

# Seasonal Influenza, Human Swine Influenza and Hand, Foot and Mouth Disease

Centre for Health Protection  
December 2009

# Outline

- Introduction
- What is seasonal influenza, human swine influenza (HSI) and hand, foot and mouth disease (HFMD)?
- How could infectious disease outbreaks at schools be prevented?
- Management of infectious disease outbreaks at schools



# Introduction

- Influenza (including seasonal influenza and HSI), HFMD, gastroenteritis are common infectious diseases in schools
- Easily transmitted through close person-to-person contact in children
- Prevention, early recognition and control
  - Stop disease transmission and prevent outbreaks
- Schools have an important role to play



# Influenza

- Caused by Influenza viruses
- Highly infectious
- Classified as influenza A, B and C
- Influenza A ( \* H1N1 and H3N2 ) and B are more common

\*including the recent pandemic (H1N1) 2009 virus (also known as human swine influenza)



# Influenza

- Mutates frequently (change in genes)  
→ periodic review and preparation of vaccine according to the prevalent circulating strains
- In Hong Kong, influenza is more common from January to March (winter peak) and July to August (summer peak)

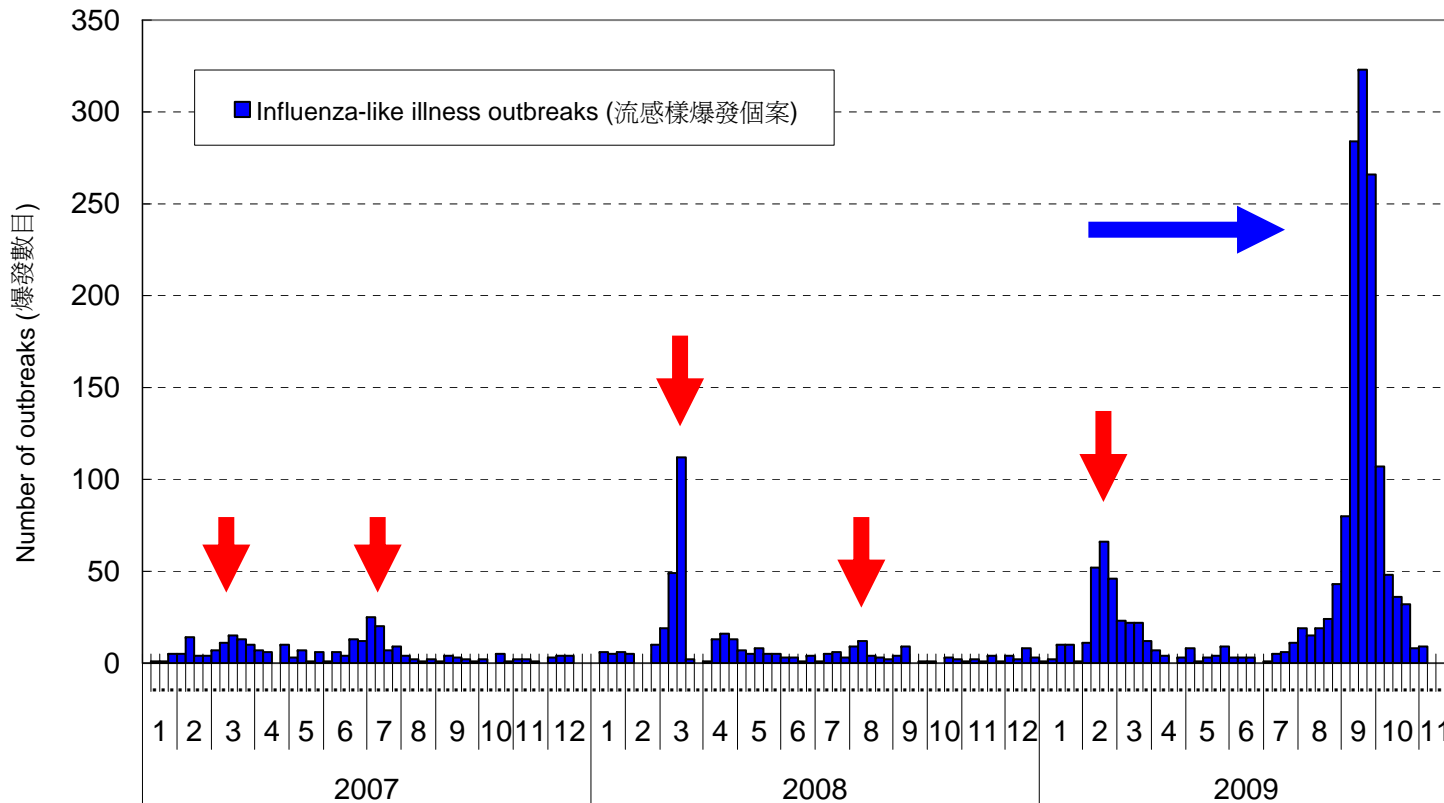


# Human Swine Influenza

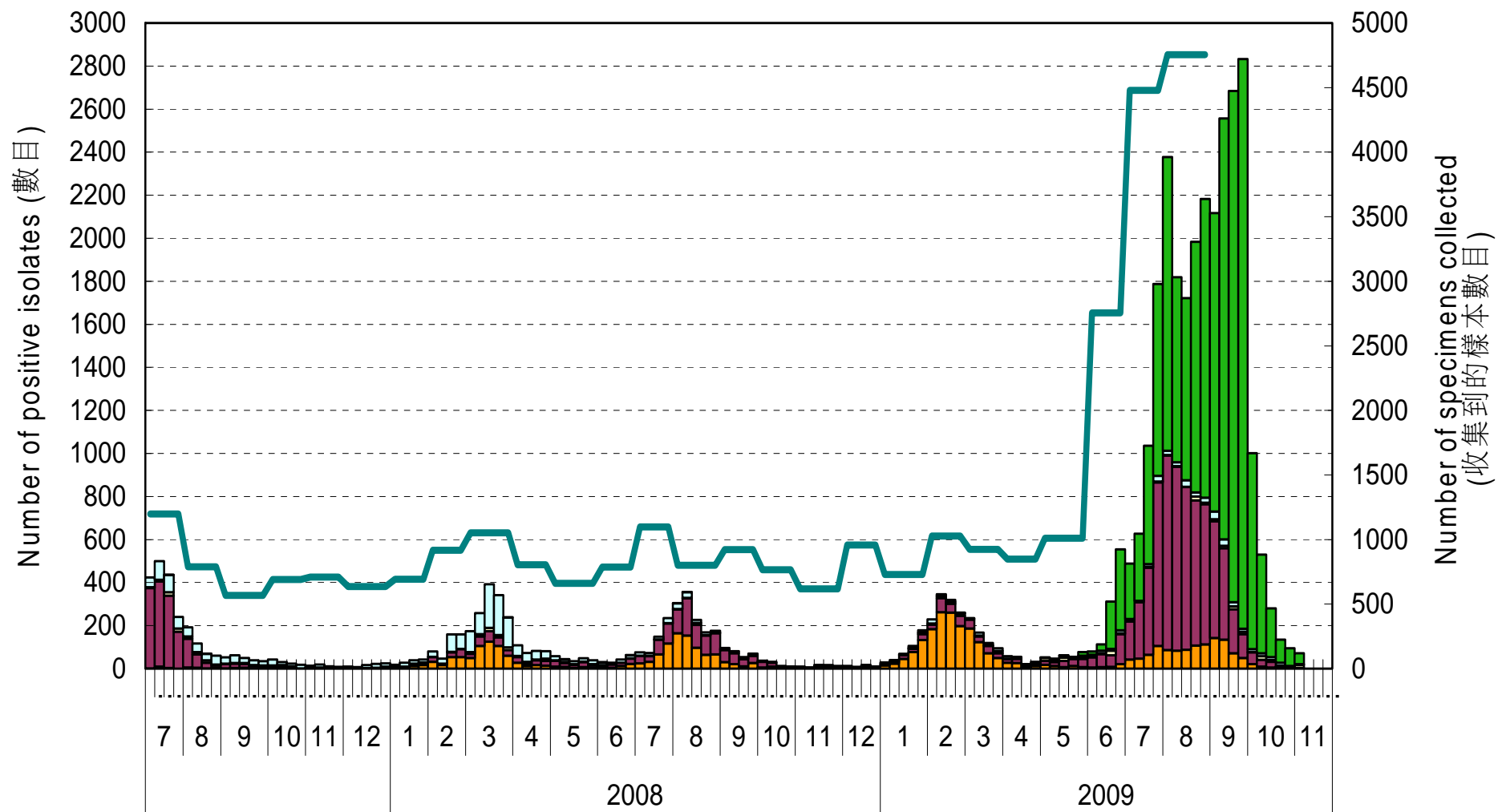
- In Hong Kong, under the Government's "Preparedness Plan for Influenza Pandemic", the Emergency Response Level was activated on 1 May 2009
- In June 2009, WHO raised the level of pandemic alert from phase 5 to phase 6, indicating that an influenza pandemic was under way
- Latest laboratory investigations show that Human Swine Influenza virus is the most widely circulating influenza virus in Hong Kong recently



# Peak Influenza Seasons in HK (2007-2009)



➡ Peak season: January to March and July to August each year



A (H1N1) 甲型 (H1N1)

A (Not typed) 甲型 (未分類)

C 丙型

Number of specimens collected 收集到的樣本數目

A (H3N2) 甲型 (H3N2)

B 乙型

Human swine influenza virus 人類豬型流感病毒



# Influenza (including HSI)

## Symptoms:

- Fever
- Cough
- Sore throat
- Runny nose, blocked nose
- Fatigue
- Myalgia, headache



# Influenza (including HSI)

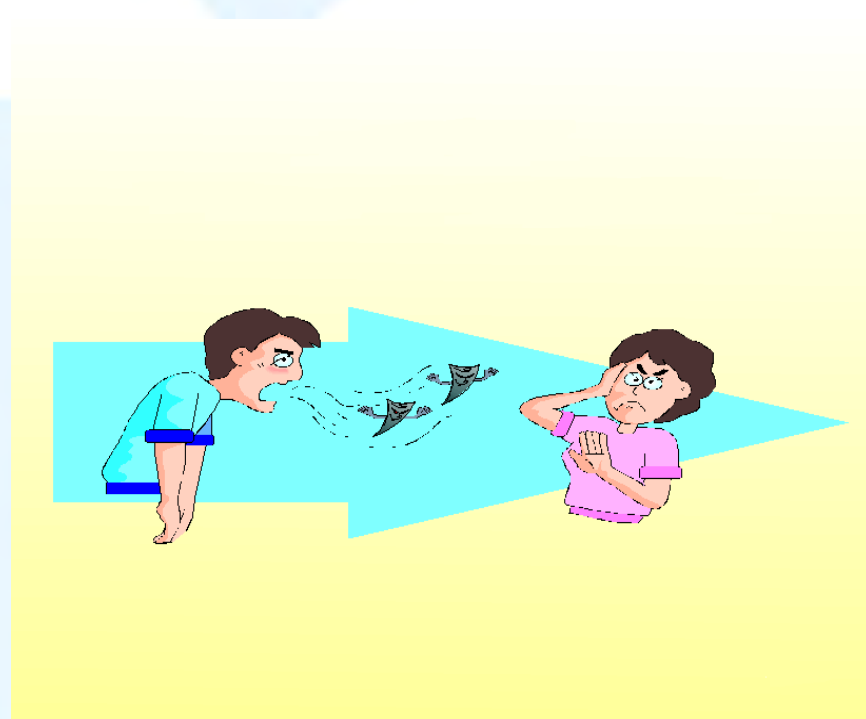
## Complications

- Pneumonia
- Bronchitis
- Otitis Media
- Others (encephalitis, myocarditis)



# Influenza (including HSI)

- **Transmission**
  - Direct contact with secretions of infected person
- **Incubation period**
  - 1 to 7 days
- **Communicable period**
  - 1 day before to 7 days after onset of symptoms



# Treatment

- Symptoms usually last for 3 to 4 days
- Healthy persons usually recover spontaneously
- Cough may last 1 to 2 weeks
- Symptomatic treatment
  - Cough medicine, analgesics and anti-pyretics
  - Control of runny nose, decongestants
- Prescription of anti-viral drugs like tamiflu (rarely necessary)



# Prevention

- Observe good personal and environmental hygiene
- Keep hands clean and wash hands properly
- Wash hands with liquid soap promptly if they are contaminated by respiratory tract secretions, e.g. after sneezing or coughing
- Cover nose and mouth when sneezing or coughing. Always wrap nasal and mouth discharges with tissue paper, and dispose of it properly



# Prevention

- Strengthen body resistance to prevent infection
  - Balanced diet, regular exercise, adequate rest
  - Avoid stress and smoking
- When influenza is prevalent, avoid going to crowded and poorly ventilated places
- Vaccination
  - seasonal influenza vaccine can prevent influenza and its complications and reduce hospitalisation
  - reduce the chance of gene reassortment and production of a virus with pandemic potential



# Influenza Vaccination Subsidy Scheme

- 19 Oct 2009 to 31 March 2010
- Children who are HK residents and meet either of the following criteria
  - (i) between the age of 6 months and less than 6 years; or
  - (ii) attending a kindergarten or child care centre in Hong Kong
- Government will subsidise HK\$80 per dose of influenza vaccine
- Influenza vaccination service to be provided by private medical doctors who enrol in the scheme



# Human Swine Influenza Vaccine

- As the human swine influenza virus or pandemic (H1N1) 2009 virus differs significantly from human H1N1 virus, seasonal influenza vaccine cannot protect individuals against human swine influenza





# HSI Vaccination Subsidy Scheme

- From 21 Dec 2009
- Children who are HK residents and meet either of the following criteria
  - (i) between the age of 6 months and less than 6 years;  
or
  - (ii) attending a kindergarten or child care centre in Hong Kong
- Vaccination service to be provided by private medical doctors who enrol in the scheme



# Hand, Foot and Mouth Disease



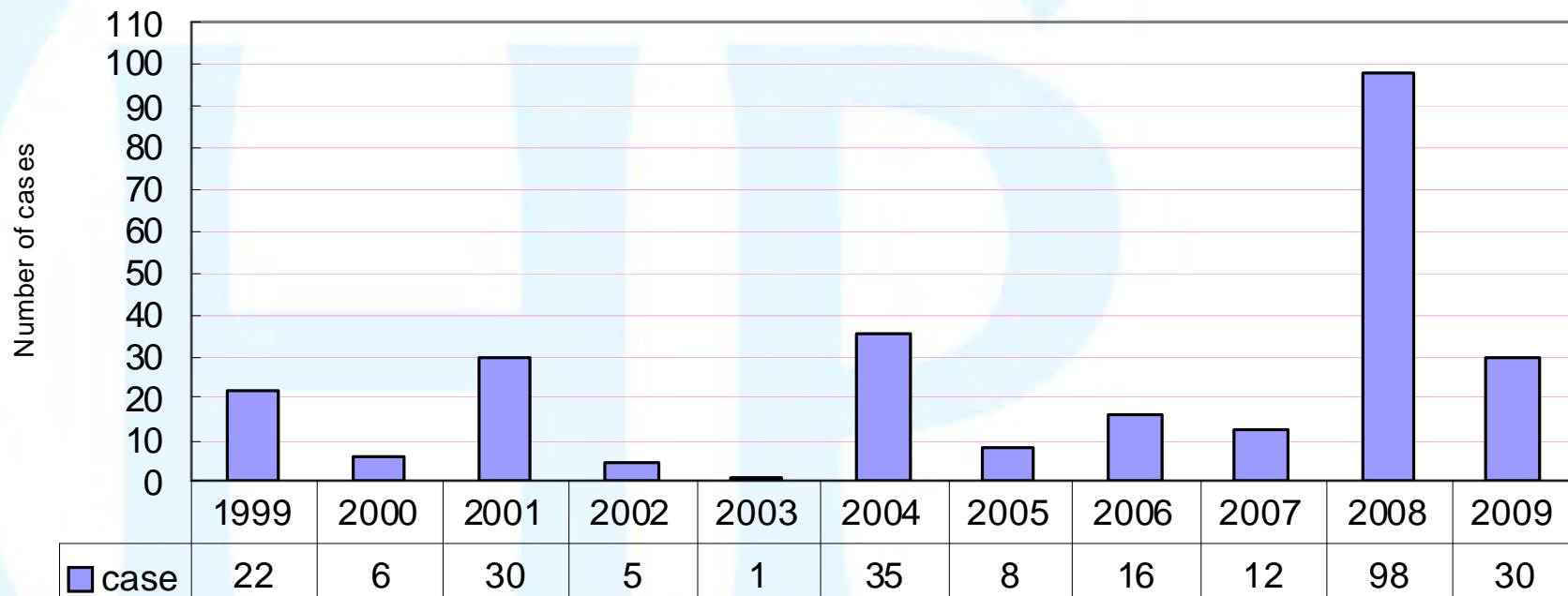
# What is Hand, foot and mouth disease? (1)

- Pathogen
  - Coxsackie viruses ( A or B) are most common
  - Less commonly caused by Enterovirus 71 (EV71)
- Worldwide distribution
- More frequent in summer and early autumn
- More common in children aged below 5 years



# EV71 infection

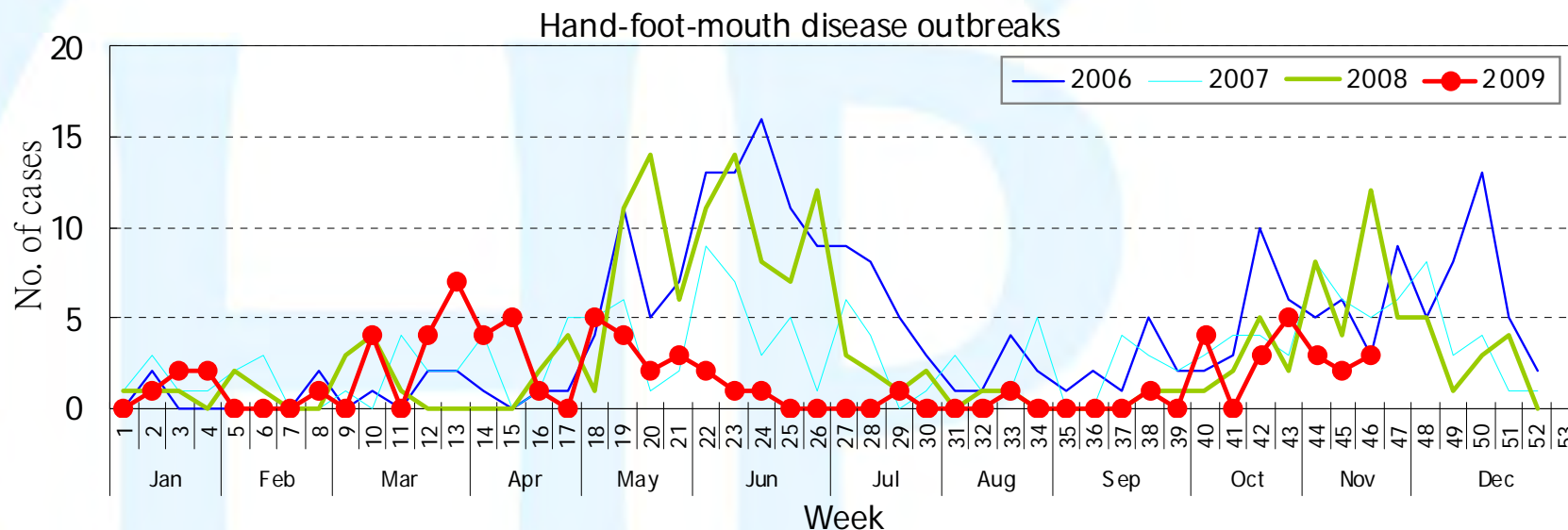
## 1999–2009 (As of 14/11/2009)



EV71 infection has become a statutory notifiable disease in Hong Kong since March 6, 2009

自二零零九年三月六日起，腸病毒 7 1 型感染在本港列為法定須呈報的傳染病

# HFMD institutional outbreak (as of 14/11/2009)



Statistics on HFMD also includes herpangina  
手足口病統計數字包括疱疹性咽峽炎

No. of persons affected 受影響人數	
2006	1744
2007	1081
2008	967
2009 (up to 14/11) provisional	436

# What is Hand, foot and mouth disease? (2)

- Symptoms
  - Main symptoms are fever, sores in the mouth, and a rash with blisters
  - Usually begins with fever, poor appetite, malaise and sore throat
  - One to two days later, painful sores develop in the mouth which may affect swallowing



# What is Hand, foot and mouth disease? (3)

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- Symptoms

- Sores are characterised by small red spots with blisters which then often become ulcers
- Usually located on the tongue, gums, and inside of the cheeks
- Rash is usually found on the palms of the hands and soles of the feet, is not itchy and manifests as flat or raised red spots



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# What is Hand, foot and mouth disease? (4)

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# What is Hand, foot and mouth disease? (5)

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- Incubation period
  - Usually 3 to 7 days
- Mode of transmission
  - direct contact with saliva, nose and throat discharges
  - fluid from blisters, or the faeces of infected persons (who may be asymptomatic)
  - contact with contaminated articles like toys, furniture, towels, carpets, etc.
- Most contagious during the first week
- Transmission through faeces could last several weeks



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# What is Hand, foot and mouth disease? (6)

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- Complications

- In most cases, the illness is self-limiting. Symptoms including fever, rash and ulcers subside spontaneously in one week
- Rarely, EV71 may cause more serious complications, such as encephalitis, or a poliomyelitis-like paralysis



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# What is Hand, foot and mouth disease? (7)

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- Treatment
  - No specific treatment available
  - Symptomatic treatment to provide relief from fever, aches or pain from the ulcers
  - Parents are advised to seek prompt medical attention if their children develop a high fever, decrease in alertness or deterioration of general condition



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# **Prevention of Communicable Disease Outbreaks in Schools**



# Prevention of School Outbreaks (1)

- Check students' temperature/temperature record daily
- Advise parents/guardians not to bring sick children to school
- Obtain emergency contact number from parents (e.g. to inform them about class suspension arrangement)
- Avoid large gatherings during peaks of infectious diseases to reduce risk of disease transmission



# Prevention of School Outbreaks (2)

- Designate staff to coordinate and monitor communicable disease prevention and control measures (Infection control officer )
- Raise awareness of students and staff to personal and environmental hygiene
- Keep the school environment clean
  - Open windows wide to maintain good ventilation
  - Disinfect the premises daily
  - Minimise sharing of common rooms (e.g. computer room, art room, music room) and items. All items for shared use must be disinfected more frequently
- Keep track of Department of Health's announcements





# Centre for Health Protection

## Website: [www.chp.gov.hk](http://www.chp.gov.hk)

GovHK 香港政府一站通 TEXT ONLY 繁體版 簡體版

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**PRESS RELEASES**

**CHP investigating noroviral gastroenteritis outbreak**  
27 November 2009

**Public urged not to consume slimming products with undeclared drug ingredients**  
25 November 2009

**Warning about slimming product with undeclared drug ingredients**  
24 November 2009

**WHAT'S NEW**










**EV Scan (Week 48, November 27, 2009)**  
27 November 2009






**Swine and seasonal flu monitor (Volume 1, Number 10) Week 47**  
26 November 2009

**Communicable Diseases Watch Volume 6, Number 24, Week 46 - 47 (November 08 - November 21, 2009)**

### • Schools

#### ○ Guidelines on Prevention of Communicable Diseases in Schools /Kindergartens /Kindergartens-cum-Child Care Centres / Child Care Centres (revised in Jan 2009)

- [Full text](#) (  2.05 MB)
- [Introduction and Contents](#) (  32.51 KB)
- [1. Concepts of communicable diseases](#) (  49.19 KB)
- [2. Communicable diseases in schools/centres](#) (  66.93 KB)
- [3. General guidelines on prevention of communicable diseases](#) (  61.20 KB)
- [4. Preventive measures to be adopted by schools/centres against communicable diseases](#) (  39.36 KB)
- [5. Outbreak of communicable diseases](#) (  34.41 KB)
- [6. Roles of school/centre staff and related support](#) (  41.34 KB)
- [7. Appendix](#) (  403.20 KB)

- [Guideline on Prevention and Management of Human Swine Influenza in Boarding Sections of Schools](#) (  34.23 KB)
- [Guideline on Prevention of Human Swine Influenza for Commencement of the New School Year \(Revised September 2009\)](#)  
[New](#) (  219.29 KB)
- [HSI Pandemic Mitigation Phase Guideline On School Functions and Extra-Curricular Activities](#) (  21.67 KB)
- [Prevention of Influenza: Action Checklist for School Resumption \(March 2008\)](#) (  351.09 KB)
- [Advice on School Disinfection at the Height of Influenza Season](#) (  180.70 KB)



The Centre for Health Protection is a professional arm of the Department of Health for disease prevention and control.



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# What is an Outbreak?

- A higher than usual number of students reporting sick; or
- Students or staff develop similar symptoms and the incidence is higher than usual e.g.:
  - 3 or more students from the same class have taken sick leave or develop respiratory symptoms within a short time
  - 2 or more students from the same class/group in a school/KG/nursery develop HFMD symptoms within a short time





# Reporting of Communicable Disease Outbreak

- Staff responsibility
  - Closely monitor the school's situation, find out whether students/staff were absent due to illness
  - Promptly report suspected outbreaks to the Centre for Health Protection
  - Promptly inform SWD/EDB
  - Inform parents/guardians of the situation
- Central Notification Office (CENO)
  - Tel : 2477 2772
  - Fax : 2477 2770



# Management of Communicable Diseases Outbreaks in Schools(1)

- Supply relevant information to CHP to facilitate epidemiological investigation and implement outbreak control measures
  - Prepare students' attendance record and floor plan of the school
  - Provide detailed information of the sick students and staff including their symptoms, onset date, contact information (CHP may contact parents of the sick students to enquire about their condition)
  - Take care of the sick students
    - Inform parents/guardians to take the child to seek early medical consultation and to rest at home
    - Isolate the sick who are still at school
- Maintain close communication with parents/guardians
  - Inform them of the details of the outbreak, preventive measures and the control measures taken by the school



# Management of Influenza Outbreaks in Schools

- Open doors and windows to improve ventilation
- Disinfect potentially contaminated areas as soon as possible (including school buses)
- Provide a mask for the sick to put on before leaving for medical consultation
- Allow the sick to return to school only after fever has subsided for at least 48 hours (adequate rest is very important to the child's immune system and facilitates recovery)



# Management of Hand, foot and mouth disease Outbreaks in Schools

- Students with hand, foot and mouth disease should not attend school or participate in group activities until fever has subsided and all vesicles have dried up and crusted
- If a student is confirmed to have been infected with enterovirus 71, he/she should rest at home until 14 days after fever has subsided and all vesicles have dried up and crusted
- If the outbreak is confirmed to be an enterovirus 71 outbreak, all the affected students should rest at home until 14 days after fever has subsided and all vesicles have dried up and crusted
- Those who handle nose or throat discharges, faeces and soiled articles should wash hands promptly with soap afterwards



# Actions taken by CHP in Outbreak Investigation

- Compile statistics on the number of affected persons, their distribution, symptoms, consultation pattern, influenza vaccination record of the affected class (Influenza outbreak only)
- Site inspection and offer advice on control measures
- Obtain specimen for laboratory confirmation
- Health talk on infection control
- When a large number of people are affected (e.g. 20) or severe cases occur in the outbreak, press release may be considered
- From 1 Sept, a daily list of institutions with influenza like illness outbreaks and the number of persons affected is uploaded to CHP's website





To: CHP

**Fax: 2699 7691**



**Centre for Health Protection**

### Sick Students' Record



Today's no. of student's absenteeism with upper respiratory symptom: \_\_\_\_\_

Today's no. of student's absenteeism: \_\_\_\_\_

Today's no. of staff's absenteeism:\_\_\_\_\_ Ver 101109 Sch

Name of Organisation: \_\_\_\_\_ Students No.(all): \_\_\_\_\_ Staff No.(All): \_\_\_\_\_ Tel: \_\_\_\_\_ Fax: \_\_\_\_\_ Date of facsimile: \_\_\_\_\_

[illegible]

# Class Suspension ? (1)

- CHP may consider advising affected schools/centres to suspend classes for a period of time
- Schools/centres should make the necessary arrangement and inform parents promptly
- Schools considering class suspension due to an outbreak should consult CHP before such a decision is made as well as inform the respective School Development Division/Joint Office for Pre-primary Services of the situation



# Class Suspension ? (2)

- Points to consider
  - number affected ;
  - severity of illness ;
  - number of hospitalisations ;
  - outbreak progression ;
  - response to control measures
- The “Expert Group Report on the Deaths of Three Children” recommended indicators such as:
  - 10% or higher absenteeism, hospitalisation rate of 1 % or higher, 2 or more students requiring intensive care or occurrence of an influenza-related death in a previously healthy student [Note : [Note : these indicators are not prescriptive, individual outbreak characteristics should be considered]
  - Class suspension is usually for 7 days but may be extended as necessary





# Class Suspension ? (3)

## Hand, foot and mouth disease and Enterovirus 71 infection

- CHP may consider advising class suspension for 2 weeks in certain situations, e.g.:
  - The occurrence of new cases after the implementation of control measures in an outbreak with confirmed enterovirus 71 infection; or
  - Development of complications in a confirmed case who belongs to a school outbreak of hand, foot and mouth disease
- CHP would closely monitor local and overseas situation and evaluate class suspension arrangements



- For enquiries, please contact the Centre for Health Protection:  
Tel : 24772772  
*or*  
Browse CHP's website  
<http://www.chp.gov.hk>
- Central Health Education Unit  
Hotline : 2833 0111  
Website : <http://www.cheu.gov.hk>
- “Guidelines on Prevention of Communicable Diseases in Child Care Centres, Kindergartens, Schools” is available at the following site :  
<http://www.chp.gov.hk/files/pdf/Guild-Booklet-eng.pdf>



# “Guidelines on Prevention of Communicable Diseases in Child Care Centres, Kindergartens, Schools”



# Thank You

