

## OVERVIEW OF COMMUNICABLE DISEASES SITUATION

In Singapore, the incidence of infectious diseases is monitored systematically through various surveillance systems. The Communicable Diseases Surveillance Branch (CD-Surveillance) at the Ministry of Health (MOH) implements and administers surveillance systems for human infectious diseases. Complementing the efforts of MOH are partner agencies, the Agri-Food and Veterinary Authority of Singapore (AVA) and the National Environment Agency (NEA), which are responsible for animal and food surveillance, and environmental surveillance respectively.

MOH collects epidemiological information on human infectious diseases via:

- Mandatory notifications
- Administratively-required notifications
- Active sentinel surveillance (via polyclinics)
- Anecdotal reporting
- Laboratory surveillance
- Seroepidemiological surveillance

In 2003, CD-Surveillance implemented several measures to improve on the timeliness, completeness, accuracy and representativeness of epidemiological data collated on infectious diseases of public health importance. Lessons learnt from the global SARS epidemic have also been applied to enhance disease surveillance and outbreak response for endemic, as well as emerging and

### AIR-/DROPLET-BORNE DISEASES

In 2005, chickenpox and hand, foot and mouth disease (HFMD) continued to contribute significantly to the burden of air-/droplet-borne diseases. A total of 24,248 chickenpox cases (557.2 per 100,000 population) were notified in 2005 - a 21% increase from 20,083 cases (473.6 per 100,000 population) reported in 2004. Two chickenpox associated deaths were reported by the Registry of Births & Deaths. Both had known co-morbid conditions which might have contributed to their deaths.

A total of 15,257 cases (350.6 per 100,000 population) of HFMD were notified in 2005 compared to the relatively low incidence rates observed in 2003 (133.9 per 100,000) and 2004 (151.2 per 100,000). The enterovirus surveillance showed an increase in the proportion of enterovirus 71 (EV71) detected in the specimens obtained from sentinel HFMD cases. EV71

re-emerging infectious diseases.

Various communication channels have also been established to provide timely information to medical practitioners, who play a vital role in the national surveillance of infectious diseases. These include:

- MOH MedAlert (for alerts on disease outbreaks)
- MOH Weekly Infectious Disease Bulletin (providing weekly data on infectious diseases)  
<http://www.moh.gov.sg/corp/publications/idbulletin>
- Epidemiological News Bulletin (quarterly bulletin on epidemiological trends)  
<http://www.moh.gov.sg/corp/publications/enb>
- Communicable Diseases Surveillance Annual Report  
<http://www.moh.gov.sg/corp/publications/CDS2005>

In this issue of the communicable diseases surveillance report, all notifications of infectious diseases received during the year 2005 have been included. However, notifications of cases involving non-resident foreigners seeking medical treatment in Singapore for infectious diseases have been excluded from selected morbidity statistics which reflect the status in Singapore citizens, Singapore permanent residents and foreigners residing in Singapore (i.e. non-citizens who have not been granted permanent residence status).

infection has been associated with increased severity and case fatality in the past; however, no HFMD fatality was reported in 2005.

The incidence of other vaccine preventable air-/droplet-borne diseases such as measles, mumps, rubella and meningococcal infection has stabled at the low level observed in 2004. There was a sharp decline in the number of laboratory-confirmed measles cases from 96 cases (2.3 per 100,000 population) reported in 2004 to 33 cases (0.8 per 100,000 population) in 2005. A total of 139 rubella cases (3.2 per 100,000 population) were notified in 2005 compared with 141 cases in 2004. There was one reported case of congenital rubella and no termination of pregnancy as a result of maternal rubella infection in 2005. The incidence of mumps was 1,004 cases (23.1 per 100,000 population) in 2005 compared

with 1,003 cases (23.7 per 100,000 population) in 2004. Five sporadic cases of meningococcal infections were also reported. There was no subsequent transmission.

We continued to monitor influenza activity in 2005. As in other years, influenza A predominated over influenza B. Of the 97 influenza A isolates, 78.4% belonged to the H3N2 subtype. Another 65 cases of influenza A were not typed as they were identified by antigen detection. Most of the influenza A H3N2 viruses were characterised as

A/California/7/2004(H3N2)-like or as low reactors to the latter. Low numbers of A/New York/55/2004-like isolates were detected in July and August. H1N1 activity was due to A/New Caledonia/20/99-like strains as in the previous year. B/Hong Kong/330/2001-like strains continued to circulate from 2004 into 2005 although towards the end of the year, B/Ohio/1/05 made its appearance. No H5N1 virus was detected from suspected avian influenza cases.

### VECTOR-BORNE/ZOONOTIC DISEASES

Since the year 2000, when the annual dengue incidence was 673 cases (16.8 per 100,000 population), there has been a steady increase in notifications of Dengue Fever/Dengue Haemorrhagic Fever (DF/DHF). In 2005, a record high of 14,209 DF/DHF cases were notified, including 27 deaths. The majority of the cases (98.8%) were infected locally. DEN-1 was the predominant circulating strain in 2005.

In contrast, the majority (99.4%) of the 166 malaria cases notified in 2005 were acquired overseas. One case of Japanese Encephalitis (JE) was reported.

All vector-borne diseases were thoroughly investigated on notification, followed by a coordinated multi-agency response. Intensive vector control remained the main strategy for the prevention and control of vector-borne diseases.

### FOOD-/WATER-BORNE DISEASES

There was an increase in the incidence of Hepatitis A notifications in 2005 compared to 2004 (98 cases in 2005 vs 67 cases in 2004). The incidence of enteric fevers (typhoid and paratyphoid fevers) also showed a slight increase, from 84 cases in 2004 to 95 cases in 2005. Campylobacteriosis and non-typhoidal salmonellosis contributed significantly to foodborne disease morbidity. There were 241 cases of campylobacteriosis reported

in 2005, an 84.0% increase in incidence from 131 cases in 2004. However, there was a decrease in the number of salmonellosis cases, from 345 in 2004 to 296 in 2005. Although most cases were sporadic in nature, strict measures were implemented to ensure that high standards of food and environmental hygiene were maintained. These measures were carried out by MOH, in close collaboration with NEA and AVA.

### ENVIRONMENT-RELATED DISEASES

In 2005, 21 cases of legionellosis (0.5 per 100,000 population) and 78 cases of melioidosis (1.8 per 100,000 population) were notified. There were five deaths with melioidosis being the direct cause of death. Another

seven patients died of melioidosis-related conditions giving an overall case fatality rate of 16.2%, lower than that reported in 2004 (27.1%).

### HIV/AIDS, STIs, TUBERCULOSIS & LEPROSY

The number of notifications of HIV/AIDS infection increased by 1.9% from 311 in 2004 to 317 in 2005.

In 2005, a total of 1,936 new cases of TB were reported (1,316 residents and 620 non-residents), a slight increase from 2004.

The three main STIs notified in Singapore in 2005 were gonorrhoea, non-gonococcal urethritis (NGU) and syphilis. The overall incidence rate for STI was 254 cases per 100,000 population. Gonorrhoea was the most common STI with an incidence rate of 59 cases per 100,000 population.

In 2005, a total of 13 cases of leprosy were notified (four residents and nine non-residents). The incidence rate for residents remained at 0.1 per 100,000 population.

The annual statistics on infectious disease notifications and deaths are presented in the following table. Detailed

updates on individual diseases are provided in the respective chapters of the report.

### Infectious disease notifications and deaths in 2005

Diseases	No. of notified cases	No. of deaths+	Morbidity rate*	Mortality rate*
<b>Air-/Droplet-Borne Diseases</b>				
Chickenpox	24,248	2	557.2	0.05
Hand, Foot and Mouth Disease	15,257	0	350.6	0.0
Measles	33	0	0.8	0.0
Meningococcal Infection	5	0	0.1	0.0
Mumps	1,004	0	23.1	0.0
Rubella	139	0	3.2	0.0
<b>Vector-Borne/Zoonotic Diseases</b>				
Dengue fever/Dengue haemorrhagic fever	14,209	27	326.5	0.6
Leptospirosis	32	0	0.7	0.0
Malaria	166	2	3.8	0.05
Murine typhus	27	0	0.6	0.0
<b>Food-/Water-Borne Diseases</b>				
Campylobacteriosis	241	0	5.5	0.0
Cholera	1	0	0.0	0.0
Hepatitis A	98	0	2.3	0.0
Hepatitis E	36	1	0.8	0.02
Listeriosis	5	0	0.1	0.0
Paratyphoid	26	0	0.6	0.0
Salmonella enteritidis infection	296	0	6.8	0.0
Shigellosis	9	0	0.2	0.0
Typhoid	69	0	1.6	0.0
<b>Blood-Borne Diseases</b>				
Hepatitis B	83	18	1.9	0.4
Hepatitis C	26	0	0.6	0.0
<b>Environmental-Related Diseases</b>				
Legionellosis	21	0	0.5	0.0
Melioidosis	78	5	1.8	0.1
<b>HIV/AIDS, STIs, TB &amp; Leprosy</b>				
HIV/AIDS	317	90	8.9	2.5
STIs	11,048	0	253.9	0.0
Tuberculosis	1,316	64	37.0	1.8
Leprosy	13	0	0.3	0.0

+Source: Registry of Births & Deaths

\*Rates per 100,000 population, based on estimated mid-year total population, 2005,  
(Source: Singapore Department of Statistics)