REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH
Epidemiology Surveillance Program

Guideline for

Medical center, dispensary and field medical unit based surveillance system

2015

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

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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 circular no. 21(2015)

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Introduction

تعتبر المستوصفات والمراكز الصحية والعيادات الطبية الميدانية من المرافق الأساسية للقطاع الصحي في لبنان. وتعتبر علاقة وزارة الصحة العامة مع القطاع الأهلي الذي يرعى معظم هذه المؤسسات، علاقة مثالية يحتذى بها للتعاون بين القطاع العام ومؤسسات المجتمع المدني.

تقدم المستوصفات والمراكز الصحية والعيادات الطبية الميدانية خدمات وقائية وعلاجية. وهي تسهام في برامج صحية عديدة مثل برنامج التلقيح الموسع، برنامج الادوية الاساسية، برنامج الصحة الانجابية، برنامج الصحة النفسية وغيرها. فضلاً عن التزامها بتقديم رزمة شاملة من خدمات الرعاية الصحية الأولية.

ان نظام الابلاغ عن الامراض من قبل المستوصفات والمراكز الصحية والعيادات الطبية الميدانية هو احد مكونات نظام الترصد الوبائي الوطني. وبناء عليه وجب الاهتمام بتعزيز الابلاغ ونوعيته للحصول على بيانات دقيقة لمتابعة تطور الامراض وخاصة الامراض الانتقالية حسب الزمان و المكان والافراد والتحقيق بالانذارات الوبائية والفاشيات بغية مكافحتها.

يشمل هذا الدليل نظام الابلاغ القائم على المستوصفات والمراكز الصحية والعيادات الطبية الميدانية، بما فيها البيانات ومصادرها وطريقة جمعها وتدقيقها وتحليلها ومن ثم نشرها. وهو يساهم بتعزيز برنامج الترصد الوبائي الذي اثبت نجاحه وفعّاليته في حماية المجتمع من الأمراض والحفاظ على السلامة العامة.

اننا نشكر كل الجهات التي قامت باعداد وترجمة وطباعة هذا الدليل من فريق برنامج الترصد الوبائي وفريق منظمة الصحة العالمية والاتحاد الاوروبي ومفوضية الامم المتحدة العليا لشؤون اللاجئين. وكلنا ثقة من تجاوب المراكز المعنية بغية تعزيز النظام الصحي في لبنان.

مدير عام وزارة الصحة العامة

الدكتور وليد عمار

DG/HK1408154A

Contents

I. Generalities

A- Context

In 2002, the Ministry of Public Health has issued a circular mandating all medical centers and dispensaries in both public and philanthropic (NGO) sectors to report on monthly basis certain infectious diseases.
In 2006, with the WHO support, an early warning surveillance system based on medical centers and dispensaries with weekly reporting was implemented in the regions with war conflicts.
In 2009, the MOPH asked all medical centers and dispensaries all over Lebanon to participate in such surveillance system. In 2014, the decision was revised to include also the field medical units (Annex 1).

B- Regulations and framework

The MOPH decision no. 529/1 dated on 10th March 2014 specifies the data sources, the data mangement and the terms of reference of the various entities involved in the system: medical centers, dispensaries, field medical units, and MOPH teams at caza, mohafaza and central level.
The MOPH decision no. 964/2 dated on the 3rd July 2014 specifies the updated official weekly form used for reporting (Annex 2).

C- Objectives

The main objectives of medical center, dispensary and feild medical unit based surveillance system are:

- To enhance reporting from the ambulatory health system
- To monitor communicable diseases by time, place and person
- To detect alerts and outbreaks at local level.

The system aims to ensure timely detection and verification of alerts and timely response for outbreaks. Moreover, the system complements the national communicable diseases surveillance in order to have a more comprehensive overview about the current public health situation.

D- Objectives and intended users of this guideline

The guideline is designed primarily for:

- The staff of the medical centers, dispensaries and field medical units
- The MOPH staff
- In addition to other involved stakeholders.

At the end of this guideline, target audience will:

- Acquire knowledge about the objectives and the structure of the system
- Acquire knowledge about target syndromes, pathogens, modes of transmission, means of prevention and control
- Able to compute epidemiological indicators
- Able to recognize an alert, verify it and to initiate the investigation procedure and the response measures.

II. Information system

A- Data sources

The data sources are:

- Medical centers and dispensaries of the MOPH
- Medical centers and dispensaries of the MOSA
- Medical centers and dispensaries of the MND
- Medical centers and dispensaries of various NGO
- Field medical units

The number of operational medical centers and dispensaries in Lebanon is estimated to be 850-900.

B- Collected data

A weekly aggregated-data based form is used (Annex 2).
The form includes variables divided into the following categories:

- General identification
- Reportable health events
- Referral for inpatients
- Deaths

Table 1: Variables included in the medical center and dispensary based surveillance system form	
Categories	**Variables**
General identification	- Medical center / dispensary / field medical unit name - Location: mohafaza, caza and locality - Identification of the week, starting on Monday
Reportable health events	Target health events are classified by two age group (>5 and <5). **For vaccine preventable diseases:** - Number of acute flaccid paralysis cases - Number of measles cases - Number of rubella cases - Number of pertussis or whooping cough cases - Number of mumps cases **For other communicable diseases:** - Number of acute diarrhea cases - Number of bloody/dysenteric diarrhea cases - Number of cholera cases - Number of acute jaundice cases - Number of acute respiratory infection and flu-like illness cases - Number of unexplained fever cases - Number of scabies cases - Number of leishmaniasis cases - Number of cases related to other mandatory notifiable diseases - Number of cases during outbreak **Others** - Number of asthma cases - Number of accidents/injuries cases - Total number of other consultations
Inpatients	In case of referral to hospital, the following varialbes are specified: name, age, gender, locality, hospital name and medical diagnosis.
Deaths	In case of death in the health structure, the following variables are specified: name, age, gender, locality and cause of death.

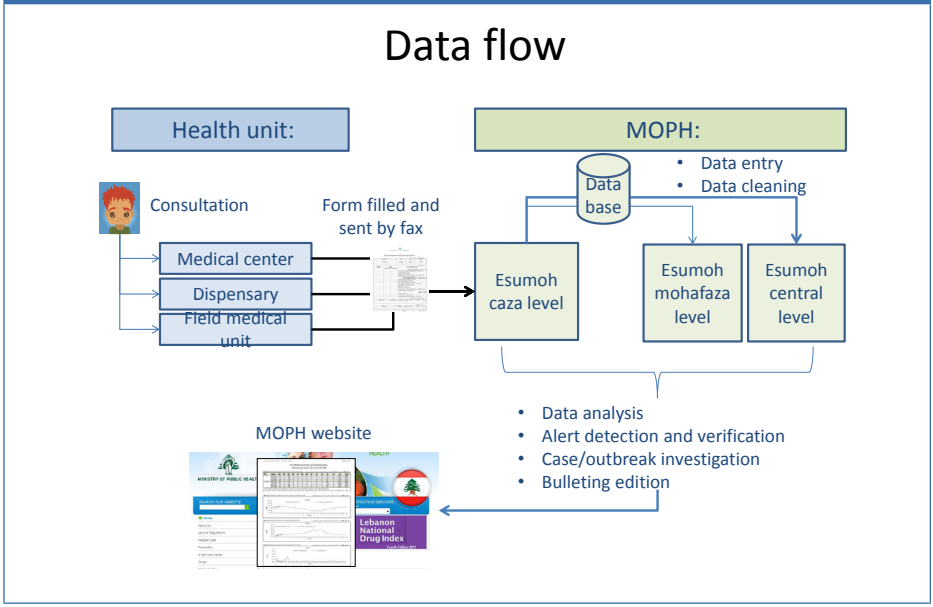
C- Data flow

1. At the health unit level (medical centers, dispensaries or field medical units), one person is designated to review the consultations logbook, to complete the weekly form and send it to the MOPH caza level, on weekly basis. The optimal is to send the form on each Monday for the week before. In case, there are communication troubles, the forms can be sent to the MOPH higher level as the mohafaza or central level. In Beirut, forms are sent directly to the central unit of the MOPH/ Epidemiological Surveillance Program.

2. At the MOPH caza level, one person is designated to ensure the follow up with the medical centers, dispensaries and field medical units. The person in charge receives and reviews the form. Data is checked. In case of error, the health unit is contacted. Received forms are entered in a specific local database, which allows data storage and automatic descriptive analysis. The person also sends the local database electronically to the MOPH/Esumoh central and corresponding mohafaza level. Local data bases are sent on weekly basis, by Wednesday (mid-week). If no data entry is performed at caza level due to shortage in human resources, the forms are sent on weekly basis to the corresponding mohafaza level.

3. At mohafaza and central level, the MOPH/Esumoh team receives the copies of the local databases. If there is gap in data-entry at caza level, the mohafaza level will ensure necessary data entry.For the forms provided by the field medical units, the data entry is performed at mohafaza level. Data cleaning is performed. Then, data is analyzed. Regular summary bulletin is generated and posted on the MOPH website.

Figure 1: Data flow



D- Data management

Upon reception of forms, there are several steps in managing the data:

1- Checking the form

Two points are verified:

1. The name of the medical center/dispensary/field medical unit is checked, in addition to the locality. Some units have the same "name" but located in different cities/villages. For each health unit, a specific code is given by MOPH/Esumoh.

2. The date of Monday starting the week is checked. If the specified date was not a Monday, the health unit is contacted or the preceding Monday is chosen.

2- Data entry

Data entry is conducted using dedicated application developed by the MOPH/Esumoh.

At the data entry, there are 2 screens available:

1- Screen related to the identification of the medical center / dispensary / field medical unit. For each health unit, the following is specified:
   - Name
   - Code (local code given by Esumoh)
   - Location: caza and locality
   - Focal point: name, phone and fax details
   - Director: name and phone details
   - Activity status: operational or not

   The information is entered once a year for each health unit and updated in case of any modifications.

2- Screen related to received weekly forms. A form is entered for each health unit and for each week. The screen is similar to the "paper" form.

3- Data cleaning

Data cleaning searches for duplicates and missing data.

Duplicates are defined as entering a form more than once for same dispensary and same week. In case there is duplication, the forms are checked for real duplication or data entry error. In case of duplication, the second form is deleted. In case of error, the data entry is corrected. Such corrections need to be done at the data-entry level.

In case of missing data, in particular for health unit name and code or week date, the forms are checked, and the data-entry is corrected.

4- Analysis

Data analysis is performed at MOPH /Esumoh caza, mohafaza and central levels. Several outputs are automatically generated.
The generated indicators are:

4.1- Completeness of reporting

Weekly completeness is the proportion of health units who have reported for a specific week among the total number of health units.

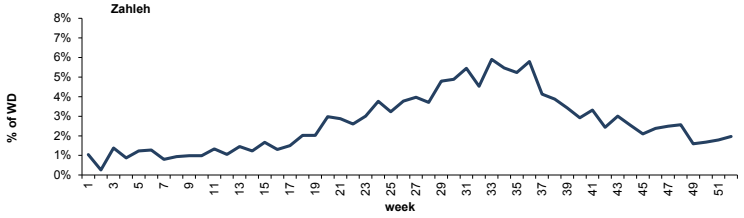
Cumulative completeness is the proportion of health units who have reported for a specific period among the total expected forms from the health units.

The completeness is computed for the caza, mohafaza and national level.

$$\text{Completeness } \% = \frac{\text{number of received forms from health units for a specific period} * 100}{\text{number of expected forms from all health for that period units}}$$

The completeness indicator is a percentage. The target of good reporting is to reach at least 80% of completeness.
An example is provided in annex 3.

Figure 2: Completeness by week, Zahleh caza, 2013



4.2- Weekly count

The weekly count of each target health event is monitored, and for each of the two age groups (under 5 years and 5 years and above).

For comparison, the weekly counts for the past 4 weeks are usually presented in a summary table.

Table 2: Counts of reported events, Zahleh caza, 2013, week 49 to week 52

Region	Age	Week	WD	BD	AR	ME	AJ	WC	MU	UF	AF	SC	IN	AT	OT	Total
Zahleh	< 5y	2013-49	31	0	183	0	0	0	0	0	0	7	39	9	1585	1854
		2013-50	18	0	111	0	0	0	0	0	0	2	20	3	933	1087
		2013-51	32	0	151	0	1	0	0	0	0	4	28	9	1410	1635
		2013-52	33	0	173	0	0	0	0	0	0	3	47	6	1433	1695
	>=5y	2013-49	34	0	188	0	1	0	0	0	0	8	112	0	1879	2236
		2013-50	20	0	103	0	0	0	0	0	0	1	63	0	985	1175
		2013-51	35	0	144	0	0	0	0	2	0	4	106	0	1806	2106
		2013-52	36	0	145	0	0	0	0	2	0	17	102	0	1504	1818

WD: watery diarrhea — BD: bloody diarrhea — AR: acute respiratory infection

ME: measles and rubella — AJ: acute jaundice — WC: whooping cough

MU: mumps — UF: unknown fever — AF: acute flaccid paralysis

SC: scabies — IN: injuries — AT: asthma

OT: other consultations

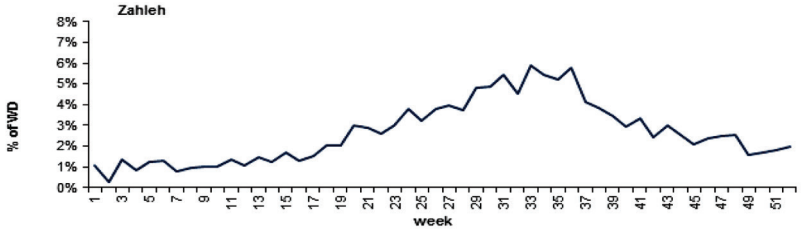
4.3- Weekly proportion

The weekly proportion of target event is the count of cases reported over the total number of consultations for the same week. Weekly proportions of the current year are compared with the results of the previous years.

$$\text{Weekly proportion} = \frac{\text{number of reported cases for a specific event} * 100}{\text{number of total consultations}}$$

The weekly proportions are presented as percentages. An example is provided in annex 4.

Figure 3: Weekly proportion of watery diarrhea over total consultations, Zahleh caza, 2013



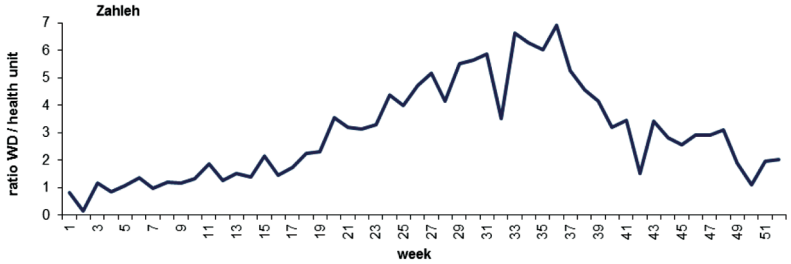
4.4- Weekly ratio per health unit

The weekly ratio is the number of cases for a target event over the number of reporting health units for a specific week.
Weekly results of the current year are compared with the results of the previous years.

$$\text{Weekly ratio per health unit} = \frac{\text{number of reported cases for a specific event for a week}}{\text{number of reporting health units for that week}}$$

An example is provided in annex 5.

Figure 4: Weekly ratio of watery diarrhea per health unit, Zahleh caza, 2013



5- Alert generation

Alerts are generated via 3 methods:

5.1- Fixed thresholds

They are defined by the Epidemiological Surveillance Program based on international or national guidelines.

- **One case of Acute Flaccid Paralysis (AFP) is an alert.** The case needs to be investigated. Is the case highly suspicious to be an acute poliomyelitis? Did the case receive all necessary anti-polio vaccines? Did the case travel to regions that reported poliomyelitis cases? The rapid investigation includes the collection of stool specimens within 14 days of paralysis onset for virological culture in WHO accredited laboratory. One confirmed polio case is enough to constitute an outbreak if the case was confirmed to be poliomyelitis; an urgent vaccination campaign will be needed to stop the virus circulation.

- **One case of measles or rubella is an alert.** There is need to confirm the case. Clinical specimen as oral fluid is collected within 28 days from rash, and tested for IgM detection at RHUH reference laboratory. If the case is confirmed, there is need to vaccinate the susceptible contacts. An outbreak is defined as having at least 3 confirmed cases. Supplementary vaccination is carried out to control the outbreak.

- **One severe case with dehydration or death following acute watery diarrhea is an alert.** There is need to rule out cholera. The collection of stool for bacteriological culture is an urgent step in case investigation. If the vibrio cholera type O1 or O139 is confirmed, correctives measures are to be started including ensure proper case management, isolation, vaccination, safe water, safe food, health education…

5.2- Relative increase

The relative increase is monitored by comparing:

- The current week with the average of the 3 previous weeks
- The average of the 4 past weeks with the average of the 48 previous weeks.

If the relative increase reached 2, the alert is generated. This method is used if the historical data cannot be used to determine the expected figures, in particular in the following situations:

- During the first years of the implementation of the surveillance system
- Or if there is change in the population demography profile.

The monitoring of relative increase is used for acute diarrhea, acute respiratory infection, pertussis, mumps, acute jaundice…

5.3- Historical data

Data of at least 5 previous years can be used to determine expected figures and baseline data. This can be used for common and endemic diseases, with the condition to have stable population.

III. Principles of response

A- Verification

In case of an alert, there is need to check various points:

- The absence of data entry error
- The medical diagnosis
- The true increase of cases reported by the health unit(s).

The MOPH conducts first verification by contacting the health unit.

B- Investigation

In case of verified alert, investigation is launched. This process is done by the MOPH teams, initiated by the caza level and supported by the mohafaza and central levels.

Outbreak investigation includes the following:

- Confirming the outbreak
- Confirming the disease
- Establishing a case definition
- Searching for additional cases
- Performing detailed description of the outbreak by time, place, & person
- Generating hypothesis
- Conducting additional analysis as further laboratory testing, environmental sampling, analytical studies to identify source of contamination and/or risk factor
- Guiding the corrective measures
- Documenting the outbreak and investigation findings
- Continuing surveillance.

C- Principles of corrective measures

Corrective measures are taken to prevent the spread of diseases.

Response measures may entitle the following:

- Ensure proper case management
- Control and stop the source of infection
- Contact vaccination and/or mass vaccination
- Ensure safe drinking water
- Ensure safe food
- Raise health awareness
- Ensure vector control
- Ensure infection control
- …

IV. Feedback

Regular epidemiological bulletin is generated by the mohafaza and central MOPH teams. The bulletin summarizes the methods and the main findings.

The bulletins are posted on the MOPH website. The annex 6 provides an example for the bulletin.

In addition, specific bulletin for field medical units is generated. The annex 7 provides an example of that bulletin.

Website of the Ministry of Public Health:
www.moph.gov.lb
(→ prevention, → surveillance, → dispensary)

V. Terms of reference of key players

A- The health unit: medical center, dispensary and field medical unit

Each health unit designates a focal person from the operational staff. The focal person is in charge to:

- Maintain and update the logbook for consultations. The logbook includes at least the following: date of consultation, patient name, age, nationality, reasons for consultations, medical diagnosis, and physician name. The logbook may be a hard copy or an electronical database
- Ask attending physicians and search for cases to be reported
- Fill the weekly form and send it to the MOPH caza level, on weekly basis
- Report to MOPH all mandatory notifiable diseases using the standard reporting form (Annex 8)
- Coordinate with MOPH in case of alert verification and outbreak investigation.

B- The MOPH caza team

At MOPH caza level, a person is designated to follow up with the ambulatory health units.
The terms of reference of this person are to:

- Maintain and update a list of all medical centers, dispensaries and field medical units, including the contacts details of the focal persons.
- Receive weekly forms from health units
- Check the information in the form
- Perform data entry
- Run automatic data analysis
- Extract alerts
- Conduct alert verification
- Initiate case/outbreak investigation
- Send the local database to the corresponding mohafaza and central MOPH teams
- Coordinate with partners for necessary corrective measures.

C- The MOPH mohafaza team

At the mohafaza level, the MOPH/Esumoh team is in charge to manage the surveillance system. Usually, one person is designated to ensure necessary follow up. The terms of reference are to:

- Complete necessary data entry
- Receive local databases from corresponding caza teams
- Send the local databases to the central MOPH teams
- Check for potential alerts
- Perform data cleaning
- Perform data analysis
- Monitor indicators
- Follow up for alert verification and case/outbreak investigation
- Edit epidemiological bulletin
- Coordinate with partners for necessary corrective measures.

D- The MOPH central team

At the central level, the MOPH/Esumoh team is in charge to support the surveillance system from medical centers, dispensaries, and field medical units.

The central team is in charge to:

- Revise the weekly form when needed
- Develop the database and the application
- Conduct necessary training for data entry, data cleaning and data analysis
- Conduct necessary training for the health units
- Receive local databases
- Revise the bulletins and upload them at the MOPH website
- Set thresholds to generate alerts
- Evaluate the indicators and the system
- Ensure the designation of reference laboratories
- Ensure the tasks of the mohafaza level in case there was lack of human resources at mohafaza level.

VI. Target events

A- Poliomyelitis due to wild poliovirus

Generalities	
Agent	- Virus: poliovirus (genus enterovirus). - 3 serotypes: 1, 2 and 3.
Incubation	7-14 days (3-35 days).
Period of communicability	7-10 days before onset, up to 3-6 weeks after onset. Virus is present in the throat 36 hours after infection, up to 1 week. Virus is present in feces 72 hours after infection, and up to 3-6 weeks.
Reservoir	Humans.
Modes of transmission	- Person-to-person: mainly faecal-oral route, and rarely pharyngeal. - Rarely through water and food.
Clinical	- 90-95% asymptomatic infection - 4-8% mild illness (influenza-like illness or gastro-intestintal illness) - 1-2% aseptic meningitis - <1% paralytic poliomyeltis.
Worldwide	- Endemic countries in 2013: Nigeria, Pakistan, and Afghanistan. - Since 2013: cases were reported in Syria and in Iraq. See: www.polioeradication.org
Lebanon	- Last local cases in 1994. - Last imported case in 2003. - Lebanon declared polio-free in 2002.
Specific control objective	Worldwide eradication initiative (1988). Since 1999, the poliovirus type 2 has been eradicated.

Surveillance	
Surveillance approach	Syndromic-based surveillance: acute flaccid paralysis (AFP).
Investigation: data collection about case	Clinical findings, medical diagnosis, CSF,EMG/ENG results, vaccination status, travel history, follow-up at 60 days for residual weakness
Investigation: clinical specimen collection from case	2 stool specimens from case within 14 days from paralysis onset.
Investigation: data collection about contacts	If polio or highly suspicion of polio: rapid survey on vaccination status (OPV3/IPV3 coverage) at the community level.
Investigation: clinical specimen collection from contacts	- If delay in specimens collection from case: stool specimens are collected from at least 3 contacts under 15 years. - If polio case: stool specimens are collected from siblings, neighbors and inpatients.
Test	Virological culture.
Laboratories	WHO accredited laboratory: Vacsera laboratory in Egypt.
Alert level	1 case of Acute Flaccid Paralysis under 15 years.
Outbreak level	1 confirmed polio case = outbreak.

Control	
Primary prevention	Immunization: 3 doses under 1 year, and 3-4 boosters > 1 year.
Case management	Symptomatic.
Isolation	Enteric precautions.
Outbreak response	National vaccination campaign.

Poliomyelitis case definition	
Confirmed case MOPH circular no. 34 (2012)	A confirmed case is a suspected case with isolation of wild poliovirus in stool specimens collected from the suspected case or from a close contact of the suspected case.
Suspected case MOPH circular no. 34 (2012)	A suspected case is defined as: - A child under 15 years of age presenting with acute flaccid paralysis AFP whatever was the medical diagnosis; - Or any person at any age with paralytic illness if poliomyelitis is suspected by a physician.

Forms	
Reporting	Standard reporting form or specific case reporting form for AFP.
Investigation	For case, contacts and neighborhood: specific polio investigation forms for further case investigation, specimen collection, rapid coverage survey, follow up at 60 days, and final classification.

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

B- Measles

Generalities	
Agent	Virus: measles virus, genus morbillivirus, family paramyxoviridae.
Incubation	10 days (7-18 days).
Period of communicability	4 days before rash and 4 days after rash onset.
Reservoir	Humans.
Modes of transmission	Person-to-person: - Direct contact with droplets, rarely indirect contact. - Airborne (if confined place).
Clinical	- Febril maculo-papular rash. - Complication: otitis media (7-9%), pneumonia (1-6%), gastro-enteritis (8%) and dehydration, blindness, convulsions (1/200), encephalitis (1/1000). - Encephalitis: post-infectious encephalitis 1 week from onset; or delayed acute encephalitis (weeks and months after onset). - Long term complication: sub-acute sclerosing pan-encephalitis, 7 years or more after onset (1/25000 case, and 1/8000 if onset under 2 years old). - Case fatality: 3-6% in developing countries, 1-3/1000 in developed countries.
Worldwide	- Worldwide. - In high coverage area: outbreak every 7-8 years. - In low coverage area: outbreak every 3-4 years.
Lebanon	Annual outbreaks from 2003 to 2007, and in 2013. Case fatality: 2/1000.
Specific control objective	Elimination goal (interrupt local circulation of the virus).

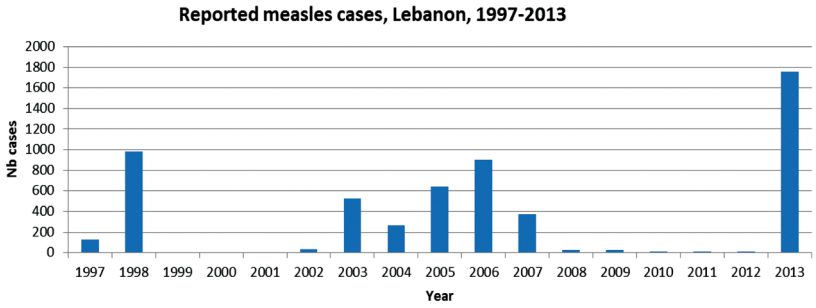
Surveillance	
Surveillance approach	Syndromic approach: febril macuplo-papular rash.
Investigation: data collection about case	Symptoms, vaccination status, travel history, contact tracing, pregnancy …
Investigation: clinical specimen collection from case	Serum, urine, oral fluid, dried blood, throat swab, (CSF).
Investigation: data collection about contacts	Cases among contact, travel history, vaccination status, pregnancy.
Investigation: clinical specimen collection from contacts	If cases among contact.
Test	- IgM (1-28 days from onset with serum, oral fluid, urine, or dried blood) - PCR (1-7 days with oral fluid, or dried blood) - Virological culture (1-5 days with urine, or throat swab)
Laboratories	- Fot isolation and virus detection: RHUH - Virus isolation: Tunis Pasteur, Central Public Health of Sultanat of Oman
Alert level	1 suspected case.
Outbreak level	At least 3 confirmed cases epidemiologically or virologically linked.

Control	
Primary prevention	Immunization with at least 2 doses after 1 year.
Case management	Symptomatic.
Isolation	- Droplet isolation. - If hospitalized: airborne isolation.
Contact prevention	MMR if within 72 hours of first contact with the patient.
Case response	Confirmation and vaccination of susceptible close contacts.
Oubtreak response	Immunization.

Measles case definition	
Laboratory confirmed case MOPH circular 11 (2013)	A suspect case with laboratory confirmation with presence of measles-specific IgM antibodies.
Epidemiologically-confirmed case MOPH circular 11 (2013)	A suspect case who has not had a blood test, and who is epidemiologically linked to a laboratory-confirmed case in which rash onset occurred 7-18 days earlier.
Suspected case / clinical case MOPH circular 11 (2013)	- Any person with: • Fever; • And maculo-papular (non vesicular) rash; - Or any person in whom a clinician suspects measles/ rubella infection.

Forms	
Reporting	Standard reporting form or specific measles/rubella reporting form.
Investigation	Specific measles/rubella investigation form.

National figures



C- Rubella (German measles / Rubeola)

Generalities	
Agent	Virus: rubella, genus rubullovirus, family Togaviridae.
Incubation	14-17 days.
Period of communicability	7 days before rash and 4 days after rash onset.
Reservoir	Humans.
Modes of transmission	Person-to-person: direct contact with droplets.
Clinical	- Febril maculo-papular rash. - Complications: thrombocytopenia (1/3000), post-infectious encephalitis (1/6000), rarely chronic arthritis. - In pregnant women, there is high risk of congenital rubella syndrome in particular if the infection was during the first trimester.
Worldwide	Worldwide. Outbreak ever 5-9 years.
Lebanon	An outbreak was reported in 2004.

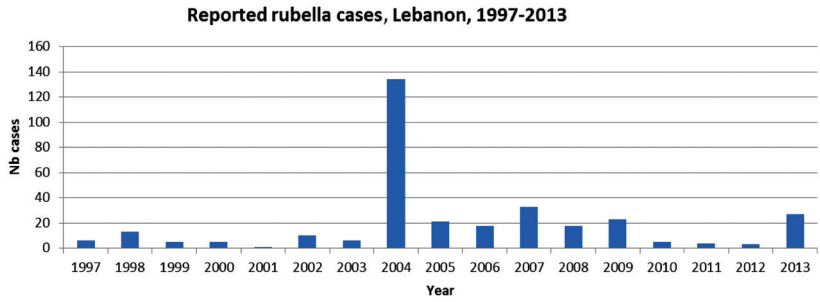
Surveillance	
Surveillance approach	Syndromic approach: febril macuplo-papular rash.
Investigation: data collection about case	Symptoms, vaccination status, travel history, contact, pregnancy.
Investigation: clinical specimen collection from case	Serum, urine, oral fluid, dried blood, throat swab.
Investigation: data collection about contacts	- Cases among contact, pregnant women among contacts. - Vaccination status of contacts.
Investigation: clinical specimen collection from contacts	If cases among contact.
Test	IgM, PCR, culture.
Laboratories	- For virus isolation and detection: RHUH. - For isolation and virus detection: Tunis Pasteur, Central Public Health Laboratory of Sultanat of Oman.
Alert level	1 suspected case.
Outbreak level	At least 3 confirmed cases epidemiologically linked.

Control	
Primary prevention	At least 1 dose during childhood.
Case management	Symptomatic treatment.
Isolation	- If hospitalization: contact and droplet isolation. - Prevent exposure to pregnant women.
Oubtreak response	Immunization.

Rubella case definition	
Laboratory confirmed case MOPH circular 12 (2013)	A suspected case with laboratory confirmation with presence of rubella-specific IgM antibodies.
Epidemiologically-confirmed case MOPH circular 12 (2013)	A suspected case who has not had a blood test and has an epidemiological link to a laboratory-confirmed case of rubella.
Suspected case / clinical case MOPH circular 12 (2013)	- Any person with: • Fever • And maculopapular (non vesicular) rash - Or any person in whom a clinician suspects measles/ rubella infection.

Forms	
Reporting	Standard reporting form or specific measles/rubella reporting form.
Investigation	Specific measles/rubella investigation form.

National figures



D- Pertussis

Generalities	
Agent	Bacteria: - Bordetella pertussis (the bacillus of pertussis). - Bordetella parapertussis (causes parapertussis).
Incubation	9-10 days (6-20 days).
Period of communicability	- During the early catarrahal phase (up to 3 weeks). - No longer after 5 days of antibiotic treatment.
Reservoir	- Humans. - Ovins for B. parapertussis.
Modes of transmission	Person-to-person: direct contact with respiratory discharges and droplets, rarely by indirect contact though contaminated objects.
Clinical	- Upper respiratory infection. - Complications: apnea (<1 y), encephalopathy, hernias, death. - Mis-diasgnosed among adults.
Worldwide	- Worldwide. - Outbreak every 3-4 years (in prevaccine era). - In high coverage area: incidence under 15 year is <1/100000.

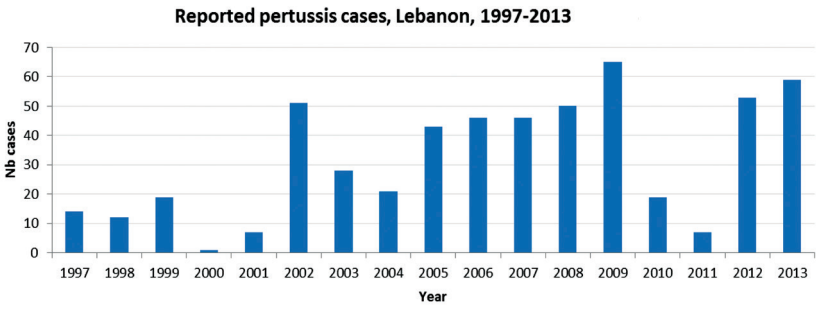
Surveillance	
Surveillance approach	Disease.
Investigation: data collection about case	Symptoms, complications, vaccination status.
Investigation: clinical specimen collection from case	Throat swab (for bacteriological culture).
Investigation: data collection about contacts	Presence of children under 1 year among close contacts.
Test	Bacteriological culture.
Laboratories	RHUH (planned).
Alert	Relative increase >=2.
Outbreak level	- Institutional outbreak = at least 3 cases epidemiologically linked with at least one confirmed case. - Community outbreak = if the number is higher than expected based on the historical data for a given population.

Control	
Primary prevention	Vaccine.
Post-exposure prevention	Erythromycin.
Case management	Eruthromycin or clarythromycin.
Isolation	Droplet precautions.
Mass prevention	Vaccination.

Pertussis case definition	
Confirmed case MOPH circular 109 (2006)	A suspected case that is laboratory confirmed with: - Isolation of Bordetella pertussis - Or detection of genomic sequences by polymerase chain reaction (PCR) - Or positive paired serology.
Suspected case MOPH circular 109 (2006)	A person with a cough lasting at least 2 weeks with at least one of the following symptoms: - Paroxysms (fits) of coughing - Inspiratory "whooping" - Post-tussive vomiting (vomiting immediately after coughing) OR a case diagnosed as pertussis by a physician.

Forms	
Reporting	Standard reporting form.
Investigation	Specific pertussis investigation form.

National figures



E- Mumps

Generalities	
Agent	Virus: mumps virus, genus rubulavirus, family paramyxoviridae.
Incubation	17 days (14-25 days).
Period of communicability	- Max 2 days prior to onset and 4 days after. - Virus is present in saliva 7 days prior and 9 days after parotiditis onset. - Virus is present in urine 6 days prior and 15 days after onset.
Reservoir	Humans.
Modes of transmission	Person to person transmission: mainly via droplets and may be airborne.
Clinical	- Parotiditis most common manifestation (30-40%) - Asymptomatic in 20% - Complications: orchitis, oophoritis, sensoneuronal loss, hearing loss, pancreatitis (4%), aseptic meningitis/encephalitis. Rarely nephritis, arthropathy, cardiac abnormalities, death.
Worldwide	Worldwide.

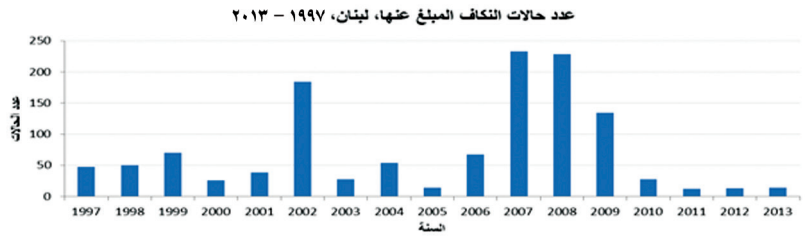
Surveillance	
Surveillance approach	Disease.
Investigation: data collection about case	Symptoms, complications, vaccination status, profession, institution...
Investigation: clinical specimen collection from case	- Serum, urine, oral fluid (1-6 weeks after onset). - CSF if meningitis.
Investigation: data collection about contacts	Cases among contact.
Tests	IgM, PCR, virological culture.
Laboratories	RHUH (planned).
Alert level	Relative increase >=2.
Outbreak level	- Institutional outbreak = at least 3 cases epidemiologically linked with at least one confirmed case. - Community outbreak = if the number is higher than expected based on the historical data for a given population.

Control	
Primary prevention	At least 2 doses after 1 year of age.
Isolation	Droplet precautions.
Contact prevention	Susceptible contacts should be offered immunization with MMR vaccine.
Mass prevention	Vaccine.

Mumps case definition	
Confirmed case MOPH circular 110 (2006)	A suspected case confirmed by laboratory by one of the following tests: - Isolation of mumps virus from clinical specimen (throat swab, urine or CSF). - Seroconversion or significant rise (at least four-fold) in serum mumps IgG titre (in the absence of mumps immunization in the preceding 6 weeks). - Positive serological test for mumps–specific IgM antibodies (in the absence of mumps immunization in the preceding 6 weeks).
Probable case MOPH circular 110 (2006)	Acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland, lasting 2 or more days without other apparent cause.

Forms	
Reporting	Standard reporting form.
Investigation	Specific mumps investigation form.

National figures



F- Watery, Bloody Diarrhea and Cholera

<table>
<tr><th colspan="2">Generalities</th></tr>
<tr><td>Agent</td><td>Etiological agents can be viral, bacterial, and parasitic:
1) Viral gastroenteritis: Rotavirus, Norovirus, Adenovirus, and Astrovirus …
2) Bacterial gastroenteritis: Cholera, Campylobacter sp., Escherichia coli, Salmonella, Shigella, Clostridium, Staphylococus aureus, Bacillus cereus …
3) Parasitic gastroenteritis: Giardia lambia, Cryptosporidim sp., Entamoeba histolytica …</td></tr>
<tr><td>Incubation</td><td>Varies with each agent.

<table><tr><th>Agent</th><th>Incubation period</th></tr><tr><td colspan="2">Virus</td></tr><tr><td>Adenovirus</td><td>1-10 days</td></tr><tr><td>Human rotavirus</td><td>1-3 days</td></tr><tr><td>Norovirus</td><td>12-48 hours</td></tr><tr><td colspan="2">Bacteria</td></tr><tr><td>Cholera</td><td>1-3 days</td></tr><tr><td>Campylobacter</td><td>2-5 days</td></tr><tr><td>E. coli</td><td>1-8 days</td></tr><tr><td>Salmonella</td><td>6-48 hours</td></tr><tr><td>Shigella</td><td>1-3 days</td></tr><tr><td>Staphylococcus aureus</td><td>2-6 hours</td></tr><tr><td colspan="2">Parasite</td></tr><tr><td>Giardia lamblia</td><td>7-14 days</td></tr><tr><td>Entamoeba histolytica</td><td>2-4 weeks</td></tr></table></td></tr>
<tr><td>Period of communicability</td><td>As long as the agent is excreted, in particular during the active disease.
For Salmonella, the excretion can last for several weeks.</td></tr>
</table>

Reservoir	Varies with each infectious agent.

Agent	Reservoir
Virus	
Adenovirus	Humans.
Human rotavirus	Humans.
Norovirus (Norwalk-like virus)	Humans.
Bacteria	
Cholera	Humans, aquatic environments.
Campylobacter	Domestic animals (cats, dogs), livestock (pigs, cattle, sheep), birds (poultry), polluted water.
E .coli	Mainly humans, cattle (for some E coli).
Salmonella	Domestic and wild animals. Also humans, i.e. patients and convalescent carriers.
Shigella	Humans.
Staphylococcus aureus	Humans (skin, nose, throat). S. aureus is carried by about 25 – 40 % of the healthy population.
Parasite	
Giardia lamblia	Humans (principal reservoir), dogs, cats, beavers, and other animals.
Entamoeba histolytica	Mainly humans, but also dogs and rats. The organism is also found in sewage used for irrigation.

<table>
<tr><td>Modes of transmission</td><td>- Person-to-person transmission: fecal oral route.
- Ingestion of contaminated food: by food handler or harvested from contaminated water (seafood and vegetables).
- Ingestion of contaminated water or drinks.</td></tr>
<tr><td>Clinical</td><td>Either acute watery diarrhea or mucous bloody diarrhea. Most of the agents cause watery diarrhea. The agents which can cause bloody diarrhea are: E. coli, Salmonella, Shigella, Campylobacter and Entamoeba histolytica.
<table>
<tr><th>Agent</th><th>Clinical</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Adenovirus</td><td>Fever, vomiting, watery non-inflammatory diarrhoea.</td></tr>
<tr><td>Human rotavirus</td><td>Fever, vomiting, watery non-inflammatory diarrhoea.</td></tr>
<tr><td>Norovirus (Norwalk-like virus)</td><td>Watery diarrhea, vomiting, nausea.</td></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Cholera</td><td>Profuse watery diarrhoea which can lead to severe dehydration, collapse and death within a few hours.</td></tr>
<tr><td>Campylobacter</td><td>Fever, severe abdominal pain, nausea and diarrhoea which can vary from slight to profuse and watery, sometimes containing blood or mucus.</td></tr>
<tr><td>E .coli</td><td>Fever, abdominal pain, vomiting, diarrhea (watery or bloody).</td></tr>
<tr><td>Salmonella</td><td>Fever, headache, nausea, vomiting, abdominal pain and diarrhoea.</td></tr>
<tr><td>Shigella</td><td>Fever, abdominal pain, vomiting, diarrhea (watery or bloody).</td></tr>
<tr><td>Staphylococcus aureus</td><td>Severe nausea, cramps, vomiting and sometimes diarrhea.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Clinical</td><td>
<table>
<tr><th>Agent</th><th>Clinical</th></tr>
<tr><td colspan="2">Parasite</td></tr>
<tr><td>Giardia lamblia</td><td>The majority of infections are asymptomatic. Symptoms include low grade fever, nausea, chills, epigastric pain and sudden onset of watery diarrhea.
Chronic infections can occur and lead to dehydration, malabsorption, weight lost and impaired pancreatic function.</td></tr>
<tr><td>Entamoeba histolytica</td><td>Fever, severe bloody diarrhoea, stomach pain, and vomiting. Most infections remain symptomless.</td></tr>
</table>
</td></tr>
<tr><td>Worldwide epidemiology</td><td>- Seasonal pattern
- or occasional outbreaks</td></tr>
</table>

Surveillance	
Surveillance approach	Syndromic: acute diarrhea.
Investigation: data collection about case	Clinical presentation, drinking water consumption, food consumption, occupation.
Investigation: clinical specimen collection from case	Stool in clean recipient or Cary Blair media.
Investigation: data collection about contacts	Search of other cases among contacts.
Investigation: other specimens	Stool from cases among contacts, water samples, food samples...
Tests	For clinincal specimens: - Stool direct exam (Entamoeba) - Stool bacteriological culture (bacteria) - Antigen detection in stool (Rotavirus) - Virus detection in stool as PCR (Norovirus, Adenovirus…)

Laboratories	- Bacteriological culture: clinical laboratories - For bacterial typing: reference laboratories - For virus detection: reference laboratories - For water and food testing: national reference laboratories
Alert level	- If occurrence of dehydration or death following acute diarrhea: suspicion of cholera - If relative increase of cases reached 2 or more for the current week compared to the average of the 3 previous weeks - If the proportion or ratio reached 2SD from the average proportion/ratio observed in the previous 3 years, in stable population
Outbreak level	- 1 case of confirmed cholera: outbreak - Occurrence of unexpected increase of cases in specified time, place and person with specific clinical criteria - Occurrence of unexpected increase of cases in specified time, place and person with specific identified infectious agent

Control	
Prevention	- Personal hygiene and hand washing - Ensure safe drinking water - Ensure safe food - For specific agents: vaccination (Cholera, Rotavirus)
Case management	- Ensure adequate rehydration - Ensure antibiotics if bacterial agents - Ensure anti-parasitic treatment if parasite agents
Isolation	Enteric precautions
Outbreak response	Control of the source of infection and risk factors

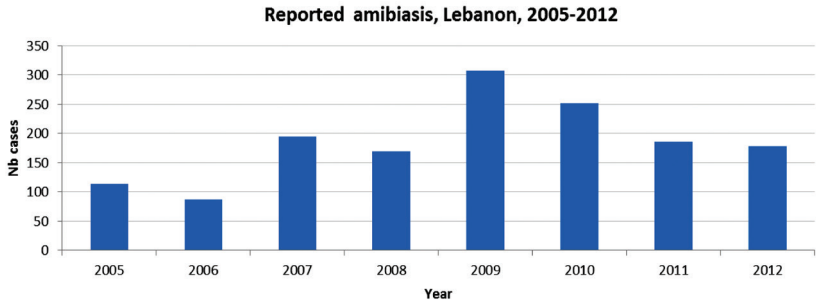
Confirmed case definitions	
Adenovirus: confirmed case	A case presenting watery diarrhea with laboratory identification of the virus using antigen detection, or polymerase chain reaction PCR assay, or virus isolation.
Amebic dysentery: confirmed case MOPH Circular 51 (2007)	A case presenting acute diarrhoea with bloody or mucoid diarrhoea with laboratory confirmation through microscopic demonstration of trophozoites or cysts of Entamoeba histolytica in fresh or suitable preserved faecal specimens or other clinical specimens.
Campylobacter: confirmed case	A case presenting acute diarrhoea watery or bloody with Campylobacter isolation in a stool specimen.
Cholera: confirmed case MOPH circular 112 (2006)	Isolation of Vibrio cholerae O1 or O139 from stool in any patient with diarrhoea.
E. coli: confirmed case	Watery or bloody diarrhea with laboratory confirmation through E. coli isolation from stool specimen.
Giardia lamblia: confirmed case	Watery diarrhea with laboratory confirmation using: - Demonstration of G. lamblia cysts in stool - Demonstration of G. lamblia trophozoites in stool, duodenal fluid, or small-bowel biopsy, or - Demonstration of G. lamblia antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay).
Norovirus: confirmed case	Watery diarrhea with laboratory confirmation through virus detection by reverse transcription-polymerase chain reaction (RT-PCR) method using stool (or vomitus specimen).
Rotavirus: confirmed case	A case presenting watery diarrhea with laboratory confirmation through: - Detection of rotavirus antigen in stool with an enzyme immunoassay (EIA), or - Reverse transcriptase polymerase chain reaction (RT-PCR) methods

Salmonellosis: confirmed case	A case presenting acute diarrhoea with laboratory confirmation through isolation of Salmonella sp. from stool.
Shigellosis: confirmed case MOPH Circular 51 (2007)	A case presenting acute diarrhoea with visible blood in stool, with: - Laboratory confirmation through isolation of Shigella sp from stool - Or, during epidemic situation, presence of an epidemiological link to a laboratory confirmed case.
Staphylococcus aureus: confirmed case	A case presenting diarrhea with a laboratory confirmation through toxin-producing Staphylococcus aureus detection in stool (or vomit specimens).

Clinical case definitions	
Watery diarrhea	>=3 loose and/or bloody and/or mucous stools in the past 24 hours with/without dehydration.
Bloody/mucous diarrhea MOPH Circular 51 (2007)	A case presenting with acute diarrhea with bloody or mucoid diarrhea.
Cholera: suspected case	- In area where the disease is not known to be present: severe dehydration or death from acute watery diarrhea - In area where cholera is endemic: acute watery diarrhea, with or without vomiting in a patient aged 5 years or more - In an area where there is a cholera epidemic: acute watery diarrhea, with or without vomiting in any patient

Forms	
Reporting form	Standard reporting form.
Investigation form	Specific investigation forms for Cholera, dysentery, food poisoning.

National figures



G- Acute Jaundice

Generalities	
Agent	Primarily: Hepatitis A virus HAV. But also can be caused by: - Viruses with fecal oral transmission: Hepatitis E virus HEV - Viruses with blood or sexual transmission: Hepatitis B virus HBV, Hepatitis C virus HCV, and Hepatitis D virus HDV
Incubation	- HAV: 28-30 days (15-50 days) - HEV: 26-42 days (15-64 days)
Period of communicability	HAV: during the second half of the incubation period and up to one week after jaundice onset.
Reservoir	HAV: Humans, rarely chimpanzees and other primates.
Modes of transmission	For HAV and HEV: - 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 For HBV, HCV, HDV: sexual transmission, blood-borne transmission, materno-foetal transmission …
Clinical	- Febrile jaundice - For HAV: can be asymptomatic in childhood. Case fatality: 0.1-0.3 % (1.8% for >50 years) - No chronic hepatitis - For HEV: case fatality may reach 20% for pregnant women (if infection during the 3rd trimester)
Worldwide	For HAV: worldwide, related to hygienic and sanitary conditions. Three epidemiological profiles: - High endemicity: childhood infection, no outbreaks - Middle endemicity: outbreaks among children and adults - Low endemicity: cases among households, sexual contacts, day care centers, travelers …
Lebanon	- VHA: Endemic with middle endemicity profile - VHE: not reported from 1994 to 2013

Surveillance for VHA and VHE	
Surveillance approach	Syndromic: febrile acute jaundice
Investigation: data collection about case	Clinical presentation, occupation, drinking water consumption, food consumption...
Investigation: clinical specimen collection from case	Serum
Investigation: data collection about contacts	Search of other cases among contacts
Investigation: other specimens	Water, food…
Tests	Clinical specimens: VHA IgM serology
Laboratories	- VHA: clinical laboratories - VHE: reference laboratories
Alert level	For VHA: - If relative increase of cases reached 2 or more for the current week compared to the average of the 3 previous weeks - If the proportion or ratio reached 2SD from the average proportion/ratio observed in the previous 3 years, in stable population For VHE: any probable case.
Outbreak level	- For VHA: Occurrence of unexpected increase of cases of VHA in specified time, place and person - For VHE: 1 case of confirmed VHE is an outbreak

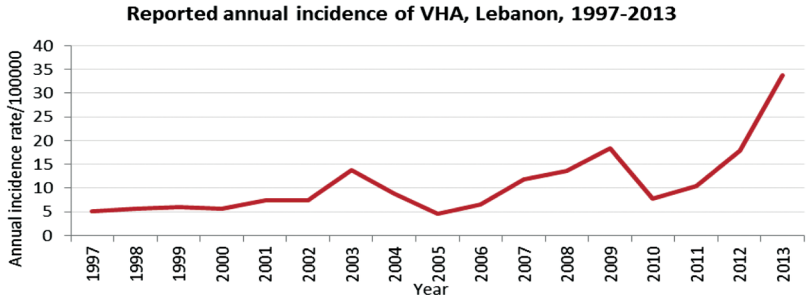
Control for VHA and VHE	
Prevention	Personal hygiene, water safety, food safety, and sanitation. Hepatitis A vaccine may be used.
Case management	Symptomatic
Isolation	Enteric precautions
Outbreak response	Control of the sources of infection and risk factors

Case definitions for HVA	
VHA: Confirmed case MOPH circular 47 (2007)	- 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).
VHA: Suspected case MOPH circular 47 (2007)	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.

Case definitions for VHE	
VHE: confirmed case MOPH circular 35 (2007)	Case confirmed by laboratory testing with presence of IgM anti-HEV antibodies.
VHE: probable case MOPH circular 35 (2007)	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 form	Standard reporting form
Investigation form	Specific investigation form for VHA/VHE

National figures



H- Acute Respiratory Infection

<table>
<tr><th colspan="2">Generalities</th></tr>
<tr><td>Agent</td><td>Acute Respiratory Infection (ARI) is caused by more than 200 different viruses, a number of bacteria and parasites.
Causative agents include:

1) Viruses: Rhinovirus, Respiratory Synctial virus, Influenza virus, Parainfluenza virus, Human Metapneumovirus, Adenovirus, and Coronavirus …

2) Bacteria (less common): Streptococcus pneumoniae, Mycoplasma pneumoniae, Haemophilus influenzae, Chlamydophila pneumonia, Coxiella burnetii and Legionella pneumophilia …

3) Parasites</td></tr>
<tr><td>Incubation</td><td>Varies among infectious agents.

<table><tr><th>Agent</th><th>Incubation period</th></tr><tr><td colspan="2">Virus</td></tr><tr><td>Influenza</td><td>1-7 days</td></tr><tr><td>Human para-influenza virus</td><td>2-4 days</td></tr><tr><td>Adenovirus</td><td>1-10 days</td></tr><tr><td>Rhinovirus</td><td>2-3 days</td></tr><tr><td>Classical human coronavirus</td><td>2-4 days</td></tr><tr><td>Respiratory syncytial virus</td><td>2-8 days</td></tr><tr><td>Human metapneumovirus</td><td>5-9 days</td></tr><tr><td colspan="2">Bacteria</td></tr><tr><td>Streptococcus pneumonia</td><td>1-3 days</td></tr><tr><td>Haemophilus influenza</td><td>2-4 days</td></tr><tr><td>Mycoplasma pneumonia</td><td>6-32 days</td></tr></table></td></tr>
<tr><td>Period of communicability</td><td>Usually, infectious agents are transmitted during the active disease.</td></tr>
</table>

<table>
<tr><td>Reservoir</td><td>Varies among infectious agents..

<table>
<tr><th>Agent</th><th>Incubation period</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Influenza</td><td>Humans, birds, pigs, horses, seals, whales</td></tr>
<tr><td>Human para-influenza virus</td><td>Humans</td></tr>
<tr><td>Adenovirus</td><td>Humans</td></tr>
<tr><td>Rhinovirus</td><td>Humans</td></tr>
<tr><td>Classical human coronavirus</td><td>Humans</td></tr>
<tr><td>Respiratory syncytial virus</td><td>Humans</td></tr>
<tr><td>Human metapneumovirus</td><td>Humans</td></tr>
<tr><td colspan="2">Bacteria</td></tr>
<tr><td>Streptococcus pneumonia</td><td>Humans</td></tr>
<tr><td>Haemophilus influenza</td><td>Humans</td></tr>
<tr><td>Mycoplasma pneumonia</td><td>Humans</td></tr>
</table></td></tr>
<tr><td>Modes of transmission</td><td>- Person-to-person: direct or indirect contact with infected droplets
- Airborne if confined place</td></tr>
<tr><td>Clinical</td><td>- Upper respiratory infections have usually mild clinical presentation with fever with cough, rhinorrhea or sore throat
- Lower respiratory infections with serious clinical presentation: bronchiolitis, bronchitis, pneumonia

Some infectious agents may cause additional symptoms:
<table>
<tr><th>Agent</th><th>Additional presentation</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Adenovirus</td><td>Gastroenteritis, conjunctivitis, cystitis, and less commonly, neurological disease.</td></tr>
<tr><td>Classical human coronavirus</td><td>Gastroenteritis, encephalitis</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Clinical</td><td>
<table>
<tr><th colspan="2">Bacteria</th></tr>
<tr><td>Streptococcus pneumoniae</td><td>Streptococcal skin infection, scarlet fever, cellulitis, otitis media, rheumatic fever, toxic shock-like syndrome</td></tr>
<tr><td>Haemophilus influenza</td><td>Bacterial meningitis, epiglottitis</td></tr>
</table>
</td></tr>
<tr><td>Worldwide epidemiology</td><td>Varies depending on the infectious agents.
<table>
<tr><th>Agent</th><th>Epidemiology pattern</th></tr>
<tr><td colspan="2">Virus</td></tr>
<tr><td>Influenza</td><td>Worldwide. Usually, it occurs on seasonal pattern during the late fall and winter seasons. It can cause localized outbreaks, and sporadic cases.
Rarely, it causes pandemic if new strain appeared with the ability of human-to-human transmission. In the past, worldwide pandemics have occurred at 10 to 40 year intervals.</td></tr>
<tr><td>Human para-influenza virus</td><td>Worldwide. Present year-round. Seasonal patterns are observed, with biennial epidemics. It is estimated to cause 10-12% of lower respiratory infection.
It also may cause nosocomial infections.</td></tr>
<tr><td>Adenovirus</td><td>Worldwide. It has seasonal pattern in temperate regions, with highest incidences in the fall, winter and early spring.</td></tr>
<tr><td>Rhinovirus</td><td>Worldwide. It is present in the community year-round. It accounts for more than 80% of common colds during high prevalence seasons in autumn between September to November in temperate climates.</td></tr>
</table>
</td></tr>
</table>

Worldwide epidemiology

Agent	Epidemiology pattern
Virus	
Classical human coronavirus	Worldwide. It is causing 10-15% of common cold cases. It has seasonal pattern with most cases occurring in winter.
Respiratory syncytial virus	Worldwide. It follows a seasonal pattern with annual outbreaks during fall, winter, and early spring. It is the most common cause of bronchiolitis and pneumonia among infants and young children. It is also a major cause of nosocomial infections.
Human metapneumovirus	Worldwide, with seasonal pattern during winter season.
Bacteria	
Streptococcus pneumoniae	Worldwide. It may be endemic, epidemic or sporadic.
Haemophilus influenza	Worldwide. The incidence is decreasing since the use of the vaccine.
Mycoplasma pneumoniae	Worldwide. Cases appear as sporadic, or in endemic area. Occasionally, epidemics can occur in institutions.

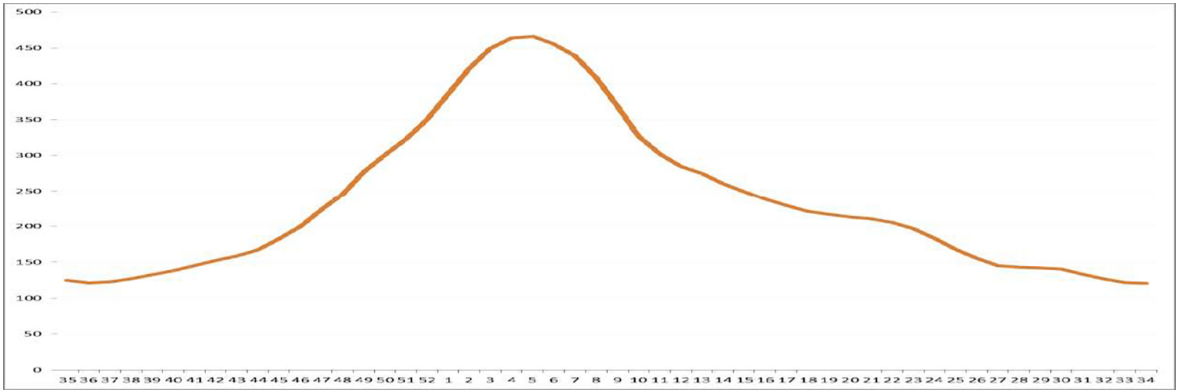
Surveillance	
Surveillance approach	Syndromic approach: acute respiratory infection
Investigation: data collection about case	Clinical presentation, severity, travel history, contact with animals, occupation …
Investigation: clinical specimen collection from case	- Sputum - Throat/nasal swab using Amies swab for bacterial agents, or swabs with Viral Transport Media VTM for viral agents - For inpatients: deep tracheal aspirate, broncho-alveolar lavage …
Investigation: data collection about contacts	Search of cases among contacts, presence of dead animals …
Tests	- For bacterial and parasitic agents: culture - For viral agents: PCR, virus isolation
Laboratories	- Bacteriological/parasitic culture: clinical laboratories - Virus detection: national reference laboratory (RHUH) - Virus culture: international reference laboratories
Alert level	- The presence of cluster of ARI cases outside of the respiratory infections normal season - The presence of cluster of ARI cases with at least 2 severe cases (admitted to ICU or death)
Outbreak level	- 1 case of confirmed novel virus (novel influenza, novel coronavirus…): outbreak - Occurrence of unexpected increase of cases in specified time, place and person with specific clinical criteria - Occurrence of unexpected increase of cases in specified time, place and person with specific identified infectious agent

Control	
Prevention	- Minimize close contact with droplets - Frequent hand washing either soap and water or alcohol-based hand sanitizers - Cough etiquette
Case management	- Antibiotics for bacterial infections - Anti-parasitic for parasitic infections - Supportive with or without antivirals for viral infections
Isolation	- Droplet precautions - Airborne precautions if confined area or generating aerosol procedures
Outbreak response	- Raise awareness - Isolation with or without quarantine - Vaccination

Case definitions	
Virus agents: confirmed case	Case with positive PCR testing or positive virus culture
Bacterial agents: confirmed case	Case with positive bacteriological culture from respiratory or blood specimens
Suspected case	Influenza-like illness (ILI): case with fever and cough or coryza (runny nose) or sore throat or dyspnea.

Forms	
Reporting	For novel influenza and novel coronavirus (SARS, MERS-COV): standard reporting form
Investigation	Specific investigation forms for novel influenza and novel coronavirus.

National figures: Weekly ARI cases from the MOPH visa system, Lebanon 2007-2012 (excluding 2009)



I- Scabies

Generalities	
Agent	The human itch mite Sarcoptes scabiei hominis (skin parasite). The mite burrows into the upper layer of the skin where it lives and lies its eggs.
Incubation	2-6 weeks for first time infection and 1-4 days for repeated infection.
Period of communicability	As long as the mites are found on the skin of an infested person (even before symptoms appear).
Reservoir	Humans, cats, dogs, sheep.
Modes of transmission	- Direct contact with skin sores of an infested person - Sharing beds, bedding, towels with an infested person
Clinical	- Continuous skin itching especially during sleep - Rash in the form of small pimples in extremities - Skin sores due to secondary bacterial infection
Worldwide	Worldwide. Mainly homeless people, refugees, displaced communities, prisons …

Surveillance	
Surveillance approach	Disease
Investigation	Search of cases among contact
Test	Diagnosed clinically

Control	
Prevention	Personal hygiene
Case management	-Anti-scabies treatment -Proper hygienic measures
Isolation	Contact precautions
Outbreak response	- Prepare health education programs to promote proper hygienic measures to control spread of disease - Ensure that cases are taking adequate treatment (benzyl benzoate)

Case definitions	
Suspected case	A person with clinical symptoms of a persistent pruritic rash.
Confirmed case	A person who has a skin scraping with mites, or mite eggs identified by a trained health care professional.
Contact case	Anyone with a close skin to skin contact with a case.

J- Leishmaniasis

Generalities	
Agent	- Protozoa: Leishmania - Cutaneous form: 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	- Cutaneous form: 1 week to several months - Visceral form: 2-6 months
Period of communicability	As long as the parasite is in the blood and may infect phlebotomes.
Reservoir	- Cutaneous form: Humans, wild rodents, hyraxes, edentates, marsupials, domestic dogs - Visceral form: Humans, wild canidae, domestic dogs
Modes of transmission	Bite of infective female phlebotomines (sandflies).
Clinical	- Cutaneous form: Intracellular parasite in humans causing single or multiple macule skin lesions then papule that enlarge and become indolent ulcer. Involvement of the mucosa of the nasopharynx is characterized by progressive tissue destruction. - Visceral form: Chronic systematic disease characterized by fever, hepato-splenomegaly, lymphoanedopathy, anemia, leukopenia, thrombocytopenia. Complication: death if untreated.
Worldwide	Asia (Middle East …), Africa (Sub-Sahara …) and America (Central and South America).
In Lebanon	Annually, the average of reported cases was 2. Since 2013, the number of reported cases of Leishmaniasis is increasing (1033 in 2013). Almost all new cases are Syrian.

Surveillance	
Surveillance approach	Disease
Investigation: data collection about case	Clinical presentation, nationality, travel history, date of onset …
Investigation: clinical specimen collection from case	- Cutaneous form: skin punch biopsy - Visceral form: bone marrow, spleen, liver, lymph node, blood
Investigation: data collection about contacts	- Search of similar cases among contact - Search for sandflies
Tests	- Histopathology: skin biopsy and other biopsies - Visceral form: serological tests
Laboratories	Reference laboratories

Control	
Prevention	- Reduce bites: reduce exposition of skin to sand flies (cover skin), apply insect repellent - Vector control: use insecticides
Case management	Specific treatment protocols in designated MOPH public hospitals
Isolation	Cover the cutaneous lesions
Outbreak response	- Ensure proper case management - Vector control

Case definitions	
Cutaneous Leishmania: Confirmed case MOPH circular 34 (2013)	A suspected case with laboratory confirmation: - With parasitological confirmation: positive stained or positive culture from lesion of Leishmania - And/or, for mucosal leishmaniasis only, serological confirmation: immunofluorescent assay, ELISA
Visceral Leishmania: Confirmed case MOPH circular 122 (2006)	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.
Cutaneous Leishmania: Suspected case MOPH circular 34 (2013)	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, beck, arms and legs are the common 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.

K- Other

1- Other notifiable diseases

The Lebanese Law on communicable diseases issued in 1957 requests from physicians to report to MOPH on specific diseases.
The list of mandatory notifiable diseases, updated in 2014, includes 42 diseases. Two groups are identified:

- **Group A:** Immediately notifiable diseases requiring immediate investigation and response. They are acute flaccid paralysis and poliomyelitis, anthrax, cholera, diphtheria, food poisoning, hemorrhagic fevers, novel influenza virus, invasive coronavirus, invasive meningococcal disease, measles, meningitis, mumps, pertussis, plague, rabies, rubella and congenital rubella syndrome, smallpox, tetanus and neonatal tetanus, unusual or unexpected event

- **Group B:** Weekly notifiable diseases. They are bilharzias, brucellosis, Creutzfledt-Jacob Disease, gonorrhea, viral hepatitis (A, B, C, D, and E), Human T-cell lymphotropic1 (HTCL1), hydatic cyst, intestinal infections, legionellosis, leishmaniasis, leprosy, syphilis and congenital syphilism and typhoid fever.

Reporting is done by filling the standard reporting form (Annex 8) and sending it to the MOPH. That form is individual-based and nominative.
In addition, HIV and tuberculosis are reported using specific forms.

Medical centers, dispensaries, and field medical units, report using the individual-based form in case they diagnose a suspected or confirmed case of a mandatory notifiable communicable disease.

2- Unexplained fever

It refers to a patient who presented to the medical consultation for fever without identified etiology.

3- Outbreaks

Outbreak is defined as the increase number of a disease above the expected number in a given population, place and time.

4- Injury

Injury group includes the following conditions:

- Injuries of the body whatever was the external cause
- Effects of foreign body entering through natural orifice
- Burns and corrosions
- Frostbite
- Poisonings by drugs, medicaments and biological substances
- Toxic effects of substances chiefly non-medicinal as to source

5- Asthma

Asthma case refuse to asthma attack. The asthma case is defined clinically.

Clinical criteria	- Healthcare professional diagnosis of asthma, reactive airway disease, hyperreactive airway disease, or wheezing-related respiratory illness (or chronic bronchitis if patient is pediatric) - Or symptoms (on symptom list) that improve with treatment at least once (cromolyn, leukotriene, steroid, theophylline, long-acting bronchodilator, short-acting bronchodilator) unless health-care professional has diagnosed an alternative diagnosis as causing symptoms - Or medication: taking at least one rescue and one controller (see list above) - Or laboratory criteria: 12% increase in Forced Expiratory Volume 1 FEV 1 or Forced Vital Capacity after the patient inhales a short-acting bronchodilator or 20% decrease in FEV1 after exercise challenge
Symptom list	- Wheezing two or more times within the past 12 months - Or cough that persists for at least three weeks in the absence of allergic rhinitis or sinusitis - Or nocturnal awakening at least once a week with dyspnea and/or cough and/or wheezing in the absence of other medical conditions known to cause these symptoms

6- Other consultations

The other consultations include the medical consultations as:

- Medical consultations
- Dental consultations

The non-medical consultations are not counted, as non-medical consultation for vaccine or drug dispensation.

V. “To do” and “not to do”

Several errors are encountered in the forms. The following are the most common:

A- Health unit identification

For many health units, the names are similar. One way to distinguish them is by looking to the locality. Filling the locality will help to identify properly the health unit.

B- Week identification

Some received forms do not include the date of Monday as starting week, or include a wrong date. Filling the correct date will help to identify the correct week.

C- Count of cases

In some received forms, the table of cases is filled by crosses “×” or other symbols as “✓”. This kind of information cannot be entered in the database. Filling the table with correct numbers will help to use the information.

D- Forms

For AFP/polio, measles, rubella, mumps, pertussis, bloody diarrhea, acute jaundice, and leishmania, the weekly reporting form does not provide enough information to investigate the case.

Filling the individual-based reporting form (Annex 8) will help the MOPH:
- To describe the cases by time, place and person
- And to contact the case and complete the data and collect necessary specimen.

Annexes

Annex 1: MOPH decision

الجمهورية اللبنانية
وزارة الصحة العامة
الوزير
- - -

رقم المحفوظات: 2/4
بيروت في 10 اذار 2014

قرار رقم 1/529
يتعلق بنظام الترصد في المستوصفات والمراكز الصحية في لبنان

إن وزير الصحة العامة،
بناء على المرسوم رقم 11217 تاريخ 15 شباط 2014 (تشكيل الحكومة)،
بناء على المرسوم رقم 14969 تاريخ 30 كانون الاول 1963،
بناء على قانون الامراض المعدية في لبنان الصادر بتاريخ 31 كانون الاول 1957،
بناء على اهمية دور قطاع المستوصفات والمراكز الصحية الحكومية والخيرية في متابعة سير الامراض والكشف عن الاوبئة،
وحيث انه إثر الازمة الانسانية السورية، تزايد عدد اللاجئين في لبنان واللجوء الى المراكز الصحية والمستوصفات والعيادات الطبية النقالة،
وفي اطار تعزيز اللامركزية الادارية، وتعزيز دور فرق وزارة الصحة العامة في القضاء والمحافظات،
وبعد موافقة مدير عام الصحة العامة،

يقرر ما يلي:

المادة الاولى: يعتمد نظام الابلاغ الاسبوعي الروتيني من قبل كافة المستوصفات والمراكز الصحية، والعيادات الطبية النقالة، الحكومية والخيرية والخاصة العاملة على الاراضي اللبنانية.

المادة الثانية: يهدف هذا النظام الى ما يلي:
- تعزيز الابلاغ عن المرضى في القطاع الصحي خارج إطار المستشفيات
- معرفة الامراض وتوزيعها حسب الزمان والمكان والاشخاص
- الكشف عن الاوبئة.

المادة الثالثة: يعيّن كل مستوصف او مركز صحي او عيادة طبية نقالة ضابط اتصال من الجسم الطبي او الصحي او الاداري. تتضمن مهام ضابط الاتصال:
- الاشراف على مسك سجل المعاينات حيث توثق المعلومات التالية لكل معاينة: تاريخ المعاينة، اسم المريض، العمر، الجنسية، سبب المعاينة، تشخيص الطبيب، اسم الطبيب المعالج. يكون سجل المعاينات دفتر او قاعدة بيانات ممكننة.
- البحث عن الحالات الوبائية عبر مسألة اطباء المستوصف او المركز الصحي او العيادة الطبية النقالة
- ابلاغ وزارة الصحة العامة عن الامراض الواجب الابلاغ عنها
- التنسيق مع وزارة الصحة العامة لدى ظهور حالات وبائية
- تعبئة استمارة اسبوعية وارسالها الى قسم الصحة العامة في القضاء. اما في بيروت، ترسل الاستمارة الى الوحدة المركزية للترصد الوبائي.

المادة الرابعة: يقوم فرق وزارة الصحة العامة في القضاء عبر فرق الترصد الوبائي بما يلي:
- متابعة استلام الاستمارات الاسبوعية من المستوصفات والمراكز الصحية والعيادات الطبية النقالة
- وضع لائحة تضم اسماء كافة المستوصفات والمراكز الصحية والعيادات الطبية النقالة واسماء ضباط الاتصال وكيفية الاتصال بهم، وإفادة الوحدة المركزية للترصد الوبائي باللائحة عند كل تعديل وسنويا
- استكمال المعلومات للحالات المتعلقة بالامراض الانتقالية الواجب الابلاغ عنها
- مباشرة التقصي عند ظهور حالات وبائية
- مكننة الاستمارات الاسبوعية
- استخراج الجداول الاسبوعية الوصفية
- افادة قاعدة البيانات الى فريق الترصد الوبائي في المحافظة والوحدة المركزية للترصد الوبائي وبتواتر اسبوعي.

المادة الخامسة: يقوم فريق الترصد الوبائي في المحافظة بما يلي:

- استكمال مكننة الاستمارت الاسبوعية عند الحاجة وافادة قاعدة البيانات الى الوحدة المركزية للترصد الوبائي وبتواتر اسبوعي
- استخراج الانذارات الوبائية اسبوعيا
- اعداد تقرير كل اسبوعين لكل قضاء يبين نسبة استكمال الاستمارات وتوزيع الامراض حسب الزمان والمكان والاشخاص ومؤشرات الانذارات الوبائية.

المادة السادسة: يقوم فريق الترصد الوبائي في الادارة المركزية بما يلي:

- وضع البرنامج الآلي لمكننة وتحليل المعلومات وتدريب الفرق على استعماله
- استخراج الانذارات الوبائية اسبوعيا
- اعداد تقرير كل اسبوعيين لكل قضاء يبين نسبة استكمال الاستمارات وتوزيع الامراض حسب الزمان والمكان والاشخاص ومؤشرات الانذارات الوبائية
- وضع التقارير، بعد مراجعتها، على موقع الانترنت لوزارة الصحة العامة.

المادة السابعة: تعدل آلية هذا القرار وتحدد الاستمارة الاسبوعية "استمارة الترصد الوبائي عن الامراض والوفيات الخاصة بالمستوصفات والمراكز الصحية" بقرارات تصدر عن مدير عام وزارة الصحة العامة وفقا للحاجة.

المادة الثامنة: تلغى جميع الرارات والمذكرات ات تتعارض مع هذا القرار لاسيما القرار رقم 1/384 تاريخ 5 ايار 2009 والتعميم رقم 67 تاريخ 4 تموز 2002.

المادة التاسعة: يبلغ هذا القرار حيث تدعو الحاجة%

وزير الصحة العامة

وائل بو فاعور

Annex 2: Weekly form

الجمهورية اللبنانية
وزارة الصحة العامة
الوزير
- - -

رقم المحفوظات: 2/4
بيروت في 3 تموز 2014

قرار رقم 2/964
يتعلق بتعديل استمارة الابلاغ الاسبوعي من المراكز الصحية والمستوصفات الطبية العاملة على الاراضي اللبنانية

إن مدير عام وزارة الصحة العامة،
بناء على المرسوم رقم 3654 تاريخ 18 حزيران 1993 ،
بناء على قانون الامراض المعدية في لبنان الصادر بتاريخ 31 كانون الاول 1957،
بناء على قرار وزارة الصحة العامة رقم 1/381 تاريخ 5 ايار 2014 (يتعلق بنظام الترصد في المستوصفات والمراكز الصحية في لبنان)،
واثر النزوح السوري الكثيف و ظاهرة انتشار المخيمات غير الصحية وازدياد مخاطر ظهور حالات ضمة الكوليرا،
وبغية تعزيز الاستعداد الوبائي والكشف المبكر لحالات الكوليرا،

يقرر ما يلي:

المادة الاولى: تعدل الاستمارة الاسبوعية "استمارة الترصد الوبائي عن الامراض والوفيات الخاصة بالمستوصفات والمراكز الصحية" بحيث تضاف ضمة الكوليرا على لائحة الامراض المستهدفة.

المادة الثانية: يبلغ هذا القرار حيث تدعو الحاجة%

مدير عام وزارة الصحة العامة

الدكتور وليد عمار

استمارة الترصد الوبائي عن الأمراض والوفيات الخاصة بالمستوصفات والمراكز الصحية

1) عن المستوصف و الأسبوع

المحافظة	القضاء	البلدة	اسم المستوصف
التاريخ	من الاثنين	لغاية الأحد	رقم الاستمارة

2) عن الأمراض

الأمراض المشمولة بالترصد	الحالات		ملاحظات
	أقل من 5 سنوات	5 سنوات أو أكثر	
أ) امراض مناعية / vaccine preventable diseases			
شلل رخو حاد/ paralysie flasque aigue/acute flaccid paralysis			
حصبة / rougeole / measles			
حصبة ألمانية / rubeole / rubella			
السعال الديكي اوالشاهوق/ coqueluche / pertussis or woophing cough			
النكاف او أبو كعب / oreillons / mumps			
ب) أمراض انتقالية أخرى / other communicable diseases			
إسهال حاد / diarrhée aigue/ acute diarrhea			
إسهال دموي مخاطي/ bloody diarrhea			
هضمة الكوليرا / cholera			
حالة يرقان حادة أو صفيرة/ ictère / jaundice			
انتان تنفسي حاد والزكام / acute respiratory infection & flu			
حمى غير مشخصة / unexplained fever			
الجرب / gale / scabies			
داء الليشمانيات / leishmaniasis			
أمراض انتقالية أخرى واجب الإبلاغ عنها **/other notifiable diseases			
حالات تفشي وباء / épidémie/ outbreak			
ج) غيره / others			
ربو / asthma / asthma			
الحوادث والجروح / accident / injury			
معاينات أخرى /autres consultations /other consultations			

3) عن الحالات التي استدعت الاستشفاء

#	الاسم	العمر	الجنس	بلدة الإقامة	اسم المستشفى	سبب الاستشفاء
1						
2						

4) عن حالات الوفيات

#	الاسم	العمر	الجنس	بلدة الإقامة	سبب الوفاة
1					
2					

الاسم، التوقيع: رقم الهاتف:

** **لائحة الأمراض الانتقالية الواجب الإبلاغ عنها فور تشخيصها أو الشك فيها**: الشلل الرخو الحاد و شلل الأطفال، الخانوق، التسمم الغذائي، الملاريا، التهاب السحايا، الكزاز الوليدي، الكلب / السعار، انفلونزا الطيور، كروتسفيلد جاكوب، الحمى النزفية، الطاعون، حمى التيفوس، الحمى الصفراء

** **لائحة الأمراض الانتقالية الواجب الإبلاغ عنها أسبوعيا**: بلهارسيا، الحمى المالطية، التهاب الكبد الفيروسي A, B, C, D, E ، الكيسيات المائية، السيلان، الجذام، السفلس، التريشنوز، السل الرئوي، السل إشكال أخرى، الحميات التيفية

قرار وزارة الصحة العامة رقم 2/964 تاريخ 3 تموز 2014

Annex 3: Completeness of reporting

Table: Recived forms from medical centers by week

Health units	Week 1	Week 2	Week 3	Week 4
Medical center 1	Received	Received	Received	Received
Medical center 2	Received	Received	Received	Received
Medical center 3	Received	Received	Received	Received
Medical center 4	Received	0	Received	Received
Medical center 5	Received	0	Received	0
Medical center 6	0	Received	Received	0
Medical center 7	Received	Received	0	0

$$\text{Weekly completeness, \%} = \frac{\text{Number of received forms from health units} * 100}{\text{Number of expected forms from all health units}}$$

1) Total number of medical centers = 7
2) For week (1):
    a. Six forms were received,
    b. The weekly completes is = received *100/ expected = 6*100/7 = 79%
3) Compute the weekly completeness for:
    a. Week (2)
    b. Week (3)
    c. Week (4)

Annex 4: Weekly proportion

Table: Disease counts by diarrhea and week

Week	WD	BD	AR	Total consultations
Week 1	19	1	150	1562
Week 2	36	0	142	1698
Week 3	27	2	178	1585
Week 4	27	0	250	1648
Week 5	39	1	200	1689
Week 6	25	2	180	1578
Week 7	16	1	126	1609

WD: watery diarrhea BD: bloody diarrhea AR: acute respiratory infection

$$\text{Weekly Proportion} = \frac{\text{Number of reported cases}*100}{\text{Number of total consultations}}$$

:

1. For week (1)
    a. The weekly proportion of WD = 19 * 100 / 1562 = 1.2%
    b. The weekly proportion of BD = 1 * 100 / 1562 = 0.1%
    c. The weekly proportion of AR = 150 * 100 / 1562 = 9.6%

2. Compute for week (4):
    a. The weekly proportion of WD =
    b. The weekly proportion of BD =
    c. The weekly proportion of AR =

Annex 5: Weekly ratio per medical center

Table: Recived reports disease counts by week

Week	Number of received forms	WD	BD	AR	Total consultations
Week 1	7	19	1	150	1562
Week 2	8	36	0	142	1698
Week 3	7	27	2	178	1585
Week 4	8	27	0	250	1648
Week 5	8	39	1	200	1689
Week 6	6	25	2	180	1578
Week 7	5	16	1	126	1609

WD: watery diarrhea BD: bloody diarrhea AR: acute respiratory infection

$$\text{Weekly Ratio} = \frac{\text{Number of reported cases}}{\text{Number of received forms}}$$

1. For week (1) :
    a. The number of received forms = 7
    b. The weekly ratio of WD per health unit =19 / 7 = 2.71
    c. The weekly ratio of BD per health unit = 1 / 7 = 0.14
    d. The weekly ratio of AR per health unit = 150 / 7 = 21.43

2. Compute for week (4):
    a. The number of received forms =
    b. The weekly ratio of WD per health unit =
    c. The weekly ratio of BD per health unit =
    d. The weekly ratio of AR per health unit =

Annex 6: Weekly bulletin

الجمهورية اللبنانية

وزارة الصحة العامة – برنامج الترصد الوبائي

Bi-Weekly Epidemiological Bulletin
Zahleh Caza - Bekaa
Week 51 of 2013 from 16 to 22 December

النشرة الوبائية النصف شهرية
قضاء زحلة - البقاع
الأسبوع الواحد والخمسون من 16 لغاية 22 كانون الأول 2013

Context and objectives

Various surveillance systems are established by the Ministry of Public Health MOPH in order to monitor communicable diseases and to allow early detection of outbreak for prompt response.

Classical surveillance system for communicable diseases

Physicians and health centers report to the MOPH on specific diseases and syndromes, using standard case-based reporting form.

Medical centers and dispensaries surveillance

Medical centers and dispensaries report on weekly basis to the MOPH on standard aggregated reporting form, the number of consultations related to specific diseases/syndromes.

School absenteeism monitoring

Schools in the public and private sectors, report to MOPH on weekly basis, the number of absences per academic cycle and the number of received medical reports, using a standard aggregated form.

Results

A. Classical surveillance *(until 29th December)*

- One case of pertussis, 7 cases of hepatitis A and one case of leishmaniasis were reported during December.

B. Health centers and dispensaries surveillance

- The completeness of reporting for the latest week was 92% across the district.
- 295 cases of acute respiratory infections (AR) were reported in Zahleh. The proportion of AR cases relative to total consultations was 8%, lower than the proportion reported during the previous week.
- 67 cases of watery diarrhea (WD) were reported. The proportion of WD to total consultations was 2%, higher than the proportion reported during the previous week.
- Two cases of unexplained fever and 8 cases of scabies were reported in Zahleh.

C. School absenteeism monitoring

- Twenty six forms were received from schools in the current week. The completeness of reporting was 42% in the public sector and 4% in the private sector.
- The weekly absenteeism rate was 3% across Zahleh district. High absenteeism rates were recorded in two villages: Ali Nahri and Hawch Kaysar(>10%) due to non medical reasons
- Seven medical reports were received during the week: two cases of acute respiratory infection and three cases of gastroenteritis.
- 43 cases of pediculosis were also reported.

الإطار والأهداف

تقوم وزارة الصحة العامة بترصد الأمراض الانتقالية من أجل متابعة حدوثها والكشف المبكر عن الأوبئة.

برنامج الإبلاغ عن الأمراض الانتقالية

يبلغ الأطباء والمنشآت الصحية وزارة الصحة العامة عن أمراض محددة، وذلك باستخدام استمارة خاصة للإبلاغ.

برنامج الترصد في المراكز الطبية والمستوصفات

تبلغ المراكز الصحية والمستوصفات وزارة الصحة العامة أسبوعيا بأعداد المعاينات المتعلقة بأمراض وحالات مرضية معينة من خلال استمارة خاصة.

نظام مراقبة الغياب في المدارس

المدارس من القطاعين العام والخاص ترسل تقريرا أسبوعياً إلى وزارة الصحة العامة باستخدام استمارة خاصة بالمدارس، تتضمن عدد الغياب في المراحل الدراسية وعدد التقارير الطبية الواردة.

النتائج

أ-الإبلاغ عن الأمراض الانتقالية (لغاية 29 كانون الأول)

- تم الابلاغ عن حالة شاهوق، سبعة حالات التهاب الكبد الفيروسي الألفي وحالة داء الليشمنيات خلال شهر كانون الأول.

ب- نظام ترصد المراكز الطبية والمستوصفات

- بلغت نسبة استلام الاستمارات 92% في القضاء.
- تم الإبلاغ عن 295 حالة التهاب تنفسي حاد وكانت النسبة المئوية للحالات 8% من مجموع المعاينات. تدل هذه النسبة على انخفاض نسبة للأسبوع الفائت.
- تم الإبلاغ عن 67 حالة إسهال مائي حاد وكانت النسبة المئوية للحالات 2% من مجموع المعاينات. تدل هذه النسبة على ارتفاع نسبة للأسبوع الفائت.
- تم الإبلاغ عن حالتي حمّى غير مشخّصة، حالة صفيرة وثمانية حالات جرب.

ت- مراقبة الغياب في المدارس

- تم استلام 26 استمارة خلال الأسبوع وسجلت نسبة الاستلام 42% في القطاع الرسمي و 4% في القطاع الخاص.
- بلغت نسبة الغياب 3% في القضاء. سجّلت نسبة غياب عالية في بلدتي علي النهري وحوش قيصر (10% >) ناتجة عن أسباب غير مرضية.
- تم الإفادة عن سبعة تقارير طبّية خلال هذا الأسبوع تضمنت: حالتي التهاب تنفسي حاد وثلاثة حالات التهاب معوي.
- تم الابلاغ عن ثلاث وأربعون حالة قمل.

A- Classical Surveillance
أ- الإبلاغ عن الأمراض الانتقالية

Table A1 Reported communicable diseases in Zahleh caza. **جدول (A1)** الأمراض الانتقالية المبلغ عنها في قضاء زحلة.

Disease	2011	2012	2013												
			TOTAL	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Vaccine Preventable Diseases															
Acute Flaccid Paralysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acute Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diphteria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	3	132	0	0	5	9	31	46	26	10	3	0	2	0
Mumps	2	0	2	0	0	1	0	0	0	0	0	1	0	0	0
Pertussis	2	6	7	0	0	0	1	1	0	0	1	0	1	2	1
Rabies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rubella	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tetanus neonatal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Viral Hepatitis B	2	4	4	1	0	0	0	2	0	1	0	0	0	0	0
Food & Water Borne Diseases															
Brucellosis	12	11	12	0	2	1	0	3	0	2	1	2	0	1	0
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dysentery	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Food Poisoning	14	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydatic Cyst	2	1	2	0	1	1	0	0	0	0	0	0	0	0	0
Parasitic Worms	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichinosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typhoid Fever	25	16	16	0	1	1	1	2	1	2	4	3	0	1	0
Viral Hepatitis A	65	62	236	13	21	19	6	4	11	6	13	41	30	65	7
Other Diseases															
Bilharziasis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Creutzfeld Jakob Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ebola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gonorrhea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leishmaniasis	0	0	242	5	2	11	34	16	25	48	32	21	29	18	1
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malaria	0	3	1	0	0	0	0	0	0	1	0	0	0	0	0
Meningitis	6	5	10	1	1	1	0	0	2	1	0	2	1	1	0
Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syphilis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typhus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Viral Hepatitis C	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Yellow Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

B- Medical Centers and Dispensaries
نظام الترصد للمراكز الصحية والمستوصفات

Table B1 Reported diseases from dispensaries in the past 4 weeks. **جدول (B1)** الأمراض الانتقالية المبلغ عنها من المستوصفات خلال الاسابيع الاربع الماضية.

Age	Week	WD	BD	AR	ME	AJ	WC	MU	UF	AF	SC	IN	AT	OT	Total
< 5 y	2013-48	65	0	180	1	0	0	0	0	0	0	41	6	1458	1751
	2013-49	31	0	183	0	0	0	0	0	0	7	39	9	1585	1854
	2013-50	18	0	111	0	0	0	0	0	0	2	20	3	933	1087
	2013-51	32	0	151	0	1	0	0	0	0	4	28	9	1410	1635
>=5 y	2013-48	40	0	160	0	1	0	0	0	0	10	131	0	1990	2343
	2013-49	34	0	188	0	1	0	0	1	0	8	112	0	1879	2236
	2013-50	20	0	103	0	0	0	0	0	0	1	63	0	985	1175
	2013-51	35	0	144	0	0	0	0	2	0	4	106	0	1806	2106

WD: Watery Diarrhea. BD: Bloody Diarrhea. AR: Acute Respiratory infection. ME: Measles/Rubella.
AJ: Acute Jaundice. WC: Whoppoing Cough. MU: Mumps. UF: Unexplained Fever. SC: scabies. IN: Injury. AT: Asthma OT: Other.

Figure B1 Weekly proportions of acute respiratory infections (AR). **رسم بياني (B1)** نسب حالات الالتهاب التنفسي الحاد من مجموع المعاينات.

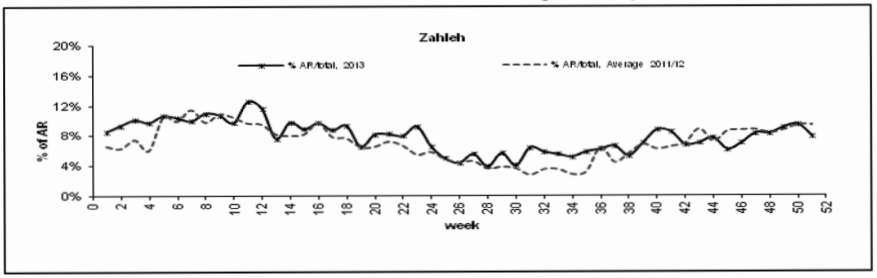


Figure B2 Weekly proportions of watery diarrhea (WD). **رسم بياني (B2)** نسب حالات الاسهال المائي الحاد من مجموع المعاينات.

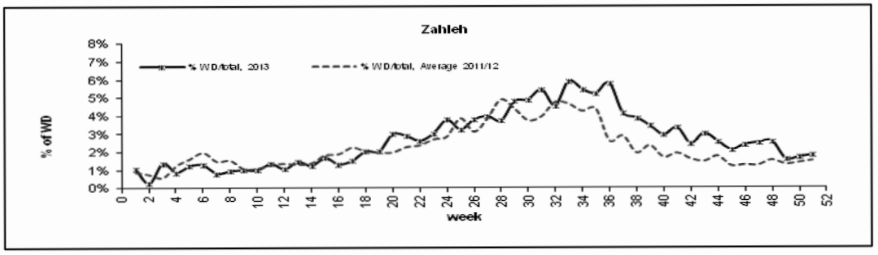
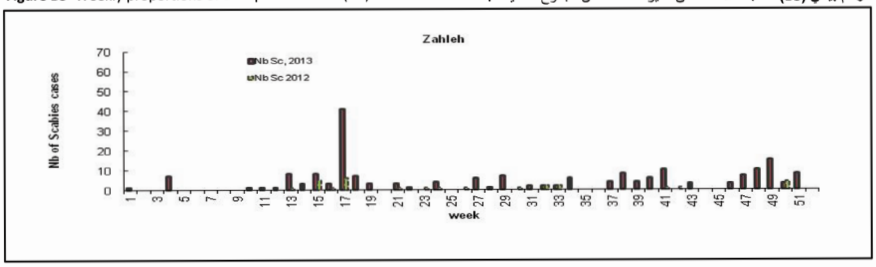


Figure B3 Weekly proportions of unexplained fever (UF). **رسم بياني (B3)** نسب حالات الحمى الغير مشخصة من مجموع المعاينات.



C- School Absenteeism Monitoring

نظام مراقبة الغياب في المدارس

Figure C1 Completeness by week. **رسم بياني (C1)** نسبة استلام الاستمارات حسب الأسابيع.

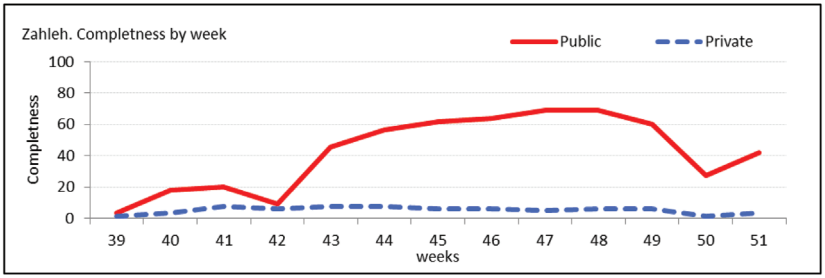


Figure C2 Absenteeism rate by week. **رسم بياني (C2)** نسبة الغياب حسب الأسابيع.

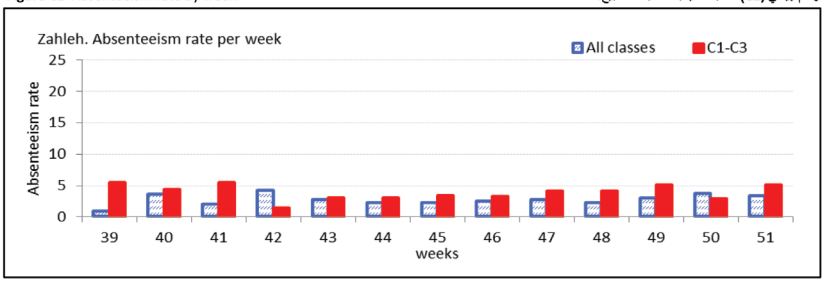


Figure C3 Medical reports received per week. **رسم بياني (C3)** عدد التقارير الطبية المستلمة حسب الأسابيع.

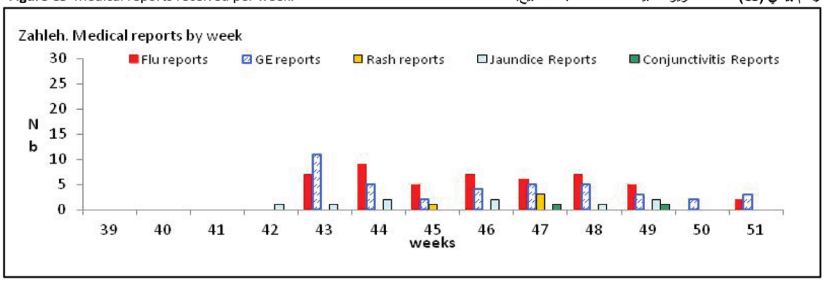
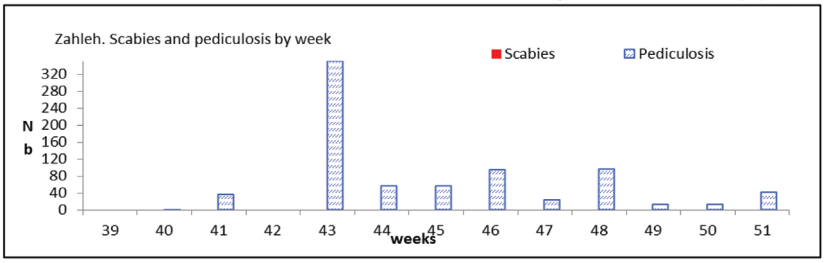


Figure C4. Scabies and Pediculosis by week. **رسم بياني (C4)** حالات الجرب و القمل حسب الاسابيع.



Annex 7: Field medical units bulletin

REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH

Field Medical Units Surveillance
Bekaa-2013

Context

In 2013, international and national organizations started operating field mobile units to provide health services for Syrian refugees living in tented settlements in Lebanon. Refugees poor living conditions and overcrowding increase the risk of communicable diseases transmission. Thus, it was crucial to collect surveillance data from these medical units.

Objectives

The objectives of the system are to early detect alerts and outbreaks, to monitor trends of communicable diseases among refugees and to complement the data collected from other surveillance systems. This will assist decision makers to control communicable diseases among Syrian refugees.

Methods

Data is collected on a weekly basis using a standard aggregated reporting form for target diseases and syndromes. Data is collected for 2 age groups: under 5 and 5 and above. Forms are sent to MOPH by hand, by fax or by email. Data is computerized using Epidata Software. Completeness of reporting and distribution by place and time of target diseases for both age groups are computed. Proportions of consultations for target diseases from total consultations are also computed.

Results

During 2013, 297 reports were received from 15 field medical units active in the Bekaa. The average completeness of reports was 38%.

Table 1: Reported diseases/syndromes by age groups, field medical units, Bekaa, 2013

Reported diseases	<5 years old	≥ 5 years old	Total
Acute respiratoty infections	6642	9535	16177
Acute diarrhea	1755	1158	2913
Jaundice	26	77	103
Measles/rubella	52	17	69
Woophing cough	8	7	15
Mumps	4	1	5
Scabies	194	478	672

Figure 1: Weekly proportions of acute respiratory infections, field medical units, Bekaa, 2013

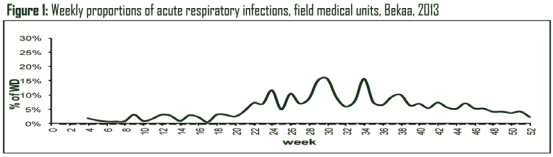


Figure 2: Weekly proportions of watery diarrhea, field medical units, Bekaa, 2013

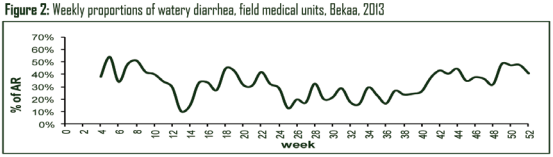


Figure 3: Weekly numbers of measles and rubella, field medical units, Bekaa, 2013

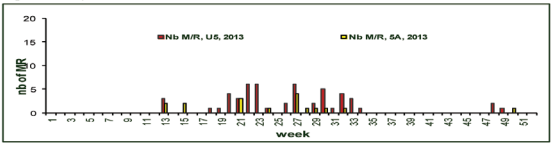
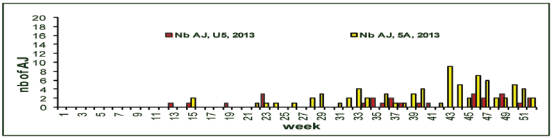


Figure 4: Weekly numbers of jaundice, field medical units, Bekaa, 2013



Acknoledgmments: Medecins Sans Frontieres, International Medical Corps, Humedica, and Amel Association,

Issued by the Lebanese Ministry of Public Health, Epidemiological Surveillance Program in the Bekaa

Annex 8: Standard reporting form

الجمهورية اللبنانية
وزارة الصحة العامة

إستمارة إبلاغ عن مرض إنتقالي

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

.....

الجنسية: مقيم ☐ زائر ☐

تاريخ الولادة: .....

الجنس: ذكر ☐ أنثى ☐

الوضع التحصيني: (للمرض المبلغ عنه)

ملقح ☐ غير ملقح ☐

عدد الجرعات: .....

البلدة/الحي: .....

المحافظة/القضاء: .....

رقم الهاتف: .....

تاريخ ظهور عوارض المرض: .....

تاريخ تشخيص المرض: .....

هل دخل المريض المستشفى: نعم ☐ لا ☐

إسم المستشفى: .....

تاريخ دخول المستشفى: .....

هل من تشخيص مخبري: نعم ☐ لا ☐

إذا نعم، حدد: .....

.....

وجود حالات مماثلة في محيط المريض: نعم ☐ لا ☐

يمارس المريض مهنة طبية/صحية: نعم ☐ لا ☐

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

.....

العنوان: .....

الهاتف: .....

إسم وصفة المبلغ: .....

التاريخ: / / **التوقيع**

في الحالات التي تبلغ فوراً إضافة إلى ملء الوثيقة يجب الإتصال مباشرة وخلال 24 ساعة ببرنامج الترصد الوبائي في بيروت والمناطق.
هاتف 01/614194 , **فاكس** 01/610920

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

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

Weekly Reportable Cases/الأمراض التي تبلغ اسبوعيا
Laboratory-confirmed

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

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

قرار وزارة الصحة العامة رقم 1/899 تاريخ 3 ايار 2014

Acronyms

AFP	Acute Flaccid Paralysis
CSF	Cerebral Spinal Fluid
ENG	Electro neurography
Esumoh	Epidemiological Surveillance Program
IPV	Inactivated Polio Vaccine
MERS-COV	Middle East Respiratory Syndrome – Novel Coronavirus
MND	Ministry of National Defense
MOPH	Ministry of Public Health
MOSA	Ministry of Social Affairs
NGO	Non Governmental Organization
OPV	Oral Polio Vaccine
PCR	Polymerase Chain Reaction
RHUH	Rafic Hariri University Hospital
SD	Standard Deviation
VTM	Viral Transport Media
WHO	World Health Organization

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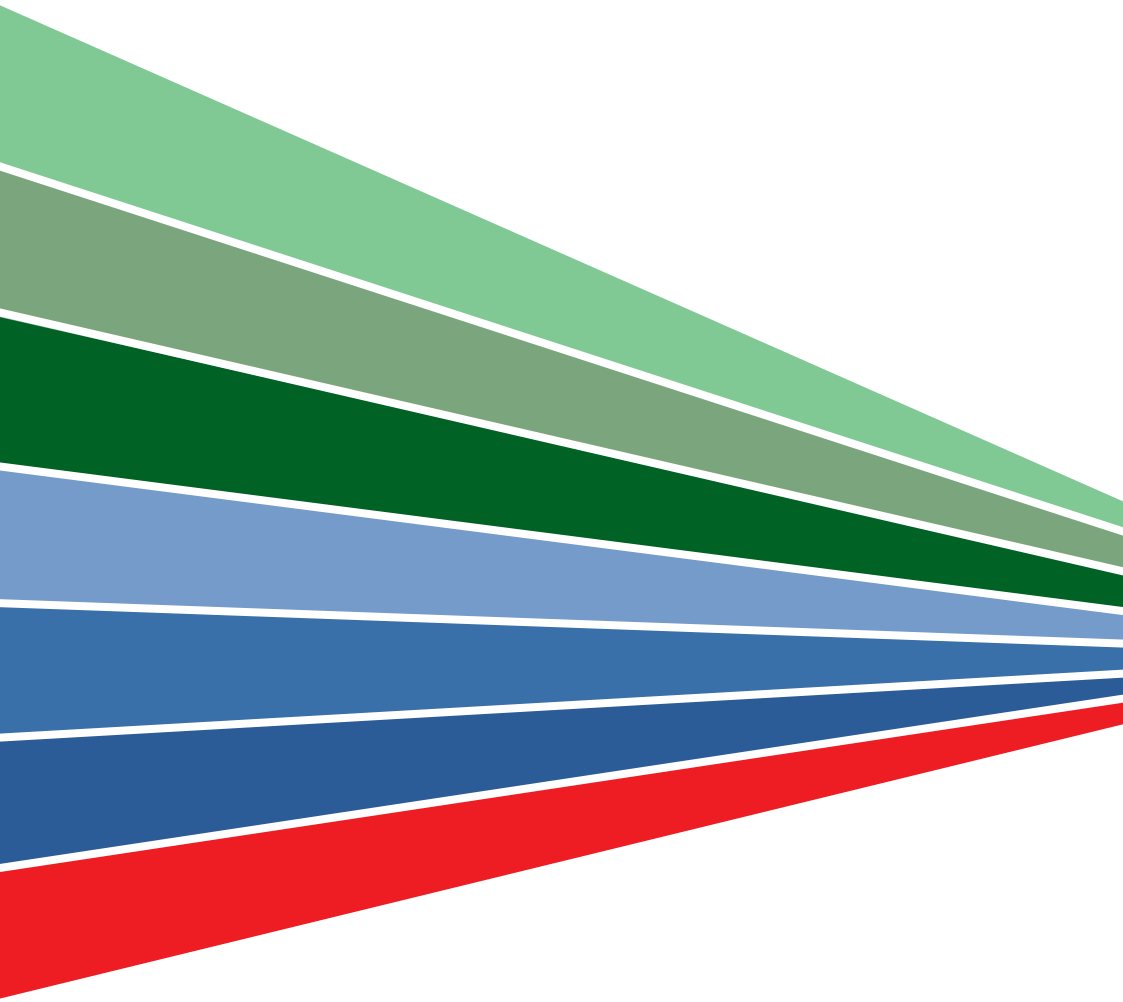

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