayed by age group.
- Disease: classification, complications…

b) Cross checking

Data is also compared with the findings of various surveillance systems:

- Medical-based surveillance system
- Meningitis surveillance
- Hospital-based mortality surveillance
- Event-based surveillance...

Step 6: Confirm the outbreak

Based on the epidemiological and laboratory findings, the outbreak is declared. The Esumoh informs the concerned units at the MOPH, in particular the EPI.

The MOPH informs the national partners: health professionals, the MEHE, the kindergratens.
Official memos are issued by the MOPH to inform health professionals.
Also, the MOPH informs the WHO based on the IHR(2005) criteria.

Step 7: Search for additional cases

Additional cases are searched from various sources:

- Indicator-based surveillance:
  - Enhancing passive surveillance
  - Including pertussis in active surveillance
- Community search via field visits (if needed)
- Event-based surveillance...

Step 8: Conduct further studies

Based on the extend of the outbreak and identified potential risk factors, additional studies can be conducted as:

- Analytic studies: to assess vaccine efficacy
- Virus genotyping: to identify circulating virus.

Step 9: Enhance monitoring

During an outbreak, the Esumoh central team prepares weekly reports to monitor cases and share them with EPI and partners.

Step 10: Write summary report

Once the outbreak has ended, the Esumoh central team prepares a summary report describing the cases, and the factors. The summary report is shared with health partners.

Figure 3: Mumps case classification

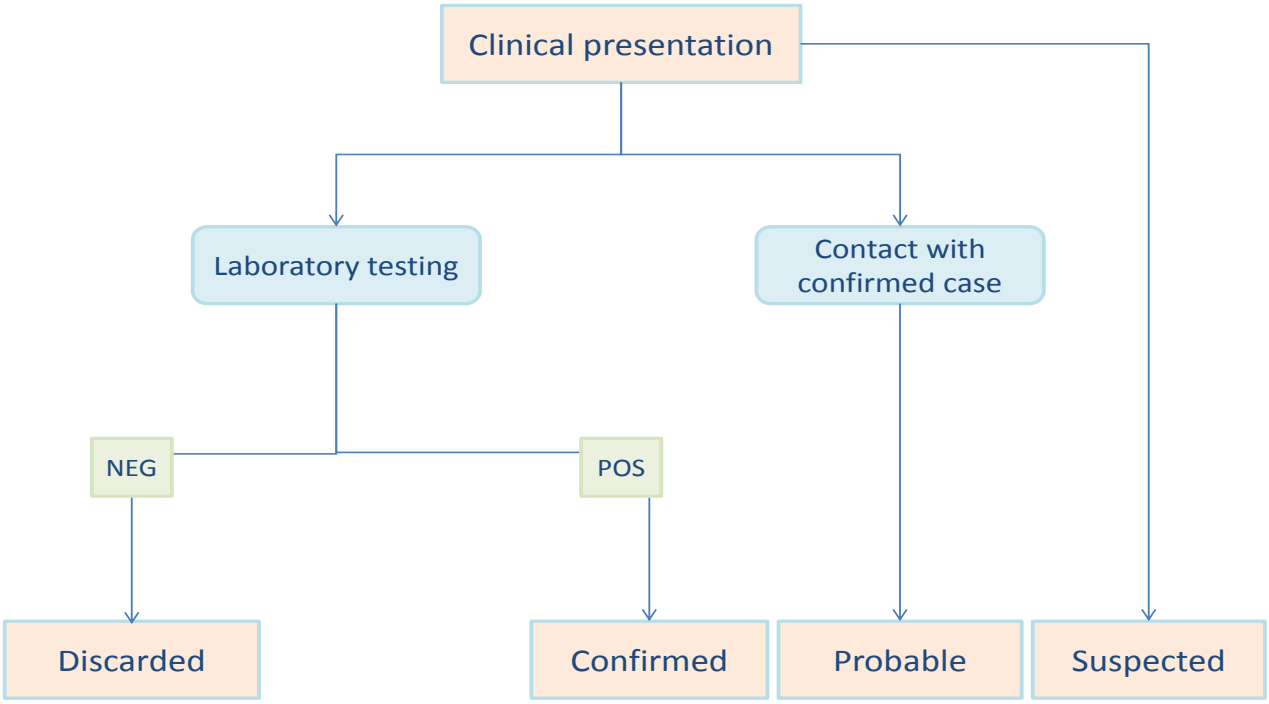
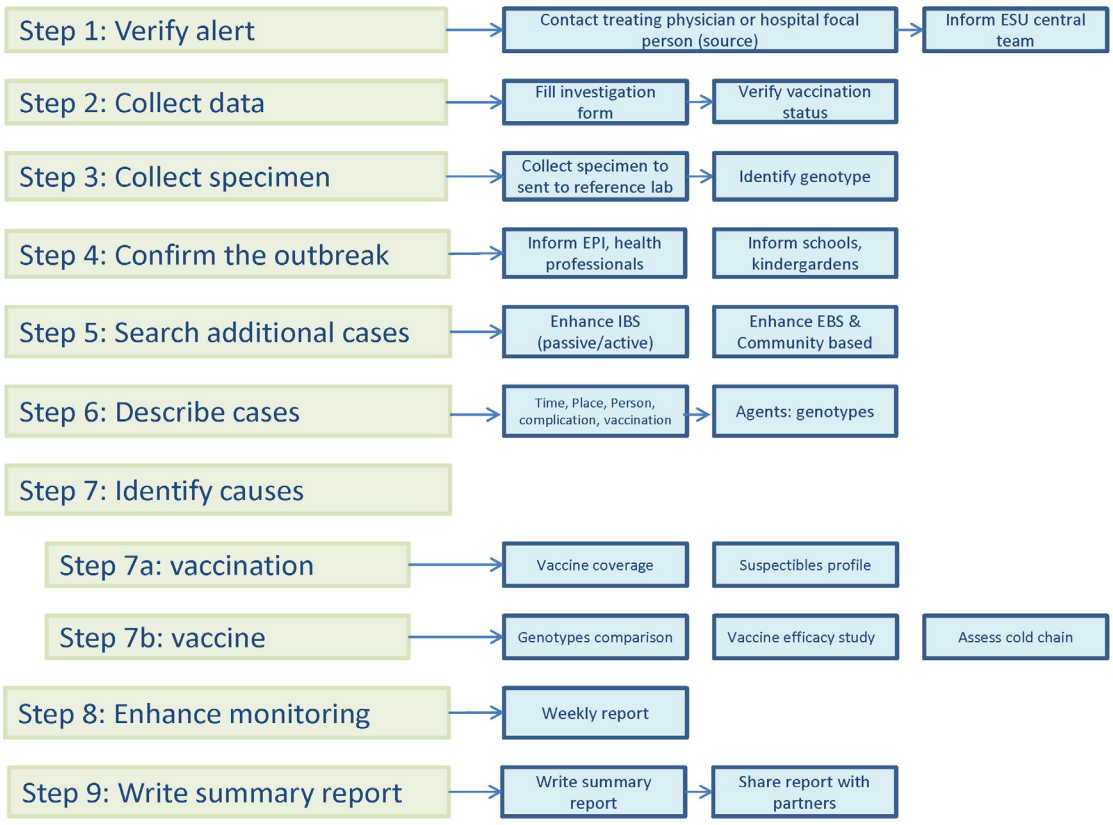


Figure 4: Mumps investigation steps



Mumps - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - برنامج الترصد الوبائي

استمارة تقصي لحالات أبو كعب / Mumps / Oreillons

تعبأ الاستمارة من قبل وزارة الصحة العامة / فريق الترصد الوبائي

1) في التقصي

اسم المحقق	تاريخ التقصي	رقم استمارة Esu	رقم استمارة التقصي

2) المريض

الاسم الثلاثي عند الولادة	اسم الزوج	الجنس ☐ذكر ☐انثى	الجنسية	تاريخ الولادة	العمر
عنوان السكن: المحافظة	القضاء	البلدة		رقم الهاتف	

3) الوضع التلقيحي

وثيقة تلقيح متوفرة	عدد جرعات MMR	تاريخ جرعة MMR1	تاريخ جرعة MMR2
☐نعم ☐كلا	☐لا يعلم ☐يعلم |__|		

4) المرض

تاريخ ظهور العواض		الاشتراكات ، المضاعفات:		
دخل المستشفى	☐نعم ☐كلا	التهاب سحايا / meningitis	☐نعم	☐كلا
اسم المستشفى		التهاب دماغي/ encephalitis	☐نعم	☐كلا
العوارض السريرية:		التهاب الخصية / orchitis	☐نعم	☐كلا
تضخم الغدد النكافية / parotitis	☐نعم ☐كلا	غيره	☐نعم	☐كلا
عوارض تنفسية	☐نعم ☐كلا	وفاة	☐نعم	☐كلا
		تاريخ الوفاة		

5) الفحوصات المخبرية

اجراء فحص مصلي	نوع الفحص المصلي	النتيجة	المختبر
☐نعم ☐كلا			

6) المهنة

مهنة المريض				
	نعم	كلا	اذا نعم، حدد عنوان العمل: البلدة	القضاء
يعمل في المواد الغذائية	☐	☐	|_____|	|_____|
يعمل في مؤسسة صحية	☐	☐	|_____|	|_____|
يتردد او يعمل في دار حضانة	☐	☐	|_____|	|_____|
يتردد أو يعمل في مدرسة	☐	☐	|_____|	|_____|
يتردد ا يعمل في جامعة أو معهد	☐	☐	|_____|	|_____|

7) حالات اخرى في المحيط خلال الشهر الذي سبق ظهور العوارض

عدد الافراد في المنزل	عدد الحالات في المنزل	عدد الحالات في محيط السكن	عدد الحالات عند الأقارب	عدد الحالات في محيط العمل أو التربوي

8) خلاصة

تصنيف الحالة	تفشي المرض	الوضع التلقيحي
☐مثبتة ☐مشتبهة	☐فردية ☐مجموعة	☐ملقح ☐غير ملقح ☐غير معروف

Mumps. Agent: Mumps virus (family Paramyxoviridae). Reservoir: humans. Transmission: airborne, droplet, direct contact with saliva of infected person. Incubation: 14-25 days. Communicability: 7 days before parotitis and 9 days after.

Notes

Notes

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Surveillance Standard Operating Procedure:

Pertussis

Version 1
MOPH circular no. 37
(19th Jan 2015)

Contents

I. Purpose

The present Standard Operating Procedure is to guide the Esumoh on how to proceed in case of alert or outbreak of Pertussis.

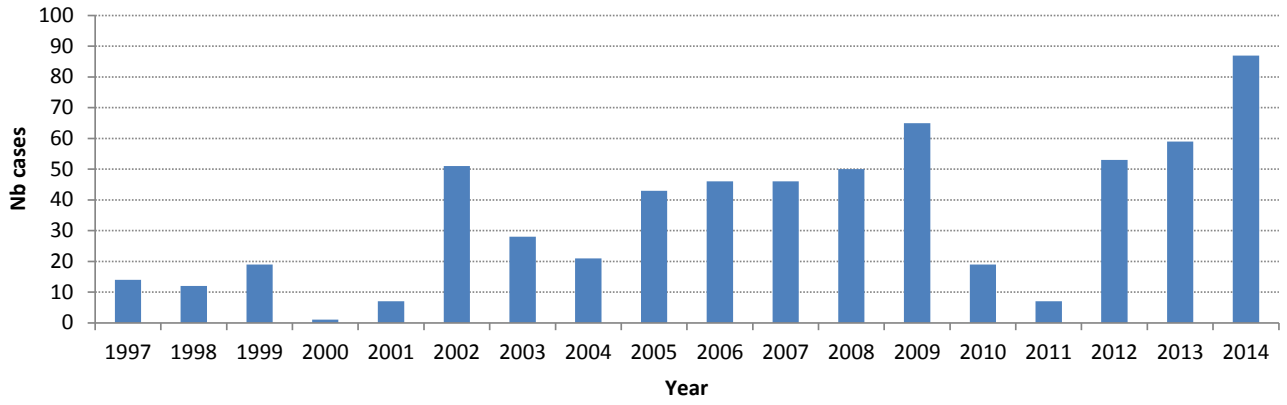
II. Generalities

Pertussis	
Agent	Bacteria: Bordetella pertussis (the bacillus of pertussis) or Bordetella parapertussis (causes parapertussis)
Incubation	9-10 days (6-20 days)
Period of communicability	- During the early catarrahal phase (up to 3 weeks) - No longer after 5 days of antibiotic treatement
Reservoir	- Humans for B. pertussis - Ovins for B. parapertussis
Modes of transmission	Person-to-person: direct contact with respiratory discharges and droplets, rarely by indirect contact though contaminated objects
Clinical presentation	- Upper respiratory infection - Complications: apnea (<1 y), encephalopathy, hernias, death - Mis-diasgnosed among adults
Worldwide	- Worldwide. Outbreak every 3-4 years (in prevaccine era) - In high coverage area: incidence for under 15 y is <1/100000.
Lebanon	Annual average of 31 cases (1-65)
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease
Investigation: data about case	Symptoms, complications, vaccination status
Investigation: clinical specimen from case	Throat swab
Investigation: data about contacts	Children under 1 year among close contacts
Investigation: clinical specimen from contacts	None
Test	Bacteriological culture
Laboratories	RHUH
Outbreak level	At least 3 confirmed cases epidemiologically-linked
Notification to WHO	If outbreak
Control	
Primary prevention	Vaccine
Case management	Erythromycin or clarythromycin
Isolation	- Cases should be excluded from school for five days after starting antibiotic treatment - Hospitalized patients should be placed in droplet precautions
Contact prevention	Erythromycin
Mass prevention	- Childhood vaccination - Adults should receive a booster with acellular pertussis.

Pertussis case definition (MOPH circular no. 109 dated on the 6th September 2006)	
Confirmed case	A suspected case that is laboratory confirmed with: - Isolation of Bordetella pertussis (or parapertussis) - Or detection of genomic sequences by polymerase chain reaction (PCR) - Or positive paired serology
Suspected case	- A person with a cough lasting at least 2 weeks with at least one of the following symptoms: - Paroxysms (fits) of coughing - Inspiratory "whooping" - Post-tussive vomiting (vomiting immediately after coughing) - Or a case diagnosed as pertussis by a physician
Forms	
Reporting	Standard reporting form
Investigation	Pertussis investigation form (MOPH circular no. 192 dated on the 2nd November 2007)

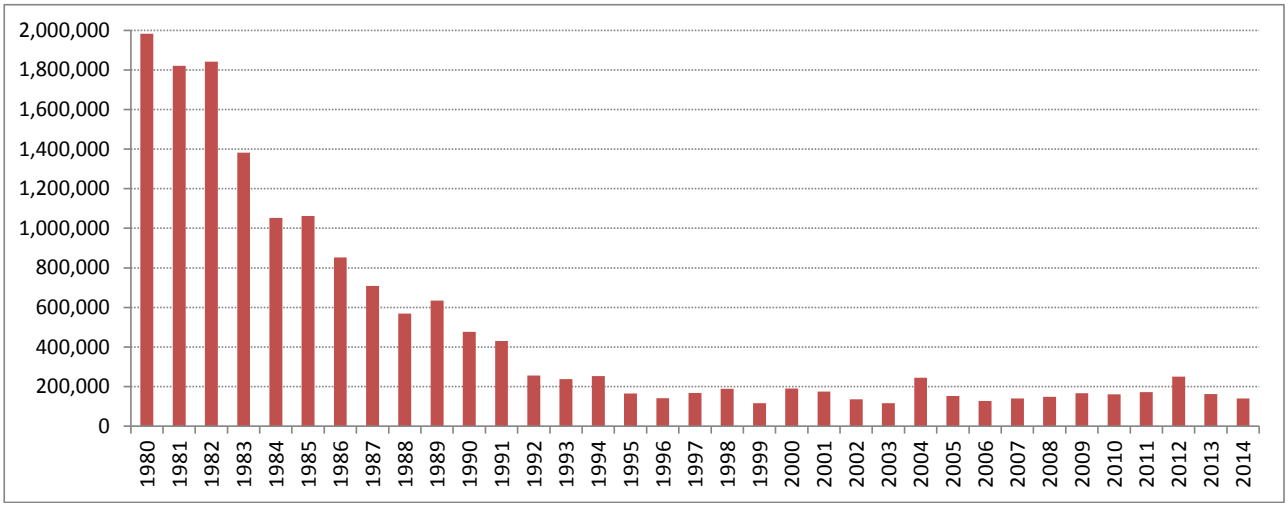
National figures

Figure 1: Reported pertussis in Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported pertussis cases worldwide, 1980-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance of pertussis are:
- To monitoring pertussis
- To detect and confirm outbreaks
- To identify risk factors.

IV. Alert and outbreak thresholds

An **alert** is defined by one of the following:
- A cluster of pertussis cases
- At least 3 reported cases in an institution/setting
- Relative increase.

An **outbreak** is defined by one of the following:
- At least 3 confirmed cases in an institution/setting
- Observed incidence exceeding the expected incidence of cases.

V. Procedural steps

In case of alert or outbreak, the following steps are recommended. They are summarized in figure (5).

Step 1: Verify alert

The detection of alert is done by the Esumoh caza/mohafaza team or the Esumoh central team. Upon the detection of an alert, the Esumoh peripheral team contacts the healthcare provider to verify the following:
- The suspected diagnosis
- The time and place of the event
- The suspected cluster (if any).

Once verified, the Esumoh peripheral team informs the Esumoh central team.

Step 2: Collect data

Upon the verification of the alert, the Esumoh caza team collects data on all pertussis suspected cases.
This is done by filling the investigation form (Annex 1), and interviewing the patient or the parents. The investigation form includes the following information:
- Demography: age group, gender, nationality…
- Disease: clinical presentation, complications, case management, date starting antibiotic
- Vaccination status
- Risk factors: occupation, institution
- Contacts: age group, disease…

For the vaccination status, data is collected from the vaccination cards or personal health records. If such document is not available, the treating physician or the medical center is contacted to have the needed information.

Step 3: Collect specimen

For each cluster, there is need to have laboratory confirmation.
The collection of specimens for pertussis is done by the treating physician in a healthcare facility. No specimens for pertussis should be taken by the Esumoh staff outside the hospital.

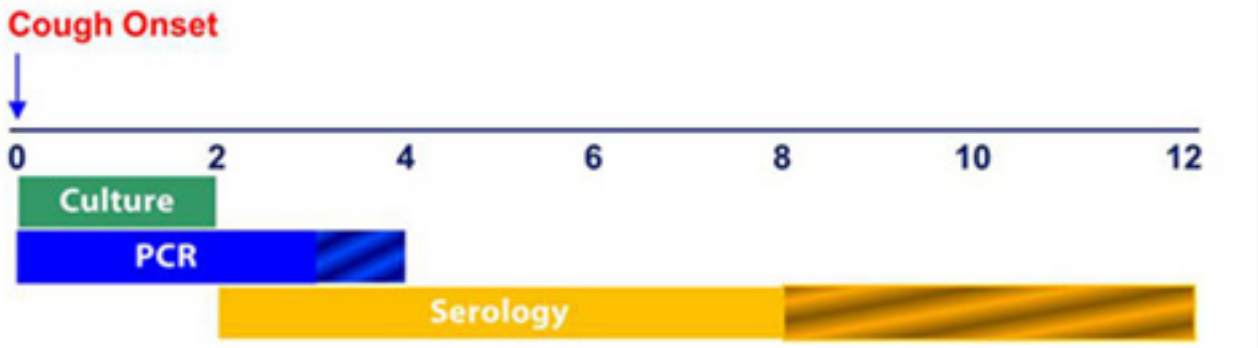
The needed specimen is a throat swab in adequate media for bacteria growth. Such swabs are provided by the Esumoh central staff. Tests are done in laboratory designated by the MOPH.

The case is classified as shown in figure (4).

The table below summarizes the needed specimens and tests for pertussis.

Table 1: Needed specimens and tests for pertussis confirmation			
Specimen	**Tests**	**Timing**	**Notes**
Nasopharyngeal swab or nasal aspirate	Culture	First 2 weeks	Avoid if collected after 5 days of antibio-therapy
	PCR	First 4 weeks	
Serum	Serology	From 2-8 weeks	

Figure 3: Optimal timing for specimen collection (Source: USA-CDC)



Step 4: Identify contacts

During the investigation, close contacts are identified, in particular at the household.
For each contact, the following information is needed: relation, age, and vaccination status.
Based on the national guidelines, vaccination and antibiotic prophylaxis is indicated for specific age groups.

Step 5: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence or work in terms of locality, caza and mohafaza
- Person: age group, sex, nationality, and vaccination status. Vaccination status is displayed by age group.
- Disease: classification, complications, inpatient…

b) Cross checking

Also, other sources providing data on acute respiratory infection are verified, in particular:

- Acute respiratory infection reported from dispensaries and medical centers
- Acute respiratory infection reported from schools
- Severe acute respiratory infections reported from ICU and SARI sentinel sites
- Event-based surveillance, including NGOs...

Step 6: Confirm the outbreak

Based on the epidemiological and laboratory findings, the outbreak is declared. EPI is informed.
Official memos are issued by the MOPH to inform health professionals.

Step 7: Search for additional cases

Additional cases are searched from various sources:

- Indicator-based surveillance:
  - Enhancing passive surveillance
  - Including pertussis in active surveillance
  - ICU-based surveillance...
- Event-based surveillance
- Community search (if needed).

Step 8: Identify risk factors

Based on the extend of the outbreak and identified potential risk factors, additional studies can be conducted as:

- Analytic studies: to assess vaccine efficacy
- Assess the vaccine cold chain...

Step 9: Enhance monitoring

During an outbreak, national weekly reports are prepared in order to monitor cases and to share them with EPI and partners.

The weekly reports are prepared by the Esumoh central team.

Step 10: Write summary report

Once the outbreak has ended, the Esumoh central team prepares a summary report describing cases and the factors. The summary report is shared with health partners.

Figure 4: Pertussis case classification

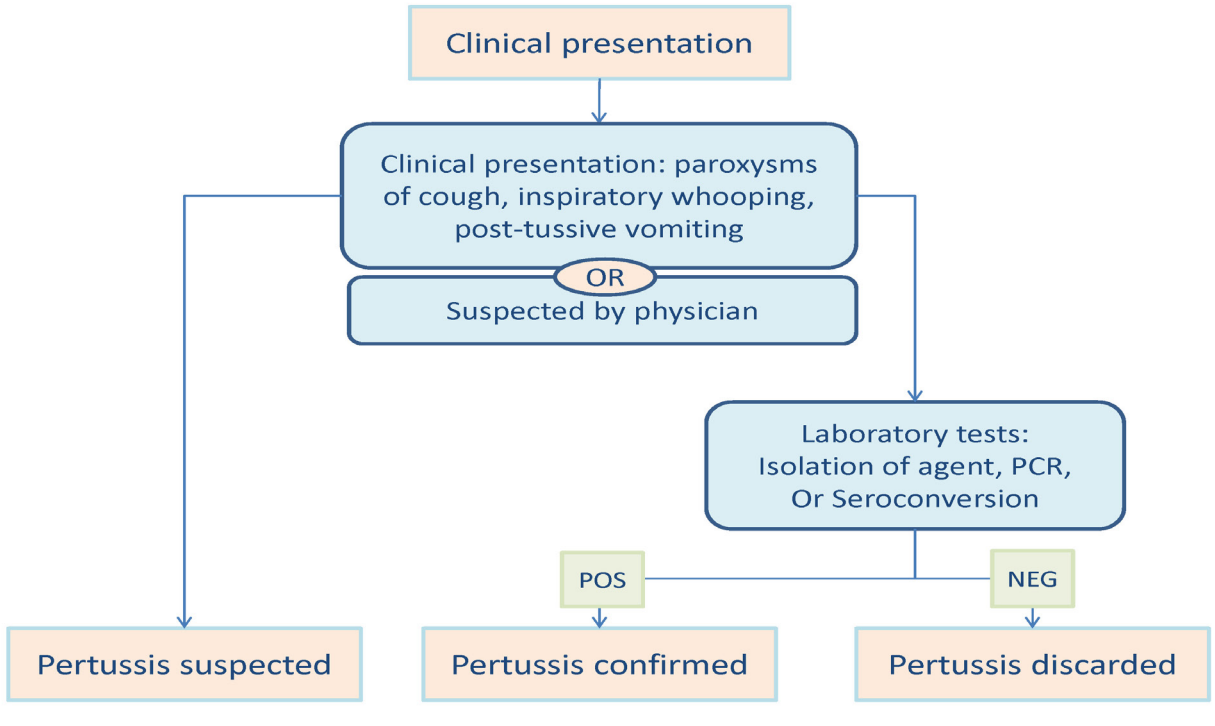
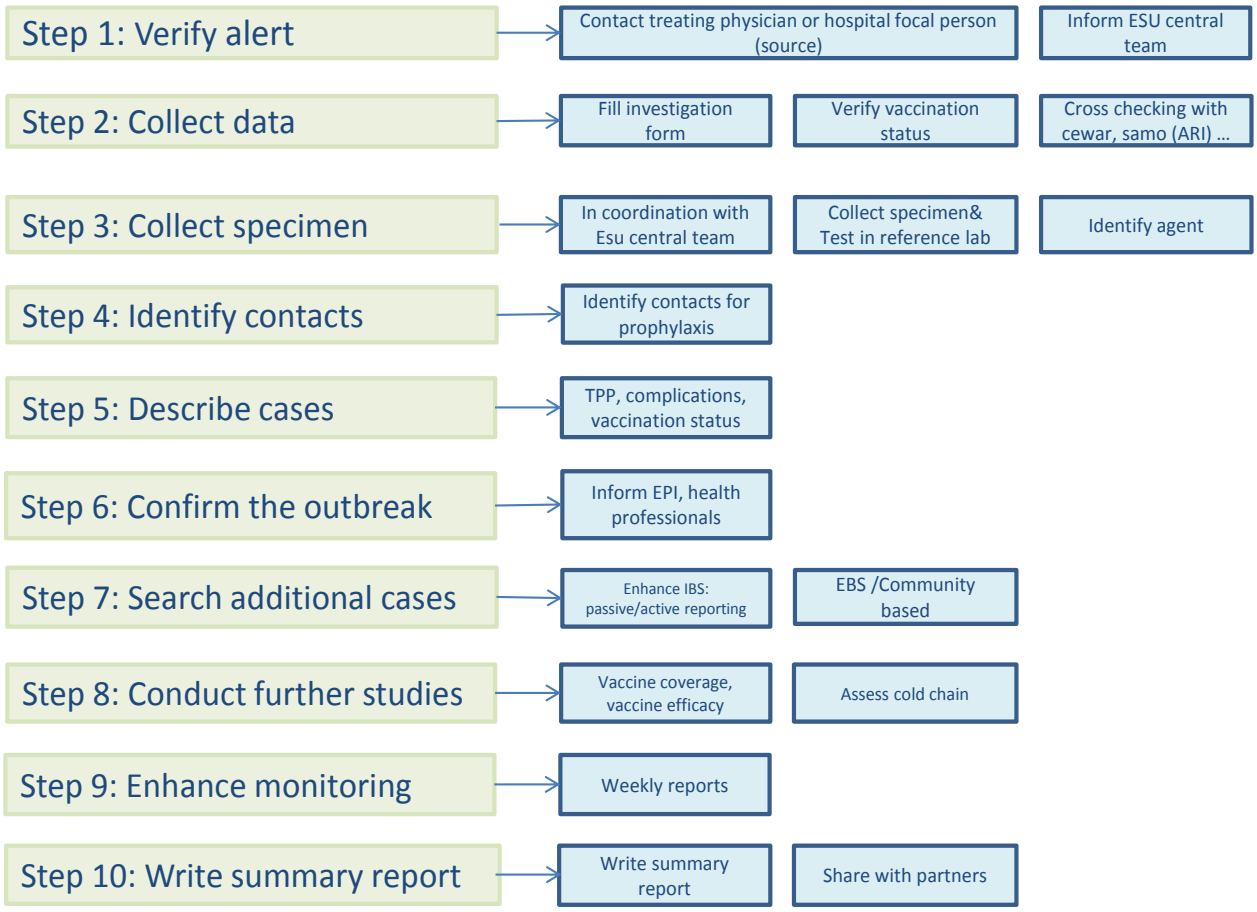


Figure 5: Pertussis investigation steps



Pertussis - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - برنامج الترصد الوبائي

استمارة تقصي لحالات الشاهوق / Pertussis / Coqueluche

تعبأ الاستمارة من قبل وزارة الصحة العامة / فريق الترصد الوبائي

1) التقصي

اسم المحقق	تاريخ التقصي	رقم استمارة Esu	رقم استمارة التقصي

2) المريض

الاسم الثلاثي عند الولادة	اسم الزوج	الجنس ☐ذكر ☐انثى	الجنسية	تاريخ الولادة	العمر
عنوان السكن: المحافظة	القضاء	البلدة		رقم الهاتف	

3) الوضع التلقيحي

وثيقة تلقيح	عدد الجرعات	تواريخ الجرعات الثلاث الأول			تواريخ الجرعات الداعمة Booster	
☐نعم ☐كلا		الأولى	الثانية	الثالثة	الأولى	الثانية
		___/___/___	___/___/___	___/___/___	___/___/___	___/___/___

4) المرض

			الاشتراكات ، المضاعفات:		
تاريخ ظهور العواض					
دخل المستشفى	☐نعم	☐كلا	Apnea	☐نعم	☐كلا
اسم المستشفى			Seizures	☐نعم	☐كلا
العوارض السريرية:			Encephalopathy	☐نعم	☐كلا
Paroxysmal cough	☐نعم	☐كلا	Pneumonia	☐نعم	☐كلا
Post-tussive vomiting	☐نعم	☐كلا	وفاة	☐نعم	☐كلا
Inspiratory whoup	☐نعم	☐كلا	تاريخ الوفاة		

5) الفحوصات المخبرية

إجراء فحص مخبري	نوع الفحص المخبري				
☐نعم ☐كلا	☐زرع	☐PCR	☐DFA	☐مصلي مزدوج	☐غيره:

6) المهنة

مهنة المريض					
	نعم	كلا	اذا نعم، حدد عنوان العمل: المؤسسة	البلدة	القضاء
يعمل في مؤسسة صحية	☐	☐			
يتردد او يعمل في دار حضانة	☐	☐			
يتردد أو يعمل في مدرسة	☐	☐			

7) حالات اخرى في المحيط خلال الشهر الذي سبق ظهور العوارض

عدد الافراد في المنزل	عدد الحالات في المنزل	عدد الحالات في العمل	عدد الحالات في الجيران

8) أشخاص معرضة للإصابة بالشاهوق

	المنزل		مكان العمل أو الدراسة		غيره:	
طفل دون السنة	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا
امرأة حامل	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا
شخص يعتني باطفال دون السنة	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا	☐نعم، عدد |__|	☐كلا

9)خلاصة

تصنيف الحالة		تفشي المرض		الوضع التلقيحي		
☐مثبتة	☐مشتبهة	☐فردية	☐مجموعة	☐ملقح	☐غير ملقح	☐غير معروف

Pertussis or whooping cough. Agent: Bordetella pertussis. Reservoir: Humans. Transmission: direct contact with discharges from respiratory mucous membranes of infected person; airborne via droplets. Incubation: 9-10 days (6-20 days). Communicability: 1 week before onset of cough and 2 weeks after.

Notes

Notes

Notes

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Surveillance Standard Operating Procedure: Plague

Version 1
MOPH circular no. 29
(19th Jan 2015)

Contents

I. Purpose

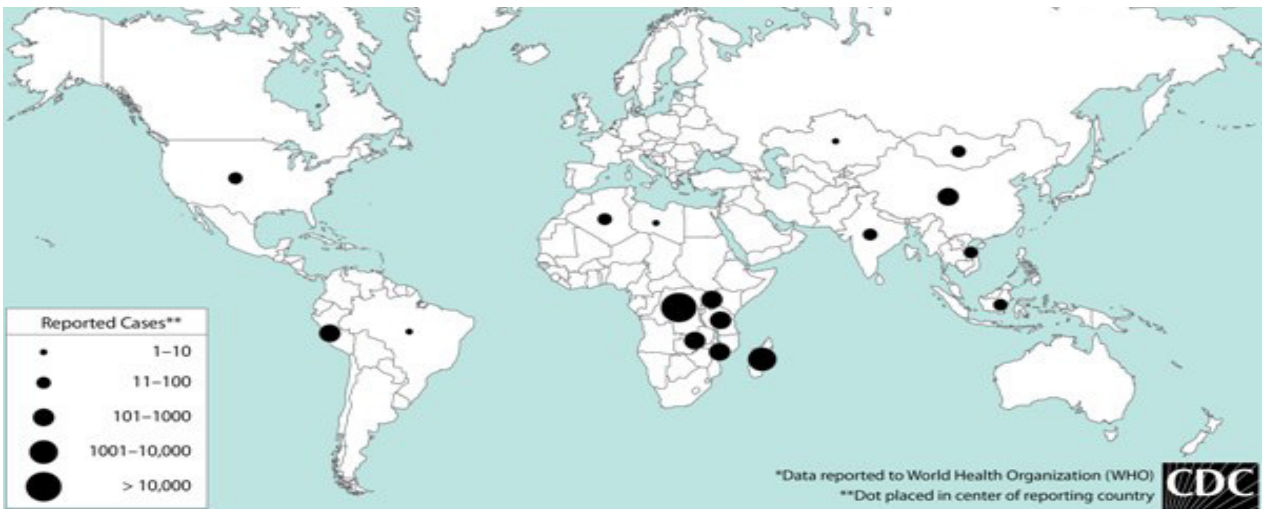
The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of alert or outbreak of plague.

II. Generalities

Plague	
Agent	- Bacteria: Yersinia pestis - Can be used in biological warfare
Incubation	1-7 days
Period of communicability	- Pneumonic plague: during the active phase - Bubonic phase (rare): if contact with pus from suppurative buboes
Reservoir	Wild rodents, lagomorphs (rabbits, hares), wild carnivores and domestic cats
Modes of transmission	- Most common: bite of infected fleas (Xenopsylla cheopis, rat flea) - Handling tissues of infected animals - Laboratory exposure - Person-to-person: • Airborne droplets from patients with pneumonia or pharyngitis plague • Pulex irritans fleas (human flea) • Aerosol: deliberate use
Clinical presentation	- Bubonic plague (90%): febrile lymph nodes that become swollen, inflamed, tender and may suppurate. Most often the inguinal area is concerned, and less commonly in axillary and cervical areas. - Complications: septicemic plague, meningitis, disseminated intravascular coagulation, pneumonia, mediastinitis, pleural effusion, endotoxin shock - Secondary pneumonic plague: source of primary pneumonic or pharyngitis plague, causing localized outbreaks - Case fatality: 50-60%
Worldwide	- Urban plague: Africa - Wild plague: America, Africa, Asia, Europe - Endemic in China, India, Las, Mongolia, Myanmar, Vietnam, Ecuador, Brazil and Peru
Lebanon	Cases were reported during the 14th century. No report was found since 1994.
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease
Investigation: data about case	Clinical presentation, complications, occupation, exposure
Investigation: clinical specimen from case	Blood, clotted blood
Investigation: data about contacts	Identify contacts and ensure needed follow up

Investigation: clinical specimen from contacts	If symptom
Test	Culture, PHA test, seroconversion, FA
Laboratories	WHO reference laboratories
Outbreak level	At least 1 confirmed case
Notification to WHO	Yes
Plague case definition (MOPH circular no. 113 dated on the 6th September 2006)	
Confirmed case	A suspected or probable case that is laboratory confirmed by: - Isolation of Yersinia pestis in cultures from buboes, blood, CSF or sputum - Or passive haemagglutination (PHA) test, demonstrating an at least 4-fold change in antibody titre specific for F1 antigen of Y. pestis (haemagglutination inhibition test in paired sera)
Probable case	Suspected case with: - Positive direct fluorescent antibody (FA) test for Yersinia pestis in clinical specimen - Or passive haemagglutination test, with antibody titre of at least 1:10, specific for the F1 antigen of Y. pestis as determined by the haemagglutination inhibition test (HI) - Or Epidemiological link with a confirmed case
Suspected case	Rapid onset of fever, chills, headache, severe malaise, prostration with: - For the bubonic form: extreme painful swelling of lymph nodes (buboes) - For the pneumonic form: cough with blood-stained sputum, chest pain and difficult breathing Both forms can progress to a septicaemic form with toxaemia.
Forms	
Reporting	Standard reporting form
Investigation	Plague investigation form (MOPH circular no.8 dated on the 7th January 2015)
National figures	
No cases reported in Lebanon during the last 2 centuries.	
International figures (Source: www.who.int)	
400 cases reported to WHO in 2012 in 5 countries from Africa and America.	

Figure 1: Reported human plague cases, worldwide, 2000-2009 (Source: WHO and CDC)



III. Objective of surveillance

The objectives of the plague surveillance are:

- To identify and confirm any plague case/outbreak
- To investigate any outbreak
- To trigger the CBRN committee in case of bio-terrorism event
- To document the containment of any plague outbreak.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case.

An **outbreak** is defined by at least 1 confirmed case.

V. Procedural steps

In case of an alert or outbreak of plague, the Esumoh proceeds with the following steps. They are summarized in figure (3).

Step 1: Verify alert

Any alert needs to be verified.

The Esumoh team that receives the information contacts the source, healthcare providers to verify the information. It is important to contact the treating physician or the hospital focal point to verify the diagnosis. Do the health professionals suspecting plague?

Once verified, the Esumoh central level and the MOPH/DG are immediately informed.

Step 2: Collect data

Upon verification of the information, the Esumoh central team initiates data collection using the investigation form (Annex 1). The data is collected from the interview of the patient or the relatives, the interview of the treating physician and the consultation of the medical file and laboratory results.

The investigation form includes the following core information:

- Demography: age, gender, occupation, place of residence
- Disease: date of onset, clinical presentation (bubonic, septicaemic, pneumonic), complications, case management, evolution
- Exposure: place of exposure if known, source of exposure if known, possible exposure of other persons in contact with the patient...

Step 3: Confirm the case

Any suspected case of plague needs to be confirmed.

The table (1) summarizes the needed specimens from suspected cases. Confirmation needs to be done in reference laboratory.

Table 1: Needed specimens and tests for plague confirmation

Specimens	Tests	Notes
Lymph node aspirate	Microscopy, culture	PCR, Direct fluorescent antibody (DFA)
Bubo aspirate	Microscopy, culture	
Blood	Microscopy, culture	
Serum	Serological tests	Paired sera (acute and convalescent 4-6 weeks)
Sputum	Culture	
Respiratory wash	Culture	
Autopsy	PCR, Direct fluorescent antibody (DFA)	Post-mortem: lymph, spleen, lung, liver, bone marrow

Specimens need to be collected before treatment. On microscopy, the Y. pestis appears as bipolar-staining, ovoid, Gram-negative organisms with a “safety pin”.
If cultures are negative, and plague is still suspected, serologic testing is indicated to confirm the diagnosis.

In case of death of the case before the collection of specimens, specimens are collected:
- In post-mortem: autopsy
- Among close contacts: blood samples (ex: family members).

Based on clinical, laboratory and epidemiological findings, the case is classified as shown in figure (2).

Upon the confirmation of at least one case, an outbreak is declared.
The main question following the confirmation is: Is the case related to animal/fleas contact or to bioterrorism attack?

Step 4: Inform

The MOPH informs officially:
- The CBRN national committee
- The WHO, based on the IHR(2005)
- The health professionals, to be aware on the event
- The MOA...

Based on the IHR (2005), plague in Lebanon will be serious and unexpected event. The event fills the criteria of potential public health event of international concern. The notification to WHO allows also to refer the specimens to supranational laboratories and to benefit from technical support.
The CBRN national committee needs to know about the event. The national team will be mobilized to investigate any source of deliberate release.
Health professionals are informed via official letters to Orders of Physicians, Syndicate of private hospitals, and Syndicate of private laboratories. The official memos include summary information on the event and reminder on case definition, and how to notify cases to MOPH.

Step 5: Find additional cases

a) Indicator-based surveillance

Health professionals are asked to report immediately any suspected case. The importance of prompt reporting should be emphasized especially for pneumonic plague. Specific sessions for hospitals and physicians are conducted as soon as possible.
In addition to classical reporting, other systems are enhanced and scaled up:
- ICU-based surveillance
- Hospital-based mortality surveillance
- Active surveillance...

Any new case needs to be confirmed.

b) Event-based surveillance

Also, the event-based surveillance is reinforced:
- Activating the hotline1214 to receive calls on plague
- Screening news and media on plague
- Raising awareness of the public, municipalities, and NGO...

Any rumor should be verified.

Step 6: Describe cases

Cases are described by:
- Time: day, week, month of onset
- Place: setting, locality, caza, mohafaza of residence or exposure

- Person: age, gender, nationality, setting, refugees…
- Disease: form, evolution, classification...

The used indicators are counts and incidence rates.
Furthermore, the data analysis is used to assess the source of infection.

Step 7: Identify source of infection

Efforts should be initiated to identify the source of infection.

a) If animal-related

The investigation is carried in coordination with the MOA. It includes field investigation with rodents surveillance, carnivores serosurveys and fleas surveillance.

Are rodent infected?

Rodents are the reservoirs of plague, and nearly all human cases are associated with rodent epizootics.
Rodent surveillance includes:
- Rodent mortality surveillance: collecting carcasses of dead rodents and examining them
- Rodent morbidity surveillance: trapping rodents for population data, serum and tissue samples collection…

Are the carnivores infected?

Rodents are consumed by carnivore populations. Carnivores may be infected following the consumption on infected rodents.
The recommended method is to conduct carnivore's sero-surveys to detect evidence of plague activity. Serum is collected from carnivores that consume rodents (live or carcasses).
This method is especially recommended when:
- Vast geographical area is affected
- No plague detected in local rodent populations previously
- No epizootics occurred in local rodent populations for many years
- No recent history of human plague case in the area, plague is human unexpected disease.

The target carnivores may include:
- Canidae family: Wild and domestic dogs and their relatives who survive plague infection and develop antibodies that can be detected for as long as six months
- Felidae family: Cats may die from the infection.

Are the fleas infected?

Fleas are the vectors of plague.
Local fleas surveillance can provide precious information for better control as:
- Species of local fleas
- Numbers of fleas per host
- Host preferences
- Y. pestis infection rates for the species of fleas collected...

b) If terrorism act

In case of suspicion of bioterrorism act, the CBRN plan is activated.
Crisis management is done under the commandment of the CBRN national committee.
The Esumoh reports to the MOPH/DG and the CBRN leader team.

Step 8: Conduct contact tracing

In case of pulmonary plague, the contacts are at risk to get the infection. The Esumoh staff is in charge to:
- Identify contacts of the cases
- Assess the risk of exposure
- Follow up: daily monitoring up to 7 days from date of last contact with the case.

In case of non-pulmonary plague, exposed persons to same sources are targeted for

identification, assessment and daily monitoring up to 7 days after the date of last exposure.

Step 9: Enhance monitoring

On daily basis, the counts of cases and contacts are monitored and described by time, place and person. Weekly bulletin is edited and shared with partners.

Step 10: Write summary report

Once the outbreak was contained, the Esumoh central staff prepares a summary report. This report is shared with involved partners.

Figure 1: Plague case classification

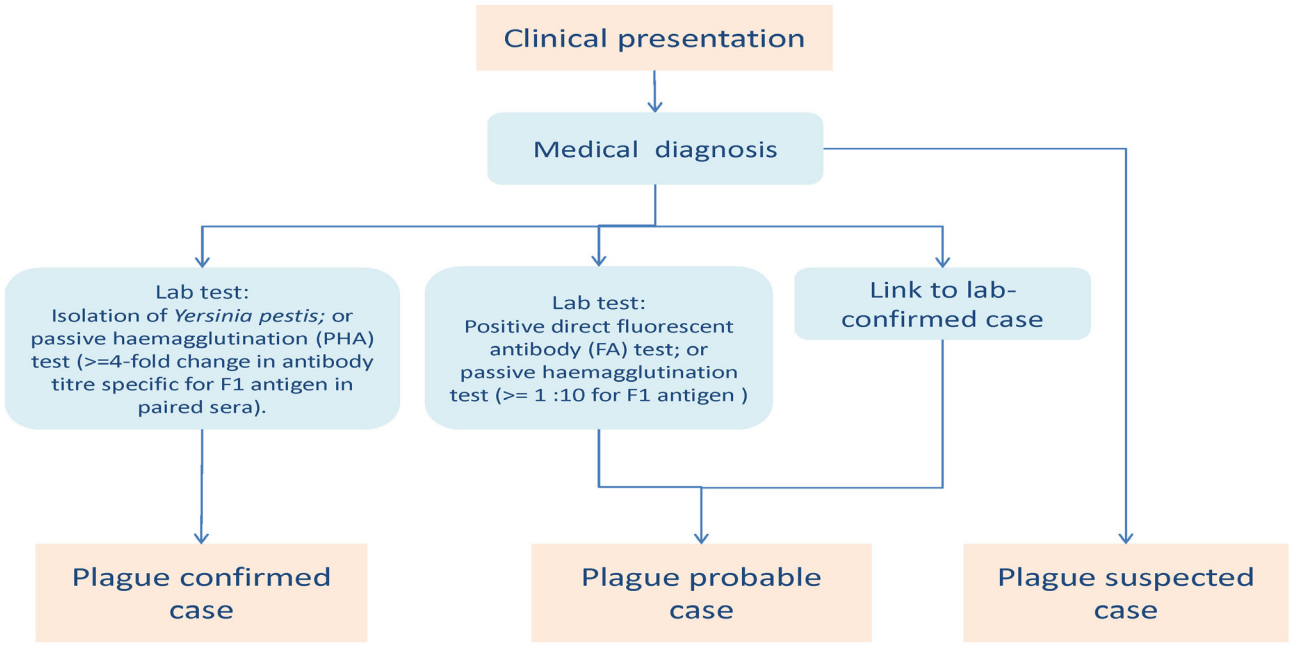
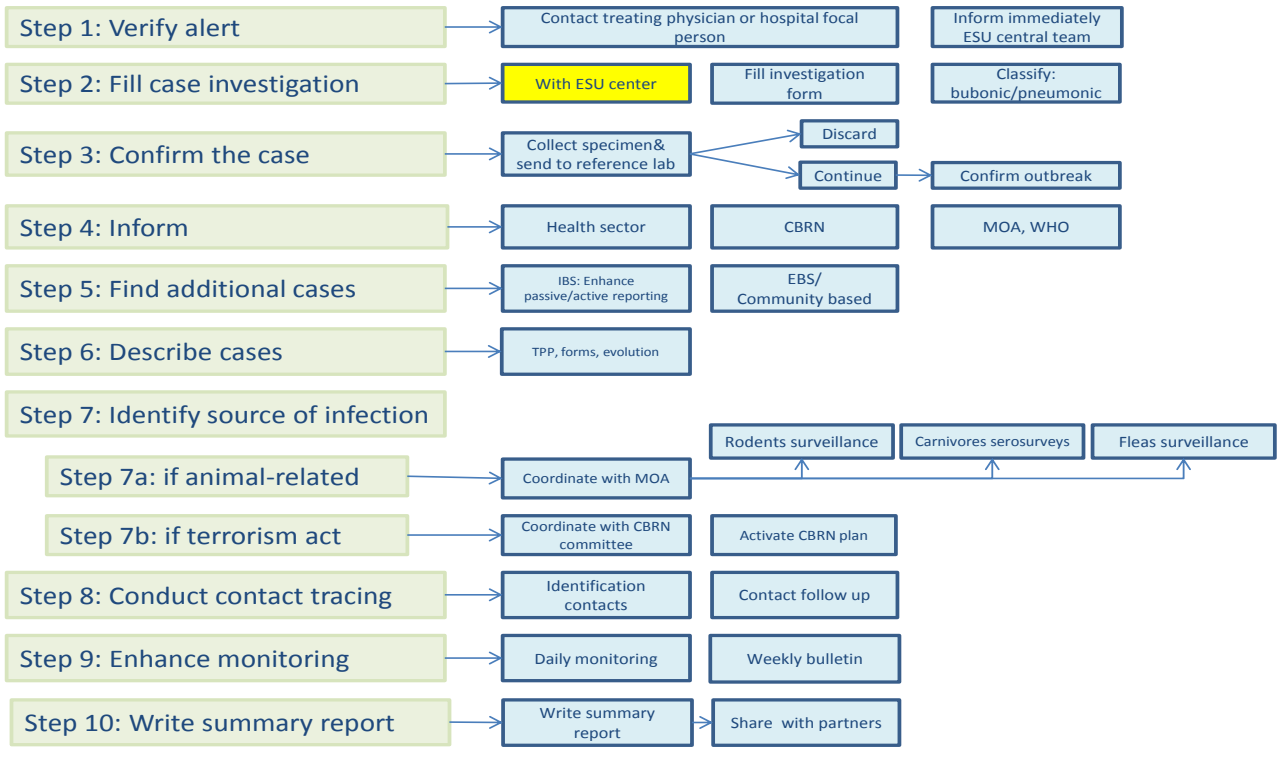


Figure 2: Plague investigation steps



Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Plague Case Investigation Form

Case ID |_____|

A Investigator

Name of investigator	Phone	Setting/team	Date of investigation

**

B Reporter

Name of reporter	Phone	Health facility	Date of reporting

**

C Patient identity

Patient name		Gender	Date of birth	Age
Nationality	Type of residence □Resident □Refugee	Occupation	Institution	Institution address
Residence: caza	Locality	Phone	Detailed address	

**

D Clinical picture

Dates	Date on onset		Date of 1st consultation	
Vital signs (currently)	Temperature	□Yes □No □Unk	Heart rate	□Yes □No □Unk
	Blood pressure	□Yes □No □Unk	Respiratory rate	□Yes □No □Unk
Symptoms at initial presentation	Fever	□Yes □No □Unk	Abdominal pain	□Yes □No □Unk
	Sweats/chills	□Yes □No □Unk	Nausea/vomiting	□Yes □No □Unk
	weakness	□Yes □No □Unk	Diarrhea	□Yes □No □Unk
	Confusion/delirium	□Yes □No □Unk	Sore throat	□Yes □No □Unk
	Headache	□Yes □No □Unk	Dyspnea	□Yes □No □Unk
	Muscle/joint pains	□Yes □No □Unk	Chest pain	□Yes □No □Unk
	Swollen tender glands	□Yes □No □Unk	Other:	□Yes □No □Unk
Respiratory	Cough	□Yes □No □Unk	Date onset of cough	
	Bloody sputum	□Yes □No □Unk		
Bubo	Presence of bubo	□Yes □No □Unk		
	Cervical	□Yes □No □Unk	Femoral	□Yes □No □Unk
	Axillary	□Yes □No □Unk	Other:	□Yes □No □Unk
	Inguinal	□Yes □No □Unk		
Skin	Insect bite	□Yes □No □Unk	Skin ulcer	□Yes □No □Unk
	Location:		Location:	
Clinical presentation	Bubonic	□ I □ II □No □Unk	Pneumonic	□ I □ II □No □Unk
	Pharyngeal	□ I □ II □No □Unk	Gastrointestinal	□ I □ II □No □Unk
	Meningitis	□ I □ II □No □Unk	Ocular	□ I □ II □No □Unk
	Septicemic	□ I □ II □No □Unk	Other:	□ I □ II □No □Unk
Underlying condition	Chronic disease	□Yes □No □Unk	Specify:	

**

E Chest X Radiology findings

Dates:	Clear	□Yes □No □Unk	Pulmonary abscess	□Yes □No □Unk
	Hilar adenopathy	□Yes □No □Unk	Pulmonary nodules	□Yes □No □Unk
	Unilateral infiltrates	□Yes □No □Unk	Interstitial changes	□Yes □No □Unk
	Bilateral infiltrates	□Yes □No □Unk	Pleural effusion	□Yes □No □Unk

Plague Case Investigation Form

Case ID |_____|

**

F Laboratory findings

Specimens	Date of collection	Test	Laboratory	Result
Blood culture 1				
Blood culture 2				
Bubo aspirate				
Sputum sample				
CSF sample				
Other				

**

G Case management

Hospital admission □Ye s □No □Unk	Hospital name	Date admission	Intubation	Isolation (contact, droplet, respiratory)
Antibiotics	**Name ATB**	**Date started**	**Date stopped**	**Posology**

**

H Evolution and outcome

Complications □Ye s □No □Unk	Limb ischemia/amputation	□Ye s □No □Unk	Multisystem organ failure	□Ye s □No □Unk
	Bleeding	□Ye s □No □Unk	Renal failure	□Ye s □No □Unk
	Cardiac arrest	□Ye s □No □Unk	Secondary pneumonia	□Ye s □No □Unk
	Respiratory failure	□Ye s □No □Unk	Shock	□Ye s □No □Unk
Outcome	Recovered	□Ye s □No □Unk	Death	□Ye s □No □Unk
	Complications	□Ye s □No □Unk	Date death	

**

I Exposure

Animals	Contact with sick / dead animal	□Ye s □No □Unk
	Exposure to abandoned burrows	□Ye s □No □Unk
	Hunting, including with wild animals	□Ye s □No □Unk
	Flea or insect bites	□Ye s □No □Unk
Ill persons	Contact with ill persons	□Ye s □No □Unk
	Contact with ill person who died last week	□Ye s □No □Unk
	Contact with known plague patient	□Ye s □No □Unk
Pets	Pets at home, specify:	□Ye s □No □Unk
	Ill pets at home, specify:	□Ye s □No □Unk
	Pets brought dead animals at home	□Ye s □No □Unk
Other	Specify:	□Ye s □No □Unk

Notes

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Surveillance Standard Operating Procedure: Rabies

Version 1
MOPH circular no. 30
(19th Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps be followed in by the epidemiological surveillance program in case of rabies alert or outbreak.

II. Generalities

Rabies	
Agent	Rabies virus, genus Lyssavirus
Incubation period	3-8 weeks (6 days – 7 years)
Period of communicability	- Rabid dogs/cats are infectious 3-7 days before onset and up to death - Rabid bats are infectious 12 days before onset and up to death - Person-to-person transmission is possible but have never been confirmed
Reservoir	- Wild and domestic cannidae - In some countries, bats
Modes of transmission	- Usually: virus-laden saliva of rabid animal introduced through wound (scratch, bite, existing wound) - Possible: mucous membranes (eyes, nose, mouth) contaminated with saliva - Airborne in cave with rabid bats
Clinical presentation	Encephalomyelitis, with hydrophobia, fatal within 2-6 days from onset
Worldwide	Worldwide
Lebanon	- Annual average of 430 exposures managed by the anti-rabies centers - Annual 0-2 cases of human rabies reported
Control objective	Control via post-exposure prophylaxis
Surveillance and Investigation	
Surveillance approach	Syndromic approach
Investigation: data about case	Exposure history
Investigation: clinical specimen from case	CSF, serum, saliva, skin biopsy
Investigation: data about contacts	If other exposed persons
Investigation: clinical specimen from contacts	If symptoms
Test	Serology, PCR, virus culture
Laboratories	Supranational laboratories
Outbreak level	At least one case
Notification to WHO	If cross-border case or cross-border origin
Control	
Primary prevention	Pre-exposure vaccination for exposed professions

Post-exposure prevention	1) Human rabies immunoglobulin 20UI/Kg for wounds near the neck, the head, or the fingers 2) Antirabic vaccine: - Day 0 : 2 doses IM - Day 7: 1 dose - Day 21:1 dose - Day 90: 1 booster dose
Case management	- Symptomatic - Specific protocol
Isolation	Prevent contact with biological liquids and saliva
Contact prevention	Anti-rabies vaccination for close contacts
Rabies exposure case definition (MOPH circular no. 50 dated on the 26th April 2005)	
Confirmed case	A person who had a close contact (usually a bite or a scratch) with a laboratory-confirmed rabid animal
Possible case	A person who had a close contact (usually a bite or a scratch) with a rabies-susceptible animal in/or originating from a rabies-infected area
Rabies case definition (MOPH circular no. 109 dated on the 6th September 2006)	
Confirmed case	Confirmed case: A suspected case that is laboratory-confirmed by one or more of the following: - Detection of rabies viral antigens by direct fluorescent antibody (FA) in clinical specimens, preferably brain tissue (collected post-mortem) - Detection of rabies viral antigens by FA on skin or corneal smear (collected ante-mortem) - FA positive after inoculation of brain tissue, saliva or CSF in cell culture, or after intracerebral inoculation in mice or in suckling mice - Detectable rabies-neutralizing antibody titre in CSF of an unvaccinated person - Identification of viral antigens by PCR on fixed tissue collected post-mortem in a clinical specimen (brain tissue or skin, cornea or saliva) - Isolation of rabies virus from clinical specimens and confirmation of rabies viral antigens
Probable case	A suspected case with a history of contact with a suspected rabid animal
Suspected case	A case with acute neurological syndrome (encephalitis) dominated by forms of hyperactivity (furious rabies) or paralytic syndromes (dumb rabies) progressing towards coma and death, usually by respiratory failure, within 7 to 10 days after the first symptom if no intensive care is instituted
Forms	
Reporting of exposure	Rabies exposure form (MOPH circular no. 90 dated on the 19th September 2005): filled by the anti-rabies centers
Reporting of human case	Standard reporting form for communicable diseases
Investigation	Specific investigation form for rabies ((MOPH circular no. 74 dated on the 31st July 2012)

National figures

Figure 1: Reported rabies human cases, Lebanon, 1997-2014 (Source: MOPH)

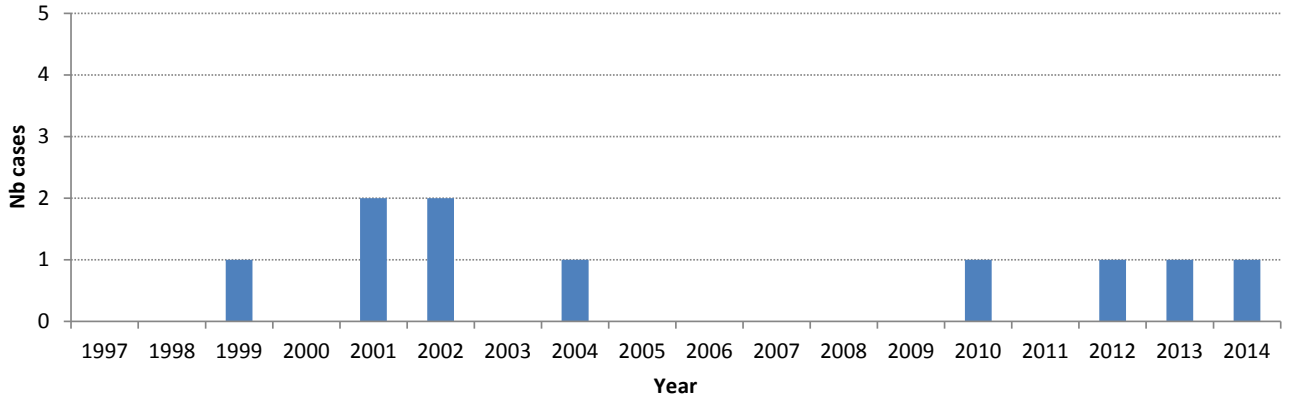
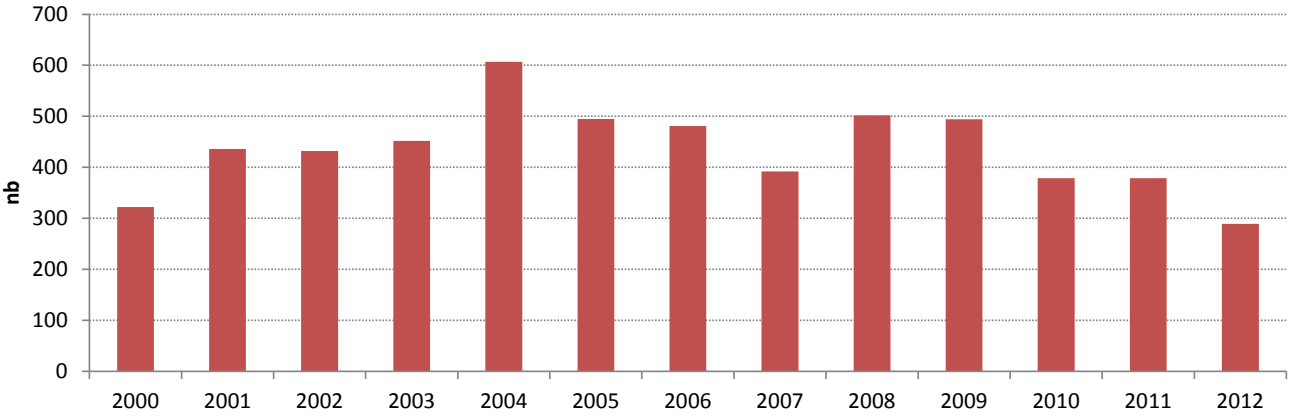
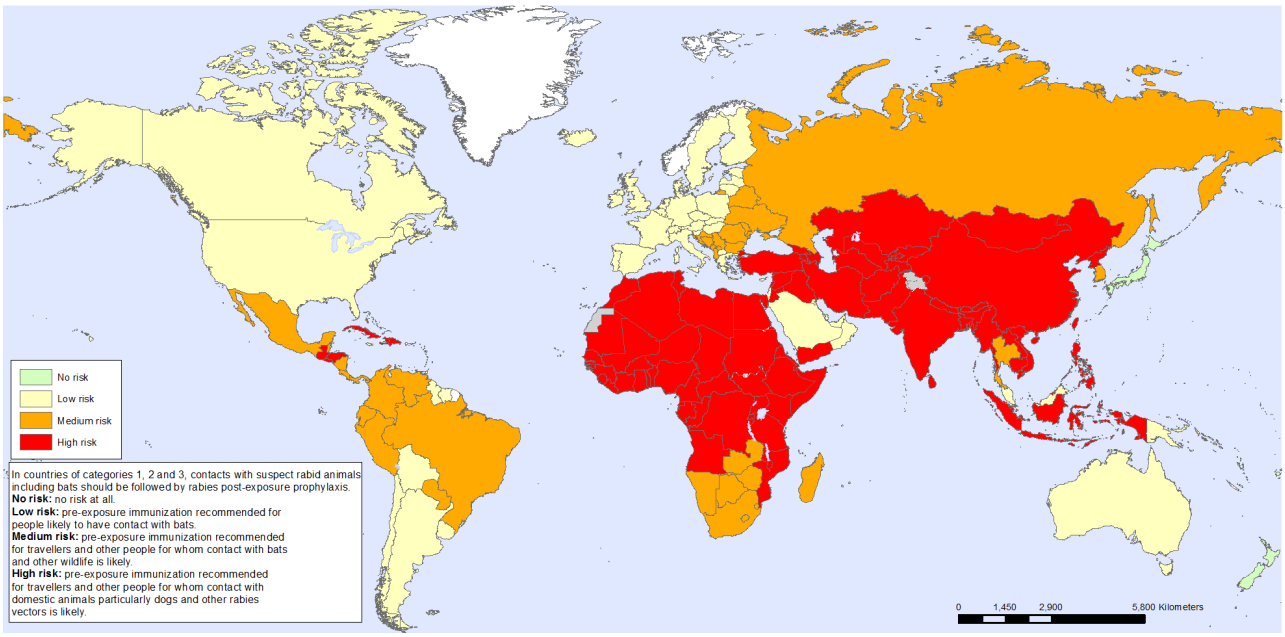


Figure 2: Exposed persons to rabies as reported by anti-rabies centers, Lebanon, 1997-2012 (Source: MOPH)



International figures

Figure 3: Areas at risk of rabies in the world (Source: WHO, 2013)



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO Control of Neglected Tropical Diseases (NTD)
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization

World Health Organization

III. Objectives of surveillance

The objectives of surveillance are:

- Detect and investigate human rabies cases
- Monitor and describe human rabies cases
- Identify high risk areas for specific animal-related interventions.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case of rabies.

An **outbreak** is defined by the occurrence of human rabies (probable or confirmed) case acquired locally.

V. Procedural steps

The steps described below are recommended for investigation of any alert or outbreak of rabies. The steps are summarized in figure (5).

Step 1: Verify the case

In case of reporting of a human case of rabies, the Esumoh caza team contacts the treating physician, hospital or medical center. Is the case a patient of human rabies or an exposed person to rabies?

A case of human rabies is a patient showing illness after exposure to rabies. An exposed person to rabies is a person with history of bite or scratch by an animal.

Once verified, the Esumoh caza team informs the mohafaza and central levels.

Step 2: Collect data

For each case of rabies, the Esumoh team visits the patient at household or health facility. The patient and the family are interviewed. An investigation form is filled (Annex 1).
The investigation form includes the following information:

- Demography
- Exposure
- Illness
- Laboratory results
- Post-exposure prophylaxis.

Copy of the filled investigation form is sent to the Esumoh mohafaza and central levels.

If the case died, a copy of the hospital medical file is requested for the Esumoh central team.

Step 3: Confirm the case

If possible, clinical specimens are collected from the case.

The needed ante-mortem specimens are summarized in the table below.

Table 1: Summary specimens and tests for rabies confirmation

Specimens	Tests
Saliva	PCR, virus culture
Serum	Serology
CSF	Serology
Skin biopsy of hair follicles at the nape of the neck	RT/PCR, immunofluorescent staining if rabies antigen

The specimen collection is done by the health facility in coordination with the Esumoh central team. Specimens are sent to supranational reference laboratories.

The laboratory confirmation is not needed to declare an outbreak, but it is useful to identify the circulating rabies virus genotype.

Step 4: Investigate absence of PEP

Any exposed person should receive the post-exposure prophylaxis (PEP) at one of the anti-rabies centers.
This step will clarify the lack of effective PEP:

- Lack of awareness of the patient and family
- Lack of adequate case management at the health facility
- Lack of PEP provision by the anti-rabies center.

a) Patient and family interview

In case of human case of rabies, the patient and family are interviewed to identify the measures taken after exposure:

- Presence of any medical consultation
- Presence of any orientation to an anti-rabies center
- Reception of anti-rabies vaccines: number of doses
- Reception of anti-rabies serum: quantity.

b) Health professional interview

The Esumoh team contacts and visits the health facilities seen after exposure:

- Health care professionals: medical diagnosis and prescription
- Anti-rabies centers: consultation and preventive measures taken.

Step 5: Investigate the animal

a) Animal outcome

The family is asked about the rabid animal:

- Domestic or stray animal
- Type of animal
- The outcome of the animal is searched. Was the animal killed or find dead? Where the animal had been buried? How?
- Did the animal attack other animals or humans? Who?

b) Ministry of Agriculture

In case the exposure was in Lebanon, the MOPH informs the Ministry of Agriculture.
The MOA will assess:

- Presence of animal rabies
- Follow up of exposed animals if identified
- Identify target areas for any animal rabies vaccination.

Step 6: Search for additional cases or exposed persons

Based on the exposure history, additional exposed persons and cases are identified.

a) Exposed persons

The rabid animal may have attacked other persons in the vicinity of the patient. All exposed persons are identified, provided with appropriate post-exposure prophylaxis and followed up.

b) Symptomatic patients

The health professionals are informed. They are requested to orient any exposed person to anti-rabies center. In case of human cases, they are asked to report immediately to the MOPH.

c) Animals

The rabid animal may have attacked other animals in the vicinity of the patient. All exposed animals are identified and reported to the MOA for appropriate follow up.

Step 7: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of exposure, in term of locality, caza and mohafaza
- Person: age group, gender, nationality
- Presence of post-exposure-prophylaxis.

b) Outbreak

Based on the epidemiology findings, an outbreak is declared. The Esumoh central team informs the MOPH units. Local health professionals are informed via official memos issued by the MOPH. Also the MOPH informs the MOA.

c) Circulating genotypes

In case of laboratory test was done as virological culture and PCR, the virus genotype is described and compared with the national animal findings and the regional picture.

Step 8: Write summary report

Once the outbreak is confined, the Esumoh central staff prepares a summary report describing the outbreak. Such report is needed to document the epidemiology history of rabies in Lebanon.

Figure 4: Rabies case classification

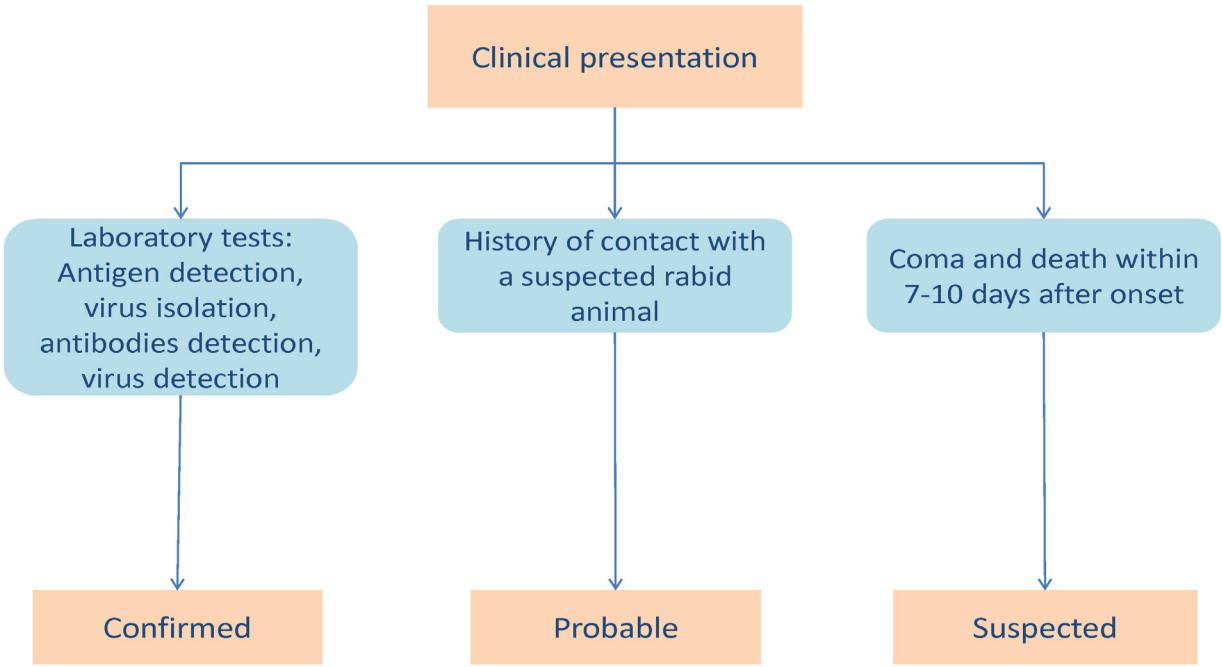
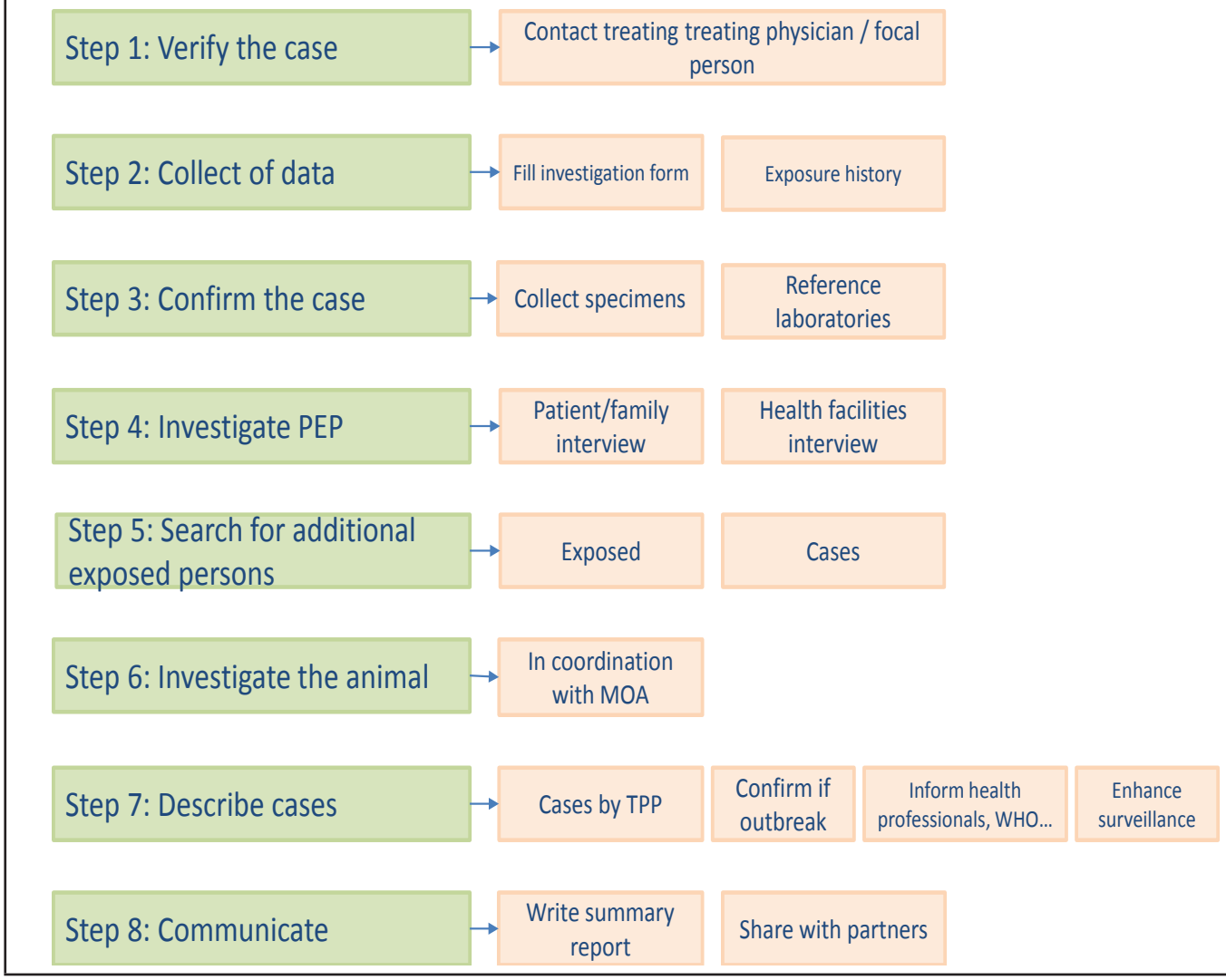


Figure 5: Rabies investigation steps



الجمهورية اللبنانية
وزارة الصحة العامة
مديرية الوقاية الصحية
مصلحة الطب الوقائي
مراكز مكافحة داء الكلب

_ _ _

استمارة تعرض لداء الكلب

خاص بالمركز
مركز: رقم الاستمارة:
خاص بالترصد الوبائي

1)- معلومات عن المصاب

الاسم الثلاثي	العمر	الوزن	الجنسية	العنوان الكامل
المهنة	**القضاء**	**البلدة/الحي**	**رقم الهاتف**	

2)- معلومات عن الحيوان

ما نوع الحيوان؟	من صاحب الحيوان؟	هل هو ؟	هل كان مشبوها ؟	هل اصاب اشخاص آخرين؟	هل اصاب حيوانات آخرى؟	ماذا جرى للحيوان؟	نتيجة المراقبة؟
		☐ أليف ☐ شارد ☐ بري	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ مراقب ☐ غير مراقب ☐ قتل	☐ حي سليم ☐ توفي ☐ قتل

3)- ظروف الحادثة

تاريخ الحادثة	القضاء	البلدة/الحي	أسباب الحادثة

4)- معلومات عن الجرح

موقع الجرح	نوع الجرح	عقم الجرح	حالة الجرح	لقح ضد الكزاز
	☐ عقر ☐ خدش	☐ نعم ☐ كلا	☐ عميقة ☐ خدوش	☐ نعم ☐ كلا

5)- العلاج في المركز

لقاح ضد داء الكلب	عدد الجرعات	الموعد المحدد	اسم الماركة	رقم Batch	اسم الطبيب	تاريخ الاعطاء
اليوم الاول						
اليوم السابع						
اليوم الحادي والعشرون						
اليوم التسعون						
مصل ضد داء الكلب	الكمية المعطاة	عدد الامبوبات	اسم الماركة	رقم Batch	اسم الطبيب	تاريخ الاعطاء
اليوم الاول						

اسم الطبيب وتوقيعه:
ملاحظات:

التاريخ:

Rabies - Annex 2

Republic of Lebanon – Ministry of Public Health – Epidemiology Surveillance Program

Rabies Investigation Form

I.Patient Identification

Name	Occupation	Nationality
Date of Birth	Caza	Phone 1
Gender	Community	Phone 2

II.Symptoms

Date of onset					
Fever	☐ Yes ☐ No	Ataxia	☐ Yes ☐ No	Hallucincations	☐ Yes ☐ No
Headache	☐ Yes ☐ No	Seizures	☐ Yes ☐ No	Insomnia	☐ Yes ☐ No
Localized pain	☐ Yes ☐ No	Aerophobia	☐ Yes ☐ No	Hyperactivity	☐ Yes ☐ No
Nausea	☐ Yes ☐ No	Hydrophobia	☐ Yes ☐ No	Agitation	☐ Yes ☐ No
Vomiting	☐ Yes ☐ No	Localized weakness	☐ Yes ☐ No	Muscle spasm	☐ Yes ☐ No
Dysphagia	☐ Yes ☐ No	Paresthesia	☐ Yes ☐ No	Behavior changes	☐ Yes ☐ No
Hypersalivation	☐ Yes ☐ No	Confusion/delirium	☐ Yes ☐ No	Dyspnea	☐ Yes ☐ No
Anorexia	☐ Yes ☐ No	Autonomic instability	☐ Yes ☐ No	Anxiety	☐ Yes ☐ No

III. Case management

Inpatient	☐ Yes ☐ No	Hospital 1	Admission date
		Hospital 2	Admission date

IV. Laboratory investigation

Specimen	Serum	Saliva	CSF	Nuchal biopsy	Other:
Date collection					
Laboratory name					
Result					

V. Animal Exposure

Date of exposure		Caza		Commune	
Animal	☐Domestic dog	☐Stray dog	☐Cat	☐Wild animal	☐Other
Injury	☐Bite	☐Scratch	☐Lick		
Location	☐Upper limb	☐Lower limb	☐Head	☐Trunk	☐Multiple
Circumstances					
What happened to the animal?					

VI. anti-rabies Post Exposure Prophylaxis

PEP received	☐ Yes ☐ No				
☐If yes		D1	D7	D21	D90
	Date				
	Center				
	Vaccine, Serum				
☐If no, why:					

VII.Outcome

Outcome	
Date of death	

Investigator name: Date:

Notes

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Surveillance Standard Operating Procedure: Rubella

Version 1
MOPH circular no. 38
(19th Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of rubella alert or outbreak.

II. Generalities

Rubella is a contagious, generally mild viral infection that occurs most often in children and young adults. Rubella infection in pregnant women may cause fetal death or congenital defects know as Congenital Rubella Syndrome (CRS). There is no specific treatment for rubella but the disease is preventable by vaccination.

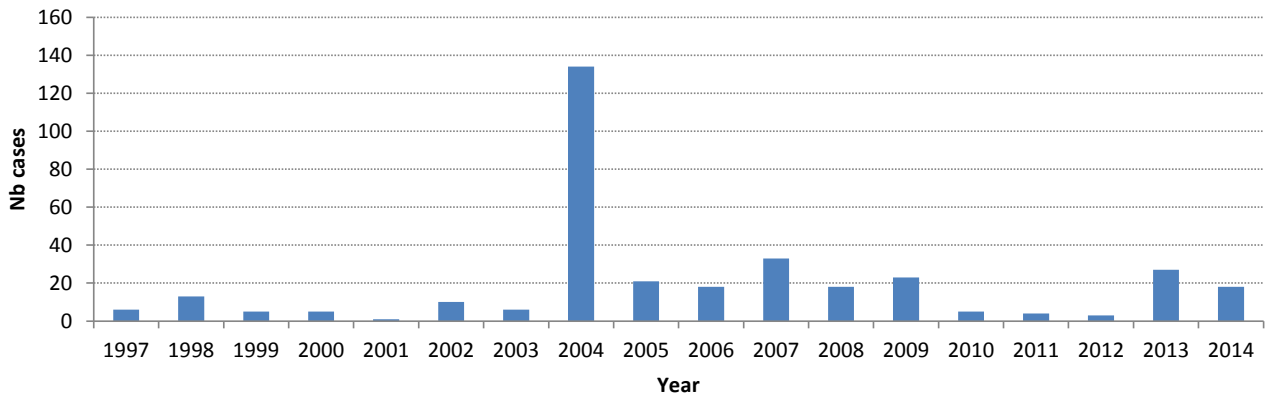
More information about the disease are presented in the table below

Rubella	
Agent	Virus: rubella, genus Rubullovirus, family Togaviridae
Incubation period	14-17 days (14-21 days)
Period of communicability	7 days before rash and 4 days after rash onset
Reservoir	Humans
Modes of transmission	- Person-to-person: direct contact with droplets - Infants with CRS shed large quantities of virus in their pharyngeal secretions and urine.
Clinical presentation	- Febril maculo-papular rash - Complications: thrombocytopenia (1/3000), post-infectious encephalitis (1/6000), rarely chronic arthritis, CRS if pregnant women
Worldwide	Worldwide
Lebanon	Outbreak in 2004
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Syndromic: febril macuplo-papular rash
Investigation: data about case	Symptoms, vaccination status, travel history, contact, pregnancy...
Investigation: clinical specimen from case	Serum, urine, oral fluid, dried blood, throat swab
Investigation: data about contacts	- Cases among contact, pregnant women among contacts - Vaccination status of contacts
Investigation: clinical specimen from contacts	If cases among contact
Test	IgM, PCR, culture, genomic sequencing
Laboratories	- IgM and PCR: RHUH - Culture: Tunis Pasteur and the Central Public Health Laboratory in Sultanat of Oman
Outbreak level	At least 3 confirmed cases epidemiologically-linked
Notification to WHO	-To report to WHO if outbreak - Routine monthly dataset sharing
Control	
Primary prevention	At least 1 dose during childhood
Post-exposure prevention	None
Case management	Symptomatic treatment

Isolation	- If hospitalization: contact and droplet isolation - Prevent exposure to pregnant women
Contact prevention	None
Mass prevention	Immunization campaign
School eviction	4 days
Rubella case definition (MOPH circular no. 12 dated on the 23rd February 2013)	
Laboratory-confirmed case	A suspected case with laboratory confirmation with presence of rubella-specific IgM antibodies or positive PCR test
Epidemiologically-confirmed case	A suspected case who has not had a laboratory test and has an epidemiological link with a laboratory-confirmed case of rubella
Suspected case / clinical case	- Any person with: • Fever • And maculopapular (non vesicular) rash - Or any person in whom a clinician suspects rubella infection
Forms	
Reporting	Standard reporting form or specific measles/rubella reporting form (MOPH circular no. 13 dated on the 23rd February 2013)
Investigation	Measles/rubella investigation form (MOPH circular no. 74 dated on the 31st July 2013)

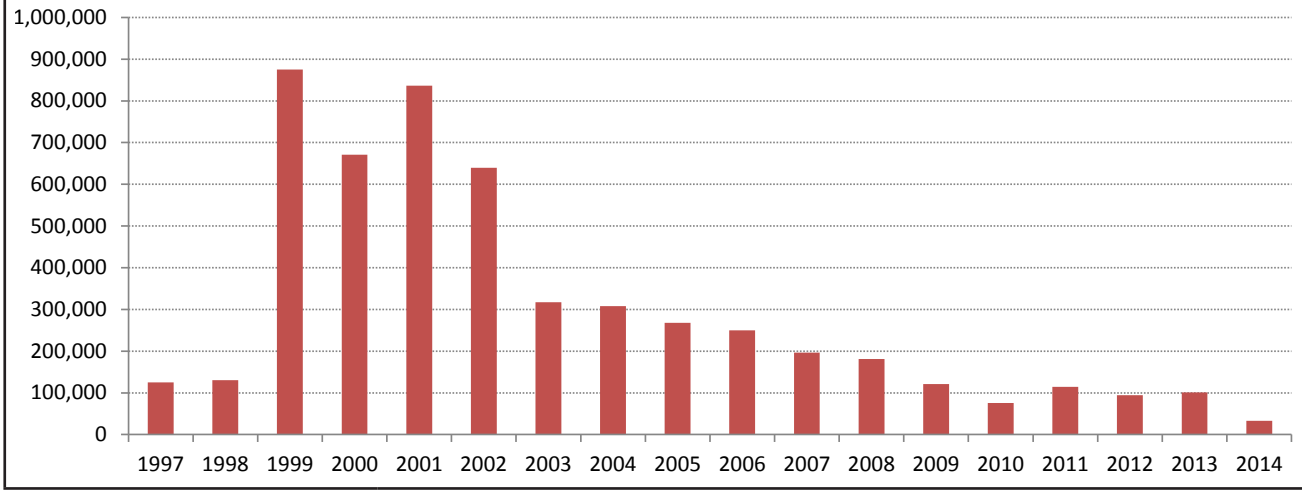
National figures

Figure 1: Reported rubella cases, Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported rubella cases in the world, 1997-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance are:

- Detect and confirm rubella cases
- Detect and investigate rubella outbreaks
- Identify risk factors
- Identify circulating genotypes
- Identify CRS cases.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case of rubella (or measles).

An **outbreak** is defined by the occurrence of at least three confirmed rubella cases which are epidemiologically and/or virologically-linked.

V. General procedural steps

The steps described below are recommended for investigation of any alert or outbreak of rubella.The steps are summarized in figure (4).

Rubella surveillance is integrated within measles surveillance.

Step 1: Verify alert

Any case of rubella (or measles) is verified by the Esumoh caza team within 24 hours.
The treating physician or hospital focal person is contacted: Is it really fever with maculo-papular rash?
If yes, the information is shared with the Esumoh mohafaza and central levels and investigation is initiated immediately.

Step 2: Investigate the case

Upon verification of any case of rubella (or measles), data is collected by using specific measles/rubella investigation form (Annex 1). The investigation is done by the Esumoh peripheral team.
The data is collected by interviewing the patient or the parents.

The investigation form includes the following information:

- Demography
- Disease
- Vaccination status
- Case management
- Risk factors: cases among contacts, travel history…
- Presence of pregnancy.

Vaccination status is collected from available data recorded in vaccination card, personal health record or medical file. If no document is available with the patient or the parents, the treating physician or the medical center where vaccination is done is contacted to collect the needed information.

Copy of the filled investigation form is sent to the Esumoh mohafaza and central levels.

If the case died, a copy of the hospital medical file is requested for the Esumoh central team.

Step 3: Confirm the case

Any suspected rubella case needs to be confirmed.

Rubella and measles cases are tested for both measles and rubella. The test is sequential: specimens are tested first for measles. If negative for measles, they are tested then for rubella.

If the case seems to be sporadic, the case has to be laboratory-confirmed. If the case occurres among a cluster or chain of transmission, at least 3 cases need to be laboratory-confirmed.

The needed specimens are summarized in the table below.

Table 1: Summary specimens and tests for measles/rubella confirmation

Specimens	Tests	Timing (after rash onset)	Notes
Oral fluid	IgM	1-28 days	If sample is taken within 72 hours after rash onset and results are negative, a second sample is preferred.
	PCR	1-14 days	
Serum	IgM	1-28 days	
Dried blood	IgM	1-28 days	
	PCR	1-7 days	
Throat swab	Culture	1-5 days	Swab in VTM
	PCR	1-5 days	
Urine	Culture	1-5 days	
	PCR	1-5 days	

The specimen collection is done by the healthcare facility or Esumoh caza team. Specimens are forwarded to the Esumoh central team in charge to verify labelling and sending them to the reference laboratories.

The IgM and PCR tests are done at RHUH clinical laboratory. Virus isolation is done at Central Public Health Laboratory in Sultanat of Oman or at Pasteur Institute in Tunis.

Step 4: Classify the case

Based on the medical, epidemiology and laboratory findings, the case is classified based on the algorithm shown in figure (3).

Step 5: Communicate

Any confirmed case of rubella is communicated to the EPI program, for proper response.
At caza level, the Esumoh staff informs the caza physician and the EPI focal person. At central level, the Esumoh staff informs the EPI central team.

Step 6: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of work, place of school, in term of locality, caza and mohafaza. Also travel history is described.
- Person: age group, gender, nationality, vaccination status, pregnancy. Vaccination status is displayed by age group and nationality.
- Disease: classification, complications, fatalities, inpatient proportion…

Indicators include counts and incidence rates.

b) Chains of transmission

Cases are described by chain of transmission. A chain of transmission is defined by at least 2 epi-linked cases. Any chain of transmission needs to have at least 3 laboratory-confirmed cases, and at least 3 specimens collected for virus isolation.

Step 7: Confirm the outbreak

Based on the epidemiology and the laboratory findings, an outbreak is declared.

Once declared, official memos are issued by the MOPH to:

- Health professionals: physicians, hospitals and medical centers
- WHO
- MEHE and schools
- Kindergartens
- Media...

Step 8: Search for additional cases

a) Enhance notification from health professionals

The health professionals are asked to be more aware about rubella and the potential to have rubella among pregnant women. They are asked to report any suspected case.
The official memos issued by the MOPH will include updated case definition and updated contact details of the MOPH teams for any reporting.
Sessions for healthcare facilities may be conducted based on the extend of the outbreak.

b) Active surveillance

Rubella is already targeted in active surveillance. During field visits, more focus will be done on visiting additional wards, ER, outpatients clinics, and obstetrics wards.
Also, specimens will be requested from all inpatients.

c) School surveillance

Schools are informed on the confirmation of the outbreak and requested to immediately notify any case reported in the medical reports or by the parents.
In case of rubella cases in school, the Esumoh staff will visit the school and record any suspected case in specific line listing and collect clinical non-invasive specimens (oral fluid).

d) Community search

Around the confirmed cases, the Esumoh caza staff will visit the neighbors and ask for any rubella case. A specific line listing is filled. Clinical specimens are collected from suspected cases.

Also any rumor of rubella case is verified.

Step 9: Identify susceptible contacts

a) All contacts

The risk of confirmed rubella case is to spread the virus to his/her contacts, in particular to pregnant women.
There is need to identify all close contacts of the case:

- In the family
- In the neighbors
- At workplace
- In school or kindergarten
- In the health care facilities (if visited).

Contacts are assessed for their vaccination status.The unvaccinated contacts are listed and the list is communicated to the EPI, who will be in charge to vaccinate them via medical centers or private physicians.

b) Pregnant women

Among the identified contacts, women in child bearing age are asked for any pregnancy.
If there are any pregnant women among the contacts, the recommended steps are specified in VI.

Step 10: Enhance monitoring

During a rubella outbreak, weekly bulletin on rubella is edited by the Esumoh central staff and shared with partners.

Step 11: Write summary report

Once the outbreak is confined, the Esumoh central staff in coordination with the RHUH and EPI, prepares a summary report describing the outbreak, the confirmation and the response. Such report is needed to document the epidemiology history of rubella in Lebanon.

VI. Procedural steps for rubella in pregnant women

The steps described below are recommended for verification and investigation of any alert of rubella related to pregnant women.The steps are summarized in figure (5).

Step 1: Verify alert

The alert is verified:
- Is the rubella case in a pregnant women? Is the case laboratory-confirmed?
- Is the pregnant woman a contact of a rubella case? Is the index case laboratory-confirmed?

Step 2: Assess women immunity

The history of the women is collected:
- Rubella disease: age at onset (if natural disease)
- Rubella vaccination: number of dose and year of last dose
- Rubella screening: IgG at pre-nuptial test and prenatal test…

Also the history of the pregnancy is collected:
- Age of pregnancy
- Dates of contact with the rubella case

Step 3: Test women

Rubella infection may occur without febril maculo-papular rash. There is need to test the woman. The woman is tested for rubella IgM in paired sera, and for IgG:
- If the IgG was positive and the contact/exposure with rubella was beyond the 12 weeks of gestation: there is no risk of CRS.
- If there no increase of IgM in paired sera, there is no risk of CRS.
- In other cases, the pregnant woman is monitored.

Step 4: Counselling and follow up

The follow up is done in coordination with the treating physician. Regular ultrasound is conducted to detect any abnormality.

In case of abnormalities, the physician and the mother decide on the therapeutic termination of the pregnancy.

Step 5: Pregnancy termination

At birth, the newborn is tested for rubella IgM, whatever was the condition of the baby, with or without symptoms or malformations. Testing for CRS is specified in the surveillance SOP for CRS.

Step 6: Write summary report

Once the laboratory test of the child is known, a summary report is prepared by the Esumoh central team and shared with EPI and other partners.

Figure 3: Rubella case classification

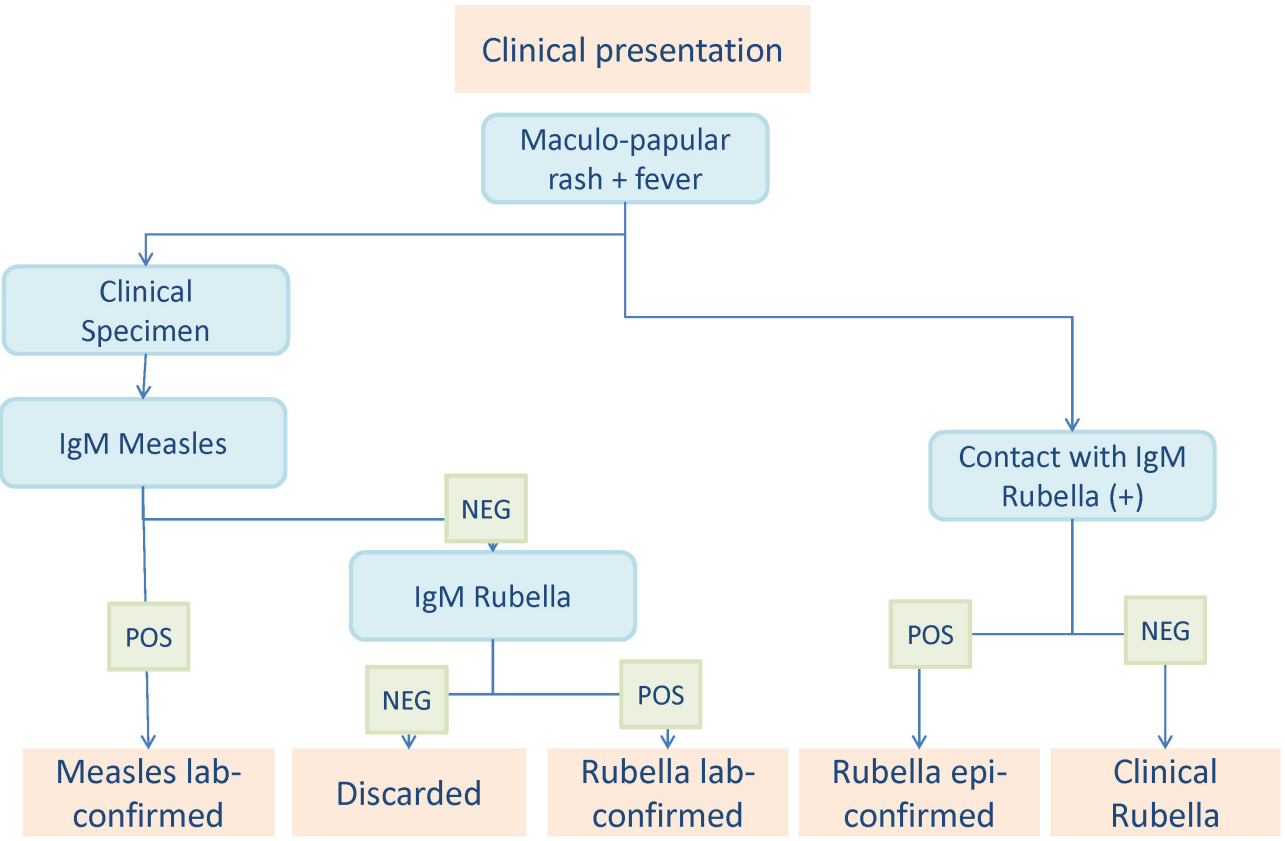


Figure 4: Rubella investigation steps

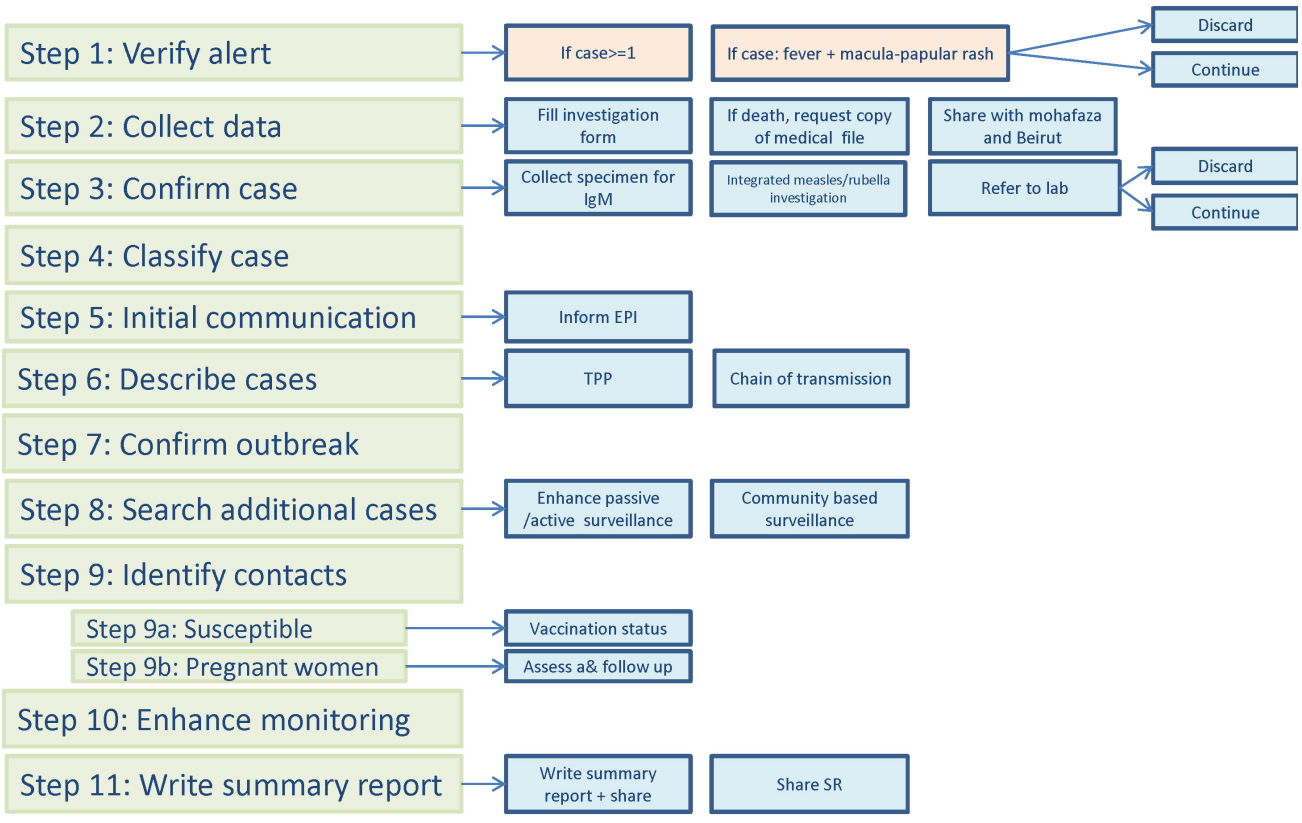
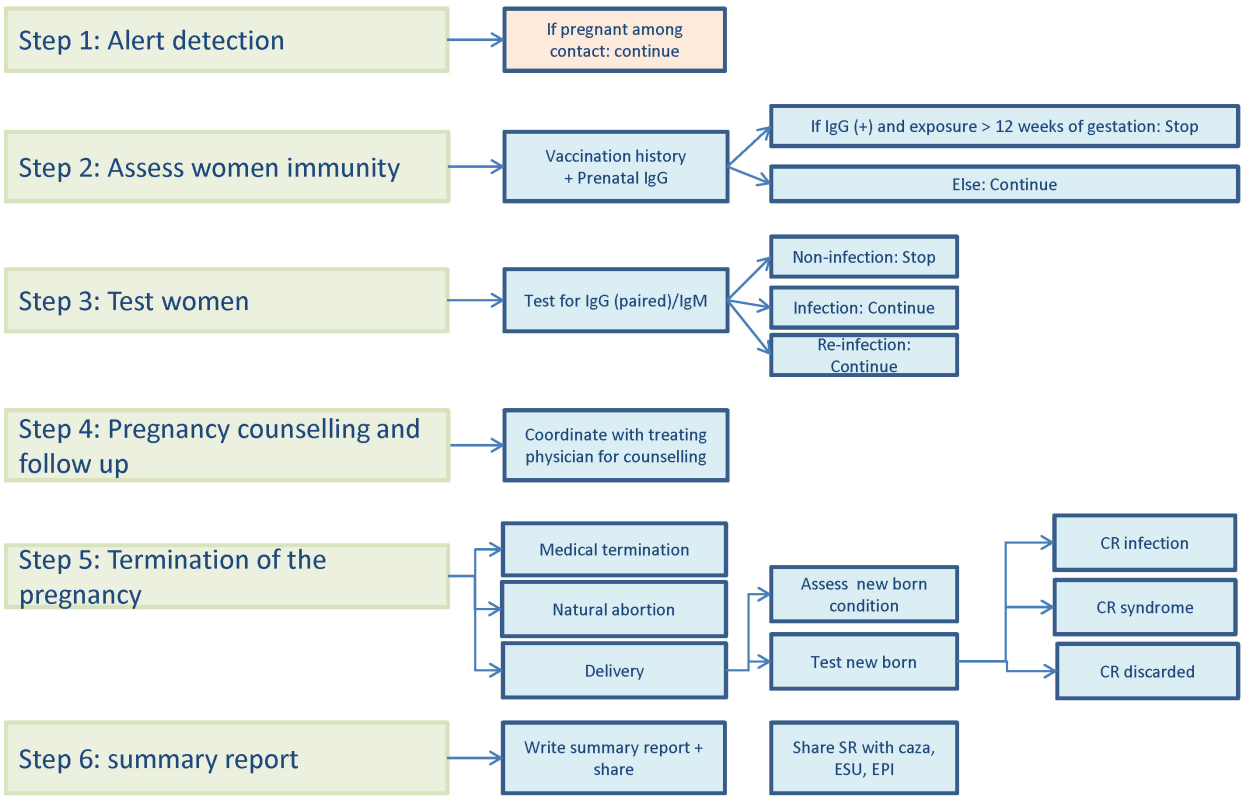


Figure 5: Rubella investigation steps for pregnant woman



الجمهورية اللبنانية

وزارة الصحة العامة

استمارة إبلاغ عن حالة حصبة أوحصبة ألمانية

١ ـ اسم وعنوان المريض

الاسم الثلاثي للمريض : ..... العنوان : .....

تاريخ الولادة : ....

الجنس : ☐ذكر ☐أنثى المدينة / البلدة : .....

الجنسية : ☐ لبناني ☐غير لبناني..... القضاء : .....

الاقامة : ☐مقيم ☐زائر ☐نازح/لاجئ رقم الهاتف : .....

٢ ـ المعطيات الطبية

المرض المشخص : ..... دخول مستشفى : ☐نعم ☐كلا

تاريخ ظهورالطفح : ..... اسم المستشفى : .....

تاريخ المعاينة : ..... تاريخ الدخول : .....

نوع الطفح الجلدي : ☐بقعي *Maculopapular* تضخم العقد اللمفوية : ☐خلف الأذن *Post-auricular*

☐مع حويصلات *Vesicular* ☐خلف العنق *Cervical*

☐من نوع اخر *Other rash* ☐ خلف الرقبة *Sub-occipital*

عوارض مختلفة : ☐حرارة *Fever >= 38°C* مضاعفات : ☐التهاب رئوي *Pneumonia*

☐التهاب ملتحمة العين *Conjunctivitis* ☐التهاب معوي *Gastroenteritis*

☐نزلة أنفية *Coryza* ☐غيره، حدد: .....

☐سعال *Cough* وجود حمل : ☐نعم ☐كلا

☐ألم في المفاصل *Arthralgia/ Arthritis* حدوث وفاة : ☐نعم، تاريخ الوفاة:.....☐كلا

٣ ـ معطيات التقليح

نوع اللقاح	عدد الجرعات	تاريخ آخر جرعة	معلومة مدونة
الحصبة / *Measles*			
الحصبة والحصبة الالمانية / *Measles Rubella*			
الحصبة والحصبة الالمانية وابو كعب/ *MMR*			
الحصبة الالمانية / *Rubella*			

٤ ـ عينات للفحص المصلي و عزل الفيروس

	تاريخ جمع العينة	نوع العينة		
عينة أولى		☐ مصل *Serum*	☐ مسحة لثوية *Oral fluid*	☐ مسحة دم *Dried blood*
عينة ثانية		☐ مصل *Serum*	☐ مسحة لثوية *Oral fluid*	☐ مسحة دم *Dried blood*
عينة لعزل الفروس		☐ بول	☐ مسحة من الزلعوم *Throat swab*	

تعريف حالة الحصبة / الحصبة الألمانية المشتبهة:

طفح جلدي بقعي maculo-papular + حرارة

تثبت الحالة مخبريا بفحصي IgM للحصبة والحصبة الالمانية، عبر جمع :

-عينة مصل serum

-أو مسحة لثوية oral fluid

-أو مسحة دم dried blood

وذلك في غضون ٢٨ يوم من تاريخ ظهور الطفح.

وتحفظ العينة بين 8° C-4.

بالإضافة يحدّد نمط الفيروس عبر جمع عينة بول (urine) او مسحة من الزلعوم (throat swab) في غضون اسبوع من الطفح.

لمزيد من المعلومات :هاتف 01-614194

فاكس01-610920، موقع ww.moph.gov.lb

٥ـ معلومات اخرى

اسم الطبيب المعالج : ..... التاريخ : .....

العنوان : ..... التوقيع والختم:

رقم الهاتف : .....

تعميم وزارة الصحة العامة رقم ١٣ تاريخ ٢٣ شباط ٢٠١٣

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

استمارة تقصي حالة حصبة /حصبة الألمانية

تعبأ الاستمارة من قبل وزارة الصحة العامة / فريق الترصد الوبائي

رقم الحالة |_____|

1. معلومات عن التقصي

اسم المحقق	المحافظة	القضاء	تاريخ التقصي	مع من تمّ التقصّي/الاتصال؟
			...../...../.....	☐ المريض نفسه ☐ الأم ☐ الأب ☐ غيره، حدّد.

2. المريض وعنوانه

اسم المريض الثلاثي	الجنس	تاريخ الولادة	الجنسية	الاقامة
	☐ ذكر ☐ أنثى	...../...../..... العمر:	☐ لبناني ☐ غير لبناني، حدّد:	☐ مقيم ☐ زائر ☐ عامل اجنبي ☐ لاجئ من أقّل من 10 سنوات ☐ لاجئ منذ 10 سنوات او اكثر

القضاء	البلدة	العنوان الكامل	رقم الهاتف

3. العوارض

- هل ظهرت حمى (38<) ؟ ☐ كلا ☐ نعم
- هل ظهر طفح جلدي ؟ ☐ كلا ☐ نعم، حدد **نوع الطفح:** ☐ *Maculopapular* ☐ *Vesicular* ☐غيره، حدّد: **تاريخ ظهور الطـفــح** : ...../...../.....
- هل دخل المريض المستشفى؟ ☐ كلا ☐ نعم، حدد اسم المستشفى: . تاريخ دخول المستشفى: ...../...../.....
- هل المريضة حامل؟ ☐ كلا ☐ نعم، حدد شهر الحمـل: تاريخ الولادة المتوقـع: ...../...../.....
- كيف أصبح المريض؟ ☐ شفاء ☐ ما زال مريض ☐ وفاة، السبب: تاريخ الوقـــــــاة: ...../...../.....

4. الوضع التلقيحي للمريض

- هل المعلومات موثّقة في السجل الصحّي/البطاقة الصحية؟ ☐ كلا ☐ نعم
- هل أخذ المريض لقاح ؟

				عدد الجرعات	تاريخ آخر جرعة	المكان
حصبة measles	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حصبة /حصبة المانية /ابو كعب MMR	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حصبة / حسبة المانية MR	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	
حسبة المانية / rubella	☐ غير معروف	☐ كلا	☐ نعم، حدد		...../...../.....	

- في حال عدم التطعيم، اذكر السبب: ☐ المركز الطبي بعيد ☐ توقيت المركز الطبي غير مناسب ☐ لا قدرة مالية ☐ الطفل دائماً مريض ☐ غير مقتنع بالتلقيح ☐ وضع أمني غير مستقر ☐ إهمال ☐ غيره، حدّد:

5. مهنة المريض

ما وضع/مهنة المريض؟ ☐ في البيت ☐ في الحضانة ☐ طالب ☐ عامل/موظف ☐ عامل في مجال الصحة ☐ عسكري ☐غيره:

اسم الحضانة/المدرسة/ المؤسسة	الصف/القسم	القضاء	البلدة	العنوان	رقم الهاتف

6. الاختلاط مع حالات في المحيط

- اختلاط مع امرأة حامل ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد من. ؟ الاسم: . شهر الحمل: |__| رقم الهاتف:
- وجود حالات مشابهة في المحيط ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد اين؟ ☐ المنزل ☐ مدرسة ☐ مستشفى ☐ الحي/البلدة ☐ دار حضانة ☐ جامعة ☐ مؤسسة ☐غيره:
- **هل اختلط المريض <u>في الأسابيع الثلاثة السابقة لظهور الطفح</u> مع شخص يعاني من طفح جلدي <u>أو</u> حرارة ؟** ☐ كلا ☐ نعم، حدد من ؟

اسم الشخص	الجنس	تاريخ الولادة	العمر	الصلة	تاريخ ظهور العوارض	تاريخ آخر لقاء مع الحالة	رقم الهاتف
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						
	☐ ذكر ☐ أنثى						

7. السفر الى الخارج خلال الأسابيع الثلاثة قبل ظهور الطفح

- هل سافر المريض ؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد البلد: تاريخ العودة:
- هل اختلط المريض مع أحد العائدين من السفر؟ ☐ غير معروف ☐ كلا ☐ نعم، حدد البلد: من: الهاتف:

إستمارة تقصي حول حالات غياب في المدارس بسبب الطفح الجلدي

من تاريخ ------- الى ---------

المدرسة	اسم المبلّغ	صفة المبلّغ	رقم الهاتف

#	الإسم Name	الجنس Sex	تاريخ الولادة DOB	الصف/ الشعبة Class Section	الجنسية	الطفح الجلدي rash		هل عانى(ت) الطالب(ة) من				هل لقح(ت) الطالب(ة) ضد				رقم الهاتف
						تاريخ ظهور الطفح Date of onset	نوع الطفح Rash type	حرارة Fever	إلتهاب تنفسي Respiratory Infection	إلتهاب معوي Gastro-enteritis	التهاب الملتحمة (conjunctivitis)	الحصبة (Measles)	الحصبة الألمانية (Rubella)	الحصبة و الحصبة الألمانية (Measles rubella)	الحصبة و الحصبة الألمانية و ابو كعيب (MMR)	
												تاريخ أخر جرعة	تاريخ أخر جرعة	تاريخ أخر جرعة	تاريخ أخر جرعة	
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					
		☐ ذكر ☐ أنثى						☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا	☐ نعم ☐ كلا					

الجمهورية اللبنانية – وزارة الصحة العامة – برنامج الترصد الوبائي

إستمارة تقصي حول حالات طفح جلدي في حي/بلدة
تاريخ ----------

الحي		البلدة	القضاء	اسم المحقق

#	الاسم الثلاثي	الجنس Sex	تاريخ الولادة او العمر	الجنسية	هاتف	العوارض			هل لقح(ت) الطالب(ة) ضد					جمع عينات		ملاحظات استشفاء، وفاة،
						تاريخ ظهور الطفح	نوع الطفح Rash :type MP Or Vs	حرارة Fever	موثقة	الحصبة (Measles)	الحصبة و الحصبة الألمانية (MMR1)	الحصبة و الحصبة الألمانية (MMR2)	حملة تلقيح	تم جمع عينة حدد النوع والتاريخ	نتيجة الفحص	
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، سنة			
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، سنة:			
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، سنة:			
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:			
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، سنة:			
		☐ ذكر ☐ أنثى						☐ كلا ☐ نعم	☐ كلا ☐ نعم	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، التاريخ:	☐ كلا ☐ نعم، سنة:			

Rubella - Annex 5

Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program

Measles and Rubella Surveillance

LINE LISTING

YEAR |__|__|__|__|

								ID	Case identification
								M/R	
								Name	
								Caza	
								Age	
								Form completed	Case reporting
								Investigation form	
								Rash onset	
								Reported on	
								Health Facility	
								Type	1st serology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Result	
								Type	2nd serology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Result	
								Type	Virology specimen
								Collected on	
								Reffered to ESU on	
								Referred to Lab on	
								Final classification	

Rubella - Annex 6

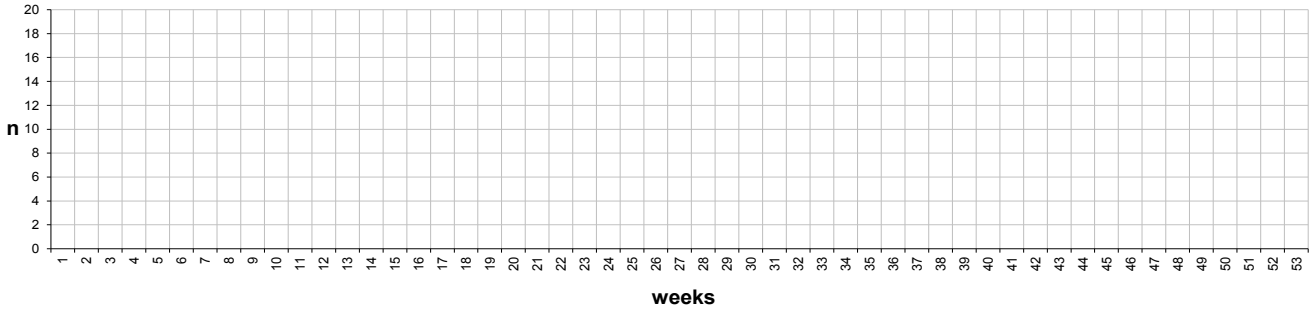
Republic of Lebanon - Ministry of Public Health - Epidemiological Surveillance Program

Descriptive Surveillance Findings

Event	Level	Year	Week	Period	As on
		20___			

1. Cumulative number =

2. Number of cases by time: weekly histogramm



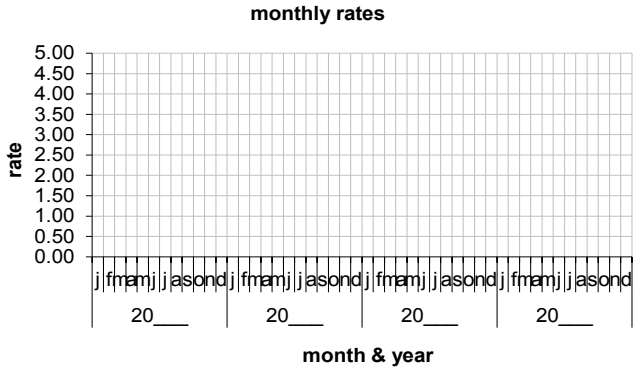
3a. By time: monthly cases and rates (/100000)

Month	R20__	R20__	R20__	Pop20__	N20__	R20__
Jan						
Feb						
Mar						
Apr						
Mai						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
Total						

4a. By place: commune

Commune	N	Commune	N

3b. By time: curve of monthly rate (/100000)



4b. By place: dot map

1 dot = 1 case

5. By age group, gender and vaccination status: cases and rates (/100000) and %

Age	Pop	Nb	Rate	Male	Female	Unsp
0-4 y						
5-9 y						
10-14 y						
15-19 y						
20-44 y						
45+ y						
Unsp	-					
Total						

0d	1+d	Unsp	0d %

6. By classification

Lab	Epi	Clin	Total

7. By hospital admission

In	Out	Unsp.	Total

8. By occupation

Interviewed	Education	DayCare

Notes

Notes

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Surveillance Standard Operating Procedure: Congenital Rubella Syndrome (CRS)

Version 1
MOPH circular no. 40
(19th Jan 2015)

Contents

I. Purpose

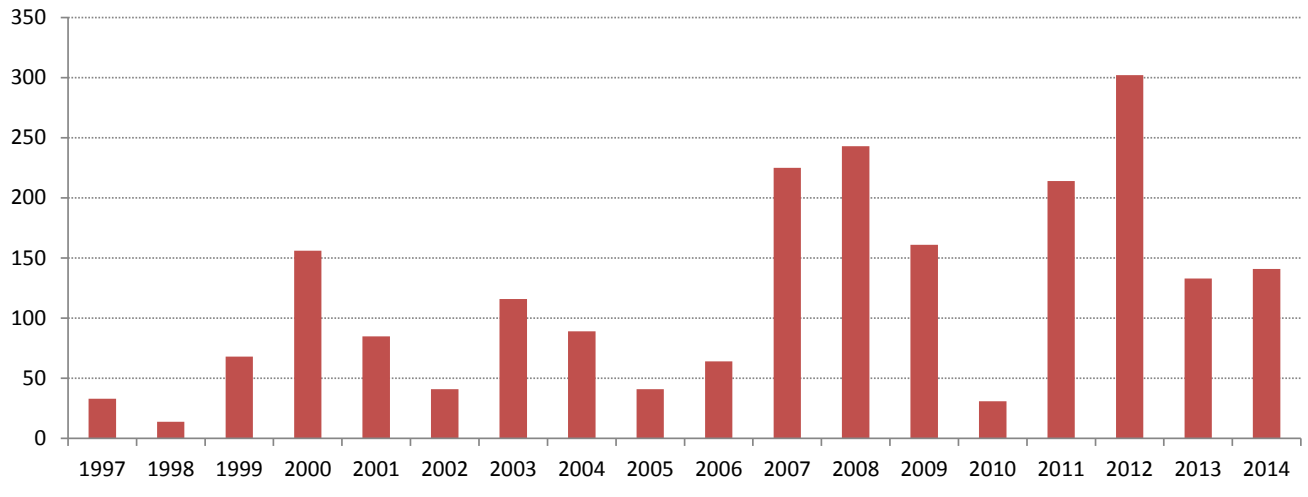
The purpose of this standard operating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of alert or outbreak of CRS.

II. Generalities

Congenital Rubella Virus (CRS)	
Agent	Rubella virus, genus Rubullovirus, family Togaviridae
Period of communicability	Several months after birth
Reservoir	Humans
Modes of transmission	- Materno-foetal transmission: 90% of infants born to women infected with rubella during the 1st trimester. The risk of transmission is 10-20% by the 16th week, and rare after the 20th week.
Clinical presentation	- Intrauterine death, spontaneous abortion - Congenital malformations: deafness, cataract, microphtalmia, congenital glaucoma, pigmentary retinopathy, nystagmus, microcephaly, meningo-encephalitis, mental retardation, patent ductus arteious, atrial or ventricular septal defects, other congenital heart disease, purpura, hepatosplenomegaly, jaundice, radiolucent bone disease
Worldwide	Worldwide
Lebanon	Rare
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease-based approach
Investigation: data about case	Clinical symptoms: eye, ear, cardiac and neurology malformations, outcomes
Investigation: clinical specimen from case	Serum, urine, CSF
Investigation: data about contacts	Rubella history, vaccination status...
Investigation: clinical specimen from contacts	If symptoms appear among contacts
Test	IgM
Laboratories	RHUH
Outbreak level	At least 2 confirmed cases of CRS following a rubella outbreak (6-9 months after)
Notification to WHO	If outbreak
Control	
Primary prevention	Vaccination
Isolation	Contact isolation: Infants with CRS may shed virus for several months
Contact prevention	Immunization of contacts
Mass prevention	Vaccination

Congenital Rubella Syndrome case definition (MOPH circular no. 45 dated on the 3rd April 2007)	
Laboratory-confirmed case	An infant with a positive blood test for rubella IgM who has clinically-confirmed Congenital Rubella Syndrome
Clinical-confirmed case	A case in whom a qualified physician detects: - At least 2 of the following: cataract(s), congenital glaucoma, congenital heart disease, loss of hearing, pigmentary retinopathy - Or at least one of the following: purpura, splenomegaly, microcephaly, mental retardation, meningoencephalitis, radiolucent bone disease, jaundice with onset less than 24 hours after birth
Suspected case	- Any child under 1 year in whom a health worker suspects CRS when the child presents with: • Heart disease • And/or suspicion of deafness • And/or one or more of the following eye signs: white pupil (cataract), diminished vision, pendular movement of the eyes (nystagmus), squint, small eye ball (microphthalmos), enlarged eye ball (congenital glaucoma) - Or any child where there is a maternal history of suspected or confirmed rubella during pregnancy, even if the child shows no signs of CRS
Congenital Rubella Infection (CRI)	An infant with a positive blood test for rubella IgM who does not have clinically-confirmed Congenital Rubella Syndrome
Forms	
Reporting	Standard reporting form or CRS reporting form (MOPH circular no. 80 dated on the 6th August 2013)
Investigation	Specific CRS investigation form (MOPH circular no.6 dated on 7th January 2015)
National figures	
One suspected case in 2010.	
International figures	

Figure 1: Reported CRS worldwide, 1997-2014 (source: WHO)



III. Objectives of surveillance

The objectives of CRS surveillance are:

- To detect and conform CRS
- To monitor infectivity of any CRS and to prevent secondary cases
- To measure the burden of CRS.

IV. Alert and outbreak thresholds

An **alert** of CRS is defined by at least one suspected case of CRS.
An **outbreak** of CRS is defined by at least 2 confirmed cases occurring:

- At national level in a period of 12 months
- Or following a rubella outbreak (6-9 months after).

V. Procedural steps

Every suspected CRS case needs to be investigated according to the following steps summarized in figure (3).

Step 1: Verify alert

Upon notification of CRS, the Esumoh peripheral team immediately contacts the reporting physician or hospital focal point to verify the diagnosis: Do they mean CRS?
If yes, the specific CRS reporting form is filled (Annex 1). The peripheral team informs the Esumoh central team, and requests copies of the medical file of the patient (discharge summary, laboratory findings…).

Clinical signs of interest are:

- Ophthalmologic signs and symptoms: cataracts, congenital glaucoma, pigmentary rethinopathy
- Ear signs and symptoms: hearing impairment or loss
- Cardiac signs and symptoms: congenital heart disease, mental retardation
- CNS signs and symptoms: microcephaly, meningoencephalitis, mental retardation …
- Other: splenomegaly, radiolucent bone disease, purpura at birth, jaundice at birth and other abnormalities

If the suspected CRS case was admitted to more than one setting (hospital, medical center, private clinician), all of them are contacted, medical files are reviewed, and copies of medical files are requested.

Step 2: Fill the investigation form

Upon notification, the Esumoh central staff starts to fill the investigation form (Annex 2). The information is provided by two main sources:

- Mother interview
- Healthcare providers.

Investigation collects the following information:

- Maternal pregnancy history: number of previous pregnancies, number of previous live births, age at last delivery, occupation during pregnancy
- Rubella-like illness during pregnancy: if mother experienced following signs during pregnancy (maculopapular rash, fever, conjunctivitis, coryza, lymphadenopathy, arthritis…) and gestational week or month of occurrence
- Exposure to Rubella during pregnancy: if mother was exposed during pregnancy to a person (of any age) with maculopapular rash and fever, travel history during pregnancy
- Contacts of the CRS case: identifying other pregnant women, healthcare workers, nursery mates in contact with the suspected CRS case

When the medical files of the mothers' pregnancy are available, they are used to support the investigation.

Step 3: Confirme the case

Every suspected case of CRS needs to be laboratory confirmed.

a) Clinical specimens

Clinical specimens are collected from the case. The table below summarizes the various types of specimens and tests. Specimens can be collected up to 12 months of age: serum, urine, CSF, oral fluid, nasopharyngeal/throat swab.

Table 1: Needed Specimens and tests for CRS

Specimens	Specimen recipient	Storage temperature	Tests
Serum	Sterile tube	4−8 °C, no freezing	IgM Serology
Urine	Sterile container	4−8 °C, no freezing	IgM Serology, Virus isolation
CSF	Sterile tube	4−8 °C, no freezing	IgM Serology
Oral fluid	Sponge swab	4−8 °C, no freezing	IgM Serology, RT-PCR
Naso-oropharyngeal swab	Viral Transport Media	4−8 °C, no freezing	IgM Serology, virus isolation

If specimen was collected soon after birth and tested negative, it is recommended to repeat specimen collection one month later.
The recommend tests are:

- At diagnosis: IgM serology positive up to 6-12 months
- For the follow up: virus isolation or virus detection

The type of specimen collection differs according to the setting.

Table 2: Selection of specimens

Setting	Coordination of specimen collection	Specimens for IgM	Specimens for virus detection/isolation
In hospital	With the hospital focal point or treating physician	Any type	Naso-oropharyngeal swab or urine
At home	With the mother of the CRS case	Oral fluid	Naso-oropharyngeal swab

Material for CRS testing includes the following:

- Sets for oral fluid and nasopharyngeal/throat swab, urine recipient
- Specimen labelling and packaging
- Ice box with frozen ice /gel-packs.

When collecting the clinical specimens, the staff in contact with the CRS case has to wear the following personal protective equipment: gloves, gown, surgical mask, eye protection...

b) Specimens referral

Clinical specimens are transported to the central level within 24 hours of collection, where they are verified for adequacy and labelling, and then referred to the national reference laboratory at Rafik Hariri University Hospital for serology testing and RT-PCR.
For virus isolation and genotyping, specimens are referred to one of the two tegional reference laboratories (Muscat-Oman and Institute Pasteur-Tunis).

Step 4: Classify the case

Based on medical and laboratory results, the case is classified as shown in figure (2).

For any suspected, probable or confirmed case, infection control practice should be applied. Infants with CRS are infectious and appropriate infection control measures are needed to be implemented.

Personal protective measures should be advised for contacts around the CRS case. Infection control measures include contact isolation, vaccinating household members and caregivers, and avoid contact with any pregnant women.

Step 5: Find susceptible contacts

The CRS case can shed the virus and still be infectious for several weeks, and can infect the contacts if not vaccinated.
The Esumoh staff identifies all close contacts among the family, the care givers and other institutions.
Contacts are then assessed for their vaccination status or IgG rubella status. If there is no documented vaccination, they are labelled as susceptible contacts.
Susceptible contacts are monitored for the incubation period from their last contact with the infective CRS case and oriented for vaccination. The list of susceptible contacts is shared with the EPI.

Step 6: Find additional cases

Once a CRS case is laboratory-confirmed, it is essential to look for additional CRS cases.
The MOPH issues official memos to health professionals (hospitals, orders, syndicates) informing them on the event and reminding them on the importance of rapid detection, rapid notification and appropriate infection control.
The active surveillance is also enhanced to include CRS in the weekly field rounds.
Retrospective and prospective search for possible unreported CRS cases is conducted in sentinel hospital sites known to provide care for specific conditions: heart malformation, hearing loss, eye conditions…

Step 7: Conduct follow up

CRS cases are followed up.
The follow up enables to document:
- The end of infectious period of the case
- The clinical and medical outcomes.

Moreover, close contacts are followed up to detect any rubella case.

Clinical specimens are collected regularly from CRS case, on monthly basis. There is need to have at least two consecutive negative tests to declare non-infectiousness of the case.

Step 8: Review rubella epidemiology

The occurrence on any CRS case is an opportunity to review the national epidemiology of rubella.
Two levels are considered:
- The chain of transmission of rubella that infected the mother: a thorough interview with the mother is conducted to attempt to trace the chain of transmission. The mother treating physician or gynecologist are contacted to retrieve relevant information such as IgM/IgG serology testing, any illness during pregnancy…
- The rubella epidemiology at the national level: the Esumoh staff compares the findings of previous months and explore link with the current CRS case.

Step 9: Write summary report

Once the event is contained, the Esumoh prepares a report summarizing important findings. Summary report contains the following information: description of the case by time, place, person, laboratory findings, and exposure history. This summary report is shared with EPI and partners.

Figure 2: CRS case classification

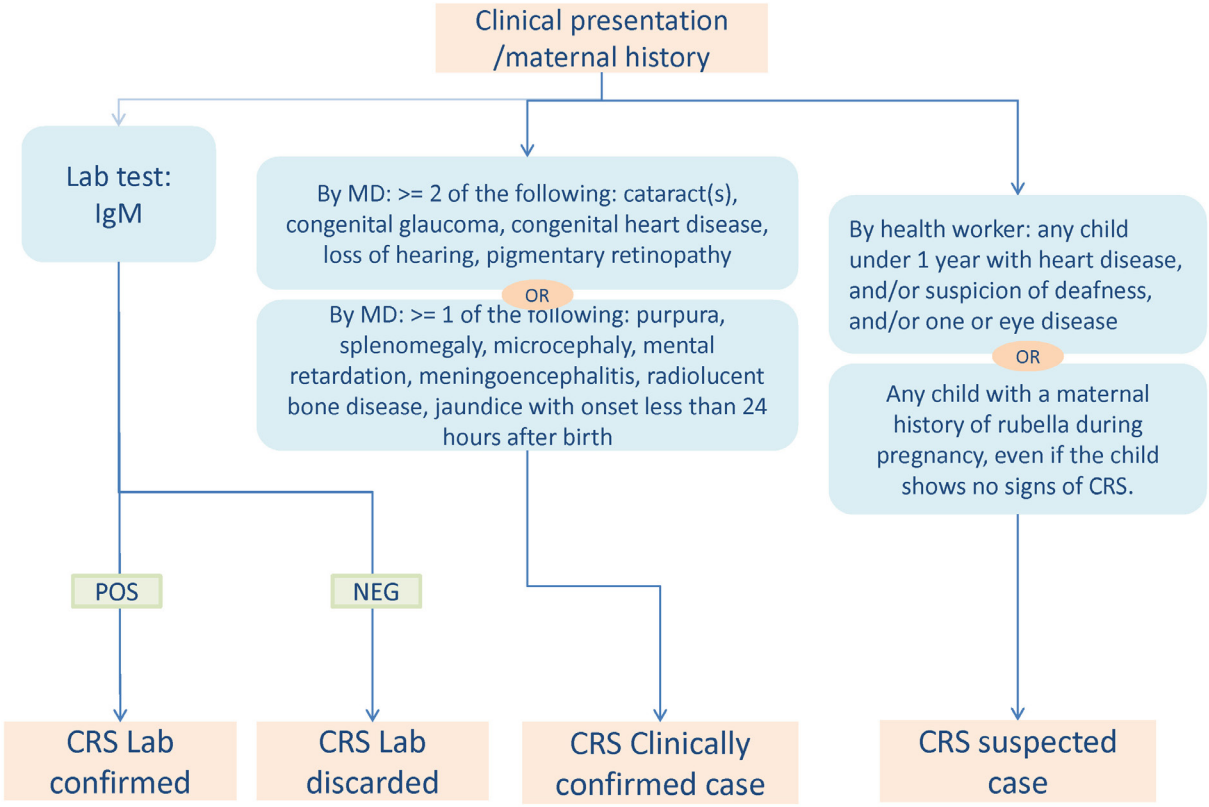
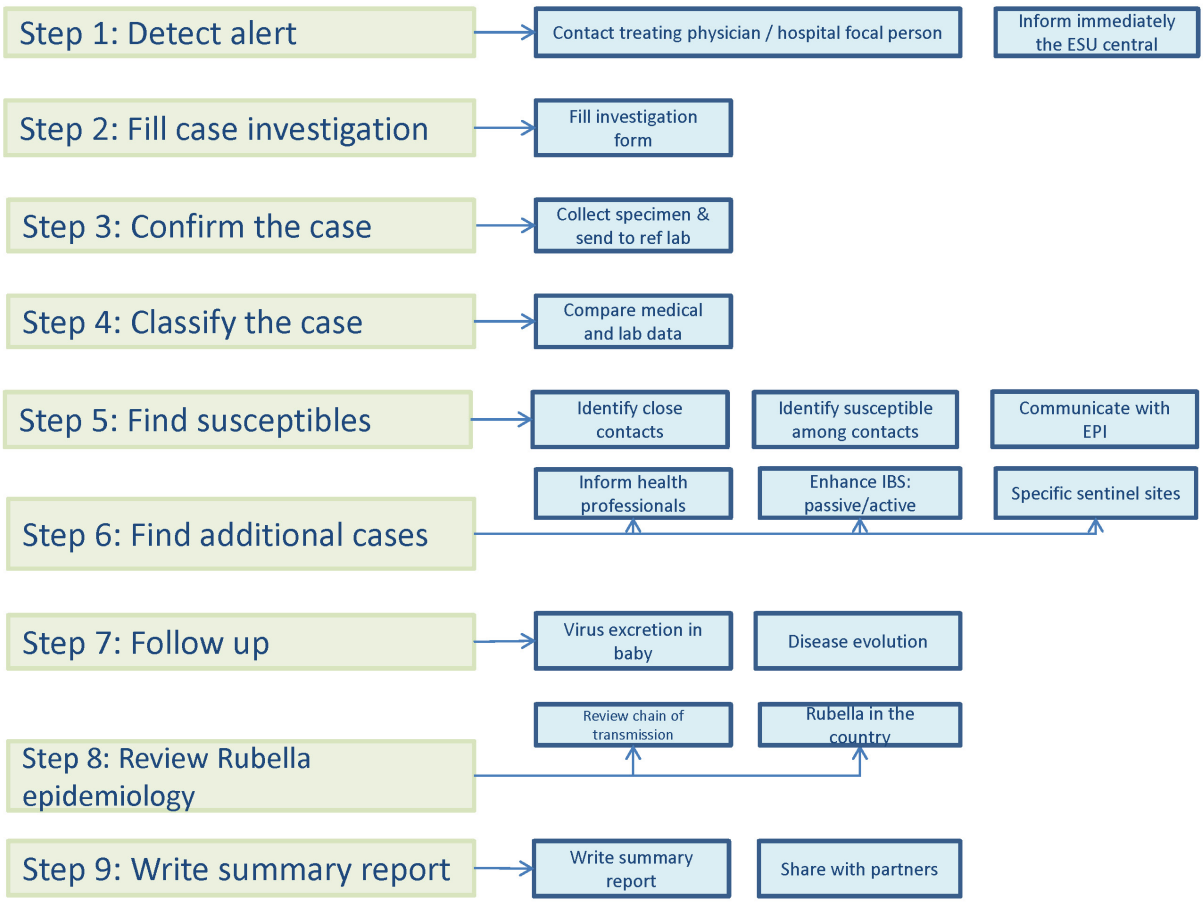


Figure 3: CRS investigation steps



Congenital Rubella Syndrome (CRS) - Annex 1

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Congenital Rubella Syndrome/Infection case reporting form

A suspected case of CRS is any infant presenting with **congenital heart disease**, and/or suspicion of **deafness**, and/or one or more of **eye signs**. For any infant fitting the suspected case definition, kindly fill the following reporting form for a better ascertainment of the case.

1- Patient identification

Patient full name: ……..... Address: ……..…….

Date of birth: _____/_____/_____ ……..…….

Gender: ☐Male ☐Female Town/locality: ……..…….

Nationality: ☐Lebanese ☐Other, ……... Qada: ……..…….

Residency: ☐Resident ☐Visitor ☐Refugee Phone number: ……..…….

2- Health care providers

Physician's name: ……..... Patient hospitalized: ☐Yes ☐No

Initial diagnosis: ……..... Hospital name: ..……..……...

Examination date: _____/_____/_____ Hospitalization date: _____/_____/_____

3- Clinical symptoms & evolution

3.1) Sensorial:

Cataract[a]: ☐Yes ☐No ☐Unknown

Glaucoma[a]: ☐Yes ☐No ☐Unknown

Pigmentary retinopathy[a]: ☐Yes ☐No ☐Unknown

Microrphtalmy: ☐Yes ☐No ☐Unknown

Nystagmus: ☐Yes ☐No ☐Unknown

Hearing impairment/Loss[a]: ☐Yes ☐No ☐Unknown

3.2) Congenital heart disease:

Atrial septal defect[a]: ☐Yes ☐No ☐Unknown

Ventricular septal defect[a]: ☐Yes ☐No ☐Unknown

Patent ductus arterosus[a]: ☐Yes ☐No ☐Unknown

Coarctation of the aorta[a]: ☐Yes ☐No ☐Unknown

Peripheral pulmonic stenosis[a]: ☐Yes ☐No ☐Unknown

Other, specify: ……

……

3.3) Bones:

Radiolucent bone disease[b]: ☐Yes ☐No ☐Unknown

3.4) Neuro:

Meningoencephalitis[b]: ☐Yes ☐No ☐Unknown

Microcephaly[b]: ☐Yes ☐No ☐Unknown

Mental retardation[b]: ☐Yes ☐No ☐Unknown

3.5) Spleen & blood:

Splenomegaly[b]: ☐Yes ☐No ☐Unknown

Purpura on birth[b]: ☐Yes ☐No ☐Unknown

Jaundice[b] (within 24 hours after birth): ☐Yes ☐No ☐Unknown

3.6) Other, specify:

…..……..……..……..…..

……..……..……..……

3.7) Patient status:

Present status of patient: ☐ Alive ☐ Dead ☐ Unknown

If dead, date of death: _____/_____/_____

Cause of death: ……..…..

Autopsy conducted ☐Yes ☐No ☐Unknown

Autopsy date: _____/_____/_____

Autopsy findings: ……..……..…..

4- Laboratory investigation

Specimen collected: ☐Yes ☐No ☐ Unknown

#	Date of collection	Type of specimen	Laboratory	Result
1st		☐ Serum ☐ Throat swab ☐ Urine ☐ CSF ☐ Other ……..		
2nd		☐ Serum ☐ Throat swab ☐ Urine ☐ CSF ☐ Other……..		

5- Reporter

Form filled by: ……..... Date: _____/_____/_____

Function: ……..….. Signature:

CASE DEFINITIONS:
- A **clinically confirmed case** of CRS presents two complications of the group (a) OR one complication from group (a) and one from group (b).
- A **laboratory-confirmed case** is a clinically confirmed CRS case with a positive blood/urine/CSF test for Rubella IgM.
- A **congenital rubella infection** (CRI) is an infant with a positive blood test for Rubella IgM who does not have clinically-confirmed CRS.

More info: www.moph.gov.lb /Tel:01.614194 / Fax:01.610920

Congenital Rubella Syndrome (CRS) - Annex 2

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Congenital Rubella Syndrome (CRS): investigation form for the mother

A suspected case of CRS is any infant presenting with heart disease, and/or suspicion of deafness, and/or one or more of eye signs. For a better ascertainment of the case, kindly fill the following investigation form regarding the mother of any infant fitting the suspected case definition.

1- Mother identification

Mother full name : _____
Date of birth : _____/_____/_____
Sex : ☐ Male ☐ Female
Nationality : ☐ Lebanese ☐ Other, specify: _____
Residency : ☐ Resident ☐ Tourist

Address : _____
_____
Town : _____
Qada : _____
Phone number : _____

2- Maternal pregnancy history

Occupation during last pregnancy ☐ Housewife ☐ Unknown
☐ Active worker, specify:
Job type : _____
Institution name : _____
Address : _____

Number of previous pregnancies : _____
Number of previous live births : _____
Mother's age at last delivery : _____

3- Rubella-like illness during pregnancy

►Did mother present any of the following clinical signs during last pregnancy?

If yes, specify month of pregnancy

Maculopapular rash	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Conjunctivitis	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Post auricular lymphadenopathy	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Cervical lymphadenopathy	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Sub-occipital lymphadenopathy	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Arthralgia/Arthritis	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Coryza	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Cough	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown
Other, specify:	☐ Yes, month of pregnancy:_____	☐ No	☐ Unknown

►Was rubella lab-confirmed in the mother? ☐ Yes, specify: ☐ No ☐ Unknown
Test type : _____, Setting: _____
Test date : _____/_____/_____

4- Exposure to Rubella during pregnancy

►Was the mother exposed during pregnancy to a person (of any age) with maculopapular rash and fever? ☐ Yes, month of pregnancy:_____ ☐ No ☐ Unknown

►Did the mother travel during pregnancy? ☐ Yes, month of pregnancy:_____ ☐ No ☐ Unknown
Country :_____
Travel duration: From: _____/_____/_____
To : _____/_____/_____

5- Administrative information

Form filled by (name and signature): Date:

Notes

Notes

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Surveillance Standard Operating Procedure:
Smallpox

Version 1
MOPH circular no. 39
(19th Jan 2015)

Contents

I. Purpose

This Standard Operating Procedure (SOP) is intended to assist the Epidemiological Surveillance team in verifying and investigation any alert or outbreak of smallpox.

II. Generalities

Smallpox is an acute contagious disease caused by the variola virus, a member of the Orthopoxvirus family. It was one of the world's most devastating diseases known to humanity. It was declared eradicated in 1979 following a global immunization campaign led by the World Health Organization.

Smallpox is transmitted from person-to-person via infective droplets during close contact with infected symptomatic people. Vaccine administered up to 4 days after exposure provides protective immunity and is preventing infection and lessening the severity of the disease.

The last known natural case was in Somalia in 1977. Since then, the only known cases were caused by a laboratory accident in 1978 in Birmingham, England, which killed one person and caused a limited outbreak. More information about the disease is presented in the table below.

Smallpox	
Agent	- Variola virus of Orthopoxvirus species - Can be used in biological warfare
Incubation period	7-19 days (10-14 days for illness, 2-4 days for rash)
Period of communicability	3 weeks from onset of skin lesions
Reservoir	Humans
Modes of transmission	- Person-to-person: direct contact with droplets or skin lesions - Conjunctiva or placenta may be points of entry.
Clinical presentation	- Prodomic phase with fever and flu-like illness - Classical form includes fever with characteristic centrifugal deep-seated skin eruption: succession of macules, papules, vesicles, and pustules then crusted scabs. The lesions appear first at on the face, extremities, including the palms and soles, and subsequently on the trunk. Skin lesions are at same stage in same area. - Two forms: minor with a CFR < 1% and major with CFR 20-50%. The major shows bleeding into the skin and mucous membranes.
Worldwide	Smallpox was declared eradicated in 1979. Two laboratories still have smallpox virus for essential research: - The US-CDC, Atlanta, USA - The State Research Center for Virology and Biotechnology, Koltsovo, Novosibirsk region in Russian federation
Lebanon	No cases
Control objective	Eradication
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, complications, occupation, exposure, intentional release, similar cases among contacts…
Investigation: clinical specimen from case	Vesicular/pustular fluid, scab biopsy, pharyngeal swab, clotted blood
Investigation: data about contacts	Contacts tracing and follow up

Investigation: clinical specimen from contacts	If symptoms appear
Test	Virological culture, PCR
Laboratories	WHO reference laboratories
Outbreak level	At least one confirmed case
Notification to WHO	Immediate notification according to the International Health Regulations (2005)
Smallpox case Case definition (MOPH circular no. 37 dated on the 5th May 2012)	
Confirmed case	An individual of any age presenting with acute onset of fever (≥38.3°C), malaise, and severe prostration with headache and backache occurring 2 to 4 days before rash onset, - And subsequent development of a maculopapular rash starting on the face and forearms, then spreading to the trunk and legs, and evolving within 48 hours to deep-seated, firm/hard and round well-circumscribed vesicles and later pustules, which may become umbilicated or confluent - And lesions that appear in the same stage of development (i.e. all are vesicles or all are pustules) on any given part of the body (e.g. the face or arm) - And no alternative diagnosis explaining the illness - And laboratory confirmation by virological culture or PCR
Probable case	A suspected case with: - An epidemiological link to a confirmed case of smallpox - Or a documented smallpox environmental exposure
Suspected case	An individual of any age presenting with acute onset of fever (≥38.3°C), malaise, and severe prostration with headache and backache occurring 2 to 4 days before rash onset - And subsequent development of a maculopapular rash starting on the face and forearms, then spreading to the trunk and legs, and evolving within 48 hours to deep-seated, firm/hard and round well-circumscribed vesicles and later pustules, which may become umbilicated or confluent - And lesions that appear in the same stage of development (i.e. all are vesicles or all are pustules) on any given part of the body (e.g. the face or arm) - And no alternative diagnosis explaining the illness
Forms	
Reporting	Standard reporting form
Investigation	Smallpox investigation form (MOPH circular no.174 dated on 31st December 2015)
National figures	
No cases	
International figures	
Eradication declared in 1979. The last minor case was in 1977 in Somalia. The last major case was in Bangladesh in 1976. An accidental laboratory release was documented in 1978 (UK).	

III. Objectives of surveillance

The objectives of surveillance are to:

- Detect and confirm any case of smallpox
- Detect and investigate smallpox outbreaks
- Identify source of infection
- Document containment.

IV. Alert and outbreak thresholds

One suspected case of smallpox is considered an **alert** and necessitates an investigation.

Since smallpox no longer exists as a naturally occurring disease, a single laboratory-confirmed case of smallpox is considered an **outbreak**. Once an outbreak of smallpox has been confirmed, the following steps are conducted.

V. Procedural steps

The steps described below are recommended for investigation of any alert or outbreak of smallpox. The steps are summarized in figure (3).

Step 1: Verify alert

In case of suspected case, the Esumoh caza team contacts the treating physician. What diagnosis does he/she suspecting: Smallpox or chicken pox?

In case of suspicion of smallpox, the Esumoh central team and the MOPH/DG are informed immediately.

Step 2: Collect data

Upon verification, the Esumoh central team conducts field visits where patient is. An investigation form (Annex 1) is filled via patient and physician interview.

The investigation form includes the following information:

- Demography
- Illness: onset, lesions description…
- Vaccination
- Exposure: occupation…

The patient is assessed for smallpox (Figure 2):

- High risk:
  - Febrile prodrome
  - And classical smallpox lesion
  - And lesions in same stage of development
- Moderate risk:
  - Febrile prodrome and 1 other major criteria
  - Or febrile prodrome and less than 4 minor criteria
- Low risk:
  - No febrile prodrome
  - Or febrile prodrome and less than 4 minor criteria

The high risk case needs urgent clinical specimens for confirmation in WHO reference laboratories. The moderate risk case needs monitoring and if the case become high risk, he/she is tested for smallpox.

Step 3: Communicate alert

Upon verification and assessment of the case as high or moderate risk, the Esumoh team informs immediately the MOPH/DG.

The MOPH informs immediately the CBRN national committee, as smallpox is considered to be due to potential intentional release.
Also, the MOPH informs immediately the WHO as this event represents a potential public health event of international concern.
Smallpox is notified to WHO and CBRN national committee, even if the case is not yet confirmed.

Step 4: Confirm the case

Case needs to be confirmed by laboratory tests.
Specimens are collected with the high precautions of infection control.
Clinical specimens include vesicular material, scab specimens, biopsy lesions, oropharyngeal secretions, CSF, and blood.
Laboratory tests include PCR, virus isolation, electronic microscopy, direct fluorescence antibody (DFA).
There are 2 WHO reference laboratories to confirm smallpox:

- Centers for Disease Control and Prevention, Atlanta, Georgia, United States
- Russian State Centre for Research on Virology and Biotechnology, Koltsovo, Novosibirsk Region, Russian Federation.

The clinical specimens are shipped to reference laboratories as category A based on IATA regulations.
Detailed information on clinical specimens is provided in annex (2).

Step 5: Confirm the outbreak

If smallpox case is laboratory-confirmed, the ESU central team informs the MOPH/DG. One case constitutes an outbreak. The information is officially shared with WHO and CBRN national committee.

On the other hand, the MOPH informs the health professionals and the community with emphasis on case definition, rapid case detection and notification.

Step 6: Search for additional cases

Additional cases are searched through various methods:

- Notification from health professionals:
  - Immediate notification from physicians and health facilities
  - Hospital zero-reporting
  - Hospital active surveillance
  - Hospital mortality surveillance…
- Search in the vicinity of the case
- Notification from the community:
  - Hotline 1214
  - Medias news
  - Community rumors…

Memos and press releases are issued by the MOPH. Sessions are conducted for health professionals…

Step 7: Describe cases

Cases are described by:

- Time: day, week, month and year of onset
- Place: place of residence, place of work, place of school, in term of locality, caza and mohafaza. Travel history is described.
- Person: age group, gender, nationality, occupation...
- Disease: classification, outcomes…

Step 8: Conduct contact tracing

The containment relies on early detection, confirmation and on adequate contact tracing.

Information about contacts can be obtained from interviews of the patient, family members, workplace or school associates, or others with knowledge about the patient's recent activities and travels.

Contact tracing is done by the Esumoh teams at caza, mohafaza and central levels.

a) Document patient itinerary

All places visited by the patient are listed for the past days since fever onset.

b) Contact identification

Since rash onset, persons being in contact with the patient in the daily life are listed.
Additional information is collected on the contacts:

- Household contact or no
- Contact while having symptoms (rash)
- Contact within 6 feet distance or no
- Contact for >=3 hours or no
- Date of exposures (first and last)...

Based on the information, the contacts are assessed as high risk if:

- Household contact
- Contact < 6 feet with or without >=3 hours duration.

c) Transportation use

Since fever onset, all common transport means used by the patient are listed.
Additional information is collected on those transports:

- Type of transportation mean (car, bus, train, plane…)
- Date and time of travel
- Transporter name
- Itinerary (origin and destination)
- Duration of travel.

d) Health facilities

Since fever, the patient or the family lists all health facilities visited or consulted or admitted in.
For each, the following information is collected:

- Type of health facility
- Type of visit (visitor, outpatient, inpatient…)
- Date and time
- Waiting in waiting room and duration
- Infection control measures applied for the patient...

e) Social events

Since fever, the patient or the family lists all social events with mass gathering.
For each, the following information is collected:

- Type of social event (social, family, sport, meeting/conference…)
- Date and time
- Duration of social event.

f) Follow up

For all identified contacts, in particular those assessed with high exposure, a follow up is conducted for 19 days from last contact with the patient.
For each day, the contact is asked if fever or rash appears.
In case, smallpox vaccination was administered to the contacts, the follow up will search for onset of adverse effects.

Step 9: Investigate the source of infection

The investigation aims to identify potential sources of infection. It is done in coordination with the CBRN national committee.

The source may be obvious or not. The infection may be accidental or of deliberate release of biological weapons. The infection may be in health facility or no. The source may be a person or a release in the environment.

a) Time

The source is found in the 19 days prior to rash onset.

b) Person

The patient is asked for any previous contact with persons with rash. The person can be identified or no.

For each suspected person, the following information is collected:

- Name
- Contact details
- Rash type
- Diagnosis (if known)
- Place and time of exposure.

c) Place: Laboratory

The patient is asked for any previous contact with laboratory setting within the 19 days prior to rash onset.

For each laboratory, the following information is collected:

- Type of laboratory (research, reference, clinical, human, animal…)
- Type of visit (staff, visitor, outpatient, inpatient…)
- Date and time
- Infection control practice in place
- Presence of persons with rash
- Manipulating of biological samples or material
- Accident in manipulating biological samples or material…

d) Place: Health facilities

The patient is asked for any previous contact with health facilities within the 19 days prior to rash onset.

For each health facility, the following information is collected:

- Type of health facility
- Type of visit (staff, visitor, outpatient, inpatient…)
- If staff: type of work
- Date and time
- Waiting in waiting room and duration
- Infection control practice in place
- Presence of persons with rash...

e) Place: Transportation use

The patient is asked for any previous use of common transportation means within the 19 days prior to rash onset.

For each common transport use, the following information is collected:

- Type of transportation mean (car, bus, train, plane …)
- Date and time of travel
- Transporter name
- Itinerary (origin and destination)
- Duration of travel
- Contact with person with rash.

f) Place: Travel history

The patient is asked for any travel history within the 19 days prior to rash onset.
For each travel history, the following information is collected:

- Country of origin
- Country of destination
- Date and duration
- Visited cities
- Contact with person with rash...

g) Place: Social events

The patient is asked for any participation to social event within the 19 days prior to rash onset.
For each social event, the following information is collected:

- Type of social event (social, family, sport, meeting/conference…)
- Date and time
- Duration in social event
- Contact with person with rash...

Step 10: Enhance monitoring

During the outbreak, daily monitoring of cases and contact is done by time, place, person and disease.
A regular bulletin is prepared and shared with CBRN national committee and WHO.
The bulletin includes figures on:

- Patients
- Follow up of contacts.

Step 11: Write summary report

Once the outbreak is confined, the Esumoh central staff prepares a summary report describing the outbreak in term of time, place, person, risk factors and outcomes.

Figure 1: Smallpox case classification

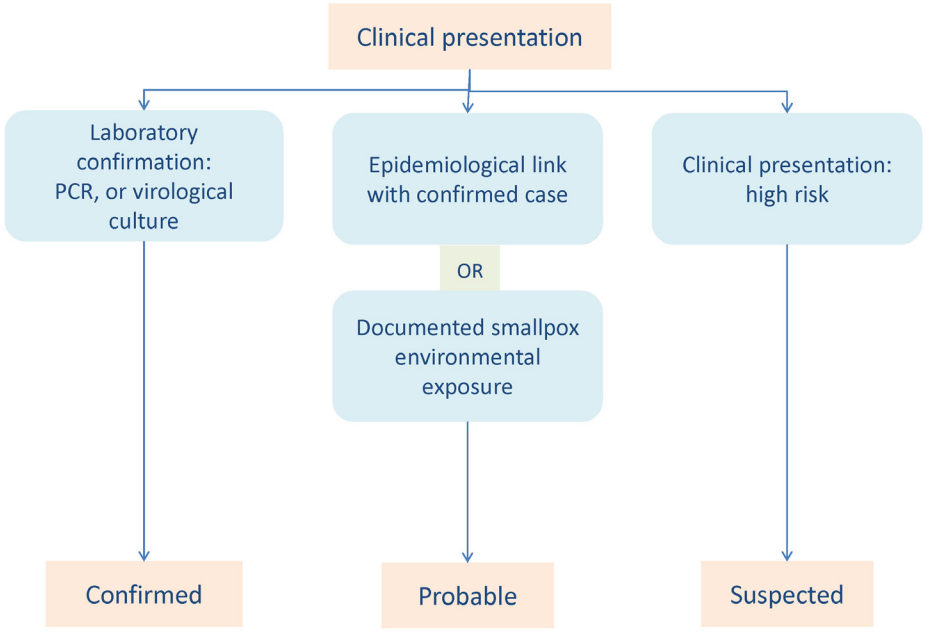


Figure 2: Smallpox case assessment

Major criteria

Febrile prodrome:
Occurring 1-4 days before rash onset >-101F and at least one of the following: prostration, headache, backache, chills, vomiting, or severe abdominal pain

Classical smallpox lesions: deep-seated firm/hard, round well-circumscribed vesicles or pustular; as they evolve, lesions may become umbilicated or confluent

Lesions in same stage of development: on any one part of the body, all the lesions are in the same stage of development

Minor criteria

Centrifugal distribution: greatest concentration of lesions on face and distal extremities

First lesions on the oral mucosal palate, face or forearms

Patient appears toxic or moribund

Slow evolution: lesions evolve from macules to papules, pustules over days (each stage lasts 1-days)

Lesions on the palms and soles

High risk:

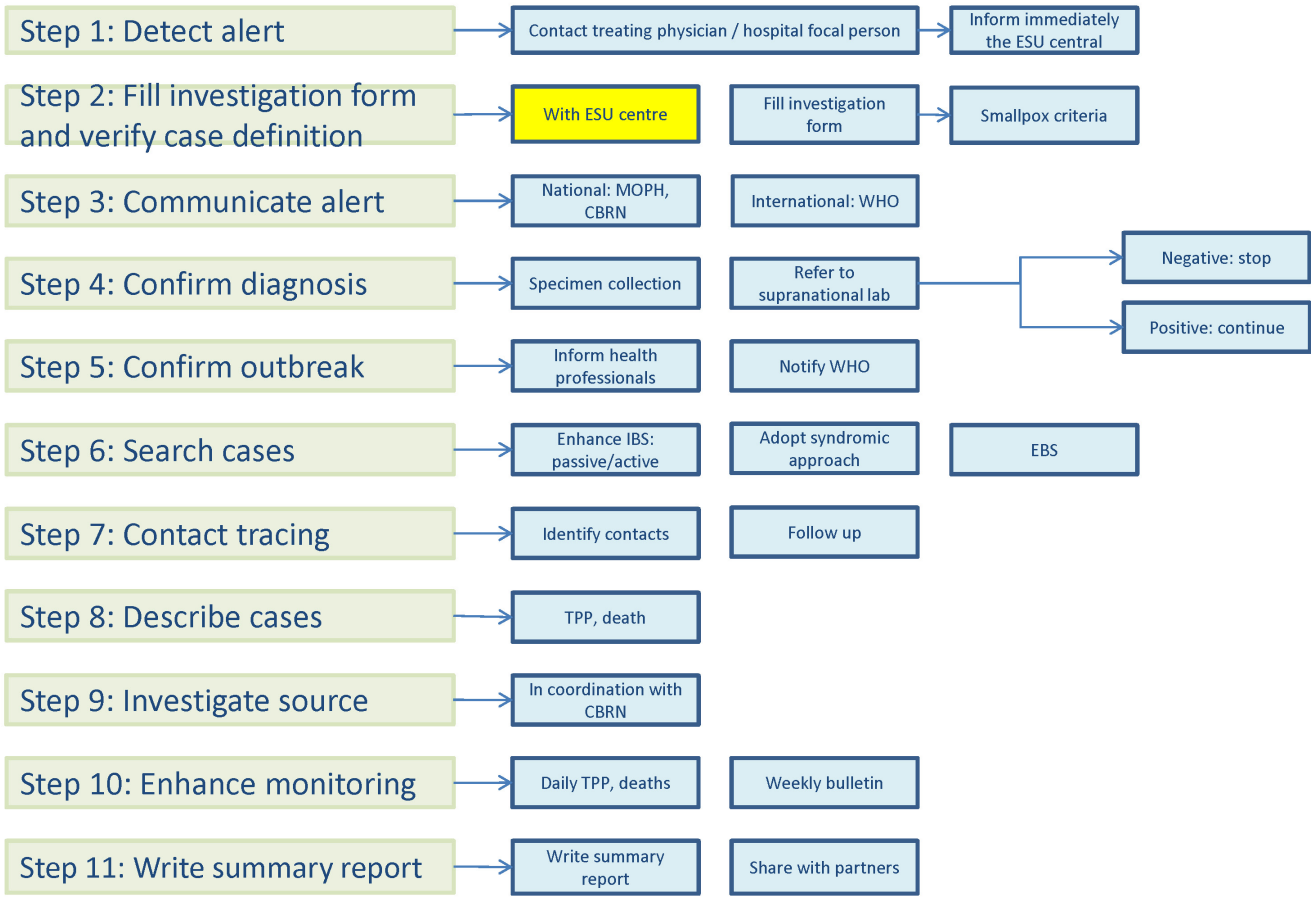
Febrile prodrome
+ Classical smallpox lesion
+ Lesions in same stage of development

Moderate risk:
Febrile prodrome + 1 other major criteria
Or
Febrile prodrome and >4 minor criteria

Low risk:

No febrile prodrome
Or
Febrile prodrome and <4 minor criteria

Figure 3: Smallpox investigation steps



Smallpox - Annex 1

Republic of Lebanon – Ministry of Public Health – Epidemiological Surveillance Program

Smallpox investigation form

|_____|

A Investigator

Name	Date of investigation	Entity/MOPH unit	Phone

B Reporter

Name	Date of reporting	Entity/Health unit	Phone

C Patient identity

Patient name	Gender	Date of birth (age)	Nationality
Type of residence	Caza of residence	Locality of residence	Phone
Detailed address			

D Clinical symptoms: Prodrome 1- 4 days before rash onset

Illness:	□Yes	□No	□Unk	Headache:	□Yes	□No	□Unk
Date first symptom:				Back pain:	□Yes	□No	□Unk
Fever:	□Yes	□No	□Unk	Abdominal pain:	□Yes	□No	□Unk
Maximum temperature:				Seriously ill:	□Yes	□No	□Unk
Chills:	□Yes	□No	□Unk	Other, specify:	□Yes	□No	□Unk
Sore throat:	□Yes	□No	□Unk				
Vomiting:	□Yes	□No	□Unk				

E Clinical symptoms: Rash

Date of rash onset			
Was the rash acute:	□Yes	□No	□Unk
Black eschar before rash:	□Yes	□No	□Unk
Generalized rash:	□Generalized	□Focal	□Unk

Smallpox investigation form

|_____|

Rash first apparition:	□Face	□Inside mouth	□Trunk
	□Arms	□Legs	□Unk
	□Other, specify		
Most dense places:	□Face or	□Scalp	□Trunk
	□Arms	□Legs	□Equally distributed
	□Other		
Specific topography:	□Palms	□Soles	□Unk
Types of lesions, now:	□Macules (flat spots)	□Papules (solid bumps)	□Vesicles (fluid filled)
	□Pustules (pus filled)	□Crusts	□Other
Most dominant type, now:	□Macules (flat spots)	□Papules (solid bumps)	□Vesicles (fluid filled)
	□Pustules (pus filled)	□Crusts	□Other
Lesions, now:	□Superficial (on top of skin)	□Deep (deep in skin)	□Other:
Number of lesions, now:	|____|		
Estimate lesions number:	□<20	□20-100	□>100
In any part, are lesions in same stade:	□Yes	□No	□Unk
Size of lesions:	□Small (1-5mm)	□Large (5-10mm)	□Other
Are there crusted lesions?	□Yes	□No	□Unk
If yes, how many days to crust	|_____|		
If yes, ichtying:	□Yes	□No	□Unk
Lymphoadenopathy:	□Yes	□No	□Unk
If yes, specify topography:			

F Chickenpox cases within 21 days before rash onset

Chicken pox in the community	□Yes	□No	□Unk
Contact with cases 10-21 days before rash	□Yes	□No	□Unk

G Other exposure within 21 days before rash onset

Contact with person with rash:	□Yes	□No	□Unk
Contact with mice:	□Yes	□No	□Unk

Smallpox investigation form

|_____|

Exposed to ticks:	□Yes	□No	□Unk
Exposed to insect bites:	□Yes	□No	□Unk
Being in woods:	□Yes	□No	□Unk
If yes, specify place and date			

H Complications

Skin surinfection:	□Yes	□No	□Unk	Arthralgia:	□Yes	□No	□Unk
Ocular corneal ulcer:	□Yes	□No	□Unk	Osteitis:	□Yes	□No	□Unk
Bronchitis:	□Yes	□No	□Unk	Hemorrhage:	□Yes	□No	□Unk
Pneumonia:	□Yes	□No	□Unk	Shock:	□Yes	□No	□Unk
Encephalitis:	□Yes	□No	□Unk	Other, specify:	□Yes	□No	□Unk

I Travel history within 3 weeks before rash onset

Country	Dates	Places	Contact with person with rash

J Vaccination

Chicken pox	□Yes, nb doses|___|	□No	□Unk
Smallpox	□Yes, nb doses|___|	□No	□Unk

K Medical history

				Specify
History of chicken pox	□Yes	□No	□Unk	
Immuno-compromised	□Yes	□No	□Unk	
Chronic diseases	□Yes	□No	□Unk	
Currently pregnant	□Yes	□No	□Unk	
Treatment with steroids	□Yes	□No	□Unk	
Chemotherapy	□Yes	□No	□Unk	
Antivirals	□Yes	□No	□Unk	
Illicit drugs	□Yes	□No	□Unk	

Smallpox investigation form

|_____|

L Occupation

Profession	
Institution	

M Primary laboratory results

Test	Date	Laboratory	Result

N Assessment

	Immediate	In 24 hours	In 48 hours	In 72 hours
Major				
Febrile prodrome				
Classical smallpox lesions				
Lesions in same stage of development				
Minor				
Centrifugal distribution				
First lesions on oral mucosal, face or forearms				
Patient appears toxic				
Evolution: from macules to papules to pustules				
Lesions on palms and soles				
Risk				
Risk assessment				

High risk: 3 major criteria
Moderate risk: febrile prodrome and another major criteria, or febrile prodrome with 4 minor criteria
Low risk: no febrile prodrome, or febrile prodrome with <4 minor criteria

Smallpox investigation form

|_____|

O Smallpox laboratory results

Specimen	Date	Laboratory	Test	Result

Specimen Collection (Source: www.cdc.gov)

Vesicular Material

1. Sanitize the patient's skin with an alcohol wipe and allow skin to dry.
2. Open the top of a vesicle or pustule with a scalpel, sterile 26-gauge needle, or slide. Collect the skin of the vesicle top in a dry, sterile 1.5- to 2-mL screw-capped tube. Label the tube.
3. Scrape the base of the vesicle or pustule with the wooden end of an applicator stick or swab and smear the scrapings onto a glass or plastic light microscope slide. Allow slide to dry for 10 minutes.
4. Label the slide and place it in a slide holder. To prevent cross-contamination, do not place slides from more than one patient in the same slide holder.
5. Take another slide, and touch it repetitively to the opened lesion using progressive movements of the slide in order to make a touch prep. Allow slide to dry for 10 minutes.
6. Label the slides as touch preps and place in the same slide holder. To prevent cross-contamination, do not place slides from more than one patient in the same slide holder.
7. If plastic-coated electron microscopic (EM) grids are available, lightly touch the shiny side of 3 EM grids to the base of the open lesion, allow EM grids to air-dry for 10 minutes, and place grids in an appropriately labeled grid box. Use varying degree of pressure (minimal, light, and moderately firm) in application of the 3 grids to the unroofed lesion. EM grids and collection materials will soon be available at Laboratory Response Network (LRN) sites.
8. If a slide or EM grid is not available, swab the base of the lesion with a polyester or cotton swab, place in screw-capped plastic vial, break off applicator handle, and seal.
9. Repeat this procedure for 2 or more lesions.

Scab Specimens

1. Sanitize the patient's skin with an alcohol wipe and allow skin to dry.
2. Use a 26-gauge needle to remove 2 to 4 scabs.
3. Place 1 or 2 scabs in each of 2 dry, sterile screw-capped plastic tubes.
4. Wrap parafilm around the juncture of the cap and vial.
5. Label the tube.

Biopsy Lesions

(At least 2 specimens obtained by using a 3.5- or 4-mm punch biopsy kit.)

1. Use sterile technique and appropriate anesthetic.
2. Place 1 sample in formalin for immunohistochemical or histopathologic evaluation and store at room temperature.
3. The second specimen should be placed dry (do not add transport medium) in a sterile 1.5- to 2-mL screw-capped container (do not add transport medium).
4. Refrigerate if shipment occurs within 24 hours; otherwise, the specimen should be frozen.

Serum Specimens

1. Draw 10 mL of blood for serum separation and collection.
2. Send serum, stored refrigerated.

Notes

Notes

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Surveillance Standard Operating Procedure: Tetanus

Version 1
MOPH circular no. 57
(22nd Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps be followed in by the epidemiological surveillance program in case of tetanus alert or outbreak.

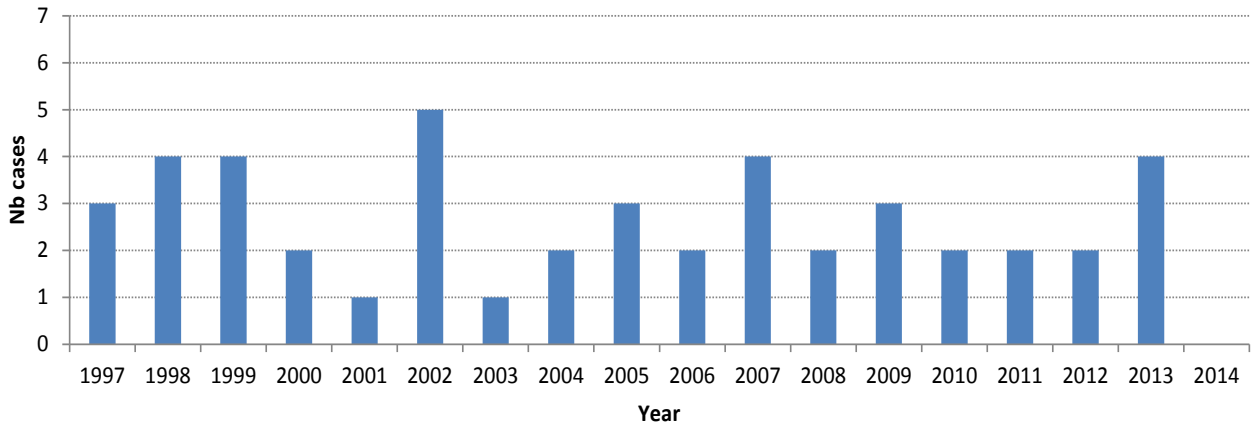
II. Generalities

Tetanus	
Agent	- Bacteria: clostridium tetani or tetanus bacillus - Toxin producer
Incubation period	3-21 days (1 day to several months), and commonly 10 days
Period of communicability	No person-to-person
Reservoir	- Intestines of horses, animals, and humans - Tetanus spores are ubiquitous in environment and soil.
Modes of transmission	- Skin entry: Introduction of spores through puncture wound contaminated with soil, street dust or animal or human feces - Rarely by injectable contaminated drugs
Clinical presentation	- Muscle contraction, trismus (masseter contraction), neck/ trunk spasms, opisthotonos - Case fatality from 10% to 90% depending on availability of intensive care
Worldwide	- Worldwide - WHO estimates 282000 deaths in 2001 - Risk factors: Agriculture work, intra-veinous drug users...
Lebanon	0-2 cases per year
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease-based surveillance
Investigation: data about case	Wound history, vaccination status, use of injectable drugs...
Investigation: clinical specimen from case	None
Investigation: data about contacts	If use of injectable drugs: vaccination status
Investigation: clinical specimen from contacts	None
Test	None
Laboratories	None
Outbreak level	- If the observed incidence exceeds the expected one - Or if there is a cluster with at least 2 epi-linked cases
Notification to WHO	According to IHR(2005) criteria
Tetanus case definition (MOPH circular no. 53 dated on the 10th April 2007)	
Confirmed case	A clinically compatible case as reported by a physician: Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw leading to trismus, or the muscles of the neck), abdominal rigidity, opisthotonos, generalized muscle spasms, and occasional risus sardonicus, without other apparent medical cause.

Forms	
Reporting	Standard reporting form
Investigation	For case: specific tetanus investigation form (MOPH circular no. 98 dated on the 26th October 2010)

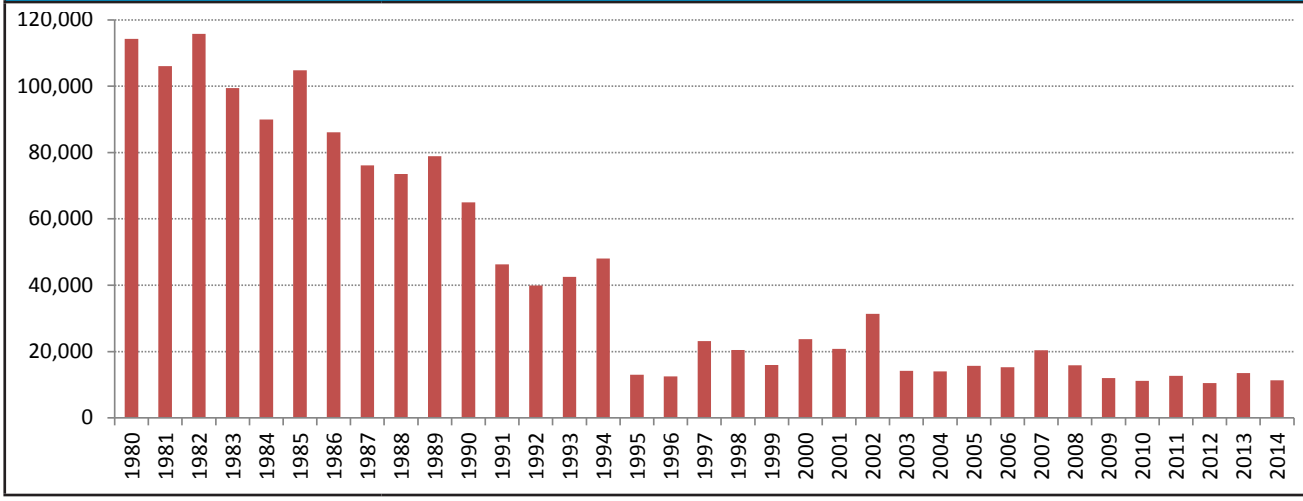
National figures

Figure 1: Reported Tetanus cases, Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported Tetanus cases in the world, 1997-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance are:

- Monitor incidence of tetanus cases
- Investigate the cases
- Identify risk factors.

IV. Alert and outbreaks thresholds

An **alert** is defined by any case of tetanus.

An **outbreak** is defined when:

- The observed incidence exceeds the expected one (based on past 10 years)
- Or least 2 cases epi-linked.

V. Procedural steps

The steps described below are recommended for investigation of any alert or outbreak of tetanus. The steps are summarized in figure (3).

Step 1: Verify the case

In case of reporting of tetanus, the Esumoh caza team contacts the treating physician, the hospital or the medical center. Are they reporting a tetanus?

Once verified, the Esumoh caza team informs the mohafaza and central levels.

Step 2: Collect data

For each case of tetanus, the Esumoh team visits the patient at the hospital. The patint, the parents and the treating physician are interviewed. If the patient passed away, a copy of the medical file is requested.

An investigation form is filled (Annex 1). The investigation form includes the following information:

- Demography: age, gender, nationality
- Vaccination status
- Illness
- Case management (ICU, mechanical ventilation…)
- Outcome
- Potential point of entry of the infection...

Copy of the filled investigation form is sent to the Esumoh mohafaza and central levels.

There is no laboratory confirmation for tetanus.

Step 3: Investigate the vaccination status

a) Patient & family interview

From the family and the patient, the needed information is collected:

- Routine vaccination in childhood
- Booster at adulthood
- Care given for identified point of entry.

b) Healthcare interview

If the patient consulted the health facilities at the time of infection, the consulted health facility is interviewed.

The questions will be oriented on the tetanus prevention policy in place:

- Assessing tetanus risk
- Prescription of tetanus serum and vaccine
- Administration of tetanus serum and vaccine.

Step 4: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of exposure, place of care, in term of locality, caza and mohafaza
- Person: age group, gender, nationality
- Disease: symptoms, outcome
- Vaccination status and tetanus prevention measures taken.

b) Confirm the outbreak

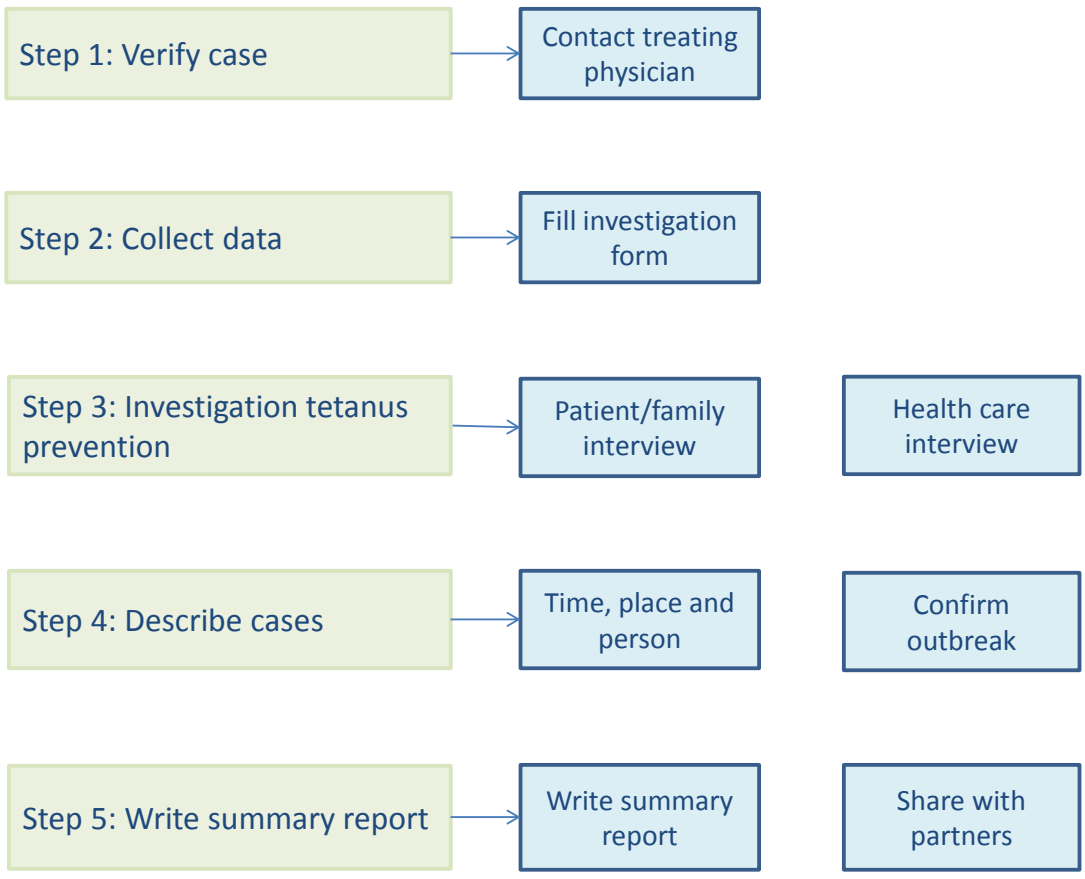
Based on the epidemiological findings, the outbreak is declared.

The Esumoh central team informs the concerned units at the MOPH, in particular the EPI. The MOPH issues memos to inform the health professionals and the health facilities, with emphasis on the preventive measures.

Step 5: Write summary report

Once the event ended, the Esumoh central staff prepares a summary report describing the case. The report is shared with EPI and other partners.

Figure 3: Tetanus investigation steps



Tetanus - Annex 1

Republic of Lebanon - Ministry of Public Health – Epidemiological Surveillance Program

Tetanos Investigation Form

To be filled by the Ministry of Public Health team

1. Patient identity

Name _____ Nationality _____

Date of birth _____ Caza _____

Gender _____ Locality _____

Occupation _____ Phone n° _____

2. Clinical details

Date of onset _____

Clinical signs: ☐ Trismus ☐ Respiratory distress

☐ Spasticity ☐ Autonomic dysfunction

☐ Dysphagia ☐ Spasms

Severity:
- ☐ Grade 1 (mild): Mild to moderate trismus and general spasticity, little or no dysphagia, no respiratory embarrassment
- ☐ Grade 2 (moderate): Moderate trismus and general spasticity, some dysphagia and respiratory embarrassment, and fleeting spasm occur
- ☐ Grade 3a (severe): Severe trismus and general spasticity, severe dysphagia and respiratory difficulties, and severe and prolonged spasms (both spontaneous and on stimulation)
- ☐ Grade 3b (very severe): As for severe tetanus plus autonomic dysfunction, particularly sympathetic overdrive

3. Treatment

Date of hospitalization _____ Hospital _____

Admission to ICU ☐, nb of days: |_____| Physician _____

Mechanical ventilation ☐, nb of days: |_____| Phone n° _____

Tetanus ImmunoGlobulin ☐

TIG before tetanus onset ☐

Date of TIG _____

4. Outcome

Recovery ☐ Date of discharge _____

Sequelae ☐ Specify sequela _____

Death ☐ Date of death _____

5. Wound history

Acute wound identified ☐ Medical care given ☐

Date of wound _____ Tetanus Toxoid given ☐

Soil contamination ☐ Date TT given _____

Wound type: ☐ New ☐ Chronic ☐ Unspecified
Specify:

Wound site: ☐ Head ☐ Trunk ☐ Upper limb
☐ Lower limb ☐ Unspecified
Specify:

Environment: ☐ Home ☐ Yard ☐ Work
☐ Street ☐ Other ☐ Unspecified
Specify:

6. Patient history

Diabetes ☐ ☐ Insulino-dependent

Parental drug Abuse ☐ Drugs: _____

7. Vaccination

Nb of vaccine doses |____| Date last vaccine _____

Investigator: Date:

MOPH circular 98 dated on the 26th October 2010

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Ministère de la Santé Publique
Direction de la Prévention

TETANOS NEONATAL:
Formulaire d'investigation
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Numéro:

A- Déclaration

Date de déclaration	Hôpital / structure santé	Déclaré par	Date enquête	Enquêteur

B- Identification

Nom de famille	Prénom bébé	Prénom père	Prénom mère	Nationalité
Sexe	Date de naissance du bébé	Caza	Commune	Téléphone
☐ Garçon ☐ Fille				
Adresse complète				

C- Situation vaccinale de la mère

La mère est-elle vaccinée contre le tétanos ?	Date dernière dose reçue	La vaccination est-elle documentée ?
☐ Oui ☐ Non		☐ Oui ☐ Non

D- Soins prénatals

Nombre de consultations prénatales	Lieu des consultations prénatales	Hospitalisation Durant la grossesse	Date hospitalisation	Motifs d'hospitalisation
	☐ Hôpital ☐ Cabinet médical ☐ Centre médical ☐ Dispensaire ☐ Autre :	☐ Oui ☐ Non		

E- Naissance du bébé

Lieu d'accouchement, précisez	Qui a pratiqué l'accouchement ?	Nom de la personne qui a pratiqué l'accouchement
☐ Hôpital : ☐ Centre médical : ☐ Domicile : ☐ Autre:	☐ Médecin ☐ Sage-femme ☐ Matrone ☐ Autre	
Si accouchement à domicile : Sur quelle surface l'accouchement a-t-il été pratiqué?	La surface semblait-elle propre ?	La personne qui a pratiqué l'accouchement s'est-elle lavée les mains?
☐ Drap ☐ Table non couverte ☐ Sol de terre	☐ Oui ☐ Non	☐ Oui ☐ Non
Quel instrument a-t-on utilisé pour sectionner le cordon?	Le matériel a-t-il été nettoyé et stérilisé dans l'eau bouillante avant l'emploi? Ou semblait-il neuf?	Comment a-t-on traité ou pansé le moignon du cordon?
	☐ Oui ☐ Non	

Circulaire du MSP numéro 75 du 27 aout 2005

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Numéro:	Nom du bébé :

F- Symptômes

Date début de la maladie	Le bébé a-t-il tété et pleuré normalement pendant les 2 premiers jours de la vie ?	Si non, décrivez les faits :
	☐ Oui ☐ Non	
	Passé les 2 premiers jours de la vie, le bébé a-t-il eu du mal à téter?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il été atteint de raideur?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il eu des convulsions?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il eu des convulsions réactionnelles ou des crises convulsives?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Y a-t-il eu d'autres symptômes?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	

G- Traitement et issue

Le bébé a-t-il été hospitalisé ?	Si oui, nom hôpital	Date d'hospitalisation
☐ Oui ☐ Non		
Diagnostic	Le bébé est-il mort ?	Date de décès
	☐ Oui ☐ Non	

H- Remarques

Notes de la famille	Notes du médecin traitant	Notes de l'enquêteur

Notes

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Surveillance Standard Operating Procedure:
Tetanus Neonatorum

Version 1
MOPH circular no. 58
(22nd Jan 2015)

Contents

I. Purpose

The purpose of this standard operating procedure (SOP) is to describe the steps be followed in by the epidemiological surveillance program in case of alert or outbreak of tetanus neonatorum.

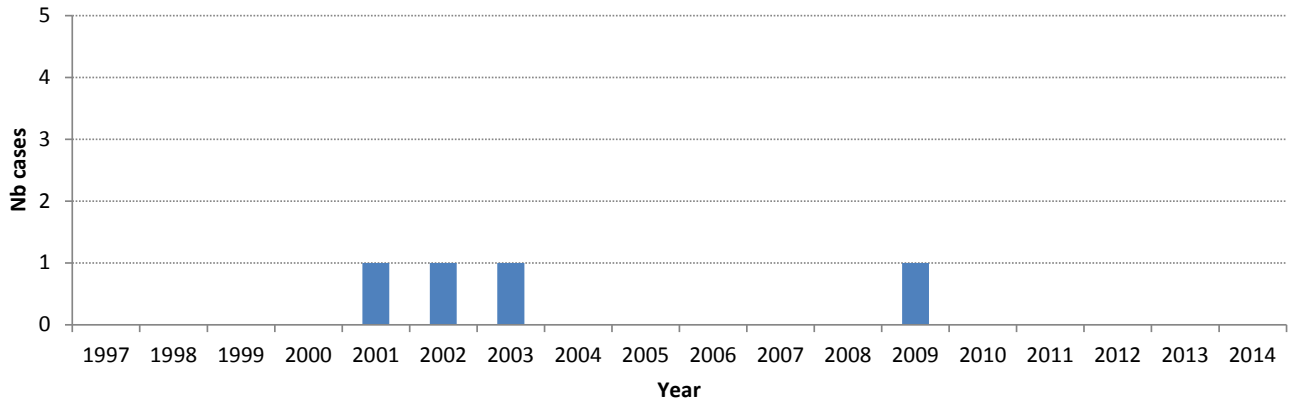
II. Generalities

Tetanus neonatorum	
Agent	- Bacteria: clostridium tetani or tetanus bacillus - Toxin producer
Incubation period	6 days (3-28 days)
Period of communicability	No person-to-person
Reservoir	- Intestines of horses, animals, and humans - Tetanus spores are ubiquitous in environment and soil.
Modes of transmission	- During delivery: introduction via the umbilical cord of tetanus spores through the use of an unclean instrument to cut the cord - After delivery: by dressing the umbilical stumps with substance heavily contaminated with tetanus spores
Clinical presentation	- Few days after birth the infant develops progressively trismus, generalized stiffness, spasms, convulsions and opisthotonos. - Typically, an infant who sucks and cries well for the first few days after birth, and then shows progressive difficulty and inability to feed. - Complications: 80% as case fatality, 5-20% of mental retardation
Worldwide	- Worldwide - WHO estimates 200000 deaths each year, mainly in developing countries.
Lebanon	0-1 case per year
Control objective	Elimination
Surveillance and Investigation	
Surveillance approach	Disease-based approach
Investigation: data about case	Delivery circumstances, umbilical wounds…
Investigation: clinical specimen from case	None
Investigation: data about contacts	None
Investigation: clinical specimen from contacts	None
Test	None
Laboratories	None
Outbreak level	At least 1 confirmed case
Notification to WHO	According to the IHR(2005) criteria
Control	
Primary prevention	- Clean deliveries - Tetanus toxoid for women of childbearing age
Post-exposure prevention	Tetanus toxoids during pregnancy

Case management	Admission to intensive care unit
Mass prevention	Improve tetanus immunization
Tetanus neonatorum case definition (MOPH circular no. 108 dated on the 6th September 2006)	
Confirmed case	Any neonate with a normal ability to suck and cry during the first 2 days of life, and: - Who, between 3 and 28 days of age cannot suck normally - Or becomes stiff or has convulsions (jerking of the muscles) or both
Suspected case	- Any neonatal death between 3 and 28 days of age in which the cause of death is unknown - Or any neonate reported as having suffered from neonatal tetanus between 3 and 28 days of age and not investigated
Forms	
Reporting	Standard reporting form
Investigation	For case: specific neonatal tetanus investigation form (MOPH circular no. 75 dated on the 27th August 2005)

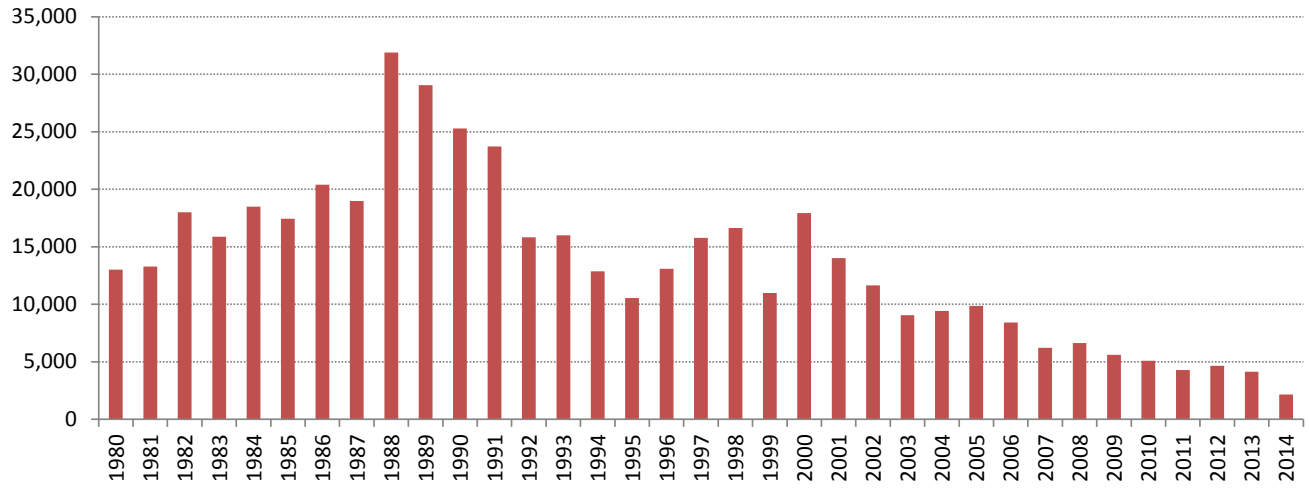
National figures

Figure 1: Reported neonatal tetanus in Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported neonatal tetanus in the world, 1980-2014 (Source: WHO)



III. Objectives of surveillance

The objectives of surveillance are:
- Detect and investigate neonatal tetanus cases
- Identify risk factors
- Document the elimination status for tetanus neonatorum.

IV. Alert and outbreak thresholds

An **alert** is defined by any suspected case of tetanus neonatorum.
An **outbreak** is defined a confirmed case of tetanus neonatorum.

V. Procedural steps

The steps described below are recommended for investigation of any alert or outbreak of neonatal tetanus. The steps are summarized in figure (4).

Step 1: Verify the case

In case of reporting of neonatal tetanus, the Esumoh caza team contacts the treating physician, the hospital or the medical center. Are they reporting a neonatal tetanus?

Once verified, the Esumoh caza team informs the mohafaza and central levels.

Step 2: Collect data

For each case of neonatal tetanus, the Esumoh team visits the patient at the hospital.
The parents and the treating physician are interviewed. If the patient passed away, a copy of the medical file is requested.

An investigation form is filled (Annexes 1 and 2). The investigation form includes the following information:
- Demography
- Illness
- Case management (ICU, mechanical ventilation…)
- Outcome
- Delivery circumstances and neonatal care.

Copy of the filled investigation form is sent to the Esumoh mohafaza and central levels.

Step 3: Confirm the case

Based on the clinical findings, the case is confirmed. The outbreak is then declared. The Esumoh central team informs the MOPH concerned units, in particular the EPI.

There is no laboratory test for neonatal tetanus.

Step 4: Investigate the point of entry

a) Family interview

From the family, the needed information is collected related to:
- The delivery:
  - Place of delivery: household, clinic, hospital
  - Presence of health professional for delivery act
  - Profile of the health professional who did the delivery...
- The ombilic:
  - Manipulation of the ombilic / navel
  - Daily care
  - Use of foreign material (coin…)

b) Delivery care interview

If the healthcare was identified, the person who conducted the delivery is interviewed face-to-face. Usually, the neonatal tetanus cases are observed for babies delivered at home by local "matronne" .

The questions will be oriented on the safe delivery conditions:

- Training:
  - Did the person had any formal professional training?
  - Did the person receive any formal training on safe delivery?
- Delivery:
  - Use of material: sterilized or not
  - Type of material used
  - Sterilization or disinfection of used material
  - Methods used for disinfection and sterilization...

Step 5: Describe cases

a) Time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence, place of exposure, in term of locality, caza and mohafaza
- Person: age group, gender, nationality
- Disease: symptoms, outcome
- Exposure: place of delivery, health professional presence at delivery, potential point of entry...

b) Incidence rate

The rate of neonatal tetanus is computed = number of neonatal tetanus / 1000 live births.
The elimination needs to have a rate < 1/1000 live births.

Step 6: Write summary report

Once the event is ended, the Esumoh central staff prepares a summary report describing the case. The report is shared with EPI and the reproductive health unit.
The summary report is needed to document the epidemiology history of neonatal tetanus in Lebanon.

Figure 3: Neonatal tetanus case classification

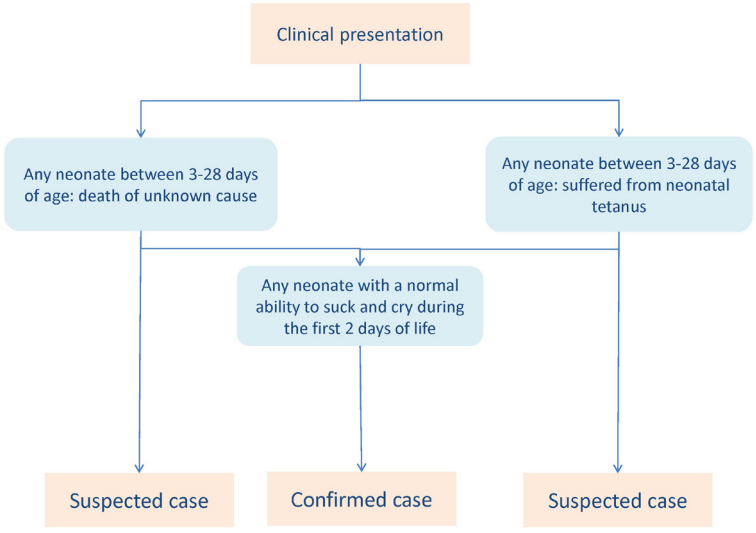
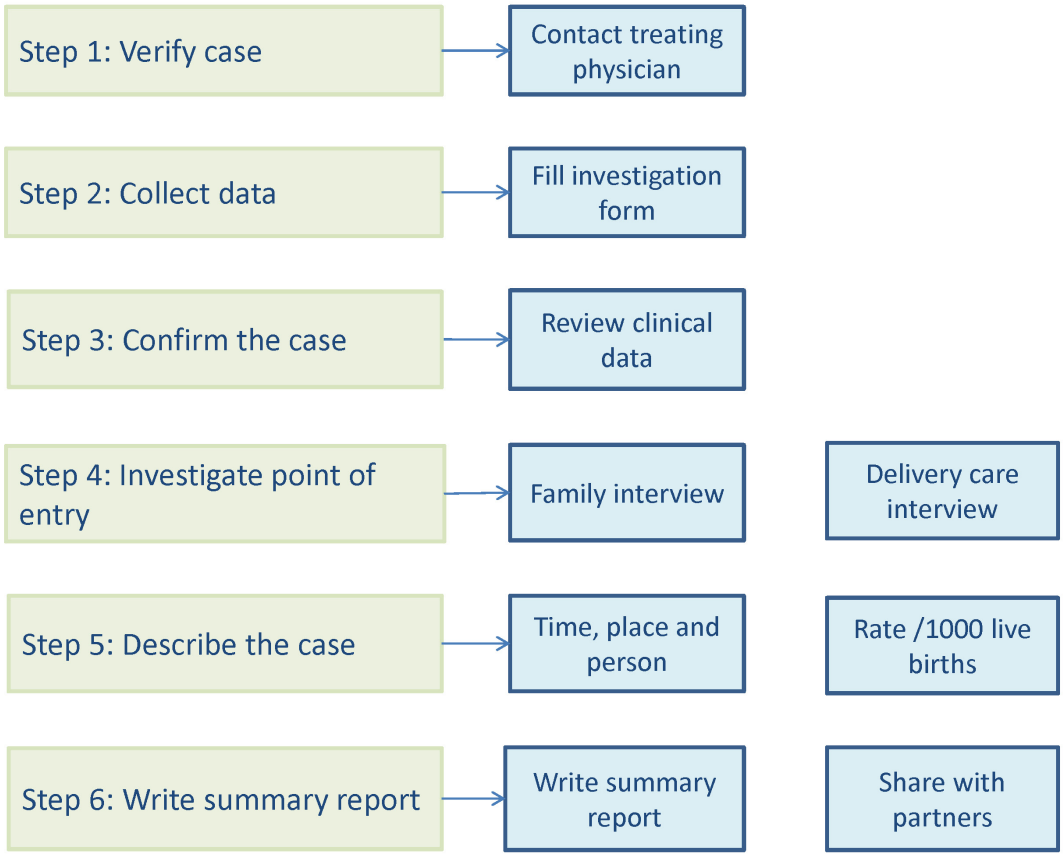


Figure 4: Neonatal tetanus investigation steps



الجمهورية اللبنانية
وزارة الصحة العامة
مديرية الوقاية الصحية

الكزاز الوليدي:
استمارة تقصي
صفحة 1 / 2

رقم الاستمارة:

1. الإبلاغ

تاريخ الإبلاغ	المستشفى	اسم المبلغ	تاريخ التقصي	اسم المحقق

2. هوية الطفل

اسم العائلة	اسم الطفل	اسم الأب	اسم الأم	الجنسية
جنس الطفل	تاريخ الولادة	القضاء	المدينة / القرية	رقم الهاتف
☐ صبي ☐ بنت				
العنوان الكامل				

3. الوضع التلقيحي للام ضد الكزاز

هل تلقت الأم لقاحات ضد الكزاز؟	تاريخ آخر جرعة لقاح ضد الكزاز	هل الوضع التلقيحي موثق / مدون؟
☐ نعم ☐ كلا		☐ نعم ☐ كلا

4. العناية بالأم الحامل / قبل ولادة الطفل

عدد المعاينات الطبية خلال الحمل	مكان إجراء المعاينات الطبية	هل أدخلت الأم المستشفى خلال الحمل	تاريخ دخول المستشفى	سبب دخول المستشفى خلال الحمل
	☐ مستشفى ☐ عيادة طبية ☐ مركز صحي ☐ مستوصف ☐ غيره، حدد:	☐ نعم ☐ كلا		

5. ولادة الطفل

حدد مكان الولادة	من قام بعملية التوليد؟	اسم الشخص الذي قام بعملية التوليد
☐ مستشفى: ☐ مركز صحي: ☐ المنزل ☐ غيره، حدد:	☐ طبيب ☐ قابلة قانونية ☐ داية ☐ غيره، حدد	
<u>في حال تم التوليد في المنزل:</u> على أي مسطح، تمت عملية التوليد ؟	هل بدا المسطح نظيف؟	هل الشخص الذي قام بالتوليد قد غسل يديه؟
☐ شرشف ☐ طاولة غير مغطاة ☐ أرضية المنزل	☐ نعم ☐ كلا	☐ نعم ☐ كلا
اي آلة استعملت لقطع حبل الصرة؟	هل تم تنظيف وتعقيم آلات بالمياه الساخنة؟ هل بدت جديدة ؟	كيف تم معالجة حبل الصرة؟
	☐ نعم ☐ كلا	

الجمهورية اللبنانية
وزارة الصحة العامة
مديرية الوقاية الصحية

الكزاز الوليدي:
استمارة تقصي
صفحة 1 / 2

رقم الاستمارة:

1. الإبلاغ

تاريخ الإبلاغ	المستشفى	اسم المبلغ	تاريخ التقصي	اسم المحقق

2. هوية الطفل

اسم العائلة	اسم الطفل	اسم الأب	اسم الأم	الجنسية
جنس الطفل	تاريخ الولادة	القضاء	المدينة / القرية	رقم الهاتف
☐ صبي ☐ بنت				
العنوان الكامل				

3. الوضع التلقيحي للام ضد الكزاز

هل تلقت الأم لقاحات ضد الكزاز؟	تاريخ آخر جرعة لقاح ضد الكزاز	هل الوضع التلقيحي موثق / مدون؟
☐ نعم ☐ كلا		☐ نعم ☐ كلا

4. العناية بالأم الحامل / قبل ولادة الطفل

عدد المعاينات الطبية خلال الحمل	مكان إجراء المعاينات الطبية	هل أدخلت الأم المستشفى خلال الحمل	تاريخ دخول المستشفى	سبب دخول المستشفى خلال الحمل
	☐ مستشفى ☐ عيادة طبية ☐ مركز صحي ☐ مستوصف ☐ غيره، حدد:	☐ نعم ☐ كلا		

5. ولادة الطفل

حدد مكان الولادة	من قام بعملية التوليد؟	اسم الشخص الذي قام بعملية التوليد
☐ مستشفى: ☐ مركز صحي: ☐ المنزل ☐ غيره، حدد:	☐ طبيب ☐ قابلة قانونية ☐ داية ☐ غيره، حدد	
<u>في حال تم التوليد في المنزل:</u> على أي مسطح، تمت عملية التوليد ؟	هل بدا المسطح نظيف؟	هل الشخص الذي قام بالتوليد قد غسل يديه؟
☐ شرشف ☐ طاولة غير مغطاة ☐ أرضية المنزل	☐ نعم ☐ كلا	☐ نعم ☐ كلا
اي آلة استعملت لقطع حبل الصرة؟	هل تم تنظيف وتعقيم آلات بالمياه الساخنة؟ هل بدت جديدة ؟	كيف تم معالجة حبل الصرة؟
	☐ نعم ☐ كلا	

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Ministère de la Santé Publique
Direction de la Prévention

TETANOS NEONATAL:
Formulaire d'investigation
Page 1/2

Numéro:

A- Déclaration

Date de déclaration	Hôpital / structure santé	Déclaré par	Date enquête	Enquêteur

B- Identification

Nom de famille	Prénom bébé	Prénom père	Prénom mère	Nationalité
Sexe	**Date de naissance du bébé**	**Caza**	**Commune**	**Téléphone**
☐ Garçon ☐ Fille				
Adresse complète				

C- Situation vaccinale de la mère

La mère est-elle vaccinée contre le tétanos ?	Date dernière dose reçue	La vaccination est-elle documentée ?
☐ Oui ☐ Non		☐ Oui ☐ Non

D- Soins prénatals

Nombre de consultations prénatales	Lieu des consultations prénatales	Hospitalisation Durant la grossesse	Date hospitalisation	Motifs d'hospitalisation
	☐ Hôpital ☐ Cabinet médical ☐ Centre médical ☐ Dispensaire ☐ Autre :	☐ Oui ☐ Non		

E- Naissance du bébé

Lieu d'accouchement, précisez	Qui a pratiqué l'accouchement ?	Nom de la personne qui a pratiqué l'accouchement
☐ Hôpital : ☐ Centre médical : ☐ Domicile : ☐ Autre:	☐ Médecin ☐ Sage-femme ☐ Matrone ☐ Autre	
Si accouchement à domicile : Sur quelle surface l'accouchement a-t-il été pratiqué?	La surface semblait-elle propre ?	La personne qui a pratiqué l'accouchement s'est-elle lavée les mains?
☐ Drap ☐ Table non couverte ☐ Sol de terre	☐ Oui ☐ Non	☐ Oui ☐ Non
Quel instrument a-t-on utilisé pour sectionner le cordon?	Le matériel a-t-il été nettoyé et stérilisé dans l'eau bouillante avant l'emploi? Ou semblait-il neuf?	Comment a-t-on traité ou pansé le moignon du cordon?
	☐ Oui ☐ Non	

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République Libanaise
Ministère de la Santé Publique
Direction de la Prévention

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Numéro:	Nom du bébé :

F- Symptômes

Date début de la maladie	Le bébé a-t-il tété et pleuré normalement pendant les 2 premiers jours de la vie ?	Si non, décrivez les faits :
	☐ Oui ☐ Non	
	Passé les 2 premiers jours de la vie, le bébé a-t-il eu du mal à téter?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il été atteint de raideur?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il eu des convulsions?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Le bébé a-t-il eu des convulsions réactionnelles ou des crises convulsives?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	
	Y a-t-il eu d'autres symptômes?	Si oui, décrivez les faits :
	☐ Oui ☐ Non	

G- Traitement et issue

Le bébé a-t-il été hospitalisé ?	Si oui, nom hôpital	Date d'hospitalisation
☐ Oui ☐ Non		
Diagnostic	Le bébé est-il mort ?	Date de décès
	☐ Oui ☐ Non	

H- Remarques

Notes de la famille	Notes du médecin traitant	Notes de l'enquêteur

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Notes

Notes

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Abbreviations

Abbrevation	Meaning
AFP	Acute Flaccid Paralysis
AIDS	Acquired Immune Deficiency Syndrome
ARDS	Acute Respiratory Distress Syndrome
BAL	Broncho-Alveolar Lavage
BSE	Bovine Spongiform Encephalopathy
CBC	Complete Blood Count
CBRN	Chemical Biological Radio-Nuclear
CCHF	Crieman-Congo Hemorrhagic Fever
CD	Communicable Diseases
CFR	Case Fatality Rate
CNS	Central Nervous System
COPD	Chronic Obstructive Pulmonary Disease
CRS	Congenital Rubella Syndrome
CSF	Cerebral Spinal Fluid
DG	Director General
EBS	Event-Based Surveillance
EIA	Enzyme-Linked Immunoassay
Elisa	Enzyme-Linked Immunosorbent assay
EPI	Expanded Program for Immunization
Esumoh	Epidemiology Surveillance Program
HAV	Hepatitis A Virus
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HDV	Hepatitis D Virus
HEV	Hepatitis E Virus
Hib	Haemophilus Influenza b
HIV	Human Immunodeficiency Virus
HM	Hemorrhagic Fever
HTLV1	Human T-cell Lymphotropic Virus 1
IATA	International Air Transport Association
IBS	Indicator-Based Surveillance
ICU	Intensive Care Unit
IHR (2005)	International Health Regulations (2005)
IPV	Inactivated Polio Vaccine
IVDU	Intravenous Drug User
KG	Kindergarten
MEHE	Ministry of Education and High Education
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
MEW	Ministry of Energy and Water
MOA	Ministry of Agriculture
MOPH	Ministry of Public Health
NEG	National Expert Group

NGO	Non-Governemental Organization
NIC	National Influenza Center
NM	Neisseria Meningitidis
OPV	Oral Polio Vaccine
PA	Particle Agglutination
PCR	Polymerase Chain Reaction
PEP	Post-Exporure Prevention
PHEIC	Public Health Event of International Concern
RT-PCR	Reverse Transcription Polymerase Chain Reaction
SARI	Severe Acute Respiratory Infection
SARS-CoV	Severe Acute Respiratory Syndrome Coronavirus
SAT	Serum Agglutination Test
SOP	Standard Operating Procedure
SP	Streptococcus Pneumoniae
TB	Tuberculosis
UNHCR	United Nations Refugee Agency / Office of the United nations High Commissioner for Refugees
Unicef	United Nations Children's Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
VPD	Vaccine Preventable Disease
VTM	Viral Transport Media
WHO	World Health Organization

Medical coding

Disease	ICD-10 code
Acute Flaccid Paralysis	A80, G04, G37, G54, G56, G57, G58, G61, G62, G72, G82, G83
Acute poliomyelitis	A80
Anthrax	A22
Cholera	A00
Congenital Rubella Syndrome	P35.0
Diphtheria	A36
Food Poisoning	A05
Food poisoning: Botulism	A05.1
Food Poisoning: Trichonosis	B75
Hemorrhagic Fever	A99
Hemorrhagic Fever: CCHF	A98.0
Hemorrhagic Fever: Dengue	A91
Hemorrhagic Fever: Ebola viral disease	A98.4
Hemorrhagic Fever: Marbrug viral disease	A98.3
Hemorrhagic Fever: Rift Valley	A92.4
Hemorrhagic Fever: Yellow fever	A95
Invasive Coronavirus	(B34.2)
Measles	B05
Meningitis	A87, G00, G01, G02, G03
Meningitis: Haemophilus influenza b	G00.0
Meningitis: Listeria	A32.1
Meningitis: West Nile fever	A92.3
Meningococcal Infection	A39
Mumps	B26
Novel Influenza	(J10)
Pertussis	A37
Plague	A20
Rabies	A82
Rubella	B06
Smallpox	B03
Tetanus	A33, A34, A35
Tetanus neonatorum	A33

Notes

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