



衛生防護中心
Centre for Health Protection

Scientific Committee on Emerging and Zoonotic Diseases

Review of surveillance systems for detecting clusters of unusual diseases in Hong Kong and other countries

Introduction

Unusual diseases may take the form of a novel infection, a rare infection, or an infection cluster that takes on an unusual epidemiological manifestation. Among the various surveillance data collected by the Centre for Health Protection (CHP), the following types provide signals that warrant further epidemiological investigation to verify the occurrence of unusual disease clusters in Hong Kong:

- (a) Case notifications and outbreak reports of infectious diseases and specific syndromes;
- (b) Sentinel surveillance;
- (c) Laboratory surveillance;
- (d) Hospital admissions/discharges; and,
- (e) Monitoring reports from the media.

2. This paper will first discuss how the surveillance systems processing the above-mentioned types of data may be useful in detecting clusters of unusual infectious diseases in humans locally. The latter part of this paper gives an account of the monitoring of unusual disease clusters outside Hong Kong. Surveillance systems associated with antimicrobial resistance is not covered in this paper. Surveillance for



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control

diseases in animals was introduced in an earlier paper and will not be repeated here.

Case notifications and outbreak reports of infectious diseases and specific syndromes

3. All registered medical practitioners are required by law to report any suspected or confirmed cases of infectious diseases specified in the First Schedule of the Quarantine and Prevention of Disease Ordinance (Chapter 141). (Annex 1). In addition, the CHP and the Hospital Authority (HA) have agreed on a list of 17 diseases that HA doctors will report to CHP (Annex 2). This case notification system covers a host of unusual diseases such as anthrax, botulism, brucellosis, Creutzfeldt-Jakob disease (CJD), *E. coli* O157:H7, enterovirus 71 (EV71), hantavirus, influenza A H5/H7/H9, Japanese encephalitis (JE), leptospirosis, listeriosis, meningococcal infections, plague, Q fever, rabies, and so on. In 2003/04, the system was able to pick up cases of unusual infections such as anthrax (1 case of gastrointestinal anthrax in 2003), brucellosis, (1 case with history of ingesting sheep placenta in 2004), CJD (3 cases in sporadic form in 2004), JE (5 local sporadic cases), leptospirosis (6 cases in 2004, 4 of which were associated with a local watersporting event), EV 71 (35 cases in 2004, mostly associated with childcare centres and kindergartens), and others. Furthermore, the DH/CHP has publicized regularly to doctors urging them to report suspected outbreaks and infectious diseases that are unusual and of public health concern.

4. Besides the case notifications of infectious diseases, there are case notification systems for specific syndromes to help detect the occurrence of unusual disease clusters. Under the acute flaccid paralysis (AFP) surveillance system set up since 1997, all registered medical practitioners are requested to report AFP cases, mainly to facilitate the surveillance of acute poliomyelitis. Active surveillance and zero reporting of AFP is implemented through a network of designated key physicians with each HA acute hospital. The performance characteristics of this surveillance system satisfy the standards and requirements of the World Health Organization (WHO). As another example, following the outbreak of SARS in 2003, a surveillance system was implemented in public and private hospitals to report and monitor acute respiratory illnesses among healthcare staff. This system ties in with the surveillance requirements of WHO for SARS Alert. Similarly, in response to the re-emergence of SARS cases in the Mainland in December 2003, a surveillance system was initiated on pneumonia patients with history of travel, during the 10 days prior to symptom onset, to the provinces where SARS patients were reported. The system detected 480 cases; all were investigated and the diagnosis of SARS was excluded. A further example involves the surveillance of acute encephalitis of unknown origin following discovery of JE cases in June 2004. 28 reports were received and 2 were confirmed to be JE. In these syndromic case reporting systems, clear case definitions are prescribed to

reporting doctors. Besides, the system guides doctors on the necessary clinical and laboratory investigations to confirm the infective agent.

5. Outbreak reports from institutions constitute another important means to detect unusual clusters of diseases, since the institutional setting is conducive to amplification of infectious diseases (e.g., SARS in hospitals, norovirus in schools, EV71 in childcare centres). In this regard, CHP has formed a reporting network with the management of schools, kindergartens and child care centres, and the Infection Control Officers in residential care homes for the elderly and disabled. In most of these outbreaks, clinical samples from cases are collected for laboratory investigation to determine the causative agent. In addition, statistics on institutional outbreaks are compiled and analyzed to detect unusual or seasonal patterns.

Sentinel surveillance systems

6. There is an established sentinel surveillance network comprising 64 general outpatient clinics and some 50 private medical practitioners for monitoring the trends of four disease conditions (namely, influenza-like illness, hand-foot-mouth disease, acute conjunctivitis and acute diarrhoeal diseases).

7. Sentinel doctors send in weekly returns on the daily number of patients presenting with any of the four disease conditions according to the surveillance case definitions and the total number of consultations for each day. The CHP collates the data and computes weekly consultation rates for each condition. Detection of sudden changes in the consultation rates overall or by region or by clinic will be followed up with evaluation, investigation or action as appropriate.

8. Sentinel doctors also send clinical specimens to the Public Health Laboratory Services Branch (PHLSB) of CHP according to the surveillance protocol to facilitate the laboratory identification of microbiological agents associated with the disease conditions under surveillance.

9. This out-patient based sentinel surveillance system has proved effective in detecting community-wide outbreaks (many of which are seasonal in nature) and identifying the responsible agent. For example, the system routinely picks up seasonal peaks of influenza each year which is in good agreement with laboratory surveillance findings and outbreak reports from institutions. In 2002, the system detected an outbreak of acute conjunctivitis in mid-August caused by Coxsackievirus A24 (Annex 3). The system also detects seasonal increases in hand-foot-mouth disease typically during May – July, with identification of Coxsackievirus A16, EV71, and other enteroviruses.

Laboratory surveillance

10. Laboratory reports constitute another important source of data for detecting clusters of unusual diseases. The chief source of laboratory surveillance data comes from the PHLSB, which has a BSL-3 laboratory for human samples. The PHLSB processes diagnostic as well as surveillance specimens collecting mainly from public hospitals and clinics. It also receives specimens from sentinel outpatient clinics, and private hospitals and clinics.

11. The PHLSB conducts laboratory surveillance on a wide range of pathogens against a set of clinical conditions. Examples of agents under surveillance include poliovirus, HIV, adenoviruses, influenza, parainfluenza, respiratory syncytial virus, rhinovirus, mumps, measles, rubella, Coxsackieviruses, echoviruses, enteroviruses, papovavirus, polymomavirus, rotavirus, parvovirus, norovirus, hepatitis viruses, herpes simplex virus, Epstein-Barr virus, varicella-zoster virus, cytomegalovirus, JE, dengue, coronavirus, HuCoV, hantavirus, mycoplasma, chlamydia, rickettsiae, orientia, legionella, etc. Typing and subtyping is done on most viral agents. Similar surveillance is conducted for many bacteriological agents. For example, a special salmonellosis surveillance system conducted in association with some HA hospitals provide serotype information on Salmonella agents in Hong Kong. Molecular typing methods such as PFGE, RFLP and gene sequencing are also adopted. The PHLSB reports any unusual isolate/serological result, or clusters of isolates/serological results to the Surveillance and Epidemiology Branch of CHP for epidemiological investigations.

Hospital admissions

12. After the SARS outbreak was contained in Hong Kong, an enhanced surveillance system has been established in collaboration with HA to detect clusters of pneumonia cases in elderly homes admitted to hospital. HA hospitals provide CHP with daily information on all cases of pneumonia admissions from elderly homes. An epidemiological investigation will be conducted if two or more residents from the same elderly home have been admitted into public hospitals for pneumonia within the same day. Through this surveillance system, clusters of unusual diseases presenting as pneumonia in elderly homes can be detected.

13. The HA has also been sending weekly hospital admission statistics of major acute hospitals on 7 disease conditions, namely, influenza, pneumonia, hand-foot-mouth disease, bacterial meningitis, giardiasis, cryptosporidiosis and listeriosis, to CHP.

Monitoring reports from the media

14. The CHP surveys reports in the print and electronic media daily

for any unusual diseases or unexplained deaths or suspected infectious disease outbreaks. Based on such reports, an initial investigation will be conducted to obtain further clinical information for evaluation of its public health significance. Accumulation of case reports of similar unusual diseases may contribute towards detection of clusters of unusual diseases.

Monitoring unusual disease clusters outside Hong Kong

15. The CHP surveys reports in the print and electronic media, ProMED-mails, APEC EINet, websites of the WHO and other national health authorities daily to monitor overseas outbreak news. The WHO has established global disease surveillance through a broad range of sources and performs outbreak verifications. The CHP, through subscription to the WHO Outbreak Verification List, obtains information on outbreaks of potential international public health importance.

16. Besides, the CHP maintains close liaison with the Ministry of Health, and the health authorities in the Guangdong Province and Macao. Based on the agreement in Tripartite Meeting of the Guangdong-Hong Kong-Macao Expert Group on Prevention and Treatment of Infectious Diseases, there has been regular exchange of information on statutorily notifiable diseases among the three places (Annex 4). Furthermore, any sudden upsurge of infectious diseases of unknown or unusual nature or of public health significance will be promptly reported among the three places. Recent examples of reports given from Guangdong include SARS (early 2004), febrile outbreak caused by adenovirus (2004), meningococcal infections (2005), febrile illness cluster among Hong Kong students travelling to Guangdong later proved to be influenza (2005). Most importantly, designated point-to-point contacts have been established between Guangdong, Hong Kong, and Macao for instant queries and exchange of outbreak information, 24 hours round the clock. The CHP also has a designated contact point with the Ministry of Health for information regarding the occurrence of outbreaks in other Mainland provinces besides Guangdong.

17. The CHP regularly seeks verification and details from consulates, regional health authorities, and the WHO concerning the occurrence of reports of unusual diseases. Examples include avian influenza outbreak in Thailand and Viet Nam (2004/05), and meningococcal infections in the Philippines (2004). A risk assessment is performed in regard of the risk to Hong Kong so as to formulate appropriate responses.

Way forward

18. Taking reference from some overseas countries, there are several new developments in which the surveillance system for unusual infections may be strengthened. The first area involves the breadth of the surveillance network.

Examples include surveillance of over-the-counter drug sales in community pharmacies and surveillance of defined disease conditions/syndromes in childcare institutions and elderly homes. The CHP recently introduced sentinel surveillance in childcare centres which also successfully reflects a seasonal rise in influenza. As the system develops, it will enhance the sensitivity and timeliness of detection of community-wide unusual infections involving predominantly children, particularly EV71. Other sentinel systems are being examined and planned.

19. The second area concerns the number of infectious disease entities under surveillance. After SARS, many countries have revised their notifiable disease lists (Annex 5). In Hong Kong, the relevant law (Chapter 141) is being reviewed, and it is planned to introduce a number of new and emerging infections into the notifiable disease list to enhance the detection of unusual infection or clusters. These diseases may include anthrax, botulism, CJD, E. coli O157:H7 infection, EV71 infection, haemophilus influenzae type b meningitis, hantavirus infection, leptospirosis, listeriosis, psittacosis, and viral hemorrhagic fevers. In addition, the CHP and AFCD have established a bilateral notification channel for human and animal infections.

20. The third area concerns laboratory diagnostic capacity in detecting unusual infections, whether natural (e.g., West Nile Virus) or related to bioterrorist agents. Domains of importance include more efficient methods for direct detection of viruses in clinical samples, anti-viral resistance testing of clinical and epidemiological significance. The development of molecular techniques is particularly versatile for relating pathogens of different origins/sources and this provides valuable hints for epidemiological investigations. The PHLSB is coordinating with other countries in the use of standardized protocol for DNA “fingerprinting” of foodborne bacterial pathogens, e.g. in the PulseNet Asia Pacific network of laboratories. A genetic database for three foodborne bacterial pathogens, namely salmonella, E. coli O157:H7 and listeria, will be established to facilitate tracking the source and spread of infections.

21. A last major area concerns the timeliness and analytic capacity of the surveillance system in detecting unusual disease clusters. Successful automated systems for infectious disease surveillance have been developed in a number of advanced countries. In a recent communicable disease surveillance workshop organized by the CHP, we learned experience from the United Kingdom and the United States of America regarding the application of information systems for laboratory surveillance, syndromic surveillance, aberration detection and alert generation, geographic information systems, and other tools. The CHP has recently launched a web-based tool for notification of infectious diseases including unusual infections. Over a longer term, the construction of a Communicable Disease Information System (CDIS) will provide a real-time and common platform for the collection of surveillance data from multiple sources. This will greatly improve the sensitivity and timeliness

of detecting unusual diseases and clusters.

Centre for Health Protection
March 2005

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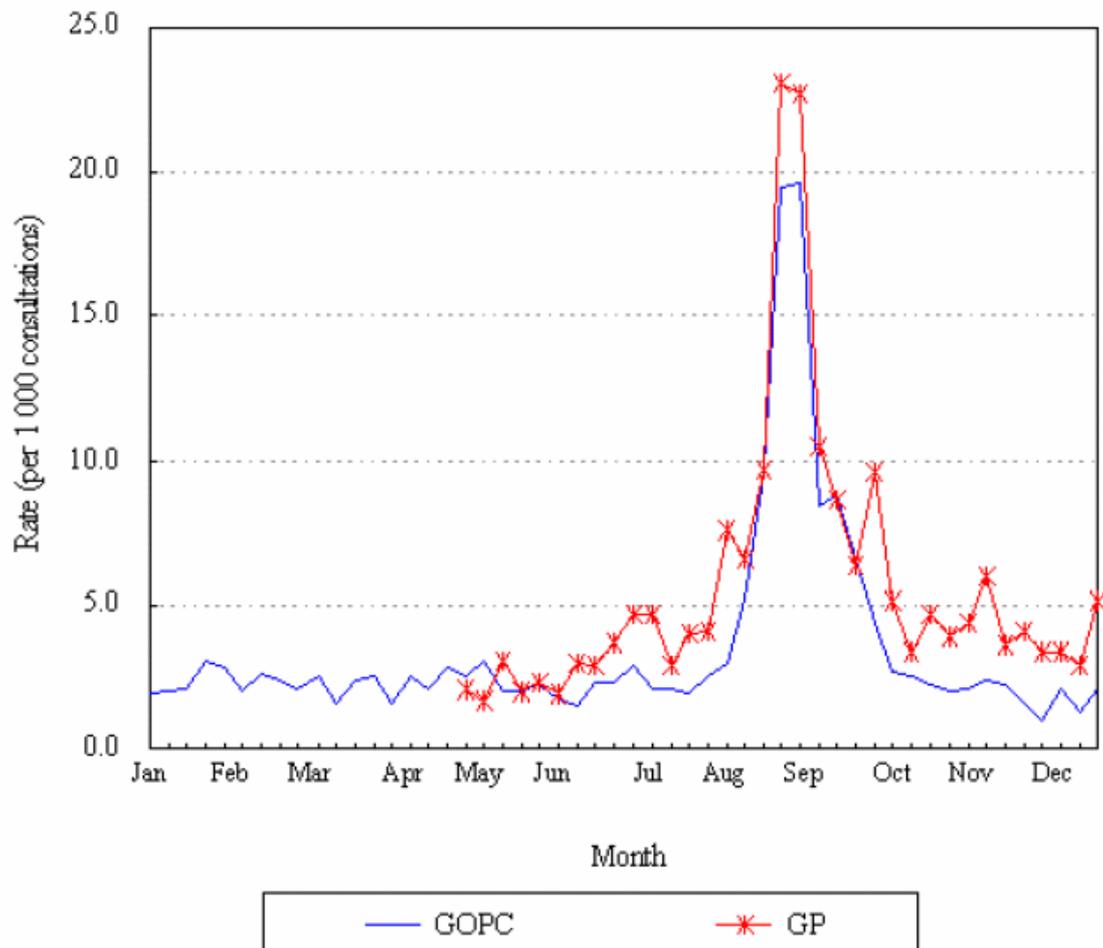
List of statutorily notifiable diseases in Hong Kong

Acute poliomyelitis
Amoebic dysentery
Bacillary dysentery
Chickenpox
Cholera
Dengue fever
Diphtheria
Food poisoning
Influenza A (H5), Influenza A (H7) or Influenza A (H9)
Japanese encephalitis
Legionnaires' disease
Leprosy
Malaria
Measles
Meningococcal infections
Mumps
Paratyphoid fever
Plague
Rabies
Relapsing fever
Rubella
Scarlet fever
Severe Acute Respiratory Syndrome
Tetanus
Tuberculosis
Typhoid fever
Typhus
Viral hepatitis
Whooping cough
Yellow fever

Additional list of infectious diseases to be notified by HA

Acute Flaccid Paralysis
Anthrax
Avian influenza (other than H5, H7 and H9)
Botulism
Brucellosis
Creutzfeldt-Jakob disease
Cryptococcosis
Cryptosporidiosis
E. coli O157:H7
Enterovirus 71
Haemophilus influenzae type b meningitis
Hantavirus infection
Leptospirosis
Listeriosis
Q Fever
Smallpox
Streptococcus suis infection

**Sentinel surveillance of acute conjunctivitis:
Graphical presentation of the weekly consultation rates for acute
conjunctivitis in General Out-patient Clinics (GOPC) and at private
medical practitioners (GP) in 2002**



Regular exchange of infectious diseases information among Guangdong-Hong Kong-Macao

Eight diseases specified in the notification mechanism		
Cholera Dengue fever HIV/AIDS Influenza		Japanese encephalitis Malaria Severe Acute Respiratory Syndrome Tuberculosis
Statutorily notifiable infectious diseases		
Mainland	Hong Kong	Macao
Plague Cholera Viral Hepatitis Dysentery : Bacillary Dysentery and Amoebic Dysentery Typhoid Fever and Paratyphoid Fever HIV/AIDS Gonorrhoea Syphilis Poliomyelitis Measles Whooping Cough Diphtheria Epidemic Cerebrospinal Meningitis Scarlet Fever Epidemic Hemorrhagic Fever Rabies Leptospirosis Brucellosis Anthrax Typhus Epidemic Encephalitis B Kala-Azar Malaria Dengue Fever Neonatal Tetanus Tuberculosis of Lungs Severe Acute Respiratory Syndrome	Acute poliomyelitis Amoebic dysentery Bacillary dysentery Chickenpox Cholera Dengue fever Diphtheria Food poisoning Influenza A (H5), Influenza A (H7) or Influenza A (H9) Japanese encephalitis Legionnaires' disease Leprosy Malaria Measles Meningococcal infections Mumps Paratyphoid fever Plague Rabies Relapsing fever Rubella Scarlet fever Severe Acute Respiratory Syndrome Tetanus Tuberculosis Typhoid fever Typhus Viral hepatitis Whooping cough Yellow fever	Cholera Typhoid Fever and Paratyphoid Fever Other Salmonella Infection (excluding Typhoid Fever and Paratyphoid Fever) Shigellosis (including Bacillary Dysentery) Intestinal E. coli Infections Bacterial Food Intoxication (including staphylococcal and botulism poisoning, excluding Typhoid Fever, Paratyphoid Fever, other Salmonella Infection, Shigellosis and Intestinal E. coli Infections) Amoebiasis (including Acute Amoebic Dysentery) Tuberculosis (all types) Plague Leprosy Tetanus (all types) Diphtheria Whooping Cough Scarlet Fever Meningococcal Infections (with or without Meningitis) Legionnaires' Disease H. influenzae Infection (with or without Meningitis) Syphilis Gonococcal Infections Lymphogranuloma Venereum Other STD (excluding Syphilis, Gonococcal Infections, Lymphogranuloma Venereum and HIV Diseases) Trachoma Acute Poliomyelitis Rabies Dengue Fever (including Dengue Haemorrhagic Fever) Yellow Fever Varicella (Chickenpox) Measles Rubella (German Measles) (all types) Viral Hepatitis (all types) HIV Diseases (including Asymptomatic HIV Infection and AIDS) Mumps Malaria (all types)

Notifiable diseases in Taiwan

(Source: Taiwan CDC http://www.cdc.gov.tw/WebSite_En/index1024.htm)

Communicable Disease Control Act

- (1) Category 1 communicable diseases: cholera, plague, yellow fever, rabies, Ebola hemorrhagic fever, anthrax, severe acute respiratory syndrome (SARS);
- (2) Category 2 communicable diseases: typhus fever, diphtheria, meningococcal meningitis, typhoid, paratyphoid, poliomyelitis, bacillary dysentery, amebic dysentery, dengue fever, malaria, measles, acute viral hepatitis A, enterohemorrhagic E coli (EHEC), enterovirus complicated severe case, Hanta virus syndrome;
- (3) Category 3 communicable diseases: tuberculosis, Japanese encephalitis, leprosy, rubella, congenital rubella syndrome, pertussis, scarlet fever, tetanus, scrub typhus, acute viral hepatitis (except A), mumps, chickenpox, legionella, invasive hemophilus influenzae b, syphilis, gonorrhoea, serious complication of influenza;
- (4) Designated communicable diseases: known communicable diseases or syndromes other than those mentioned in the preceding three subparagraphs that are deemed by the central competent authority necessary to be prevented and controlled in accordance with this Act and are so announced;
- (5) New infectious diseases: unknown emerging communicable diseases or syndromes whose symptoms or cure outcomes are significantly different from those of the known communicable diseases, and the central competent authority considers that their epidemics can pose serious impact on the health of the population, and that it is necessary to prevent and control them in accordance with this Act and is so announced.

Notifiable diseases in Singapore

(Source: Ministry of Health, Singapore)

http://www.moh.gov.sg/corp/publications/details.do?cid=pub_groups_professionals&id=29163546)

LIST OF INFECTIOUS DISEASES LEGALLY NOTIFIABLE UNDER THE INFECTIOUS DISEASES ACT

Diseases to be notified within 24 hours from time of diagnosis

1. Cholera
2. Dengue
3. Dengue haemorrhagic fever
4. Encephalitis
5. Hand, foot and mouth disease
6. Legionellosis
7. Malaria
8. Nipah virus infection
9. Paratyphoid
10. Plague
11. SARS
12. Typhoid
13. Yellow fever

Diseases to be notified within 72 hours from time of diagnosis

14. Chickenpox
15. Diphtheria
16. Hepatitis, viral
17. Measles
18. Mumps
19. Poliomyelitis
20. Rubella
21. AIDS
22. HIV infection (non-AIDS)
23. Tuberculosis
24. Chancroid
25. Gonorrhoea
26. Non-gonococcal urethritis
27. Non-infectious syphilis (latent/tertiary)
28. Infectious syphilis (primary/secondary)
29. Congenital syphilis
30. Genital herpes (first episode)
31. Genital herpes (recurrent)
32. Leprosy

ADMINISTRATIVELY NOTIFIABLE DISEASES

1. *Campylobacter* enteritis infection
2. Hantavirus infection
3. Leptospirosis
4. Melioidosis
5. Meningococcal meningitis
6. Typhus
7. *Listeria monocytogenes* infection
8. *Haemophilus influenzae* b infection
9. Shigellosis
10. Salmonellosis
11. *E Coli* 0157 infection
12. *Cryptococcus neoformans* infection

Notifiable diseases in Japan

(Source: Amendment of the Infectious Diseases Control Law, Japan. *IASR* 2004; 25 : 1-3
<http://idsc.nih.gov/jp/iasr/25/287/tpc287.html>)

Target diseases of the Infectious Diseases Control Law revised on November 5, 2003 (Reportable infectious diseases of categories I to V under the National Epidemiological Surveillance of Infectious Diseases)

<p>Category I (to be notified all the cases promptly after diagnosis)</p> <ul style="list-style-type: none">Crimean-Congo hemorrhagic fever*Ebola hemorrhagic fever*Lassa fever*Marburg disease*Plague*Severe Acute Respiratory Syndrome(SARS)*Smallpox*
<p>Category II (to be notified all the cases promptly after diagnosis)</p> <ul style="list-style-type: none">Acute poliomyelitis*Cholera*Diphtheria*Paratyphoid fever*Shigellosis*Typhoid fever*
<p>Category III (to be notified all the cases promptly after diagnosis)</p> <ul style="list-style-type: none">Enterohemorrhagic <i>Escherichia coli</i> infection*
<p>New category IV (to be notified all the cases promptly after diagnosis)</p> <ul style="list-style-type: none">Anthrax*Avian influenza virus infection*Botulism*Brucellosis*Coccidioidomycosis*Dengue fever*Echinococcosis*Epidemic typhus*Hantavirus pulmonary syndrome*Hemorrhagic fever with renal syndrome*Hepatitis A*Hepatitis E*Herpes B virus infection*Japanese encephalitis*Japanese spotted fever*Legionellosis*Leptospirosis*Lyme disease*Lyssavirus infection (excluding rabies)*Malaria*Monkeypox*Nipah virus infection*Psittacosis*Q fever*Rabies*Relapsing fever*Scrub typhus (Tsutsugamushi disease)*Tularemia*West Nile fever (including West Nile encephalitis)*Yellow fever*

New category V

a. Diseases to be notified all the cases by all physicians within 7 days after diagnosis

- Acquired immunodeficiency syndrome*
- Amebiasis*
- Acute encephalitis (excluding Japanese encephalitis and West Nile encephalitis)*
- Congenital rubella syndrome
- Creutzfeldt-Jakob disease*
- Cryptosporidiosis
- Giardiasis
- Severe invasive streptococcal infections (Streptococcal toxic shock-like syndrome)*
- Syphilis
- Meningococcal meningitis*
- Tetanus*
- Vancomycin-resistant *Enterococcus* infection*
- Vancomycin-resistant *Staphylococcus aureus* infection*
- Viral hepatitis (excluding hepatitis A and E)*

b. Diseases to be reported by the sentinel clinics and hospitals

< Influenza sentinel > (weekly report)

- Influenza (excluding avian influenza virus infection)*

< Pediatric disease sentinel > (weekly report)

- Chickenpox
- Erythema infectiosum
- Exanthem subitum
- Group A streptococcal pharyngitis*
- Hand, foot and mouth disease*
- Herpangina*
- Infectious gastroenteritis*
- Measles (excluding adult)*
- Mumps*
- Pertussis*
- Pharyngoconjunctival fever*
- Respiratory syncytial virus infection*
- Rubella

< Eye disease sentinel > (weekly report)

- Acute hemorrhagic conjunctivitis*
- Epidemic keratoconjunctivitis*

< Sexually transmitted disease (STD) sentinel > (monthly report)

- Condyloma acuminatum
- Genital chlamydial infection
- Genital herpes
- Gonorrhea

< sentinel hospital >

(weekly report)

- Aseptic meningitis*
- Bacterial meningitis*
- Chlamydial pneumonia (excluding psittacosis)
- Measles in adults*
- Mycoplasmal pneumonia

(monthly report)

- Methicillin-resistant *Staphylococcus aureus* infection
- Multi-drug-resistant *Pseudomonas aeruginosa* infection
- Penicillin-resistant *Streptococcus pneumoniae* infection

The disease added or changed in this revision.

* Target disease of infectious agent surveillance

Australian national notifiable diseases list

(Source: Australian Government Department of Health and Ageing

http://www.health.gov.au/internet/wcms/publishing.nsf/Content/cda_surveil-nndss-dislist.htm)

Acquired immunodeficiency syndrome	Kunjin virus infection
Anthrax	Legionellosis
Australian bat lyssavirus	Leprosy (Hansen's disease)
Barmah Forest virus infection	Leptospirosis
Botulism	Listeriosis
Brucellosis	Lyssavirus unspecified
Campylobacteriosis (not notified in New South Wales)	Malaria
Chlamydial infection	Measles
Cholera	Meningococcal disease (invasive)
Congenital rubella syndrome	Mumps
Congenital syphilis	Murray Valley encephalitis virus infection (notified as Australian arbo-encephalitis in Victoria)
Creutzfeldt-Jakob disease (CJD)	Pertussis (whooping cough)
Cryptosporidiosis	Plague
Dengue virus	Pneumococcal disease (invasive)
Diphtheria	Poliomyelitis - wild type and vaccine-associated
Donovanosis	Psittacosis (ornithosis)
Flavivirus infection -unspecified or not otherwise classified	Q fever
Gonococcal infection	Rabies
Haemolytic uraemic syndrome (HUS)	Ross River virus infection
<i>Haemophilus influenzae</i> serotype b (Hib) (invasive only)	Rubella
Hepatitis A	Salmonellosis
Hepatitis B newly acquired	Severe acute respiratory syndrome (SARS)
Hepatitis B unspecified	Shiga toxin- and verocytotoxin-producing <i>Escherichia coli</i> (STEC/VTEC)
Hepatitis C newly acquired	Shigellosis
Hepatitis C unspecified	Smallpox
Hepatitis D	Syphilis - infectious (primary, secondary and early latent), less than 2 years duration
Hepatitis E	Syphilis - more than 2 years or unknown duration
Hepatitis - not otherwise specified (not notified in Western Australia)	Tetanus
HIV infection - individuals less than 18 months of age	Tuberculosis
HIV infection - newly acquired	Tularemia
HIV infection - unspecified individuals over 18 months of age	Typhoid
Influenza laboratory-confirmed	Viral haemorrhagic fevers (quarantinable)
Japanese encephalitis virus infection	Yellow fever

Notifiable diseases in the United States of America

(Source: US CDC <http://www.cdc.gov/epo/dphsi/phs/infdis2005.htm>)

<ul style="list-style-type: none"> • Acquired Immunodeficiency Syndrome • Anthrax • Arboviral neuroinvasive and non-neuroinvasive diseases <ul style="list-style-type: none"> ○ California serogroup virus disease ○ Eastern equine encephalitis virus disease ○ Powassan virus disease ○ St. Louis encephalitis virus disease ○ West Nile virus disease ○ Western equine encephalitis virus disease • Botulism <ul style="list-style-type: none"> ○ Botulism, foodborne ○ Botulism, infant ○ Botulism, other (wound & unspecified) • Brucellosis • Chancroid • <i>Chlamydia trachomatis</i>, genital infections • Cholera • Coccidioidomycosis • Cryptosporidiosis • Cyclosporiasis • Diphtheria • Ehrlichiosis <ul style="list-style-type: none"> ○ Ehrlichiosis, human granulocytic ○ Ehrlichiosis, human monocytic ○ Ehrlichiosis, human, other or unspecified agent • Enterohemorrhagic <i>Escherichia coli</i> <ul style="list-style-type: none"> ○ Enterohemorrhagic <i>Escherichia coli</i>, O157:H7 ○ Enterohemorrhagic <i>Escherichia coli</i>, shiga toxin positive, serogroup non-O157 ○ Enterohemorrhagic <i>Escherichia coli</i> shiga toxin+ (not serogrouped) • Giardiasis • Gonorrhoea • <i>Haemophilus influenzae</i>, invasive disease • Hansen disease (leprosy) • Hantavirus pulmonary syndrome • Hemolytic uremic syndrome, post-diarrheal • Hepatitis, viral, acute <ul style="list-style-type: none"> ○ Hepatitis A, acute ○ Hepatitis B, acute ○ Hepatitis B virus, perinatal infection ○ Hepatitis C, acute • Hepatitis, viral, chronic <ul style="list-style-type: none"> ○ Chronic Hepatitis B ○ Hepatitis C Virus Infection (past or present) • HIV infection <ul style="list-style-type: none"> ○ HIV infection, adult(> =13 years) ○ HIV infection, pediatric (<13 years) • Influenza-associated pediatric mortality 	<ul style="list-style-type: none"> • Legionellosis • Listeriosis • Lyme disease • Malaria • Measles • Meningococcal disease • Mumps • Pertussis • Plague • Poliomyelitis, paralytic • Psittacosis • Q Fever • Rabies <ul style="list-style-type: none"> ○ Rabies, animal ○ Rabies, human • Rocky Mountain spotted fever • Rubella • Rubella, congenital syndrome • Salmonellosis • Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV) disease • Shigellosis • Smallpox • Streptococcal disease, invasive, Group A • Streptococcal toxic-shock syndrome • <i>Streptococcus pneumoniae</i>, drug resistant, invasive disease • <i>Streptococcus pneumoniae</i>, invasive in children <5 years • Syphilis <ul style="list-style-type: none"> ○ Syphilis, primary ○ Syphilis, secondary ○ Syphilis, latent ○ Syphilis, early latent ○ Syphilis, late latent ○ Syphilis, latent unknown duration ○ Neurosyphilis ○ Syphilis, late, non-neurological • Syphilis, congenital <ul style="list-style-type: none"> ○ Syphilitic Stillbirth • Tetanus • Toxic-shock syndrome • Trichinellosis (Trichinosis) • Tuberculosis • Tularemia • Typhoid fever • Vancomycin - intermediate <i>Staphylococcus aureus</i> (VISA) • Vancomycin - resistant <i>Staphylococcus aureus</i> (VRSA) • Varicella (morbidity) • Varicella (deaths only) • Yellow fever
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