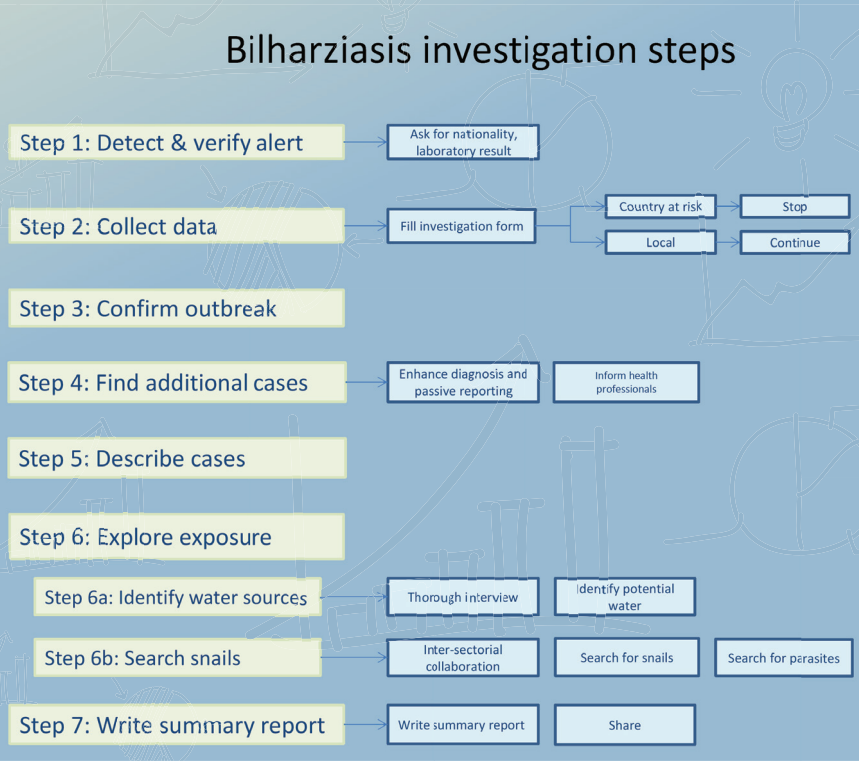
REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH
Epidemiology Surveillance Program

Surveillance Standard Operating Procedures

Part (2): Weekly 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

Surveillance
Standard Operating Procedures

Part (2): Weekly notifiable communicable diseases

2015

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

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Surveillance Standard Operating Procedure: Bilharziasis/Schistosomasis

Version 1
MOPH circular no. 41
(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 notification of any alert of Bilharziasis.

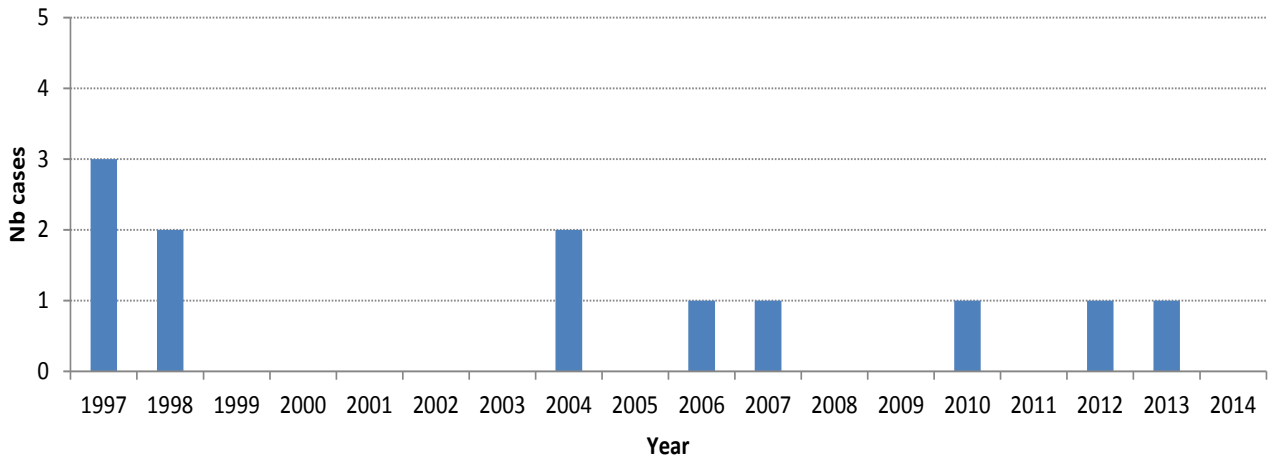
II Generalities

Bilharziasis	
Agent	Fluke worms: Schistosoma haemotobium, S. mansoni, S. japonicum, S. intercalatum, S. mekongi
Incubation	2-6 weeks
Period of communicability	No person-to-person transmission
Reservoir	- Humans, rodents - Intermediate snail hosts: Bulinus (S. Haematobium), Biomphalania (S. Mansoni)
Modes of transmission	- Skin penetration of larvae (cercaviae) in contaminated water - Eggs of schistosoma leave the human body via urine and fees. Eggs hatch in water and liberate larvas (miracidia) that penetrate into freshwater snail host (genus Bulinus or genus Biomphalania). Several weeks after, larvas (cercariae) emerge from snails and penetrate human skin while swimming, wading, or washing…
Clinical presentation	- Parasite living in mesenteric / vesical veins - Urinary form: hematuria (S. Haemotobium) - Intestinal/hepatic form: gastro-intestinal symptoms with or without hepato(spleno)megaly
Worldwide	- Worldwide - S. Mansoni in Africa, Middle East and South America - S. Haematobium in Africa and Middle East
Lebanon	Eliminated in the 60s
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Nationality, travel to endemic countries…
Investigation: clinical specimen from case	Urine
Investigation: data about contacts	-
Investigation: clinical specimen from contacts	-
Test	Microscopic urine exam
Laboratories	Clinical laboratories
Outbreak level	At least 1 local case
Notification to WHO	According to International Health Regulations (2005)

Urinary schistosomiasis or Bilharziasis case definition (MOPH circular no. 130 dated on the 22nd September 2006)	
Confirmed case	Case confirmed by laboratory testing with presence of eggs of Schistosoma haematobium in urine at microscope observation.
Forms	
Reporting	Standard reporting form
Investigation	Bilharzia investigation form (MOPH circular no.16 dated on the 19th January 2015)

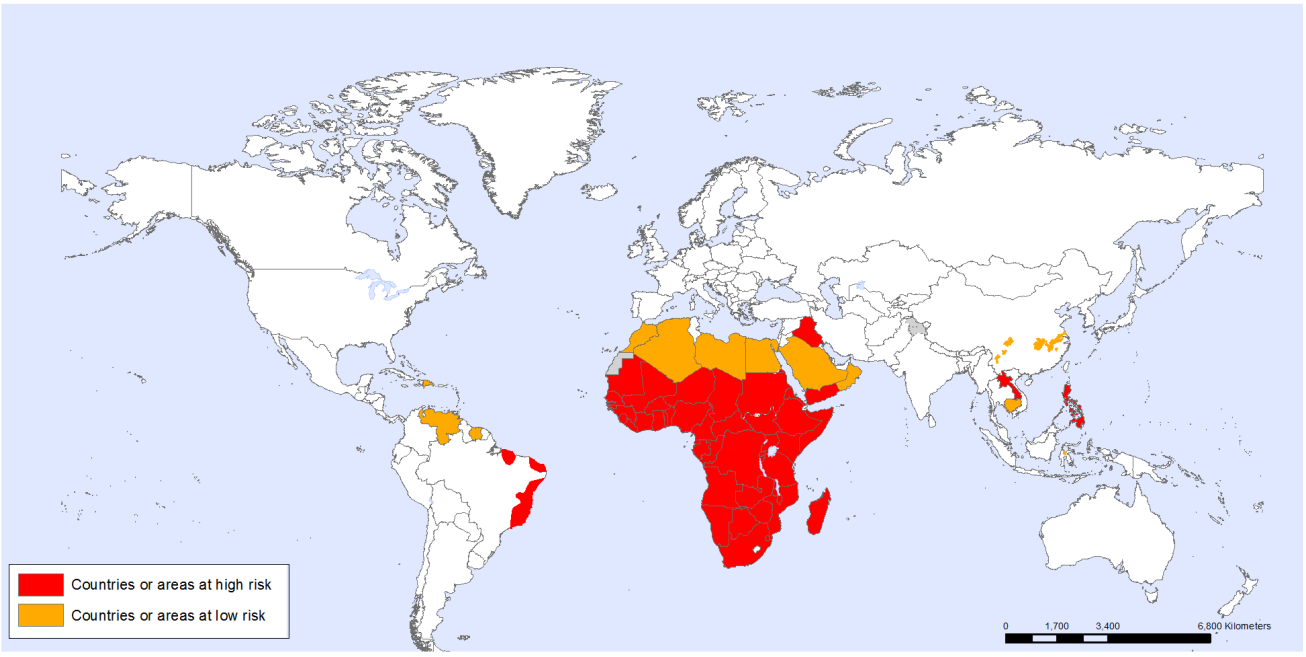
National figures

Figure 1: Reported cases of Bilharziasis, Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Areas at risk of Shistosomiasis, Worldwide, 2014 (Source: WHO, 2012)



III Objectives of surveillance

The main objectives of the bilharzia surveillance are:

- To monitor incidence of bilharzia
- To identify and confirm bilharzia local cases
- To identify risk factors for local cases.

IV Alert and outbreak thresholds

An **alert** is defined by any reported case of Bilharziasis.
An **outbreak** is defined by a locally acquired Bilharziasis.

V Procedural steps

The steps described below are recommended for the verification and investigation of any alert of Bilharziasis. They are summarized in figure (3).

Step 1: Detect and verify alert

Upon notification of any Bilharziasis case, the Esumoh caza team asks for the laboratory results.

Step 2: Collect data

For each case of Bilharziasis, the Esumoh caza team interviews the patient (usually by phone). The investigation form provided in Annex 1, is filled and sent to the Esumoh mohafaza and central teams.
The investigation form includes the following information:

- Demography: age group, gender, nationality, residence
- Illness: onset, date of first diagnosis, laboratory results
- Exposure: travel to endemic countries, work in watery environment, water related leisure activities …
- Case management.

Step 3: Confirm the outbreak

Based on the epidemiological data, the case is classified as:

- Imported case: acquired abroad
- Local case: acquired in Lebanon.

In case of local case, the outbreak is declared. The MOPH informs health professionals. If the case is travel-related or acquired abroad, the investigation is then stopped.

Step 4: Search for additional cases

Health professionals are informed on the possibility of local bilharziasis and the importance of reporting of any suspected case.
Official MOPH memos are issued to the health professionals including the case definition and how to report. The target health professionals are mainly urologists, general practioners and family physicians.

Step 5: Describe cases

Cases are described by:

- Time: week, month, year of diagnosis, first symptoms onset
- Place: place of residence or source of infection. The potential water sites are mapped using GPS coordinates.
- Person: age, gender, nationality...

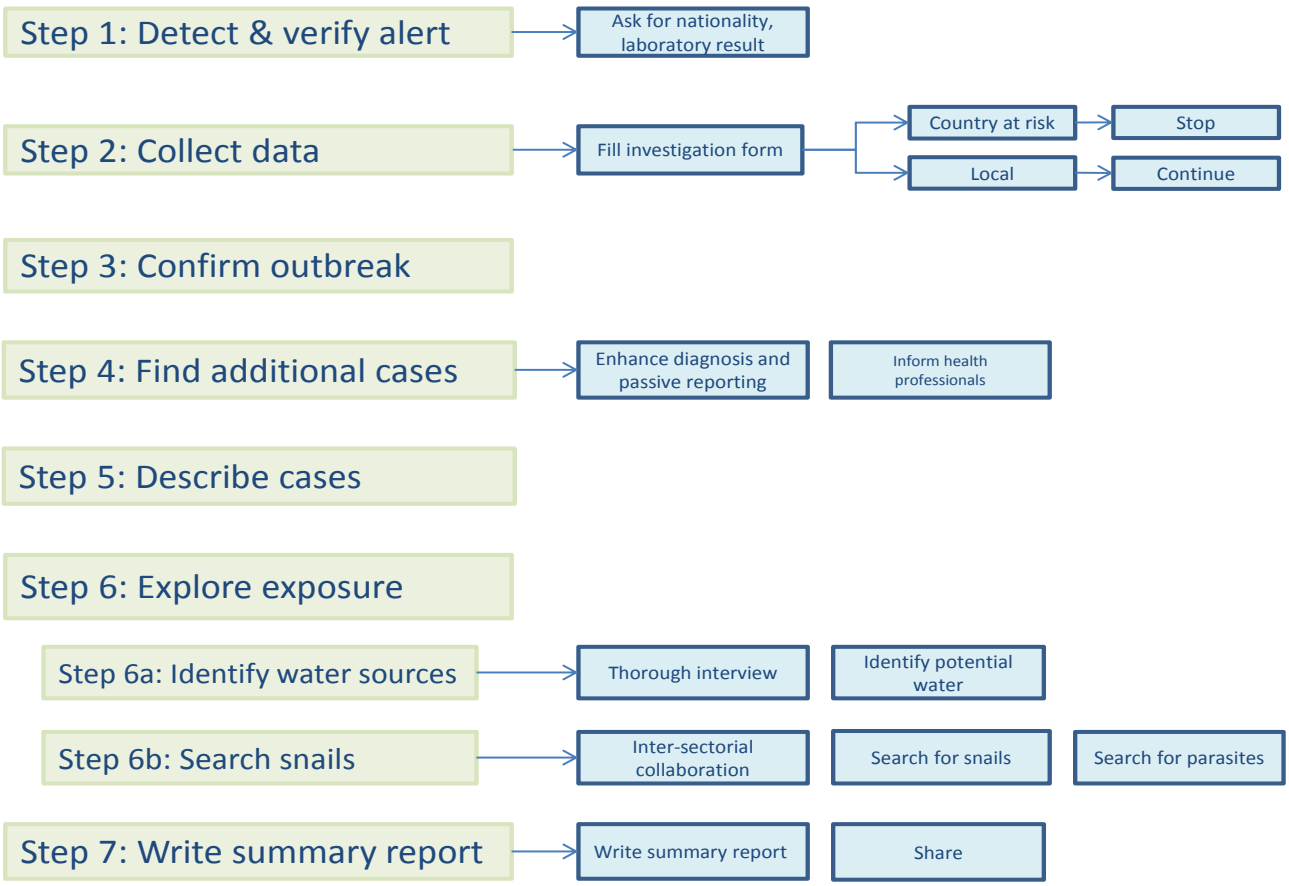
Step 6: Explore exposure and analyze water

Upon the declaration of local case, there is need to find the water contaminated with infected snails.
The patient is interviewed thoroughly to identify all occupational-related or leisure-related to water.
In coordination with the Ministry of Water and Energy, the Ministry of Agriculture, and the Ministry of Environment, water sources are investigated for the presence of snails. Snails are collected and tested for the presence of the parasites.
Based on the results, all potential sites with infected snails are mapped. Maps are shared with the involved partners for snail control.

Step 7: Write summary report

The Esumoh central team prepares a summary report. The report is shared with parnerts, in particular the urology society and the ministries involved in the control of snails.

Figure 3: Bilharziasis investigation steps



Bilharziasis - Annex 1

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

Bilharziasis 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 in Lebanon □ Resident □ Tourist	□ Worker □ Refugee	Residence: caza	Locality	Phone

**

D Clinical diagnosis

Motif of diagnosis		Date of onset	Date of diagnosis
□ Symptomatic, specify:	□ Blood in urine □ Renal disorders, specify: □ Bladder tumor □ Other, specify:		
□ Asymptomatic, specify:	□ Screening, specify: □ Other, specify:		

**

E Laboratory diagnosis for Bilharziasis

Dates	Country	Laboratory	Result	Notes

**

F Family history

Family cases of blood in urine?	□ Yes	□ No	□ Unknown
Family history of Bilhraziasis?	□ Yes, nb:	□ No	□ Unknown
Family working in agriculture?	□ Yes, specify:	□ No	□ Unknown

**

G Risk factors: Travel history to Bilharziasis high risk countries[1]

Dates	Country	Stay length	Contact with water (river, ponds, lacs…)						
			□ Swim, play	□ Bath	□ Fish	□ Collect snails	□ Plant-farm (rice)	□ Exploit	□ Other:
			□ Swim, play	□ Bath	□ Fish	□ Collect snails	□ Plant-farm (rice)	□ Exploit	□ Other:
			□ Swim, play	□ Bath	□ Fish	□ Collect snails	□ Plant-farm (rice)	□ Exploit	□ Other:
			□ Swim, play	□ Bath	□ Fish	□ Collect snails	□ Plant-farm (rice)	□ Exploit	□ Other:
			□ Swim, play	□ Bath	□ Fish	□ Collect snails	□ Plant-farm (rice)	□ Exploit	□ Other:

(1) Bilharziasis high risk countries:
Arab coutnries (Morocco, Algeria, Libya, Egypt, Sudan, Saudia, Yemen, Sultanat of Oman, Iraq), Sub-Saharian Africa, South-East Asia, Central and South America

**

Bilharziasis case investigation form

Case ID |_____|

H Risk factors: if non travel to Bilharziasis high risk countries, water-related activities in Lebanon

Activities related to rivers, ponds, lacs

	How often?	Caza/Locality	Type of site (river, lac, pond…)	Name of site
Swimming				
Bathing				
Playing				
Fishing				
Other water leisure activities:				
Collecting snails				
Rice farming				
Other farming				
Exploitation				
Other:				

**

Notes:

Notes

Notes

2

Surveillance Standard Operating Procedure: Brucellosis

Version 1
MOPH circular no. 42
(19th Jan 2015)

Contents

I Purpose

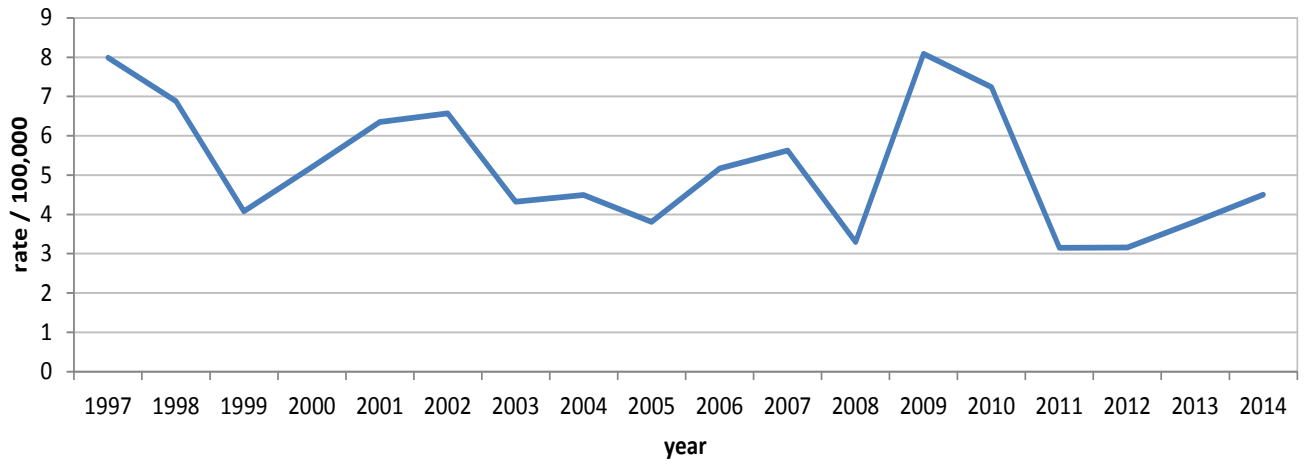
The purpose of this standard opssserating procedure (SOP) is to describe the steps to be followed in by the epidemiological surveillance program in case of alert/outbreak of brucellosis.

II Generalities

Brucellosis	
Agent	Bacteria: brucella abortus (biovar 1-6,9) brucella melitensis (biovar 1-3), Brucella suis (biovar 1-5), Brucella canis
Incubation period	5-60 days (1-2 months)
Period of communicability	No person-to-person transmission
Reservoir	Cattle, goats, sheep, swine
Modes of transmission	- Consumption of unpasteurized milk and milk products - Contact with skin breaks with infected animal tissues (placenta, abortion…) - Airborne in pens, stables, laboratories, abattoirs
Clinical presentation	Systematic bacterial infection, with irregular fever
Worldwide	Worldwide, in particular in Mediterranean region
Lebanon	Endemic with seasonal pattern in summer
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease-based
Investigation: data about case	Risk factors: occupation, animal-related exposure, consumption of dairy products...
Investigation: clinical specimen from case	Blood, serum...
Investigation: data about contacts	Search of other cases
Investigation: clinical specimen from contacts	If there are other similar cases
Test	Culture, PCR, (Wright, Rose Bengale)
Laboratories	Clinical laboratories
Outbreak level	If the observed number exceeds the expected number of cases
Notification to WHO	If meeting the IHR (2005) criteria
Control	
Primary prevention	- Avoid products from unpasteurized milk - Protective equipment for workers in slaughterhouses, laboratories...
Case management	- Combination therapy: streptomycin and doxycycline or rifampin and doxycycline - For children less than 8 years old: TMP/SMX and rifampin
Contact prevention	Check for common exposure
Mass prevention	Animal vaccination program

Brucellosis case definition (MOPH circular no. 55 dated on the 10th April 2007)	
Confirmed case	- A suspected or probable case that is laboratory-confirmed with isolation of Brucella sp. from blood or other clinical specimens - Or a probable case with positive reaction ELISA, Coombs or 4-fold increase or greater rise in SAT levels in paired sera (acute and convalescent 15 days later)
Probable case	A suspected case that has: - A positive Rose Bengale test - Or positive Brucella agglutination titre: Standard tube Agglutination Test ≥1/ 160
Suspected case	Case presenting with: - Clinical signs compatible with the clinical description: acute or insidious onset, with continued, intermittent or irregular fever of variable duration, profuse sweating particularly at night, fatigue, anorexia, weight loss, headache, arthralgia and generalized aching. Local infection of various organs may occur with abscess formation - And epidemiologically linked to suspected/confirmed animal cases or contaminated animal products.
Forms	
Reporting	Standard reporting form
Investigation	For case: specific brucellosis investigation form (MOPH circular no. 150 dated on the 15th October 2007)
National figures	

Figure 1: Annual incidence of brucellosis, Lebanon, 1997-2014 (Source: MOPH)



International figures

Table 1: Annual incidence (per 100000) of Brucellosis in selected countries

(Source: Dean AS, Crump L, Greter H, Schelling E, Zinsstag J (2012) Global Burden of Human Brucellosis: A Systematic Review of Disease Frequency. PLoS NeglTrop Dis 6(10): e1865. Doi:10.1371/journal.pntd.0001865)

Region		**World**	
Egypt	0.28 - 70.0	Germany	0.03
Iraq	52.29 - 268.81	Argentina	12.84
Iran	0.73 - 141.6	Chad	34.86
Jordan	25.7 - 130.0	Greece	4.00 - 32.49
Oman	11.01	Italy	1.4
Palestine	8	Kyrgystan	88
Saudi Arabia	137.61	Mexico	25.69
Turkey	11.93 - 49.54	USA	0.02 - 0.09

III Objective of surveillance

The objectives of the brucellosis are :

- To monitor trends of Brucellosis
- To detect outbreaks
- To identify risk factors
- To assess zoonotic control programs (animal vaccination…)

IV Alert and outbreak thresholds

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

- Cluster: at least 3 cases in same place (locality or adjacent localities), within 2 months
- Relative increase
- At least 2 human cases linked to the consumption of same food item/product.

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

- Number of observed exceedint the expected number
- At least 2 human cases linked to the consumption of same food item with documented contamination.

V Procedural steps

In case of an alert of Brucellosis, the Esumoh team proceeds with the investigation based on the following steps summarized in figure (3).

Step 1: Fill investigation form

For each brucellosis case, an investigation form (Annex 1) is filled by the Esumoh caza team. The investigation form is used to collect data related to the following topics:

- Demography
- Disease: date of onset of symptoms, hospitalization, available lab test results
- Contacts: presence of additional cases (at home, in the neighborhood or at the workplace)
- Exposure: occupation (if animal-related occupation), contact with animals and consumption of some food (unpaseurized dairy products or raw meat)...

Step 2: Classify the case

Based on the available medical and laboratory findings, the case is classified as suspected, probable or confirmed case as shown in figure (2).

Cases with clinical symptoms that lasted more than 6 months before treatment was initiated are considered as chronic cases and should not be considered part of the alert.

Based on the data gathered, the potential exposure is identified as:

- Animal-related exposure or occupation-related exposure
- Dairy-related exposure or raw meat consumption.

Step 3: Describe cases

a) Description by time, place and person

Cases are described by:

- Time: week, month and year of onset
- Place: locality, caza and mohafaza of residence
- Person: potential exposure, age group, gender, nationality
- Disease: classification.

Incidence indicators are presented by count of cases and incidence rates.

b) Search of artefacts

An increase may not reflect a reel increase of the incidence of the disease:

- An increase of the number may be due to the increase of the population. In this case, the incidence rate does not show an increase.
- An increase may due to enhanced reporting. New sites who did not report in the past, start to report cases.

Cross-checking with various sources will provide information on the real occurrence of an outbreak. The other sources that can be used are:

- Laboratory-based surveillance: number of isolates of Brucella sp.
- MOPH visa database
- MOA surveillance data on animal heath
- Food sampling and testing of dairy products.

c) Confirm the outbreak

Based on the available data, the outbreak is declared.

d) Inform MOPH and MOA

Once the outbreak is declared, an internal memo is shared with the MOPH/DG, prevention directorate, preventive medicine sub-directorate.
Also, an official letter is sent to the MOA.
If the event meets the IHR (2005) criteria, the event is notified to WHO.

Step 4: Search for additional cases

In case of outbreak, the Esumoh teams searches for additional cases through:

- Interviewing the patients
- Calling health facilities in the affected areas
- Enhancing passive reporting
- Including brucellosis in the active surveillance
- Contacting the municipalities, and the field NGO.

For each additional case, the investigation form is filled. The investigation form is the tool to point out the potential exposure.

Step 5: Investigate sources

a) If related to products of specific farm

The exposure is potentially animal-related if there are at least 2 cases linked to products of the same farm.
The investigation needs to have the MOA involved. A field inspection of the farm is conducted by the MOA, including testing animals and assessing vaccination coverage.

b) If dairy-related

The exposure is potentially dairy related if the majority of the cases are not linked to animal contact.
The search of suspected food items is done by various approaches:

- Thorough interview to identify suspected food items (conducted by the Esumoh caza/ mohafaza teams)
- Inspection of farms of dairy products (conducted by the MOA)
- Dairy sampling and testing from the local market (conducted by the caza team)
- Analytic studies (conducted by the mohafaza and central teams).

c) If live animal-related

The is potentially animal-related if there is a cluster of cases who handles animals in their daily life or daily work.

The MOA is informed. Suspected farms are inspected, tested and assessed for their herd vaccination coverage.
In addition, safety behaviour of the workers handling animals is assessed.

d) If other occupation-related

Here, the cases are professionals working in laboratories, butcheries, slaughterhouses…
Safety behaviour of the workers handling animal tissues is assessed.
If the cases are laboratory staff, the biosafety assessment of the laboratory should be performed by the MOPH.

e) Further studies

Based on the needs, the Esumoh conducts:
- Analytic studies
- Identification of circulating species.

Step 6: Write summary report

Once the outbreak is ended, the Esumoh central or mohafaza level prepares a summary report. Such report is shared with involved partners.

Figure 2: Brucellosis case classification

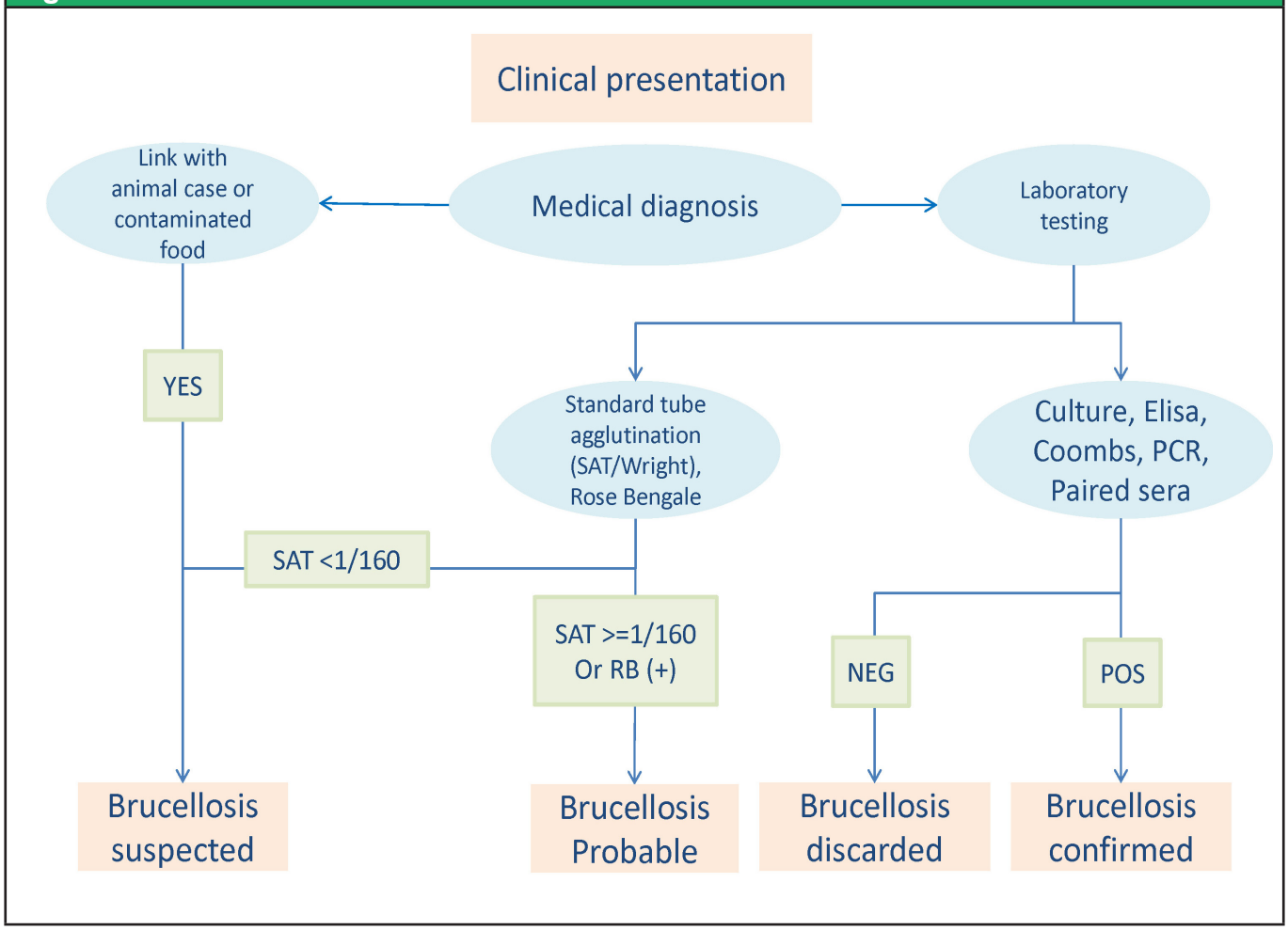
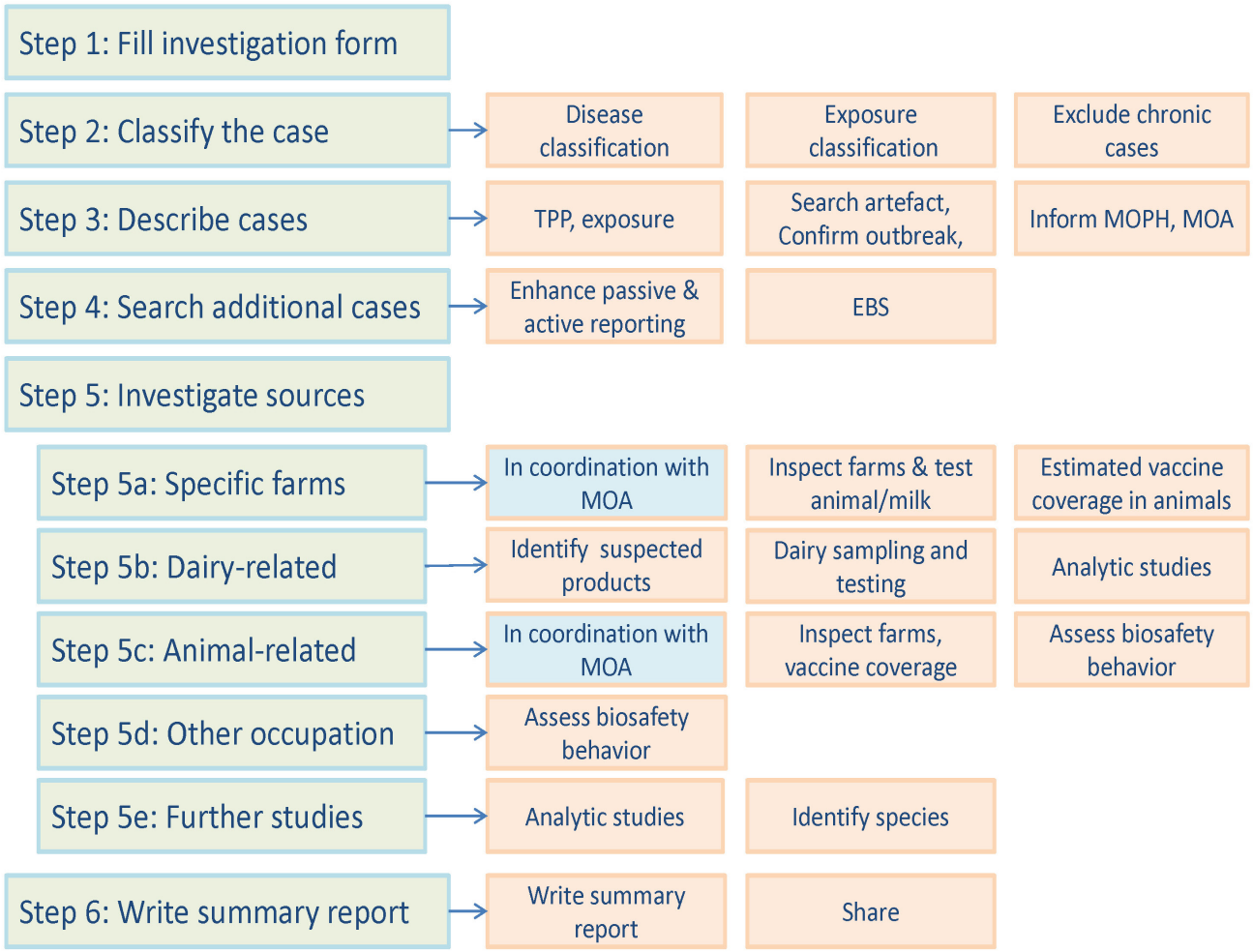


Figure 3: Brucellosis investigation steps



Brucellosis - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - برنامج الترصد الوبائي

استمارة تقصي لحالات الحمى المالطية

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	الجنسية	تاريخ الولادة	العمر
عنوان السكن: المحافظة	القضاء	البلدة		رقم الهاتف	

3) المرض

تاريخ ظهور العوارض/الحمى	دخل المستشفى	اسم المستشفى	تصنيف الحالة
	☐نعم ☐كلا		☐مشتبهة ☐محتملة ☐مثبتة
زرع ☐نعم، ☐كلا حدد المصدر:	نتيجة الزرع	نوع الفحص المصلي ☐نعم، ☐كلا حدد الفحص:	نتيجة الفحص المصلي

4) حالات اخرى في المحيط خلال الأشهر الثلاث الماضية:

عدد الأفراد في المنزل	عدد الحالات في المنزل	عدد الحالات في محيط السكن	عدد الحالات في محيط العمل/التربوي

5) المهنة والنشاطات

مهنة المريض		
للمرضى الاطفال: مهنة الوالد		
مهنة الوالدة		

	نعم	كلا	إذا نعم، حدد عنوان العمل: البلدة	القضاء
مزارع	☐	☐		
مربي حيوانات ومواشي	☐	☐		
تاجر مواشي	☐	☐		
راعي	☐	☐		
طبيب بيطري	☐	☐		
مساعد بيطري	☐	☐		
عامل مختبر	☐	☐		
عامل في مسلخ	☐	☐		
لحام	☐	☐		
مهنة تستدعي زيارة مزارع ومكان تواجد الماشية، حدد:	☐	☐		

Brucellosis. Agent: Brucella abortus, Brucella melitensis, Brucella suis, Brucella canis. Reservoir: cattle, goats, sheep, swine. Transmission: wound contact with animal tissues, blood, urine, vaginal discharges, aborted fetuses, placentas; ingestion of raw milk and dairy products from infected animals; airborne in stables and laboratories and abattoirs. Incubation: 5 to 60 days. Communicability: no person to person transmission.

تعميم وزارة الصحة العامة رقم 150 تاريخ 15 تشرين الأول 2007

استمارة تقصي لحالات الحمى المالطية

تعبأ الاستمارة من قبل وزارة الصحة العامة / فريق الترصد الوبائي

6) خلال الاشهر الثلاث الاخيرة قبل ظهور المرض، هل احتك او لامس المريض ماشية أو حيوانات ؟

	نعم	كلا	لا يعلم	إذا نعم، حدد حالتها: حية	ميتة	مجهضة	مشيمة placenta	إذا نعم، حدد مكانها: ماشية العائلة	ماشية غيره	غيره	لا يعلم
بقر	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
غنم	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
ماعز	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
خنزير	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
غيره	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

في حال لامس مشيمة / placenta، حدد المكان والزمان:

7) خلال الاشهر الثلاث الاخيرة قبل ظهور المرض، هل استهلك المريض حليب غير مبستر أو مشتقاته ؟

	نعم	كلا	لا يعلم	إذا نعم، هل الحليب مغلي؟ نعم	كلا	لا يعلم	إذا نعم، حدد المصدر: مزرعته	مزرعة غيره	بائع متجول	متجر	غيره	لا يعلم
حليب طازج	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
جبنة خضراء	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
قريشة	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
غيره	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

8)- خلال الاشهر الثلاث الاخيرة قبل ظهور المرض، هل استهلك المريض لحمة نيئة ؟

	نعم	كلا	لا يعلم	إذا نعم، حدد نوع اللحمة: بقر	غنم	ماعز	لا يعلم	إذا نعم، حدد مصدر الذبيحة: مزرعته	مزرعة غيره	ملحمة	مطعم	غيره	لا يعلم
كبة نيئة	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
سوداء نيئة	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
غيره نيئ	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9)- خلاصة

تصنيف الحالة	☐ مثبتة	☐ محتملة	☐ مشتبهة
حالات اخرى في المحيط	☐ نعم	☐ كلا	
تعرض مهني	☐ نعم	☐ كلا	
احتكاك مع الماشية	☐ نعم	☐ كلا	
استهلاك حليب غير مبستر أو مشتقاته	☐ نعم	☐ كلا	
استهلاك لحمة نيئة	☐ نعم	☐ كلا	

Brucellosis. Agent: Brucella abortus, Brucella melitensis, Brucella suis, Brucella canis. Reservoir: cattle, goats, sheep, swine. Transmission: wound contact with animal tissues, blood, urine, vaginal discharges, aborted fetuses, placentas; ingestion of raw milk and dairy products from infected animals; airborne in stables and laboratories and abattoirs. Incubation: 5 to 60 days. Communicability: no person to person transmission.

تعميم وزارة الصحة العامة رقم 150 تاريخ 15 تشرين الأول 2007

Brucellosis - Annex 2

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

YEAR |__|__|__|__|

Brucellosis Surveillance
LINE LISTING

|_____|

Local ID	ESU ID	Name	Sex	Age (month/year)	Date onset	Week	Caza	Commune	Laboratory						Exposure						Other cases			Inpatient	Reporting site
									Wright	Rose Bengal	PCR	Culture	AMR	Classification	Interviewed	Risky occupation	Animal contact	Unpasteurized dairy products	Raw meat	Identified source	in the family	in the neighborhood	in the institution		
<##>			<M,F>	<# m/y>	<dd/mm/yyyy>	<##>								<S,P,C>	<Y,N>						<Y,N>	<Y,N>	<Y,N>	<Y,N>	

Page No. |__|

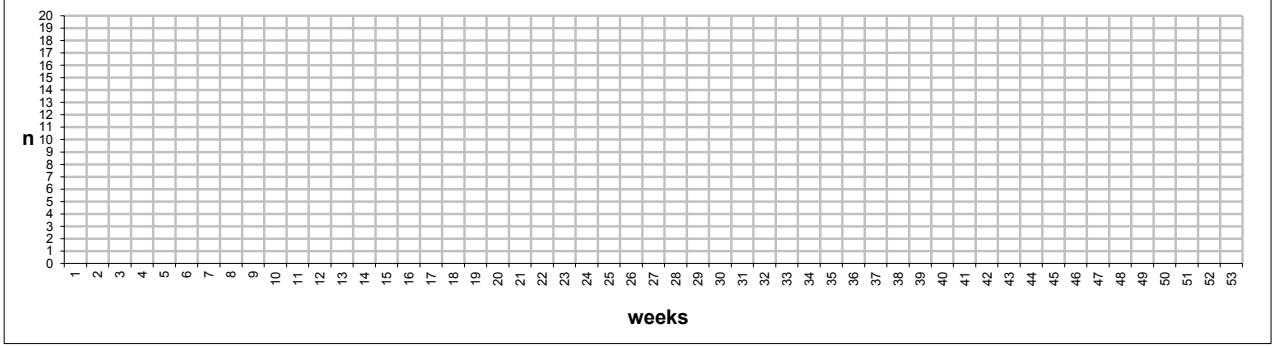
Brucellosis - Annex 3

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

Descriptive Surveillance Findings

Event	Level	Year	Week	Period	As on
		20___			

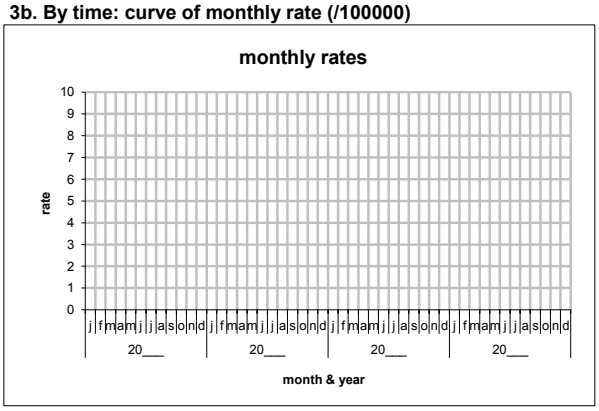
1. Cumulative number =



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						

3b. By time: curve of monthly rate (/100000)



4a. By place: commune

Commune	n	Commune	n

4b. By place: dot map

1 dot = 1 case

5. By age group: cases and rates (/100000)

Age	R20__	R20__	R20__	Pop20__	N20__	R20__
0-4 y						
5-9 y						
10-19 y						
20-39 y						
40-59 y						
60+ y						
Unsp						
Total						

6. By gender

Gender	N20__	% 20__
Male		
Female		
Unsp		
Total		

7. By case management

Case	N20__	% 20__
In-pat		
Out-pat		
Unsp		
Total		

8. By classification

Classificat	N20__	% 20__
Confirm.		
Probable		
Suspect		
Total		

9. Interviews done

N cases	N inter.	%

10. Reporting sites

Total	Hospitals	Dispens.	Lab	Cabinets	Other

Done by

Notes

Notes

3

Surveillance Standard Operating Procedure: Creutzfeldt-Jakob Disease (CJD) Transmissible Spongiform Encephalopathy

Version 1
MOPH circular no. 43
(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 notification of any CJD.

II Generalities

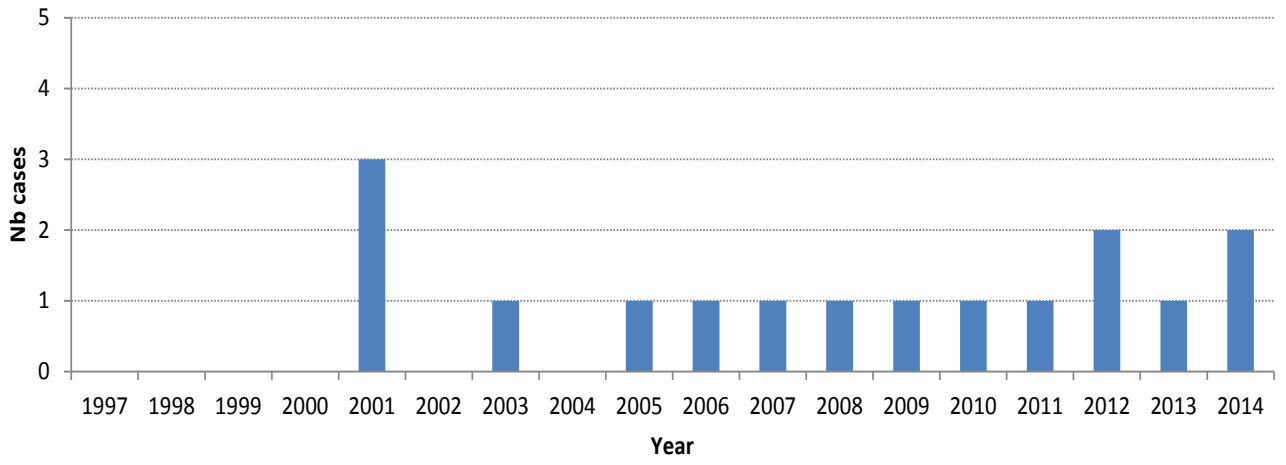
Creutzfeldt-Jakob Disease CJD	
Agent	- Self-replicating host-encoded protein or prion protein - 4 forms: sporadic, iatrogenic, familial and new variant
Incubation	- For iatrogenic CJD: 15 months – 30 years - For new variant: unknown
Period of communicability	As long as prions are present, found in lymphoid tissues from early incubation, and lately in the CNS
Reservoir	- Humans - For new variant: cattle affected with Bovine Spongiform Encephalopathy (BSE)
Modes of transmission	- Sporadic: unknown - Iatrogenic: transmission via human pituitary hormone therapy, human dura mater grafts, corneal grafts, neurosurgical instruments - Familial: hereditary mutation - New variant: hypothesis of consumption of food from animal infected by BSE agent.
Clinical presentation	- Sporadic, iatrogenic, familial: subacute spongiform encephalopathy, with typical EEG, fatal within 3-12 months - New variant: subacute spongiform encephalopathy in younger age group, without typical EEG, and with high signal in the posterior thalamus - Case fatality: 100%
Worldwide	- Worldwide, the sporadic form has an annual incidence of 1/million - Familial: familial clusters were observed in Chile, Occupiend Palestine and Slovakia - New variant: diagnosed since 1996 in United Kingdom (with more than 130 cases)
Lebanon	The annual reported cases vary from 0 to 3 cases per year. No new variant was diagnosed in Lebanon from 2000 to 2014.
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Demography, clinical presentation, EEG testing, CSF Protein, occupation, family history, medical and surgical history, meat consumption…
Investigation: clinical specimen from case	EEG, CSF, neuro-biopsy/autopsy
Investigation: data about contacts	Family history
Investigation: clinical specimen from contacts	-
Test	Serological test (CSF protein 14-3-3), neuropathology
Laboratories	Supranational reference laboratories

Outbreak level	- At least 1 case of new variant of CJD - Or if the observed number of cases exceeds the expected number
Notification to WHO	Based to International Health Regulations (2005)
CJD case definitions	
Sporadic Creutzfeldt-Jakob Disease (MOPH circular no. 42 dated on the 3rd April 2007)	
Sporadic CJD: definite case	A suspected or probable CJD case with: - Neuropathological confirmation: • Spongiform encephalopathy in cerebral and/or cerebellar cortex and/or subcortical grey matter • And/or encephalopathy with prion protein (PrP) immunoreactivity (plaque and /or diffuse synaptic and/or patchy/perivacuolar types) - And/or confirmation of protease-resistant prion protein (PrP) by immunocytochemistry or Western Blot - And/or presence of scrapie-associated fibrils
Sporadic CJD: probable case	Case presenting, in the absence of an alternative diagnosis from routine investigation: - Progressive dementia - And at least 2 of the following 4 clinical features: myoclonus, visual or cerebellar disturbance, pyramidal or extrapyramidal dysfuntion, akinetic mutism - With a typical EEG (generalized triphasic periodic complexes at approximately one per second), whatever the clinical duration of the disease - And/or a positive 14-3-3 assay for CSF and a clinical duration leading to death in < 2 years
Sporadic CJD: suspected case	Case presenting: - Progressive dementia - And EEG atypical or not carried out - And duration < 2 years - And at least 2 out of the following clinical features: myoclonus, visual or cerebella disturbance, pyramidal or extrapyramidal dysfunction, akinetic mutism
Familial Creutzfeldt-Jakob Disease (MOPH circular no. 42 dated on the 3rd April 2007)	
Familial CJD: definite case	Definite CJD with: - A recognized pathogenic PRNP mutation - And/or presence of definite or probable CJD in a first-degree relative - And/or definite Gerstmann-Sträussler-Scheinker (GSS) syndrome or the fatal familial insomnia (FFI) with specific mutations and/or specific neuropathological findings
Iatrogenic Creutzfeldt-Jakob Disease (MOPH circular no. 42 dated on the 3rd April 2007)	
Iatrogenic CJD: definite case	Definite CJD with a recognized iatrogenic risk
Iatrogenic CJD: probable case	Case presenting: - Progressive cerebellar syndrome in a recipient of human cadaver-derived pituitary hormone - Or probable CJD with a recognized iatrogenic risk (graft of human dura mater, human corneal transplant, or exposure to neurosurgical instruments used for patient with definite or probable CJD

New variant of Creutzfeldt-Jakob Disease - vCJD (MOPH circular no. 44 dated on the 3rd April 2007)	
vCJD: clinical features	Group I features: A. Progressive psychiatric disorder B. Clinical duration > 6 months C. Routine investigations do not suggest an alternative diagnosis D. No history of potential iatrogenic exposure E. No evidence of a familial form of TSE (transmissible spongiform encephalopathy) Group II features: A. Early psychiatric symptoms (depression, anxiety, apathy, withdrawal, delusions) B. Persistant painful sensory symptoms (frank pain and/or dysaesthesia) C. Ataxia D. Chorea/ dystonia or myoclonus E. Dementia Group III features: A. EEG unkown or does no show the typical appearance of sporadic CJD (generalized triphasic periodic complexes at approximately one per second) B. Bilateral symmetrical pulvinar high signal on MRI brain scan (relative to other deep gray-matter nuclei) Group IV features: A. Positive tonsil biopsy (evidence of PrP)
vCJD: definite case	- A patient with the item A under (I) above: - And neuropathological confirmation of vCJD: spongiform encephalopathy with abundant PrP deposition, in particular multiple fibrillary PrP plaques surrounded by a halo of spongiform vacuoles ("florid" plaques, "daisy-like" plaques) and other PrP plaques, and amorphous pericellular and perivascular PrP deposits especially prominent in the cerebellar molecular layer.
vCJD: probable case	A patient with: - Items under group (I) above - And at least 4 items under (II) - And the item A under (III)
vCJD: possible case	A patient with: - Items under group (I) above - And at least 4 items under (II) - And the item B under (III) Or a case with: - Items under (I) above - And the item A under (IV)
Forms	
Reporting	Standard reporting form
Investigation	Specific CJD investigation form (MOPH circular no.43 dated on 3rd April 2007)

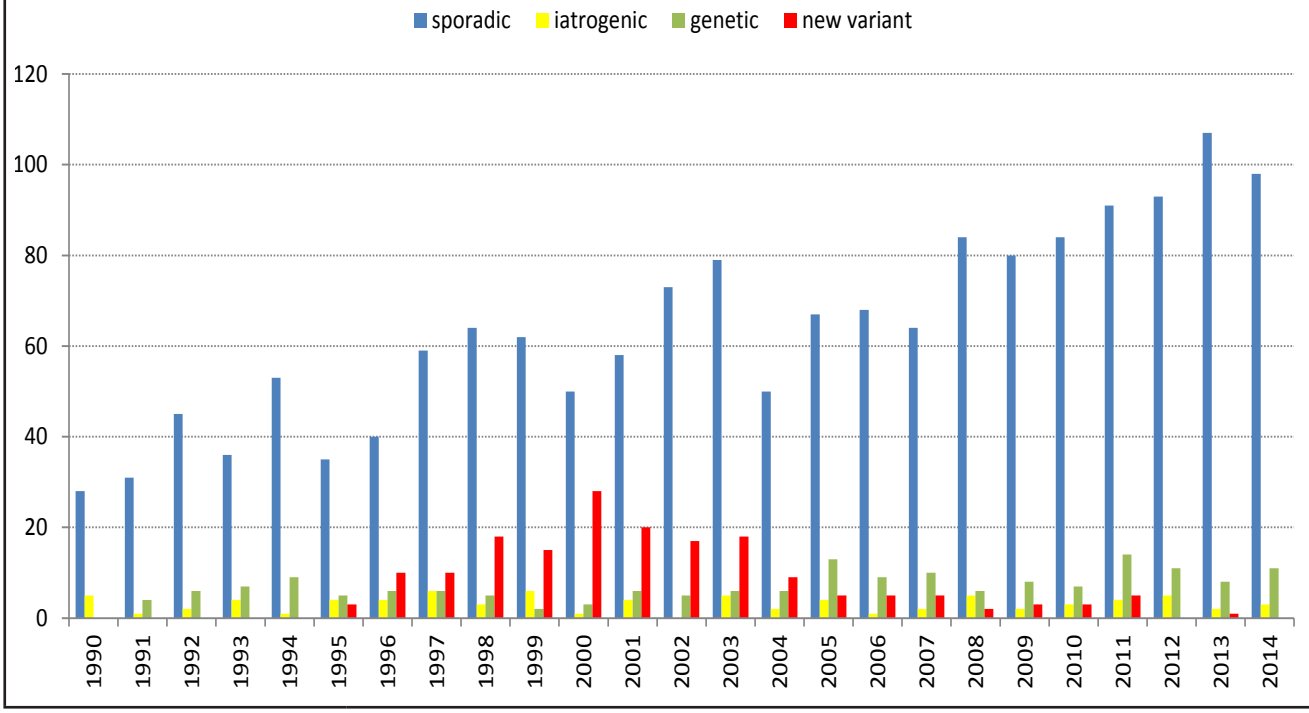
National figures

Figure 1: Reported sporadic CJD in Lebanon, 1997-2014 (Source: MOPH)



International figures

Figure 2: Reported CJD in the United Kingdom, 1994-2014 (Source: http://www.cjd.ed.ac.uk/documents/figs.pdf)



III Objectives of surveillance

The objectives of the CJD surveillance are:

- To monitor CJD in Lebanon
- To detect and confirm vCJD case
- To investigate risk factors for CJD, including vCJD
- To identify any novel forms of human spongiform encephalopathy.

IV Alert and outbreak thresholds

An **alert** is defined by the notification of any suspected case of CJD whatever was the type.
An **outbreak** is defined by one of the following:

- Occurrence of at least 1 case of vCJD confirmed case
- Occurrence of at least 1 case of iatrogenic CJD case
- Occurrence of at least 2 cases of CJD in one family.

V Procedural steps

The steps described below are recommended for the investigation of suspected CJD.
The order of these steps does not necessarily indicate the chronological order of their implementation. Many of these actions will have to be undertaken concurrently as soon as the outbreak is suspected or confirmed (Figure 6).

Step 1: Detect and verify alert

Upon the notification of a case of CJD, the Esumoh staff contacts the treating physician or hospital focal person. Do they really suspect CJD? And what form do they suspect?
If CJD is suspected, the Esumoh peripheral staff informs immediately the Esumoh central level.

Step 2: Collect data

Once verified, there is need to gather information on the case. The investigation form (provided in Annex 1) is used.
The data collection is done in coordination with the treating physician. The patient or family can also be interviewed to complete the information.
The investigation form includes the following information:

- Demography
- Disease: examination at notification, clinical classification
- Paraclinical results: EEG, CSF, 13-4-4 protein
- Risk factors: occupation…

In case of death, a copy of the medical file is requested.

Step 3: Classify the case

Based on the clinical and paraclinical data, the case is classified:

- By form: sporadic, iatrogenic, familial, or new variant
- By level of confirmation: suspected, probable or confirmed.

The figures (2), (3), (4) and (5) provide algorithms on case classification.

If a case of new variant, iatrogenic of familial CJD is suspected, then there is need to confirm the diagnosis.

Step 4: Collect specimens

The Esumoh central team coordinates with the treating physician to obtain laboratory confirmation.
The golden test is the neurobiopsy/autopsy of the patient. The family consent is needed. The Esumoh and the treating physician intervene to convince the family.

The annex (2) explains the procedures for neurobiopsy (if the case is alive) and autopsy (if the case is dead).

The annex (3) specifies the reference laboratory. Specimens are shipped following the IATA regulations.

Step 5: Confirm the outbreak

If a case was confirmed for vCJD, iatrogenic or familial, an outbreak is declared.
The Esumoh central staff immediately informs the MOPH/DG, and the directorate of prevention and the sub-directorate of preventive medicine.
The MOPH informs officially:

- The health professionals
- The WHO

Also, the incidence rate is compared with historical data and the expected incidence rate at international level (1 case per 1 million inhabitants).

Step 6: Investigate the risk factors

a) vCJD

In case of vCJD, a detailed history of risk factors is reviewed with the family, including:

- Travel history
- Meat consumption
- Source of consumed meat.

The MOA is informed. Investigation of the presence of animal spongiform encephalopathy is required.

b) Iatrogenic CJD

In case of iatrogenic CJD, a detailed history of medical and surgical history is reviewed with the family, including:

- Any transplantation
- Any medication with human-derived products.

The MOPH undergoes a traceability study to trace back the source of the infection.

c) Familial CJD

In case of familial CJD, there is need to understand the familial history. Up to date, no familial CJD was observed in Lebanon. The investigation includes:

- The history of any dementia in the family
- The search of gene abnormality or marker.

Step 7: Enhance surveillance

Heath professionals are informed via official memos. Case definitions are re-distributed. Specific sessions are conducted.

Search for additional cases is conducted via:

- Enhancing surveillance
- Retrospective search of cases
- Review of hospital-based mortality surveillance.

Cases are monitored and described by time, place, persons and forms. Regular bulletin is edited and shared with professionals.

Step 8: Write summary report

Once the outbreak has been explained, a summary report is prepared by the Esumoh staff and shared with partners.

Figure 3: Sporadic CJD case classification

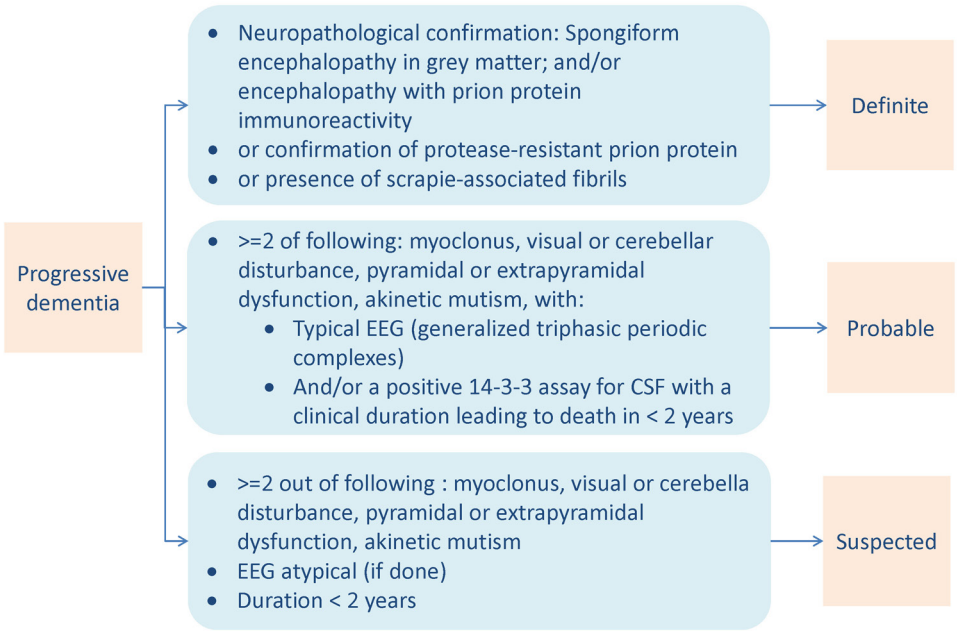


Figure 4: Familial CJD case classification

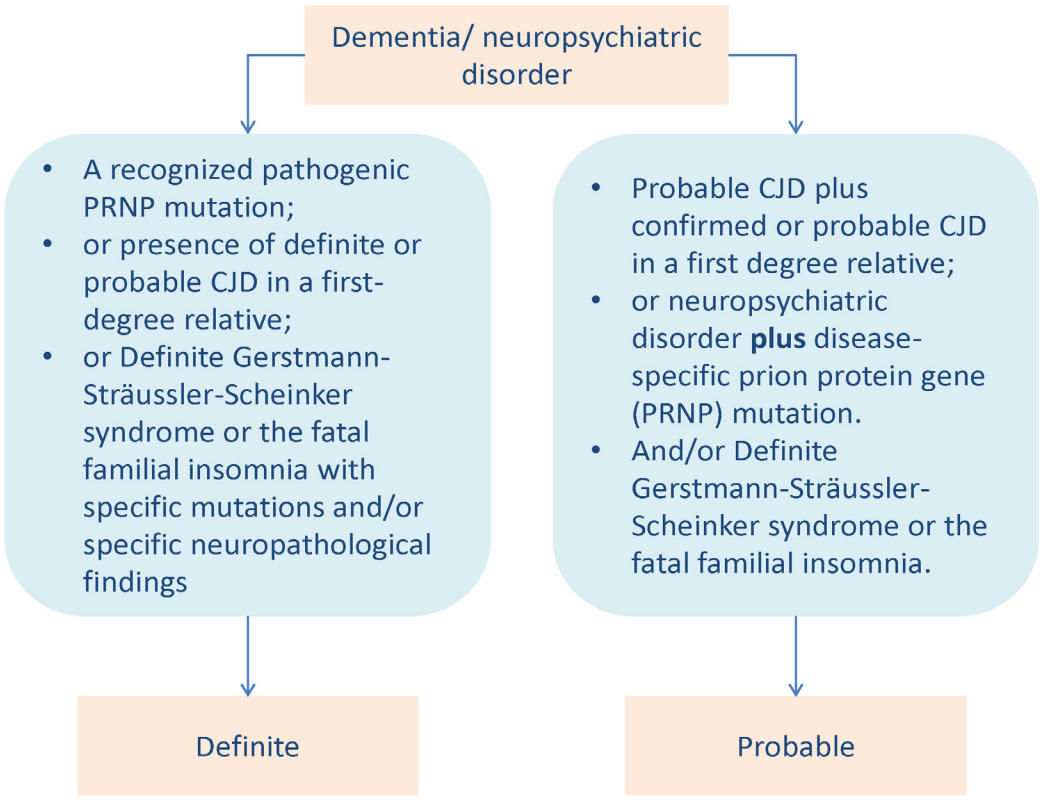


Figure 5: Iatrogenic CJD case classification

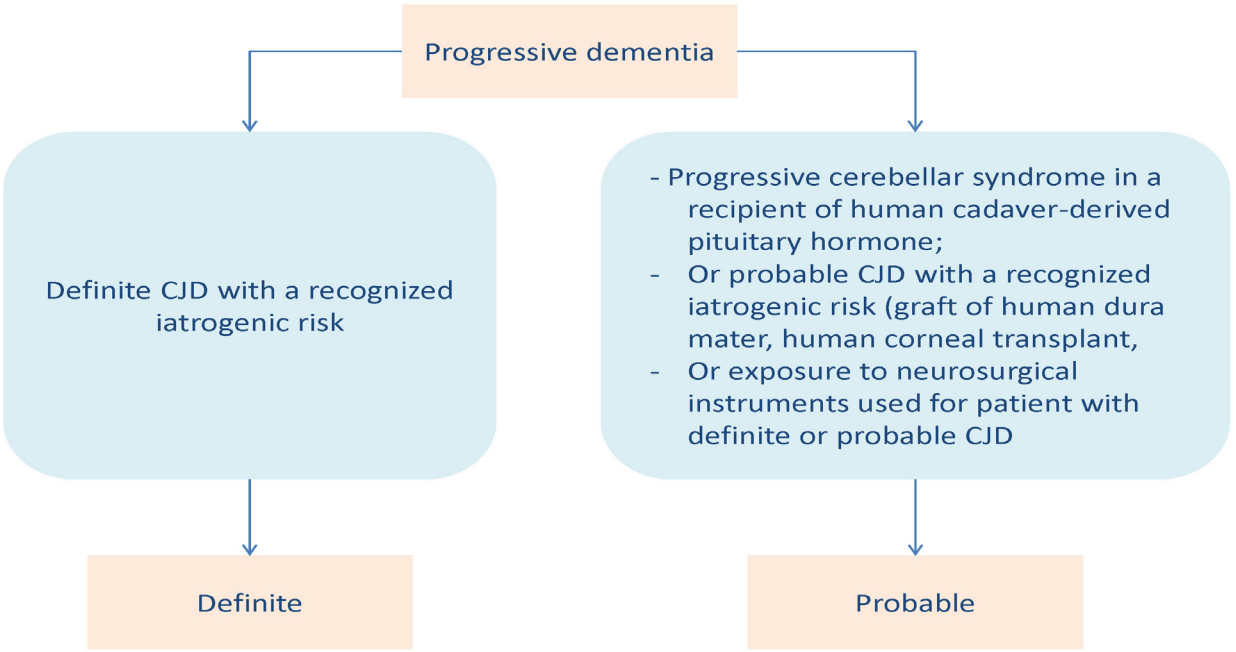


Figure 6: New variant CJD case classification

Group (I)
A. Progressive psychiatric disorder
B. Clinical duration > 6 months
C. No alternative diagnosis
D. No history of iatrogenic exposure
E. No evidence of familial form

Group (II)
A. Early psychiatric symptoms
B. Persistant painful sensory symptoms
C. Ataxia
D. Chorea/ dystonia or myoclonus
E. Dementia.

Group (III)
A. EEG: no typical of sporadic CJD
B. Bilateral symmetrical pulvinar high signal on MRI brain scan

Group (IV)
A. Positive tonsil biopsy (evidence of PrP).

A patient with:
- Item A under (I)
- And neuropathological confirmation

→ Definite

A patient with:
- Items under group (I)
- And >= 4 items under (II)
- And the item A under (III)

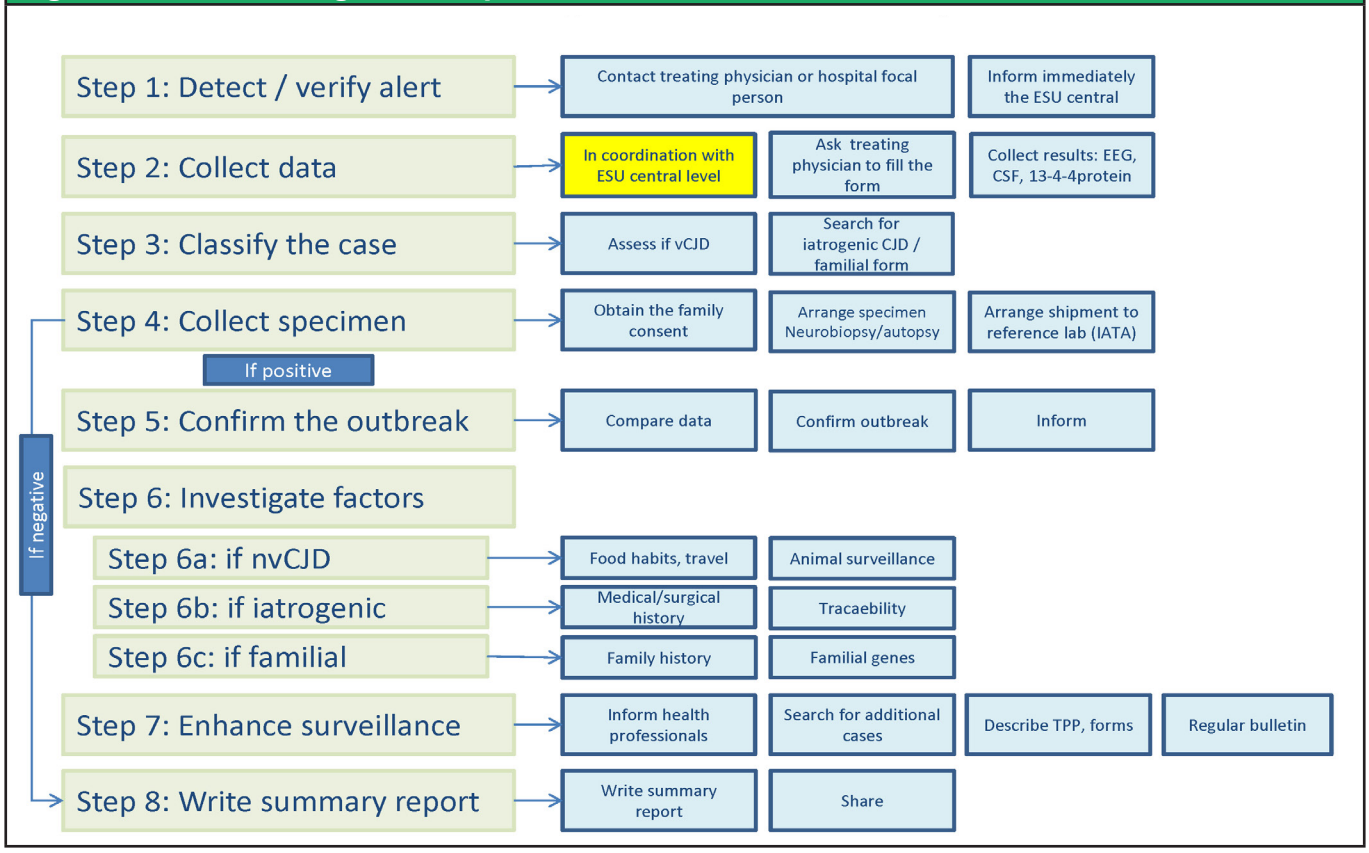
→ Probable

A patient with:
- Items under group (I) above
- And at least 4 items under (II)
- And the item B under (III).

Or a case with:
- Items under (I) above
- And the item A under (IV)

→ Possible

Figure 7: CJD investigation steps



CJD - Annex 1

Republic of Lebanon
Ministry of Public Health

Case |_____|

CJD surveillance reporting form

I. Information on the person reporting			
Name of person reporting			
Date of reporting	|__|__| (dd) |__|__| (mm) |__|__|__|__| (yyyy)		
Name of institution			
Address			
Telephone			
Fax number			
Email address			
II. Patient detail			
Serial number (filled by MOPH)	(Country-Province-Year-##) |__|__|__|-|__|__|-|__|__|__|__|-|__|__|		
Name			
Date of birth	|__|__| (dd) |__|__| (mm) |__|__|__|__| (yyyy)		
Sex			
Country of birth			
Town of residence			
District of residence			
Occupation			
Date of onset	|__|__| (dd) |__|__| (mm) |__|__|__|__| (yyyy)		
Date of hospital admission	|__|__| (dd) |__|__| (mm) |__|__|__|__| (yyyy)		
Age of onset			
Current status	☐ Alive	☐Dead	☐Unknown
Date of death	|__|__| (dd) |__|__| (mm) |__|__|__|__| (yyyy)		
III. Classification of CJD case			
CJD Subtype	☐Sporadic ☐Iatrogenic	☐Familial ☐New Variant	☐Unknown
Level of diagnostic confirmation	☐Definite ☐Probable	☐Possible ☐Suspect	☐Not known
IV. If Iatrogenic			
If Iatrogenic	☐Growth hormone ☐Neurosurgery	☐Gonadotropin ☐Dura mater graft	☐Corneal transplant ☐Other
If other Iatrogenic, specify			
V. If Familial			
Has blood been taken for genetic analysis?	☐Yes If yes, Mutation found: _ _ _ _ _ _ _ _ _ _ _ Or ☐Result awaited	☐No ☐Unknown	☐Not known ☐No mutation found
Is there a 1st degree relative with definite or probable CJD or GSS or FFI?	☐Yes If Yes, does the relative have? ☐CJD	☐No ☐GSS	☐Not known ☐FFI

CJD surveillance reporting form

VI. Clinical Features			
Rapidly progressive dementia	☐Yes	☐No	☐Unknown
Cerebella signs	☐Yes	☐No	☐Unknown
Myoclonus	☐Yes	☐No	☐Unknown
Chorea	☐Yes	☐No	☐Unknown
Visual disturbance	☐Yes	☐No	☐Unknown
Pyramidal signs	☐Yes	☐No	☐Unknown
Extrapyramidal signs	☐Yes	☐No	☐Unknown
Rigidity	☐Yes	☐No	☐Unknown
Primitive reflexes	☐Yes	☐No	☐Unknown
Gait disturbance	☐Yes	☐No	☐Unknown
Dysarthria	☐Yes	☐No	☐Unknown
Dysphasia	☐Yes	☐No	☐Unknown
Dysphagia	☐Yes	☐No	☐Unknown
Akinetic mutism	☐Yes	☐No	☐Unknown
Seizures	☐Yes	☐No	☐Unknown
Paraesthesia/dysaesthesia	☐Yes	☐No	☐Unknown
Visual/auditory hallucinations	☐Yes	☐No	☐Unknown
Depression	☐Yes	☐No	☐Unknown
Delusions	☐Yes	☐No	☐Unknown
Others, specify			

VII. Diagnostic investigations				
EEG	☐Yes	☐No	☐Not done	☐Unknown
If yes, typical CJD tracing	☐Yes	☐No	☐Not done	☐Unknown
Lumbar punction	☐Yes	☐No	☐Not done	☐Unknown
Elevated CSF protein	☐Yes	☐No	☐Not done	☐Unknown
Elevated CSF white cells	☐Yes	☐No	☐Not done	☐Unknown
Positive CSF 14-3-3 protein	☐Yes	☐No	☐Not done	☐Unknown
Neuroimaging	☐Yes	☐No	☐Not done	☐Unknown
Atrophy on CT	☐Yes	☐No	☐Not done	☐Unknown
Basal ganglia or thalamic abnormalities on MRI	☐Yes	☐No	☐Not done	☐Unknown
PrP gene analysis	☐Yes	☐No	☐Not done	☐Unknown
Mutation found	☐Yes	☐No	☐Not done	☐Unknown
Codon 129 genotype known	☐Yes	☐No	☐Not done	☐Unknown
If yes, specify:	☐MM	☐MV	☐VV	

CJD surveillance reporting form

VIII. Neuropathology				
Was a necropsy performed?	☐Yes	☐No		☐Unknown
Histology considered typical (spongiform change, neuronal loss, and astrocytosis)	☐Yes	☐No	☐Not done	☐Unknown
Other neuropathological features	☐Yes	☐No	☐Not done	☐Unknown
Immunocytochemistry	☐Yes	☐No	☐Not done	☐Unknown
Western Blott	☐Yes	☐No	☐Not done	☐Unknown
Presence of scrapie associated fibrills	☐Yes	☐No	☐Not done	☐Unknown
Was samples referred to a specialist center?	☐Yes	☐No	☐Not done	☐Unknown
Where?				
Comments				
Was a brain biopsy performed during life?	☐Yes	☐No	☐Not done	☐Unknown
Histology considered typical (spongiform change, neuronal loss, and astrocytosis)	☐Yes	☐No	☐Not done	☐Unknown
Other neuropathological features	☐Yes	☐No	☐Not done	☐Unknown
Immunocytochemistry	☐Yes	☐No	☐Not done	☐Unknown
Western Blott	☐Yes	☐No	☐Not done	☐Unknown
Presence of scrapie associated fibrills	☐Yes	☐No	☐Not done	☐Unknown
Was samples referred to specialist center?	☐Yes	☐No	☐Not done	☐Unknown
Where?				
Comments				
IX. Blood donation				
Is the patient a blood donor?	☐Yes	☐No	☐Not done	☐Unknown
If yes, date and place of last donation				
X. Other comments				

Neuropathology tests for diagnosis of CJD

Brain autopsy

The definite diagnosis of CJD, including vCJD, requires neuropathological confirmation. Autopsy should be strongly encouraged in any suspect case of CJD. Where autopsy is not possible or permitted, post-mortem biopsy of the brain should be sought.
The use of cerebral biopsy in living patients is discouraged except to make an alternative diagnosis of a treatable disease. When handling tissues and other materials from suspected CJD cases, specific safety precautions are mandatory to avoid accidental transmission and to eliminate any infectivity.
Extensive sampling, from different areas of the brain, is mandatory on autopsy, including as a minimum:

- frontal lobe
- temporal lobe
- occipital lobes
- basal ganglia
- cerebellum

Especially important is the comparison between the involvement of the cerebrum and the cerebellum.
Generally, neuropathological confirmation is important because of the ongoing recognition of the potentially broad spectrum of clinical and pathological manifestations of human TSEs. Factors that may play a role include PrP gene mutations, genotype and as-yet unidentified factors or cofactors, including potential prion strains.
PrP immunocytochemistry testing is especially helpful, in the absence of typical or characteristic changes appreciable on routine histopathological examination.

Full procedure

The autopsy should be performed as soon as possible after death. However, the tissue can be successfully examined up to 48–72 hours post-mortem, especially if the body is refrigerated. The brain, the hemispheric dura and the pituitary gland should be split in half, sagitally. The left cerebral hemisphere with the left dura and the left pituitary gland, left cerebellar hemisphere, left vermis and left brain stem should be put in formalin, fixed for two weeks, sliced and sampled. Tissue samples should be treated with formic acid (98%) for one hour and then placed in formalin for 24 hours before dehydration and paraffin embedding to reduce infectivity. Alternatively, the left half of the brain can be sent to the center performing the diagnostic procedure at any time following immersion in formalin. Before shipping, formalin should be absorbed with paper towels so that there is no free formalin but the tissue is exposed to formalin vapors.
The right cerebral hemisphere should be separated from the right cerebellar hemisphere and brain stem with a horizontal cut at the level of the upper midbrain.

Source: World Health Organization, 2003. WHO manual for surveillance of human transmissible spongiform encephalopathies including variant Creutzfeldt-Jakob disease.

It should than be sliced coronally in ~1.5-cm slices. The right cerebellum and brain stem should be sliced horizontally in slices of ~1.0 cm. The right half of the dura and the right half of the pituitary gland should be frozen uncut. The brain slices should be frozen in a -70 °C freezer (or, lacking that, in a -20 °C freezer) individually, inside plastic bags (to avoid drying) while lying flat on a tray. They can then be put together in a plastic bag when they are frozen.
Alternatively, the right half of the brain can be sent to the diagnostic center uncut surrounded by dry ice.
Short procedure If the above procedure cannot be followed, 1–5 grams of brain tissue, including the cerebral cortex, should be removed and frozen and an adjacent brain tissue sample should be fixed as above.
A completed autopsy request form and any significant patient information have to be included.
Generally, the sample must arrive at the center during regular working days, since appropriate storage cannot be guaranteed during the weekend. Please contact the responsible person for more information before sending samples.

Brain biopsy

When used to diagnose CJD, brain biopsy typically involves the removal of a small piece of non-dominant frontal cortex under general anesthesia. Although usually diagnostic in CJD, approximately 5% of biopsies from subsequently confirmed definite cases are non-diagnostic, reflecting the variable distribution of brain pathology in CJD. Brain biopsy can lead to serious complications, including cerebral abscess formation or hemorrhage and cannot be recommended as a procedure to confirm the clinical suspicion of CJD. Instruments used for neurosurgery on patients with CJD should be destroyed. If re-use is unavoidable, instruments must be immersed in 1N NaOH2 or fresh undiluted hypochlorite for at least one hour, cleaned, and then autoclaved at 134 °C for 1 hour.

Full procedure

Freeze 0.5 g of tissue (for western blot of PrP as little as 10 mg is enough) in a -70 °C freezer (or in a -20 °C freezer). Ship in dry ice to the center performing the procedure.
Fix the remaining tissue in 10% formalin for at least 24 hours. Transfer formic acid for 1 hour and then again in formalin for at least 24 hours. The tissue can then be embedded using routine procedures.
A completed biopsy request form and any significant patient information have to be included.
Generally, the sample must arrive at the center during regular working days, since appropriate storage cannot be guaranteed during the weekend. Please contact the responsible person for more information before sending samples.

Supranational Reference Laboratories for CJD

The National CJD Research & Surveillance Unit (NCJDRSU)
Western General Hospital, Edinburgh, EH4 2XU

EDINBURGH BRAIN AND TISSUE BANKS

CJD BRAIN AND TISSUE BANK

The national surveillance of CJD in the UK was initiated in May 1990. Surveillance is funded by the Department of Health, UK and by the Scottish Government Health Department. The NCJDRSU aims to monitor characteristics of CJD, specifically sporadic CJD and nvCJD, to identify trends in incidence rates and to study risk factors for the development of disease.

Web site: www.cjd.ed.ac.uk

About the Bank:

The purpose of this bank is to retain, store and make available for research use, post mortem tissue samples from individuals who have died with, or were suspected of having, Creutzfeldt-Jakob disease (CJD). All the samples have appropriate authorisation and ethical approval for storage in the bank and for use in research.

Email

1. Brain bank manager: c.a.mckenzie@ed.ac.uk
2. Brain bank director: james.ironside@ed.ac.uk

Telephone

Brain bank office:	+44 (0) 131 537 2658
Neuropathology:	+44 (0) 131 537 3084 or +44 (0) 131 537 3109
Fax:	+44 (0) 131 343 1404

Post

Brain and Tissue Bank
The National CJD Surveillance Unit
The Bryan Matthews Building
Western General Hospital
Crewe Road
Edinburgh EH4 2XU

TISSUE HANDLING AND SAFETY PRECAUTIONS

Adherence to the following routine precautions during any diagnostic procedure or laboratory work will reduce the risk of infection.
Only persons who have been advised of the potential hazards and who meet specific entry requirements (i.e. training) should be allowed to take laboratories samples and enter the laboratory working areas, or to participate in the collection of high-infectivity tissues from patients with confirmed or suspected TSEs.

General protective measures

General protective measures and basic precautions are recommended as following:

1. Eating, drinking, smoking, storing food and applying cosmetics must not be permitted in the laboratory work areas.
2. Laboratory coveralls, gowns or uniforms must be worn for work and removed before entering nonlaboratory areas; consider the use of disposable gowns; non-disposable gowns must be decontaminated by appropriate methods.
3. Safety glasses, face-shields (visors) or other protective devices must be worn when it is necessary to protect the eyes and face from splashes and particles.
4. Gloves appropriate for the work must be worn for all procedures that may involve unintentional direct contact with infectious materials. Armoured gloves should be considered in post-mortem examinations or in the collection of high-infectivity tissues.
5. All gowns, gloves, face-shields and similar re-usable or non-reusable items must be either cleaned or destroyed.
6. Wherever possible, avoid or minimize the use of sharps (needles, knives, scissors and laboratory glassware), and use single-use disposable items.
7. All technical procedures should be performed in a way that minimizes the formation of aerosols and droplets.
8. Work surfaces must be decontaminated after any spill of potentially dangerous material and at the end of the working day.
9. All contaminated materials, specimens and cultures must be either incinerated, or decontaminated.
10. All spills or accidents that are overt or potential exposures to infectious materials must be reported immediately to the laboratory supervisor, and a written record retained.
11. The laboratory supervisor should ensure that adequate training in laboratory safety is provided and that practices and procedures are understood and followed.

Source: World Health Organization, 2003. WHO manual for surveillance of human transmissible spongiform encephalopathies including variant Creutzfeldt-Jakob disease.

After death

Precautions for handling of the deceased patient

On the death of a patient with confirmed or suspected TSE, the removal of the body from the ward, community setting, or hospice, should be carried out using normal infection control measures. It is recommended that the deceased patient be placed in a sealed body bag before moving, in line with normal procedures for bodies where there is a known infection risk. Where the skull is open or there is CSF leakage, and where sutures do not completely control this leaking, the bag should be lined with materials to absorb any fluid, and the body should be moved in a sealed body bag. Refer to country-based guidelines and regulations for more information on care and handling of a deceased and infected patient.

Post-mortem examination

Post-mortem examinations remain an essential element in confirming the clinical diagnosis and the cause of death as TSE. Ideally, three people should be present during the examination: the pathologist assisted by one technician, and one further person to handle and label specimen containers. Except for training purposes, observers should be prohibited or kept to a minimum. All personnel should be made aware of the relevant history of the patient and fully informed of procedures for such post-mortem examinations.

Conducting the autopsy

- To the extent possible, disposable protective clothing should be worn, including surgical cap and gown, apron, double gloves, and a face visor which completely encloses the operator's head to protect the eyes, nose and mouth. Consideration should be given to the use of hand protection, such as armoured or cut-resistant gloves.
- Disposable or dedicated reusable instruments are recommended in order to minimize the risk of environmental contamination. Manual saws are recommended in order to avoid the creation of tissue particulates and aerosols and for ease of decontamination after use. Electric saws, if used, should be operated inside an aerosol-containing bag unless ventilated helmets with an appropriate filter are worn.
- Instruments and mortuary working surfaces should be decontaminated following specific decontamination procedures.
- Restricted post-mortem examinations on TSE cases can be undertaken in any mortuary. If examination is limited to the brain, a plastic sheet with absorbent wadding and raised edges is first placed underneath the head to ensure containment of tissue debris and body fluids (e.g., CSF). The scalp is reflected in the normal way and the cranium is opened. After removal of the brain, replacement of the skullcap and suturing of the skin, the plastic sheet containing all tissue debris and drainage is bagged and sealed and sent for incineration.
- A full postmortem examination is discouraged except in dedicated facilities, unless special circumstances warrant the added difficulty of infectivity containment.

Histopathological examination

Only persons who have been advised of the potential hazards and trained in the specific methods used for TSE infectious tissues should be permitted to work in laboratories where high-infectivity tissues are being processed. Facilities conducting a large number of histological examinations on high-infectivity tissues should dedicate laboratory space, processors, instruments, glassware and reagents for this purpose.

Guidelines in some countries and regions require Bio-Safety Containment Level 3 for handling these tissues.

It is important to note that formalin and glutaraldehyde-fixed TSE tissues retain infectivity for long periods, if not indefinitely. As a result, they should be handled with the same precautions as fresh material and be considered infectious throughout the entire procedure of fixation, embedding, sectioning, staining, and mounting on slides, until or unless treated with formic acid. Treatment with formic acid reduces infectivity to negligible levels. Although exact procedures may vary, formic acid treatment consists of placing small pieces of fixed tissue, no more than 4 to 5 mm thick, in 50 to 100 ml of 95% formic acid for an hour, and then transferring them to fresh formalin for another two days before further processing. The entire procedure is conducted using continuous, gentle agitation.

All of the serial steps involved in bringing the blocks from formalin into paraffin and, after sectioning, bringing the mounted paraffin sections back into aqueous staining solutions, can be carried out manually, or in an automatic processor dedicated to TSE tissues. Similarly, it would be advisable to dedicate a microtome for sectioning non-formic acid treated tissue blocks, as there is no practical way to disinfect the instrument. Formic acid treated sections can be cut on a standard microtome (if possible, using a disposable knife or dedicated blade) and processed as usual. Processing fluid should be decontaminated and debris (such as wax shavings) from section cutting should be contained and disposed of by incineration. Formic acid treated sections tend to be brittle, but show good preservation of histological morphology.

Slides made from sections that have been treated with formic acid can be considered non-infectious. Slides made from sections that have not been treated with formic acid may also be handled without specific precautions, once the coverslip is sealed to the slide and chemically disinfected to ensure external sterility, but should be labeled as a hazardous material. These slides, if damaged, should be treated and destroyed.

Containers used for the storage of formalin-fixed tissues should, after secure closing, be cleaned, marked “Hazardous”, and stored separately (e.g. in sealed plastic bags). When tissue is needed, the container can be removed from the bag, set upon a water-resistant disposable mat, and manipulation of the tissue confined to the mat. After the tissue is replaced, the area and container are cleaned, and the container put into a new plastic bag for further storage.

Notes

Notes

4

Surveillance Standard Operating Procedure: Gonococcal Infection

Version 1
MOPH circular no. 61
(22nd Jan 2015)

Contents

I Purpose

The Standard Operating Procedure (SOP) is intended to assist the epidemiologic surveillance program in how to proceed when verifying and investigating alert or outbreak of gonococcal infection.

II Generalities

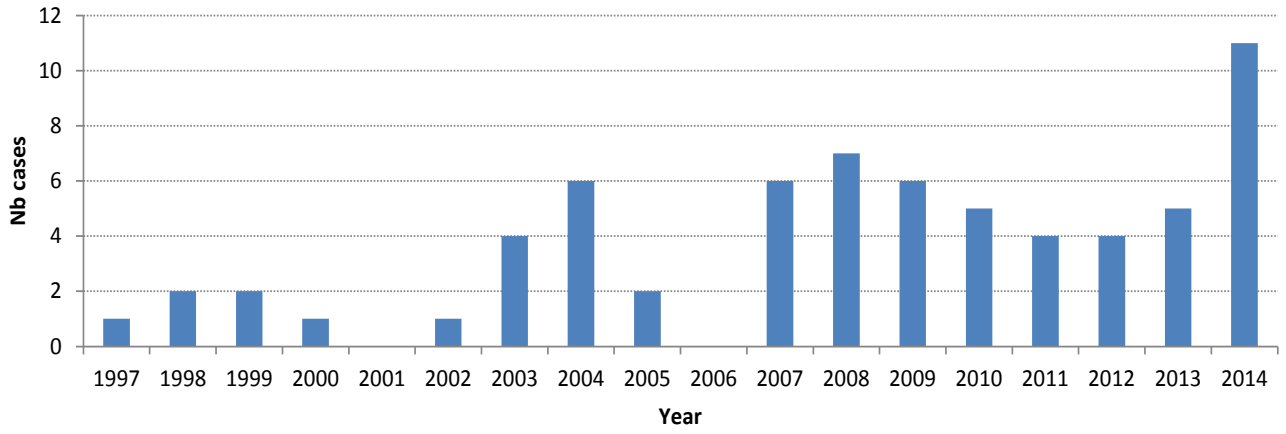
a) Adult infection

Gonococcal infection	
Agent	Bacteria: Neisseria gonorrheae (gonococcus)
Incubation	2-7 days
Period of communicability	- For months if untreated - Effective treatment ends communicability within hours
Reservoir	Humans
Modes of transmission	Contact with exudates from mucus membranes of infected people, secondary of sexual contact
Clinical presentation	- For males: acute purulent urethritis - For females: cervicitis, that may be asymptomatic. Complications: endometritis, salpingitis, peritonitis, infertility, ectopic pregnancy, congenital conjunctivitis. - General complications: septicemia, arthritis, endocarditis, meningitis, death.
Worldwide	Worldwide
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, risk factors, case management, pregnancy, other sexual transmitted diseases …
Investigation: clinical specimen from case	Genital discharge
Investigation: data about contacts	Sexual contacts and contact management
Investigation: clinical specimen from contacts	From sexual partners
Test	Bacteriological culture on selected media (Thayer-Martin agar), detection of gonococci nucleic acid
Laboratories	Clinical laboratories
Outbreak level	If observed number exceeds the expected number of cases
Notification to WHO	According to International Health Regulations (2005)

Gonorrhea case definition (MOPH circular no. 61 dated on the 14th April 2007)	
Confirmed case	A case presenting with: - Clinically: a sexually transmitted infection commonly manifested by urethritis, cervicitis or salpingitis. Other sites can be affected of the urogenital tract, oropharynx, rectum. Infection may be asymptomatic - And laboratory confirmation: • Observation of typical Gram-negative, oxidase-positive diplococci from a clinical specimen • Or observation of Gram-negative intracellular diplococci in a urethral smear obtained from a male • Or positive bacteriological culture on selective media (modified Thayer-Martin MTM or New York City NYC) • Or detection of antigen or nucleic acid-based of Neisseria gonorrhoeae in a clinical specimen
Probable case	Observation of gram-negative intracellular diplococci in an female endocervical smear or male urethral smear.
Forms	
Reporting	Standard reporting form
Investigation	Gonococcal infection investigation form in case of alert or outbreak (MOPH circular no. 171 dated on the 31st December 2015)

National figures

Figure 1: Reported gonococcal infections, Lebanon, 1997-2014 (Source: MOPH)



International figures

Table 1: Estimates of incidence and prevalence of Gonococcia among adults (15-49y), for 2008. (Source: WHO. Global incidence and prevalence of selected curable sexually transmitted infections, 2008)

	Incidence /1000		Prevalence %	
	M	F	M	F
WHO South-East Asia Region	37	16.2	1.2	0.8
WHO Region of the Americas	27.6	18.5	0.7	0.8
WHO African Region	60.3	49.7	2	2.3
WHO European Region	7	8.3	0.2	0.3
WHO Eastern Mediterranean Region	11.6	8.1	0.3	0.3
WHO Western Pacific Region	49.9	34.9	1.3	1.5

b) Gonococcal conjunctivitis neonatorum

Gonococcal conjunctivitis	
Agent	Bacteria: Neisseria gonorrheae (gonococcus)
Incubation	1-5 days
Period of communicability	- As long as discharge persists, if untreated - Transmissibility stops 24 hours after atb treatment.
Reservoir	Humans: infection of maternal cervix
Modes of transmission	Contact with infected birth canal during childbirth
Clinical presentation	- Acute conjunctivitis with pus - Complication: corneal ulcer, blindness
Worldwide	Worldwide
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Maternal medical history, prophylaxis at birth …
Investigation: clinical specimen from case	Conjunctival discharge
Investigation: data about contacts	Mother medical history
Investigation: clinical specimen from contacts	Specimen from mother
Test	Bacteriological culture on selected media (Thayer-Martin agar), detection of gonococci nucleic acid
Laboratories	Clinical laboratories
Outbreak level	At least one confirmed case
Notification to WHO	According to the International Health Regulations (2005)
Gonorrheal ophthalmia neonatorum case definition (MOPH circular no. 60 dated on the 14th April 2007)	
Confirmed case	A new-born (<=30 days old) presenting: - Conjunctivitis - And laboratory confirmation: ocular specimen positive for Neisseria gonorrheae
Probable case	A new-born (<=30 days old), who has not received ocular prophylaxis, presenting with conjunctivitis within 2 weeks of delivery.
Forms	
Reporting	Standard reporting form
Investigation	Gonococcal infection investigation form (MOPH circular no. 171 dated on the 31st December 2015)

III Objectives of surveillance

The objectives of surveillance of gonorrhea are:
- To monitor incidence of gonococcal infections
- To detect and confirm pediatric cases, especially in children ≤30 days
- To detect and investigate alerts and outbreaks.

IV Alert and outbreak thresholds

a) In adults

An **alert** is reached whenever there is:
- A cluster of gonorrhea cases epi-linked reported to MOPH
- An increase in gonorrhea annual/annualized incidence rate.

An **outbreak** is defined as having the observed annual/annualized incidence increased compared to the expected one.

b) In children ≤30 days

An **alert** is defined by reporting at least 1 suspected case.
An **outbreak** is defined as having at least 1 confirmed case.

V Procedural steps for adults

The steps described below are recommended for the verification and investigation of gonorrhea alerts and outbreaks, including their confirmation. They are summarized in figure (2).
Many of these actions will have to be undertaken concurrently as soon as the outbreak is suspected or confirmed.

Step 1: Detect and verigy alert

Alert is activated when there is an increase in the annual/annualized incidence rate or a cluster of epi-linked cases. In case of an increase in the annual/annualized incidence rate, the data is analyzed to search for a cluster of epi-linked cases.
Before confirming the alert, the data needs to be checked for validity and adequacy of case definition.

Step 2: Identify artefacts

Search for artefacts will be done at central and mohafaza levels. Reporting behavior will be analyzed to identify new sources of reporting and change in the way of reporting.
In case there was an evolution in the case definition, the date of change of the case definition will be identified and frequency of cases before and after this change carefully analyzed.

Step 3: Collect data

Treating physician is asked to fill an investigation form (Annex1).
The investigation form includes the following information:
- Demography: gender, age, residence, nationality
- Reasons for testing
- Other StDs
- Tests results
- Personal risk factors (including intercourse with one or multiple partners)
- Partners protection...

Results of performed blood tests will also be collected to confirm the adequacy of the case definition.

Step 4: Describe cases and confirm the outbreak

The cases are described by time, place, person and risky behaviors to identify additional cluster in place and time.
If the outbreak criteria are reached, the outbreak is declared. The Esumoh informs the MOPH concerned units. The MOPH informs the concerned health professionals (urologists, gynecologists…)

Step 5: Find additional cases

The MOPH issues memos reminding health professionals about the case definition, the channel of reporting and the need to notify cases.
Search of additional cases are done via:

- Enhanced passive reporting
- Activating laboratory surveillance for gonococcal infection.

Step 6: Conduct further studies

a) Risky behaviors

In order to identify the risk factors, analytic studies are conducted in coordination with treating physicians.

b) Antimicrobial resistance

The isolats of Neisseria gonorrhoeae are confirmed and tested for antimicrobial resistance.

Step 7: Write summary report

Once the outbreak is contained, a summary report is prepared by the Esumoh central team, and shared with partners.

VI. Procedural steps for children < 30 days

The steps described below are recommended for the verification and investigation of gonorrhea alerts and outbreaks for infants (< 30 days of age). They are summarized in figure (3).

Step 1: Detect and verify alert

Alert is activated when there is one case of suspected case, and outbreak is reached when there is one case of confirmed case.
Before confirming the alert/outbreak, the data needs to be checked for validity and adequacy of case definition.

Step 2: Confirm the case

Laboratory test result for Neisseria gonorrhoeae related to the ocular specimen is collected.

Step 3: Collect data

In addition to demographic information, treating physician will be asked to fill the specific part of the investigation related to gonococcal conjunctivitis ≤30 days (Annex 1).
The specific information includes:

- Mother status
- Knowledge of mother to be infected
- Mother prenatal care
- Mother specific treatment for gonorrhea
- Clinical presentation of the child.

Step 4: Describe case and confirm the outbreak

Once the investigation form is received, the case will be described by time, place, person.
If the case is confirmed, the outbreak is declared. The Esumoh informs the MOPH concerned units. The MOPH informs the concerned health professionals (gyneco-obstetricians, pediatricians…)

Step 5: Conduct further studies

For confirmed case, further assessment of the preventive practice at delivery will be conducted.

Step 6: Write summary report

Once the outbreak is explained and contained, a summary report is prepared by the Esumoh central team and shared with partners.

Figure 2: Gonococcal infection algorithm steps

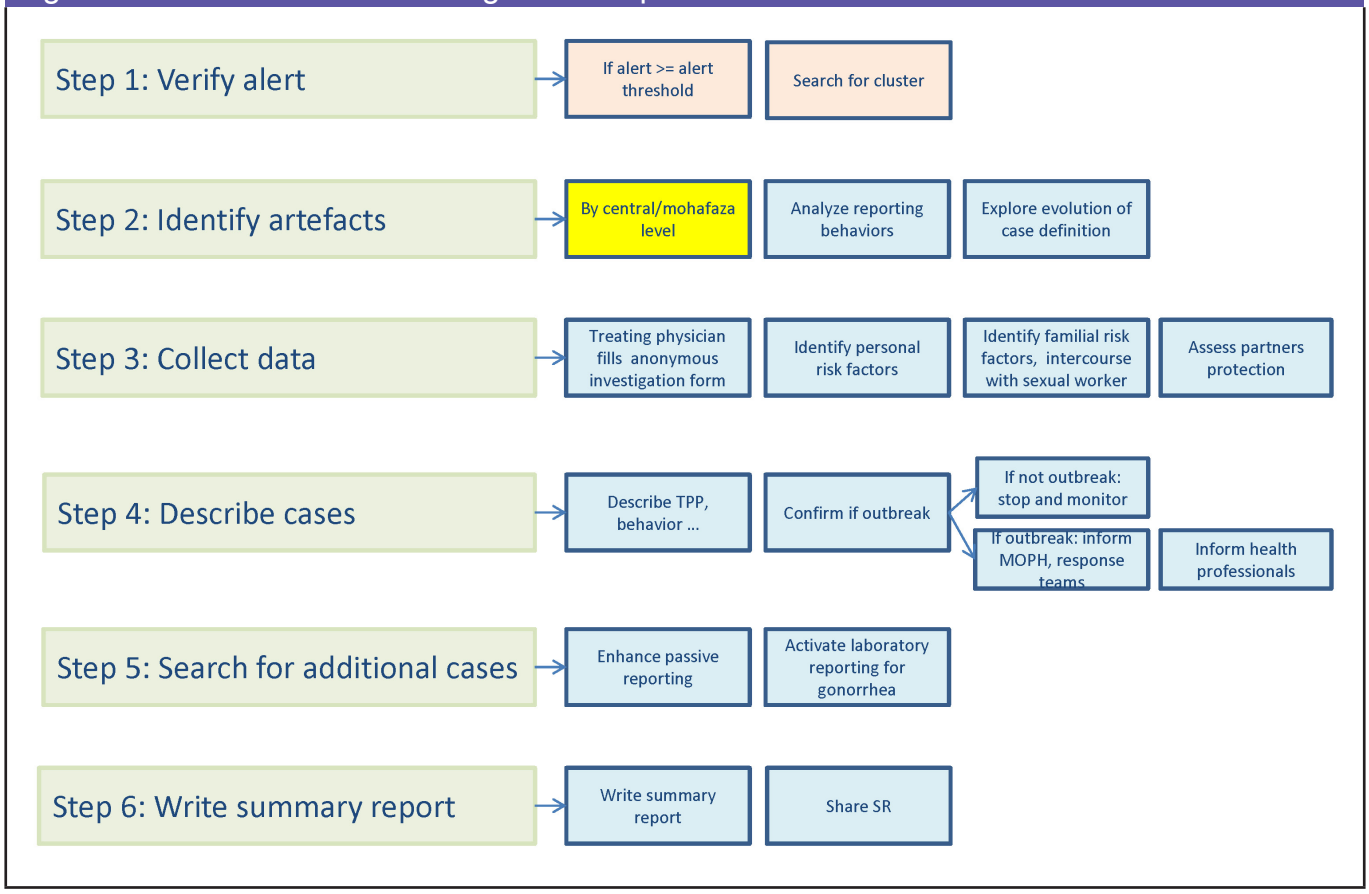
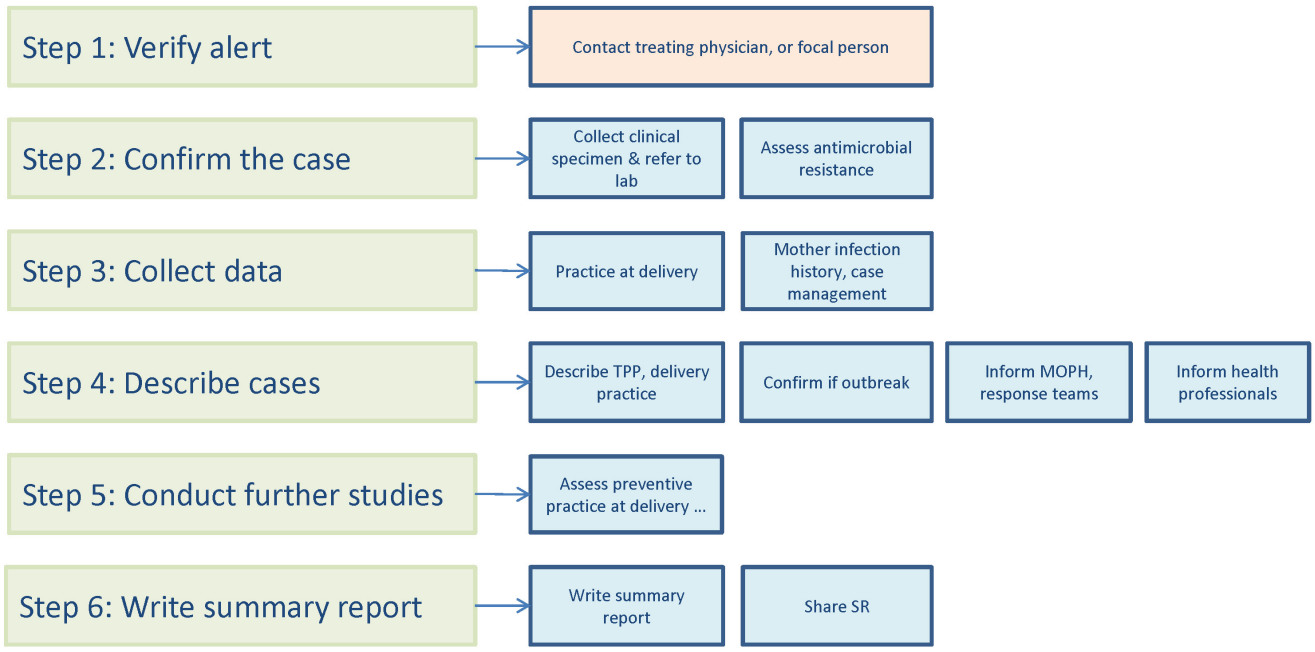


Figure 3: Gonococcal conjunctivitis algorithm steps



Gonorrhea - Annex 1

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

Case ID |_____|

Investigation form for Gonococcal infection

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of syphilis

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

**

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

**

C Disease and diagnostic circumstances

▶Reason for testing:

☐ Symptoms:
- ☐Urethritis
- ☐Epididymitis
- ☐Proctitis
- ☐Cervicitis
- ☐Bartholinitis
- ☐Pelvic inflammatory disease
- ☐Vulvovaginitis
- ☐Pharyngitis
- ☐Arthritis
- ☐Dermatitis
- ☐Endocarditis
- ☐Meningitis
- ☐Conjunctivitis of newborn
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Contact tracing
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Immigration screening
- ☐Other, specify:

▶Dates:

Year of first symptoms: |_____|
Year of first diagnosis: |_____|

▶Other STD infections:

- ☐Viral hepatitis B
- ☐Viral hepatitis C
- ☐Viral hepatitis D
- ☐Syphilis
- ☐Chlamydia
- ☐HIV

**

D Congenital syphilis

▶Mother status: ☐Asymptomatic ☐Symptomatic, specify form: ☐Unknown	▶Was the mother known to be infected? ☐Yes ☐No ☐Unknown
▶Did the mother have prenatal care? ☐Yes ☐No ☐Unknown	▶Did the mother have specific treatment for gonococcie? ☐Yes ☐No ☐Unknown
▶Clinical presentation of the child: ☐Asymptomatic ☐Conjunctivitis ☐Purulent discharge	☐Perforation ☐Other, specify:

**

E Laboratory testing

Gono	Specimen	Date collection	Test	Result	Notes
	☐ Urethral				
	☐ Urine				
	☐ Cervical				
	☐ Vaginal				
	☐ Rectal				
	☐ Orорpharyngeal				
	☐ Conjunctiva				
	☐ Sterile body fluids				
	☐ Other, specify				

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	☐	☐	Profession:
	Contact with blood	☐	☐	
	Blood exposure injury	☐	☐	Nb:
	Blood exposure professions	☐	☐	
Health care				
	Admitted to hospitals	☐	☐	Nb:
	Had surgery	☐	☐	Nb:
	Had dialysis	☐	☐	Nb:
	Received blood products	☐	☐	Nb times:
	Received blood derived products	☐	☐	Products:
	Had transplantation	☐	☐	Organ:
	Dental care	☐	☐	
Household				
	Sharing toothbrushes	☐	☐	Frequency:
	Sharing “rasoirs”	☐	☐	Frequency:
	Sharing personal items	☐	☐	What:
Other				
	Participated in invasive religious rituals	☐	☐	
	Tatoos	☐	☐	
	Body piercing	☐	☐	

**

Case ID |_____|

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	☐	☐	
	Sharing needles	☐	☐	
	Invasive inhalation	☐	☐	
Prison				
	Incarcerated	☐	☐	
STD				
	STD: VHB, VHC, VHD, HIV, syphilis …	☐	☐	What:
	Contact with a person with STD: home	☐	☐	
	Contact with a person with STD: sex	☐	☐	
	Contact with a person with STD: other	☐	☐	Specify:
Sexual risk				
	Male partners	☐	☐	Nb:
	Female partners	☐	☐	Nb:
	Sexual workers	☐	☐	Nb:
	Protective behavior	☐	☐	

**

H Partners protection

Specify number

	Identified	Screened	Positive	Treated
Regular				
Casual				
Sex workers				
Other:				

**

I. Notes

Notes

Notes

5

Surveillance Standard Operating Procedure:

Viral Hepatitis A

Version 1
MOPH circular no. 44
(19th Jan 2015)

Contents

I Purpose

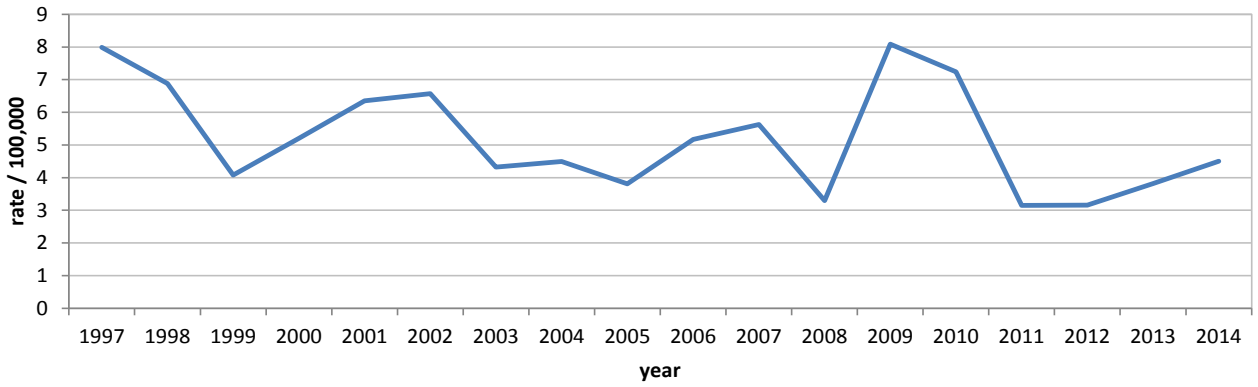
The purpose of the present standard operating procedures (SOP) is to guide the Epidemiological Surveillance Program on how to proceed in case of alert/outbreak of viral hepatitis A.

II Generalities

Viral Hepatitis A	
Agent	Hepatitis A virus HAV
Incubation	28-30 days (15-50 days)
Period of communicability	During the second half of the incubation period, and up to one week after jaundice onset
Reservoir	Humans, rarely chimpanzees and other primates
Modes of transmission	- Person-to-person transmission: fecal oral route - Ingestion of contaminated food: by food handler or by harvested from contaminated water (shellfish or salad vegetables) - Ingestion of contaminated water or drinks - Recipients of factor VIII or factor IX concentrates
Clinical presentation	- Febrile jaundice - Asymptomatic in childhood - Case fatality: 0.1-0.3 % (1.8% for >50 years) secondary to fulminant acute hepatitis
Worldwide	- Worldwide, related to hygienic and sanitary conditions - High endemicity: childhood infection, no outbreaks - Middle endemicity: outbreaks among adults - Low endemicity: cases among households, sexual contacts, day care centers…
Lebanon	Endemic with middle endemicity profile
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Syndromic and disease approach
Investigation: data about case	Water exposure, food exposure, occupation...
Investigation: clinical specimen from case	Serum, oral fluid
Investigation: data about contacts	Search of other cases among contacts
Investigation: clinical specimen collection from contacts	If there is suspected cases among contacts
Test	Serology IgM, genotyping
Laboratories	- Clinical laboratories for IgM - WHO reference laboratories for virus identification and genotyping
Outbreak level	If the observed number exceeds the expected number of cases
Notification to WHO	Based on IHR (2005) criteria
Control	
Primary prevention	- Personal hygiene, water safety, food safety, and sanitation - Hepatitis A Vaccine

Post-exposure prevention	Vaccination up to 2 weeks after exposure
Case management	Symptomatic treatment
Isolation	Enteric isolation
Contact prevention	- Immunoglobulins for high risk patients - If the case is a food handler: vaccination of other food handlers
Mass prevention	- Ensure water and food safety and adequate sanitation - Vaccination
Viral Hepatitis A case definition (MOPH circular no. 47 dated on the 10th April 2007)	
Confirmed case	- A suspected or probable case that is confirmed by laboratory testing with presence of IgM anti-HAV antibodies - Or a suspected or probable case who has an epidemiological link with a laboratory-confirmed case of viral hepatitis A (household or sexual contact with an infected person during the 15-50 days before the onset of symptoms)
Probable case	Case of acute jaundice with: - Negative results for viral hepatitis B (negative IgM anti-HBc or HbsAg antigens) - And negative or unknown results for viral hepatitis C (negative anti-HCV)
Suspected case	A clinically compatible case as reported by a physician: acute illness typically including fever, acute jaundice, dark urine, anorexia, malaise, extreme fatigue, and right upper quadrant tenderness. Biological signs include increased urine urobilinogen and >2.5 times the upper limit of serum alanine aminotransferase.
Forms	
Reporting	Standard reporting form
Investigation	For case: specific VHA investigation form (MOPH circular no. 15 dated on the 19th January 2015)
National figures	

Figure 1: Annual incidence of reported VHA in Lebanon, 1997-2014 (Source: MOPH)



International figures

Table 1: Incidence of VHA, Worldwide (Source: WHO. The Global prevalence of hepatitis A virus infection and susceptibility: a systematic review. WHO/IVB/10.01 2010)

	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	Child Immunity rate	Adult susceptibility rate
High Income Asia Pacific	0	2	10	17	25	36	51	66	81	98	100	100	Low	High
Central Asia	42	60	68	72	76	81	85	89	91	94	96	97	Medium	Low-Medium
East Asia	24	44	56	63	69	75	82	87	91	94	97	100	Low-Medium	Low-Medium
South Asia	61	75	82	87	91	96	100	100	100	100	100	100	High-Medium	Very Low
South East Asia	16	30	43	52	60	72	85	94	98	99	100	100	Low-Medium	Low-Medium
Australasia	3	7	11	15	18	22	30	39	49	60	72	86	Low	High
Caribbean	14	31	42	50	57	65	76	86	95	100	100	100	Low-Medium	Medium
Central Europe	21	35	41	46	51	58	67	75	82	87	92	96	Low-Medium	Medium
Eastern Europe	20	33	40	47	54	64	76	86	95	100	100	100	Low-Medium	Medium
Western Europe	1	6	18	28	35	45	56	66	75	82	88	94	Low	High
Andean Latin America	54	69	78	85	91	97	100	100	100	100	100	100	High-Medium	Very Low
Central Latin America	59	73	80	85	89	93	97	100	100	100	100	100	High-Medium	Low
Southern Latin America	36	53	62	68	73	78	83	87	91	94	96	98	Medium	Low-Medium
Tropical Latin America	28	51	64	72	79	86	93	99	100	100	100	100	Medium	Low
North Africa / Middle East	37	58	70	77	83	89	96	100	100	100	100	100	Medium	Low
High Income North America	0	2	6	9	13	20	30	41	54	69	83	100	Low	Medium
Oceania	17	45	61	71	78	87	96	100	100	100	100	100	Medium	Very Low
Central sub-Saharan Africa	40	90	98	99	100	100	100	100	100	100	100	100	High	Very Low
East sub-Saharan Africa	73	86	91	95	98	100	100	100	100	100	100	100	High	Very Low
South sub-Saharan Africa	67	84	94	100	100	100	100	100	100	100	100	100	High	Very Low
West sub-Saharan Africa	59	75	84	90	95	100	100	100	100	100	100	100	High-Medium	Low

III Objectives of surveillance

The objectives of viral hepatitis A surveillance are:

- To monitor HVA incidence in Lebanon
- To detect and investigate outbreaks
- To identify risk factors
- To provide indicators on the level of water/sanitation infrastructure in Lebanon
- To evaluate control measures.

IV Alert and outbreak thresholds

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

- Detection of at least 1 case in school
- Relative increase of cases in a week comparing with the previous last 3 weeks
- Detection of cluster in same place and time: at least 3 cases in same locality or institution, in 2 months period.

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

- Number of observed cases exceeds the expected number of cases
- Detection of cluster with confirmed VHA in an institution within 2 months period.

V Procedural steps

For each alert related to VHA, the below steps are followed. They are summarized in figure (3).

Step 1: Detect and verify alert

Alerts are generated at Esumoh caza, mohafaza and central level. Upon the detection of an alert, the Esumoh caza team is informed. Also the caza team contacts the source to verify the following:

- The disease: Is it VHA?
- The time and place circumstances.

If the alert is verified, the Esumoh mohafaza and and central teams are informed.

Step 2: Collect data

Upon the verification of an alert, all VHA cases are interviewed by the Esumoh caza team. Interviews are done by phone, filling the investigation form provided in annex (1).
The investigation form includes information on the following:

- Demography: age, gender, nationality, residence
- Disease: onset
- Laboratory results
- Risk factors: occupation, water sources, food sources
- Contacts: age, cases…

Once forms are filled, they are shared with the Esumoh mohafaza and central teams.

Step 3: Confirm the diagnosis

In any cluster, there is need to confirm at least 10% of the clinical cases. The confirmatory test is the detection of IgM in serum.

If 10% is not reached, the Esumoh staff contacts the health care providers to ensure specimen collection and IgM testing:

- For inpatients: hospital will proceed will serum collection and testing.
- For outpatient: Esumoh will coordinate with the medical centers or laboratories for serum collection and then referral to designated laboratories for testing.

If the outbreak lasts more than one month, there is need to have at least 10% of cases by month.

Step 4: Classify cases

Based on the epidemiology and laboratory data, cases are classified following the algorithm shown in figure 2.

Step 5: Describe cases

Cases are described by:

- Time: week of onset, month of onset
- Place: place of residence or work or setting, in terms of locality, caza and mohafaza
- Person: age, gender, nationality
- Disease: classification, outcome …

Indicators are shown using counts, proportions and incidence rates.

Step 6: Confirm the outbreak

a) Cross checking

Additional surveillance sources are checked to verify the occurrence of an outbreak:

- School-based surveillance
- Medical center and dispensary based surveillance
- MOPH visa database
- Event based surveillance.

b) Confirm the outbreak

Based on the epidemiological and laboratory findings, an outbreak is declared.

c) Inform partners

Upon declaration of an outbreak, health partners are informed:
- Regular population: MEW, municipalities, health professionals …
- Refugees: WHO, UNRWA, UNCHR, Unicef…

Official memos are issued by the MOPH.

Step 7: Search for additional cases

Usually VHA is a mild disease. For under 5 years, it is usually asymptomatic.
During an outbreak, there is need to find additional cases in order to understand the epidemiology of the disease.
Both indicator and event based surveillance are enhanced:

- Passive reporting: contacting hospitals and dispensaries in concerned locality, and contacting silent sites
- Active surveillance: may include search of VHA in hospitals
- Community search with field visits: filling new cases in specific line listing
- Notification from field NGOs.

Step 8: Identify risk factors

a) Water testing

If the investigation forms point the presence of common water source: in same locality or area, or institution, the water is suspected to be contaminated.

In concerned localities or institutions, the municipalities are contacted to understand 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 lab.
Water samples should include samples from water network and non-network water.
The water will be tested for fecal contamination.

b) Food inspection and testing

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

The identified food premises are inspected. During the inspection, the conditions are reviewed, the present food is sampled, and the food handlers are checked for their medical cards, hygienic presentation and presence of illness of febrile jaundice in the previous 2 months.
In case of history of febrile jaundice among food handlers, serum is collected from suspected food handlers for VHA IgM testing.

c) Hygiene assessment

In case the VHA cluster occurred in a specific setting, as a refugee settlement, the site is inspected. At 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
- Genotype identification.

Step 9: Enhance monitoring

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

Step 10: Write summary report

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

Figure 2: VHA case classification

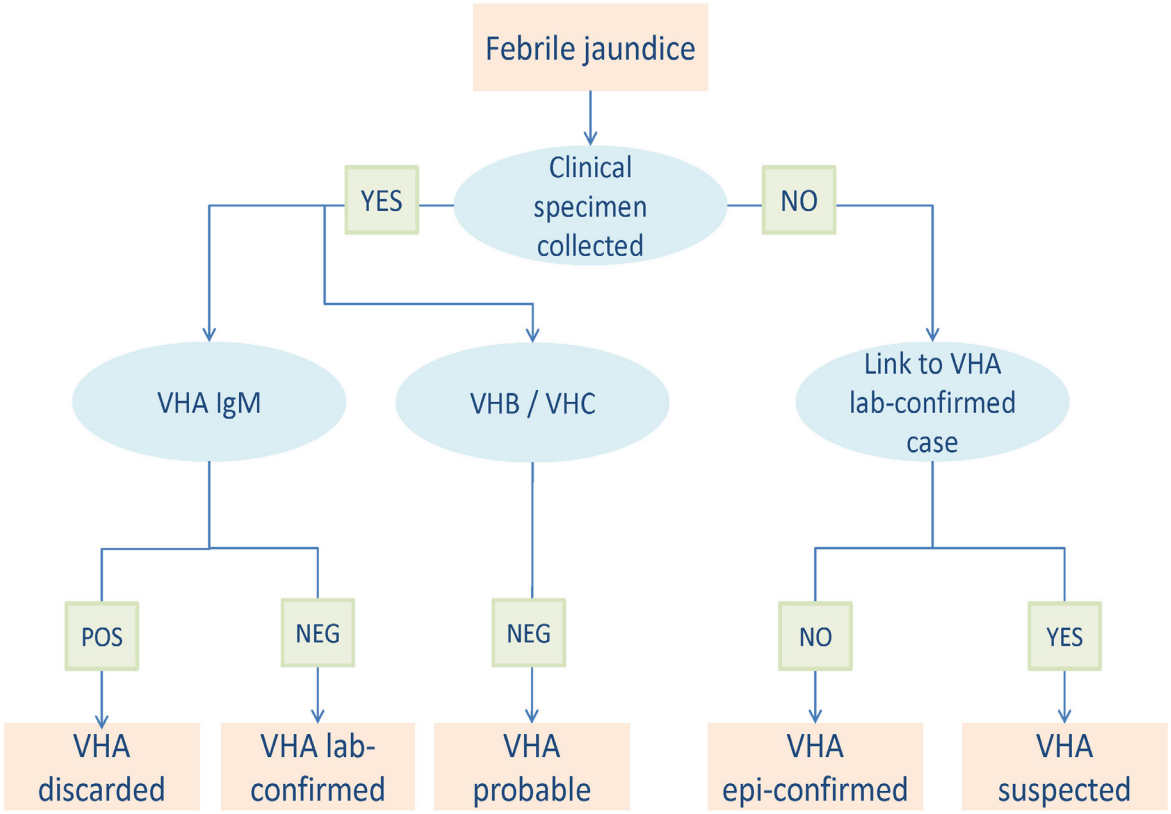
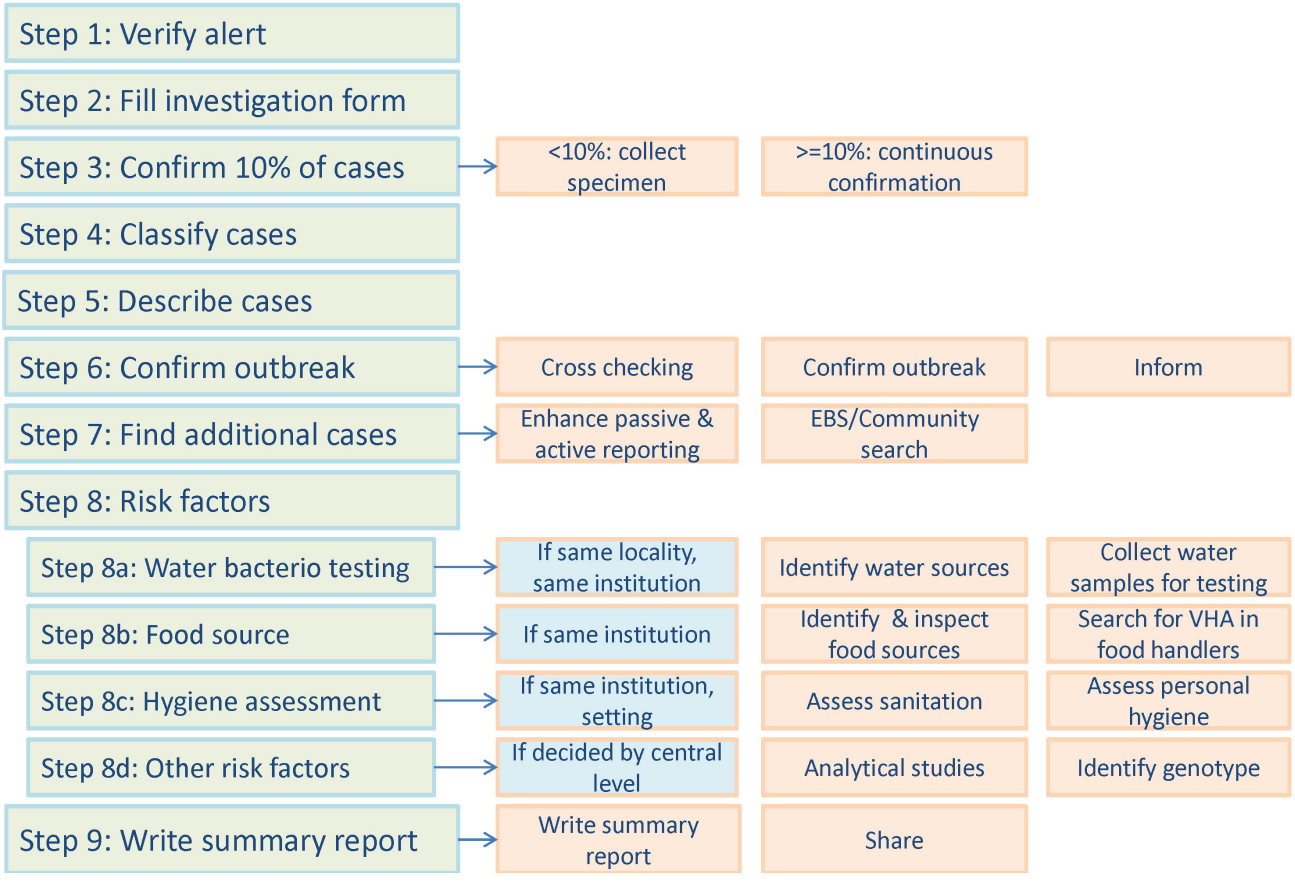


Figure 3: VHA investigation steps



Hepatitis A - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - مديرية الوقاية الصحية - برنامج الترصد الوبائي

استمارة تقصي لحالات التهاب الكبد الفيروسي الالفي / VHA / HVA

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 ☐أنثى	الجنسية	تاريخ الولادة	العمر
عنوان السكن: المحافظة	القضاء	البلدة		رقم الهاتف	

اذا لاجي، حدد السكن: ☐ منزل ☐ مخيم، حدد: ☐ غيره، حدد:

3) المرض

تاريخ ظهور العواض:	معاينة طبية: ☐مستشفى ☐عيادة خاصة ☐مركز/مستوصف	☐مستشفى ميداني ☐عيادة ميدانية ☐غيره:
دخل المستشفى: ☐نعم ☐كلا		
اسم المستشفى:		
اشتراكات: Hepatite fulminante ☐نعم ☐كلا	وفاة: ☐نعم ☐كلا	تاريخ الوفاة:

4) الفحوصات المخبرية

	VHA-IgM		VHB-AgHbs		VHC	
إجراء الفحص	☐نعم	☐كلا	☐نعم	☐كلا	☐نعم	☐كلا
نتيجة الفحص	☐ايجابي	☐سلبي	☐ايجابي	☐سلبي	☐ايجابي	☐سلبي

5) المهنة

مهنة المريض						
يعمل أو يتردد:	نعم	كلا	اذا نعم، حدد عنوان العمل: المؤسسة	البلدة	القضاء	
في مؤسسة تربوية	☐	☐				
في دار حضانة	☐	☐				
في مؤسسة صحية	☐	☐				
في بيع/تحضير المواد الغذائية	☐	☐				

6) مصدر مياه الشرب

مكان:	شبكة مياه الدولة		بئر خاص		بئر /عين عامة		سيترن		غالون		مياه الشتاء		مياه معبئة		غيره
	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	
السكن	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
الدراسة/العمل	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

7) الصرف الصحي

مكان السكن:			مكان الدراسة /العمل:		
☐شبكة مجارير	☐حفرة صحية	☐لا يعلم	☐شبكة مجارير	☐حفرة صحية	☐لا يعلم

8) المحيط

	احتكاك مع اطفال دون 5 سنوات			حالات في الاشهر الثلاث الاخيرة			الأسماء
	نعم	كلا	لا يعلم	نعم	كلا	لا يعلم	
السكن	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
العمل	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الدراسة	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الاقرباء الزوار	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الجيران	☐، عدد___	☐	☐	☐، عدد___	☐	☐	

9) خلاصة

تصنيف الحالة:		تفشي المرض:		
☐مثبتة مخبريا	☐محتملة	☐فردية	☐مؤسسة صحية	☐البلدة/الحي
☐مثبتة وبائيا	☐مشتبهة	☐مؤسسة تربوية	☐مخيم للاجئين	☐غيره:

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

YEAR |_____|

Viral Hepatitis A Surveillance
LINE LISTING

Mohafaza/Caza |_____|

Local ID	ESU ID	Name	Sex	Age (month/year)	Nationality	Date onset	Week	Caza	Commune	Laboratory				Exposure					Other cases			Inpatient	Reporting site
										VHA-IgM	VHB-AgHbs	VHC	Classification	Interviewed	Occupation	Setting	Institution	Children under 5y	in the family	in the insitution	in the neighborhood		
<##>			<M,F>	<# m/y>		<dd/mm/yyyy>	<##>			<P,N>	<P,N>	<P,N>	<C,P,S>	<Y,N>			<E,H,C>	<Y,N>	<Y,N>	<Y,N>	<Y,N>	<Y,N>	

Laboratory: Pos=Positive; Neg=Negative.
Institution: Ed=Educational; He=Health; Dy=Day care.
Classification: Conf=Confirmed; Prob=Probable; Susp=Suspected.

Page No. |___|

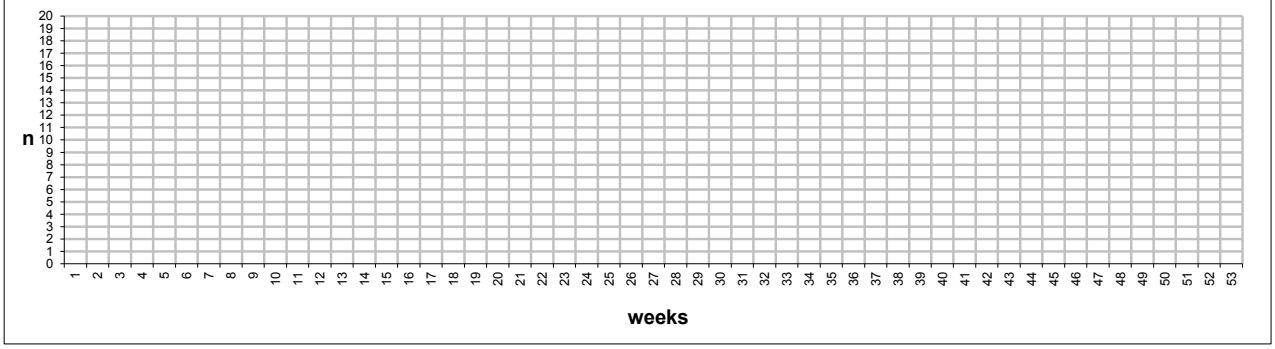
Hepatitis A - Annex 3

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

Descriptive Surveillance Findings

Event	Level	Year	Week	Period	As on
		20___			

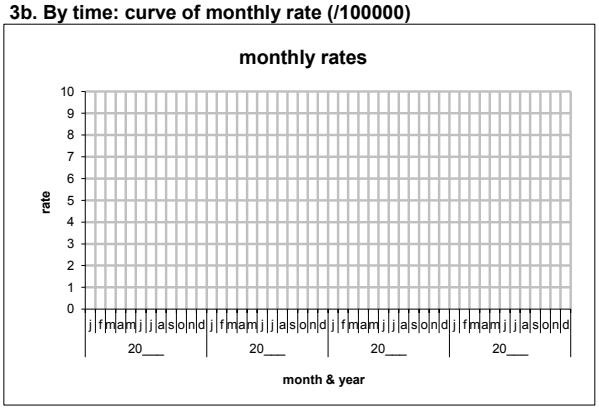
1. Cumulative number =



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						

3b. By time: curve of monthly rate (/100000)



4a. By place: commune

Commune	n	Commune	n

4b. By place: dot map

1 dot = 1 case

5. By age group: cases and rates (/100000)

Age	R20__	R20__	R20__	Pop20__	N20__	R20__
0-4 y						
5-9 y						
10-19 y						
20-39 y						
40-59 y						
60+ y						
Unsp						
Total						

6. By gender

Gender	N20__	% 20__
Male		
Female		
Unsp		
Total		

7. By case management

Case	N20__	% 20__
In-pat		
Out-pat		
Unsp		
Total		

8. By classification

Classificat	N20__	% 20__
Confirm.		
Probable		
Suspect		
Total		

9. Interviews done

N cases	N inter.	%

10. Reporting sites

Total	Hospitals	Dispens.	Lab	Cabinets	Other

Done by

Notes

Notes

Notes

6

Surveillance Standard Operating Procedure: Viral Hepatitis B

Version 1
MOPH circular no. 45
(19th Jan 2015)

Contents

I Purpose

The standard operating procedure (SOP) is intended to assist the epidemiological surveillance program in how to proceed when detecting an alert/outbreak of viral hepatitis B.

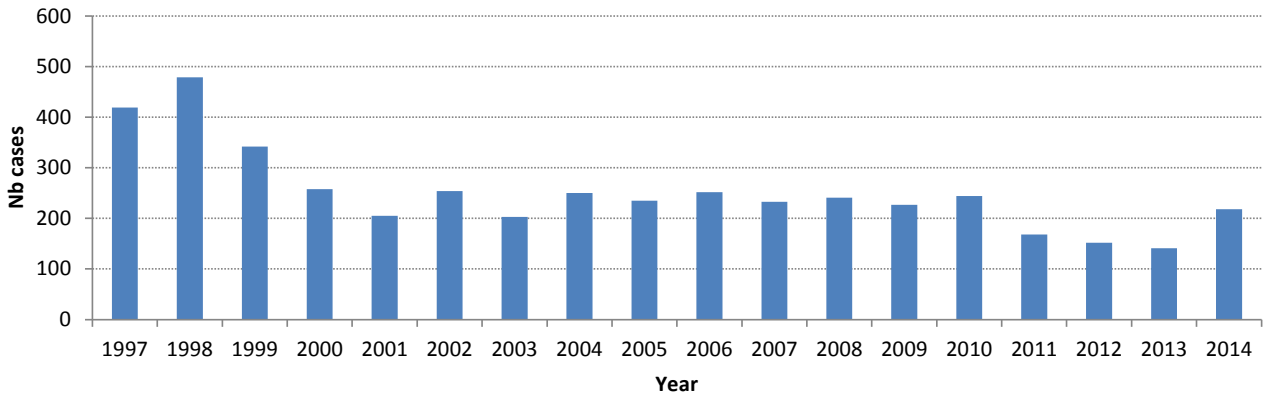
II Generalities

Viral hepatitis B	
Agent	- Hepatitis B virus HBV, hepadnovirus - 4 subtypes: adw, ayw, adr, ayr - 8 genotypes: A-H
Incubation	45-180 days (60-90 days)
Period of communicability	If HBs Ag(+) or HBe Ag(+)
Reservoir	Humans
Modes of transmission	- Person-to-person transmission: body fluids (blood, blood products, saliva, CSF, pleura, peritonial, percardial, synovial fluid, amniotic liquid, semen, vaginal secretions). - Modes: sexual, perinatal, injectable drugs, nosocomial.
Clinical presentation	- Clinical jaundice - Complications: chronic hepatitis, cirhhosis/hepatocarcinoma cancer in 90% if infected <1 year, 20-50% if infected at 1-5 years old, 1-10% if infected at older ages
Worldwide	- Worldwide - 80 % of hepatocarcinoma cancer are due to HBV infection.
Lebanon	HBsAg seroprevalence: - 1.9% (Baddoura. Hepatitis B and C seroprevalence in the Lebanese population. East Mediterr Health J. 2002 Jan), - 1.6% (Saab and col. Prevalence of hepatitis B in a presumably healthy Lebanese population. J Med Liban. 2007 Jan-Mar)
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease. There is no systematic case investigation. Investigation is done if outbreaks. Investigation is done via treating physician.
Investigation: data about case	Clinical presenetation, complications, occupation, vaccination history, occupation, exposure to blood, StD risky behavior, use of intra-veinous drugs, sharing needles, blood transfusion...
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Maternal transmission, sexual partners, intra-veinous drug partners
Investigation: clinical specimen from contacts	Blood
Test	Serology HbsAg, anti-HBc
Laboratories	Clinical laboratories
Outbreak level	if observed incidence exceeds the expected one
Notification to WHO	Based on IHR annex 2 algotrithm

Viral Hepatitis B case definition (MOPH circular no. 111 dated on the 6th September 2006)	
Confirmed case	Case confirmed by laboratory testing: - Positive hepatitis B surface antigen (HbsAg) - Or presence of IgM antibody to hepatitis B core antigen (anti-HBc)
Chronic infection	HbsAg positivity for more than 6 months
Forms	
Reporting	Standard reporting form
Investigation	Specific investigation form for viral hepatitis B, C and D if alert (MOPH circular no.23 dated on the 19th January 2015)

National figures

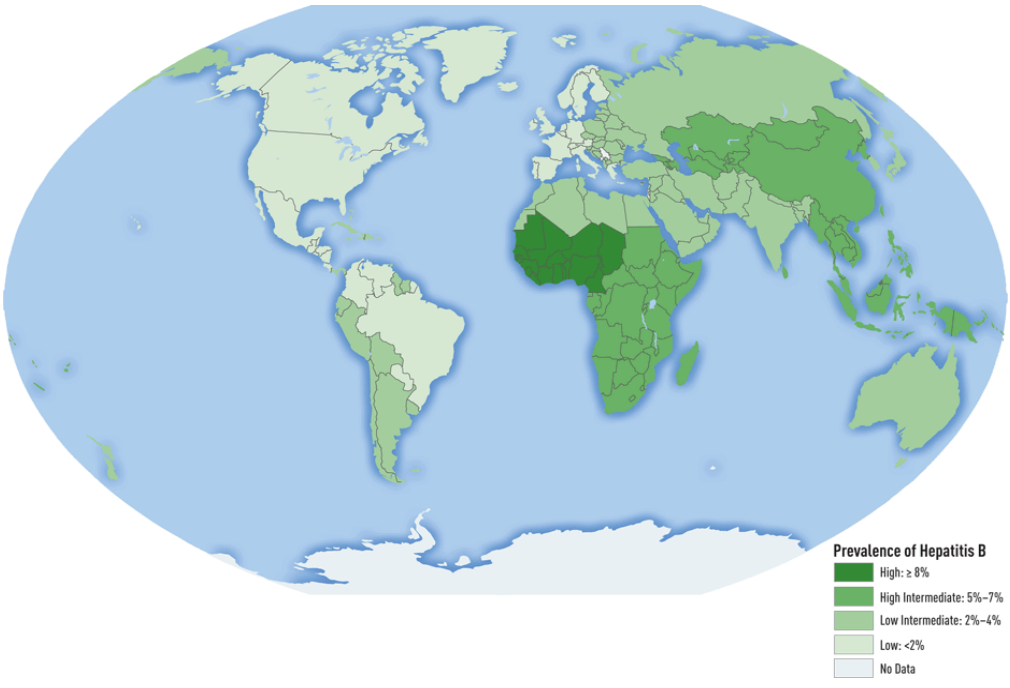
Figure 1: Reported VHB in Lebanon, 1997-2014 (Source: MOPH)



International figures

High hepatitis B prevalence is observed in Sub-Saharan Africa, East Asia, Amazon and Eastern and Central Europe. Chronic infection may be observed in 5-10% of the adult population.
In the Middle East and the Indian subcontinent, an estimated 2–5% of the general population is chronically infected.
In Western Europe and North America, less than 1% of the population is chronically infected. (WHO website, VHB fact sheet)

Figure 2: Prevalence of VHB in the world (Source: www.cdc.gov, 2015)



III Objectives of surveillance

The objectives of surveillance of viralhepatitis B are:

- To monitor VHB incidence in Lebanon
- To detect and investigate alerts and outbreaks
- To monitor childhood viral hepatitis B and evaluate the vaccination program.

IV Alert and outbreak thresholds

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

- One case < 10 years old
- Cluster of VHB epi-linked.

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

- Observed incidence exceeds the expected incidence
- Cluster epi-linked related to healthcare.

V Procedural steps: Case of viral hepatitis B < 10 years

The steps described below are recommended for the verification and investigation of an alert/ outbreak of viral hepatitis B. They are summarized in figures (3) and (4).

Based on the age, two types of alerts are identified:

- Age < 10 years
- Age >=10 years

Step 1: Detect and verify alert

Upon reception of a reported case of viral hepatitis B < 10 years, the Esumoh caza team verified the information with the reporter / source of information: Is it really VHB? The patient is really < 10 years old?
Once verified, the Esumoh caza team informs the Esumo hmohafaza and central teams.

Step 2: Collect data

In Lebanon, the national calendar for vaccination includes vaccines against VHB. A case of VHB under 10 years is unexpected. There is need to understand the causes of the infection. In order to understand the case, the Esumoh caza team coordinates with the health facility / treating physician to fill the anonymous investigation form provided in annex (1).
Since the patient (<10 years) is unable to be interviewed, the interview will be done with the parents, or the persons taking care for the child.

The investigation form includes the following information:

- Demography: gender, age, nationality
- Circumstances of diagnosis
- Illness: determine date of illness onset, whether jaundice was present
- Laboratory findings: serology results for VHB, VHC and VHD
- Vaccination history: for VHB
- Risk factors: general and sensitive

If patient has been hospitalized, the Esumoh may contul the medical file and complete necessary information.

Step 3: Investigate vaccination status

Based on the collected data, several situations are considered:

- Absence of dose zero: the EPI is informed, and the health facility is interviewed on the VHB vaccination program applied at delivery.
- Presence of dose zero but absence of first series: the reasons of non-vaccination are explored.
- Presence of dose 0 and first series: the EPI is informed on the case, the vaccination status is verified and the cold chain is assessed.

Step 4: Write summary report

The Esumoh team informs the EPI on any case of VHB under 10 years old. A summary report is prepared and shared.

VI Case of hepatitis B ≥10 years

Step 1: Detect and veriy alert

Upon detection of an alert by the Esumoh peripheral or central team, the alert is verified by the Esumoh caza team. Verification is done by contacting treating physicians or diagnostic centers. Are the cases recently diagnosed, or are they known cases?

Step 2: Identify artifacts

The Esumoh staff searches for potential artefacts leading to an increase of the cases counts or incidences:

- Analyze reporting behaviors: compliance of hospitals and laboratories to report cases to MOPH, new staff
- Explore enhanced screening programs
- Explore evolution of case definition
- New laboratory tests...

Step 3: Collect datat

Upon verification of the alert, the Esumoh coordinates with the treating physicians and the health facilities to collect information of the new diagnosed cases.
Data collection is done using the investigation from provided in annex (1). The interview is done with the patient via the treating physician.
The investigation form does not include the name of the patient.

The investigation form includes the following information:

- Demography: gender, age, nationality
- Circumstances of diagnosis
- Illness: determine date of illness onset, whether jaundice was present
- Laboratory findings: serology results for VHB, VHC and VHD
- Vaccination history: for VHB
- Risk factors: general and sensitive

According to the information gathered, ESU team generates hypothesis about possible sources of disease.

Step 4: Describe cases

Cases are described by:

- Time: month, year of diagnosis
- Place: place of residence or of care by caza and mohafaza
- Person: age, gender, nationality
- Disease: disease, acute/chronic
- Risk factors
- Sources of reporting...

Step 5: Confirm the outbreak

Based on the epidemiological data, the outbreak is declared.

Upon confirmation, the Esumoh informs the involved units at the MOPH.
The MOPH issues official memos to the health professionals, in order to be aware of the event and to enhance reporting of new cases.

Step 6: Search for additional cases

Additional cases are searched by:

- The passive reporting
- The laboratory-based surveillance
- The blood-banks reporting system...

Step 7: Identify risk factors

a) Is the outbreak health–related?

The occurrence of at least two cases associated with the same health care setting with no other recognized risk factors for infection should prompt an investigation to determine if there is a possible nosocomial source of infection.

Depending on the suspected healthcare setting:

- Inspection is done related to patient safety, infection control practices, blood safety
- Additional cases are searching among the staff and the patients of the facility...

b) Is the outbreak related to risky behavior linked to a specific source?

In case the cluster is linked to high risk accessory activities as tattoos, body piercing, an inspection is conducted to assess the infection control practices.

In case the cluster is linked to high risk professions as sexual workers, the involved partners are informed such ministry of interior, NGOs…

c) Further studies

Further studies are conducted to explore the extend and the risk factors of the outbreak, as social network, analytic studies... Such studies are planned by the Esumoh central level and done in coordination with the health professionals.

Step 8: Write summary report

Once the oubtreak or the event ended, the Esumoh central team prepares a summary report. The report is shared with health professionals.

Figure 3: VHB case classification

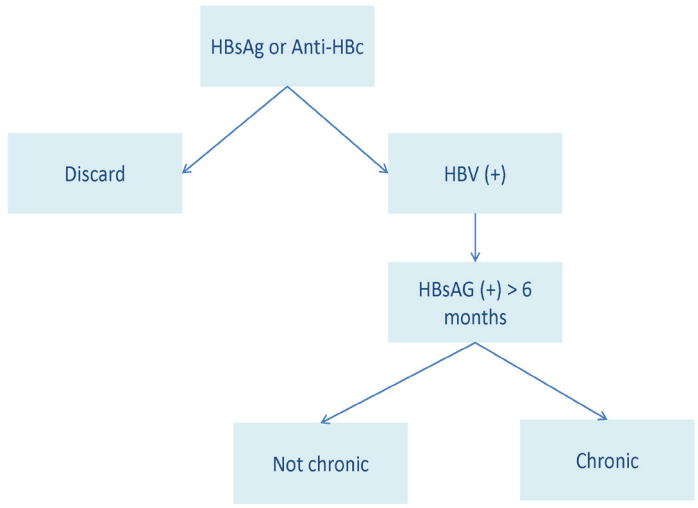


Figure 4: VHB under 10 years investigation steps

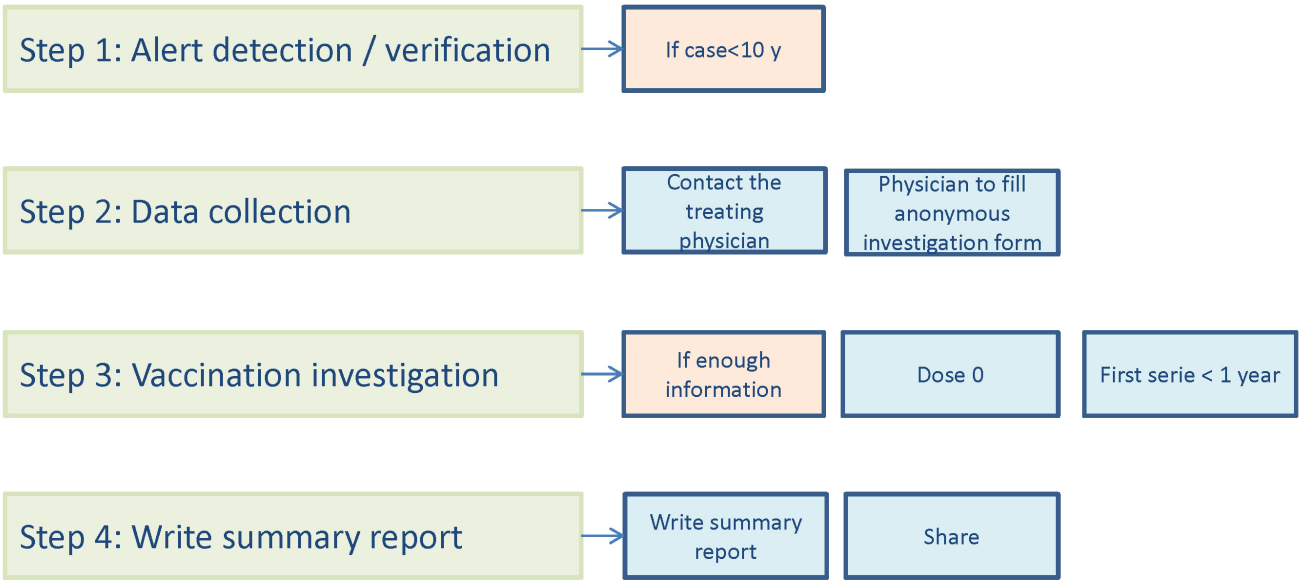
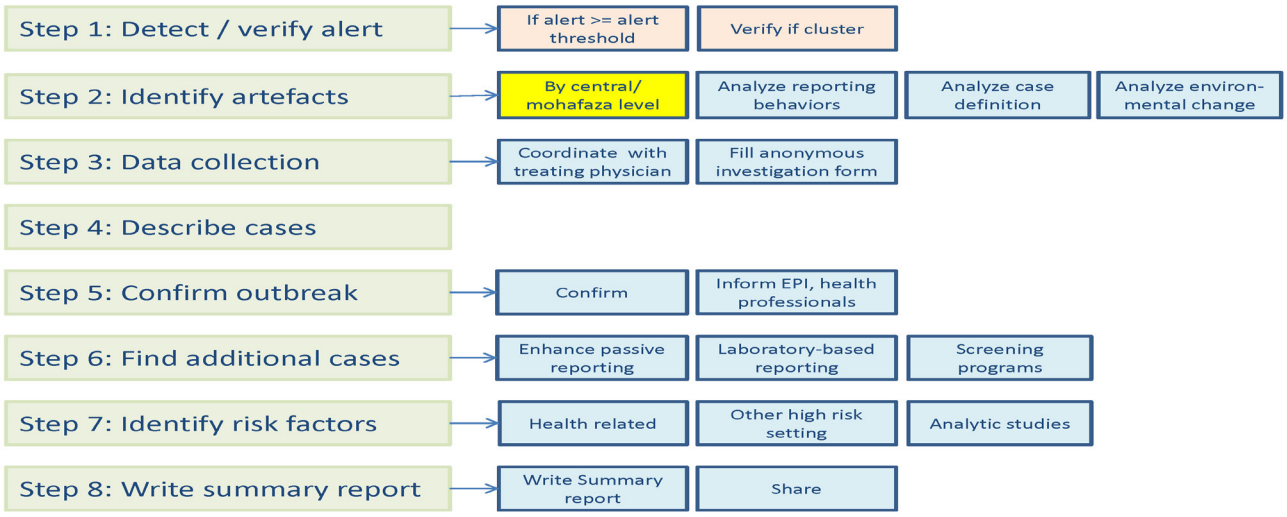


Figure 5: VHB investigation steps for 10 years old and above



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

Case ID |_____|

Investigation form for Viral Hepatitis B, C & D

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of viral hepatitis B, C or D.

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

**

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

**

C Disease and diagnostic circumstances

►Reported disease / condition:

☐ Viral Hepatitis B: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis C: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis D

►Circumstances at diagnosis

☐Symptoms:
- ☐Acute hepatitis
- ☐Chronic hepatitis
- ☐Evaluation of elevated liver enzymes
- ☐Follow up previous marker of viral hepatitis
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Other, specify:

►Circumstances at diagnosis

Presence of symptoms: ☐ Yes ☐No
Year of first symptoms: |_____|
Year of first diagnosis: |_____|

**

D Vaccination status for VHB

►VHB dose zero received at birth?	►VHB first series received at under 1 year?
☐Yes ☐No, why: ☐Unknown	☐Yes ☐No, why: ☐Unknown
►Did the child receive hepatitis B immune globulin (HBIG)?	►Did the patient received VHB vaccine after 1 year
☐Yes, why: ☐No ☐Unknown	☐Yes, number of doses |____|, date/year last dose: |_____| ☐No, why: ☐Unknown
►Was the mother infected during pregnancy or delivery?	►Place of delivery?
☐Yes, why: ☐No ☐Unknown	

**

E Laboratory testing

Virus	Test	Date result	Result	Notes
VHB	□Hepatitis B surface antigen (HBsAg)			
	□Hepatitis B antigen (HBeAg)			
	□Total antibody to hepatitis B core antigen (total anti-HBc)			
	□IgM antibody to hepatitis B core antigen (IgM anti HBc)			
	□Other, specify:			
VHC	□Antibody to hepatitis C virus (anti-HCV)			
	□Supplemental anti-HCV assay (e.g., RIBA)			
	□HCV RNA (e.g., PCR)			
	□Anti-HCV signal to cut-off ratio			
VHD	□Antibody to hepatitis D virus (anti-HDV)			

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	□	□	Profession:
	Contact with blood	□	□	
	Blood exposure injury	□	□	Nb:
	Blood exposure professions	□	□	
Health care				
	Admitted to hospitals	□	□	Nb:
	Had surgery	□	□	Nb:
	Had dialysis	□	□	Nb:
	Received blood products	□	□	Nb times:
	Received blood derived products	□	□	Products:
	Had transplantation	□	□	Organ:
	Dental care	□	□	
Household				
	Sharing toothbrushes	□	□	Frequency:
	Sharing “rasoirs”	□	□	Frequency:
	Sharing personal items	□	□	What:
Other				
	Participated in invasive religious rituals	□	□	
	Tatoos	□	□	
	Body piercing	□	□	

**

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	□	□	
	Sharing needles	□	□	
	Invasive inhalation	□	□	
Prison				
	Incarcerated	□	□	
STD				
	STD: VHB, VHC, VHD, HIV, syphilis, gonorrhea	□	□	What:
	Contact with a person with STD: home	□	□	
	Contact with a person with STD: sex	□	□	
	Contact with a person with STD: other	□	□	Specify:
Sexual risk				
	Male partners	□	□	Nb:
	Female partners	□	□	Nb:
	Sexual workers	□	□	Nb:
	Protective behavior	□	□	

Notes

Notes

7

Surveillance Standard Operating Procedure:

Hepatitis C

Version 1
MOPH circular no. 52
(19th Jan 2015)

Contents

I Purpose

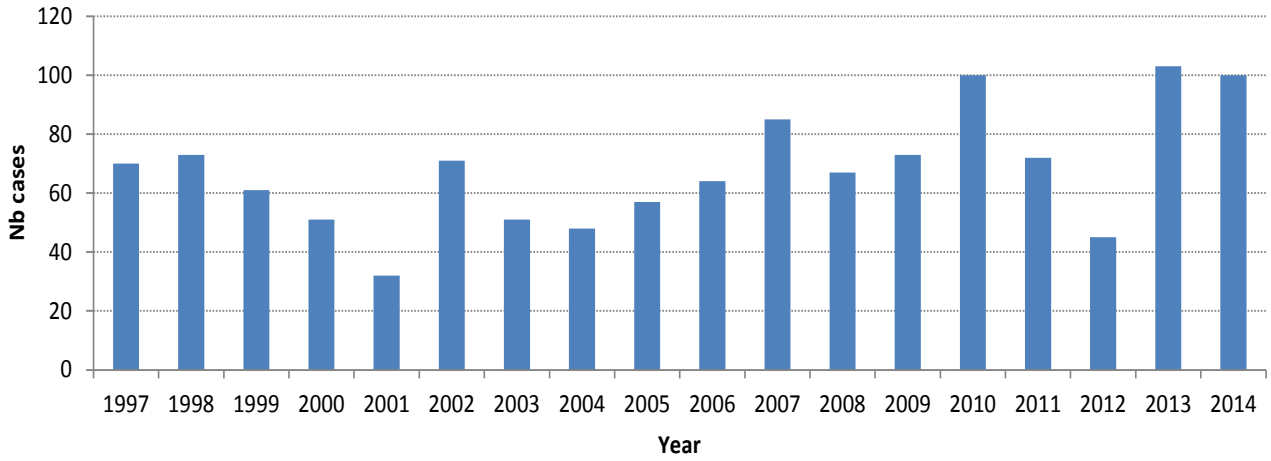
The standard operating procedure (SOP) is intended to assist the epidemiological surveillance program in how to proceed when detecting an alert/outbreak of viral hepatitis C.

II Generalities

Viral hepatitis C	
Agent	Virus: Hepatitis C virus, genus hepacavirus
Incubation period	2 weeks to 6 months
Period of communicability	From 1 or more weeks before onset, and may persists indefinitely
Reservoir	Humans
Modes of transmission	Person-to-person: - Parenterally - Sexual - Mother to child
Clinical presentation	- Febrile jaundice - Asymptomatic in 90% - Complication: chronic infection (50-80%)
Worldwide	Worldwide
Lebanon	Seroprevalence of anti-HCV: 0.7% (Baddoura. Hepatitis B and C seroprevalence in the Lebanese population. East Mediterr Health J. 2002 Jan),
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, risk factors, occupation, other sexual transmitted diseases…
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Similar cases among contacts, sexual contacts, households
Investigation: clinical specimen from contacts	Blood
Test	Serological tests
Laboratories	Clinical laboratories
Outbreak level	If the observed incidence exceeds the epxected one
Notification to WHO	According to International Health Regulations (2005)
Viral Hepatitis C case definition (MOPH circular no. 131 dated on the 22nd September 2006)	
Confirmed case	Case confirmed by laboratory testing with presence of anti-HCV antibodies
Forms	
Reporting	Standard reporting form
Investigation	Specific investigation form for viral hepatitis B, C and D if alert/outbreak (MOPH circular no.23 dated on the 19th January 2015)

National figures

Figure 1: Reported VHC in Lebanon, 1997- 2014 (Source: MOPH)

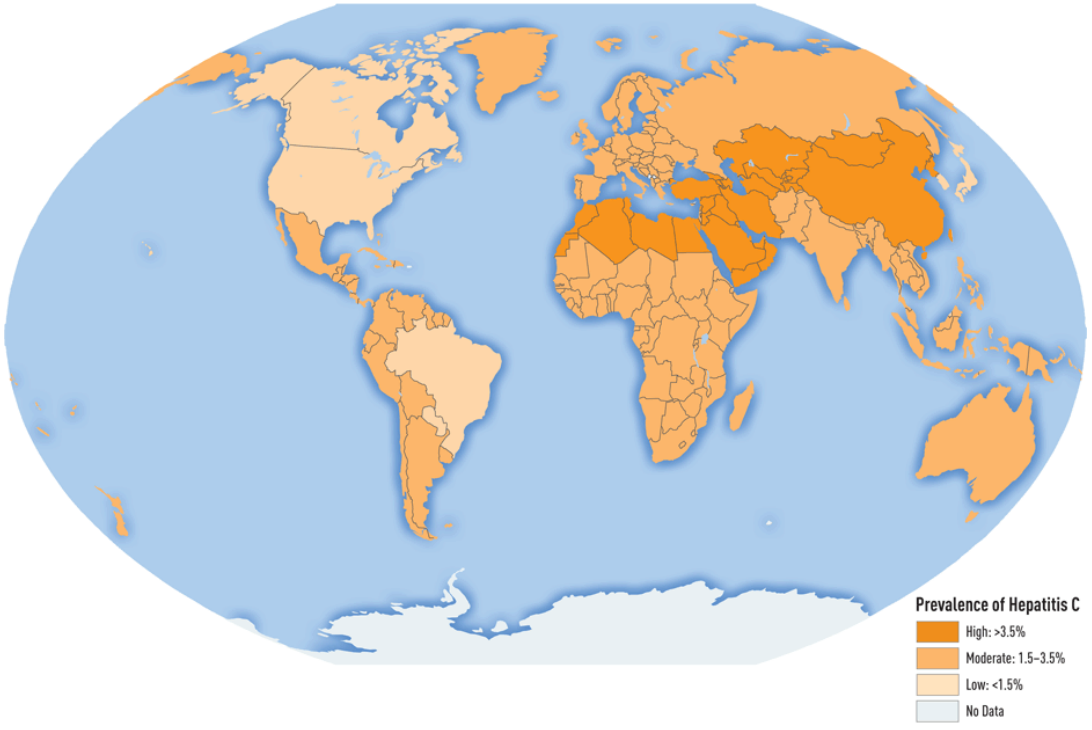


International figures

The most affected regions are Central and East Asia and North Africa (as Egypt). The hepatitis C epidemic can be concentrated in certain high-risk populations as intra-venous drug users (Source: WHO HCV fact sheet).

International figures

Figure 2: Prevalence of HCV infection, 2013 (Source: USA-CDC)



III Objectives of surveillance

The objectives of surveillance of viral hepatitis C are:

- To monitor VHC incidence in Lebanon
- To detect and investigate alerts and outbreaks.

IV Alert and outbreak thresholds

An **alert** is defined by the detection of a cluster of VHC epi-linked.

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

- Observed incidence of VHC exceeds the expected incidence
- Cluster epi-linked related to healthcare.

V Procedural steps

The steps described below are recommended for the verification and investigation of viral hepatitis C alert and outbreak. They are summarized in figure (3).

Step 1: Detect and verify alert

Upon detection of an alert by the Esumoh peripheral or central team, the alert is verified by the Esumoh caza team. Verification is done by contacting treating physicians or diagnostic centers. Are the cases recently diagnosed, or are they known cases?

Step 2: Identify artifacts

The Esumoh staff searches for potential artefacts leading to an increase of the cases counts or incidences:

- Analyze reporting behaviors: enhanced reporting from health care facilities
- Impact of screening programs
- Modification of case definition
- New laboratory tests …

Step 3: Collect data

Upon verification of the alerts, The Esumoh coordinates with the treating physicians and the health facilities to collect information of the new diagnosed cases.
Data collection is done using the investigation from provided in Annex 1. The interview is done via the treating physician.
The investigation form does not include the name of the patient.

The investigation form includes the following information:

- Demography: gender, age, nationality
- Circumstances of diagnosis
- Illness: determine date of illness onset, whether jaundice was present.
- Laboratory findings: serology results for VHB, VHC and VHD
- Risk factors: general and sensitive...

Step 4: Describe cases

Cases are described by:

- Time: month and year of diagnosis
- Place: place of residence or of care by caza and mohafaza
- Person: age, gender, nationality
- Risk factors
- Sources of reporting.

Step 5: Confirm the outbreak

Based on the epidemiological data, the outbreak is declared.

Upon confirmation, the Esumoh informs the involved units at the MOPH. The MOPH issues official memos to the health professionals, in order to be aware of the event and to enhance reporting of new cases.

Step 6: Search for additional cases

Additional cases are searched by:

- The passive reporting
- The laboratory-based surveillance
- The blood-banks reporting system...

specific studies usig social networks can be conducted to estimate the extend of the outbreak.

Step 7: Identify risk factors

Based on the epidemiological data, hypothesis are generated related to potential risk factors.

a) Analytic studies

Analytic studies are conducted to identify the risk factors such as case control studies. The risk factors are grouped as following:

- Health related (dialysis, blood transfusion…)
- Non-health setting related (tattoo…)
- Personal risk behavior (drugs, sexual intercourse…)
- Household risk behavior (sharing personal items…)

b) Inspection and assessment

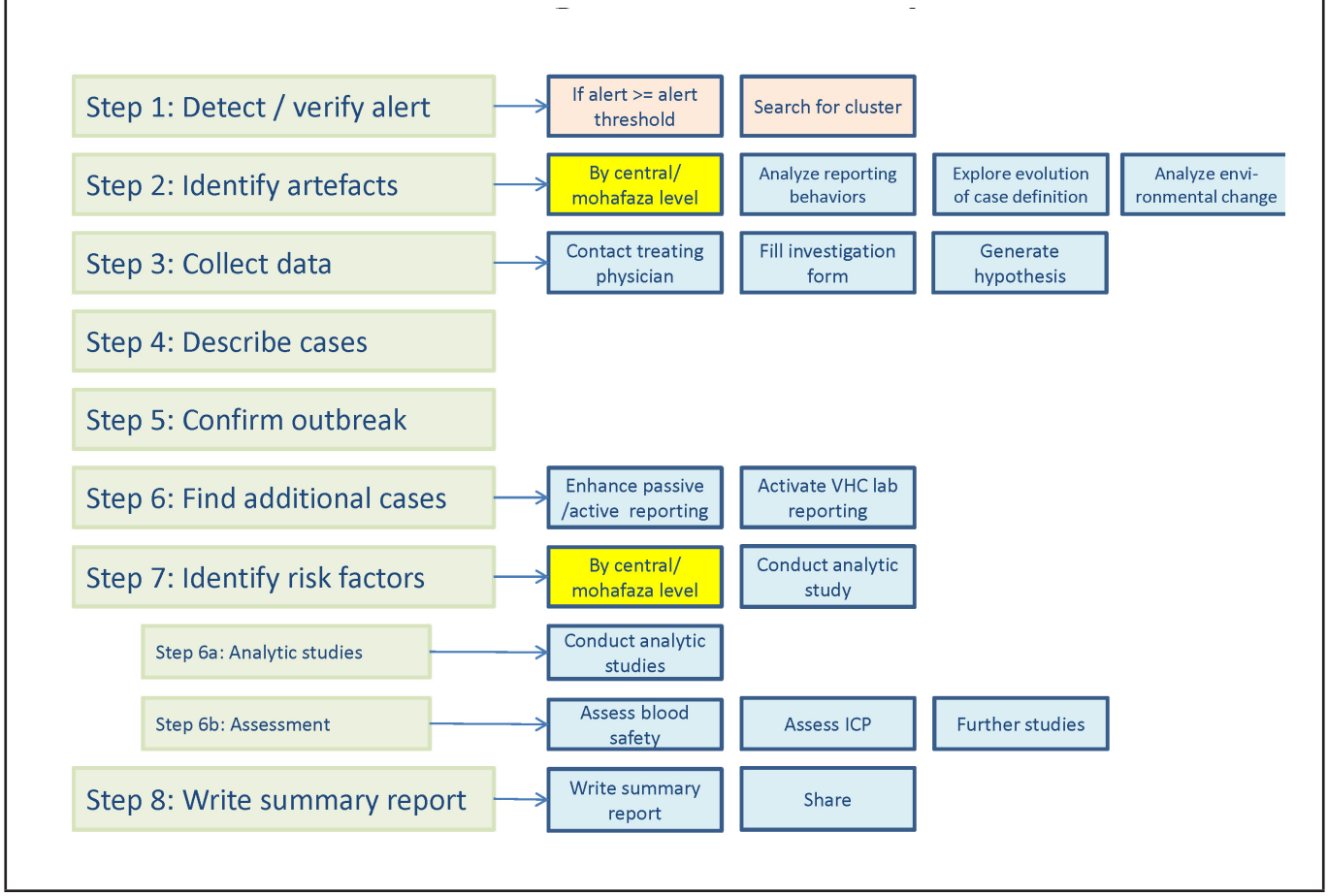
Depending on identified risk factors, additional activities are conducted:

- Inspection of settings
- Assessing patient/client safety, infection control practices, blood safety
- Search of additional cases in identified setting…

Step 8: Write summary report

Once the outbreak has ended, the Esumoh central team prepares a summary report.
The report is shared with involved partners.

Figure 3: VHC investigation steps



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

Case ID |_____|

Investigation form for Viral Hepatitis B, C & D

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of viral hepatitis B, C or D.

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

**

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

**

C Disease and diagnostic circumstances

►Reported disease / condition:

☐ Viral Hepatitis B: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis C: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis D

►Circumstances at diagnosis

☐Symptoms:
- ☐Acute hepatitis
- ☐Chronic hepatitis
- ☐Evaluation of elevated liver enzymes
- ☐Follow up previous marker of viral hepatitis
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Other, specify:

►Circumstances at diagnosis

Presence of symptoms: ☐ Yes ☐No
Year of first symptoms: |_____|
Year of first diagnosis: |_____|

**

D Vaccination status for VHB

►VHB dose zero received at birth? ☐Yes ☐No, why: ☐Unknown	►VHB first series received at under 1 year? ☐Yes ☐No, why: ☐Unknown
►Did the child receive hepatitis B immune globulin (HBIG)? ☐Yes, why: ☐No ☐Unknown	►Did the patient received VHB vaccine after 1 year ☐Yes, number of doses |____|, date/year last dose: |_____| ☐No, why: ☐Unknown
►Was the mother infected during pregnancy or delivery?	►Place of delivery?
☐Yes, why: ☐No ☐Unknown	

**

Case ID |_____|

E Laboratory testing

Virus	Test	Date result	Result	Notes
VHB	□Hepatitis B surface antigen (HBsAg)			
	□Hepatitis B antigen (HBeAg)			
	□Total antibody to hepatitis B core antigen (total anti-HBc)			
	□IgM antibody to hepatitis B core antigen (IgM anti HBc)			
	□Other, specify:			
VHC	□Antibody to hepatitis C virus (anti-HCV)			
	□Supplemental anti-HCV assay (e.g., RIBA)			
	□HCV RNA (e.g., PCR)			
	□Anti-HCV signal to cut-off ratio			
VHD	□Antibody to hepatitis D virus (anti-HDV)			

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	□	□	Profession:
	Contact with blood	□	□	
	Blood exposure injury	□	□	Nb:
	Blood exposure professions	□	□	
Health care				
	Admitted to hospitals	□	□	Nb:
	Had surgery	□	□	Nb:
	Had dialysis	□	□	Nb:
	Received blood products	□	□	Nb times:
	Received blood derived products	□	□	Products:
	Had transplantation	□	□	Organ:
	Dental care	□	□	
Household				
	Sharing toothbrushes	□	□	Frequency:
	Sharing “rasoirs”	□	□	Frequency:
	Sharing personal items	□	□	What:
Other				
	Participated in invasive religious rituals	□	□	
	Tatoos	□	□	
	Body piercing	□	□	

**

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	□	□	
	Sharing needles	□	□	
	Invasive inhalation	□	□	
Prison				
	Incarcerated	□	□	
STD				
	STD: VHB, VHC, VHD, HIV, syphilis, gonorrhea	□	□	What:
	Contact with a person with STD: home	□	□	
	Contact with a person with STD: sex	□	□	
	Contact with a person with STD: other	□	□	Specify:
Sexual risk				
	Male partners	□	□	Nb:
	Female partners	□	□	Nb:
	Sexual workers	□	□	Nb:
	Protective behavior	□	□	

Notes

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8

Surveillance Standard Operating Procedure: Hepatitis D

Version 1
MOPH circular no. 53
(19th Jan 2015)

Contents

I Purpose

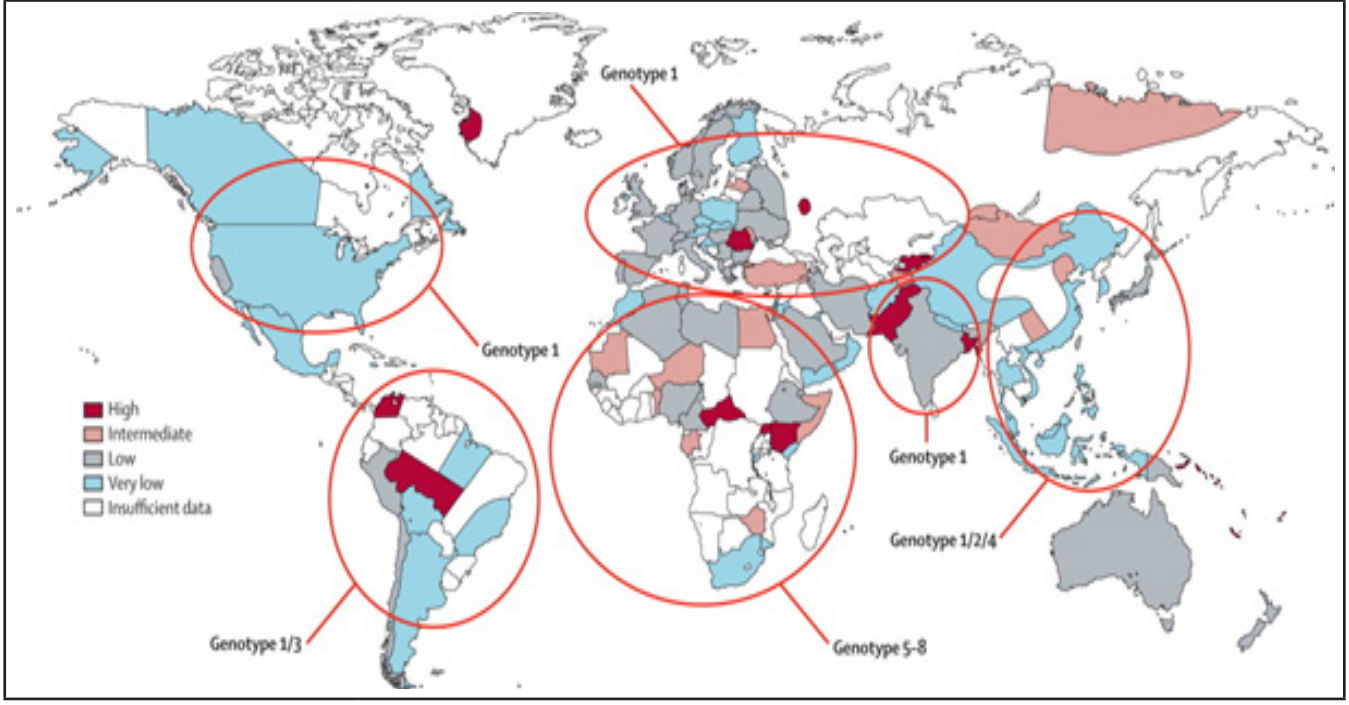
The standard operating procedure (SOP) is intended to assist the epidemiological surveillance program in how to proceed when detecting an alert/outbreak of viral gepatitis D.

II Generalities

Viral hepatitis D	
Agent	Hepatitis D virus, virus-like particle
Incubation period	2-8 weeks
Period of communicability	Blood infectious during all the phase of active delta hepatitis
Reservoir	Humans
Modes of transmission	Person-to-person: - Exposure to infected blood and serous body fluids - Contaminated needles, syringes - Contaminated plasma derivatives - Sexual transmission
Clinical presentation	- Febrile jaundice - Always associated with HBV infection - Complications: fulminant hepatitis
Worldwide	Worldwide
Lebanon	Not reported
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Hepatitis B virus infection history and case management, risk factors …
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Sexual contacts, intra-venous drug users…
Investigation: clinical specimen from contacts	Blood
Test	Serological testing
Laboratories	Clinical laboratories
Outbreak level	- At least 2 confirmed cases epi-linked - Or if the observed incidence exceeds the expected one
Notification to WHO	Notification to WHO if meeting the criteria of the International Health Regulations (2005)
Viral Hepatitis D case definition (MOPH circular no. 123 dated on the 13th September 2006)	
Confirmed case	Case confirmed by laboratory testing: - Positive hepatitis B surface antigen (HbsAg) or presence of IgM antibody anti-HBc(as co-infection of hepatitis B) - And presence of anti-HDV
Forms	
Reporting	Standard reporting form

Investigation	Specific investigation form for viral hepatitis B, C and D, for alert/ outbreak (MOPH circular no.23 dated on the 19th January 2015)
National figures	
No case was reported in Lebanon since 1995. Article (Ramia): Among HBV infected persons, 1,2% were anti-HDV positive. HDV genotype I seems to be the predominant genotype in Lebanon and the Middle East.	
International figures	
High prevalence is observed in the Mediterranean Basin, the Middle East, Central Asia, West Africa, the Amazon Basin of South America and certain South Pacific islands (Source: WHO fact sheet).	

Figure 1: Worldwide prevalence of HDV and the geographic distribution of its genotypes.
Source: Hepatitis delta virus. S. Hughes, H. Wedemeyer, Ph. M Harrison. The Lancet, Volume 378, Issue 9785, Pages 73 - 85, 2 July 2011



III Objectives of surveillance

The objectives of surveillance of viral hepatitis D are:
- To detect and confirm any case of VHD
- To identify risk factors of VHD.

IV Alert and outbreak definition

An **alert** is defined by any confirmed case of viral hepatitis D.
An **outbreak** is defined by at least 2 cases of VHD with epidemiological link.

V Procedural steps

The steps described below are recommended for the verification and investigation of an alert of viral hepatitis D. The steps are summarized in figure (2).

Step 1: Detect and verify alert

Upon reception of any case of VHD, the Esumoh caza team contacts the health facility to verify the diagnosis: Is the case really VHD?
If verified, the Esumoh caza team informs the Esumoh mohafaza and the central teams.

Step 2: Collect data

The Esumoh team contacts the health facility in order to find the best way to approach the patient in order to collect epidemiological data.
Data is collected using the investigation form for viral hepatitis B, C and D. The form is anonymous and is filled via the treating physician.

The investigation form includes the following information:

- Demography: gender, age, nationality
- Circumstances of diagnosis
- Illness: determine date of illness onset, whether jaundice was present
- Laboratory findings: serology results for VHB, VHC and VHD
- Risk factors: general and sensitive...

Step 3: Search for additional cases

In the environment of the case, other VHD cases are searched among known VHB:

- In the household or relatives
- In the health facility that usually takes care of the case
- In the peer group of the case.

The laboratory-based surveillance may be enlarged to include VHD.
Studies using socical networks may be conducted.

Step 4: Describe cases and confirm the outbreak

Cases are described by:

- Time: month and year of diagnosis
- Place: place of residence or of care by caza and mohafaza
- Person: age, gender, nationality
- Risk factors.

Based on the epidemiological data, the outbreak is declared.

The Esumoh informs the involved units at the MOPH. The MOPH issues official memos to the health professionals, in order to be aware of the event and to enhance reporting of new cases.

Step 5: Identify risk factors

Exploring the risk factors will rely on the thorough investigation of the case. The spectrum of investigation will be:

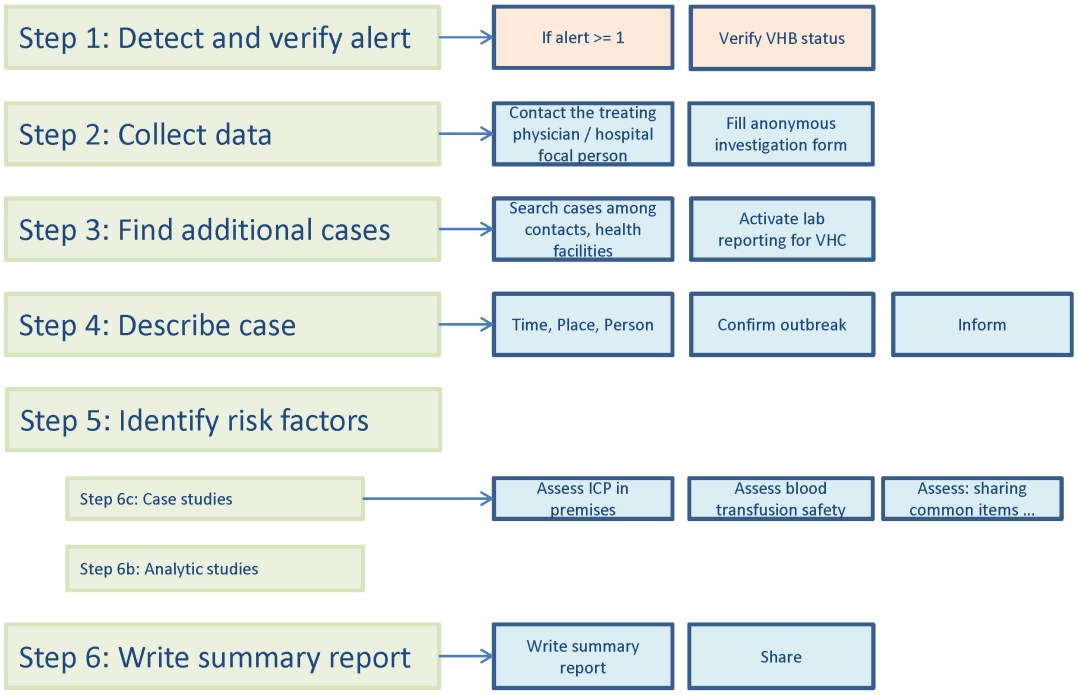
- Assessing infection control practices in all health facilities visited by the cases
- Assessing blood safety and hemodialysis if used by the cases
- Assessing infection / client safety in specific settings (tattoos…) if used by the cases
- Assessing household behavior in sharing personal items
- Assessing behaviors of drug users or other risky behaviors

If the number of cases permits, analytic studies are conducted.

Step 6: Write summary report

Once the outbreak or event has ended, the Esumoh central team prepares a summary report. The report is shared with partners.

Figure 2: VHD investigation steps



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

Case ID |_____|

Investigation form for Viral Hepatitis B, C & D

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of viral hepatitis B, C or D.

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

**

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

**

C Disease and diagnostic circumstances

►Reported disease / condition:
☐ Viral Hepatitis B: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis C: ☐Acute ☐Chronic ☐Other
☐ Viral Hepatitis D

►Circumstances at diagnosis

☐Symptoms:
- ☐Acute hepatitis
- ☐Chronic hepatitis
- ☐Evaluation of elevated liver enzymes
- ☐Follow up previous marker of viral hepatitis
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Other, specify:

►Circumstances at diagnosis

Presence of symptoms: ☐ Yes ☐No
Year of first symptoms: |_____|
Year of first diagnosis: |_____|

**

D Vaccination status for VHB

►VHB dose zero received at birth?
- ☐Yes
- ☐No, why:
- ☐Unknown

►VHB first series received at under 1 year?
- ☐Yes
- ☐No, why:
- ☐Unknown

►Did the child receive hepatitis B immune globulin (HBIG)?
- ☐Yes, why:
- ☐No
- ☐Unknown

►Did the patient received VHB vaccine after 1 year
- ☐Yes, number of doses |____|, date/year last dose: |_____|
- ☐No, why:
- ☐Unknown

►Was the mother infected during pregnancy or delivery?
- ☐Yes, why:
- ☐No
- ☐Unknown

►Place of delivery?

**

Case ID |_____|

E Laboratory testing

Virus	Test	Date result	Result	Notes
VHB	□Hepatitis B surface antigen (HBsAg)			
	□Hepatitis B antigen (HBeAg)			
	□Total antibody to hepatitis B core antigen (total anti-HBc)			
	□IgM antibody to hepatitis B core antigen (IgM anti HBc)			
	□Other, specify:			
VHC	□Antibody to hepatitis C virus (anti-HCV)			
	□Supplemental anti-HCV assay (e.g., RIBA)			
	□HCV RNA (e.g., PCR)			
	□Anti-HCV signal to cut-off ratio			
VHD	□Antibody to hepatitis D virus (anti-HDV)			

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	□	□	Profession:
	Contact with blood	□	□	
	Blood exposure injury	□	□	Nb:
	Blood exposure professions	□	□	
Health care				
	Admitted to hospitals	□	□	Nb:
	Had surgery	□	□	Nb:
	Had dialysis	□	□	Nb:
	Received blood products	□	□	Nb times:
	Received blood derived products	□	□	Products:
	Had transplantation	□	□	Organ:
	Dental care	□	□	
Household				
	Sharing toothbrushes	□	□	Frequency:
	Sharing “rasoirs”	□	□	Frequency:
	Sharing personal items	□	□	What:
Other				
	Participated in invasive religious rituals	□	□	
	Tatoos	□	□	
	Body piercing	□	□	

**

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	□	□	
	Sharing needles	□	□	
	Invasive inhalation	□	□	
Prison				
	Incarcerated	□	□	
STD				
	STD: VHB, VHC, VHD, HIV, syphilis, gonorrhea	□	□	What:
	Contact with a person with STD: home	□	□	
	Contact with a person with STD: sex	□	□	
	Contact with a person with STD: other	□	□	Specify:
Sexual risk				
	Male partners	□	□	Nb:
	Female partners	□	□	Nb:
	Sexual workers	□	□	Nb:
	Protective behavior	□	□	

Notes

Notes

9

Surveillance Standard Operating Procedure:

Viral Hepatitis E

Version 1
MOPH circular no. 54
(19th Jan 2015)

Contents

I Purpose

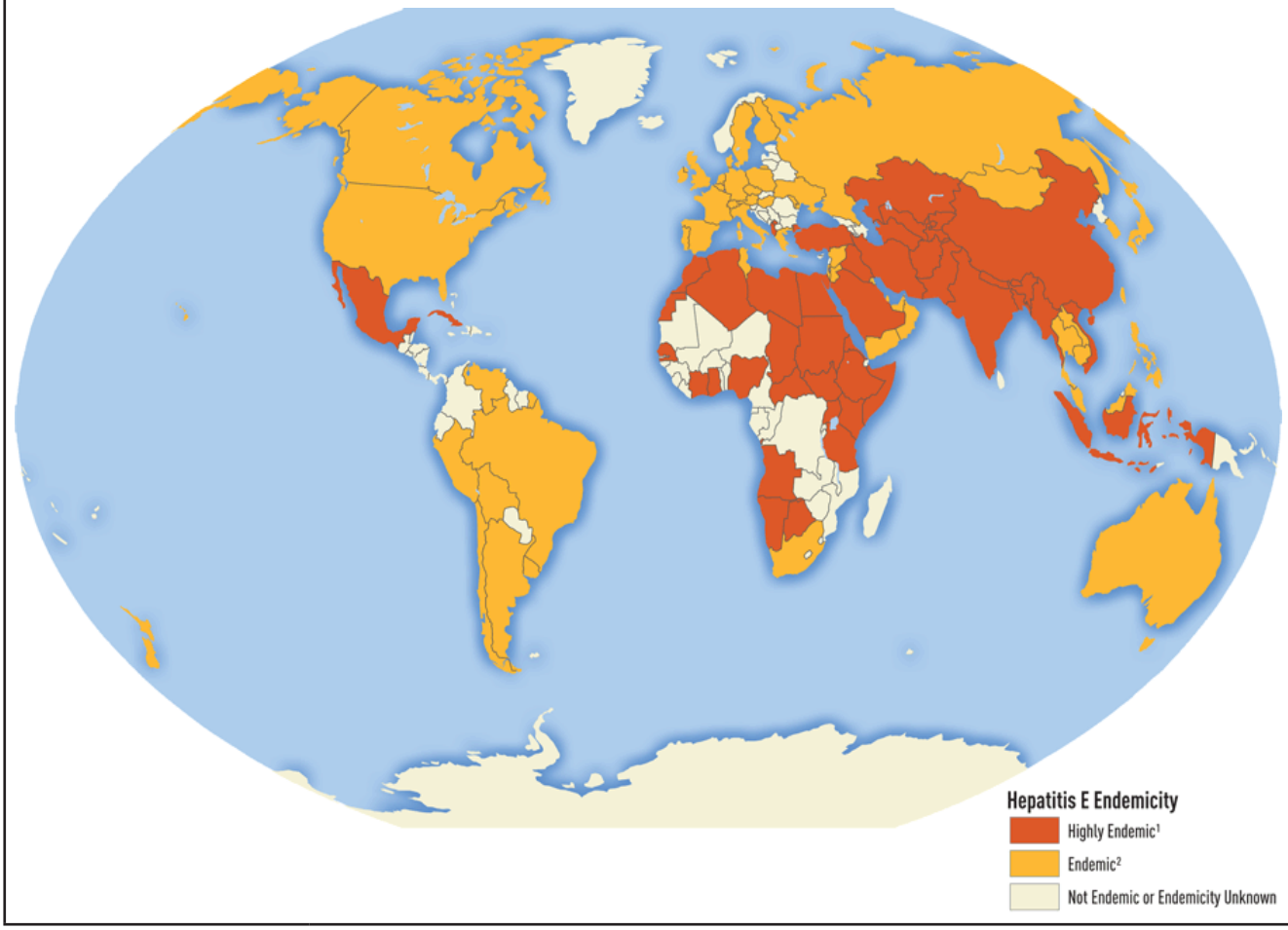
The purpose of the present standard operating procedures (SOP) is to guide the Epidemiological Surveillance Program on how to proceed in case of alert/outbreak of viral hepatitis E.

II Generalities

Viral hepatitis E	
Agent	Hepatitis E virus, family Caliciviridae
Incubation period	15-64 days (26-42 days)
Period of communicability	Up to 2 weeks after jaundice onset
Reservoir	Humans
Modes of transmission	- Dinking contaminated water - Person-to-person transmission: fecal-oral route
Clinical presentation	- Febrile jaundice - Fatality : 20 % among pregnant women infected during the 3rd trimester
Worldwide	Worldwide
Lebanon	Not diagnosed yet
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease (VHE) and syndromic (acute jaundice) approaches
Investigation: data about case	Clinical presentation, complications, pregnancy, sources of drinking water, occupation…
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Similar cases among contacts, presence of pregnant women
Investigation: clinical specimen from contacts	If symptoms
Test	Serology
Laboratories	Reference laboratories
Outbreak level	At least 1 confirmed case
Notification to WHO	Based on WHO IHR criteria
Viral Hepatitis E case definition (MOPH circular no. 35 dated on the 30th March 2007)	
Confirmed case	Case confirmed by laboratory testing with presence of IgM anti-HEV antibodies
Probable case	Case of acute jaundice with negative results for viral hepatitis A (negative IgM anti-HAV) and viral hepatitis B (negative IgM anti-HBc or HbsAg antigens) and viral hepatitis C (negative anti-HCV antibodies)
Forms	
Reporting	Standard reporting form
Investigation	VHE investigation form (MOPH ciruclar no.3 dated on the 7th January 2015)

National figures
No cases were reported in Lebanon. However a study conducted in 1998 (Irani Hakime, 1998) on 10 blood donors, detected HEV antibodies in 4% of the sample.
International figures
Hepatitis E is found worldwide, but the prevalence is highest in East and South Asia. In the Eastern Mediterranean region, outbreaks were documented in Algeria, Jordan, Libya, Morocco, and Turkey. Seroprevalence studies of anti-HEV found antibodies from 4% to 80%.

Figure 1: Distrubution of hepatitis E virus infection (Source: CDC-USA)



III Objective of surveillance.

The objectives of viral hepatitis E surveillance are:

- To detect and investigate any alert or outbreak of VHE
- To identify risk factors.

IV Alert and outbreak thresholds

An **alert** is defined by the detection of any probable case of VHE.
An **outbreak** is defined by the confirmation of at least 1 case of VHE.

V Procedural steps

For each alert of VHE, the below steps are followed. They are summarized in figure (3).

Step 1: Detect and verify alert

Upon the reporting of probable VHE case, the Esumoh caza team verifies the available medical diagnosis. The treating physician is contacted.
Upon verification, the Esumoh caza teams informs the mohafaza and central teams.

Step 2: Collect data

Upon the verification, the probable VHE case is interviewed by the Esumoh caza team.
Interviews are done by phone, filling the investigation form provided in annex (1).
The investigation form includes information on the following:

- Demography: age, gender, nationality, residence
- Disease: onset
- Laboratory results
- Risk factors: occupation, water sources, food sources
- Contacts: age, cases…
- Presence of pregnancy: among cases and contacts.

Once form is filled, it is shared with the Esumoh mohafaza and central teams.

Step 3: Confirm the case and the outbreak

There is need to confirm the diagnosis.
The Esumoh caza team arranges the collection of serum from the patient. The specimens are sen to designated laboratory in Lebanon (RHUH) or abroad, for IgM serology.
If the test is negative, the VHE diagnosis is discarded.
If the case is confirmed, the outbreak is declared. The MOPH informs health professionals.

Step 4: Search for additional cases

During an outbreak, there is need to find additional cases in order to understand the epidemiology of the disease.

Both indicator and event-based surveillance are enhanced in the area of the confirmed cases:

- Cases suspected by the confirmed cases
- Cases reported from health facilities:
  - Passive reporting: contacting hospitals and dispensaries in concerned localities, and contacting silent sites
  - Active surveillance: may include search of VHE in hospitals
- Cases notified by the community or NGOs.

Step 5: Describe cases

Cases are described by:

- Time: week, month and year of onset
- Place: place of residence or work or setting, in terms of locality, caza and mohafaza
- Person: age, gender, nationality
- Disease: classification, outcome …
- Presence of pregnancy.

Indicators are shown using counts, proportions and incidence rates.

Step 6: Search for and follow up of pregnant women

The VHE is known to cause complications among pregnant women in particular during the 3rd trimester.
Pregnancy is searched among:

- Cases
- Contacts.

Cases are followed up in coordination with the treating physician to detect any complications.
Contacts are followed up to 2 months to detect any VHE. Serology may be done to verify the presence of any infection.

Step 7: Identify risk factors

Based on the available data collected in the investigation form, the identification of risk factors includes to verify water safety and hygienic conditions.

a) Water testing

In concerned localities or institutions, the municipalities are contacted to understand 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 lab.
Water samples should include samples from water network and non-network water.
The water will be tested for fecal contamination.

b) Hygiene assessment

In case the VHE cluster occurred in a specific setting, as a refugee settlement, the site is inspected. At inspection the following is assessed:

- Availability of safe drinking water
- Availability of domestic water
- Sanitation infrastructure
- Hygiene behavior.

c) Further studies

Based on the needs, the Esumoh central level will conduct advanced studies as:

- Analytic studies: case control or cohort
- Genotype identification.

Step 8: Enhance monitoring

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

Step 9: Write summary report

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

Figure 2: VHE case classification

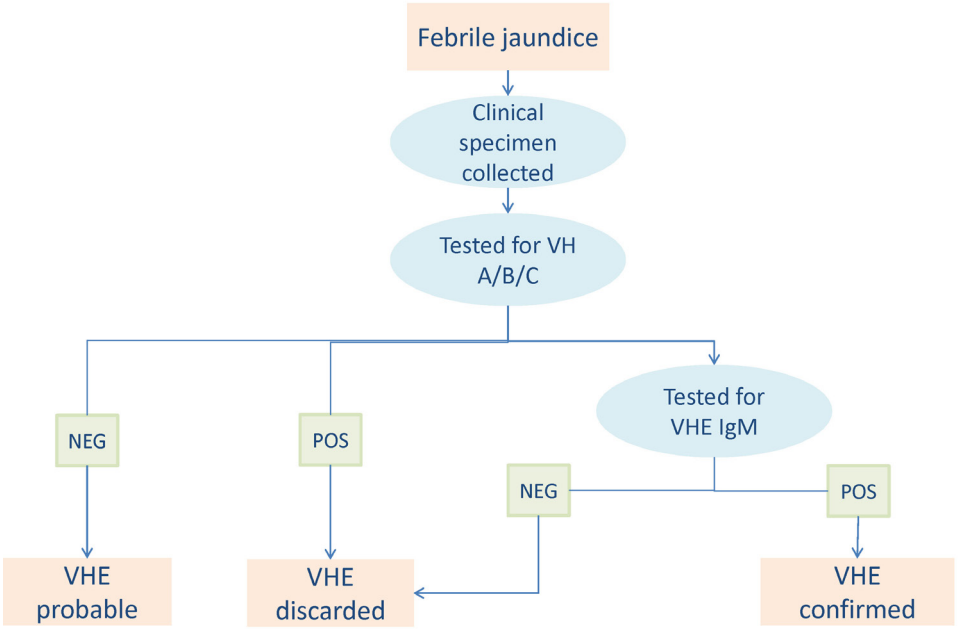
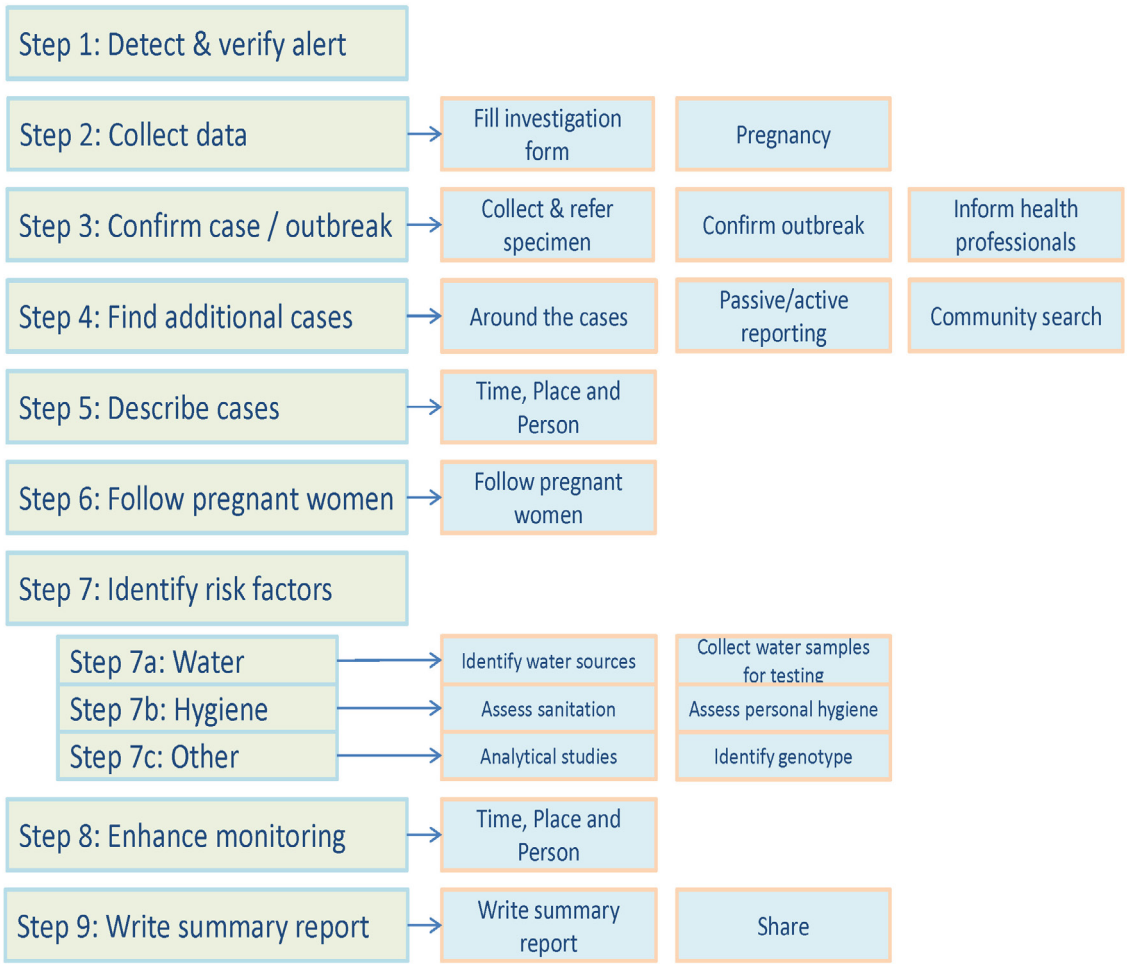


Figure 3: VHE investigation steps



Hepatitis E - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - مديرية الوقاية الصحية - برنامج الترصد الوبائي

استمارة تقصي لحالات التهاب الكبد الفيروسي الهائي / HVE / VHE

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	تاريخ الولادة	العمر
		☐ ذكر ☐ أنثى		
عنوان السكن: المحافظة	القضاء	البلدة	رقم الهاتف	

3) المرض

تاريخ ظهور العواض	دخل المستشفى	اسم المستشفى	Hepatite fulminante	وفاة	تاريخ الوفاة
	☐ نعم ☐ كلا		☐ نعم ☐ كلا	☐ نعم ☐ كلا	

4) الفحوصات المخبرية

	HAV	HBV	HCV	HDV	HEV	غيره
تاريخ الفحص						
نوع الفحص	☐ IgM anti-HAV ☐ Total anti-HAV	☐ HBsAg ☐ HBeAg ☐ Total anti-HBc ☐ IgM anti-HBc ☐ HBV DNA	☐ Anti-HCV ☐ HCV PCR	☐ Anti-HDV	☐ Anti-HEV ☐ HEV PCR	
اسم المختبر						
نتيجة الفحص						

5) وجود حمل

وجود حمل	الطبيب المعالج	عمر الحمل	تاريخ الولادة المرتقب	تطور الحمل:
☐ نعم ☐ كلا				☐ طبيعي ☐ اشتراكات:

6) المهنة

مهنة المريض				
يعمل أو يتردد:	نعم	كلا	اذا نعم، حدد عنوان العمل: المؤسسة	البلدة	القضاء
في مؤسسة تربوية	☐	☐			
في دار حضانة	☐	☐			
في مؤسسة صحية	☐	☐			
في بيع/تحضير المواد الغذائية	☐	☐			

7) مصدر مياه الشرب

مكان:	شبكة مياه الدولة		بئر خاص		بئر /عين عامة		سيترن		غالون		مياه الشتاء		مياه معبئة		غيره
	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	
المنزل	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
الدراسة/العمل	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

8) الصرف الصحي

مكان المنزل			مكان الدراسة /العمل		
☐ شبكة مجاري	☐ حفرة صحية	☐ لا يعلم	☐ شبكة مجاري	☐ حفرة صحية	☐ لا يعلم

9) المحيط

	حالات مماثلة في المحيط			وجود حوامل في المحيط			الأسماء
	نعم	كلا	لا يعلم	نعم	كلا	لا يعلم	
المنزل	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
العمل	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الدراسة	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الاقرباء الزوار	☐، عدد___	☐	☐	☐، عدد___	☐	☐	
الجيران	☐، عدد___	☐	☐	☐، عدد___	☐	☐	

10) ملاحظات:

Notes

Notes

10

Surveillance Standard Operating Procedure: HTLV1

Version 1
MOPH circular no. 46
(19th Jan 2015)

Contents

I Purpose

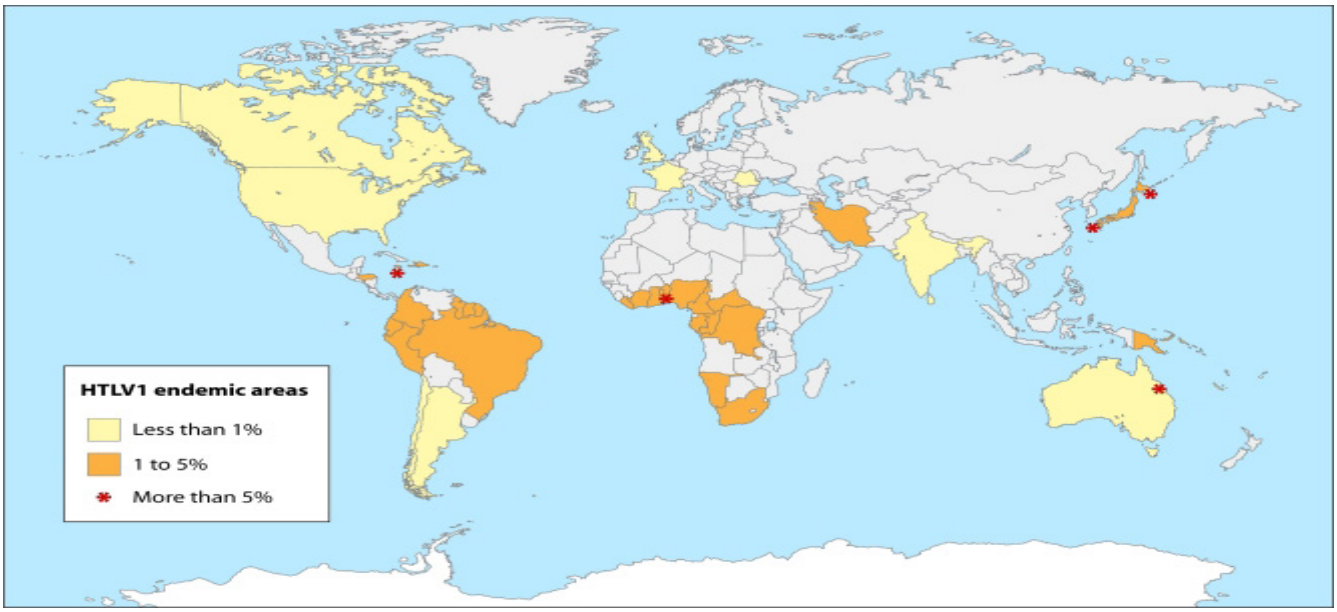
The standard operating procedure is intended to assist the epidemiological surveillance program in how to proceed when detecting, verifying and investigating any alert of HTLV1 case.

II Generalities

HTLV1	
Agent	Virus Human T-cell lymphotrophic virus-1, family Retrovirus
Incubation period	20-30 years
Period of communicability	As long as the infection persists
Reservoir	Humans
Modes of transmission	Person-to-person: - Vertical transmission: placenta-fetal, or via breastfeeding - Sexual intercourse - Blood: blood and blood products transfusion, intra-venous drug users, blood accidents…
Clinical presentation	- Asymptomatic carrier - Adult T-cell leukemia/lymphoma (5% in vertical transmission) - HTLV1-associated myelopathy/tropical spastic paraparesis - HTLV1-associated uveitis
Worldwide	Japan, Iran, Caribbean, America, Equatorial Africa
Lebanon	Some cases were diagnosed in Lebanon
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, travel history, blood transfusion, blood donation, blood transfusion, blood accidents…
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Family medical history, sexual contacts…
Investigation: clinical specimen from contacts	Blood
Test	Serological tests
Laboratories	Reference laboratories
Outbreak level	At least 2 confirmed cases epi-linked
Notification to WHO	According to the International Health Regulations (2005) criteria
HTLV1 case definition (MOPH circular no.176 dated on the 31st December 2015)	
Confirmed case	A person presenting positive confirmatory test with one of the following: - Western Blotting WB - Immunofluorescence assay IFA - Radioimmunoprecipitation assay RIPA - Polymerase Chain Reaction PCR
Probable case	A person presenting positive screening test with one of the following: - Enzyme-linked immunoassay EIA - Particle agglutination PA

Forms	
Reporting	Standard reporting form
Investigation	Specific investigation form for case and contacts (MOPH circular no.22 dated on the 19th January 2015)
National figures	
2 cases were reported in 2007.	
International figures	

Figure 1: worldwide endemicity of HTLV1
(Source: Epidemiology, Treatment, and Prevention of Human T-Cell Leukemia Virus Type 1-Associated Diseases. D UtschGonçalves, F Augusto Proietti, J Gabriel Ramos Ribas, M GrossiAraújo, S Regina Pinheiro, A. Carlos Guedes, and A. B. F. Carneiro-Proietti. CLINICAL MICROBIOLOGY REVIEWS, July 2010, p. 577–589)



III Objectives of surveillance

The objectives of surveillance of HTLV1 are:
- To detect and confirm any case of HTLV1
- To identify risk factors.

IV Alert and outbreak thresholds

An **alert** is defined by any case of HTLV1 reported to the MOPH.
An **outbreak** is defined by at least 2 confirmed cases epi-linked.

V Procedural steps

The steps described below are recommended for the verification and investigation of HTLV1 alerts and outbreaks. They are summarized in figure (2).

Step 1: Verify alert

Upon reception of a reported case of HTLV1, the Esumoh team contacts the health facility, laboratory or treating physician to verify the diagnosis: Is the diagnosis really HTLV1? Has the case any disease related to HTLV1? What laboratory test was used to suspect or confirm the diagnosis? Is the case Lebanese or resident in Lebanon?
The Esumoh peripheral team informs the Esumoh central level on the verification findings.

Step 2: Collect data

There is need to understand the history of the patient and the risk factors.
The Esumoh team coordinates with the treating physician the collection of data. An investigation form is used (Annex 1). It is filled based on the interview of the patient and the family via the treating physician.

The investigation form includes the following information:

- Demographic variables: gender, age, nationality, residence, education level
- Family: family composition, marital status, pregnancy
- Clinical features: presence of any lymphoma/leukemia
- Laboratory findings
- Risk factors: travel history, parent's status, blood transfusion, sexual intercourse, breast feeding, tattoo, acupuncture, religious rituals….

Step 3: Confirm the case

For a probable case, blood specimens are collected to conduct confirmatory test for HTLV1:

- Western Blotting WB
- Immunofluorescence assay IFA
- Radio-immuno-precipitation assay RIPA
- Polymerase Chain Reaction PCR.

This is done in coordination with the treating physician.
Based on the result, the case is classified as shown in the figure (2).

Step 4: Investigate the family

For any confirmed case, there is need to explore the HTLV1 infection within the family and the sexual partners (if possible). The infection may be asymptomatic for years.

In coordination with the treating physician or family physician, the Esumoh central team collects information and blood from family members:

- Data collection using the same investigation form (Annex 1)
- Blood specimen to undergo HTLV1 test.

Positive HTLV1 persons are informed in their results and advised for personal health monitoring and preventive behavior to avoid secondary cases.

Step 5: Describe cases

Cases are described by:

- Time: time of diagnosis, potential period of infection (if possible)
- Place: of residence in terms of caza, mohafaza
- Person: age group, gender, nationality, family index or secondary case…

Clusters are searched. Such clusters can provide clues to identify suspected risk factors.

Based on the epidemiological and laboratory results, an outbreak is declared. The Esumoh informs the concerned MOPH units. Based on the extend of the outbreak, the MOPH informs the health professionals, in particular the blood banks centers.

Step 6: Further studies

a) Blood transfusion related

If the potential source of infection is blood transfusion, the received blood products are traced back and identified donors are tested for HTLV1.
If the infected persons did provide blood to blood banks, also the receivers are identified and tested for HTLV1.

b) Organ transplantation related

If the potential source of infection is transplantation, the donor is traced back, the donor family is tested, and all orgrans receivers are identified and tested.

c) Maternal transmission related

If the potential source of infection is maternal, the history of breast feeding is collected, the mother (if possible is tested), and all persons who breast fed from that mother are identified and tested.

d) Health related

If the potential sources of infection is health care settings (excluding blood transfusion and transplantation), assessment of infection control practices is conducted. If possible, search of additional cases is explored.

e) Personal behaviour related

The potential sources are related to sexual intercourse, drug usage, travel history, invasive religious rituals, tattoos.... In coordination with the patient and the treating physician, co-exposed and exposed persons are identified and tested.

f) Sero-prevalence

Based on the available epidemiological data, a sero-prevalence is indicated.

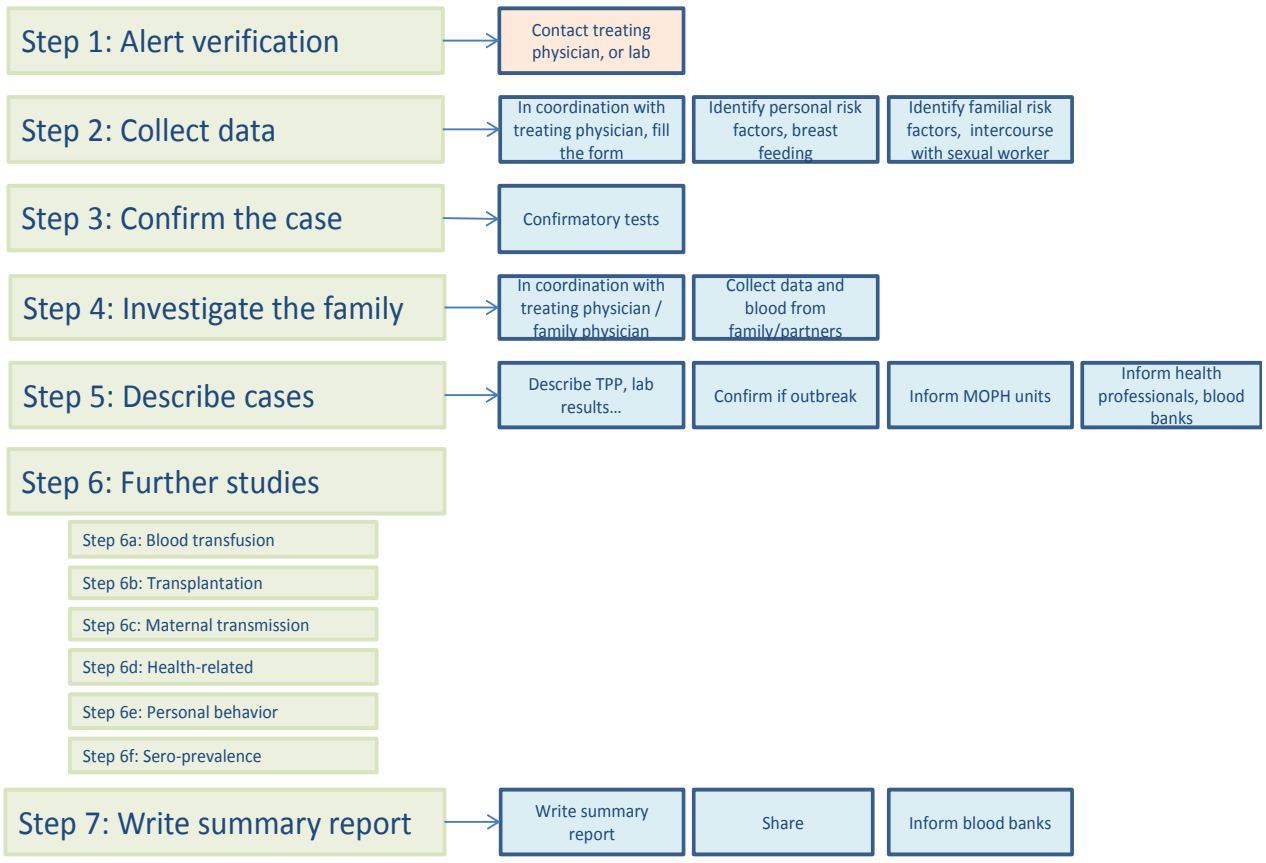
Step 7: Follow up of infected persons

All asymptomatic infected persons are invited to be targeted for annual follow up, in coordination with the treating / family physician.
The follow up also intends to raise awareness of the infected persons on their personal behavior.

Step 8: Write summary report

The Esumoh central prepares a summary report related to identified cases and the follow up of the infected persons. The report is shared with health partners and in particular the blood banks.

Figure 2: HTLV1 investigation steps



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

HTLV-1 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 Treating/Family physician

Name	Phone	Health facility	Country

**

C Patient identity

Patient name		Gender	Date of birth	Age
Nationality	Type of residence □ Resident □ Worker □ Tourist □ Refugee	Residence: caza	Locality	Phone

**

D Clinical diagnosis

Motif of diagnosis		Date of onset	Date of diagnosis
□ Symptomatic, specify:	□ ALT Adult T-cell Leukemia/lymphoma □ HAM/TSA HTLV1-Associated Myelopathy / Tropical Spastic Paraparesis □ Polymyositis □ Chronic arthropathy □ Infective dermatitis □ Panbronchiolitis □ Uveitis □ Other:		
□ Asymptomatic, specify:	□ Blood donor screening □ Family screening □ Other:		

**

E Laboratory diagnosis for HTLV1

Dates	Test[1]	Type of test	Laboratory	Result

(1) Screening tests: Enzyme-linked immunoassay (EIA), particle agglutination (PA)
Confirmatory test: PCR, Western Blot (WB), immunofluorescence assay (IFA), radioimmunoprecipitation assay (RIPA)

**

F Risk factors: blood transfusion - Receiver

Dates	Place: Country	Received products[2]	Health facility	Donor identity

(2) Whole blood, red blood cells, platelets

**

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

HTLV-1 case investigation form

Case ID |_____|

G Risk factors: blood transfusion – Donor

Dates	Place: Country	Products	Blood Bank	Notes

**

H Risk factors: Blood contact

Health profession	◻ Yes, specify:	◻ No	◻ Unknown
Working in health facility	◻ Yes, specify:	◻ No	◻ Unknown
Exposed to blood accident(s)	◻ Yes, nb:	◻ No	◻ Unknown

**

I Risk factors: Drug usage

Are you drug-user?	◻ Yes, now	◻ Yes, in the past	◻ No	◻ Unknown
Did you use intravenous drugs?	◻ Yes, now	◻ Yes, in the past	◻ No	◻ Unknown
Did you share needles?	◻ Yes, now	◻ Yes, in the past	◻ No	◻ Unknown
How do you qualify yourself?	◻ Occasional user	◻ Regular user (past/now)	◻ Non-user	◻ Unknown

**

J Risk factors: Family

	Nb (all)	Nb of currently alive	Known HTLV1 status	HTLV1 - diseases, specify if yes
Father	1			
Mother	1			
Siblings				
Spouse(s)				
Children				
Did you breast fed from your mother?		◻ Yes	◻ No	◻ Unknown
Did you breast fed from other women?		◻ Yes	◻ No	◻ Unknown

**

K Risk factors: Sexual intercourse

	Nb regular partners	Nb irregular partners	Protective measures			
With males			◻ Always	◻ Sometimes	◻ No	◻ Unk
With females			◻ Always	◻ Sometimes	◻ No	◻ Unk
With sexual workers (M/F)			◻ Always	◻ Sometimes	◻ No	◻ Unk

**

L Risk factors: Travel to HTLV1 endemic countries[3]

Date(s)	Country	Stay period(s)	Risky behavior			
			◻ Blood transfusion	◻ Drugs	◻ Sex	◻ Other
			◻ Blood transfusion	◻ Drugs	◻ Sex	◻ Other
			◻ Blood transfusion	◻ Drugs	◻ Sex	◻ Other
			◻ Blood transfusion	◻ Drugs	◻ Sex	◻ Other
			◻ Blood transfusion	◻ Drugs	◻ Sex	◻ Other

[3] HTLV1 endemic countries: Caribbean, Parts of Africa, Japan and Central and South America, Iran

**

Notes:

Notes

Notes

Notes

11

Surveillance Standard Operating Procedure:
Hydatid Disease/Echinococcosis

Version 1
MOPH circular no. 65
(23rd Jan 2015)

Contents

I Purpose

This standard operating procedure (SOP) provides an overview of the steps to take place by the Epidemiology Surveillance Program during the detection and confirmation of a hydatid disease alert or outbreak.

II Generalities

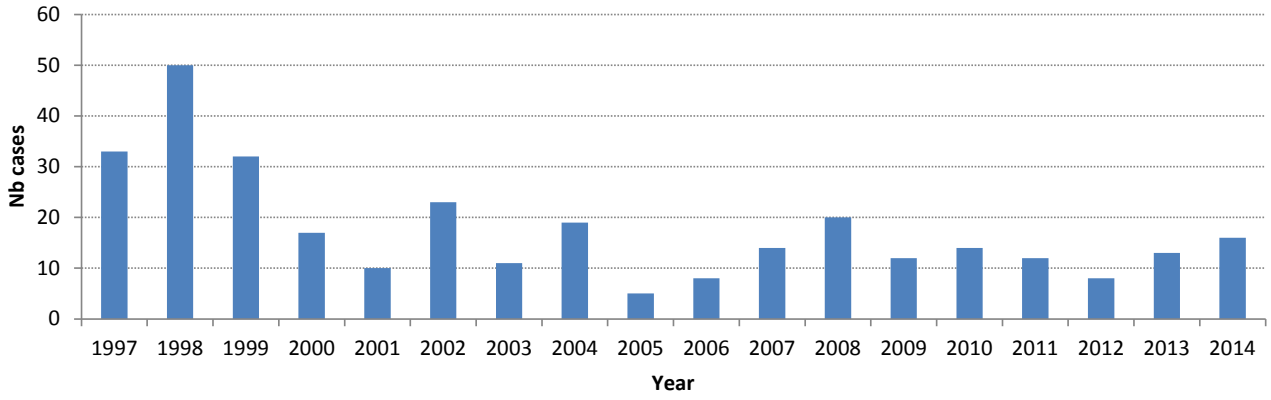
Echinococcosis, also called hydatid disease, hydatidosis, or echinococcal disease, is a parasitic disease of tapeworms of the Echinococcus type.

Hydatid disease / Echinococcosis	
Agent	Worm: Echinococcus granulosa
Incubation period	12 months to years
Period of communicability	No person-to-person transmission
Reservoir	Dogs and other canides
Modes of transmission	- Direct hand-to-mouth transfer of worm eggs after association with infected dogs - Consumption of contaminated food, water, soil, or fomites - Flies may disperse eggs after feeding on infected feces.
Clinical presentation	Symptoms depend on cysts topography, and are compatible with a slowly growing tumour.
Worldwide	Worldwide
Lebanon	On annual basis, the average number of reported cases is 18 cases.
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Demography, clinical presentation, case management…
Investigation: clinical specimen from case	Blood, biopsy
Investigation: data about contacts	-
Investigation: clinical specimen from contacts	-
Test	Serological tests, histopathology
Laboratories	Clinical laboratories, histopathology laboratories
Outbreak level	If the observed incidence exceeds the expected one
Notification to WHO	According to the International Health Regulations (2005) criteria

Hydatid cyst case definition (MOPH circular no. 76 dated on the 10th May 2007)	
Non-surgical confirmed case	A suspected case with one or more of the following: - Positive detection of specific antibodies using secondary immunodiagnostic test: detection of a precipitation line designated as arc 5, identification of IgG subclasses, IgG4 by Elisa, immunoblotting demonstrating reactivity of serum antibodies with subunits of E.granulosus antigens - Or positive examination of material obtained by non surgical diagnostic/therapeutic puncture or biopsy puncture or other methods: hydatid fluid for Echinococcusprotoscoleces or hooks, protoscoleces for DNA by PCR, antigen 5 from sterile cysts, and\ histology examination of cyst wall material…
Surgical confirmed case	A suspected case with positive examination of material obtained by surgery: macroscopic identification of cysts and/or histological examination of the parasite tissue
Probable case	A case presenting: - Clinically: symptoms vary according to site, size and number of cysts. Commonly symptoms are related to liver, lung, cyst rupture into biliary tree, cyst rupture into bronchial tree and less commonly to heart, bone and muscles, brain and spine, eyes - And one or more of the following: • Positive imaging identifying cysts structures by ultrasonography US, computed tomography CT, Xray, MRI… In US, pathognomonic signs of hepatic cysts are unilocular anechoic lesions which are round or oval with a clearly visible cyste wall (laminated layer) with snowflake-like inclusions or floating laminated membranes; or multivesicular or multiseptate cysts with a wheel-like appearance; or unilocular cysts with daughter cysts with honey comb appearance. In CT, pathognomonic signs of hepatic cysts are membrane detachment; daughter cysts (spherical formations with in a larger “mother cyst” scattered or located at the at the peripheral of the cyst); or completely calcified cysts with the typical “egg-shell” pattern; • Or positive detection of specific antibodies using primary immunodiagnostic tests: latex agglutination test LAT, indirect haemagglutination test IHAT, IgG Elisa, immunofluorescence antibody test IFAT, immunouelectrophoresis IEP...
Forms	
Reporting	Standard reporting form
Investigation	Hydatic disease investigation form (MOPH circular no.172 dated on the 31st December 2015)

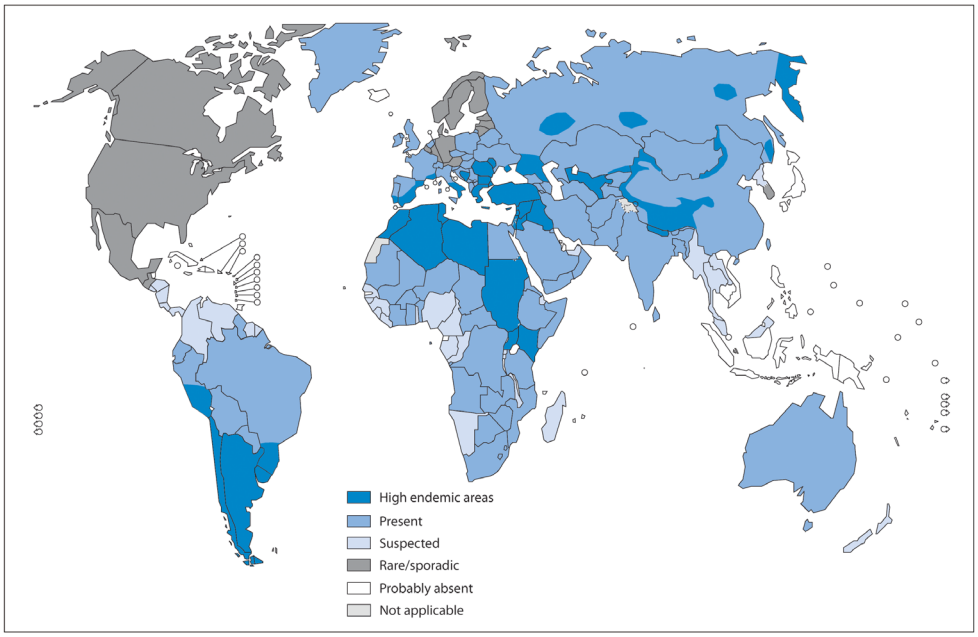
National figures

Figure 1: Reported Hydatid Disease, Lebanon, 1997-2014 (Source: MOPH)



National figures

Figure 2: Distribution of hydatid disease in the world, 2009 (Source: WHO)



Data Source: World Health Organization
Map Production: Control of Neglected Tropical Diseases (NTD)
World Health Organization

World Health Organization

III Objectives of surveillance

The objectives of Hydatid Disease surveillance are to:

- Monitor the incidence of the disease
- Detect and investigate alert and outbreaks.

IV Alert and outbreak thresholds

An **alert** is defined by relative increase of the incidence of cases.
An **outbreak** is defined when the observed incidence exceeds the expected one.

V Procedural steps

The described steps below are suggested for the management of suspected Echinococcosis alerts or outbreaks. They are summarized in figure (4).

Step 1: Verify the alert

In case of an alert, the data is verified. It is done at the mohafaza or central level. Is there a real increase of the number of the cases? Is there an artefact? Is there a change in the case definition? Is there an increase in reporting sites?

Step 2: Investigate the case

Once the alert is verified, the cases are contacted to collect additional data. An investigation form is filled (Annex 1).

The investigation form includes the following information:

- Demography
- Illness: onset, form, diagnosis
- Case management: treatment
- Exposure risk: occupation, animal-related activities, consumption of unwashed vegetables and fruits.

Step 3: Verify case definition and classify the cases

Are the reported cases meeting the case definition?

Reported cases are reviewed to verify diagnosis criteria and case classification. Diagnosis methods are verified:

- Imaging: Ultrasound...
- Surgery
- Laboratory.

Cases are classified according to the figure (3).

Step 4: Search for additional cases

Additional cases are searched in the concerned areas via:

- Retrieving cases reported in previous years
- Enhancing passive reporting
- Active search of cases in the health facilities (hospitals, laboratories….)
- Active search of cases in the vicinity of the cases
- Community-based surveillance.

Step 5: Describe cases

a) Epidemiology description

Cases are described by:

- Time: year of onset
- Place: locality, caza and mohafaza of residence
- Person: age group, sex, nationality, occupation
- Exposure.

b) Medical description

Cases are described by:

- Type of diagnosis
- Topography of lesions
- Case management.

c) Outbreak confirmation

Based on the epidemiological data, the outbreak is declared.

The MOPH informs:

- National health professionals
- Ministry of Agriculture

Step 6: Conduct further studies

a) Animal echinococcosis

The Ministry of Agriculture is contacted to investigate the prevalence of animal echinococcosis in suspected areas.

b) Analytic studies

Case control studies are conducted to identify the risk factors. Cases may be taken for a period of several years.

c) Other studies

Genotypes are identified and compared with regional and international ones.

Step 7: Write summary report

Upon compilation of data from various studies, a report is prepared by the Esumoh central team and shared with partners.

Figure 3: Hydatid Disease case classification

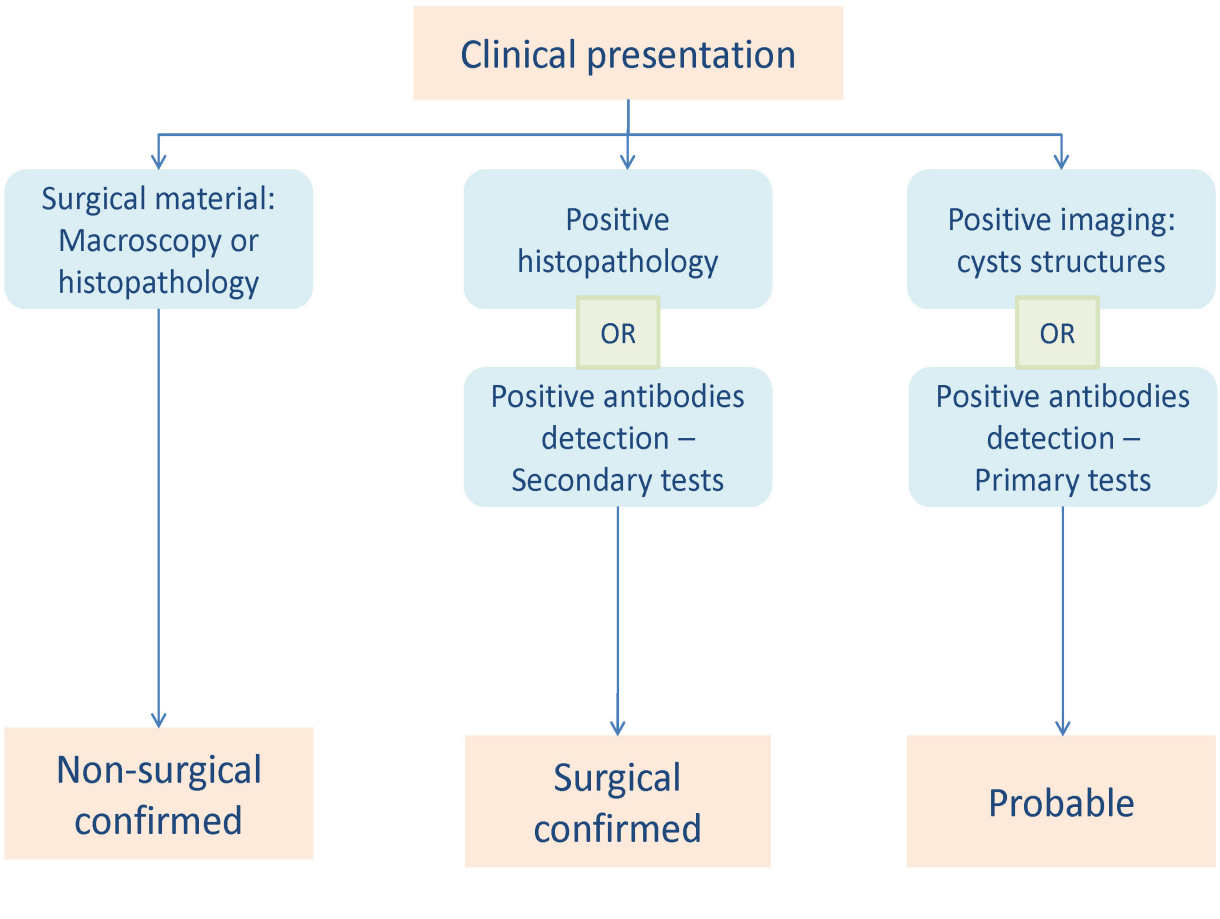
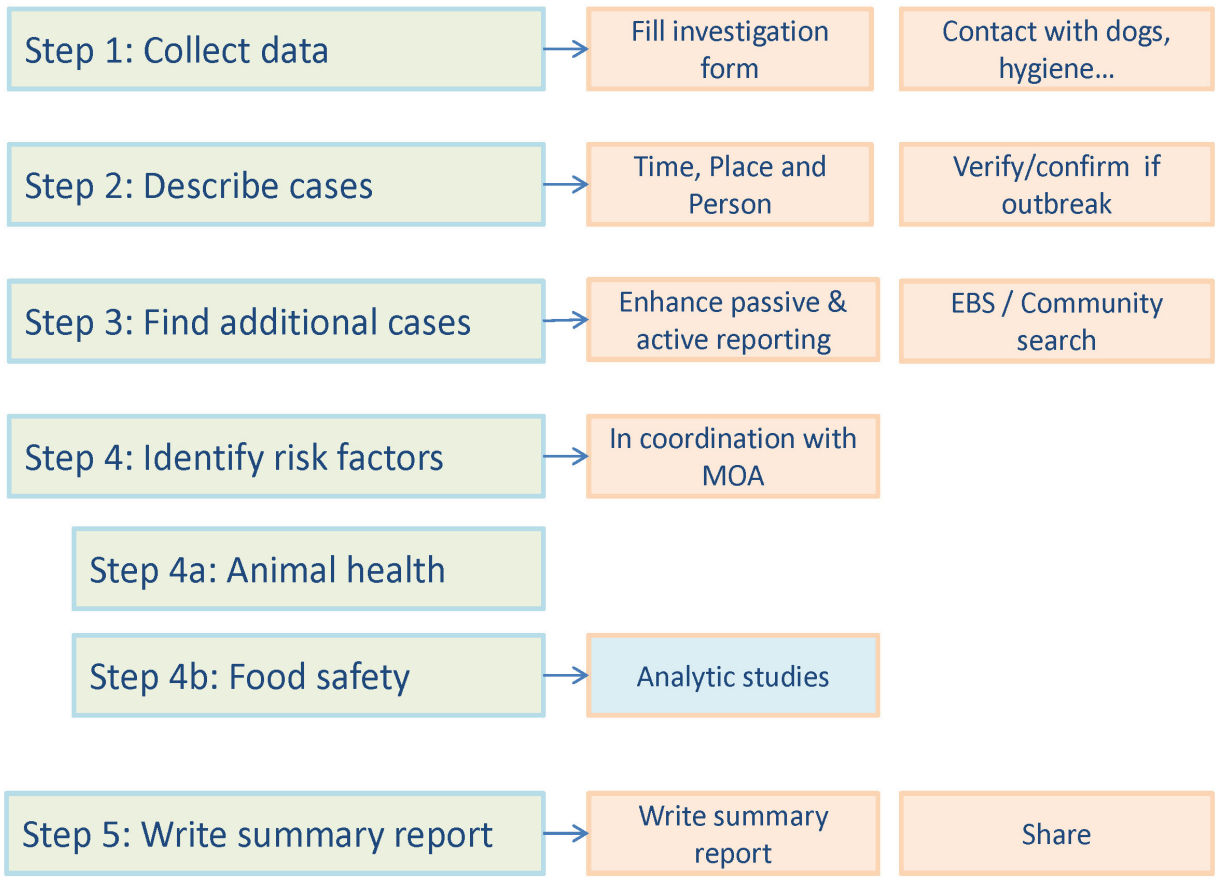


Figure 4: Hydatid Disease investigation steps



Hydatid Disease - Annex 1

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

Hydatid Cyst 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

Illness:	□Yes	□No	□Unk	Date first diagnosis:
Date first symptom:				Date first reporting:

E Medical diagnosis

Imaging:	□Pos	□Neg	□Unk	**Serology:**	□Pos	□Neg	□Unk
Radio	□Pos	□Neg	□Unk	Antibodies:	□Pos	□Neg	□Unk
Echo:	□Pos	□Neg	□Unk	Antigens:	□Pos	□Neg	□Unk
TDM:	□Pos	□Neg	□Unk	PCR:	□Pos	□Neg	□Unk
IRM:	□Pos	□Neg	□Unk	Other, specify:	□Pos	□Neg	□Unk
Other, specify:	□Pos	□Neg	□Unk				
				Histology:	□Pos	□Neg	□Unk
Surgery:	□Pos	□Neg	□Unk	Punction	□Pos	□Neg	□Unk
Macroscopic:	□Pos	□Neg	□Unk	Biopsy	□Pos	□Neg	□Unk
Other, specify:	□Pos	□Neg	□Unk	Other, specify:	□Pos	□Neg	□Unk

Hydatid Cyst investigation form

|_____|

F Characteristics

Topography:	□Liver	□Lung	□Spleenk
	□Kidney	□Heart	□Bone
	□CNS	□Other:	□Unk
Number:	□Single	□Multiple	□Unk
Size:	□Single	□Multiple	□Unk
Generation:	□Primary	□Secondary	□Unk
Rupture:	□Yes, spontaneous	□Yes, traumatic	□Yes
	□No	□Unk	
Complication: Allergic reaction	□Yes	□No	□Unk

G Treatment

Surgery:	□Yes, specify:	□No	□Unk
Protoscolicides:	□Yes, specify:	□No	□Unk
PAIR (Puncture, Aspiration, Injection, Re-aspiration) :	□Yes, specify:	□No	□Unk
Chemotherapy (Albendazole, Mebendazole):	□Yes, specify:	□No	□Unk
Other	□Yes, specify:	□No	□Unk

H Occupation

Occupation:
Institution:
Herding:
Farming:

I Dog related risk factors

Had ever owned dogs:	□Yes, how many years:	□No	□Unk
Had ever played with dogs:	□Yes, specify:	□No	□Unk
Had ever provide care to dogs:	□Yes, specify:	□No	□Unk
Presence of dogs in vicinity:	□Yes, specify:	□No	□Unk
Presence of shepherd dogs in vicinity:	□Yes, specify:	□No	□Unk
Presence of village dogs in vicinity:	□Yes, specify:	□No	□Unk

Hydatid Cyst investigation form

|_____|

J Other animal related risk factors

Had ever lived in animal farms:	□Yes, specify:	□No	□Unk
Had ever lived in plant farms:	□Yes, specify:	□No	□Unk
Had ever lived in rural areas:	□Yes	□No	□Unk

K Food risk factors

Eating raw vegetables from land:	□Often	□Sometimes	□Never	□Unk
Eating raw fruits from land:	□Often	□Sometimes	□Never	□Unk
Eating raw vegetablesfrom market:	□Often	□Sometimes	□Never	□Unk
Eating raw fruits from market:	□Often	□Sometimes	□Never	□Unk

L Drinking water sources

Public network	□Often	□Sometimes	□Never	□Unk
Public spring wells	□Often	□Sometimes	□Never	□Unk
Private wells	□Often	□Sometimes	□Never	□Unk
Rivers	□Often	□Sometimes	□Never	□Unk
Other:				

Notes

Notes

Notes

12

Surveillance Standard Operating Procedure: Intestinal Infections

Version 1
MOPH circular no. 60
(22nd Jan 2015)

Contents

I Purpose

The purpose for this standard operatig procedure highlights the steps to be undertaken by the epidemiological surveillance team for any intestinal infection alert or outbreak.

II Generalities

<table>
<tr><th colspan="2">Intestinal infections</th></tr>
<tr><td>Agent</td><td>Several agents can cause intestinal infections. Some are listed below, other are listed in “Food poisoning“ chapter.

1) Bacteria:
- Salmonella: Non-typhoid salmonella serotypes
- Shigella: Shigella dysenteriae, S. flexneri, S. boydii, S. sonnei
- Escherichia coli with 4 types:
- EHEC: Enterohaemorrhagic Escherichia coli, known as Verocytotoxin producing E. coli VTEC, or Shiga-toxin producing E.coli StEC. It includes the serogroups O26, O45, O111, O103, O121
- ETEC Enterotoxigenic elaborates enterotoxines, includes the serogroups O6, O8, O15, O20, O25, O27, O63, O78, O80, O114, O115, O128ac, O148, O153, O157, O159, O167, O169
- EIEC Enteroinvasive: includes the serogroups O28ac, O29, O112, O124, O136, O143, O144, O152, O164, O167
- EPEC Enteropathogenic: includes the serogroups O55, O86, O111, O119, O125, O126, O127, O128ab, O142
- Campylobacter: spiral-shaped bacteria with 17 species including C. jejuni and C. coli…
2) Virus:
- Rotavirus: family Reoviridae. It includes several groups A-F. Group A is the most common and includes several serotypes.
- Other viruses...
3) Parasites:
- Entamoeba histolytica: protozoa
- Giardiasis: Giardia intestinalis (formely lamblia or duodenalis)...</td></tr>
<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>Salmonella</td><td>6-48 hours</td></tr>
<tr><td>Shigella</td><td>1-3 days (up to 1 week for S. dysenteriae)</td></tr>
<tr><td>E coli: EHEC / VTEC/StEC</td><td>3-4 days (2-10 days)</td></tr>
<tr><td>E coli: ETEC</td><td>10-12 hours (24-72 hours)</td></tr>
<tr><td>E coli: EIEC</td><td>10-18 hours</td></tr>
<tr><td>E coli: EPEC</td><td>9-12 hours</td></tr>
<tr><td>Campylobacter</td><td>2-5 days (1-11 days)</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Rotavirus</td><td>1-3 days</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Entamoeba histolytica</td><td>2-4 weeks</td></tr>
<tr><td>Giardia intestinalis</td><td>1-2 weeks</td></tr>
</table></td></tr>
</table>

Period of communicability

The period of communicability varies with the agent.

Agent	Period of communicability
Bacteria	
Salmonella	As long as the bacteria is excreted in feces, from several weeks to several months
Shigella	As long as the bacteria is excreted in feces, usually up to 4 weeks. Appropriate treatment reduces carriage to few days.
E.coli	As long as the bacteria is excreted in feces several days to weeks
Campylobacter	As long as the bacteria is excreted in feces several days to several weeks.
Virus	
Rotavirus	As long as the virus is excreted in feces during the acute phase and later while virus shedding continues, usually up to 8 days. For immune-compromised, virus may be excreted for 1 month.
Parasites	
Entamoeba histolytica	Years, all the period E. histolytica cysts are passed (may be for years)
Giardia intestinalis	Months, the entire period of infection

Reservoir

The reservoir varies with the agent.

Agent	Reservoir
Bacteria	
Salmonella	- Domestic and wild animals including poulty, pigs, cattle, rodents, pets - Also humans (patients and carriers)
Shigella	Humans
E. coli: EHEC	- Cattle, and other animals (deer…) - Humans
E. coli: ETEC	Humans
E. coli: EIEC	Humans
E. coli: EPEC	Humans
Campylobacter	Domestic animals, livestock, birds, polluted water.
Virus	
Rotavirus	- Humans - Animals: the animal viruses do not produce disease in humans.
Parasites	
Entamoeba histolytica	- Humans, also dogs and cats - Possibly in sewage used for irrigation
Giardia intestinalis	- Humans - Possibly wild and domestic animals

Modes of transmission

The modes of transmission vary with the agent.

Agent	Modes of transmission
Bacteria	
Salmonella	- Ingestion of contaminated food as milk, meat, poultry, eggs derived from infected animals, or contaminated by food handlers or cross-contamination during preparation
Shigella	- Consumption of contaminated food under cooked that have received extensive handling - Consumption of contaminated water - Person-to-person transmission: fecal-oral route
E. coli: EHEC	- Consumption of contaminated food as raw/ undercooked meat products, unpasteurized dairy products from infected animals - Consumption of contaminated food during preparation - Consumption of contaminated produce and vegetables - Consumption of contaminated drinking water or during activities in recreational waters - Direct person-to-person transmission, fecal-oral route, in families, child care centers…
E. coli: ETEC	- Contaminated food and water - Contaminated weaning foods
E. coli: EIEC	Contaminated food
E. coli: EPEC	- Contaminated infant formula and weaning foods - In nurseries: by fomites and contaminated hands

Campylobacter	- Ingestion of contaminated food as raw milk or raw/undercooked poultry/ beef/pork. Spread to other foods by cross-contamination - Consumption of contaminated water - Contact with live animals (pets and farm animals) - Person-to-person may occur: fecal-oral transmission
Virus	
Rotavirus	- Fecal oral transmission - Respiratory secretions transmission
Parasites	
Entamoeba histolytica	- Ingestion of contaminated food as fruits, vegetables… - Consumption of contaminated water - Person-to-person transmission: fecal-oral route
Giardia intestinalis	- Ingestion of fecally contaminated food or water - Swalling contaminated water while swimming - Person-to-person contact, such as caring for an infected person or sexual contact

<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">Bacteria</td></tr>
<tr><td>Salmonella</td><td>- Gastroenteritis
- Complications: arthirits, septicaemia, aortitis, cholecystitits, colitis, meningitis,
myocarditis, osteomyelitis…</td></tr>
<tr><td>Shigella</td><td>- Gastro-enteritis, with mainly bloody/mucoid diarrhea
- S. sonnei shows more watery diarrhea.
- Complications: haemolytic uraemic syndrome, splenic abscess…</td></tr>
<tr><td>E. coli: EHEC</td><td>- Gastroenteritis with water diarrhea that may evolve to bloody diarrhea (haemorrhagic colitis)
- Complications: haemolytic uraemic syndrome HUS (10%) characterized by acute renal failure, haemolytic anaemia and thrombocytopenia. Other sequelae include erythema nodosum and thrombotic thrombocytopenic purpura.</td></tr>
<tr><td>E. coli: ETEC</td><td>- ETEC mediates its effects by enterotoxins.
- Symptoms include diarrhea (ranging from mild to a severe, cholera-like syndrome), abdominal cramps and vomiting, sometimes leading to dehydration and shock.</td></tr>
<tr><td>E. coli: EIEC</td><td>- EIEC causes inflammatory disease of the mucosa and submucosa by invading and multiplying in the epithelial cells of the colon.
- Symptoms include fever, severe abdominal pain, vomiting and watery diarrhea (in <10% of cases stools may become bloody and contain mucus).</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Campylobacter</td><td>- Gastro-enteritis: fever, severe abdominal pain, nausea and diarrhea which can vary from slight to profuse watery, sometimes containing blood or mucus.
- Complications: 2-10% Guillain Barre Syndrome, haemolytic uraemic syndrome, meningitis, pancreatitis…</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Rotavirus</td><td>Fever, vomiting, watery non-inflammatory diarrhea</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Entamoeba histolytica</td><td>- Severe bloody diarrhea, stomach pain, fever and vomiting
- Most infections remain symptomless.
- Complications: liver abscess</td></tr>
<tr><td>Giardia intestinalis</td><td>- Diarrhea (often with foul-smelling, greasy stools), abdominal cramps, bloating, flatulence, fatigue, anorexia, and nausea
- Weight loss may occur over time
- Fever and vomiting are uncommon.
- Complications: Reactive arthritis, irritable bowel syndrome…</td></tr>
</table>
</td></tr>
<tr><td>Worldwide</td><td>
<table>
<tr><th>Agent</th><th>Global epidemiology</th></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Salmonella</td><td>Worldwide</td></tr>
<tr><td>Shigella</td><td>Worldwide</td></tr>
<tr><td>E coli: EHEC</td><td>Causing outbreaks in industrialized countries</td></tr>
<tr><td>E. coli: ETEC</td><td>Worldwide, in particular in developing countries and during the first 3 years of life. In industrialized countries, the infection occurs mainly among travelers to developing countries.</td></tr>
<tr><td>E. coli: EIEC</td><td>- Endemic in developing countries
- Rare in industrialized countries</td></tr>
<tr><td>E. coli: EPEC</td><td>Worldwide, infant diarrhea</td></tr>
<tr><td>Campylobacter</td><td>Worldwide</td></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Rotavirus</td><td>Worldwide</td></tr>
<tr><td colspan="2">Parasites</td></tr>
<tr><td>Entamoeba histolytica</td><td>Worldwide</td></tr>
<tr><td>Giardia intestinalis</td><td>Worldwide, most commonly diagnosed in travelers returning from south Asia, the Middle East, and South America.</td></tr>
</table>
</td></tr>
<tr><td>Lebanon</td><td>Salmonella is endemic, and found in several food poisoning episodes. Shigella causes sporadic cases or small outbreaks. Entamoeba histolytica is also endemic with increases during summer.</td></tr>
<tr><td>Control objective</td><td>Control</td></tr>
</table>

Surveillance and Investigation	
Surveillance approach	Syndromic approach (acute diarrhea: watery or bloody) and disease approach
Investigation: data about case	Clinical presentation, travel history, food consumption habits, sources of drinking water, activities in recreational water, occupation, vaccination status (Rotavirus) …
Investigation: clinical specimen from case	Stool specimen
Investigation: data about contacts	Search of similar cases among contacts
Investigation: clinical specimen from contacts	If cases
Test	- Direct exam - Bacteriological culture - Virus detection of antigens - Virus culture - Identification of types and subtypes
Laboratories	- Clinical laboratories: direct exam, bacteriological culture, virus detection - Reference laboratories: identification of types and subtypes
Outbreak level	If observed incidence exceeds the expected one
Notification to WHO	According to the International Health Regulations (2005) criteria
Case definitions for confirmed cases	
Shigellosis: confirmed case (MOPH Circular 51, year 2007)	A case presenting acute diarrhoea with visible blood in stools, with: - Laboratory confirmation through isolation of Shigella sp. from stools - Or, during epidemic situation, presence of an epidemiological link to a laboratory confirmed case
Salmonellosis: confirmed case	A case presenting acute diarrhoea with laboratory confirmation through isolation of Salmonella sp. from stools
E. coli: confirmed case	Watery or bloody diarrhea with laboratory confirmation through E. coli isolation from stool specimen
Campylobacter: confirmed case	A case presenting acute diarrhoea watery or bloody with Campylobacter isolation in a stool specimen
Rotavirus: confirmed case	A case presenting watery diarrhea with laboratory confirmation through: - Detection of rotavirus antigen in stool with an enzyme immunoassay (EIA) - Reverse transcriptase polymerase chain reaction (RT-PCR) methods
Amebic dysentery: confirmed case (MOPH Circular 51, year 2007)	A case presenting acute diarrhoea with bloody or mucoid diarrhea with laboratory confirmation through microscopic demonstration of trophozoites or cysts of Entamoeba histolytica in fresh or suitable preserved faecal specimens or other clinical specimens

Giardia intestinalis (lamblia): confirmed case	Watery diarrhea with laboratory confirmation using one of the following: - Demonstration of G. lamblia cysts in stool - Demonstration of G. lamblia trophozoites in stool, duodenal fluid, or small-bowel biopsy - Demonstration of G. lamblia antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)
Forms	
Reporting	Standard reporting form
Investigation	Dysenteria investigation form

National figures

Figure 1: Reported shigellosis, Lebanon, 2005-2012 (Source: MOPH)

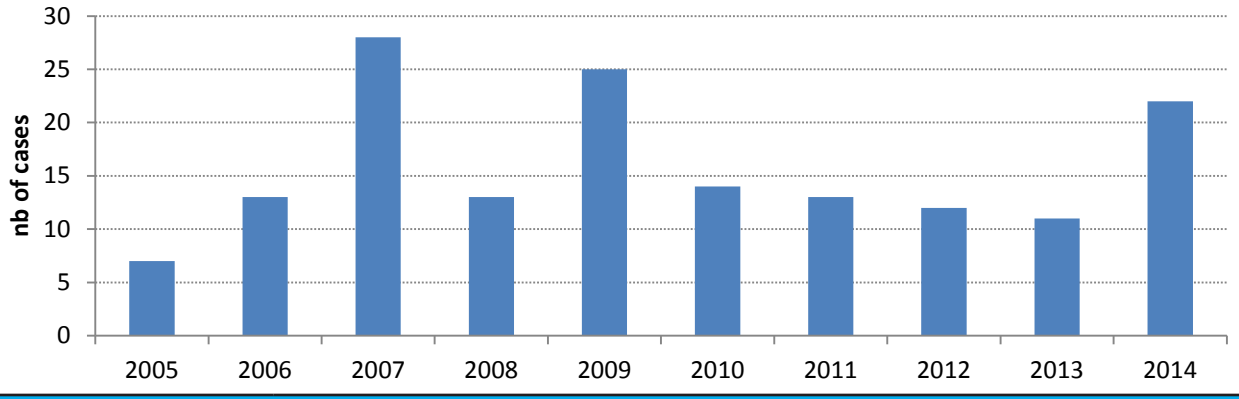
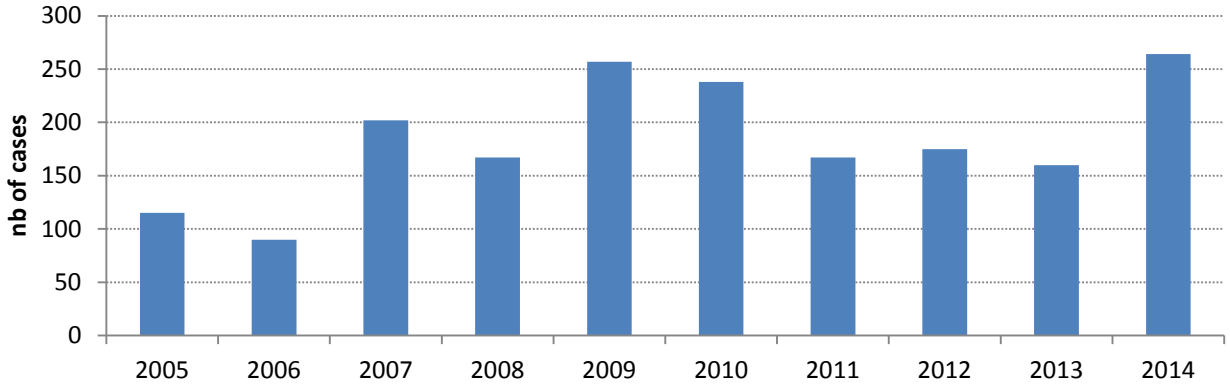


Figure 2: Reported amebiasis, Lebanon, 2005-2012 (Source: MOPH)



International figures

Table 1: Shigellosis incidence
(source: K L Kotloff, J P Winickoff, B Ivanoff, J D Clemens, D L Swerdlow, P J Sansonetti, G K Adak, M M Levine. Global burden of Shigella infections: implications for vaccine development and implementation of control strategies)

	0 - 11 months		1 - 4 years		5 - 14 years		15 - 59 years		> 60 years	
Disease burden	Low	High	Low	High	Low	High	Low	High	Low	High
Diarrhea episodes/person/year	2.7	5	1.7	3	0.65	0.65	0.5	0.5	0.69	0.69
Diarrhea episodes in domicile (DD)										
% of Total Diarrhea	88	88	92	92	98	98	98	98	98	98
% Shigella / DD	2	5	6	19	1	3	1	3	1	3
Diarrhea episodes in outpatients (OD)										
% of Total Diarrhea	10	10	8	8	2	2	2	2	2	2
% Shigella / OD	2	30	13	39	5	21	3	27	9	34
Diarrhea episodes hospitalized (ID)										
% of Total Diarrhea	2	2	0.2	0.2						
% Shigella / ID	4	11	8	32						
Mortality										
Mortality % / HD	14	14	9	9	8	8	8	8	8	8
Corrected with out-of-hospital mortality	4x	10x	4x	10x	4x	10x	4x	10x	4x	10x

Table 2: Estimated incidence of Salmonellosis
(Source: Majowicz S et al., Clin Inf Dis 2010;50:882-889)

WHO regions	Cases (millions)	Deaths (thousands)	Incidence rate /100 pyr
WHO South East Asia Region	29.8	49.1	4.0
WHO Eastern Mediterranean Region	0.56	0.9	0.1
WHO Americas Region	2.2	3.7	0.3
WHO European Region	5.0	8.4	0.8
WHO Western Pacific Region	53.6	88.5	3.2
WHO African Region	2.5	4.1	0.3
Total	94.8	155.0	1.1

Table 3: Rotavirus in patients under 5 year with gastro-enteriris. Source: Rotavirus Surveillance --- Worldwide, 2001—2008.MMWR. November 21, 2008 / 57(46);1255-1257

WHO region	No. of countries	Total no. of patients tested (range by country)		Median detection rate for all countries (range by country)	
		No.	Range	Rate (%)	Range
African	4	4,356	(642-1,702)	41	(39-52)
Americas	11	26,035	(192-6,062)	34	(10-51)
European	3	3,374	(702-1,969)	40	(38-45)
Eastern Mediterranean	9	17,291	(316-6,553)	40	(29-55)
Sout-East Asian and Western Pacific	8	11,498	(388-2,986)	45	(28-59)
Total	35	62,684	(192-6,553)	40	(10-29)

III Objectives of Surveillance

The objectives of intestinal infections surveillance are to:
- Detect intestinal infection clusters and outbreaks
- Identify infectious agents
- Investigate sources of contamination.

IV Alert and outbreak thresholds

An **alert** is defined by one of the following:
- A case of bloody diarrhea in specific setting: school, kindergarten…
- A cluster of two and/or more suspected cases who are epi-linked or work/study in the same institution
- Relative increase in the cases.

An **outbreak** is defined by one of the following:
- A cluster of confirmed cases which are epi-linked or work/study in the same institution
- Observed incidence of cases greater than the expected.

V Procedural steps

In case of an alert, the following steps are conducted by the Epidemiological Surveillance Program. The steps are summarized in figure (3).

Step 1: Verify alert

Alerts are generated by the Epidemiological surveillance program at caza, mohafaza or central level.

Upon detection of any alert, the Esumoh caza team verifies the received reports and laboratory results. The reporters (treating physician, laboratory…) are contacted.

Step 2: Collect data

Upon verification, the Esumoh caza team completes the data collection. The patient or the parents are interviewed. The treating physician and the laboratory may be contacted for specific information.

An investigation form is filled (Annex 1). It includes the following information:

- Demography
- Illness: symptoms, complications, case management …
- Laboratory results
- Potential exposure: water and sanitation, occupation, and risk factors seven days prior to illness…

Step 3: Confirm the diagnosis

The laboratory results need to be collected.

In case no laboratory result is done, the patient is asked to have stool culture.

Step 4: Confirm the outbreak

Based on the epidemiological and laboratory findings, the outbreak is declared.

The Esumoh central team informs the concerned units at the MOPH. The MOPH informs the various partners related to the outbreak:

- Health professionals
- Other governmental institutions: MEW, MOA...
- WHO if meeting the IHR(2005) criteria.

The memos issued by MOPH for the health professionals will include needed case definition.

Step 5: Search for additional cases

a) Case finding

Additional cases are searched via:

- Patient interview: presence of other member(s) in the household, institution, or community developing the same illness
- Reporting from professionals in various settings
- Active search during field visits of health facilities and community
- Reporting form the community and the media

b) Cross checking

Additional surveillance sources are checked to verify the occurrence of an outbreak:

- School-based surveillance
- Medical center and dispensary based surveillance
- MOPH visa database
- Event based surveillance...

Step 6: Microbial surveillance

In case of positive stool cultures, isolates are collected for further confirmation and testing.

The target isolates are:

- Salmonella
- Shigella
- Escherichia coli...

The isolates may be originating from:
- Human clinical samples: patients, contacts, food handlers
- Animal clinical samples
- Food samples.

The laboratories are contacted to conserve and preserve the isolates. Based on the scheduled date of collection, “repiquage” is requested.

The procedures for the isolates referral need the following:
- Scheduling on the same day the collection from clinical laboratory, the verification by Esumoh team and the transportation to reference laboratory
- Use of isolated box
- Documentation of the isolate: laboratory results at clinical laboratory including the antimicrobi al resistance profile
- Filling the isolate referral form.

At the reference laboratory, the following tests are done:
- Confirm the pathogen
- Identify phenotypic type and serotypes
- Identify genotypic subtypes
- Study antimicrobial resistance.

Such information is beneficial:
- To link the cases
- To identify new strains
- To detect unapparent outbreak if novel strain appears
- To trace back the source of infection.

Step 7: Describe cases

a) Time, place and person

The basic descriptive analysis includes:
- Time: time of symptom onset…
- Place: residence, working place, education place in terms of locality, caza and mohafaza…
- Person: age group, gender, nationality…

b) Illness

Symptoms, complications and outcomes are described.

The case management is also described (hospital admission, ICU, dialysis…)

c) Infectious agents

The causing agents are described:
- Known or novel strain
- Phenotypic and genotypic characteristics
- Antimicrobial resistance profile.

Step 8: Identify risk factors

Intestinal infections are due to various factors:
- Water-borne
- Food-borne
- Person-to-person: via respiratory secretions, feco-oral route...

a) Water-borne

If the investigation forms point the presence of common water source: in same locality, area or institution, the water is suspected to be contaminated.

In concerned localities or institutions, the municipalities are contacted to understand 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 water network and non-network water.

The water will be tested for fecal contamination.

b) Food-borne

If the investigation forms point the presence of suspected meal in same locality or 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.

Food sampling includes: ingredients, intermediate and final products.

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

c) Hygiene

In case the cholera case(s) in a specific setting, as a refugee settlement, the site is inspected. At inspection the following is assessed:
- Availability of safe drinking water
- Availability of domestic water
- Sanitation infrastructure
- Hygiene behavior.

d) Further studies

In case of an outbreak with unidentified risk factors, further analytical studies can be conducted. The type of study depends on the context of the outbreak:

Table 4 : Indications of analytic studies

Study	Context
Retrospective cohort study	Closed setting such as a wedding, prom, camp…
Case-control study	Open setting with undefined borders such as a restaurant butchery…

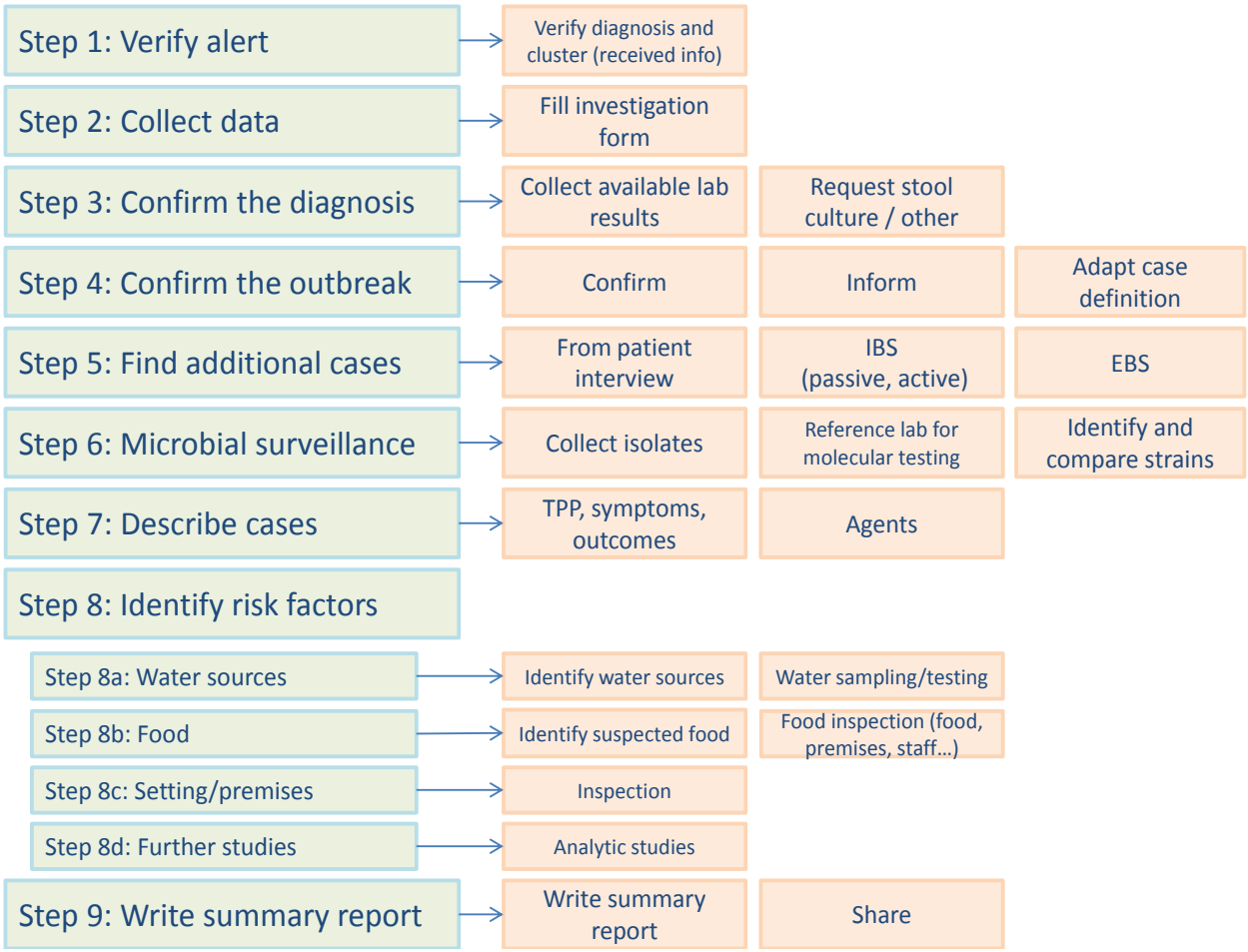
Comparing the results of the analytical studies and the laboratory findings will provide elements to confirm the outbreak and orient the investigation to the source of the outbreak.

Step 9: Write summary report

During the course of the outbreak investigation, preliminary reports are generated for the health authorities.
Once the investigation is completed, a general summary report is finalized and shared with the ESU team and authorities.

The summary report should include the following sections:
- Background of the situation
- What was done
- Results of laboratory tests
- Findings of investigation
- Conclusion
- Recommendations.

Figure 3: Intestinal infections investigation steps



Intestinal Infections - Annex 1

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

Dysentery investigation form

(Amebiasis, shigellosis, salmonellosis, giardiasis, E. coli, campylobacter, rotavirus …)

1.Identification

Name	Date of Birth	Gender	Nationality	Locality	Caza	Phone number

2.Laboratory findings

Test	Date specimen	Laboratory name	Result	Species	Referral to lab	Referral result
☐Direct stool ☐Stool culture						

3. Symptoms

Date onset					
___ / ___ / _____	☐Diarrhea	☐Nausea	☐Fever	☐Headache	☐Abdominal cramps
	☐Bloody diarrhea	☐Vomiting	☐Chills	☐Body aches	☐Other

4.Complications

☐No complication

☐Dehydration

☐Thrombotic Thrombocytopenic Purpura TTP →

☐Hemolytic Uremic Syndrome HUS →

☐Other, specify:

☐Death, Date of death: __ / __ / _____

For E. coli		
☐Low platelets count |_____|/mm^3	☐Purpura	
☐Low Hb |_____|	☐Hematurie	☐High Creatinine |_____|mg/dl
☐Low Ht |_____|	☐Proteinurie	

5.Case management

☐Hospital admission, Date of admission: __ / __ / _____, Hospital name:

☐ICU admission, Nb of days |____|

☐Dialyse, Nb of sessions |____|

☐Previously vaccinated for Rotavirus

6. Water and sanitation

	Network	Private well	Public well	Bottled water	Citerne	Winter water	Unknown	Other
•Drinking water								
At home								
At school/work								

	Network sewage	Septic tank	Unknown	Other
•Sanitation				
At home				
At school/work				

7. Occupation

Occupation: .....

Are you food handler?: ☐No, ☐Yes, where: ☐at home, ☐at work, ☐other

Institution: .....

Is it a day care center? ☐No, ☐Yes, where: ☐hospital, ☐child care, ☐adult care, ☐other

8. Risk factors: during the 7 days before onset

	Where	When	Notes
☐Contact with persons with diarrhea			
☐Contact with animals, specify type:	Where: ☐pets, ☐farm, ☐ zoo ☐other		
☐Travel			
☐Restaurants			
☐Gathering			
☐Recreational water			

Investigator: Date:

Intestinal Infections - Annex 2

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

Isolate Identification Form

I. Laboratory and Isolate identification:

For Laboratories

Laboratory name		Focal person	Phone	Email	
Identification:	☐ Salmonella ☐ Listeria	☐ Shigella ☐ Other:	☐ E. coli	☐ Campylobacter	☐ Yersinia
Species:					
Date of isolation:					
Media of isolation:					
Lab number:					
ATB susceptibility:	☐ Done	☐ Results attached	☐ Not done		
Specimen Source:	☐Human	☐ Food	☐ Animal	☐ Other:	
If Human	Patient name:				
	Type of isolate:	☐ Blood ☐ Other:	☐ Stool	☐ CSF	☐ Urine
If Food	Food type:	☐ Animal origin	☐ Dairy product	☐ Other:	
	Food item:				
	Place of collection:				
	Food submitted by:				
	Food origin:	☐ Local	☐ Imported	☐ Other:	
	Purpose of testing	☐ Outbreak investigation	☐ Systematic food screening	☐ Monitoring and follow up	
If Animal	Animal type:				
	Animal identity:				
	Animal status:	☐ Alive	☐ Ill	☐ Dead	
	Clinical specimen:				
	Place of collection:				
	Food submitted by:				
Date, name and signature:					

II. Transport via MOPH and national ID number:

For MOPH

Date of reception	Received by	Type of media	1st recipient	2nd recipient	**MOPH_ID**
Date of referral	Referred by	Signature	ESU_ID	Notes	

III. Reference laboratory and results:

For Reference Laboratory

Laboratory name		Focal person	Phone	Email	
Date of reception	Received by	Type of media	1st recipient	2nd recipient	Ref_ID
Condition:					
Confirmation:					
Type:					
Subtype:					
ATB susceptibility:	☐ Done	☐ Results attached	☐ Not done		
Notes:					
Date, name and signature:					

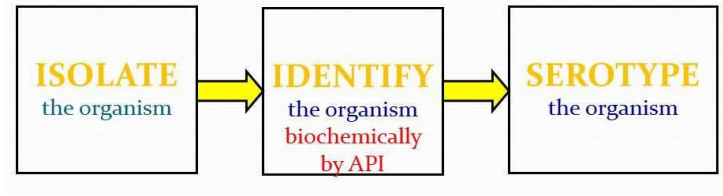
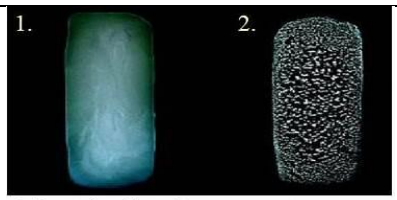
MOPH circular no. 163 (28/11/2015)

General Information on PulseNet

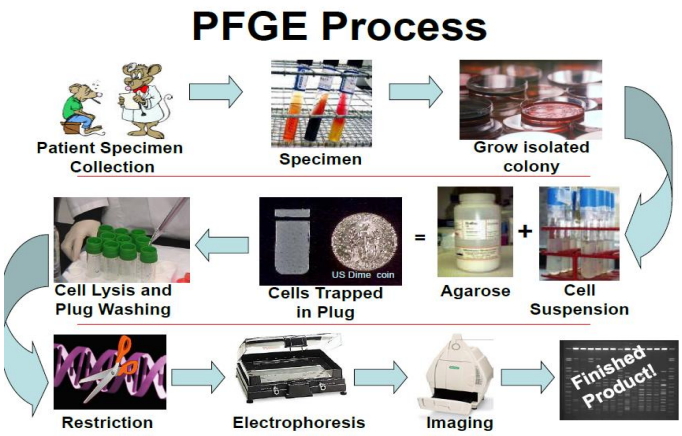
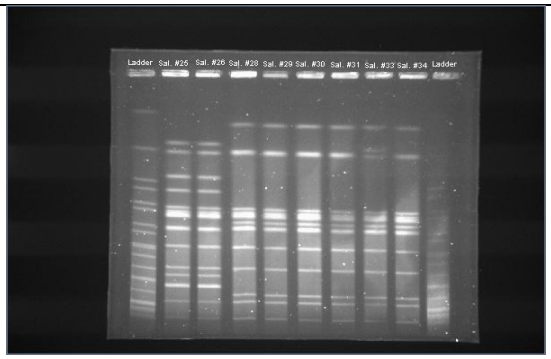
PulseNet International is a network of National and regional laboratory networks dedicated to tracking foodborne infections world-wide. Each laboratory utilizes standardized genotyping methods, sharing information in real-time.
The resulting surveillance provides early warning of food and waterborne disease outbreaks, emerging pathogens, and acts of bioterrorism.
The main objectives are to participate in the investigation of outbreaks of foodborne infections and to facilitate early recognition of foodborne disease clusters that may represent common source outbreaks through molecular surveillance of infections at the global, regional and national levels.
PulseNet relies on the strain genotyping using the methodology of Pulsed Field Gel Electrophoresis (PFGE).
Source: http://www.pulsenetinternational.org/

The processes are as follows:

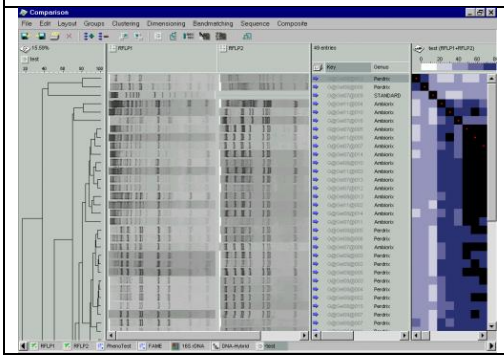
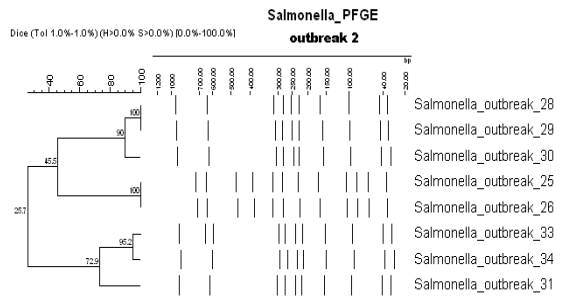
1) Serotyping

Process	Outcome
	 1. A **negative (-)** reaction. 2. A **positive (+)** reaction.

2) Molecular genotyping

Process	Outcome
	

3) Bionumerics for dendograms

Process	Outcome
	

Notes

Notes

13

Surveillance Standard Operating Procedure: Legionellosis

Version 1
MOPH circular no. 47
(19th Jan 2015)

Contents

I Purpose

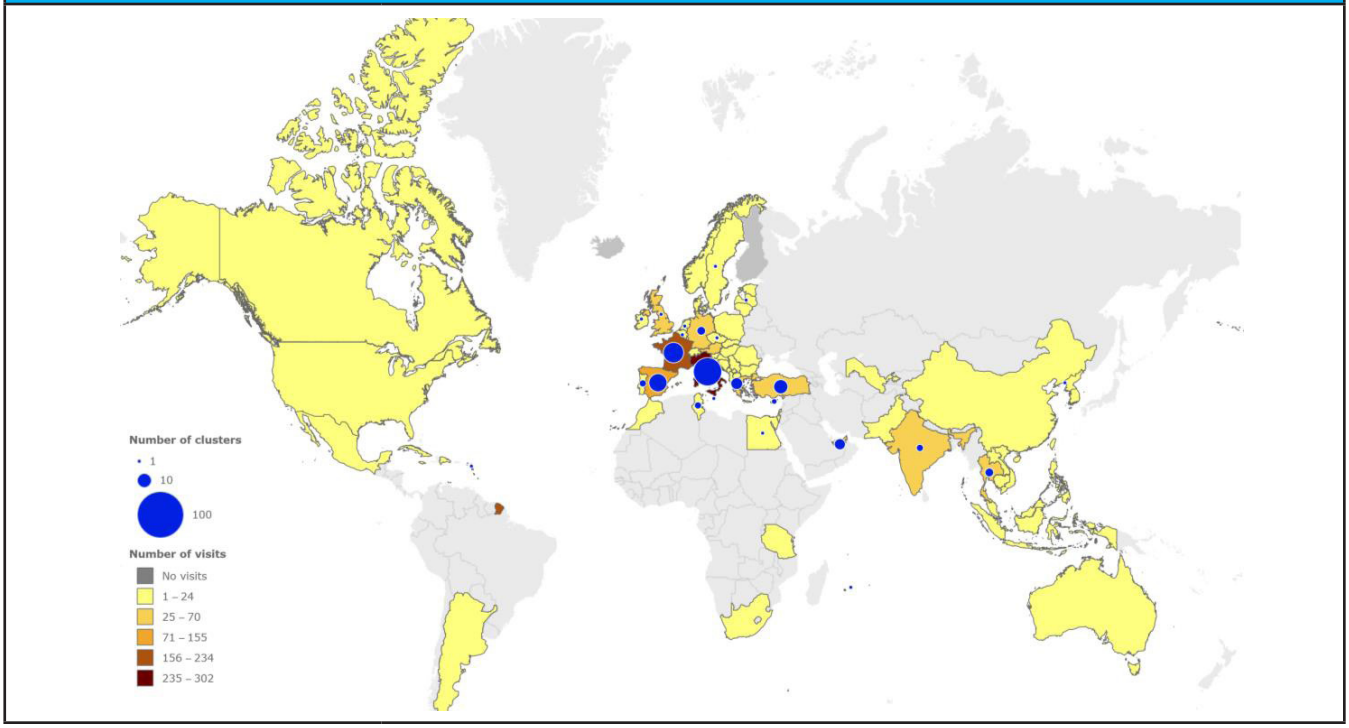
The standard operating procedure (SOP) is intended to assist the epidemiological surveillance program in how to proceed when verifying and investigating legionella disease.

II Generalities

Legionellosis	
Agent	- Legionella, gram negative bacilli - 20 different species. 80% of human infections are due to L. Pneumophila serogroup 1. - Other species: L. micdadei, L. bozemanii, L. longbeachae…
Incubation period	- For legionella disease: 5-6 days (2-10 days) - For Pontiac fever: 24-48 hours (5-66 hours)
Period of communicability	No person-to-person transmission
Reservoir	- Water: Legionella can survive in tap water. - Potting soil may be reservoir for certain spp (L. longbeachar)
Modes of transmission	- Inhalation of contaminated aerosols - Microaspiration of contaminated water
Clinical presentation	Two forms: - Legionella disease: potential fatal form of pneumonia. Case fatality: 30% - Pontiac fever: self-limited flu-like illness without pneumonia
Worldwide	First described in 1976.
Lebanon	Disease included in the mandatory list for reporting since 2014
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, travel history, case management, nosocomial factors, itinerary during the past 10 days before onset
Investigation: clinical specimen from case	Respiratory specimens, blood
Investigation: data about contacts	Similar cases among contacts at household, workplace…
Investigation: clinical specimen from contacts and environment	- Contacts: If symptoms - Environmental: water samples
Test	Culture, antigen detection, serology
Laboratories	Reference laboratories
Outbreak level	At least one confirmed case acquired locally
Notification to WHO	- According to International Health Regulations (2005). - If travel-related: need to notify the WHO and the concerned country

Legionellosis case definition (MOPH circular no.175 dated on the 31st December 2015)	
Confirmed case	A person presenting pneumonia with positive confirmatory laboratory test of at least one of the following: - Isolation of Legionella spp. from respiratory secretions or any normally sterile site - Detection of Legionella pneumophila antigen in urine - Significant rise in specific antibody level to Legionella pneumophila serogroup 1 in paired serum samples
Suspected case	A person presenting pneumonia with positive laboratory test of at least one of the following: - Detection of Legionella pneumophila antigen in respiratory secretions or lung tissue e.g. by DFA staining using monoclonal-antibody derived reagents - Detection of Legionella spp. nucleic acid in respiratory secretions, lung tissue or any normally sterile site - Significant rise in specific antibody level to Legionella pneumophila other than serogroup 1 or other Legionella spp. in paired serum samples - Single high level of specific antibody to Legionella pneumophila serogroup 1 in serum
Forms	
Reporting	Standard reporting form
Investigation	Legionellosis investigation form (MOPH circular no.7 dated on the 7th January 2015)

Figure 1: Number of standard clusters of travel-associated legionella disease per destination country, 2013 (Source: ECDC)



III Objectives of surveillance

The objectives of surveillance of legionella are:

- To detect and confirm cases
- To identify contaminated water systems for further treatment.

IV Alert and outbreak thresholds

An **alert** is reached whenever a suspected case of legionellosis was reported to the MOPH.
The **outbreak** is defined by having at least one confirmed case acquired locally.

V Procedural steps for Legionellosis detected notified locally

The steps described below are recommended for the verification and investigation of legionellosis detected locally. They are summarized in figure (3).

Many of these actions will have to be undertaken concurrently as soon as the outbreak is suspected or confirmed. We distinguish between two sources of notification

- Legionellosis case notified locally (from Lebanon)
- Legionellosis case notified from WHO or other countries

Step 1: Verify alert

Upon reception of a reported case of Legionellosis, the Esumoh team (at peripheral level) immediately contacts the health facility or the treating physician to verify the diagnosis: Do they really suspected legionellosis?
If yes, the Esumoh peripheral staff informs the Esumoh central staff immediately.

Step 2: Collect data

In order to understand the case, an investigation form is filled by the Esumoh central team in coordination with the treating physician. The collection of data is done via patient (or relative) interview, physician interview and medical file consultation. Field visit to the patient may be needed.
The investigation form is provided in annex (1).
If the patient is unable to be interviewed, the investigator contacts relatives or someone that can act as proxy.

The investigation form includes the following information:

- Demographic variables: gender, age, residence
- Occupation and professional address
- Clinical presentation
- Laboratory findings
- Existing medical conditions: renal or hepatic failure, diabetes, immune system disorders, malignant cancers, COPD, congestive heart failure
- Travel history: recent travel with overnight stay away from home
- Recreational waters: whirlpools, spa exposure...
- Other: smoking...

Step 3: Confirm the diagnosis

Usually the case is hospitalized.
The hospital is asked to collect clinical specimens for laboratory testing. The table below summarizes the needed specimens and tests.

Table 2: Laboratory diagnosis of Legionnaire's disease

Test	Specimen	Notes
Culture	Sputum	- Confirmatory test, gold standard - Highest specifity - Requires 2–4 days,sometimes (rarely) up to 14 day
	BAL or tracheal aspirate	
	Lung tissue(biopsy)	
	Blood	
Serology / seroconversion	Blood	- Good sensitivity and specifity - Seroconversion may require 3–9 weeks

Serology / Single specimen	Blood	- Unknown sensitivity and specifity
Urinary antigen EIA	Urine	- Confirmatory test - May remain positive for several weeks/months - Very rapid (15 min–3 h)
DFA testing	BAL or sputum	- Limited sensitivity - No validated for non-pneumophila species - Very rapid (2–4 h)
	Lung tissue(biopsy)	
PCR	Respiratory tract specimen	- Detects all Legionella species - Rapid
	Urine	
	Serum	

Specimens include urine, serum, lower respiratory tract secretions, lung tissue, pleural fluid...

Urinary antigen assay and culture of respiratory secretions on selective media are together the preferred diagnostic tests for confirming Legionnaires' disease.

Specimens are collected by the hospitals and referred to specific laboratories at national or supranational level.

More details about specimen, shipping, lab tests are included in Annex 2 and Annex 3.

According to laboratory results, the case is either confirmed or discarded.

Step 4: Investigate the source

Upon the confirmation of a case, there is need to identify potential source of exposure in Lebanon or travel related.

a) Is the case travel-related?

The investigation should provide the information of any travel history of the patient 10 days before onset.

If a travel history was found, the places and dates where the patient was are collected and documented, in particular the venues of accommodation.

The MOPH informs officially WHO and the IHR focal point of that country. This communication will enable:

- Adequate investigation of water systems in that country
- Compile the national data with the international data in order to find a cluster.

b) Is the case related to health facilities?

Nosocomial infection can be discussed in the below conditions:

- As definite nosocomial case if the patient was hospitalized continuously for ≥ 10 days before onset of Legionella infection
- As possible nosocomial case if the patient was hospitalized at any point 2–9 days before onset of Legionella infection.

If the nosocomial source is considered, the following points are conducted:

- Search for other cases associated with the hospital
- Conduct environmental assessment and water sampling
- Identify the source of exposure
- Monitor incident nosocomial respiratory infection cases...

c) Is the case community-acquired?

If the case is not related to travel or to health facility, the case is labelled as community-acquired.

The case is interviewed to collect data on all places visited 9 days before onset illness. All visited places and itineraries are listed. The dominant places may be assessed and tested.

Step 5: Confirm the outbreak

If the case is confirmed and not travel-related, then an outbreak is declared.

Step 6: Search for additional cases

Searching additional cases will be guide the investigation for nosocomial cases and community-acquired cases.

a) For nosocomial cases

A joint team including the Esumoh and the hospital infection control team is formed. The joint team has:

- To search for additional cases retrospectively and prospectively
- To identify, in coordination with the hospital engineer team, potential exposures related to water system
- To collect water samples for Legionella testing
- To provide recommendations...

b) For community-acquired cases

The MOPH issued official memos to hospitals and health professionals informing them on the event and reminding them to report any suspected case of Legionella.

Active surveillance is enhanced to include the search of additional cases.

Any new suspected case is investigated and confirmed. All places visited 10 days before onset are listed and documented.

Step 7: Describe cases and enhance monitoring

Cases are described be time, place and person.

Cluster in time and place are searched. Such clusters provide clues to identify suspected exposure places.

Weekly bulletin is produced and shared with health professionals.

Step 8: Test water system

Based on cases description, suspected places are pointed for assessment and water system testing.

Water samples are collected from various water systems: AC, cooling… Details on water sampling is provided in annex (2).

Water samples are referred to be tested at the Industrial Research Institute.

Step 9: Write summary report

Once the outbreak is contained, a summary report is prepared by the Esumoh central team.

VI Procedural steps for legionellosis notified by WHO or other countries

The steps below are recommended for any legionellosis case related to travel to Lebanon and detected abroad. They are summarized in figure (4).

Step 1: Detect alert

Upon reception of verification note from WHO or report from IHR country focal person, an alert is declared.
Usually, the information provided by WHO and the countries specified places to be assessed. There is need to verify that the case was in Lebanon in the 10 days before disease onset.

Step 2: Investigate the case

The Esumoh central team collects needed information related to legionella case. Such information is provided by the country who reported the case.

Step 3: Investigate the source

Upon the identification of suspected places, an investigation team visits the places for:

- Field assessment of water system
- Water specimens collection for Legionella

Results are shared with WHO and the concerned country.

If the laboratory results are positive, there is need to search for additional cases.

Step 4: Search for additional cases

IBS and EBS are enhanced to find additional cases.
Any local suspected case is investigated following the steps in figure (3).
If a local case is confirmed, the outbreak is declared. The MOPH informs officially the health professionals on the event and remind them to report any cases.

Step 5: Write summary report

Once the outbreak is over, the Esumoh central team prepares summry report describing the cases, the investigation findings and the lessons learnt.

Figure 2: Legionellosis case classification

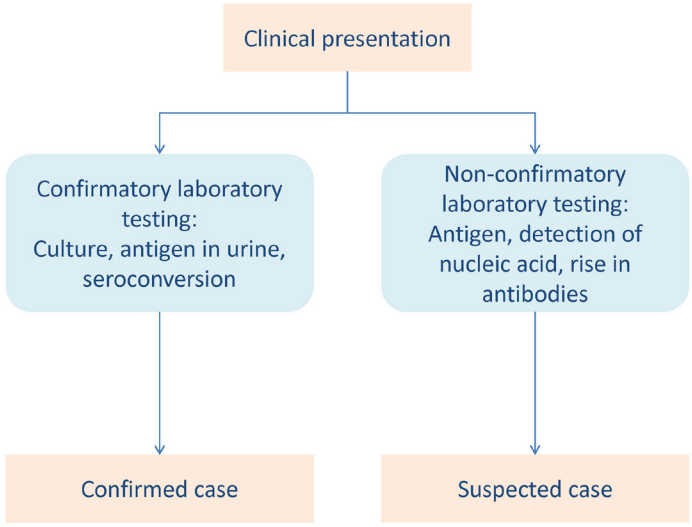


Figure 3: Legionellosis investigation steps if reported from Lebanon

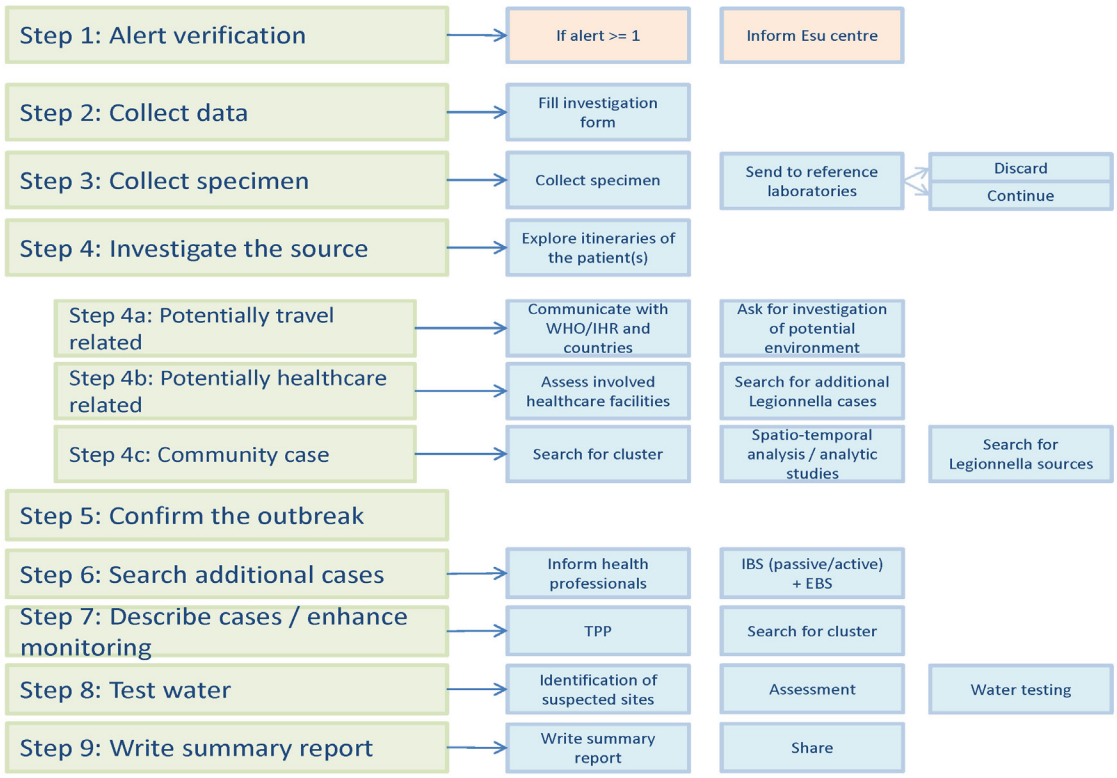
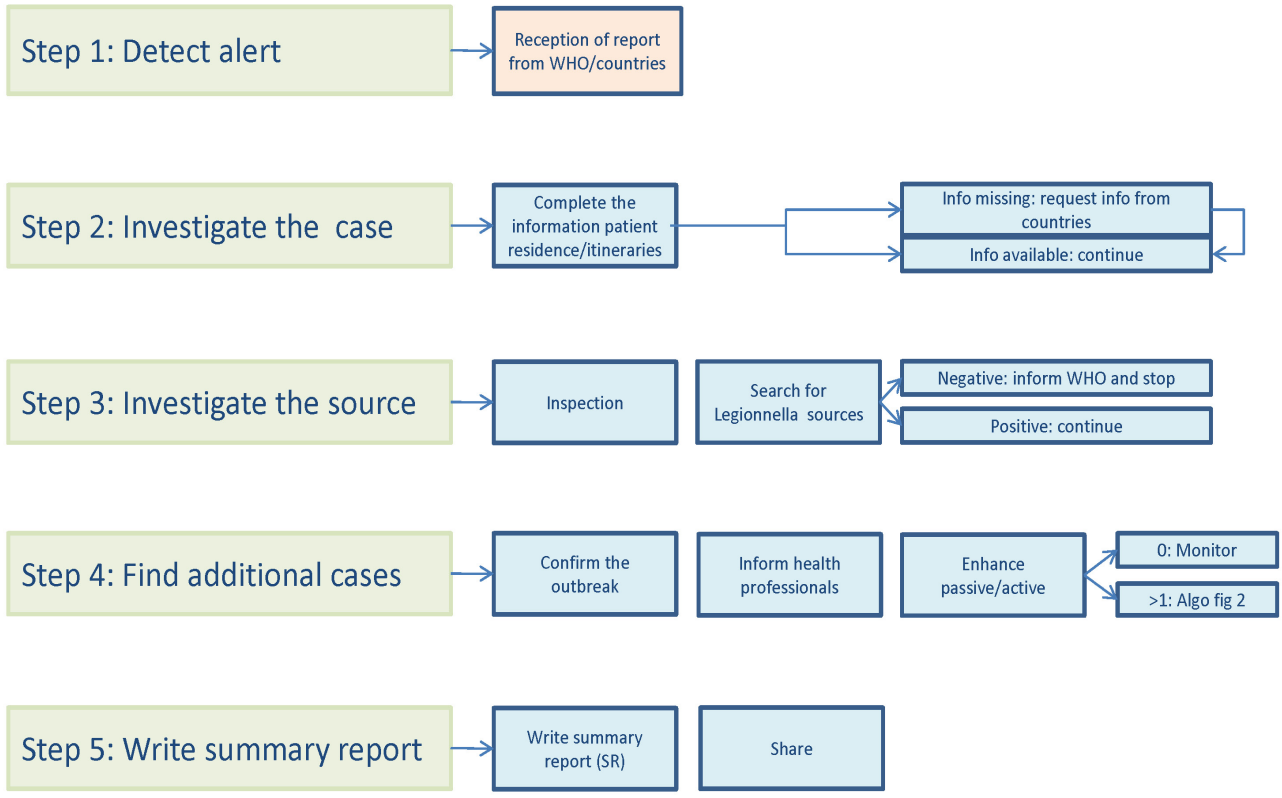


Figure 4: Legionellosis investigation steps if reported from abroad



Legionellosis - Annex 1

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

Legionella investigation form

Case ID |_____|

A. Investigator details

Name of investigator	Team	Phone details	Date of investigation

*

B. Reporter

Date of reporting to MOPH			
□ Locally, specify:	Hospital name	Physician name	Contact details
□ International, specify:	Institution	Focal person	Contact details

*

C. Patient identity

Name of patient		Date of birth	Age (y)
		Sex	Nationality
□Primary residence	Country	Locality/caza	Phone
□Second residence	Country	Locality/caza	Phone
□Occupation	Occupation	Institution	Work address

*

D. Clinical findings

Date of onset	
Diagnosis	□.Legionnaires' disease(pneumonia, clinical or X-ray diagnosed) □.Pontiac fever (fever and myalgia without pneumonia) □.Other (endocarditis, wound infection..), specify:
Was the patient admitted?	□ Yes, specify hospital name: □ No □.Unknown
Date of admission	
Has the patient had a recent organ transplant?	□ Yes, specify organ and date: □ No □.Unknown
Was the patient immunosuppressed for any reason?	□ Yes, specify the underlying condition: □ No □.Unknown
Outcome	□ Recovered □ Still ill □ Death (date of death…/…./…) □ Unknown

Legionella investigation form

Case ID |_____|

E. Risk factors

1) Possible travel related

►In the 10 DAYS BEFORE onset, did the patient spend any nights away from home (excluding health care settings)

□ Yes, complete the table below
□ No
□ Unknown

Accommodation name	Address	Country	City	Room number	Dates of stay	
					Arrival	Departure

►Did the patient get or spend time near a whirlpool/Spa?

□ Yes, specify where:
□ No
□ Unknown

2)Possible health care related

►Does the patient visit a health care center for any time in the TWO WEEKS BEFORE the date of onset of symptoms of legionellosis?

□ Yes, specify the following points
□ No
□ Unknown

Health care facility name	Type of visit (in, out-m visitor, staff…)	Date of visit/admission (from, to)	If admission		
			Diagnosis	Respiratory ventilation (CRAP…)	Water used (bottled other…)

3) Possible community acquired

►In TWO WEEKS BEFORE onset of symptoms, did the patient use or spend time near a whirlpool/spa?

□ Yes, specify where:
□ No
□ Unknown

►Is the case related to any cluster?

□ Yes, specify":
□ No
□ Unknown

*

Legionella investigation form

Case ID |_____|

E. Laboratory details

Type of specimen	Nb of specimen	Date of collection	Diagnosis test	Result	Laboratory name
□.Urine			□ Urine antigen EIA		
□. Respiratory specimens(sputum, BAL, tracheal aspirate, tissue, …) specify:			□ Culture □.PCR □.DFA		
□.Serum			□.IFA		
□.Isolate			□.Serogroup determination		

*

F. Environmental investigations

►Has sampling of water systems been requested?
- □ Yes, specify":
- □ No
- □ Unknown

*

G. Additional information

Please provide any additional information relevant to the case's possible source of exposure

TABLE 1. Protocol for sampling environment sites for legionellae

Site and description	Approx no. of samples	Vol of samples
A. Potable water outside or on boundary of hospital property		
1. Treatment plant (raw and refined water)	2	10 liters
2. Guard house or outlying facility if water is not fed there from hospital	1	1 liter
3. Fire hydrant(s)	2	1 liter
B. General potable water system for hospital		
4. Incoming water pipe(s)	2	10 liters
5. Water softener (pre and post)	2	1 liter
6. Preheater (discharge side)	1	1 liter
7. Primary heater (discharge side)	1	1 liter
8. Circulating pump(s)	2	1 liter
9. Holding tanks (cold water, discharge side)	2	1 liter
10. Expansion tank for hot water (if possible)	1	1 liter
11. Back drain on sprinkler system(s) (trap to prevent backflushing may be present and should be sampled)	2	1 liter
12. Fireline where it branches off main system (may be multiple)	1	1 liter
C. Pharmacy		
13. Water used for respiratory therapy equipment	2	≥1 liter
D. Air compressor system		
14. Vacuum water source	1	≥100 ml
Positive pressure equipment side		
15. Condensate from tank(s)	3	≥100 ml
16. Water separator(s) (directly off compressors)	4	≥100 ml
17. Water source(s) near air intake(s)	4	≥100 ml
18. Air samples where patients were ill with legionellosis	3	NA[a]
E. Potable water final distribution outlets		
Hemodialysis water source		
19. Before demineralizer	1	≥1 liter
20. After demineralizer	1	≥1 liter
Intensive care units		
21. Respiratory therapy (patient rooms)	2	1 liter
22. Cardiac	2	1 liter
23. Services with different geographical locations	7	1 liter
24. Ice maker (entry water)		≥1 liter
F. Air-conditioning system		
25. Air handling unit to service where disease occurred (drain pan)	2	≤100 ml
Cooling towers		
26. Blowdown	3	≥1 liter
27. Water supply	1	1 liter
G. Whirlpools		
28. Whirlpool (one nearest air intake system)	1	1 liter
29. Whirlpool drain	1	Wet swab
H. Other		
30. Decorative fountain(s)	1	1 liter
31. Creeks, ponds, and sites of stagnant water	4	>1 liter

[a] NA, Not applicable.

Procedures for Collecting and Processing Environmental Specimens for *Legionella* spp.

1. Collect water (1-liter samples, if possible) in sterile, screw-top bottles.
2. Collect culture swabs of internal surfaces of faucets, aerators, and shower heads in a sterile, screw-top container (e.g., 50 mL plastic centrifuge tube). Submerge each swab in approximately 5 mL of sample water taken from the same device from which the sample was obtained.
3. Transport samples and process in a laboratory proficient at culturing water specimens for *Legionella* spp., as soon as possible after collection.

Samples may be transported at room temperature but must be protected from temperature extremes. Samples not processed with 24 hours of collection should be refrigerated

Source: WHO. Bartman and Chartier. Legionella and the prevention of legionellosis.

Notes

Notes

Notes

14

Surveillance Standard Operating Procedure: Leishmaniasis

Version 1
MOPH circular no. 48
(19th Jan 2015)

Contents

I Purpose

This standard operating procedure (SOP) is intended to assist the Epdiemiological Surveillance Program teams with guidance for verification and investigation of Leishmaniasis alert or outbreak.

II Generalities

Leishmaniasis: is caused by parasitic protozoa of the genus Leishmania. Humans are infected via the bite of phlebotomine sandflies, which breed in forest areas, caves or the burrows of small rodents. There are two main types of the disease:

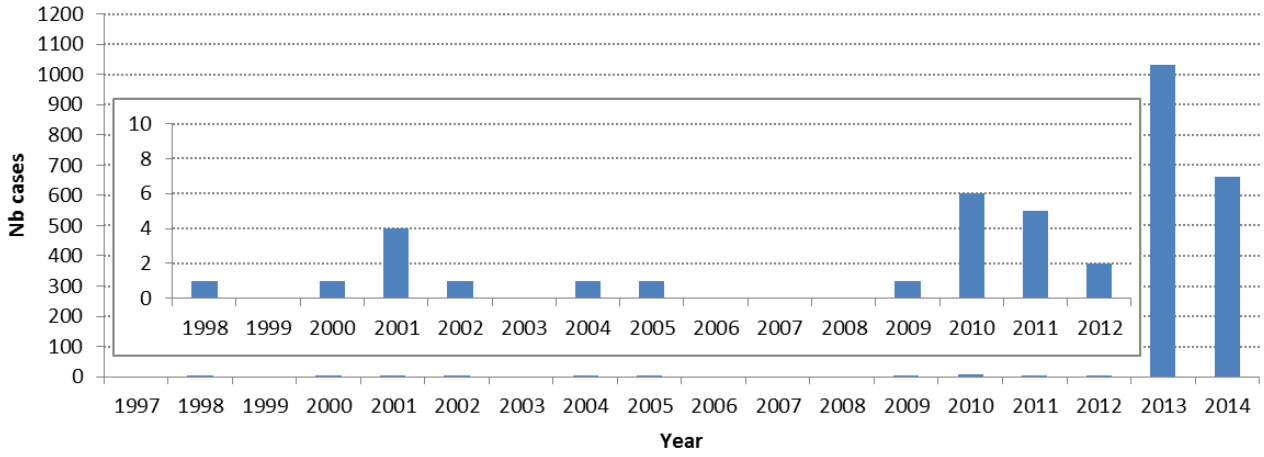
- Cutaneous leishmaniasis: is the most common form with skin ulcers usually on exposed areas, such as face, arms and legs. skin lesions usually heal within a few months, leaving\ scars.
- Visceral leishmaniasis: is the most serious form characterized by high fever, substantial weight loss, swelling of the spleen and liver. If left untreated, the disease can have a fatality rate as high as 100% within two years.

Leishmaniasis	
Agent	- Cutaneous/Mucosal form: Protozoa: Leishamania tropica, L. major, L. aethiopica, L. braziliensis, L. Mexicana, L. infantum/ chagazi, L. donovani - Visceral form: Leishamania donovani, L. infantum and L. infantum/chagazi
Incubation period	1 week to several months
Period of communicability	Non person-to-person transmission
Reservoir	Humans, wild rodents, hyraxes, marsupials, domestic and wild dogs
Modes of transmission	Bite of infective female phelbotomines (sandflies). Female sandflies become infected by feeding from reservoir hosts: animals (zoonotic cycle), or humans (anthroponotic cycle). The sandflies are from genus phlebotomus in the Old World, and genus Lutzoma in the New World.
Clinical presentation	- Cutaneous/Mucosal form: Intracellular parasite in humans causing single or multiple macule skin lesions then papules that enlarge and become indolent ulcers. Involvement of the mucosa of the nasopharynx is characterized by progressive tissue destruction. - Visceral form: Chronic systematic disease characterized by fever, hepato-splenomegaly, lympho-anedopathy, anemia, leukopenia, thrombocytopenia. Complication: death if untreated.
Worldwide	Asia, Middle East, Sub-Saharan Africa, Central and South America
Lebanon	- Before 2013: less than 10 per year of local cases - Since 2013: >1000 per year of Syrian cases
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, residence, travel history...
Investigation: clinical specimen from case	- Cutaneous/mucosal form: skin biopsy - Visceral form: blood, biopsy (bone marrow...)

Investigation: data about contacts	Similar cases among family
Investigation: clinical specimen from contacts	Specimen collection if symptoms appear
Test	- Cutaneous form: histopathology, cutaneous smear - Mucosal form: serology tests - Visceral form: serological tests, histopathology
Laboratories	- Confirmation: clinical histopathology laboratory - Identification of L. types: national reference laboratory
Outbreak level	- If observed incidence exceeds the expected one - If modification of characteristics of parasite, vector or host
Notification to WHO	According to International Health Regulations (2005) criteria
Case definitions	
Cutaneous/musocal leishmaniasis case definition (MOPH circular no. 34 dated on the 4th April 2013)	
Confirmed case	A suspected case with laboratory confirmation: - Parasitological confirmation: positive stained smear or positive culture from lesion of Leishmania - And/or for mucosal leishmaniasis only, serological confirmation: immunofluorescent assay, ELISA
Suspected case	A person with clinical signs: skin or mucosal lesions (nodule, indolent ulcer, depressed scar…) The skin lesions: appearance of one or more lesions typically on uncovered parts of the body. The face, neck, arms, and legs are the commonest site. At the site of inoculation, a papule appears which may enlarge to become an indolent ulcerated nodule or plaque. The sore remains in this stage for a variable time before healing and typically leaves a depressed scare. Other atypical forms may occur. In some individuals, certain strains can disseminate and cause mucosal lesions. These sequelae involve nasopharyngeal tissues and can be disfiguring.
Visceral leishmaniasis case definition (MOPH circular no. 122 dated on the 13th September 2006)	
WHO definition	A person showing: - Clinical signs: prolonged irregular fever, splenomegaly and weight loss - With laboratory confirmation: - Parasitological confirmation: stained smears from bone marrow, spleen, liver, lymph node, blood or culture of Leishmania from a biopsy or aspirated material - Or serological confirmation: immunofluorescent assay, ELISA, Direct Agglutination Test.
Forms	
Reporting	Standard reporting form
Investigation	- Leishmania investigation form (MOPH circular no.25 dated on the 19th January 2015) - Leishmania line listing - Leishmania case management form (MOPH memo no.28 dated on the 22nd April 2013)

National figures

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



International figures

Disease present in all continents except in Australia and Antarctica.

- Cutaneous/mucosal form - 90% of worldwide cases are in:
  - America: Brazil and Peru
  - Asia: Afghanistan, Iran, Kingdom of Saudia Arabia, Syria
- Visceral form - 90% of worldwide cases are in:
  - Africa: Sudan
  - America: Brazil
  - Asia: Bangladesh, India, Nepal

Figure 2: Incidence of cutaneous leishmaniasis CL, worldwide, 2013 (Source: WHO)

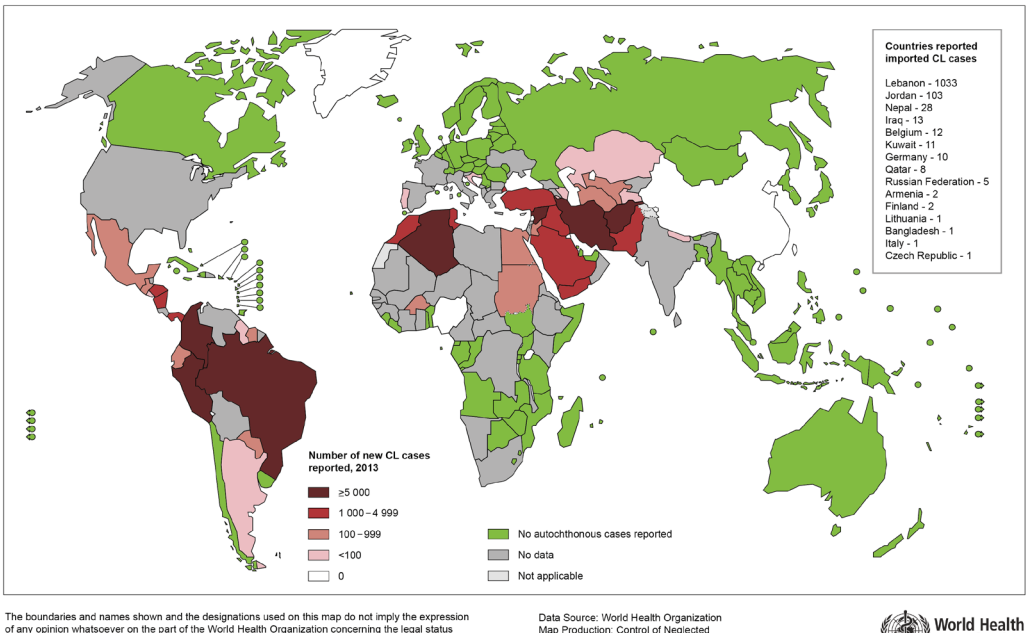
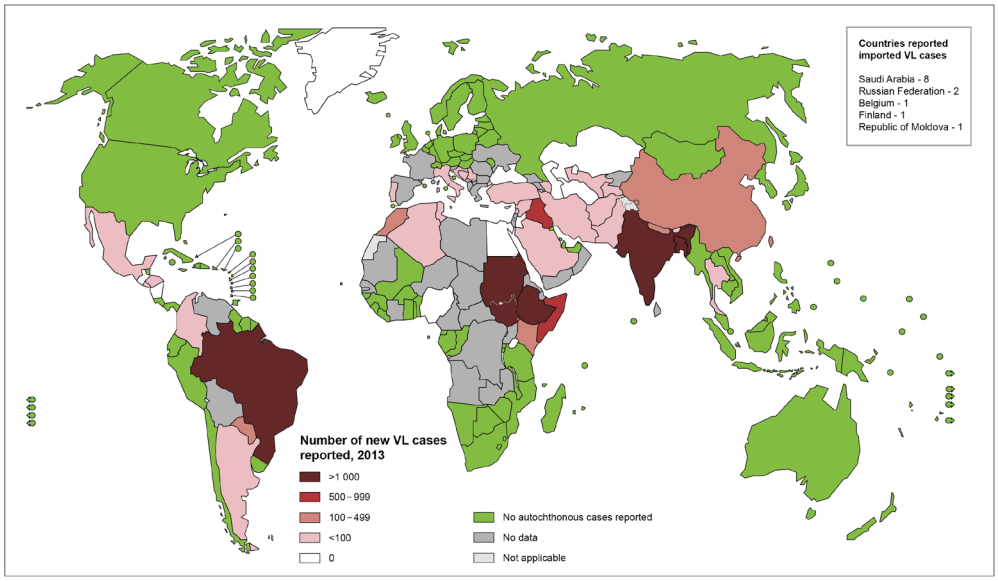


Figure 3: Incidence of visceral leishmaniasis VL, worldwide, 2013 (Source: WHO)



III Objectives of surveillance

The objectives of leishmaniasis surveillance are:

- To monitor leishmaniasis in Lebanon
- To identify new patterns.

IV Alert and outbreak thresholds

Two profiles are discussed.

a) For the Lebanese population

The Lebanese population is known to have non-endemic profile for Leishmaniasis.
An alert is defined by 1 local case.
An outbreak is defined when the observed incidence exceeds the expected incidence.

b) For the Syrian population

The Syrian population is known to have endemic profile for Leishmaniasis.
An alert is defined by one of the following:

- Recent cluster in time and place
- Cases suspected to be acquired in Lebanon.

An outbreak is defined when the observed incidence exceeds the expected incidence for the Syrian population (in terms of rates).

V Procedural steps

The steps detailed below are those to follow in case of any alert. They are summarized in figures (5) and (6).

Step1: Verify alert

The Esumoh team contacts the treating physician or the hospital focal person to verify the following:

- The diagnosis and how it was confirmed
- The nationality.

Upon verification, the Esumoh caza/mohafaza team informs the central level.

Step 2: Collect data

For each case, a form is filled by the Esumoh team. The investigation form is provided in annex (1).

The investigation form including the following information:

- Demography of the patient: age, gender, nationality…
- Illness: date of onset, type of the Leishmaniasis, location and number of lesions…
- Laboratory confirmation: results of confirmatory tests
- Case management history: treating center, date starting treatment, place, protocol
- Risk factors: travel history...

In case of death (Visceral leishmaniasis), a copy of the medical file is requested by the Esumoh.

Step 3: Confirm the diagnosis

For each type of leishmaniasis, there is need for specific specimens and tests.

Laboratory tests are conducted in coordination between the treating physician and Esumoh.

Specimen collection is done by the treating physician. When needed, the referral to specific laboratories is done by Esumoh.

Table 1: Needed specimens and tests for Leishmaniasis

	Cutaneous/mucous form	**Visceral form**
Specimens	Skin smear Skin biopsy	Blood Biopsy of bone marrow
Tests	Histopathology Serology tests (mucosal)	Serological tests Histopathology

When results are positive, there is need to specify the Leishmania species found in the lesion.

Step 4: Describe cases

Cases are described by:

- Time
- Place
- Person
- Disease
- Agent: Leishmania species

Step 5: Confirm the outbreak

Based on the available epidemiological and laboratory findings, the outbreak is declared.

The Esumoh central team informs the MOPH units.

The MOPH issues official letters to inform:

- Health professionals
- WHO...

Step 6: Find additional cases

The Esumoh team conducts field visit where the case lives. The objectives of the field visit are:

- To gather additional information from the family
- To find additional cases in the surroundings of the case
- To assess the environment where the case lives
- To prepare for any sandfly investigation or surveillance...

The line listing provided in annex (2) is used.

Step 7: Conduct further studies

a) Entomological surveillance

Technical partners are identified to conduct entomological investigation and surveillance of the sandflies.

The objectives of the investigation are:
- To confirm the presence of the vector, and identify the species
- To map the geographical distribution of the vector and seasonal host activity
- To confirm the infection of the sandfly
- To verify the susceptibility of sandflies to the used insecticides

b) Ecological studies

The control of vector borne-diseases relies also on controlling the reservoir.
Studies are conducted to better understand the local reservoirs, characteristics. Such information enables to find adapted control strategies.

c) Setting and population behavior

The control of vector borne diseases relies also on the human behavior. There is need to understand the behavior of the community related to:
- Prevention of human sandfly contact
- Vector and reservoir control...

Step 8: Enhance monitoring

During the event, the Esumoh team:
- Monitors the cases by time, place and person
- Maps cases
- Maps entomological and ecological findings...

A regular bulletin is edited and shared with partners.

Step 9: Write summary report

The Esumoh central team prepares a summary report on the findings of Leishmania investigation and shared with MOPH units and health professionals.

Figure 4: Cutaneous leishmaniasis case classification

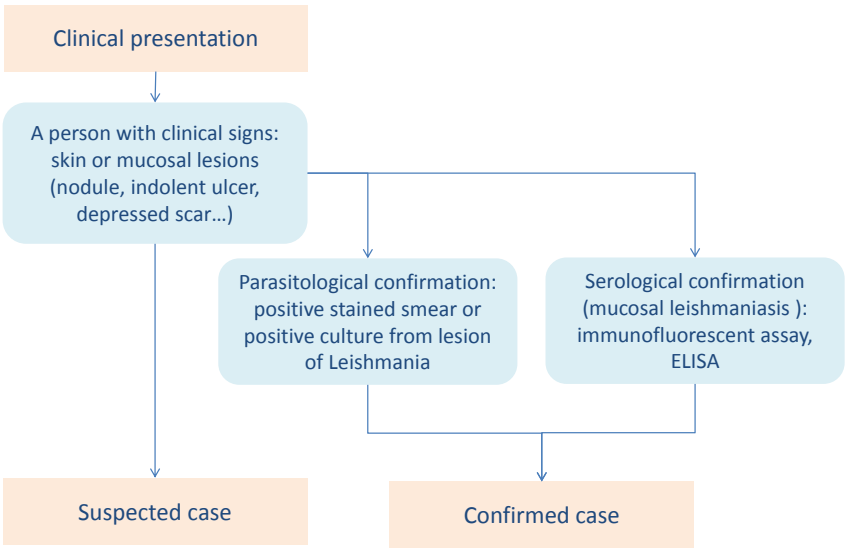


Figure 5: Leishmaniasis investigation steps in non-endemic population

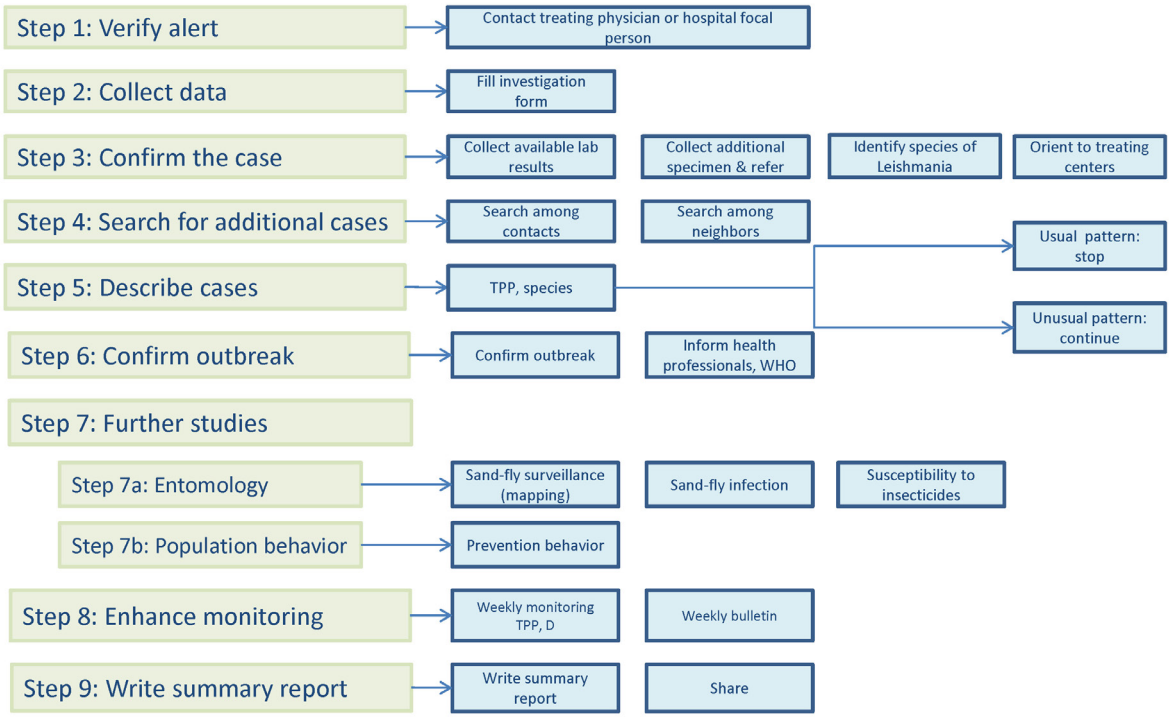
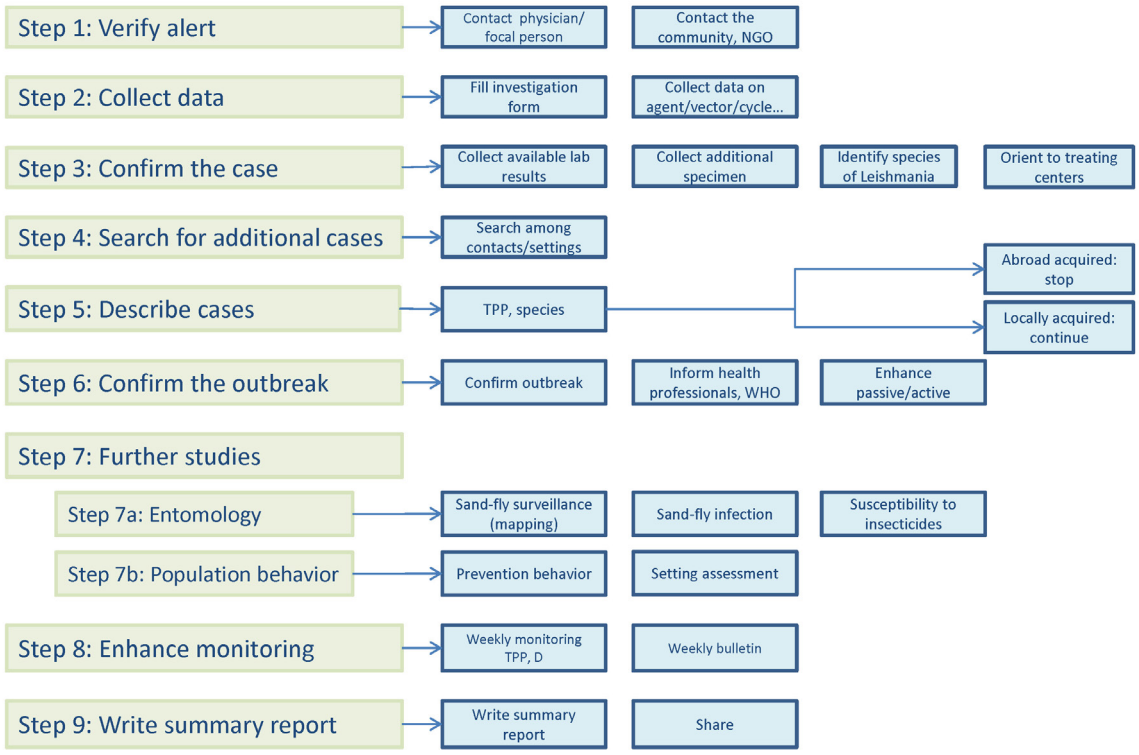


Figure 6: Leishmaniasis investigation steps in endemic population



Leishmaniasis - Annex 1

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

Leishmaniasis 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 in Lebanon □ Resident □ Worker □ Tourist □ Refugee	Residence: caza	Locality	Phone
Detailed address:				

**

D Clinical diagnosis

▶ Date of onset: |___|____|_____|

▶ Clinical presentation:

□ Cutaneous form, specify:

Topography	Number	Ulcerative	Nodular	Plaque like	Other
□ Face					
□ Neck					
□ Scalp					
□ Upper limb					
□ Lower limb					
□ Thorax /Abdomen					
□ Back					
□ Genitals					

□ Visceral form, specify :

- □ Fever
- □ Splenomegaly
- □ Hepatomegaly
- □ Lymphoadenopathy
- □ Weight loss
- □ Other, specify :

**

E Basis of diagnosis

□ Clinically

Date	MD/center	Place (Country)

□ Laboratory

Test	Date	Place (Country)	Result
□ Serology			
□ Skin biopsy			
□ Other biopsy			
□ Other test			
□ Parasite sp.			

**

Leishmaniasis case investigation form

Case ID |_____|

F Case management

Date started	Date ended	Nb sessions	Protocol	Country	Center	Outcome

**

G Travel history

Country	Province	Date departure	Date arrival	Notes

**

H Family history

Are there other cases in the family? □Yes, specify □No □Unknown

Name	Relation	Date onset	Country of onset	Treatment

**

I Specific for Syrian refugees

In Syria:

Residence: mohafaza/city _____

Lesions onset in Syria _____

Treatment in Syria

In Lebanon:

Date first entry to Lebanon _____

Recurrent visits to Syria _____

Lesions onset in Lebanon _____

Time interval: Lebanon-onset _____

**

J Notes:

جدول بحالات داء الليشمانيات(Annex2)

البلدة	القضاء	اسم المحقق	تاريخ ----------

#	الاسم الثلاثي	الجنس	تاريخ الولادة او العمر	الجنسية	هاتف	العوارض			جمع عينات		نوع وتاريخ بدء العلاج		ملاحظات استشفاء، وفاة
						تاريخ بداية العوارض	مكان منطقة الإصابة	عدد القروح الجلدية	نوع الخزعة والتاريخ	نتيجة الفحص			
		☐ذكر ☐أنثى											
		☐ذكر ☐أنثى											
		☐ذكر ☐أنثى											
		☐ذكر ☐أنثى											
		☐ذكر ☐أنثى											
		☐ذكر ☐أنثى											

الجمهورية اللبنانية وزارة الصحة العامة

استمارة داء الليشمانيا / Leishmaniasis Patient Form

مركز |_____| استمارة رقم |_____|

1. معلومات عن المريض

اسم المريض الثلاثي عند الولادة:	
تاريخ الولادة:	الجنس: ☐ ذكر ☐ أنثى
الجنسية:	الهاتف:
مكان الإقامة في لبنان، البلدة:	القضاء:

2. معلومات عامة للمرضى الغير اللبنانيين

قادم من البلد:	المحافظة والبلدة:
تاريخ اول وصول إلى لبنان:	تاريخ آخر وصول إلى لبنان:
تاريخ ظهور العوارض الجلدية:	ظهرت العوارض قبل القدوم الى لبنان: ☐ نعم ☐ كلا
بدء العلاج لبنان: ☐ نعم ☐ كلا	مكان العلاج: ☐عيادة ☐مركز ☐مستشفى
إذا نعم، حدد عدد الجلسات:	تاريخ آخر علاج:
وجود إصابات مماثلة في العائلة: ☐ نعم ☐ كلا	عدد الاصابات المماثلة في العائلة:

3. التشخيص المجهري anatomopathology

تاريخ أخذ الخزعة:	تمت الخزعة من قبل:
تاريخ النتيجة:	الطبيب المخبري:
النتيجة: ☐ ايجابية ☐ سلبية	نوع الليشمانيات: ☐ جلدية ☐ داخلية
نوع الليشمانيات: ☐ L.infantum ☐ L. tropica ☐ L. major ☐other	

استمارة رقم |_____|

4. الافات عند اول معاينة

Date of onset:					
Topography	**Nb of lesions**	**Ulcerative**	**Nodular**	**Plaque-like**	**Other**
Face, ear, scalp, neck					
Upper limb					
Lower limb					
Thorax, abdomen, back					
Genitals					

5. العلاج

Medication:						
Date	**Physician name & signature**	**Posology**	**Lesions nb**	**Type IL/IM**	**Biggest lesion size**	**Notes**

معلومات عن المحقق (الذي قام بملء الاستمارة)

اسم المستشفى:	اسم المحقق:
الهاتف:	القضاء:
المحافظة:	التوقيع والختم:

مذكرة وزارة الصحة العامة رقم 28 تاريخ 22 اذار 2013 – ملحق (4)

Notes

Notes

15

Surveillance Standard Operating Procedure: Leprosy/Hansen disease

Version 1
MOPH circular no. 49
(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 leprosy alert or outbreak.

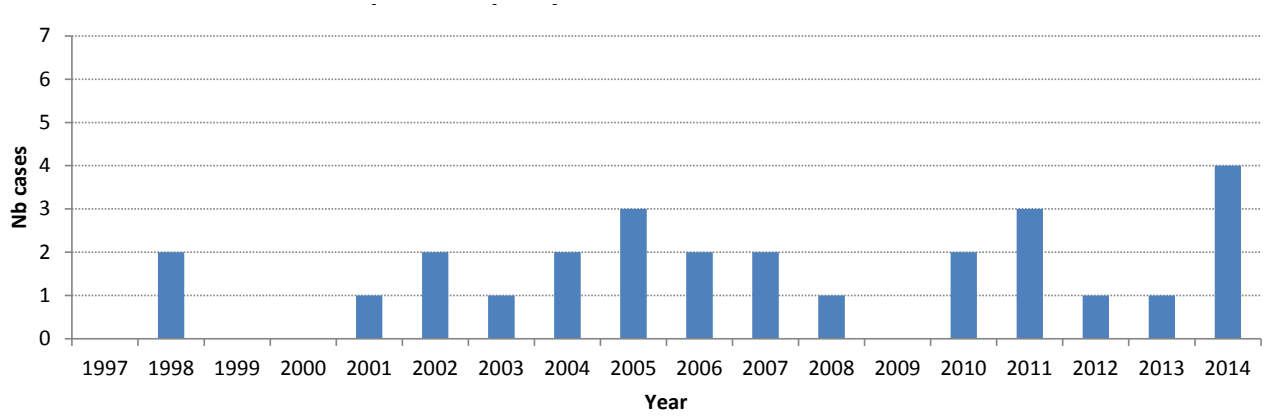
II Generalities

Leprosy is a chronic infectious disease caused by Mycobacterium leprae. It mainly affects the skin, the peripheral nerves, mucosa of the upper respiratory tract and also the eyes. Leprosy control has improved significantly in the world with the availability of effective antibiotics.
More information about the disease is presented in the table below.

Leprosy	
Agent	**Bacteria: Mycobacterium leprae**
Incubation period	9 months – 20 years
Period of communicability	- During active disease - Effective antibiotherapy treatment stoppes transmission within one day of treatment
Reservoir	Humans
Modes of transmission	Person-to-person transmission: close contact with nasal mucosa of a patient to the skin or respiratory tract of another person
Clinical presentation	- Chronic bacterial disease of the skin , peripheral nerves and upper airway, characterized by skin lesions (hypo-pigmentation with definite loss of sensation) and thicknesses of peripheral nerves. - Two forms are described: - Lepromatous multibacillary form (>5 skin lesions): symmetrical and bilateral nodules, papules, and diffuse infiltrations, involvement of nasal mucosa, ocular involvement … -Tuberculoid paucibacillary form (1-5 skin lesions): single or few skin lesions, sharply demarcated, anaesthesic or hypoaesthesic, bilateral asymmetrical involvement of peripheral nerves
Worldwide	In 2012, more than 100000 cases were reported.
Lebanon	0-3 cases per year
Control objective	WHA resolution 44.9: elimination (less than 1/10000 population) by 2000
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, case management, family history (parents and grand-parents) …
Investigation: clinical specimen from case	Skin biopsy
Investigation: data about contacts	Search of skin lesions, follow up
Investigation: clinical specimen from contacts	Specimen collection if symptoms appear
Test	Histopathology exam
Laboratories	Clinical histopathology laboratories
Outbreak level	- Cluster of cases - If observed incidence exceeds the expected one
Notification to WHO	According to International Health Regulations (2005) criteria

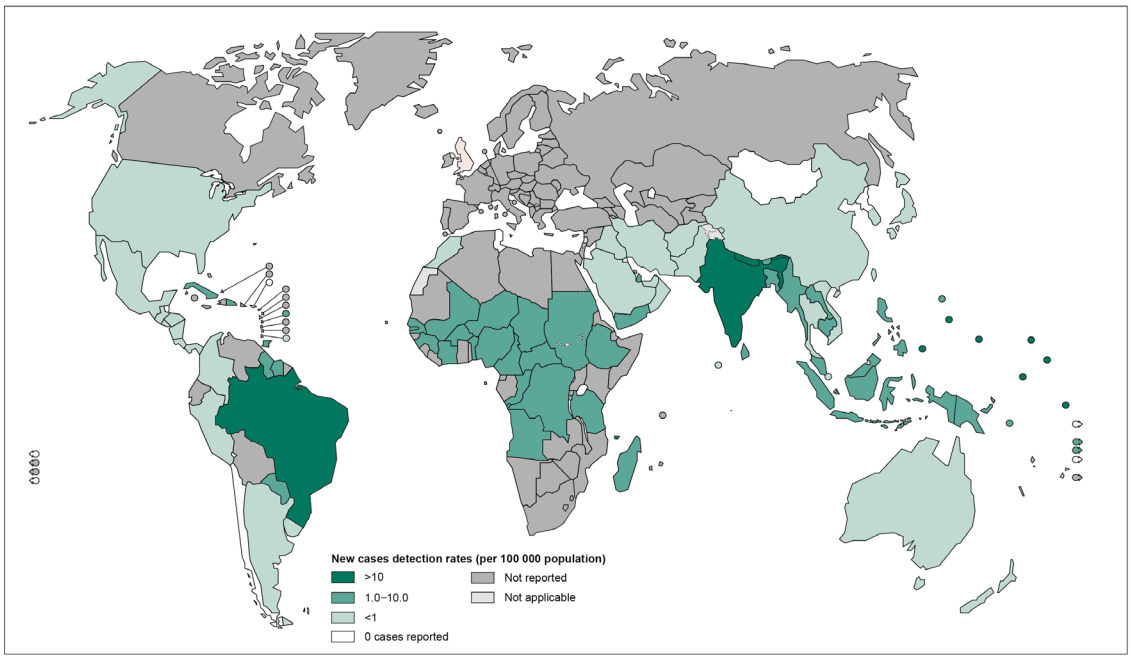
Leprosy case definition (MOPH circular no. 38 dated on the 30th March 2007)	
Operational definition	A person having one or more of the following, who has yet to complete a full course of treatment: - Hypopigmented or reddish skin lesion(s) with definite loss of sensation - Involvement of the peripheral nerves, as demonstrated by definite thickening with loss of sensation - Skin smear positive for acid-fast bacilli (Mycobacterium leprae) Case definition includes: - Retrieved defaulters with signs of active disease - Relapsed cases who have previously completed a full course of treatment It does not include cured persons with late reactions or residual disabilities. On clinical ground, leprosy cases can be classified as follows: - Multibacillary leprosy: more than 5 patches or lesions on the skin or involvement of several peripheral nerves - Paucibacillary leprosy: 1 to 5 patches or lesions on the skin or involvement of one peripheral nerve
Forms	
Reporting	Standard reporting form
Investigation	Leprosy investigation form (MOPH circular no.173 dated on the 31st December 2015)
National figures	

Figure 1: Reported leprosy cases in Lebanon, 1997-2014 (Source: MOPH)



International figures
Pockets of high endemicity still remain in: - Africa: Angola, Central African Republic, Madagascar, United Republic of Tanzania, Democratic Republic of the Congo and Mozambique - America: Brazil - Asia: India, Nepal

Figure 2: Incidence of leprosy per 100000 population, worldwide, 2013 (Source: WHO)



Data Source: World Health Organization
Map Production: Control of Neglected Tropical Diseases (NTD)
World Health Organization

World Health Organization

III Objectives of surveillance

The objectives of surveillance are:

- Detect and confirm leprosy cases
- Verify and investigate leprosy alert and outbreaks
- Document the elimination of leprosy (<1/10000).

IV Alert and outbreak thresholds

An **alert** is defined by any suspected case of leprosy.
An **outbreak** of Leprosy is defined by one of the following:

- The observed incidence of cases exceeds the expected incidence
- At least two confirmed leprosy cases which are epidemiologically-linked.

V Procedural steps

The steps described below are recommended for verification and investigation of any alert or outbreak of leprosy. The steps are summarized in figure (4).

Step 1: Verify alert

Any case of leprosy is verified by the Esumoh caza team within 24 hours. The Esumoh team contacts the treating physician or the hospital focal person to verify the diagnosis: What symptoms are present? Is there any histopathology confirmation?
If yes, the information is shared with the Esumoh mohafaza/central level and investigation is initiated immediately.

Step 2: Investigate case

Upon verification, the Esumoh team in coordination with the treating physician fills the investigation form. The information is collected via field visit to the patient household.

The investigation form is provided in annex (1). The form includes the following information:

- Demography
- Illness: onset, symptoms

- Laboratory results: histopathology results (if done)
- Exposure: family history, travel history…
- Case management...

Step 3: Confirm the diagnosis

Any suspected leprosy case needs to be confirmed. A skin biopsy is needed to make definitive diagnosis. Details on specimen collection is provided in annex (2).

The Esumoh central team coordinates with the treating physician the specimen collection and the referral to designated histopathology laboratory (with experience in leprosy diagnosis). Based on the clinical presentation, the case is classified as pauci or multi-bacillary as shown in figure (3).

Step 4: Search for additional cases

Finding additional cases is an important tool for Hansen's disease control, as it enables early diagnosis, treatment, and less spread of Mycobacterium leprae.

The search finding will rely on the follow up of the family members of the patient. An annual checkup is done by the Esumoh team or the treating physician. Any questionable skin lesion with loss of sensitivity, or any nerve thickness, is referred to the treating physician for skin biopsy and histopathology exam.

Step 5: Describe cases

a) Time, place and person

Cases are described by:

- Time: year of onset, year of diagnosis
- Place: place of residence, place of work, in term of locality, caza and mohafaza. Travel history is described.
- Person: age group, gender, nationality, contact with leprosy case
- Disease: form, classification...

b) Outbreak declaration

Based on the epidemiology and laboratory findings, an outbreak is declared.
Once declared, official memos are issued by the MOPH to local health professionals (physicians, hospitals, and medical centers). The memos includes case definition and channel of reporting.

Step 6: Conduct follow up

The follow up concerns:

- The patient: monthly follow up of patient directly or indirectly via the treating physician in order to monitor the evolution of the case
- The family: annual checkup for the family members

Step 7: Write summary report

Once the outbreak is confined, the Esumoh central team prepares a summary report describing the outbreak. The report is shared with others departments in MOPH and with health professionals (dermatologists…).

Figure 3: Leprosy case classification

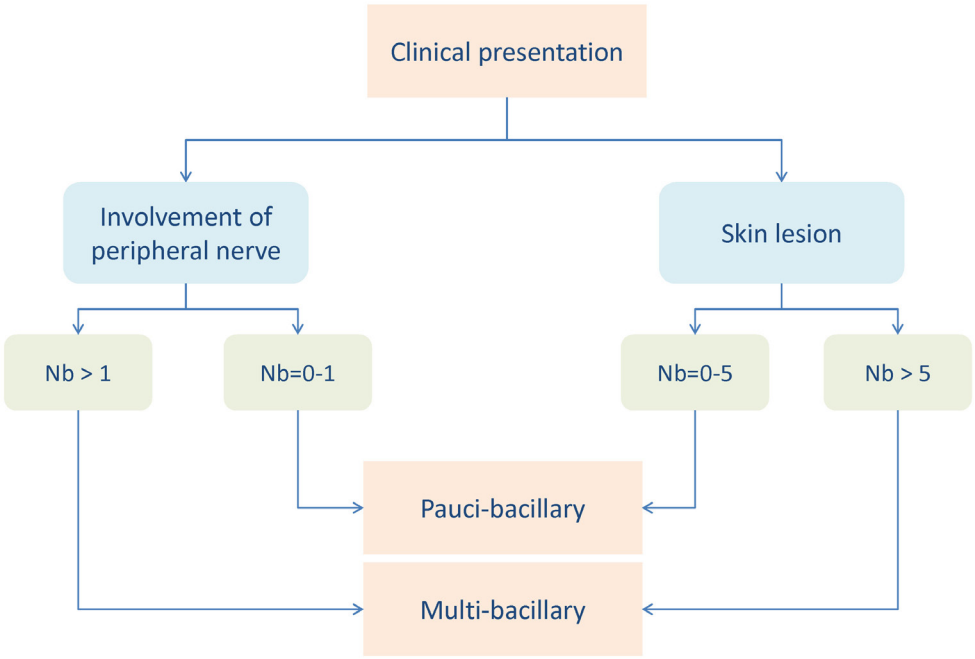
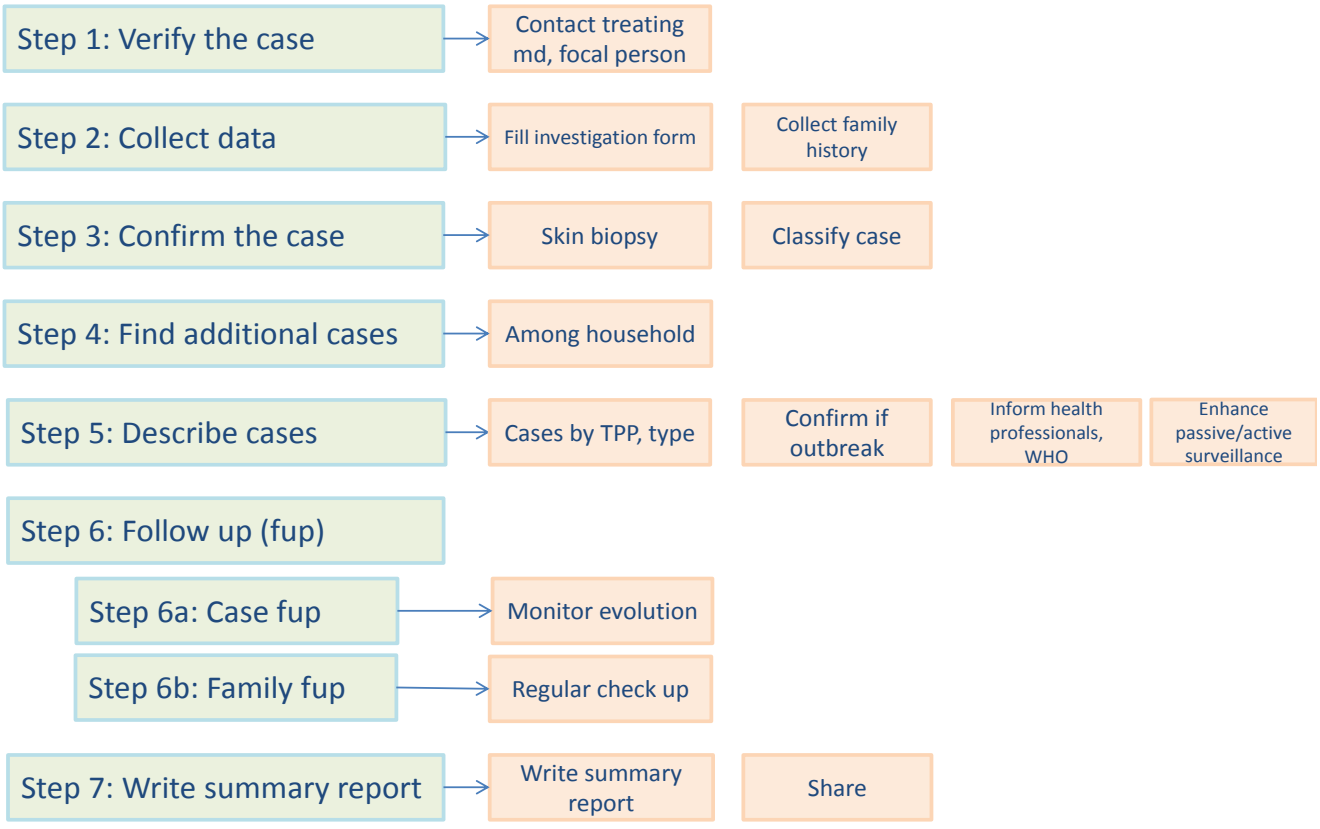


Figure 4: Leprosy investigation steps



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

Leprosy 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:

Date first symptom:			
Date of first diagnosis:			
Skin lesions:	□Yes	□No	□Unk
Hypopigmentation:	□Yes	□No	□Unk
Sensory deficit:	□Yes	□No	□Unk
Number:	|_____|		
Topography:	□Face & head	□Trunk	□Unk
	□Lower limbs	□Upper limbs	□Other, specify:
Deformity:	□Yes	□No	□Unk
Specify deformity:	□Face	□Upper limbs	□Unk
	□Lower limbs	□Other, specify:	

Leprosy investigation form

|_____|

Nerves lesions:	□Yes	□No	□Unk
Thickness:	□Yes	□No	□Unk
Topography:			
Form:	□Pauci-bacil	□Multi-bacil	□Unk
	□ Other, specify:		

E Family history

Relatives	Yes/No/Unk			Specify	Treated
Father & Mother	□Yes	□No	□Unk		
Grandparents	□Yes	□No	□Unk		
Uncles & Aunts	□Yes	□No	□Unk		
Siblings	□Yes	□No	□Unk		
Spouse(s)	□Yes	□No	□Unk		
Children	□Yes	□No	□Unk		
Other	□Yes	□No	□Unk		

E Laboratory diagnosis

Specimen	Dates	Test	Result

Leprosy investigation form

|_____________________________|

F Treatment

Protocol	Dates	Treating physician	Duration	Notes
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				
☐ Dapsone ☐ Rifampicine ☐ Clofazimine ☐ Other:				

Leprosy investigation form

|_____|

G Household contacts

Name	Relationship	Year of birth	Regular medical screening					

Leprosy - Collection of samples

Skin biopsy

1. Specimen preparation:
   - A biopsy collected with a 4 – 5 mm punch (2 mm if on face) or surgical excision, which should be deep enough to include subcutaneous fat. This depth is important because often the most prominently involved nerves will be found in the upper portion of the subcutaneous fat. As a general rule, the biopsy should be taken entirely within the lesion, preferably from the active margin if there is one.
   - Place in 10% buffered formalin, at least 5 volumes of fixative per volume of tissue. It can be embedded in paraffin. Label container with patient's name and biopsy site.
   - Send biopsy in leak-proof container.
2. Specimen labelling:
   - The patient's name, sex, race and social security number if available.
   - The patient's date of birth.
3. Specimen documentation:
   - A brief clinical history including number of lesions, changes in sensation, previous diagnosis and present clinical impressions.
   - The submitting doctor's name and the address where the report is to be sent.

Skin smear

1. Universal precautions should be observed in obtaining skin smears.
2. The skin is cleansed with 70% alcohol and air-dried or wiped dry with cotton. (Zepharin tends to make the skin too slippery and is not recommended.)
3. A fold of skin is made relatively avascular by pinching or mild clamping. If the skin cannot be grasped by pinching, it can be compressed. A surgeon's glove may aid in grasping.
4. Local anesthesia is generally unnecessary. (If there is not adequate decrease in sensation, obtain local anesthesia with 1% Xylocaine or Ethyl Chloride spray can be carefully applied.) The compression of the skin by pinching aids in the anesthesia.
5. An incision 3-5 mm long and 2-3 mm deep is made with a alcohol cleansed, single-edged razor blade. A scalpel with a #15 Bard-Parker blade may also be used. Mild pressure to maintain relative avascularity is continuously applied to the area until an adequate smear has been obtained.
6. A small amount of blood does not interfere with the reading, but large amounts should be avoided and can usually be controlled by the amount of pressure of the pinch. If excessive bleeding occurs, it can be wiped away with a cotton swab.
7. After the incision is made, and before the blade is withdrawn, the inner surface of the wound is scraped with the blade held at a right angle to the incision. Upon scraping, tissue fluid and dermal tissue are obtained.
8. The material is transferred to the cleaned microscope slide. A moderately thick smear, with a visible uniform opacity is made. The smear is made in a circular manner on the slide, no larger than a pencil eraser (5-7 mm), beginning peripherally and ending in the center, leaving a central "button" (2-4 mm) which can be easily focused upon with the microscope. Slides should be properly labeled as shown below in the sample diagram for 3 routine sites.
9. A Band-Aid is generally sufficient to protect the smear site.

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Surveillance Standard Operating Procedure: Malaria

Version 1
MOPH circular no. 62
(22nd Jan 2015)

Contents

I Purpose

This standard operating procedure (SOP) is intended to assist the MOPH in how to proceed in case of alert or outbreak of Malaria.

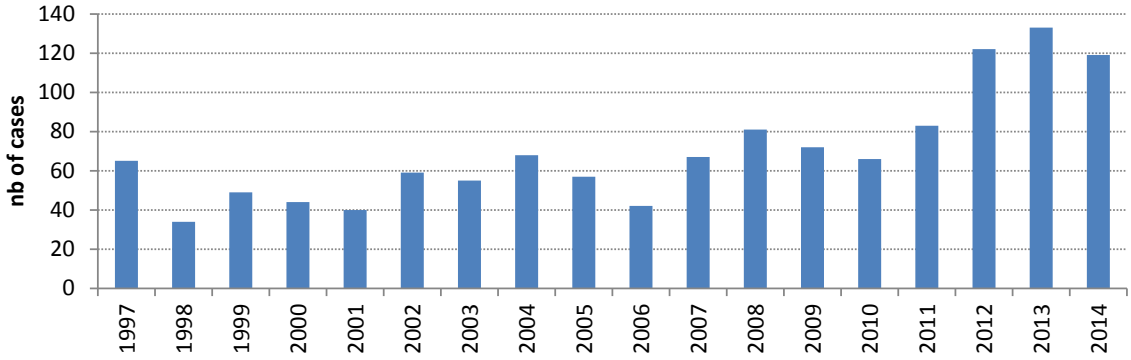
II Generalities

Malaria is caused by protozoan parasites from the Plasmodium family that can be transmitted by the bite of infected mosquito or by a contaminated needle or transfusion. In human body, the parasites multiply in the liver, and then infect red blood cells.

Malaria	
Agent	Protozoan parasites: Plasmodium falciparum, P. vivax, P. ovale, P. malariae
Incubation period	- P. falciparum: 9-14 days - P. vivax/ovale: 12-18 days - P. malariae: 18-40 days
Period of communicability	- No person-to-person transmission - Human infectivity to mosquitoes: up to 5 years for P. vivax, 1 year for P. falciparum, and to 40 y for P. malariae - Mosquitoes are infective for life
Reservoir	- Humans - For P. malariae: humans and apes
Modes of transmission	Bite of infective female Anophele
Clinical presentation	- Fever and chills with non-specific symptoms: headache, back pain, sweating, myalgia, nausea, vomiting - Anemia, splenomegaly - Complications: encephalopathy (P. falciparum), anemia, renal failure, respiratory distress, hypoglycemia, lactic acidosis and rarely coagulation defects and shock…
Worldwide	Tropical and subtropical areas
Lebanon	Malaria was eliminated in the 1960s. In the past years, malaria cases are mostly imported. Few local cases were reported.
Control objective	Elimination
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	- Clinical presentation, travel history, anti-malarial consumption, medical history, blood transfusion… - Is the case locally acquired or imported?
Investigation: clinical specimen from case	Blood smear, blood
Investigation: data about contacts	Similar cases among contacts, travel to malaria countries
Investigation: clinical specimen from contacts	If similar cases: blood smear
Test	Microscopic examination of blood smear, rapid diagnostic tests, serological tests, PCR
Laboratories	Clinical laboratories
Outbreak level	At least one local case
Notification to WHO	According to the International Health Regulations (2005) criteria

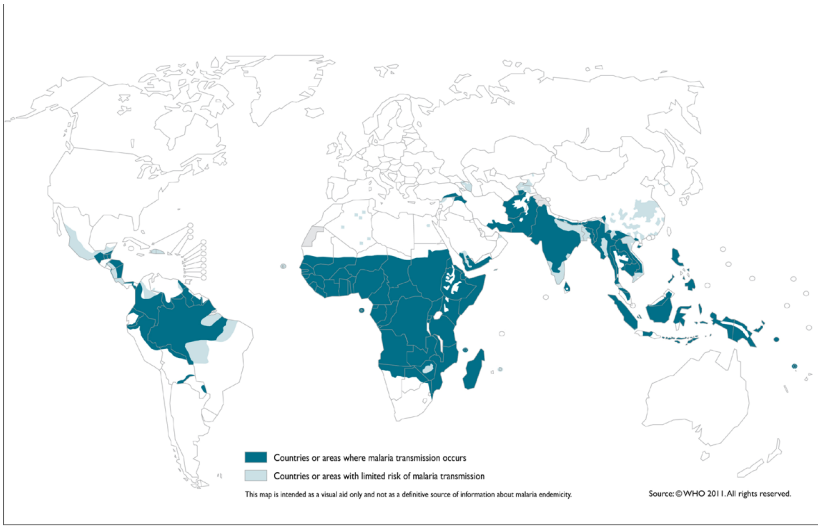
Malaria case definition	
Confirmed case	A probable case with laboratory confirmation of the disease: - Demonstration of malaria parasites (plasmodium falciparum, plasmodium vivax, plasmodium ovale, plasmodium malariae) in blood film - Or by PCR
Autochthonous/ indigenous case	Malaria acquired by mosquito transmission in an area where malaria is a regular occurance
Imported case	Malaria acquired outside the area in which it is found
Introduced case	Malaria acquired by mosquito transmission from an imported case in an area where the malaria is not a regular occurrence
Induced case	Malaria acquired through artificial means (e.g., blood transfusion, common syringes …)
Probable case	A person with signs and /or symptoms of malaria, and who receives antimalarial treatment
Forms	
Reporting	Malaria reporting form or standard reporting case
Investigation	Malaria investigation form
National figures	

Figure 1: Reported malaria cases, Lebanon (Source: MOPH)



International figures

Figure 2: Countries at risk, 2010 (Source: WHO)



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 lines on maps represent approximate border lines for which there may not yet be full agreement.

World Health Organization

III Objectives of surveillance

The objectives of Malaria surveillance are:

- Monitor malaria in Lebanon
- Identify and investigate autochthonous case of malaria.

IV Alert and outbreak thresholds

An **alert** is any case reported to the MOPH. All malaria cases need to be investigated.
An **outbreak** is laboratory-confirmed case caused by local transmission.

V Procedural steps

The steps described below are recommended for the verification and investigation of alerts and outbreaks of malaria. They are summarized in figure (3).

Step1: Verify case

The MOPH team contacts the treating physician for verification: Is the reported disease malaria?

Step 2: Collect data

The MOPH team contacts the patient and collects needed information. An investigation form is filled.
The investigation form includes the following information:

- Demography
- Illness
- Travel history
- Other exposure: blood transfusion…

Step 3: Verify the diagnosis

a) Blood smear

The MOPH team contacts the laboratory who did the diagnosis.
If smear was positive, a smear is preserved and sent to the MOPH/malaria team.
If no smear was done, the MOPH collects a smear or serum for testing.

b) Other tests

Other laboratory tests are available to detect and confirm malaria

Table 1: Malaria tests

Type of test	Objective
Blood smears	For detection of parasites and confirmation
Rapid diagnostic tests or antigen testing	Faster diagnosis and treatment
Polymerase chain reaction, PCR	Detection of the species
Serology	Detection antibodies in the blood

Step 4: Classify the case and confirm the outbreak

a) Classify the case

Based on travel history of the case and other exposures history, the case is classified as

- Imported
- Autochthonous / local
- Blood transfusion related...

b) Confirm the outbreak

In case of local transmission, an outbreak is declared.
The Malaria unit informs the concerned units at the MOPH.
The MOPH informs:

- National health professionals
- The municipalities
- World Health Organization...

Step 5: Search for additional cases

If outbreak was confirmed, the MOPH issues memos for health professionals including the case definition and the channel for reporting. Also, the public is informed via the media.

The search of additional cases is done using various approaches:

- Enhance passive reporting from health professionals
- Include malaria in active visits
- Active search for cases during field visits
- Community-based surveillance and rumors verification

All suspected cases need to be investigated.

Step 6: Investigate local transmission

In case of local case, there is need to identify the source of infection. Is the Anopheles present in the vicinity of the patient?

a) Blood transfusion

Malaria may be transmitted by blood transfusion.
The patient is asked on all blood transfusion received in the past and in particular during the last 12 months.
If yes, the following information is collected:

- Medical condition for blood transfusion prescription
- Type of blood products received
- Place
- Time
- Information on donor...

b) Local transmission

The neighborhood of the patient is investigated.
An entomological investigation is conducted to:

- Search for potential habitats
- Capture of mosquitoes: adults and larvae
- Identify mosquitos' species
- Map mosuitos' distribution
- Estimate mosquitos' density
- Study susceptibility and resistance to insecticides...

Step 7: Describe cases

a) Time, place and person

Cases are described by

- Time: week, month and year of onset
- Place: residence in term of locality, caza and mohafaza
- Person: age, gender, nationality, occupation…
- Illness: complications
- Source: imported, local...

b) Vector

Vectors are described by

- Species
- Place: mapping
- Density
- Resistance to insecticides

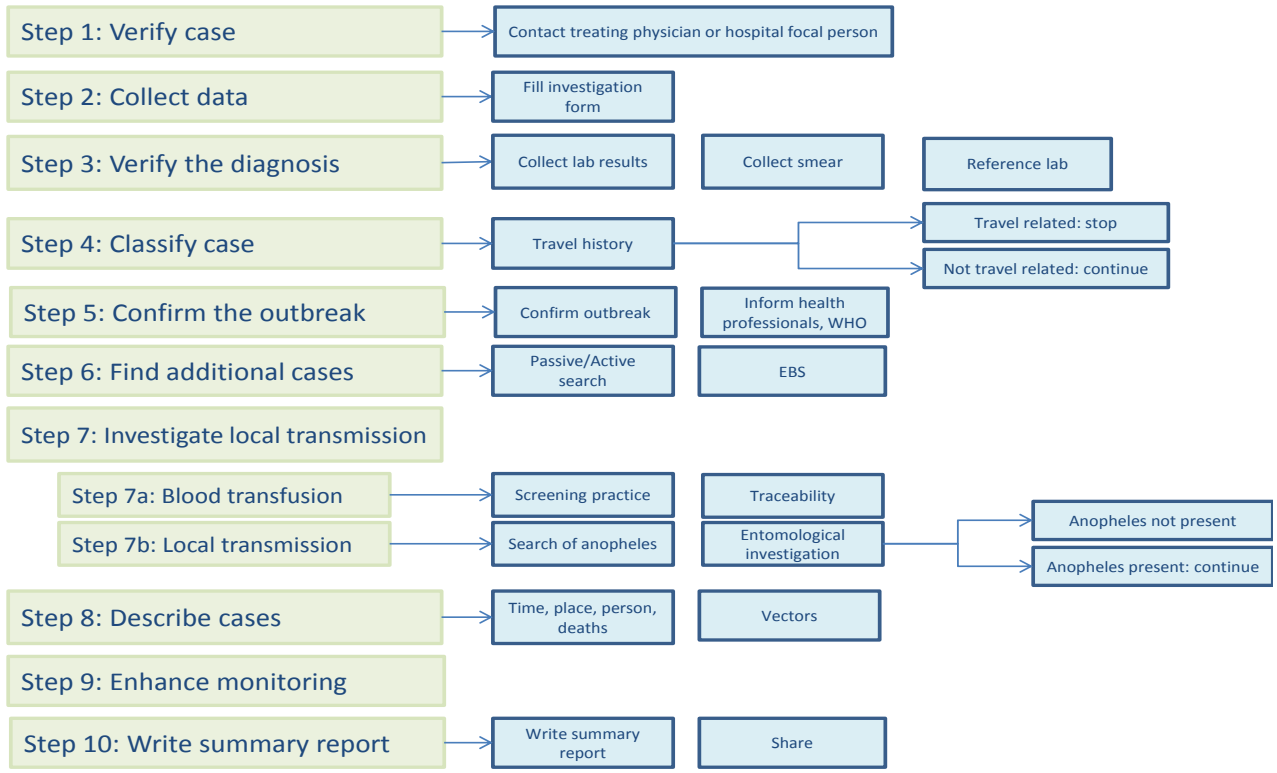
Step 8: Enhance monitoring

During an outbreak, a weekly report is issued describing cases and vectors.
The report is shared with partners, in particular the municipalities.

Step 9: Write summary report

Once the outbreak is confined, a summary report is prepared by the central level, and shared with partners.

Figure 3: Malaria investigation steps



الجمهورية اللبنانية – وزارة الصحة العامة – مكتب الملاريا

استمارة الابلاغ عن اصابة بمرض الملاريا

1) تعريف المريض

اسم المريض	:				
اسم الاب	:				
الشهرة	:				
الجنسية	:				
الجنس	:	□ ذكر	□ انثى		
نوع الاقامة	:	□ مقيم	□ عامل اجنبي	□ زائر	□ لاجئ
البلدة	:				
القضاء	:				
رقم الهاتف	:				

2) تشخيص المرض

تاريخ ظهور العوارض	:		
تاريخ تشخيص المرض	:		
دخول المريض المستشفى	:	□ كلا	□ نعم
اسم المستشفى	:		
تاريخ دخول المستشفى	:		
وجود تشخيص مخبري	:	□ كلا	□ نعم
فحص Blood smear	:	□ كلا	□ نعم، حدد النوع:
Rapid diagnostic test	:	□ كلا	□ نعم، حدد النوع:
غيره، حدد:	:	□ كلا	□ نعم، حدد:

3) المبلغ

اسم المبلغ وصفته	:
اسم المؤسسة الصحية	:
تاريخ الابلاغ	:
الهاتف	:
التوقيع	:

يطلب الاتصال مباشرة على الرقم 01/449047 , 01/442077 .فاكس: 01/580660

Malaria - Annex 2

Republic of Lebanon – Ministry of Public Health

Malaria 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 Malaria previous history

Date first symptom:			
Date of first diagnosis:			
Complications:	□Yes	□No	□Unk
ARDS	□Yes	□No	□Unk
Cerebral malaria	□Yes	□No	□Unk
Renal failure	□Yes	□No	□Unk
Other	□Yes	□No	□Unk
Specify:			

E Malaria current presentation

Date onset of current period:
Date of first diagnosis:

Complications:	□Yes	□No	□Unk
ARDS	□Yes	□No	□Unk
Cerebral malaria	□Yes	□No	□Unk
Renal failure	□Yes	□No	□Unk
Other	□Yes	□No	□Unk
Specify:			
Hospital admission	□Yes	□No	□Unk
Specify hospital:			

F Current laboratory diagnosis

Protocol	Dates	Place	Result	Species	Referral to MOPH
Blood smear					
Rapid diagnostic test					
PCR					
Other:					
Other:					

G Travel history during the past 2 years

Country	Malaria country	Dates& Periods	Malaria chemoprophylaxis	Malaria onset
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			
	□Yes □No □Unk			

H Blood transfusion in the past 2 years

Dates	Blood product	Place (country)	Medical Condition	Notes

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Surveillance Standard Operating Procedure:

Syphilis

Version 1
MOPH circular no. 50
(19th Jan 2015)

Contents

I Purpose

This standard operating procedure (SOP) is intended to assist the MOPH in how to proceed in case of alert or outbreak of syphilis.

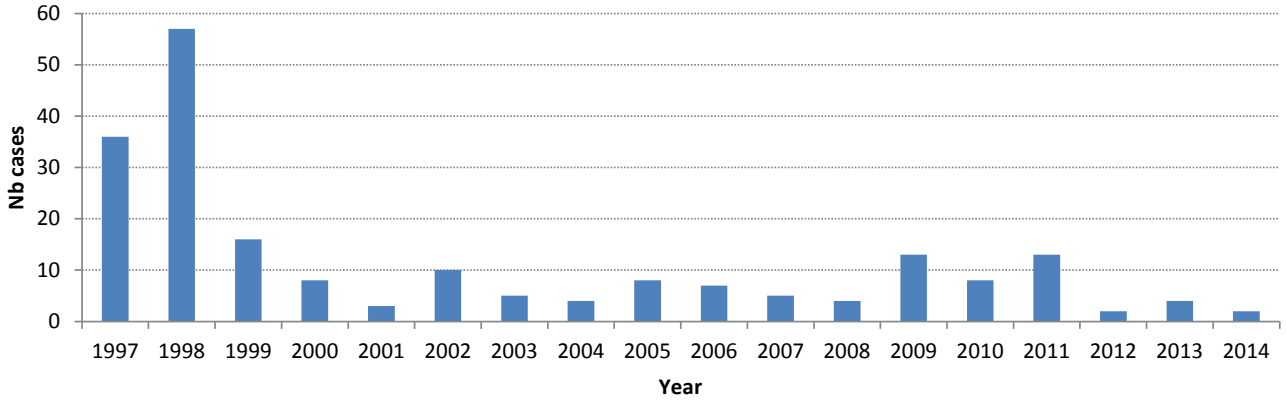
II Generalities

Syphilis	
Agent	Spirochete: Treponema pallidum, subsp. palidum
Incubation period	10 days to 3 months (usually 3 weeks)
Period of communicability	Druing the primary and secondary syphiis
Reservoir	- Humans - Congenital form: untreated early infection in pregnant women
Modes of transmission	Person-to person : - Sexual transmission with direct contact with infectious exsudats from skin lesions or mucous membranes - Tranplacental - Blood transfusion
Clinical presentation	- Primary lesion: chancre that usually appears as indurated ulcer with serous exsudates - Secondary skin eruption: maculopapular of the palms and soles with lymphadenopathy - Tertiary: meningitis, meningovascular syphilis, cardiovascular syphilis, gummas on skin, viscera, bones or mucosa - Fetal infection: congenital syphilis with generalized systemic disease, with CNS involvement. Congenital syphilis may be asymptomatic in the first weeks of life. Late manifestations include: involvement of the CNS, occasional stigmata (Hutchinson teeth), saddle nose, sabre shins (peri-ostitis), interstitial keratitis, and deafness
Worldwide	Worldwide
Lebanon	- Average of 13 reported cases per year - Congenital form: no case reported since 1995
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Demographic characteristics, clinical presentation, risk factors, other sexual transmitted diseases, blood donation, case management, pregnancy…
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	- Sexual contacts, contact management… - Congenital form: maternal history and case management
Investigation: clinical specimen from contacts	Blood
Test	Serological tests
Laboratories	Clinical laboratories
Outbreak level	- If observed incidence exceeds the expected one - Congenital form: at least one confirmed case
Notification to WHO	According to International Health Regulations (2005) criteria

Syphilis case definition (MOPH circular no. 62 dated on the 14th April 2007)	
Confirmed case I/II	- A probable case of syphilis I or II - With demonstration of Treponema pallidum in clinical specimens by darkfield microscopy, direct fluorescent antibody [DFA-TP], nucleic acid test, or equivalent methods
Probable case I/II	A person presenting: - Clinically, a sexually transmitted infection with: • Ulcers (primary syphilis) • Or mucocutaneous lesions (secondary syphilis) - And a positive serologic test: • Non-treponemal: venereal disease research laboratory [VDRL] or rapid plasma reagin [PRP] • Or treponemal: fluorescent treponemal antibody absorbed [FTA-ABS] or microhemagglutination assay for antibody to Treponema pallidum [MHA-TP]
Probable latent case	Person, without clinical signs or symptoms of syphilis, with: - In a patient with no prior syphilis diagnosis: a reactive nontreponemal and treponemal test - In a patient with a prior syphilis diagnosis: a non-treponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer
Congenital syphilis case definition (MOPH circular no. 64 dated on the 18th April 2007)	
Confirmed congenital syphilis	Demonstration of Treponema pallidum in clinical specimens by darkfield microscopy, direct fluorescent antibody [DFA-TP], or other specific stains in specimens from lesions, placenta, umbilical cord or autopsy material.
Probable congenital syphilis	- An infant whose mother had untreated or inadequately treated syphilis during pregnancy (regardless of signs in the infant) - Or an infant or child with a reactive treponemal test and any one of the following: evidence of congenital syphilis on physical examination, long bone X-rays compatible with congenital syphilis, reactive VDRL-CSF, elevated CSF cell count or protein (without other cause), reactive FTA-Abs 19S-IgM antibody test, reactive IgM ELISA, or reactive IgM treponemal Western blot.
Stillbirth	- A fetal death that occurs after a 20 week gestation or in which the fetus weights > 500g - And the mother had untreated or inadequately treated syphilis or delivery
Forms	
Reporting	Standard reporting form
Investigation	Syphilis investigation form if alert/outbreak (MOPH circular no.24 dated on the 19th January 2015)

National figures

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



International figures

Table 1: Estimates of incidence and prevalence of syphilis among adults (15-49y), 2008.
(Source: WHO. Global incidence and prevalence of selected curable sexually transmitted infections, 2008)

	Incidence /1000		Prevalence %	
	M	F	M	F
WHO South-East Asia Region	3.1	3.2	1.3	1.3
WHO Region of the Americas	6.4	5.3	1.5	1.3
WHO African Region	9.4	8.5	3.9	3.5
WHO European Region	0.6	0.6	0.1	0.1
WHO Eastern Mediterranean Region	2.1	2.1	0.5	0.5
WHO Western Pacific Region	0.5	0.5	0.1	0.1

III Objective of surveillance

The objectives of surveillance of syphilis are:

- To monitor incidence
- To detect and investigate alerts and outbreaks
- To identify risk factors
- To evaluate and guide control and preventive program...

IV Alert and outbreak thresholds

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

- Cluster epi-linked
- Increase in the annual/annualized incidence rate
- At least 1 probable case of congenital syphilis

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

- Observed incidence is greater than the expected one
- At least 1 confirmed case of congenital syphilis.

V Procedural steps

The following steps are recommended to verify any alert and investigate any outbreak of syphilis. They are summarized in figure (4).

Step 1: Verify alert

Alerts are detected by Esumoh teams at caza, mohafaza or central level. Upon detection, the Esumoh team contacts the treating physician or the hospital focal point to verify the received information.

Step 2: Search for artefacts

The observed incidence increase may due to artefacts.

The Esumoh mohafaza and central teams search for potential artefacts:

- Increase in screening: screening campaigns, blood donation campaign…
- False increase: database errors, duplicates and double reporting…
- Modification of the population and the denominator
- Modification of the case definition
- Laboratory errors
- Changes in reporting procedures
- Increase reporting from silent sites
- Increased interest in reporting
- Increase the prescription of testing...

Step 3: Collect data

In case of alert, the investigation form is filled for each case. The patient interview is done via the treating physician. The form may be filled without specifying the name of the patient.

The investigation form is provided in annex (1). The form includes the following information:

- Demography
- Illness
- Exposure and risk factors
- Contacts and partners...

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

Step 4: Describe cases

Cases are described by:

- Time: month, year of onset or diagnosis
- Place: place of residence in terms of locality, caza and mohafaza
- Person: age group, sex, nationality…
- Disease: stage, classification, outcome
- Risk factors
- Reporting sites...

Step 5: Confirm the outbreak

Based on the available clinical, epidemiological and laboratory findings, the outbreak is declared.

The Esumoh central level informs the MOPH units involved in sexually transmitted diseases StD control. The MOPH issues official letters to inform involved health partners.

Step 6: Find additional cases

In case of outbreak, there is need to find additional cases. Various approaches are used:

- Search of cases among patients partners
- Enhance detection and reporting from health facilities:
  - Laboratories
  - Dermatologists
  - Gyneco-obstetricians
  - Paediatricians
  - Neurologists
  - Urologists
  - Blood banks...

Step 7: Assess risk factors

a) Mother to child

In case of pediatric case, the mother is interviewed via the treating physician. The questions are oriented whether the syphilis was diagnosed or not? Whether she got the adequate treatment or no?

b) Healthcare-related

In case there is suspicion of infection secondary to blood transfusion, the investigation will try to trace back the transfusion history and to assess the blood safety in suspected blood banks.

c) Other

In case of infection following personal risky behavior, the patient is approached by the treating physician to identify partners for screening and treatment.

Step 8: Write summary report

At the end of the outbreak, the Esumoh central team prepares a summary report and shares it with partners.

VI Procedural steps for congenital syphilis

The following steps are recommended for congenital syphilis. They are summarized in figure (5).

Step 1: Verify the alert

Upon detection, the Esumoh team contacts the treating physician or hospital focal point to verify the received information.

Step 2: Confirm the case

Laboratory results are collected. Confirmatory tests are requested.

Step 3: Collect data

The syphilis investigation form (Annex 1) is filled for each case. The patient interview is done with the treating physician and the mother.

Step 4: Describe cases

Cases are described by time, place and person, in addition to the clinical presentation.

Step 5: Confirm outbreak

Based on the available data, the outbreak is declared. The Esumoh central level informs the MOPH units involved in StD control. The MOPH issues official letters to inform involved health partners and ask them to report any suspected case.

Step 6: Conduct further studies

a) Mother to child

In case of pediatric case, the mother is interviewed via the treating physician. The questions are oriented whether the syphilis was diagnosed or not? And whether she got the adequate treatment or no?

b) Other

Descriptive and analytic studies are conducted to estimate incidence/prevalence and to identify risk factors.

Step 7: Write summary report

At the end of the outbreak, the Esumoh central team prepares a summary report and shares it with partners.

Figure 2: Syphilis case classification

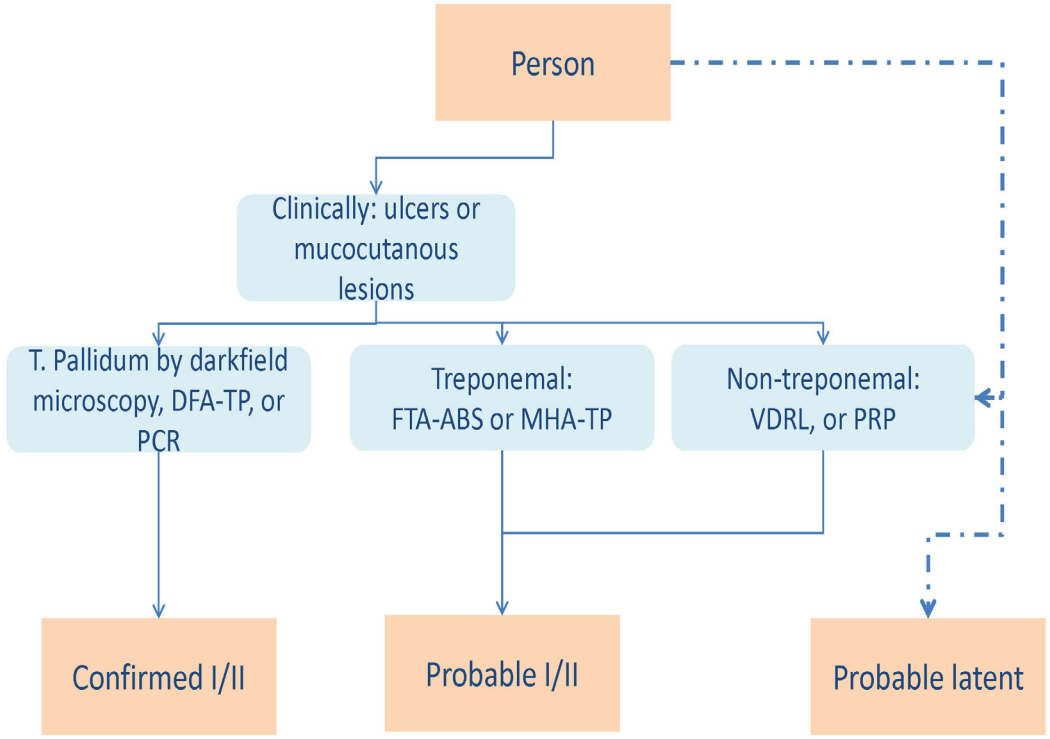


Figure 3: Congenital syphilis case classification

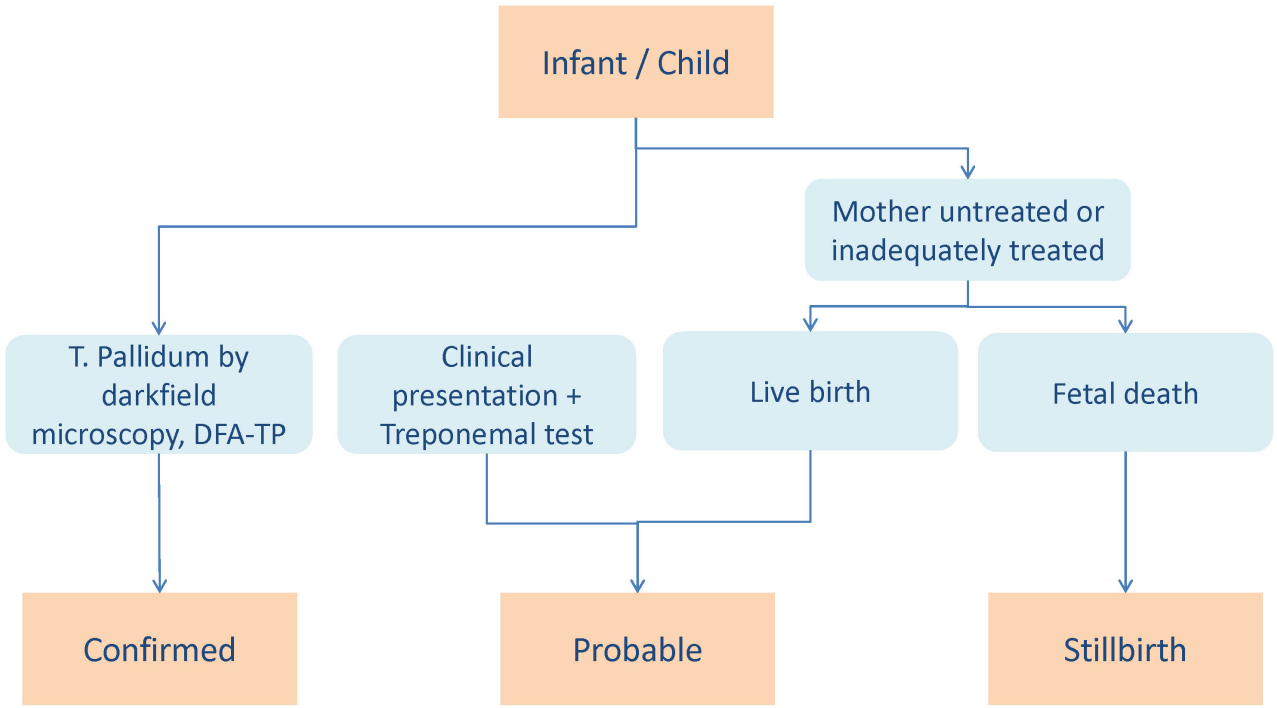


Figure 4: Syphilis investigation steps

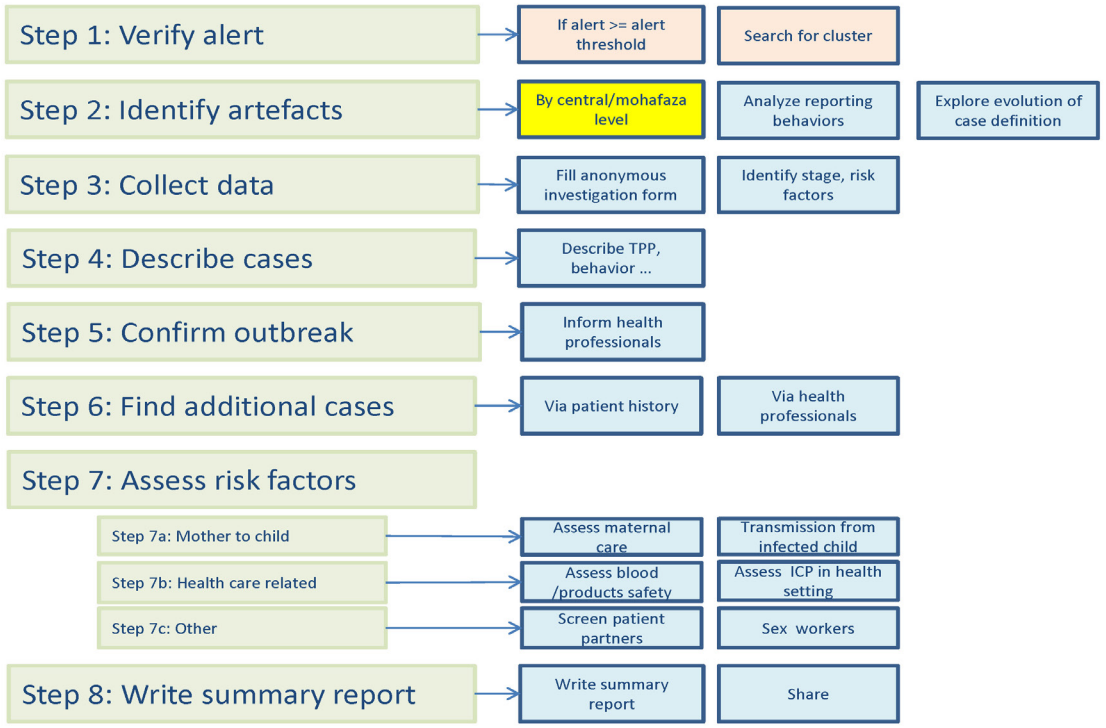
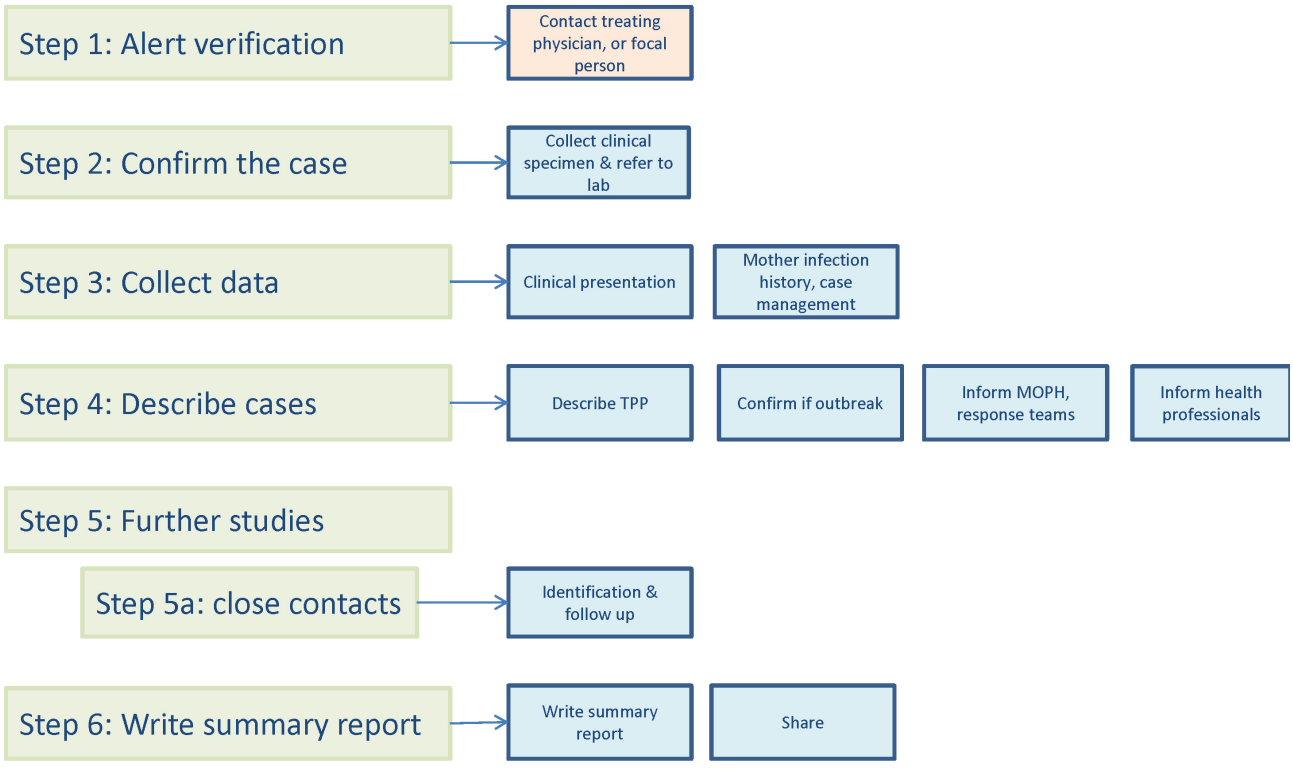


Figure 5: Congenital syphilis investigation steps



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

Case ID |_____|

Investigation form for Syphilis

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of syphilis

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

C Disease and diagnostic circumstances

►Reason for testing:

Symptoms:
- ☐Chancre
- ☐Rash
- ☐Mucous membrane lesions
- ☐Alopecia
- ☐Regional lymphoadenopathy: cervical, inguinal
- ☐Neurological
- ☐Cardiovascular (aneurysm of ascending aorta)
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Contact tracing
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Immigration screening
- ☐Other, specify:

►Dates:

Year of first symptoms: |_____|
Year of first diagnosis: |_____|

►Stage of syphilis:
- ☐Primary (up to 3 months prior to onset of symptoms)
- ☐Secondary (6 months prior to onset of symptoms)
- ☐Early latent (1 year to the diagnosis)
- ☐Late latent
- ☐Congenital
- ☐Undetermined

►Other STD infections:
- ☐Viral hepatitis B
- ☐Viral hepatitis C
- ☐Viral hepatitis D
- ☐Gonococci
- ☐Chlamydia
- ☐HIV

Case ID |_____|

D Congenital syphilis

▶Mother status: ∟Asymptomatic ∟Symptomatic, specify stage: ⌜Unknown	▶Was the mother known to be infected? ∟Yes ∟No ⌜Unknown
▶Did the mother have prenatal care? ⌜Yes ⌜No ⌜Unknown	▶Did the mother have specific treatment for syphilis? ⌜Yes ⌜No ⌜Unknown
▶Clinical presentation of the child: ⌜Asymptomatic ⌜Hepatosplenomegaly ∟Jaundice (nonviral hepatitis) ∟Rash ∟Anemia ∟Edema (nephrotic syndrome and/or malnutrition)	⌜Snuffles ⌜Condyloma lata ∟Pseudoparalysis, ∟Other, specify:

**

E Laboratory testing

Syphilis	Test	Date result	Result	Notes
	⌝ Demonsration of T. pallidum by dark field microscopy			
	⌝ PCR			
	⌝ DFA-TP (direct fluorescent antibody)			
	⌝ VDRL (Venereal Disease Research Laboratory)			
	⌝ RPR (rapid plasma regain)			
	⌝ FTA-ABS (fluorescent treponemal antibody absorbed)			
	⌝MHA-TP (microhemagglutination assay for antibody to *Treponema pallidum*)			
	⌝ TP-PA (T. pallidum particle agglutination)			
	⌝ EIA (enzyme immunoassay)			
	⌝ CIA (chemiluminescence immunoassay)			
	⌝ InnoLIA			
	□ Other, specify			

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	□	□	Profession:
	Contact with blood	□	□	
	Blood exposure injury	□	□	Nb:
	Blood exposure professions	□	□	
Health care				
	Admitted to hospitals	□	□	Nb:
	Had surgery	□	□	Nb:
	Had dialysis	□	□	Nb:
	Received blood products	□	□	Nb times:
	Received blood derived products	□	□	Products:
	Had transplantation	□	□	Organ:
	Dental care	□	□	
Household				
	Sharing toothbrushes	□	□	Frequency:
	Sharing “rasoirs”	□	□	Frequency:
	Sharing personal items	□	□	What:
Other				
	Participated in invasive religious rituals	□	□	
	Tatoos	□	□	
	Body piercing	□	□	

**

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	☐	☐	
	Sharing needles	☐	☐	
	Invasive inhalation	☐	☐	
Prison				
	Incarcerated	☐	☐	
STD				
	STD: VHB, VHC, VHD, HIV, syphilis, gonorrhea	☐	☐	What:
	Contact with a person with STD: home	☐	☐	
	Contact with a person with STD: sex	☐	☐	
	Contact with a person with STD: other	☐	☐	Specify:
Sexual risk				
	Male partners	☐	☐	Nb:
	Female partners	☐	☐	Nb:
	Sexual workers	☐	☐	Nb:
	Protective behavior	☐	☐	

**

H Partners protection

Specify number

	Identified	Screened	Positive	Treated
Regular				
Casual				
Sex workers				
Other:				

**

I. Notes

Notes

Notes

18

Surveillance Standard Operating Procedure: Typhoid fever

Version 1
MOPH circular no. 27
(19th Jan 2015)

Contents

I Purpose

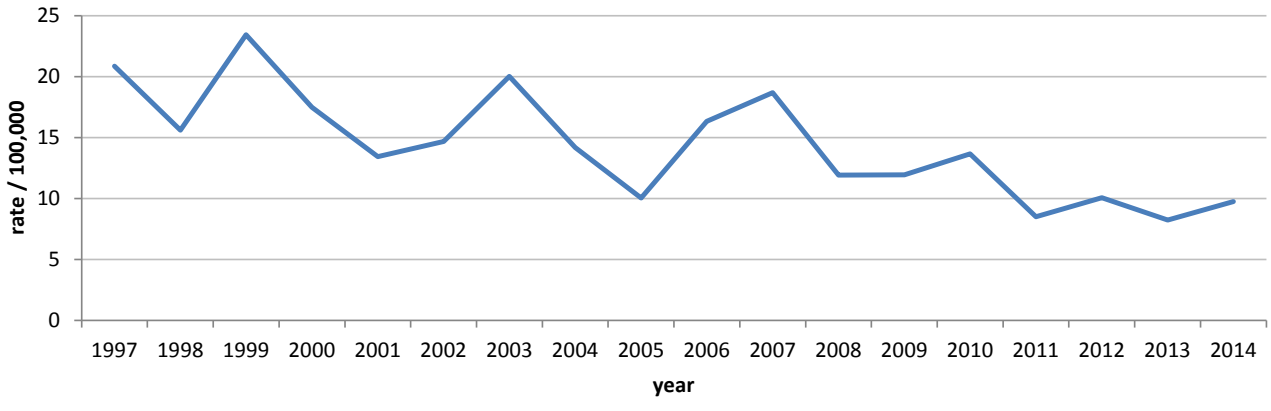
The general objective of this standard Operative procedure (SOP) is to provide guidance on proper verification and investigation of alert or outbreak of typhoid fever.

II Generalities

Typhoid fever	
Agent	Bacteria: salmonella enterica subsp. Enteric serovar typhi or paratyphi A or B
Incubation period	31-60 days (8-14 days)
Period of communicability	- As long as the bacteria is in feces. - The disease is communicable for as long as the infected person excretes S.typhi in their excreta, usually after the 1st week of illness through convalescence. - Approximately 10% of untreated cases will excrete S. typhi for 3 months and between 2-5% of all cases become chronic carriers.
Reservoir	Humans
Modes of transmission	- Consumption of contaminated food: shellfish, fruits /vegetables, milk and milk products by food handlers - Food can be contaminated by flies. - Consumption of contaminated water
Clinical presentation	a) Systemic bacteria infection: - Mild illness: low grade fever, malaise and dry cough, disturbances of bowel function (constipation in adults, diarrhea in children), headache, malaise and anorexia. Bronchitic cough is common in the early stage of the illness. During the period of fever, up to 25% of patients show a rash or rose spots, on the chest, abdomen and back. - Severe illness: abdominal discomfort, altered mental status and multiple complications (intestinal hemorrhage or peritonitis due to intestinal perforation) b) Carrier state: 1-5% of patients, depending on age, become chronic carriers harboring S.typhi in the gallbladder.
Worldwide	- Worldwide - WHO estimates that 21 million typhoid cases and 216000–600000 typhoid-related deaths occur annually worldwide
Lebanon	Endemic, the annual incidence is 8-21 reported cases per 100,000
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, tests, drinking water, occupation…
Investigation: clinical specimen from case	Blood, bone marrow, stool
Investigation: data about contacts	Similar cases among contacts
Investigation: clinical specimen from contacts	-

Test	- Serological tests, bacteriological cultures. - The definitive diagnosis of typhoid fever depends on the isolation of S. typhi organisms from the blood or bone marrow or stool. - The classical Widal test measuring agglutinating antibody titres against S. typhi in serum has only moderate sensitivity and specificity. It can be negative in up to 30% of culture proven cases of typhoid fever and can be falsely positive in many circumstances.
Laboratories	- Detection and isolation: clinical laboratory - Identification of serotypes: national reference laboratory
Outbreak level	If observed incidence exceeds the expected one
Notification to WHO	According to International Health Regulations (2005) criteria
Typhoid fever case definition (MOPH circular no. 46 dated on the 10th April 2007)	
Confirmed case	Case with acute fever (at least 38° C) during 3 days or more with laboratory confirmation through isolation of Salmonella enterica serovar Typhi ou Paratyphi (new nomenclature) from clinical specimens: blood, bone marrow, stool…
Probable case	Case with acute fever (at least 38° C) during 3 days or more with positive serodiagnostic or antigen detection test but without isolation of Salmonella enterica Typhi ou Paratyphi. Widal test is considered as positive if the title is at least 1/160.
Suspected case	A clinically compatible case as reported by a physician. The clinical presentation may vary from a mild illness with low-grade fever and malaise to a severe picture of sustained fever, diarrhoea or constipation, malaise, anorexia, severe headache, splenomegaly and relative bradycardia. Intestinal ulceration can produce intestinal haemorrhage or perforations.
Carrier	Presence of Salmonella enterica Typhi ou Paratyphi in stool or urine for more than one year from the date of disease onset
Forms	
Reporting	Standard reporting form
Investigation	Typhoid fever investigation form (MOPH circular no.201 dated on the 15th November 2007)
National figures (salmonella non typhi to exclude)	

Figure 1: Reported typhoid fever incidence rate (per 100000), Lebanon, 1997-2014 (Source: MOPH)



International figures

Table 1: Incidence of Typhoid fever worldwide
(Source: G C. Buckle, C L Fisher Walker, R E Black. Typhoid fever and paratyphoid fever: systematic review to estimate global morbidity and mortality for 2010. Journal of Global health, June 2012, vol 2 no 1)

		Typhoid fever		Paratyphoid fever	
		Meidan Incidence/ 100,000 per year	Mortality/ 100,000 per year	Meidan Incidence/	Mortality/ 100,000 per year
Super Region 1	Australia, New Zealan, Southern Latin America, North America, Asia Pacific, Western Europe	0.3 (0.1, 0.4)	<0.1	8.0 (0.3, 20.6)	<0.1
Super Region 2	Central Europe, Eastern Europe, Central Asia	<0.1	<0.1	8.0 (0.3, 20.6)	<0.1
Super Region 3	Sub-Saharan Africa	724.6 (603.6, 845.6)	7.2 (6.0, 8.5)	77.4 (42.0, 130.3)	0.4 (0.2, 0.7)
Super Region 4	North Africa and Middle East	48.2 (12.7, 58.7)	0.5 (0.1, 0.6)	0.8	<0.1
Super Region 5	South Asia	394.2 (209.6, 407.1)	3.9 (2.1, 4.1)	77.4 (42.0. 130.3)	0.4 (0.2, 0.7)
Super Region 6	East Asia and South East Asia	29.2 (22.0, 180.3)	0.3 (0.2, 1.8)	17.9 (8.8, 27.4)	0.1 (0. 0.1)
Super Region 7	Caribbean, Latin America	22.3 (16.4, 28.1)	0.2 (0.2, 0.3)	17.9 (8.8, 27.4)	0.1 (0. 0.1)

III Objectives of surveillance

The objectives of Typhoid fever surveillance are:
- To monitor the incidence
- To detect alerts and outbreaks
- To identify risk factors
- To identify circulating strains and detect new strains
- To guide control and preventive measures...

IV Alert and outbreak thresholds

An **alert** is defined by one of the following:
- Relative increase
- Cluster in same place and time: at least 3 cases in same district or institution, in 1 month (4 weeks) period.

An **outbreak** is defined by one of the following:
- Observed incidence exceeding the expected one
- Or at least 3 confirmed cases in same institution within 1 month (4 weeks) period.

V Procedural steps

The following steps are the recommended for the verification and investigation of an typhoid fever alert or outbreak. The steps are summarized in figure (3).

Step 1: Verify alert

The alerts are generated by the Esumoh caza, mohafaza and central levels.
Upon detection of an alert, the verification is initiated. The received forms are checked, and if needed, the health facilities are contacted:
- Are all reported cases of typhoid fever?
- Have reported cases occured in same time and place?

Step 2: Fill investigation form

For each case of the alert, the Esumoh caza team fills an investigation form (Annex 1). The information is collected via phone interview with the patient.
The investigation form includes the following information:
- Demography: identify of the patient, age, sex, nationality, residence

- Illness: date of onset, symptoms
- Laboratory findings
- Risk factors: occupation, water sources, food habits…
- Other cases among contacts...

Step 3: Search for artefacts

a) Cross checking

The data is compared with the findings of other surveillance systems:
- Laboratory-based surveillance
- MOPH visa database...

b) Search for artefacts

Artifical increase of cases can be observed in the following circumstances:
- Increase of the demand of the test
- Increase of notifying health facilities
- Error in data entry
- Increase of the population size...

Step 4: Describe cases

a) Time, place and person

Cases are described by:
- Time: week, month, year of onset
- Place: place of residence or reporting, in terms of locality, caza and mohafaza
- Person: age group, gender, nationality...

b) Disease

Cases are also described by:
- Disease classification
- Case management: inpatient versus outpatient

c) Exposure

Cases are also described by:
- Water habits
- Food habits
- Occupation...

d) Agent

Isolated Salmonella strains are described in terms of:
- Types, serotypes and subtypes
- Antimicrobial resistance...

Step 5: Confirm the outbreak

Based on the epidemiological and laboratory findings, the outbreak is declared.
The Esumoh informs the concerned units at the MOPH.
The MOPH informs also the concerned partners and the health partners.

Step 6: Search for additional cases

Additional cases are searched via various approaches:
- Indicator-based surveillance:
  - Enhance passive reporting
  - Include typhoid fever in the active surveillance
  - Enhance laboratory based surveillance
  - Enhance microbial surveillance (collect of isolates for typing and subtyping)...
- Event-based surveillance: community-based surveillance...
- Search of other cases among the contacts: in household, in the neighborhood, in the workplace, in school…

Step 7: Assess risk factors

Based on the epidemiological findings, various sources of infection are suspected.

a) Water testing

If the investigation forms point the presence of common water source (in same locality or area, or institution), the water is suspected to be contaminated.

In concerned localities or institutions, the municipalities are contacted to understand 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 lab.

Water samples should include samples from water network and non-network water.
The water will be tested for fecal contamination.

b) Food inspection and testing

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

The identified food premises are inspected. During the inspection, the conditions are reviewed, the food present is sampled, and the food handlers are checked for their medical cards, hygienic presentation and presence of febrile illness previous month.

In case of history of febrile illness, specimens are collected from food handlers for laboratory testing.

c) Hygiene assessment

If a typhoid fever cluster occurred in a specific setting, as a refugee settlement, the site is inspected. At 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
- Types and subtypes identification...

Step 8: Enhance monitoring

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

Step 9: Write summary report

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

Figure 2: Typhoid fever case classification

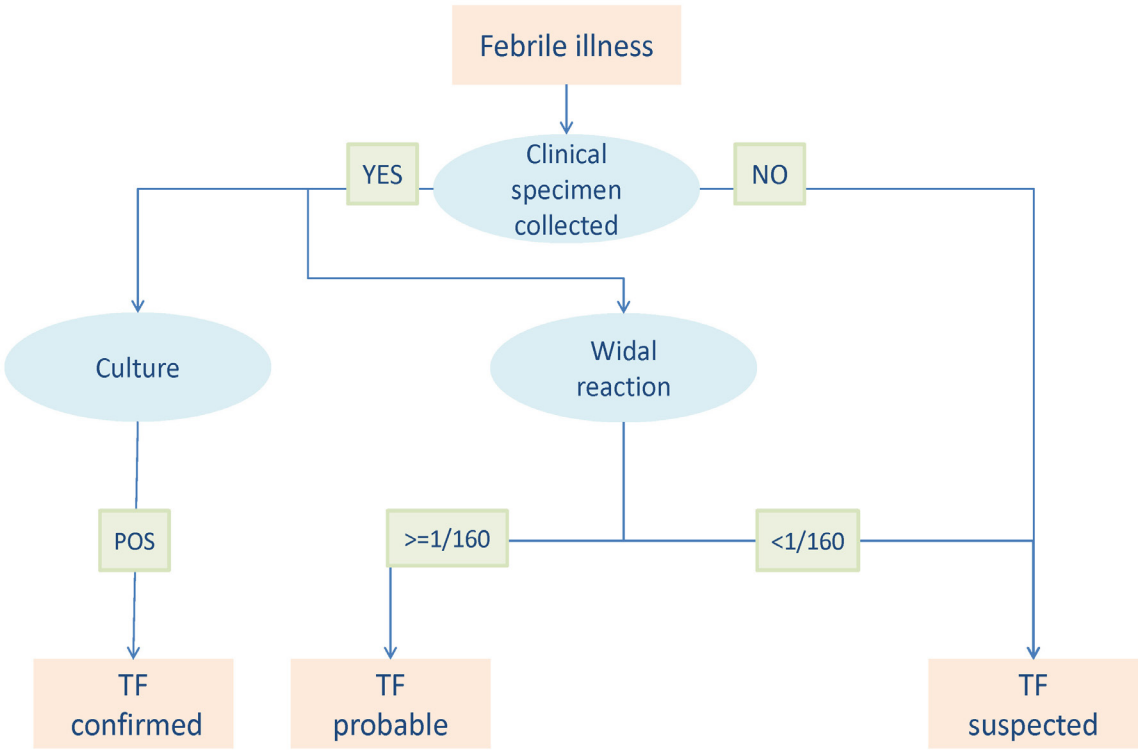
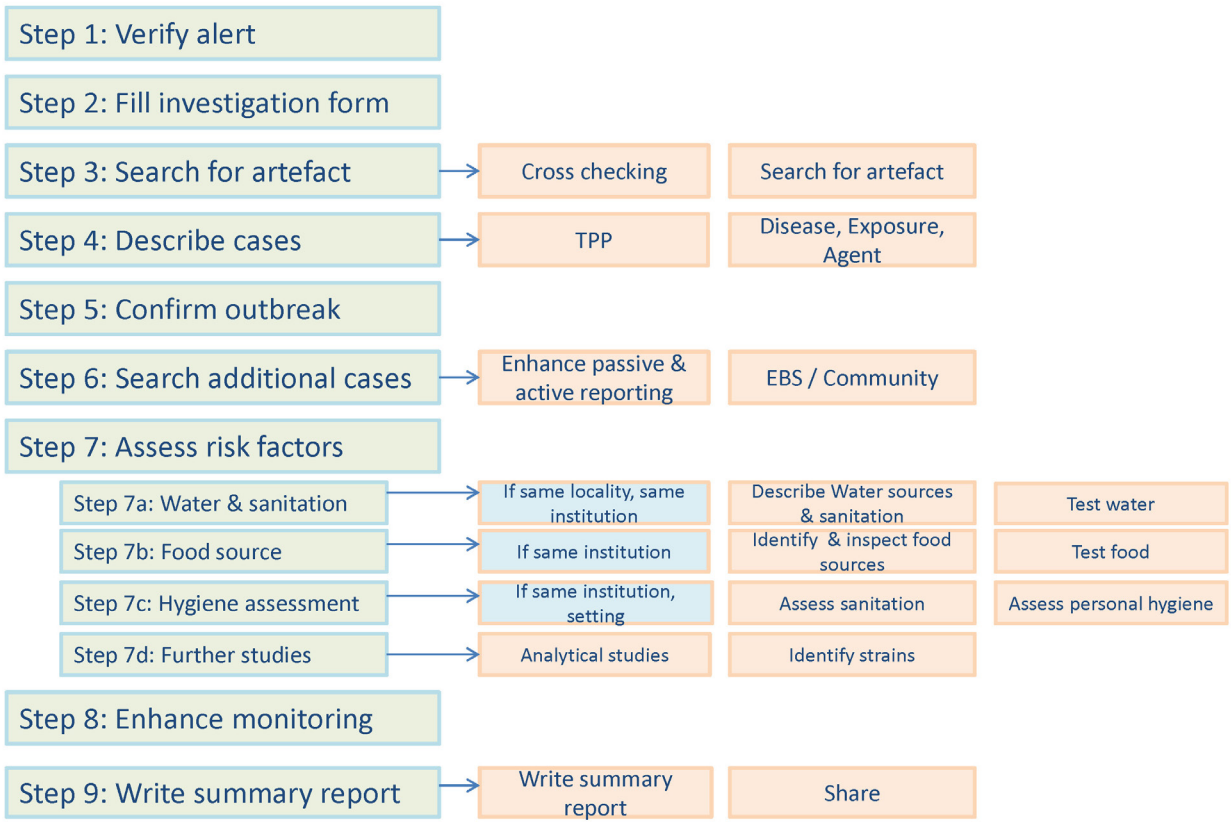


Figure 3 : Typhoid fever investigation steps



Typhoid Fever - Annex 1

الجمهورية اللبنانية - وزارة الصحة العامة - مديرية الوقاية الصحية - برنامج الترصد الوبائي

استمارة تقصي لحالات الحمى التيفية

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 ☐أنثى	الجنسية	تاريخ الولادة	العمر
عنوان السكن: المحافظة	القضاء	البلدة		رقم الهاتف	

3) المرض

تاريخ ظهور العوارض	دخل المستشفى	اسم المستشفى	Intestinal hemorrhage/perforation	وفاة	تاريخ الوفاة
	☐نعم ☐ك لا		☐نعم ☐كلا	☐نعم ☐ك لا	

4) الفحوصات المخبرية

	Blood/Bone marrow culture		Stool culture		Widal		Other serology	
إجراء الفحص	☐نعم	☐كلا	☐نعم	☐كلا	☐نعم	☐كلا	☐نعم	☐كلا
نتيجة الفحص	☐ايجابي	☐سلبي	☐ايجابي	☐سلبي	titre ____|		حدد الفحص والنتيجة:	

5) المهنة

مهنة المريض					
يعمل أو يتردد:	نعم	كلا	اذا نعم، حدد عنوان العمل: المؤسسة	البلدة	القضاء
في مؤسسة تربوية	☐	☐			
في دار حضانة	☐	☐			
في مؤسسة صحية	☐	☐			
في بيع/تحضير المواد الغذائية	☐	☐			

6) مصدر مياه الشرب

مكان:	شبكة مياه الدولة		بئر خاص		بئر /عين عامة		سيترن		غالون		مياه الشتاء		مياه معبئة		غيره
	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	نعم	كلا	
المنزل	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
الدراسة/العمل	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

7) الصرف الصحي

مكان المنزل			مكان الدراسة /العمل		
☐شبكة مجارير	☐حفرة صحية	☐لا يعلم	☐شبكة مجارير	☐حفرة صحية	☐لا يعلم

8) حالات في المحيط خلال الشهر الذي سبق ظهور العوارض

عدد الافراد في المنزل	عدد الحالات في المنزل	عدد الحالات في العمل/ الدراسة	عدد الحالات في الجيران

9) تناول المواد الغذائية خلال الشهر الذي سبق ظهور العوارض

	مطعم		سناك		بائع متجول		حفلة		غيره، حدد
	☐ نعم	☐كلا	☐ نعم	☐كلا	☐ نعم	☐كلا	☐ نعم	☐كلا	
عدد المرات	__|		__|		__|		__|		

9) خلاصة

تصنيف الحالة			تفشي المرض			
☐مثبتة	☐محتملة	☐مشتبهة	☐فردية	☐مؤسسة العمل أوالدراسة	☐ البلدة/الحي	☐غيره:

Typhoid Fever. Agent: Salmonella enterica subsp. *enterica* serovar Typhi or Paratyphi A, B or C. *Reservoir: humans. Transmission: ingestion of food or water contaminated by feces or urine of patients and carriers; sewage contaminated shellfish, raw fruit, vegetables , milk… Incubation: 8-14 days (3-60). Communicability: from the 1st week to convalescence.*
Classification: confirmed if positive culture; probable if Widal>=1/160; suspected: else.

Typhoid Fever - Annex 2

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

YEAR |__|__|__|__|

TYPHOID FEVER Surveillance
LINE LISTING

|_____|

Local ID	ESU ID	Name	Sex	Age (month/year)	Date onset	Week	Caza	Commune	Widal	Other serology	Stool culture	Blood / Bone Marrow culture	ATB-Resistance	Classification	Interviewed	Occupation	Institution	in the family	in the insitution	in the neighborhood	Inpatient	Reporting site
									Laboratory						Exposure			Other cases				
<##>			<M,F>	<# m/y>	<dd/mm/yyyy>	<##>							<FS, MDR, NARST>	<S,P,C>	<Y,N>			<Y,N>	<Y,N>	<Y,N>	<Y,N>	

ATB-Resistance: FS=Fully Sensible; MDR=Multi-Drug Resistance (Ampicillin, Chloramphenicol, Sulfonamide, Trimethoprim, Streptomycin, Tetracylcin);
NARST=Nalidixic Acid Resistance Salomella Typhi.

تعميم وزارة الصحة العامة رقم 200 تاريخ 15 تشرين الثاني 2007

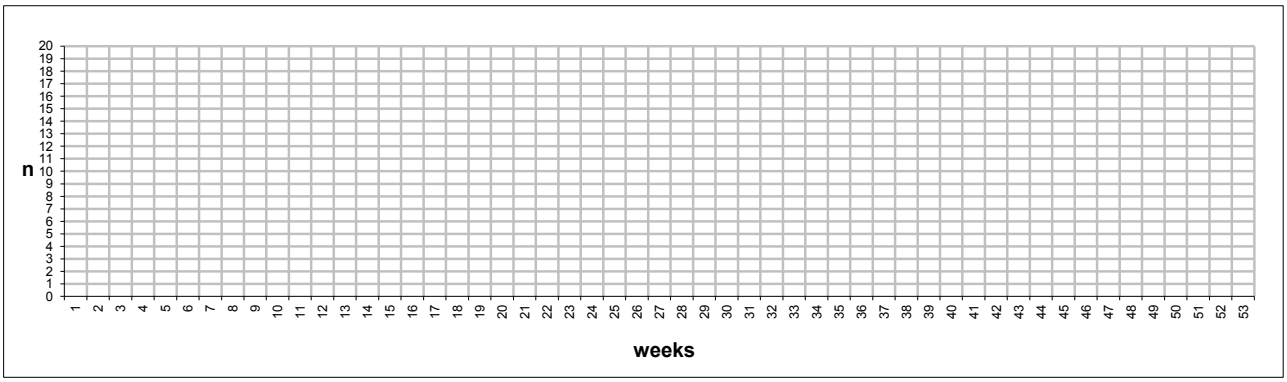
Typhoid Fever - Annex 3

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

Descriptive Surveillance Findings

Event	Level	Year	Week	Period	As on
		20___			

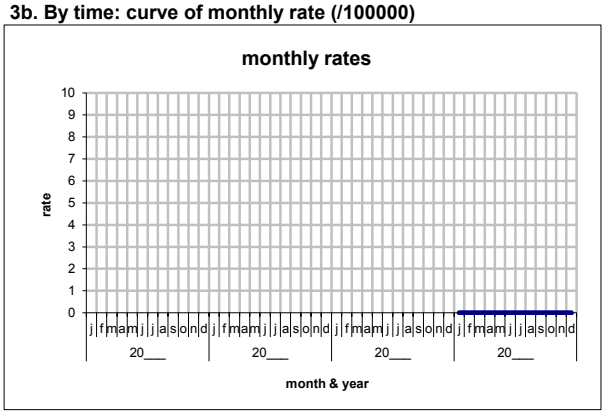
1. Cumulative number =



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						

3b. By time: curve of monthly rate (/100000)



4a. By place: commune

Commune	n	Commune	n

4b. By place: dot map

1 dot = 1 case

5. By age group: cases and rates (/100000)

Age	R20__	R20__	R20__	Pop20__	N20__	R20__
0-4 y						
5-9 y						
10-19 y						
20-39 y						
40-59 y						
60+ y						
Unsp						
Total						

6. By gender

Gender	N20__	% 20__
Male		
Female		
Unsp		
Total		

7. By case management

Case	N20__	% 20__
In-pat		
Out-pat		
Unsp		
Total		

8. By classification

Classificat	N20__	% 20__
Confirm.		
Probable		
Suspect		
Total		

9. Interviews done

N cases	N inter.	%

10. Reporting sites

Total	Hospitals	Dispens.	Lab	Cabinets	Other

Done by

Notes

Notes

Notes

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Surveillance Standard Operating Procedure: Tuberculosis

Version 1
MOPH circular no. 56
(22nd Jan 2015)

Contents

I Purpose

This standard operating procedure (SOP) provides an overview of the steps to detection and investigation of tuberculosis alert or outbreak.

II Generalities

Tuberculosis (TB) is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs (but can be extra-pulmonary). It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease.

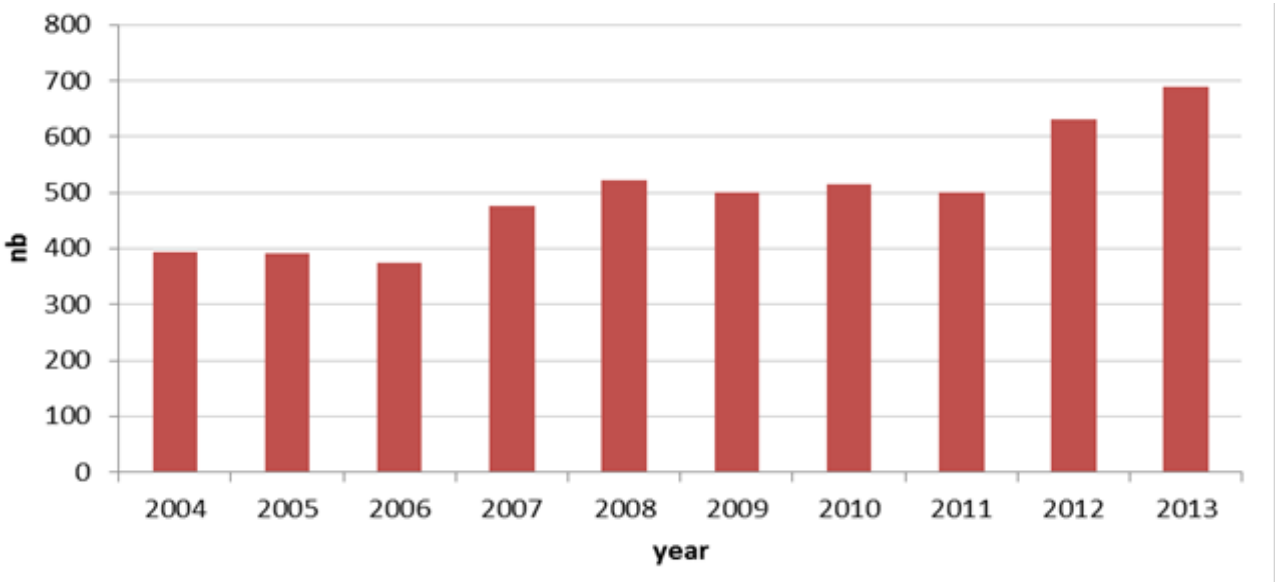
Tuberculosis	
Agent	Bacteria : Mycobacterium tuberculosis complex, including M. tuberculosis, M. africanum, M. canettii, M. bovis
Incubation period	- 2-10 weeks - IDR reaction within 1-2 days
Period of communicability	- As long as the viable tubercle bacilli are discharged in the sputum - Effective antibiotherapy eliminates communicability within 2 weeks.
Reservoir	- Humans - Also cattle…
Modes of transmission	- Person-to-person transmission: airborne or direct contact with droplet - For M. bovis: consumption of milk or dairy products
Clinical presentation	- Primo-infection: usually asymptomatic - Active disease: 10% with pulmonary TB (70%) or extra-pulmonary TB (30%). - Meningitis and disseminated form: in infants and immuno-compromised
Worldwide	- Worldwide, in particular in developed countries, and among HIV patients - Outbreaks were reported in enclosed spaces. - Multi-Drug resistance is observed in 1-2% of cases.
Lebanon	- 400-500 cases per year. - The number of cases increased since 2013 following the Syrian crisis.
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Clinical presentation, occupation, vaccination, case management
Investigation: clinical specimen from case	Sputum, CSF
Investigation: data about contacts	Cases among contacts and family, IDR testing, chest X ray results
Investigation: clinical specimen from contacts	Sputum if abnormal results or symptoms
Test	Direct microscopy, culture

Laboratories	- TB centers: direct microscopy - Clinical laboratories: direct microscopy, isolation - Reference laboratories: multi-drug resistance
Outbreak level	- At least 2 cases in same setting - Or observed incidence exceeding the expected one
Notification to WHO	According to the International Health Regulations (2005) criteria
Tuberculosis case definition (MOPH circular no. 73 dated on the 17th September 2012)	
Pulmonary tuberculosis, sputum smear positive	A patient having one of the following: - At least two smear examinations positive for acid-fast bacilli on microscope - Or one smear examination positive for acid-fast bacilli on microscope, with pulmonary radiological changes suggesting tuberculosis disease - Or one smear examination positive for acid-fast bacilli and a positive culture for Mycobacterium tuberculosis complex - Or one smear examination positive for acid-fast bacilli and a positive PCR
Pulmonary tuberculosis, sputum smear negative	A patient having: - Two smear examination negative for acid-fast bacilli, but with chest X-ray modifications suggesting of tuberculosis diseases - Or one smear examination negative for acid-fast bacilli, with a positive culture for the Mycobacterium tuberculosis complex - Or one smear examination negative for acid-fast bacilli, and a positive PCR.
Extra-pulmonary tuberculosis	A patient having one of the following: - Anatomical and/or histological and/or radiological and/or clinical symptoms leading to suspecting or confirming the diagnosis of the extra-pulmonary tuberculosis. Tuberculosis can be present in: pleura, pericardial effusion, lymph nodes, abdomen, genito-urinary tract, skin, joints and bones, meninges, etc. - Or positive culture for the complex of Mycobacterium tuberculosis from an extra-pulmonary clinical specimen - Or positive PCR from an extra-pulmonary clinical specimen.
Confirmed case	A patient with one of the following: - Positive culture for one of the Myconacterium tuberculosis complex. The complex of Myconacterium tuberculosis includes: M. tuberculosis; M. bovis; M. africanum; M. microtti; M.canetti; M.caprae; M. pinnipedii - Positive Polymerase Chain Reaction PCR
Probable case	A patient: - With clinical and/or radiological signs compatible with tuberculosis - And medical decision to treat with anti-tuberculosis drugs

Forms	
Reporting	Tuberculosis reporting form
Case management	TB case management
Contacts	TB contact follow up

National figures

Figure 1: Reported tuberculosis, Lebanon, 2004-2013 (Source: MOPH)



International figures

Figure 2: Incidence of tuberculosis in the world, 2012 (Source: USA-CDC)

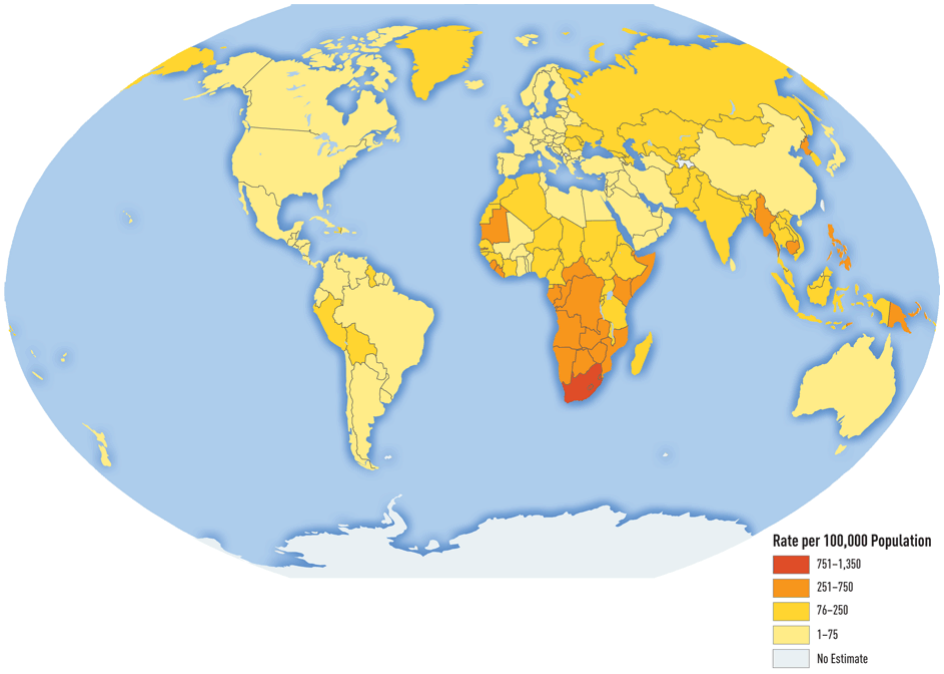
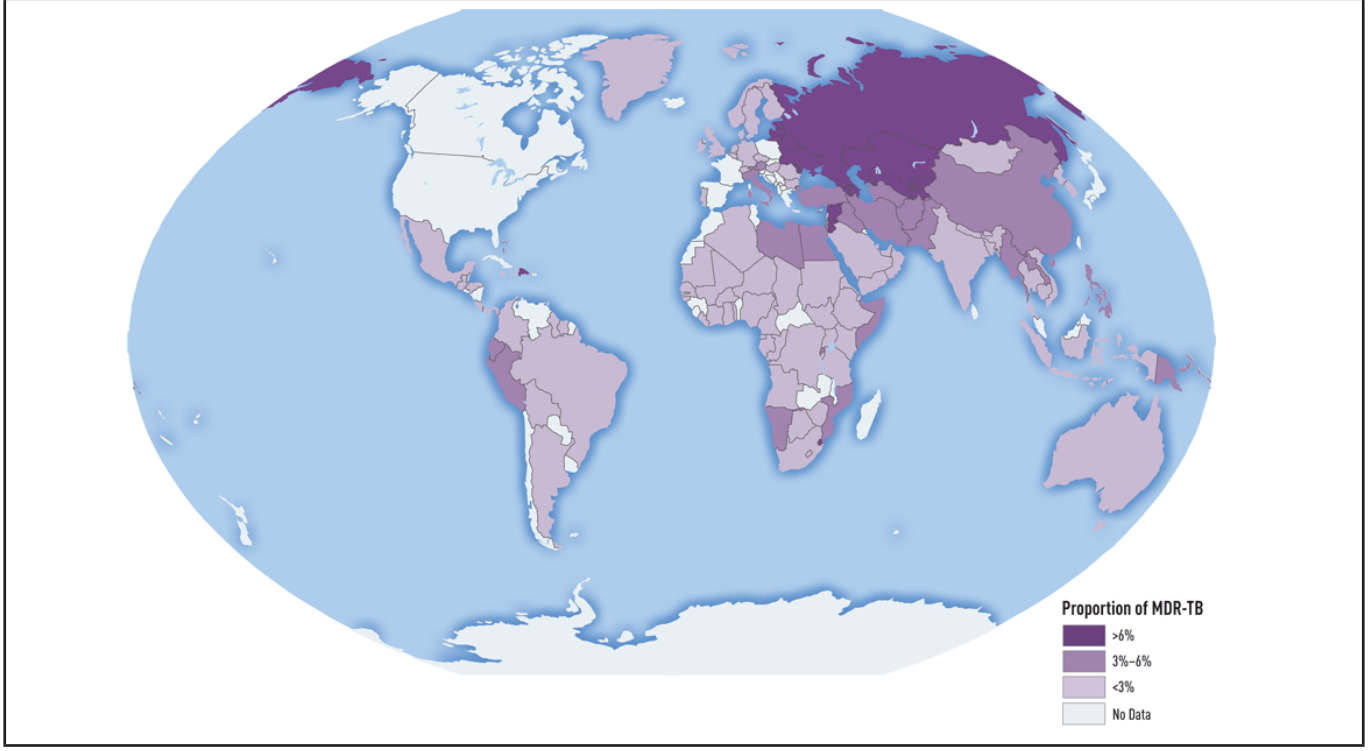


Figure 3: Incidence of multi-drug resistant MDR tuberculosis in the world, 2012 (Source: USA-CDC)



III Surveillance objectives

The objectives TB surveillance are:

- Detect and confirm cases for treatment orientation
- Detect and investigate alerts and outbreaks
- Detect TB cases with multi-drug resistance (MDR)
- Monitor TB control program.

IV Alert and outbreak thresholds

An **alert** is defined by the any suspected case of tuberculosis.
An **outbreak** is defined by one of the following:

- Cluster of confirmed cases epi-linked in setting
- Observed incidence exceeding the expected one
- Modification of the TB pattern.

V Procedural steps

The described steps below are suggested for the investigation of any TB alert or outbreak. They are summarized in figure (3).

Step 1: Verify the case

Upon notification, the MOPH staff verifies if the TB reporting form (Annex 1) was filled by the treating physician.
If not, the treating physician is contacted to fill the form or to provide medical report.

Step 2: Investigate the case

For each case, the TB team opens a new medical file.
The patient data is collected.
The TB medical file includes the following information:

- Demography: age, gender, nationality, occupation, institution…
- Disease information: Date of onset, symptoms…
- Laboratory and test information: tuberculin skin, chest X-ray, sputum culture…
- Risk factors: occupation, incarceration…

- Specific status: foreigner worker, refugee, date of arrival to Lebanon
- Treatment information: starting date, treatment protocol, DOTS …

The patient is provided with a TB card for later follow up.

Step 3: Confirm the case

Any case needs to be confirmed.
Various tests are needed.

a) IDR test: 48 to 72 hours after the injection of tuberculin. A result is considered positive if there's an induration (>10 mm) in the site of the injection. The size (diameter) of the induration zone allows to determine the presence of a significative reaction, and if the cause is probably a latent tuberculous infection. If the patient was vaccinated, the positive induration is >15 mm. If the patient is HIV(+), the positive induration is > 5 mm.

b) Clinical specimen (sputum): For the diagnosis of TB, two specimens of sputum are collected on the first and second day of first presentation. Direct microscopy is performed at TB centers (Annex 2). Culture is done in clinical and reference laboratories.

c) Chest X ray: In active pulmonary TB, infiltrates or consolidations and/or cavities are often seen in the upper lungs with or without mediastinal or hilar lymphadenopathy or pleural effusions (tuberculous pleurisy). However, lesions may appear anywhere in the lungs. In disseminated TB a pattern of many tiny nodules throughout the lung fields is common, called miliary TB. Chest X ray is done at any TB centers, or pubic hospitals or any radiology centers.
d) If culture is positive: Antimicrobial susceptibility and resistance. It should be done for any suspected case of MDR as previously treated patients, HIV patients…

e) Gene expert using PCR for MDR testing.

Step 4: Classify the case

Based on the available clinical and paraclinical findings, the case is classified as:
- New case or previously treated case
- Location of the infection:
  - Pulmonary with positive smears
  - Pulmonary with negative smears
  - Extra-pulmonary
- Resistance to drugs: MDR

Based on the classification, the treatment protocol is chosen. The DOTS therapy is applied to Pulmonary with positive smears and for MDR patients.

Step 5: Investigate close contacts

TB is person-to-person transmission. There is need to identify additional cases in the vicinity of the case. Close contacts are the ones living or sharing the space of the patient for the past 3 months prior to diagnosis.
The close contacts are listed in specific form (Annex 4).

a) Family contacts

All household contacts are identified.
A medical consultation is done: search for respiratory symptoms and/or signs and other abnormal signs
An IDR test is conducted for all, repeated 2 months later.
Other tests are requested:
- Sputum is collected for direct microscopy and culture (if needed)
- A chest X-ray is conducted if there is one of the following:
  - A positive tuberculin skin test

- Symptoms of active TB, such as a persistent cough, fatigue, fever, or night sweats
- An uncertain reaction to the tuberculin skin test because of a weakened immune system, or to a previous bacille Calmette-Guerin (BCG) vaccination.

b) Other close contacts

All persons working or studying with the case in same room, and close friends are identified. They undergo:

- Medical consultation
- IDR test, repeated 2 months later
- Sputum exam is needed
- Chest-X ray if needed.

Step 6: Describe cases

a) Time, place, person and disease

Cases are described by:

- Time: month and year of onset, date of starting treatment
- Place: residence, work in terms of locality, caza and mohafaza
- Person: age, sex, nationality, situation (foreign worker, refugee…)
- Disease: classification, outcome...

b) Microbial agents

Infectious agents are described in term of antimicrobial resistance.

c) Outbreak confirmation

Based on the epidemiological and laboratory findings, the outbreak is declared.
The MOPH issues specific memos to inform concerned health professionals, WHO and partners.

Step 7: Conduct follow up

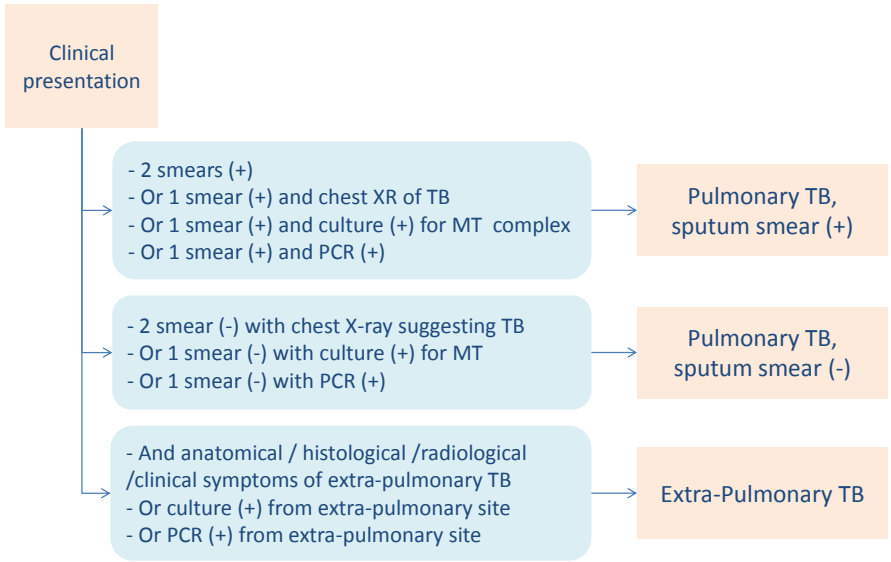
Patients under DOTS (direct observance) are monitored:

- Daily for 6 months: new patients
- Monthly for 8 months: previously treated patients
- Daily for 24 months: MDR patients.

Step 8: Write summary report

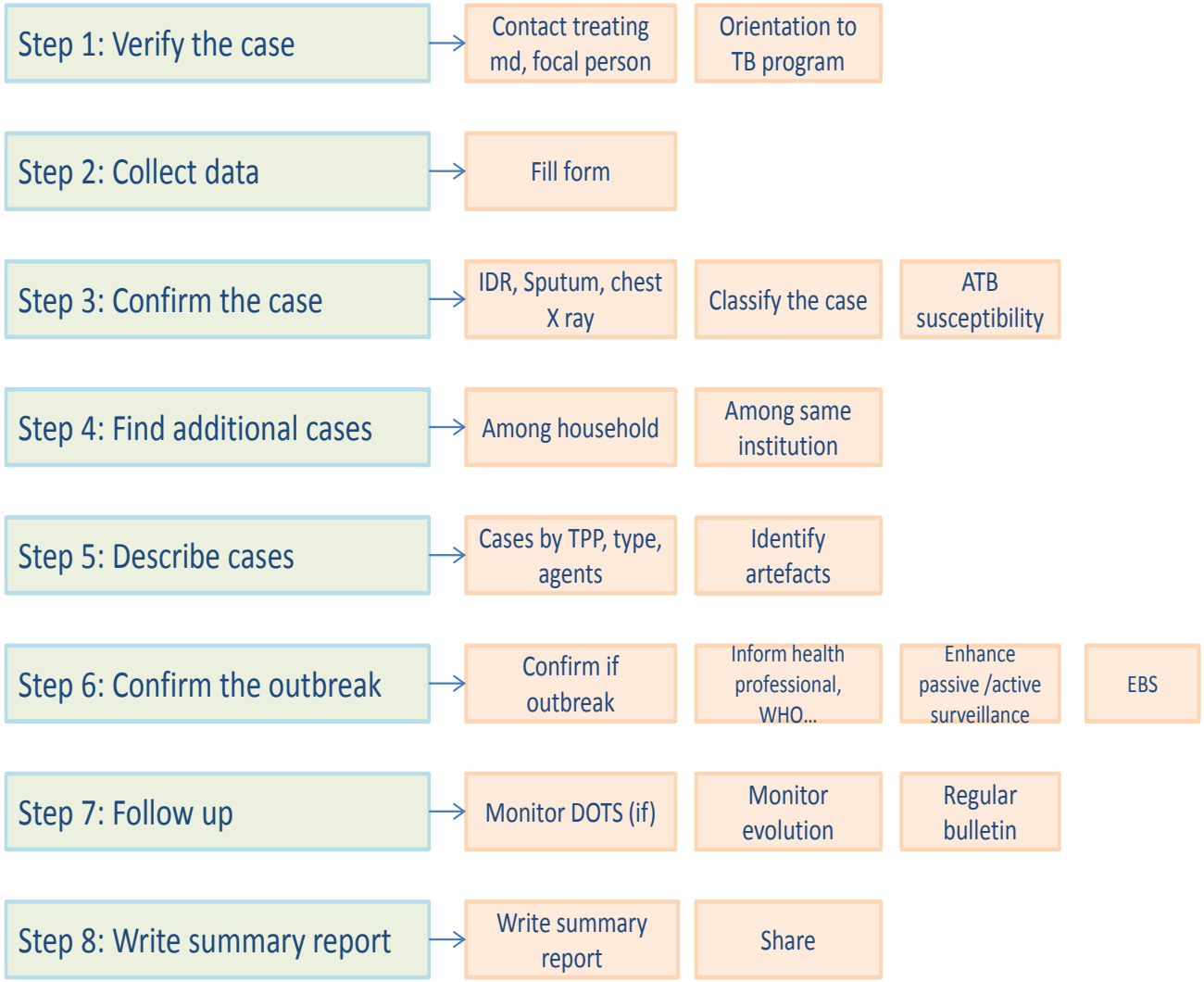
Reports are prepared on trimestral basis. If outbreak, a specific report is prepared by the TB program, and shared with partners.

Figure 4: Tuberculosis case classification



MT: Mycobacterium tuberculosis
TB: Tuberculosis

Figure 5:Tuberculosis investigation steps



برنامج مكافحة التدرن

إستمارة إبلاغ عن مرض التدرن الرئوي

1- إسم المركز : .....

2- رقم الملف : .....

3- تاريخ فتح الملف : ..... / ..... / .....

4- الإسم الثلاثي : .....

5- العنوان : المحافظة : ..... قضاء: .....

البلدة : ..... هاتف: ..... / .....

6- العمر : .....

7- الجنس : ☐ ذكر ☐ أنثى

8- الجنسية : ☐ لبناني غيره، حدد .....

9- المهنة : .....

10- الوضع الإجتماعي: ☐ عازب ☐ متأهل ☐ مطلق ☐ منفصل ☐ أرمل

11- الوزن : ..... (كغ)

12- طريقة التشخيص : ☐ فحص القشع ☐ زرع القشع ☐ اختبار جلدي
☐ أشعة غيره، حدد: .....

13- تصنيف المريض : ☐ جديد ☐ انتكاسة ☐ محول
☐ اعادة معالجة غيره، حدد: .....

14- نوع السل : ☐ رئوي ☐ إيجابي ☐ سلبي
غير رئوي: حدد .....

15- إحالة المريض قبل العلاج: ☐ مستشفيات خاصة ☐ مستشفيات حكومية ☐ عيادات خاصة
☐ مراكز صحية ☐ بنفسه ☐ سجون
غيره، حدد: .....

16- تاريخ بدء العلاج: ..... / ..... / .....

17- نوع العلاج عند بدئه: .....

18-أمراض أخرى غير السل: ☐ سيدا غيره، حدد: .....

الجمهورية اللبنانية
وزارة الصحة العامة

برنامج مكافحة التدرن

كيفية تشخيص مرض السل

المسبب : عصية كوخ **مصدرها** : مريض التدرن **طريقة العدوى** : الهواء عن طريق التنفس

يصيب السل في اغلب الاحيان الرئتين

العوارض السريرية:

- سعال لأكثر من ثلاثة أسابيع
- قشع مخاطي
- ألام في الصدر
- ارتفاع في الحرارة
- نفث دموي أحيانا"
- نقص في الشهية و الوزن

الصورة الشعاعية: تغيرات غالبا" في القسم الاعلى من الرئتين

فحص القشع (البلغم): يؤخذ عينتين الأولى(عند الزيارة فور الاشتباه بالحالة) والثانية في اليوم الثاني على الريق

اختبار التوبركولين:

- يحقن 10 وحدات في الجلد
- يقاس قطر التورم
- تقرأ بعد 48-72 ساعة
- يعد ايجابيا" القطر أكثر من 10 ملليلتر

تصنيف السل:

أولا- السل الرئوي :

- الايجابي القشع (وجود عصية كوخ في القشع
- السلبي القشع (عدم وجود عصية كوخ في القشع مع صورة شعاعية توحي بوجود المرض)

ثانيا- سل خارج الرئة : سل في أعضاء أخرى غير الرئتين يشخص عن طريق أخذ عينات من العضو المصاب و فحصها نسيجيا"

ثالثا- مريض جديد : المريض الذي لم يتلق أي علاج للسل أو تلقى علاج لأقل من شهر.

رابعا- إعادة معالجة :

- المريض الذي شفي من المرض و تبين لديه وجود عصية كوخ من جديد
- المريض الذي عاد للعلاج بعد انقطاع لشهرين أو أكثر

الجمهورية اللبنانية
وزارة الصحة العامة

لائحة بأسماء مراكز مكافحة التدرن الرئوي في لبنان

برنامج مكافحة التدرن

اسم المركز	اسم الطبيب	هاتف المركز	هاتف الطبيب	فاكس	عنوان المركز
الكرنتينا	د.هيام يعقوب	01/443550	03/786033	01/445734	بيروت الكرنتينا
المناصفي	د.بسام بسام	01/377905	03/525867	01/377905	بيروت زقاق البلاط
طرابلس	د.نبيل خلف د.وليد البابا	06/424255	03/558305 03/228005	06/424255	**طرابلس** الزاهرية مقابل كاراج سير الضنية ، ط (1)
الهرمل	د.هاني عبد الساتر كاسر حمادة	08/374682	03/857718 03/724494	08/374682	**مستشفى الهرمل القديم** شارع الرئيس صبري حمادة، ط (1)
زحلة	د.نقولا معكرون	08/821511	03/262001	08/821511	**مستوصف زحلة المركزي** بناية الامن العام مقابل مستشفى زحلة الحكومي
بيت الدين	د.كامل العياص	05/500048	03/393541	05/500048	**بيت الدين** مركز الرعاية الصحية الاولية قرب مدخل قصر الرئاسة
صيدا	د.وليد علاء الدين	07/724854	03/811215	07/724854	**صيدا** بناية البربير ساحة النجمة ،ط (3)
صور	د.عبد الحسين شرف الدين	07/343854	03/628824	07/343854	**صور** مستشفى صور الحكومي

كما يمكن الاتصال على الخط الساخن : هاتف المنسق العام لبرنامج مكافحة التدرن في لبنان الدكتورة هيام يعقوب 03/786033

معلومات عن الأشخاص المخالطين والقاطنين مع المريض في المنزل

الرقم	الإسم والشهرة	العمر	الجنس	الصلة مع المريض	نتيجة اختبار السل
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

ملاحظات:

.....

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.....

.....

.....

إسم وصفة المبلغ: ..... رقم الهاتف: .....

التوقيع: .....

الجمهورية اللبنانية
وزارة الصحة والشؤون الاجتماعية
برنامج مكافحة التدرن

المحافظة : _____
اسم المركز : _____
رقم المركز : _____

بطاقة المريض

رقم الملف: ____/____

اسم المريض وشهرته :
اسم الاب : _____
اسم الام : _____
الجنس : _____
تاريخ الولادة : _____
الوضع العائلي : _____
المهنة : _____
الجنسية : _____
العنوان الكامل : المنطقة : _____
الشارع : _____ البناية : _____
الهاتف : _____

★ يجب ابراز البطاقة عند استلام كل علاج

أخذ الدواء بانتظام يؤمن لك :

- الشفاء الأكيد
- العودة الباكرة لعملك
- عدم عدوى الآخرين من أفراد عائلتك

علاج منتظم شفاء أكيد

رقم الوصفة	شهر المعالجة	الأدوية المسلمة						تاريخ الاستلام	توقيع الصيدلي	توقيع المستلم
		I	R	Z	E	S	T + I			

الجمهورية اللبنانية
وزارة الصحة العامة

برنامج مكافحة التدرن

بروتوكول علاج مرض التدرن الرئوي

Protocol of tuberculosis treatment

	Medications and Duration	
Form of the disease	**Initial phase**	**Continuation phase**
Pulmonary & ExtraPulmonary Tuberculosis	Isoniazid +Rifampicin + Ethambutol+ Pyrazinamide (H+R+E+Z) (2months)	Isoniazid +Rifampicin (H+R) (4 months)
Severe forms*	Isoniazid +Rifampicin + Ethambutol+ Pyrazinamide (H+R+E+Z) (2months)	Isoniazid +Rifampicin (7-10months)
Multi drug resistant tuberculosis	Kanamycine inj+ Levofloxacine+Cycloserine+Ethionamide+ Pyrazinamide+Ethambutol (6months)	Levofloxacine+Cycloserine+Ethionamide+Pyrazinamide+ Ethambutol (12-18 months)

(*):Miliary Tuberculosis, Meningiti, etc...

Notes

Notes

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Surveillance Standard Operating Procedure: HIV/AIDS

Version 1
MOPH circular no. 55
(22nd Jan 2015)

Contents

I Purpose

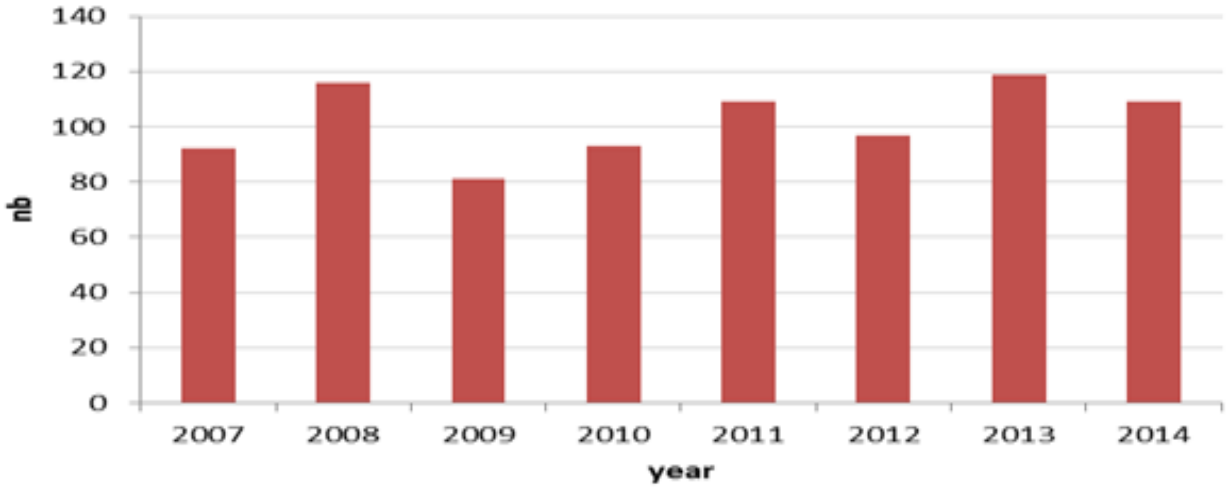
The Standard Operating Procedure (SOP) is intended to assist the epidemiologic surveillance program in how to proceed when verifying and investigating any alert or outbreak of HIV/AIDS.

II Generalities

Human Immunodeficiency Virus	
Agent	Human Immunodeficiency Virus HIV, a retrovirus, with 2 serotypes 1 and 2, from the Retroviridae family, Lentivirus genus, and each retrovirus is composed of multiple subtypes
Incubation period	- Antibodies appear within 1-3 months - Acquired Immuno-Deficiency Syndrome (AIDS) appears within 1-15 years
Period of communicability	Early after infection throughout life
Reservoir	Humans
Modes of transmission	1)Person-to-person: - Sexual - Contact of abraded skin or mucosa with infected body fluid (blood, CSF, semen) - Organ transplantation - Vertical transmission - Breastfeeding 2) Contaminated blood or blood derived products transfusion 3) Contaminated needles, syringes, sharp objects (razor blade, dentistry instruments, tattoo instrument…) 4) Dialysis
Clinical presentation	- Infection: asymptomatic, or mild self-limited mononucleosis-like illness (acute seroconversion) - Advanced HIV - AIDS: opportunistic infections, cancers…
Worldwide	Worldwide. First case described in 1981
Lebanon	The annual average of reported cases is 98. The cumulative number of HIV (to 2014) was 1780 cases. The UNAIDS estimates the number of people living with HIV (PLHIV) to be 3600 [2700-4800].
Control objective	Control
Surveillance and Investigation	
Surveillance approach	Disease approach
Investigation: data about case	Demography, clinical presentation, opportunistic infections, disease stage (HIV/AIDS), risk factors, case management…
Investigation: clinical specimen from case	Blood
Investigation: data about contacts	Sexual contacts, drug users, sharing sharp equipment (health professionals, barber, tattoo…)
Investigation: clinical specimen from contacts	Blood
Test	- Rapid test at Voluntary Counselling and Testing centers (VCT) - Serological tests (Elisa, PCR, Western blot)

Laboratories	Clinical laboratories, VCT sites
Outbreak level	- Cluster of cases epi-linked - Or if observed incidence exceeds the expected one
Notification to WHO	According to the International Health Regulations (2005) criteria
HIV case definition (MOPH circular no. 74 dated on the 17th September 2012)	
Confirmed case for 18 months and above	A person aged 18 months or above with: - Positive test result for HIV antibody by 2 different methods (e.g. repeatedly reactive enzyme immunoassay). If conflicting, this must be followed by a positive result on a confirmatory test (e.g. Western blot). - Or positive result or report of a detectable quantity on the following HIV virologic (non-antibody) tests: - HIV nucleic acid detection (e.g. DNA PCR, or plasma HIV-1 RNA) - Or HIV p24 antigen test
Confirmed HIV infection for under 18 months	A child under 18 months with positive results on 2 separate specimens (excluding cord blood) using none or more of the following HIV virologic (non-antibody) tests: - HIV nucleic acid (DNA or RNA) detection - HIV p24 antigen test including neutralization assay, in a child greater than or equal to 1 month of age
Presumptive HIV infection for under 18 months	A child under 18 months who has: - Positive results on only one specimen (excluding cord blood) using the above HIV virological detection tests (non-antibody) - And no subsequent negative HIV (either virologic detection or antibodies detection)
Forms	
Reporting	HIV reporting form
Investigation	HIV investigation form (in case of alert or outbreak)
National figures: Reported incident HIV cases, Lebanon, 2007-2011. Source: MOPH/NAP	

Figure 1: Reported HIV cases, Lebanon, 2007-2014 (Source: MOPH)



International figures

Table 1: Regional HIV and AIDS incidence in the world, 2013 (Source: WHO)

	Adults and children living with HIV	Adults and children newly infected with HIV	Adult prevalence (15–49) [%]	Adult & child deaths due to AIDS
Sub-Saharan Africa	24.7 million [23.5 million – 26.1 million]	1.5 million [1.3 million – 1.6 million]	4.7% [4.4% – 4.9%]	1.1 million [1.0 million – 1.3 million]
Middle East and North Africa	230 000 [160 000 – 330 000]	25 000 [14 000 – 41 000]	0.1% [<0.1% – 0.2%]	15 000 [10 000 – 21 000]
Asia and the Pacific	4.8 million [4.1 million – 5.5 million]	350 000 [250 000 – 510 000]	0.2% [0.2% – 0.2%]	250 000 [210 000 – 290 000]
Latin America	1.6 million [1.4 million – 2.1 million]	94 000 [71 000 – 170 000]	0.4% [0.4% – 0.6%]	47 000 [39 000 – 75 000]
Caribbean	250 000 [230 000 – 280 000]	12 000 [9400 – 14 000]	1.1% [0.9% – 1.2%]	11 000 [8300 – 14 000]
Eastern Europe and Central Asia	1.1 million [980 000 – 1.3 million]	110 000 [86 000 – 130 000]	0.6% [0.6% – 0.8%]	53 000 [43 000 – 69 000]
Western and Central Europe and North America	2 300 000 [2.0 million – 3.0 million]	88 000 [44 000 – 160 000]	0.3% [0.3% – 0.5%]	27 000 [23 000 – 34 000]
TOTAL	35.0 million [33.2 million – 37.2 million]	2.1 million [1.9 million – 2.4 million]	0.8% [0.7% - 0.8%]	1.5 million [1.4 million – 1.7 million]

III Objectives of surveillance

The objectives of surveillance of HIV/AIDS are:

- To detect and confirm cases
- To detect and investigate alerts and outbreaks
- To identify possible external risk factors for contamination (sex worker, barber, blood transfusion, religious practice with invasive instrument…)

IV Alert and outbreak thresholds

An **alert** is reached whenever there is:

- A cluster of HIV/AIDS cases epi-linked is reported to MOPH
- An increase in HIV/AIDS annual/annualized incidence rate.

The **outbreak** is defined when the observed incidence exceeds the expected one.

V Procedural steps

The steps described below are recommended for the verification and investigation of HIV/AIDS alerts and outbreaks, including their confirmation.
Many of these actions will have to be undertaken concurrently as soon as the outbreak is suspected or confirmed. They are summarized in figure (4)

Step 1: Detect and verify alert

Alert is generated when there is an increase in the annual/annualized incidence rate or a cluster of cases epi-linked. In case of an increase in the annual/annualized incidence rate, the data is analyzed to search for a cluster of epi-linked cases.
Before confirming the alert, the data needs to be checked for validity and adequacy of case definition.
Usually, HIV cases are reported using specific reporting form (Annex 1).

Step 2: Identify artefacts

Search for artefacts will be done at central and mohafaza levels. Reporting behavior will be analyzed to identify new reporting sources and change in the way of reporting.
In case there was an evolution in the case definition, the frequency of cases before and after this change is carefully analyzed.

Step 3: Collect data

Treating physician is asked to fill an investigation form for the new HIV cases (Annex 2)
The investigation form includes the following information:

- Demography: gender, age, residence, nationality
- Illness: symptoms, clinical presentation and opportunistic infections
- Personal risk factors (including intercourse with one or multiple partners)
- Possible way of transmission (sexual, IVDU, contaminated instrument, transfusion perinatal transmission)...

Additional data can be collected from the treating physician or the medical file on:

- Disease stage
- Case management
- Blood results
- Personal risk factor that can be a preventable source of infection for others:
  - Mother-to-child health practices
  - Healthcare related practices (dialysis, blood, hospitalization, dental, acupuncture, blood exposure injuries…)
  - Other professional related practices (tattoos, body piercing, barber…)
  - Drug use practice
  - Other practices (sexual worker, invasive religious practice…

Step 4: Describe cases

Once the investigation forms are received and computed, the cases are described by time, place, and person. Also risky behaviors are described.

Based on clinical, epidemiological and laboratory findings, the outbreak is declared. Confirmed outbreak is reported to MoPH concerned units. The MOPH issues memos to inform health professionals.

Step 5: Find additional cases

Passive reporting is enhanced. Laboratory-based surveillance is used to collect additional cases on HIV testing.
The public is informed and the VCT centers are promoted.

Step 6: Assess non-personal risk factors

Identified non-personal risk factors will be further assessed with additional analytical and qualitative studies:

6a- Mother-to-child practices: assess preventive measures during pregnancy, birth and breast feeding
6b- Healthcare related practices (dialysis, blood, hospitalization, dental, acupuncture, blood exposure injuries…):
- Assess blood product safety
- Assess infectious control procedures (ICP) in health setting (dialysis, OR, health professionals…)

6c- Other professional related practices: Assess safety in premises (tattoos, barber, body piercing…)
6d- Drug use practice: Explore risky practices (preparation, sharing items….) via NGO
6e- Other practices: Assess safety among sexual workers, and specific invasive religious practice…

Step 7: Write summary report

Once the outbreak is contained, a summary report is prepared by the NAP team, and shared with partners.

Figure 2: HIV case classification >= 18 months

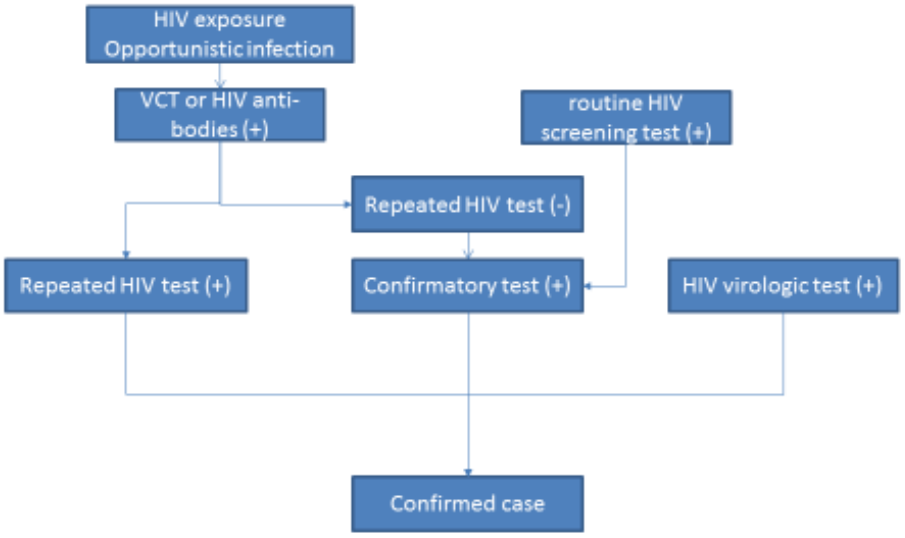
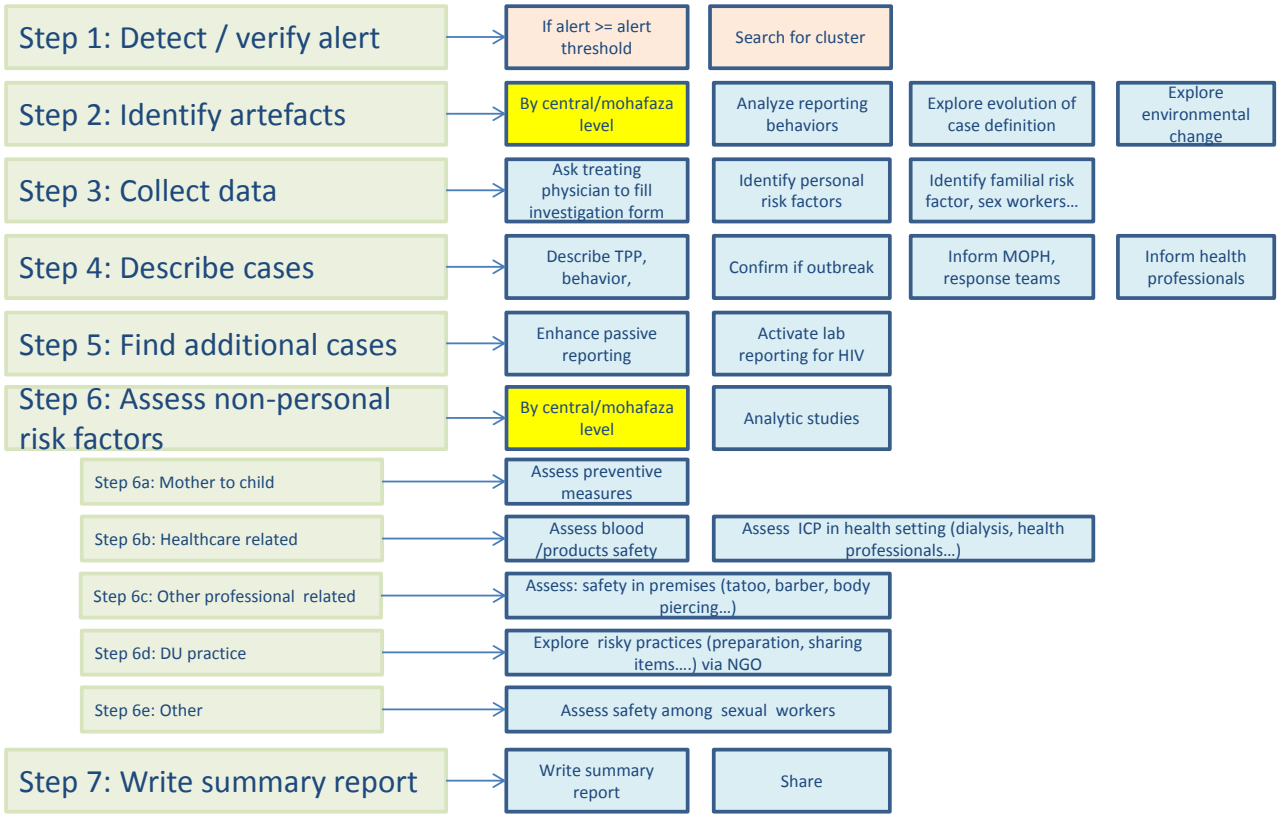


Figure 4: HIV investigation steps



الجمهورية اللبنانية

وزارة الصحة العامة

البرنامج الوطني لمكافحة السيدا

قسيمة ابلاغ حالات السيدا

اسم المريض: _____ اسم الأب: _____ اسم الام: _____

تاريخ الولادة: ____ / ____ / ____ الجنس: ☐ ذكر ☐ أنثى

يوم شهر سنة

الجنسية: _____ العنوان: البلدة _____ القضاء _____

الوضع الاجتماعي: ☐ متزوج ☐ أعزب ☐ مطلق ☐ أرمل

المستوى التعليمي: ☐ ابتدائي ☐ ثانوي ☐ جامعي ☐ أمي

المهنة: _____

Instructions

The treating physician is kindly asked to fill this form as accurately and completely as possible. Information confidentiality is guaranteed.
Return the forms as soon as possible to the National AIDS Progamme in the sealed envelope.

(Instructions)

Le médecin traitant est prié de remplir le format, le plus complétement et exactement possible. La confidentialité de l'information incluse est guarantie. Envoyer les fiches le plus tôt possible au Programme National de Lutte contre le SIDA dans l'enveloppe fermée.

Reason for Testing/ *(Raison du Test)*

- ☐ Voluntary / *(Volontaire)*
- ☐ Blood Donation / *(Donation de Sang)*
- ☐ Routine pre-op / *(Routine pre-op)*
- ☐ Clinical Suspicion / *(Suspicion Clinique)*
- ☐ Premarital / *(Prenuptial)*
- ☐ Visa/Work / *(Visa/Travail)*
- ☐ Others / *(Autres)* _____

Reserved to the National Prog.
(Reservé au Programme National)

Serial No. : _____

File No.: _____

Type of Test/ *(Type de Test)*

☐ Rapid / *(Rapide)* ☐ ELISA / *(ELISA)* ☐ WB / *(WB)*

☐ Others / *(Autres)* _____

Testing Date / *(Date du test)*

_____

Symptoms Codes

_____

_____

_____

Family Members Tests / *(Tests des Membres de la Famille)*

- Spouse / *(Epoux/épouse)*	☐ Pos	☐ Neg	Date _____
- Children / *(Enfants) (1)*	☐ Pos	☐ Neg	Date _____
(2)	☐ Pos	☐ Neg	Date _____
(3)	☐ Pos	☐ Neg	Date _____
- Other Sexual Contacts /*(Autres Contacts Sexuels)*	☐ Pos	☐ Neg	Date _____

STD Code

_____

_____

_____

Reserved to the National Prog. *(Reservé au Programme National)*	**Symptoms Codes**	**STD Code**
Serial No: _____	_____	_____
File No: _____	_____	_____

Risk Factors / ***(Facteurs de Risques)***

a - Sexual behavior / *(Comportement Sexuel)* ☐ Homosexual / *(Homosexuel)* ☐ Bisexual / *(Bisexuel)* ☐ Heterosexual / *(Heterosexuel)* ☐ None / *(Aucun)*

b - Multiple Partners / *(Partenaires Multiples)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

If yes, specify _____

(Si oui, spécifier) _____

c - Sexually Transmitted Diseases / *(Maladies Sexuellement transmissibles)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

If yes, specify _____

(Si oui, spécifier) _____

d - Multiple transfusions / *(Transfusions multiples)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

If yes, specify reason _____

(Si oui, spécifier cause) _____

e - Recent Travel / *(Voyages Récents)* ☐ Yes / *(Oui)* ☐ No / *(Non)* Country / *(Pays)* _____

Probable way of transmission / ***(Voie de transmission probable)***

Sexual / *(Sexuelle)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

IVDU *(Drogués par voie IV)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

Contaminated Instruments / *(Instruments Contaminés)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

Transfusion / *(Transfusion)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

If yes, specify / (Si oui, spécifier) Year / (Année) _____ - Country / (Pays) _____

Perinatal Transmission / *(Transmission Périnatale)* ☐ Yes / *(Oui)* ☐ No / *(Non)*

Clinical Manifestations / *(Manifestations cliniques)*

☐ Asymptomatic / *(Asymptomatique)*
☐ Fever (> 1 month, intermittent or constant) / *(Fièvre, > 1 mois, intermittente ou constante)*
☐ Weight loss (> 10% body weight) / *(Perte de Poids, > 10% du poids)*
☐ Cryptococcal meningitis / *(Meningite à cryptocoques)*
☐ Tuberculosis (Pulmonary or extra-pulmonary) / *(Tuberculose, pulmonaire ou extra pulmonaire)*
☐ Diarrehea (> 1 month, constant or intermittent) / *(Diarrhée, > 1 mois, constante ou intermittente)*
☐ Toxoplasmosis / *(Toxoplasmose)*
☐ Kaposis Sarcoma / *(Sarcome de Kaposi)*
☐ Candidiasis of the oesophagus / *(Candidose de l'œsophage)*
☐ Invasive Cervical cancer / *(Cancer Invasif du col de l'utérus)*
☐ Generalized lymphadenopathy / *(Adénopathie généralisée)*
☐ Generalized pruritic dermatitis / *(Dermatite prurigineuse généralisée)*
☐ Recurrent Pneumonia / *(Pneumonies répétées)*
☐ Sexually transmitted diseases, Specify/ *(Maladies Sexuellement transmissibles, Specifier):*_____

_____

☐ Others, Specify / *(Autres, Specifier):*_____

Physician / ***(Médecin)***

Name / *(Nom)* _____

Address / *(Adresse)* _____

Phone / *(Tél)* _____

Date of Reporting / ***(Date de déclaration)***

_____

Signature, Stamp

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

Case ID |_____|

Investigation form for HIV infection

This form is filled in coordination with the treating physician.
The name of the patient is not recorded in the form.
The form is filled in case of alert/outbreak of HIV

A Investigator

Investigator name	Setting	Date of investigation	Case ESU ID

B Patient demography

Age (year)	Gender	Nationality	Caza of residence

C Disease and diagnostic circumstances

▶Reason for testing:

☐ Symptoms:
- ☐Candidiasis
- ☐Cervical cancer
- ☐Coccidioidomycosis, Cryptococcosis, Cryptocsporidiosis
- ☐Cytomegalovirus disease
- ☐Encephalopathy
- ☐Herpes simplex persisting > 1 month
- ☐Histoplasmosis
- ☐Isosporiasis
- ☐Kaposi's sarcoma
- ☐Lymphoma
- ☐Mycobacterium avium complex
- ☐Pneumocystis
- ☐Pneumonia recurrent
- ☐Progressive multifocal leukoencephalopathy
- ☐Salmonella septicemia (recurrent)
- ☐Toxoplasmosis of the brain
- ☐Tuberculosis
- ☐Wasting syndrome
- ☐Other, specify:

☐ Screening:
- ☐Patient with reported risk factors
- ☐Contact tracing
- ☐Patient with no risk factors
- ☐Blood donor screening
- ☐Pre-medical / surgical screening
- ☐Prenuptial screening
- ☐Prenatal screening
- ☐Immigration screening
- ☐Voluntary counselling and testing
- ☐Other, specify:

▶Dates:

Year of first symptoms: |_____|
Year of first diagnosis: |_____|

▶Other STD infections:

- ☐Viral hepatitis B
- ☐Viral hepatitis C
- ☐Viral hepatitis D
- ☐Syphilis
- ☐Chlamydia
- ☐Gonococcie

Case ID |_____|

D Maternal transmission of HIV

▶Mother status: └Asymptomatic └Symptomatic, specify stade: ┌Unknown	▶Was the mother known to be infected? └Yes └No ┌Unknown
▶Did the mother have prenatal care? ┌Yes ┌No ┌Unknown	▶Did the mother have specific antiviral treatment? ┌Yes ┌No ┌Unknown
▶Clinical presentation of the child: └Asymptomatic └ Symptomatic, specify:	

**

E Laboratory testing

HIV	Test	1st: Date test	1st: Result	2nd: Date test	2nd : Result
	┐Elisa				
	┐Western Blot				
	┐Immunofluorescence AB test				
	┐PCR detection				
	┐P24 antigen				
	┐Isolation				
	┐Other, specify				

**

F General risk factors

Area	Factor	No	Yes	Specify
Professional				
	Health care professional	☐	☐	Profession:
	Contact with blood	☐	☐	
	Blood exposure injury	☐	☐	Nb:
	Blood exposure professions	☐	☐	
Health care				
	Admitted to hospitals	☐	☐	Nb:
	Had surgery	☐	☐	Nb:
	Had dialysis	☐	☐	Nb:
	Received blood products	☐	☐	Nb times:
	Received blood derived products	☐	☐	Products:
	Had transplantation	☐	☐	Organ:
	Dental care	☐	☐	
Household				
	Sharing toothbrushes	☐	☐	Frequency:
	Sharing "rasoirs"	☐	☐	Frequency:
	Sharing personal items	☐	☐	What:
Other				
	Participated in invasive religious rituals	☐	☐	
	Tatoos	☐	☐	
	Body piercing	☐	☐	

**

Case ID |_____|

G Confidential risk factors

Area	Factor	No	Yes	Specify
Drugs				
	Injecting drugs	☐	☐	
	Sharing needles	☐	☐	
	Invasive inhalation	☐	☐	
Prison				
	Incarcerated	☐	☐	
STD				
	STD: VHB, VHC, VHD, Gono, syphilis …	☐	☐	What:
	Contact with a person with STD: home	☐	☐	
	Contact with a person with STD: sex	☐	☐	
	Contact with a person with STD: other	☐	☐	Specify:
Sexual risk				
	Male partners	☐	☐	Nb:
	Female partners	☐	☐	Nb:
	Sexual workers	☐	☐	Nb:
	Protective behavior	☐	☐	

**

H Partners protection

Specify number

	Identified	Screened	Positive	Notes
Regular				
Casual				
Sex workers				
Other:				

**

I. Notes

Notes

Notes

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
ECDC	European Center for Disease Control and prevention
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
TPP	Time, Place and Person
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
USA-CDC	Centers for Disease Control and prevention (United States of America)
VPD	Vaccine Preventable Disease
VTM	Viral Transport Media
WHA	world Health Assembly
WHO	World Health Organization

Disease	ICD-10 code
Bilharziasis	B65
Brucellosis	A23
Creutzfeldt Jakob Disease	A80.1
Gonococcal infection	A54
Gonorrheal ophtalmia neonatorum	A54.3
Hepatitis A virus	B15
Hepatitis B virus	B16
Hepatitis C virus	B17.1
Hepatitis D virus	B17.0
Hepatitis E virus	B17.2
HIV	B20, B21, B22, B23, B24, Z21
HTLV1	C91.5
Hydatid disease / cystic echinococcosis	B67
Intestinal infection	A02, A03, A04, A06, A07, A08, B82
Intestinal infection: amibiasis	A06
Intestinal infection: shigellosis	A03
Legionellosis	A48.1, A48.2
Leishmaniasis	B55.9
Leishmaniasis: cutaneous and mucosal	B55.1, B55.2
Leishmaniasis: visceral	B55.0
Leprosy / Hansen Disease	A30
Malaria	B50, B51, B52, B53, B54
Syphilis	A51, A52, A53
Syphilis: congenital	A50
Tuberculosis	A15, A16, A17, A18, A19
Typhoid Fever	A01

Notes

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