SURVEILLLANCE AND NOTIFICATION QUALITY OF REPORTABLE DESEASES AT EHU ORAN 2012-2015

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Abstract

Introduction
The surveillance of notifiable diseases in Algeria is governed by regularly updated legislation. The analysis of the data collected is necessary to reveal trends in the evolution of the frequency over time. At the EHU Oran level, the existence of a surveillance and epidemiological control unit allows the monitoring of this activity. Our goal is to describe the surveillance system and to identify reporting anomalies for notifiable diseases in our hospital.
Method of working
This is a descriptive study covering 4 years of data collection from different services. The capture and analysis were done on EpiData software.
Results:
During this period, 2536 cases of reportable diseases are recorded with a microbiological confirmation of 66%. The average age of patients is 44.8 ± 0.8 years with a median age of 43 years. This variable is not found in 11% of the returns. The microbiology department reports 1682 cases (66%) followed by the blood transfusion center (14%). These are mostly male patients (52.4%). Hepatitis B (36.5%) is at the top of the list followed by hepatitis C (16.9%). Syphilis (20.7%) ranks third and tuberculosis is in fourth place (10.6%). Returns increase in the first and last quarters with the same frequency (28%) and decrease in the second (21.7%) and third (21.7%).
Discussion
Several anomalies were found during the analysis of the recorded data. Age is absent in 282 notifications (11%) as well as for the patient's address. She is absent in 1397 statements (54.8%). The frequency of notifications without the concept of confirmation is 37.3, which is contrary to the reporting recommendations for reportable diseases under the regulations.
Conclusion
The quality of the declaration is to be improved. An awareness campaign and training with our doctors would be interesting to improve the quality of reporting reportable diseases..

Keyword: reportable diseases, surveillance, notification, quality, EHU, Oran

1.INTRODUCTION

Epidemiological surveillance is a systematic and ongoing process involving the collection, analysis, interpretation of data and dissemination of the information to interested persons and services, the purpose of which is decision-making and the choice of action. Thus, any doctor, whatever his type of exercise, is required to declare a reportable diseases according to the regulations in force. Notification of contagious diseases is the first step in fight against and prevention of communicable diseases (1). She must mobilize all health personnel according to the decree n°133 of 30/12/2013 modifying and completing the list of reportable diseases. At the level of Hospital University Etablisment and of Oran (EHUO), the existence of a specialized unit is responsible for this and is supposed to report all cases to the Department of Medical Activities and Care and the Etablisment of Proximity and Public Health to which the patient's address is assigned. Several variables are mandatory to specify the category of the disease and the type of declaration: the address of the patient for a home survey, the age of the patient,

the indications concerning the confirmation, the suspicion, the notion of death, etc. according of the recommendations of the regulation. In case of absence, a nil condition is given by the head of health services (2,3). The purpose of our work is to describe our system of epidemiological surveillance and to identify anomalies and deficiencies hindering our preventive action.

2.MATERIEL ET METHODS

To meet our objective, we carry out a comprehensive descriptive study covering all the declarations recorded during the period from 2012 to 2015.

At the EHUO, the services are supposed to report all cases according to the list of reportable diseases. A support with several recommended variables, is made available to them: the surname and the first name for to elimined the duplicates in the registration, the age and the date of birth to avoid the confusion between two cases bearing the same name, the address which is a mandatory variable for reporting the case to the public health care institution for the epidemiological survey. The concept of confirmation is a mandatory variable as well as the reporting service. The indications to be included in the declaration depend on the type of disease. The concern:

-Confirmation of all reported cases

- The type of carrier of the germ (healthy carrier). This is a very necessary indication in case of waterborne diseases

-Vaccination status for controlled diseases by vaccination

- Follow-up (death) for the majority of reported cases

Data collection was done on an ongoing basis based on reporting. Coding of the data is carried out (2,4) according to the list of reportable diseases.

The input and analysis were made on Epi-info version 6. Frequencies are calculated for respond our goal.

The results are represented according to the recommendations of order n°133 of 30/12/2013, by categories of diseases and recommendations.

3.RESULTS

During the 4 years of study, 2536 cases of reportable diseases were reported to the Epidemiology and Preventive Medicine Service EHUO of which only 945 cases (37.3%) are confirmed.

3.1. The reporting year and month

The highest frequency was registered in 2012, ie 29.1% (741 cases) followed by 2015 (26%). The peak of reporting is marked in the first quarter (29%) of the year and the last quarter, particularly in December, (292 cases) or 11.4% of all reported cases.

3.2. Services that declare

The main reporting services, during this period, are the microbiology laboratory with 1682 cases (66%), the blood transfusion center with 14% of all reports, followed by the pneumo-phtisiology service (9, 3%). Dermatology (2.3%) comes fourth.

3.3. Study of case characteristics according to

3.3.1. Age and sex:

The age variable is absent in 282 declaration forms, ie 11% of all cases. Most cases, 1337 (52.7%) are male (figure 1), an sex-ratio = 1.1. The mean age of the group studied (sex confused) is 44.8 ± 0.8 years with a 40 year mode and a range of 1 to 97 years. The mean age of the male group is 45 ± 1 years versus 44.5 ± 1.1 years for women *(table 1)*.

Table 1: **characteristics of the age of reported cases by sex**
Preventive Medicine Service EHUO *(2012-2015)*

Cases	Number	Freq.(%)	Middle aged (ans)	Mediane (ans)	Mode	the percentile 25	the percentile 75
Male	1337	52,4	45±1	42	31	31	58
Female	1199	47,2	44,5±1,1	43	40	30	58
Total	2536	100	44,8±0,8	43	40	31	58
Odds Ratio=1,1							

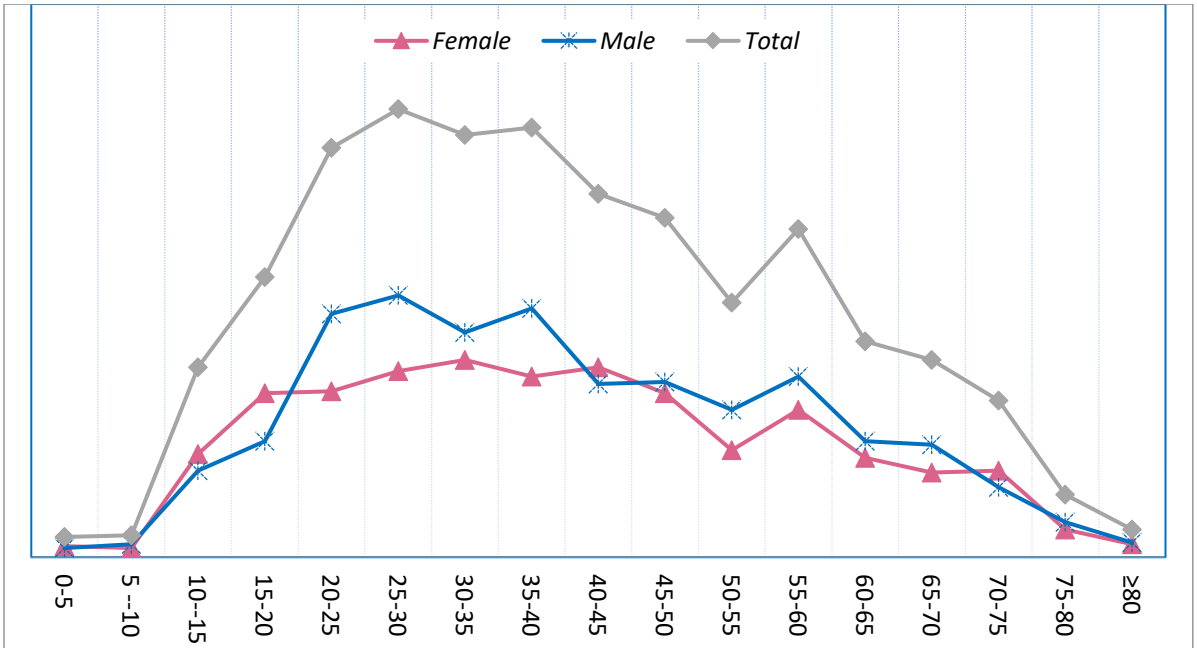

Figure 1:**Distribution of reported cases by age and sex**
Preventive Medicine Service EHUO *(2012-2015)*

3.3.2. Address of the patients

More than half of the declaration forms remain incomplete. The address is absent in 54.8%.

4.THE DECLARED REPORTABLE DISEASES

The categorization reportable diseases of according to the recommendations showed that hepatitis rank first and account for more than half of all reported cases (60.4%), followed by Sexually Transmitted Diseases (STD), which account for 22.6%, then Controlled Diseases by Vaccination(CVD) is 14.3% (figure 2).

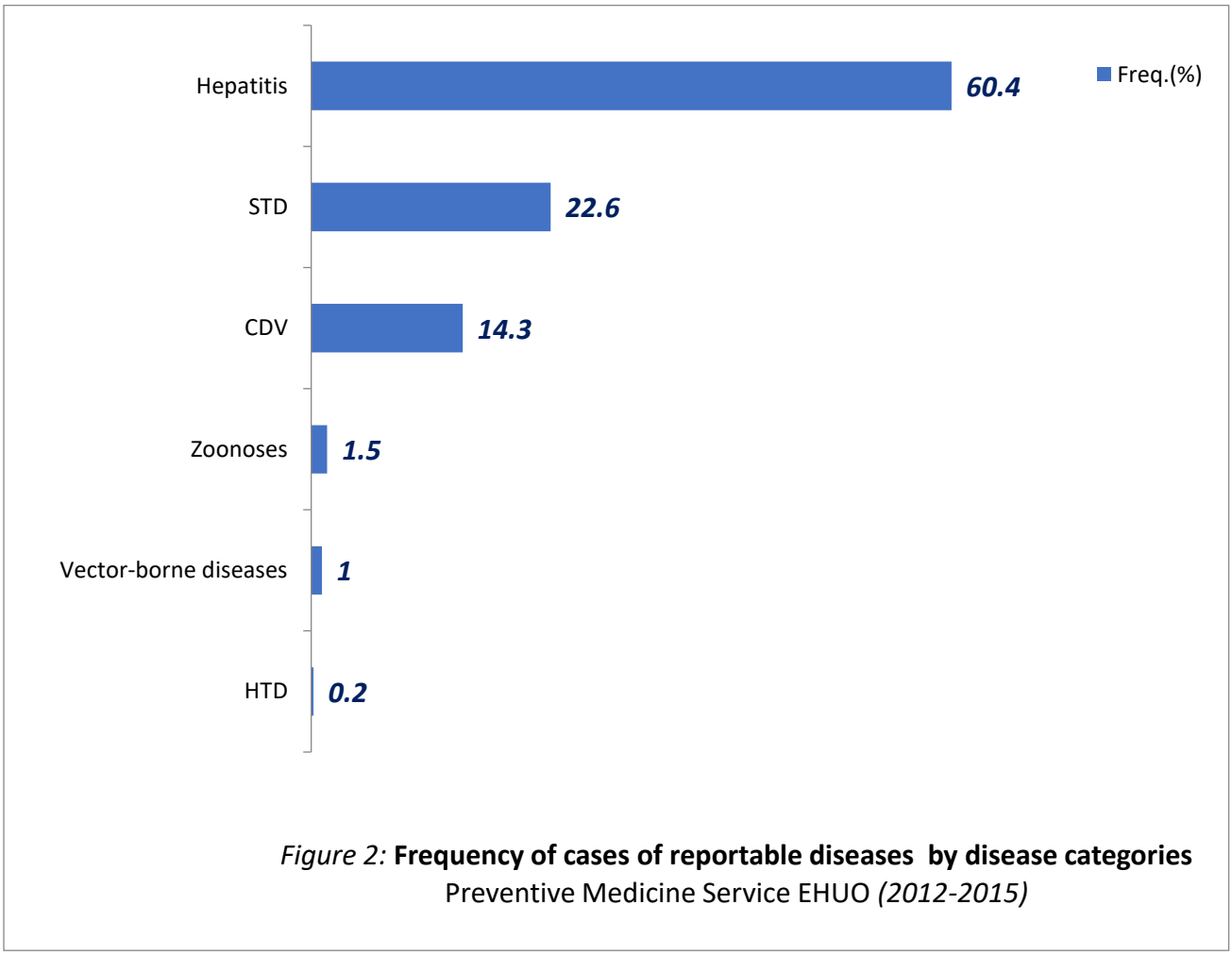

Figure 2: **Frequency of cases of reportable diseases by disease categories**
Preventive Medicine Service EHUO *(2012-2015)*

4.1. Hepatitis

There are 1531 cases for hépatitis recorded; which represents 60.4% of all reported MDO of which 1042 (41.1%) are hepatitis B cases and 489 cases (19.3%) are hepatitis C (table 2).. Nevertheless, only 295 cases (19.3%) of the total declared hepatitis is confirmed (figure 2).

4.2. Sexually Transmitted Diseases (STD)

ranked second with 572 (22.6%) cases registered and dominated by 296 (11.7%) cases of syphilis, of which 187 cases are confirmed. HIV / AIDS cases are also frequently reported, especially by the microbiology laboratory and the Blood Transfusion Center (CTS). There are 276 (10.6%) cases, of which 61 confirmed (table 2).. The confirmation rate for this category of diseases is 43.3% (248 cases) (figure 2).

4.3. Controlled Diseases by Vaccination(CVD)

362 cases (14.3%) were reported, dominated by tuberculosis (TB) with 293 cases or 10.3% of the total, followed by meningitis: 42 cases (1.5%), 25 cases (0.9%) of poliomyelitis and acute palsy paralysis (PFA). The confirmation rate is 92.5% (table 2). The vaccination status is not found in any declaration form and the notion of the follow-up and evolution of the disease (figure 2).

4.4. Zoonoses

They represent 1.5% of all cases reported with 40 cases, of which 36 (1.3%) are cases of hydatid cyst. Nevertheless, it should be noted that 2 cases (0.1%) of brucellosis and 1 case of rabies are not confirmed (figure 2).

4.5. Vector Transmission Diseases (VTD)

Out of 27 confirmed cases, 24 confirmed cases (0.8%) of cutaneous leishmaniasis are prevalent. Malaria is included in the classification of this category of diseases with 1 case (0.05%), as well as yellow fever and leptospirosis with the same frequency. The notion of patient follow-up is absent in all the declaration forms (figure 2).

4.6. Hydric Transmission Diseases (HTD)

4 cases (0.2%) are recorded during the study period with a confirmation rate of 75% (table 2).
A distribution of cases by diseases, keeps hepatitis B at the forefront with 1042 cases (41.1%). Hepatitis C is the second most commonly reported disease (19.3%) followed by syphilis 296 (11.7%) and tuberculosis with 293 (11.5%). HIV / AIDS takes place with the most pronounced diseases, they rank in the fifth position with a frequency of 10.9% (figure 3).

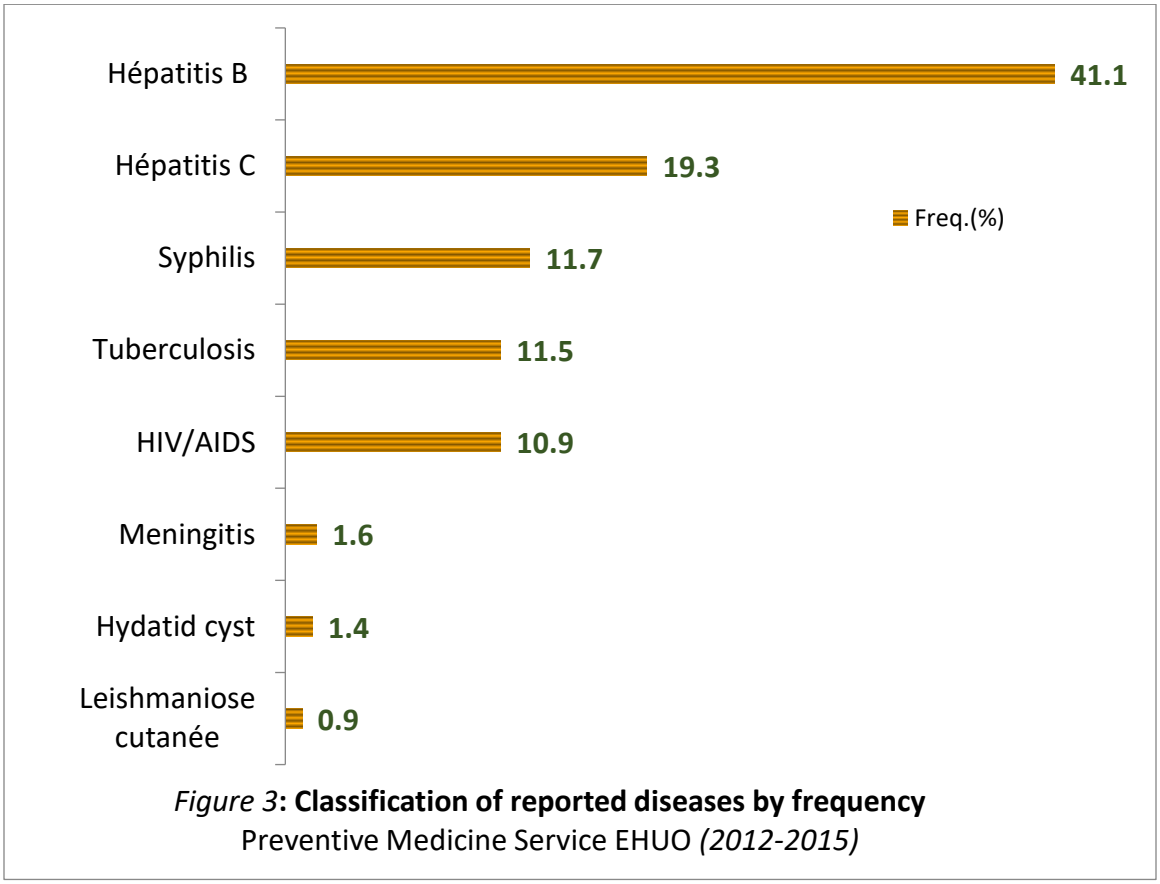

Figure 3: **Classification of reported diseases by frequency**
Preventive Medicine Service EHUO *(2012-2015)*

Table 2: Presentation of reportable diseases by disease type and confirmation frequency
Preventive Medicine Service EHUO *(2012-2015)*

Disease	Cases (Fréq.%)	Confirmation	
		Confirmed cases	Confirmation frequency (%)
Hépatitis B,C			
Hépatitis B	1042 (41.1)	190	18.2

Hépatitis C	489 (19.3)	105	21.5	
Total	**1531 (60.4)**	**295**	**19.3**	
Sexually Transmitted Diseases (STD)				
Syphilis	296 (11.7)	187	61.2	
HIV/AIDS	276 (10.9)	61	22.1	
Total	**572 (22,6)**	**248**	**43.3**	
Controlled Diseases by Vaccination(CVD)				
Tuberculosis	293 (10.3)	285	97.3	
Meningitis	42 (1.5)	31	73.8	
Poliomyelitis/ Acute Flask Paralysis	25 (0.9)	17	68.0	
Dyphtheria	1 (0.05)	1	100.0	
Tetanus	1 (0.05)	1	100.0	
Total	**362 (14.3)**	**335**	**92.5**	
Zoonoses				
Hydatid cyst	36 (1.3)	35	97.2	
Rabies	2 (0.1)	1	50.0	
Brucellosis	2 (0.1)	2	100.0	
Total	**40 (1,5)**	**38**	**95.0**	
Vector Transmission Diseases (VTD)				
Cutaneous leischmaniosis	24 (0.8)	24	100.0	
Malaria Paludisme	1 (0.05)	1	100.0	
Leptospirosis	1 (0.05)	1	100.0	
Yellow fever	1 (0.05)	1	100.0	
Total	**27 (1)**	**27**	**100.0**	
Hydric Transmission Diseases (HTD)				
Collective food poisoning infections	2 (0,1)	1	50.0	
Typhoid fever	1 (0,05)	1	100	
Amoebic dysentery	1 (0,05)	1	100	
Total	**4 (0,2)**	**3**	**75.0**	
Total reported cases 2012-2016	**2536**	**946**	**1589**	**946/2536= (37.3%)**

5.DISCUSSION

Among the essential elements of epidemiological surveillance is the mandatory reporting of certain diseases, which remains the oldest and best known of practitioners. In Algeria, a regulation no. 179 and circular n° 1126 of 17 November 1990 set out the list of notifiable diseases and the details of their notifications. The order n° 133 of 30/12/2013 modifies and completes this list.

Thus, every practitioner is obliged to declare the MDOs according to the recommendations, then to forward the information. At the CHU / EHU0, the unit director reports to the DAPM / DAMS and the EPSP to which the patient's address belongs for the epidemiological survey. In addition to these recommendations, in

Algeria, epidemiological surveillance of communicable diseases is carried out according to two categories, depending on the level of surveillance and reporting (5):

1. Category 1: includes diseases under national surveillance, subject to a compulsory declaration to the national health authority in accordance with the procedure laid down in Order No. 179 of 17 November 1990.
2. Category 2: groups together diseases under international surveillance, subject to mandatory reporting to the national health authority and

obligatorily notifiable to WHO in accordance with reporting requirements (Circular 1126 of 17/11/1990).

The indications to be included in the declaration depend on the type of disease. They concern:

- confirmation of all reported cases.
- the type of carrier of the germ (healthy carrier). This is a very necessary indication in case of diseases with waterborne transmission.
- vaccination status for diseases controllable by vaccination.
- follow-up (deaths) for the majority of reported cases.

Our initiative is to describe the frequency of MDO in our institution and to highlight the quality of the declaration. The peak of the declaration recorded in December can only be due to the importance of the declarations which is the consequence caused by the catching up of the delay of the services, following the recall launched by the SEMEP.

In our study group, the number of registered MDO is not exhaustive and does not represent all the incident cases in Oran. This is due to the lack of a specialized service within the facility and a pediatric ward. All cases are drained to the infectious department at CHUO and to pediatric hospitals.

Regarding the personal characteristics of patients, age and address are two mandatory variables for case reporting. For the age, they are absent in 11% of the cases ie 282 reporting forms (table 2), which forced us to remove them from our analysis.

It is important to know that this variable is mandatory in any notification. These are mainly notifications from the microbiology service that receive samples without the patient's information sheet from the attending physician. It should be noted that 54.8% do not understand the address, which is contrary to the recommendations of the notification and the follow-up of the information.

Unexpectedly, the concept of confirmation of cases is not specified in more than 63% of the reporting forms, mainly from the microbiology laboratory and the blood center, and concerns hepatitis and STI. The confirmation rate exceeds 95% for other types of diseases (table 2).

The frequency of hepatitis and STI at EHUO is related to the number of patients consulting in the surgical and gastroenterology departments, where a significant number of hepatitis patients are followed. These pathologies are often diagnosed for the first time at the facility level, either during an examination of complementary tests (preoperative assessment), or during a serology for a donation of blood to the CTS.

Hepatitis B is the first reported disease, it is at the top of the list with 1042 cases, a frequency of 41%. Nevertheless, only 190 cases (18.2%) are declared confirmed. It is the same for hepatitis C. Namely that in only 21.5% of the cases declared the notion of confirmation is specified (table 2).

STI come second with a confirmation rate of 43.4% (table 2). They are dominated by the cases of syphilis which are, especially declared by the service of dermatology and the service of microbiology.

For vaccine-controlled diseases (CVD), vaccination status is omitted in all reported cases, as well as in case follow-up (deaths). Nevertheless, the confirmation rate is 92.5%. Unconfirmed cases are mainly suspicions of poliomyelitis or AFP whose samples are sent to the Institut Pasteur and feedback is often lacking.

For zoonoses and Vector Transmission Diseases (MVD), confirmation exceeds 95% (6,7).

We recorded only 4 cases of waterborne diseases (MTH). A case of infection with TOXI-Food TIAC is reported without confirmation and without precision of the other parameters (type of carrier of the germ and follow-up of the case (death).

6.CONCLUSION

According to the regulations, tout any doctor, regardless of his diet and place of practice, is confronted with the day-to-day management of MDO and must immediately declare any MDO diagnosed, suspected and / or adequately confirmed according to the regulations. Also, any laboratory supervisor is required to declare the confirmed MDO confirmations in his laboratory (1-5).

Several reminders and information sessions and outreach to practitioners were conducted to improve the reporting quality of MDO but without positive outcome.

Managers will have to accept that ultimately surveillance is an essential function of public health and a practice parallel to medical practice. The state must understand that this action must be funded as such within the health budget. Commitment and financial support from the

government are essential for sustainable changes in the epidemiological surveillance system that can lead to improvements in the control of communicable diseases (8). It is important that all officials, representatives of the Ministry of Health and health practitioners become involved and find solutions for a better system or even a better declaration.

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2. All SEMEP residents who participated in the investigation of reported cases
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