Arch Public Health
1999, 57, 311-324

Notification of communicable diseases

by

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Abstract

Reporting of statutory conditions is a very useful tool in identifying outbreaks. Just as any other surveillance system it requires the use of the collected information, the control of identified problems and the feedback of results to the data-providers. Several reports already indicated that reporting could vastly be improved, in the Flemish as in the French Community. For Brussels a large part of not notifying could be due to the complex situation, where up to now it remains unclear what disease needs reporting to what authority. For clinical laboratories the EPILABO software-tool developed at the Scientific Institute of Public Health – Louis Pasteur (IPH) now integrates the capacity to forward the requested information to the health inspection.

Comparison with other countries shows the need in each of the Belgian Communities to improve surveillance and control of infectious diseases. In order to provide correct data about our country and its communities, integration of information from various sources remains necessary.

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Improvements could be achieved through a better training of graduating physicians on their future public health role, through a better communication of the regulations and through a clear legislative framework. This is needed to comply with EU, WHO and other international requirements.

The regulations in the French Community (which are in progress) needs updating and the situation in Brussels needs to be clarified.

Key words

Surveillance, notifications, mandatory-reporting, legislation.

Introduction

Surveillance as a data collection tool has existed for centuries and provided valuable information. The first use of surveillance tools for public health action was found in the fourteenth century when travellers, returning on ships from plague infected areas, were quarantined for 40 days. In 17th century London, mortality data were collected on the basis of causes of death, used to analyse the extent of plague and results were weekly made public.

Notification for a number of infectious diseases became mandatory in many European countries during the last century and have remained in effect in most places, although failure to report is common. The purpose is mainly to identify individuals, to detect early signs of a communicable disease and to implement adequate preventive measures to limit the spread.

After 1950, with the creation of the Communicable Disease Centre (later the Centres for Disease Control and Prevention), the concept of surveillance as a monitoring tool for the incidence of a disease in a population was emphasised. The actual control efforts were seen as a distinct purpose, to be addressed by the health authority.

During this period, surveillance became a major tool in control and elimination efforts for diseases such as poliomyelitis, measles, rabies, and later the eradication of smallpox. Hereafter the evolution of terms led to restrict epidemiological surveillance, reflected in the new CDC de-

finition, as "public health surveillance is the ongoing, systematic collection, analysis, interpretation and dissemination of health data on specific health events for use in the planning, implementation and evaluation of public health programs. The concept of public health surveillance does not include administration of the prevention and control programs, but does include an intended link with those programs (1).

This has led the application field to evolve into new contexts: nosocomial infections, pharmaco-epidemiology, and others. The purpose of communicable disease surveillance has thus evolved from the level of individual control (as in the classical aspects of STD's: case finding, contact tracing and prevention strategies) to guidance for health interventions, trend estimation, high-risk group identification, transmission pattern changes and prevention strategies (2, 3).

In Belgium, organisation of prevention measures still carries the remains of Napoleons' reforms at the end of the 18th century, which gave the communal level important responsibility in public hygiene: prevention of epidemics stayed under the responsibility of the mayor, albeit in co-ordination with the provincial authority.

Progressively, between 1831 (with cholera, yellow fever, plague, smallpox), 1945 (4) (with 22 other diseases), and 1976 (5) (with rabies and haemorrhagic fevers), almost 30 diseases were made mandatory to report to the public health authority. The 'statutory' notification was instated by law in June 1922, and in 1945 the prophylactic measures were described. On STD's, specific laws were made applicable in 1924 and 1945, on needs to ensure proper treatments. Similarly, for the control tuberculosis, specific laws, programmes, and even a whole history by itself of agencies (current: FARES/VRGT) were created.

In 1936 surveillance of communicable disease was for the first time considered important enough to operate under the responsibility of a Minister of Public Health. With the major reform of the Belgian constitution in 1980, competence in environment and public health was for a large part transferred to the regional authority (for environmental issues) and to the community authority (for prevention in general, for control of infectious diseases in particular). For public health in the Brussels Capital Region, falling under the prevention strategies of two distinct Community authorities, a Common Community Commission (COCOM/GGC) was created.

Current situation

By the legislation of 1945 (4) and 1976 (5), quarantinable diseases were listed to be reported to the health inspector by clinicians/physicians or by the head of family to mayor of the commune (table 1). For non-quarantinable diseases the physician reports to both (ex: *Mycobacterium tuberculosis*) and the lab-director reports to both. The mid-wife reports to health inspector on puerperal sepsis or stillbirth. For quarantinable as for non-quarantinable diseases, patient identifiers are required. Special procedures exist for extreme situations. For STD, the physician reports only to the health inspector, but here no patient identifiers required.

In 1995, the Flemish community issued a decree (6), modifying the notification requirements of 1945 and 1976 and their related prophylaxis of infectious diseases. The main targets are not written as surveillance targets but more for allowing the possibility of issuing prophylactic measures. It states three levels, depending on the severity and hence urgency to report:

1. within 24 h, by phone, by physician and the person in charge of the clinical biology laboratory making the diagnosis,
2. within 48 h, by mail, by physician and the person in charge of the clinical biology laboratory making the diagnosis,
3. within 48 h, by mail, by physician.

In comparison to the list, last modified in 1976 (5), following conditions are included: pertussis, dengue, hantavirus, *Haemophilus influenzae* meningitis, acute forms of hepatitis A, B and C, *Legionella*, *Listeria*, scabies, *Trichinella*, gastro-enteritis with 3 cases or more within same community in less than 1 one week, protozoa infections of the central nervous system. It dropped *Chlamydia trachomatis*, *Lymphogranuloma venerum*, tularemia and *Haemophilus ducreyi* from the federal list (table 1).

Since its instalment, some elements of the decree have led to a debate: the notification does not require the patient name, but only the name of the treating physician, who is required to provide additional details, if requested. For some this is too much information, for others it is not enough.

The data transfer could vastly be improved, in particular for the laboratories already forwarding information to the IPH through their partici-

pation at the national sentinel laboratories network. A recently released software-update of the electronic communication system within this network allows to immediately forward all the statutory conditions and data to the Community health authorities. The system provides the necessary confidentiality in identifiers through an encryption process of the identifier data.

The French Community, joined by a group of experts, has put great effort in reviewing statutory reporting on targets, usefulness and means of collecting information. The conclusions of this group will undoubtedly lead to a modification of the notification decree. In the meantime, the legislation of 1971 (7), last modified in 1976, remains applicable. The French Community has prepared a three level reporting requirement, depending on the person most likely to diagnose the condition: by physician, by the person in charge of the clinical biology laboratory making the diagnosis or by the person in community making the probability diagnosis (as for food-borne illnesses).

An area in which a lot of confusion still remains is the need to notify within the Brussels Capital Region. Who should notify what authority on which conditions? In principle, the Brussels Common Community Committee (COCOM or Commission Communautaire Mixte/GGC or Gemeenschappelijke Gemeenschapscommissie) should be the legal authority to whom to report to, but currently it lacks the human resources to use that incoming information. Since each Community decrees has only implications on institutions or settings within the Community but not on persons, physicians within such a body may be required to report directly to either the Flemish or French authority, following the rules and conditions applicable within that community, but the action field of the health inspector will equally be restricted to that body. For physicians not working under such a body, the situation is a lot less clear: is the reporting condition depending on the language of the physician or the patient, i.e., should legionellosis (mandatory only in Flemish Community), identified in a patient in a Brussels hospital, be reported?

Independent of this complexity, the question on data transfer to the Communities and flow of information can be an issue: will a patient diagnosed with cholera in a Brussels hospital be reported to WHO? And how often will this diagnosis be reported?

The WHO has set up the International Health Regulations (IHR) in 1969 to help monitor the spread of four serious diseases with significant

potential for spread between countries, requiring notification on cholera, plague and yellow fever (smallpox was removed from the list in 1981). Since their introduction, the spread of yellow fever has been limited by vaccination of travellers, the spread of plague has been contained by rat inspections of conveyances and by containerisation of freight, but the spread of cholera has not been prevented because of the failure of basic principles of hygiene and sanitation.

The IHR do not cover several diseases of international importance, such as ebola and other haemorrhagic fevers and dengue fever. The IHR are currently being revised to make them more appropriate to control infectious diseases of international importance as we enter the 21st century.

Revision of the IHR is intended to facilitate epidemic surveillance and control activities at all levels, national, regional and international (alert and response). Defined syndromes of international importance will replace specific diseases. The revised IHR will also include descriptions of best public health practice and ensure 24-hour availability of information.

Other reporting to other WHO-offices is required for poliomyelitis, malaria, typhus, epidemic influenza, recurring fever and rabies. The WHO Collaborating Centre on foodborne infections in Berlin requires a once yearly report on outbreaks.

In its expanding scope of activities, Europe (DG VI, the directorate general for agriculture) has issued a directive in 1992 (8) to make yearly reporting of: *Brucella* (all forms), *Echinococcus multilocularis*, *Listeria*, *Mycobacterium bovis*, rabies, *Salmonella typhi and paratyphi*, *Toxoplasma gondii*, *Trichinella spiralis*, *Yersinia enterocolitica*. Although the information is yearly fed back to all participating countries, the available information is hard to interpret (due to the vast difference in health care infrastructure, reimbursement schemes and reporting habits), it will require the inclusion of the aforementioned diseases to the federal, regional and community laws and decrees. Toxoplasmosis and yersiniose are not present in the federal or Flemish regulations, while *Mycobacterium bovis* and salmonella non-typhi are not explicitly mentioned in the Flemish regulations.

After the treaty of Maastricht, the EU has opened the way for public health and control of infectious diseases at a European level. During the last 4 years, Council, Commission and Parliament discussed the best

approach and expressed a favour of an epidemiology network (9) (as opposed to a centre or agency), which seems finally to gain the approval of the parliament. Through this network, it will become necessary to provide information on haemorrhagic fevers, Creutzfeldt-Jakob Disease (CJD), yellow fever, nosocomial infections, plasmodium, rabies, *rickettsia*, plague, cholera, viral hepatitis, sexually transmitted diseases, all epidemic and vaccine preventable diseases, foodborne and water and environment related illnesses. This again will require the regulations to be adapted.

In 1996 a prioritisation exercise among EU-public health infectious diseases epidemiologists was started to define the most appropriate need for information and exchange on infectious disease (10). The results of this exercise are included in table 1. Noteworthy is the fact that for many mentioned diseases, no statutory reporting exist in several countries.

Other obligations, either through international treaties or collaborations requires to provide information on items that are often not monitored. In the framework of a convention with the United Nations, Belgium has a commitment to exchange information on infectious diseases that could result from use/misuse of biological weapons. In this convention it is mandatory for the Ministry of Foreign Affairs to provide the UN data on all outbreaks, in particular on diseases for which a laboratory facility of biosafety level P3 or P4 is required, or outbreaks with imported pathogens, or following a non-natural course, or in the vicinity or research centres.

International collaborative efforts such as a EU-US task force on infectious disease requires Belgium to contribute to the exchange of information on antibiotic resistance, Salmonella and Verotoxin producing *E. coli* infections, on travel related *Legionella* infections.

In 1997, an EU effort of DG V and all communicable diseases institutes and administrations resulted in establishing an inventory of infectious diseases (11), in terms of resources, notifiable diseases, reported conditions, and means of controlling communicable diseases in EU-member states, joined by Norway and Switzerland. On statutory reportable conditions, it was found that in every country between 1 and 4 institutions were involved, but 14 countries had more than one. Only in UK and Belgium, not one national institute centralised the data; most countries have 1 or even more intermediate institutes, forwarding the

TABLE 1
List of pathogens or conditions to report, according to different sources

Pathogen	Statutory notification					Notes
	Sentinel laboratories	CF+ Brussels (5)	Vlaamse Gemeenschap (6)	WHO	Prioritisation exercise (10)	
Systemic infections						
Bacillus anthracis		x	x 3			
Bacterial intoxication		x				
Group A streptococcal infection	x					Scarlet fever, Pemphigus neonatorum, Erysipelas
Streptococcus pyogenes	x	x				Puerperal fever
Borrelia burgdorferi	x				31	
Borrelia recurrentis		x	x 1	x		
Brucella	x	x	x 2	x	33	Undulating fever
Chlamydia psittaci	x	x	x 2			
Clostridium botulinum	x	x	x 1		24	
Clostridium tetani		x	x 3			
Cryptococcus neoformans	x					
Dengue		x				
Echinococcus multilocularis				x	34	Zoonosis transmitted by foxes
Flavivirus		x	x 2	ihr	3	Yellow fever
Francisella tularensis		x				
Haemorrhagic fever		x	x 1		3	
Arenavirus		x	x 1		3	Lassa fever
Bunyavirus		x	x 1		3	American haemorrhagic fever
Nairovirus		x	x 1		3	Congo Crimean fever
Filovirus		x	x 1		3	Marburg fever
Hantavirus	x		x 2		22	
Leptospira	x	x	x 2			
Malleomyces mallei		x				Morve/Kwade droes
Mycobacterium bovis			x	x	15	
Mycobacterium leprae		x				
Plasmodium sp.	x	x	x 1	x	3	VG, transmission in Belgium
Rhabdovirus		x	x 1	x	30	
Ricketssia prowazekii, R. typhi, R. tsutsugamushi		x	x 1	x	3	Typhus fever, murine typhus, Scrubtyphus
Ricketssia sp.		x	x 3			Tickborne Rickettsiose, other than typhus (spotted fever)
Salmonella typhi		x	x 2	x		
Smallpox virus		x				
Staphylococcus aureus		x				
Trichinella spiralis			x 2	x		
Yersinia pestis		x	x 1	ihr	3	
Infections of Central Nervous System						
Creutzfeldt-Jakob disease					2	
Haemophilus influenzae	x		x 2		30	Meningitis, infection due to serotype b
Neisseria meningitidis	x	x	x 2		7	Septicemia or meningitis
Poliovirus		x	x 1	x	21	
Protozoa infection of CNS			x 3			
Naegleria fowleri			x 3			If CNS infection
Toxoplasma gondii		x	x 3	x	35	If CNS infection
Virale encephalitis		x				

Gastro-instestinal						
Ancylostoma duodenale		x				
Campylobacter sp.	x					
Cryptosporidium sp.	x					
Cyclospora sp.	x					
E. Coli (VTEC and EHEC)	x					
Entamoeba histolytica	x	x	x			If CNS infecton
Epidemic diarrhoea of newborns			x			
Fasciola hepatica						
(and other liver flukes)	x					
Food-borne illnesses			x 3		1	VG: 3 cases or more within same community in less than 1 one week
Giardia	x					
Listeria	x		x 3	x	11	deep isolate
Salmonella paratyphi		x	x			
Salmonella sp.		x	x			
Shigella sp.	x	x	x 3			
Vibrio cholerae	x	x	x 2	ihr	26	
Vibrio parahaemolyticus	x					
Viral hepatitis		x				
Hepatitis a	x	x	3		20	VG: acute only
Hepatitis b		x	3		18	VG: acute only
Hepatitis c		x	3		25	VG: acute only
Yersinia enterocolitica	x			x		
Yersinia pseudotuberculosis	x					
Respiratory						
Adenovirus	x					
Bordetella pertussis	x		x 3			
Chlamydia pneumoniae	x					
Corynebacterium diphteriae	x	x	x 2		14	
Influenza A	x	x		x	10	If epidemic
Influenza B	x	x		x	10	If epidemic
Legionella pneumophila	x		x 2		4	
Mycobacterium tuberculosis		x	x 2		6	
Mycoplasma pneumoniae	x					
Parainfluenza	x					
RSV	x					
Streptococcus pneumoniae	x					
Sexually transmitted diseases					27	
Chlamydia trachomatis	x	x			30	
Haemophilus ducreyi		x			30	
HIV					12	
Neisseria gonorrhoeae	x	x	x 3		17*	*antibiotic resistent only
Treponema pallidum		x	x 3		26	
Conditions						
Antibiotic resistance					5	
Illness with epidemic potential	x					
Immunisations					9	
Infections in immigrants					19	
Sarcoptes scabiei			x		3	

ihr: international health regulations
CF: Communauté française
VG: Vlaamse Gemeenschap
VG 1: to report by each physician and each laboratory within 24 hours
VG 2: to report by each physician and each laboratory within 48 hours
VG 3: to report by each physician within 48 hours

data to one national surveillance centre. The number of reportable diseases ranges from 21 (France) (12) to 80 (Finland) with a median of 39. Only 8 diseases are shared in common among all 17 countries: 4 of those are mandated by the WHO regulations (cholera, rabies, poliomyelitis, plague) and are fortunately almost not present, the others are: tuberculosis, malaria, meningococcal meningitis and typhoid fever. In several northern countries and in Belgium (Flemish and French Community) also laboratory reporting was included. In 12 areas (including Flemish Community) health authorities work with reporting classes, requiring different notifier and types of notification. 14 countries use standardised forms. Only 4 countries have protocols for field investigations. Patient names are required and mandatory in all countries but France, Portugal and Flemish Community. For STD this still holds in 8 countries. Belgium (through Flemish and French Community) and Switzerland are the only countries were not one national authority has responsibility in investigating epidemics and in issuing prevention measures. Several countries provide financial incentives to report. The information of this report has been made available on CD-ROM.

Addresses

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Conclusion

Statutory reportable conditions are a very useful tool in identifying outbreaks. Just as any other surveillance system it requires the use of the collected information, the control of identified problems and the feedback of results to the data-providers. Several reports already indicated that reporting could vastly be improved, in Flemish as in the French Community. One could wonder whether physicians are sufficiently informed about the requirements (lack of communication), whether the system is too complex to be operational (Brussels?), or whether physicians simply don't have the discipline to report (lack of training).

Comparing different reporting schemes in Belgium with each other shows small and large differences among systems in comprehensiveness of reporting, i.e. reporting on *Neisseria meningitidis,* leads roughly to the same incidence figures, independent of source (impact of the media?), such as noted from the statutory reporting, sentinel laboratory reporting or through the reference laboratory. For many other conditions the difference is obvious and underlines the need for parallel systems such as the network of sentinel laboratories.

Comparison with other countries shows the need to improve the public health approach on infectious diseases. In order to provide correct data of our country and its communities, integration of information from various sources remains necessary at some 'centralised' or 'co-ordinating' body.

A better communication of the regulations and a clear legislative framework is needed to comply with EU, WHO and other international requirements. The regulations in the French Community (which is in progress) needs updating, and to the situation in Brussels needs to be clarified.

Samenvatting

Het melden van aangifteplichtige ziekten is een zeer nuttig middel om 'outbreaks' te herkennen. Net als andere surveillancesystemen vergt het dat de vergaarde informatie gebruikt wordt, dat de geïdentificeerde problemen aangepakt worden en dat de resultaten teruggekoppeld worden naar de gegevensverstrekker. Verschillende rapporten suggereerden reeds dat de meldingsplicht nog veel kan verbeteren, zowel in de Vlaamse als in de Franse Gemeenschap. Voor het Hoofdstedelijk Gewest kan een groot deel van de onderrapportering te wijten zijn aan de complexe situatie. Tot op heden is het onduidelijk welke ziekte aan welke overheid dient gemeld te worden. Voor laboratoria voor klinische biologie bestaat sinds kort het EPILABO softwarepakket, ontwikkeld op het WIV, dat voortaan de mogelijkheid biedt de melding van aangifteplichtige aandoeningen, met de gevraagde informatie, automatisch door te sturen naar de gezondheidsinspectie.

Vergelijking met andere landen toont de noodzaak om de surveillance en controle van besmettelijke ziekten in elk van de Belgische gemeenschappen te verbeteren. Om juiste gegevens van ons land en zijn gemeenschappen te verstrekken is een integratie van informatie uit verschillende bronnen noodzakelijk.

Verbetering zou men reeds kunnen bekomen door aan artsen in opleiding een betere kijk te geven op hun toekomstige rol in de volksgezondheid, door een betere communicatie omtrent de bestaande wettelijke bepalingen en door een duidelijker wettelijk kader. Dit is verder nodig om de wetgeving aan te passen aan richtlijnen van de EU, de WGO en andere internationale instellingen. De wetgeving (in voorbereiding) van de Franse Gemeenschap moet aangepast worden en de situatie aangaande aangifteplicht in Brussel dient duidelijk te worden.

Sleutelwoorden

Surveillance, aangifte, meldingsplicht, wetgeving.

Résumé

Le recueil des maladies à déclaration obligatoire est un bon outil pour détecter des 'épidémies'. Comme pour les autres systèmes de surveillance, il exige que l'information récoltée soit traitée, que les problèmes identifiés soient solutionnés et que les résultats soient transmis aux personnes qui ont fourni les données. Plusieurs rapports ont déjà suggéré que la déclaration obligatoire devrait être améliorée, tant au niveau de la Communauté Flamande qu'au niveau de la Communauté Française. Pour la Région Bruxelles-Capitale, une grande partie de l'insuffisance de déclaration peut être attribuée à la situation complexe; en effet, à ce jour, le problème suivant n'est pas clairement défini: "quelle maladie doit-elle être déclarée à quelle autorité?" Pour les laboratoires de biologie clinique, il existe depuis peu le logiciel EPILABO, développé à l'ISP, qui donne la possibilité d'envoyer automatiquement à l'inspection d'hygiène les maladies à déclaration obligatoire et les informations requises.

En comparant la situation à celle d'autres pays, il s'avère primordial d'améliorer la surveillance et le contrôle des maladies contagieuses dans toutes les communautés du pays. Afin de fournir les informations correctes sur notre pays et ses communautés, il est tout à fait indispensable d'intégrer les informations provenant de différentes sources.

Une amélioration du système pourrait être apportée en donnant aux médecins en formation une meilleure information sur leur futur rôle en santé publique, sur les modalités juridiques existantes ainsi qu'en préparant un cadre légal plus clair. Celle-ci sera nécessaire également pour adapter la législation belge aux directives de l'UE, de l'OMS et des autres institutions internationales.

La législation (en cours) en Communauté française doit être modifiée et la situation quant à la déclaration obligatoire des maladies à Bruxelles doit être éclaircie.

Mots-clés

Surveillance, notification, déclaration obligatoire, législation.

References

1. THACKER SB, Berkelman. Public Health Surveillance in the United States. Epidemiol. rev., 1988; 10: 164-190.
2. MORABIA A. From Disease Surveillance to Surveillance of Risk Factors. Am J Pub Health, 1996; 86: 625-626.
3. SUSSER M, SUSSER E. Choosing a Future for Epidemiology: 1. Eras and paradigms. Am J Pub Health, 1996; 86: 668-673.
4. Loi sanitaire du 1 septembre 1945.
5. L'arrêté Royal du 18 novembre 1976 modifiant l'arrêté du 1 mars 1971 relatif à la prophylaxie des maladies transmissibles.

6. Besluit van de Vlaamse Regering op 19 april 1995 houdende uitvoering van het Decreet van 5 april 1995 betreffende de profylaxie van besmettelijke ziekten.
7. L'arrêté du 1 mars 1971 relatif à la prophylaxie des maladies transmisibles.
8. Richtlijn 92/117/EEG van de Raad van 17 december 1992 inzake maatregelen voor de bescherming tegen bepaalde zoönosen en bepaalde zoönoseverwekkers bij dieren en in producten van dierlijke oorsprong teneinde door voedsel overgedragen infecties en vergiftigingen te voorkomen.
9. Commission des Communautés Européennes. Proposition de décision du Parlement Européen et du Conseil portant création d'un réseau de surveillance épidémiologique et de contrôle des maladies transmissibles dans la Communauté Européenne. COM (1998) 79.
10. GRIMAUD O, WEINBERG J, NEWTON L, Charter Group. Establishing Priorities for European Collaboration in Communicable Disease Surveillance. Submitted for publication.
11. SALMASO S. European Union inventory of resources and means of control of communicable diseases. Eurosurveillance, 1998; 3: 51.
12. HUBERT B, LAPORTE A, LAPOUTRE A, ROURE C, BRUNET J-B, GOULET V, REBIÈRE I, GARMERIN P, VALLERON J, JESTIN C, BOUVET E. La surveillance des maladies transmissibles en France. Bulletin Epidémiologique Hebdomadaire 1991, 36.