

# **Pandemic Preparedness**

# **Singapore**

**29 November 2006**

Singapore's experience with SARS  
in 2003 taught us the  
importance of rallying the  
people to work with the Government  
in a crisis.

The trust and teamwork  
proved crucial in helping us  
overcome the deadly SARS virus.

Although a pandemic flu would pose its own unique challenges, a strong partnership between the people and Government would be invaluable in minimising the impact of a flu pandemic.

# Pandemic Planning Assumptions

- Two or more waves in same year or in successive flu seasons
- Second wave may occur 3-9 months later; may be more serious than first (seen in 1918)
- Each wave lasts about 6 weeks
- About 1 million infections in 1<sup>st</sup> wave

# Objectives

Maintain essential services to limit social and economic disruption

Provide treatment to infected persons

Slow and limit the spread of influenza

# Pandemic Preparedness Plan

Integrated approach involving all relevant government agencies

Co-ordination across whole of government – MOH, AVA, ICA, MTI, MICA, MOM, MOE etc

- Surveillance
- Response & impact mitigation
- Vaccinate population

# Surveillance

- Detect importation, occurrence as early as possible
- External surveillance
  - International Health Organizations (WHO, CDC, FAO etc)
  - Country Health Authorities
- Internal surveillance
  - Focus on hospitals
    - Atypical pneumonias
    - Unexplained deaths & respiratory illness

# Regional Emerging Disease Intervention (REDI) Centre

- US & Singapore signed agreement to work together to prevent and respond to pandemic influenza and other emerging diseases in Southeast Asia
- Important step in building global network of surveillance



# REDI Centre

- REDI Centre is working on three technical assistance training courses offered to Indonesia on infection control, outbreak response and laboratory techniques
- Joint monitoring of bird flu situation with US in Indonesia
- Assist Indonesia in manpower capability building

# REDI Centre

Conducted a Train-the-Trainer course in Infection Control for 100 hospital healthcare workers from Indonesia, Vietnam, Cambodia and Laos in November 2006

# Response & Impact Mitigation

- Minimize disruption to economy & society
- Maintain essential services
- Reduce morbidity and mortality

# Vaccinate population

- Obtain vaccines as soon as possible
- Vaccinate entire population
- Designated vaccination centres

# Bird Flu Vaccine

- Baxter International concluded the first trial held in Singapore
- produced in special cells derived from monkeys rather than chicken eggs - faster to produce - 11 weeks compared to at least 20 weeks
- trial started in July 2006 - 115 volunteers in Singapore and 155 in Austria, where the vaccine was invented

# Bird Flu Vaccine

- >70 percent of the cases, the vaccine effective against three strains of H5N1 virus - 1997 Hong Kong, 2004 Vietnam and 2005 Indonesia
- MOH placed order for up to 10 million doses
- small amount of vaccine required to produce relatively high immunity
- side effects may include headache and fatigue

# Pandemic Response Plan

Colour-coded risk management approach

- **Green** animal disease
- **Yellow** inefficient human-to-human, small cluster
- **Orange** large cluster, more efficient H to H, limited
- **Red** pandemic, widespread infection
- **Black** high mortality, morbidity

# Green/ Yellow/Orange

- Effective surveillance to detect importation of cases with a novel flu virus
- Ring-fence cases through isolation of cases & quarantine of contacts & Tamiflu
- Prevent spread



# Red - MOH

- Organize healthcare system to deliver care effectively
- Treat all flu-like cases. Anti-viral stockpile
- Polyclinics & GP clinics – manage all cases
- Public sector hospitals handle flu cases
- Private hospitals – manage other non-flu cases

# Red - Whole of Government

- Maintain essential services
- Consider social distancing depending on severity e.g. close schools, child care centres, ban public gatherings (e.g. cinemas, concerts)
- Strong public communications

# Black

- Public health considerations take precedence
- Social distancing measures more likely to be imposed
- Closing of borders may have to be considered initially, at least to affected countries
- Additional healthcare facilities

# Healthcare Strategies

- Capacity building in hospitals - isolation rooms, ICU beds, equipment
- Manpower training & contingency plans
- Emergency drills: Exercise Sparrow-hawk (hospitals) in May, national level in July
- test the work procedures and processes that have been worked out for crisis situations
- Stockpiling of Tamiflu
- Vaccine from Australia within 4 months of outbreak

# Other Strategies

- Public education - newspaper, pamphlets, handbook, flu website
- Schools - tap channels such as Internet, postal service, telephone service and free-to-air broadcast services to communicate with and engage students in learning

# Stock up on 2 weeks food supply

Have to stay at home for longer periods of time and avoid crowded places

Choose items based on your family's tastes and preferences

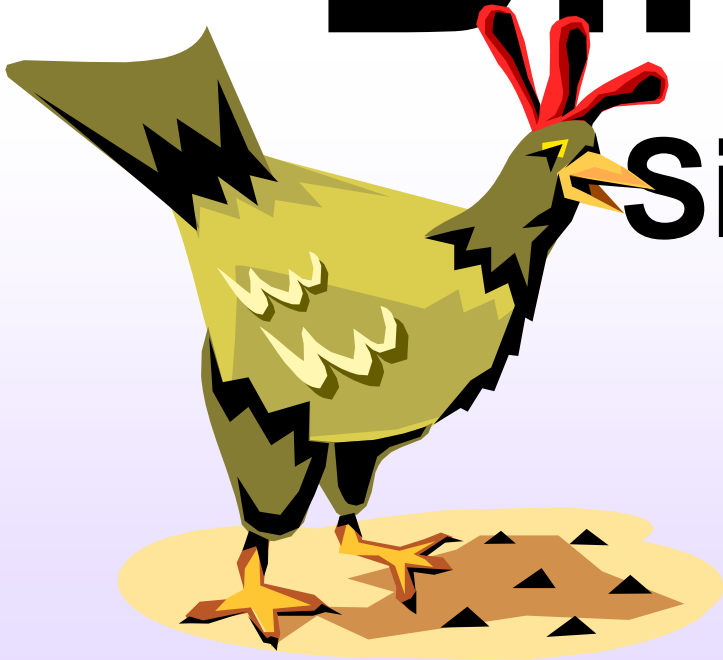
Canned food is recommended due to their longer shelf life

Check their expiry dates regularly and replenish the supplies whenever necessary

# Business continuity plan for each alert level

- Operate with minimal face-to-face contact between staff, staff and customers, and with suppliers
- Operate effectively if key members of staff are absent from work
- Operate if supply chains are disrupted

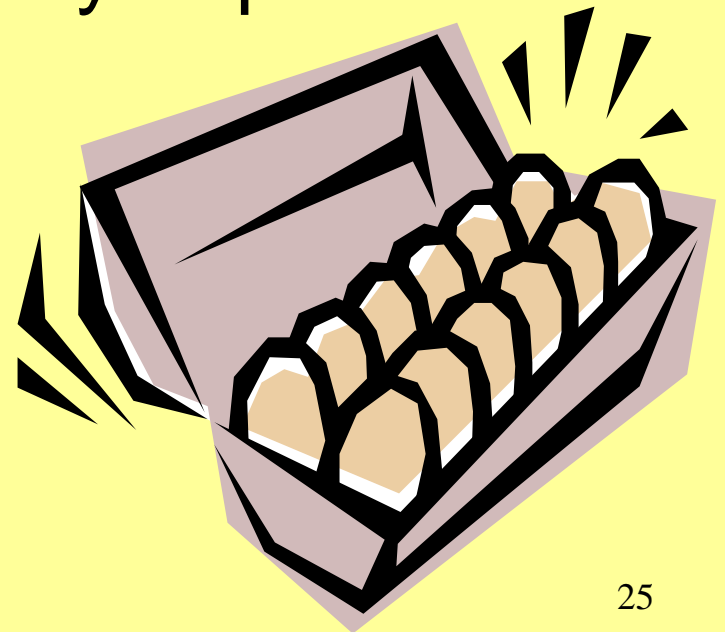
The  
**Bird Flu**  
Situation





# What has been done?

- Imports of live poultry and birds, poultry meat and eggs from bird flu-affected countries banned
- Stepped-up inspection and testing of imported eggs and poultry at points of entry
- Stepped-up checks on local poultry farms and slaughterhouses



# What has been done?

Farms required to implement biosecurity measures e.g. bird-proofing poultry houses, disinfecting vehicles

Farm and slaughterhouse employees briefed on how to recognise signs of bird flu, and required to report unusual deaths or suspicion of the disease

Farms closed to visitors

# Are we prepared for an outbreak?

- Within an hour of the first bird flu case being detected, Agri-Food & Veterinary Authority and related agencies will be mobilised to control the situation
- All hospitals and doctors advised to be on alert
- Suspected cases will be sent to Tan Tock Seng Hospital for assessment, and to Communicable Diseases Centre 2 for isolation if necessary

# Culling plans

- Culling all birds in local farms as soon as clinical signs of bird flu appear with positive test results
- All farms will be “sealed up” during culling
- Eggs produced will be destroyed
- Ex-gratia payment will be made to owners of the farms for the poultry culled
- Measures necessary to eradicate disease, safeguard public health and maintain public confidence

**We must prepare for the worst,  
even as we hope for the best.**

Dr Lee Boon Yang, Minister for Information,  
Communications and the Arts at the  
Multi-Agency Press Conference on  
Public Preparedness For Flu Pandemic on  
5 April 2006

**Thank  
You**

