

Situation Update on H7N9 Cases

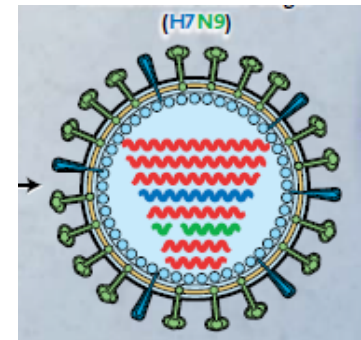
Avian influenza A(H7N9)

- Avian influenza A(H7N9) has previously been isolated only in birds.
- A(H7N9) is a low pathogenicity strain and poultry do not become sick.
- The disease is characterized by rapidly progressing severe pneumonia.
- Common symptoms are those of typical acute respiratory infection, such as fever, cough, and shortness of breath.
- Complications include the acute respiratory distress syndrome (ARDS), septic shock and multi-organ failure requiring intensive care and mechanical ventilation.
- Severe illness is more likely to occur in older persons with underlying chronic conditions.

Virology

- Avian influenza A(H7N9) is one of a subgroup of influenza viruses that regularly circulate in birds
- This specific avian influenza A(H7N9) is a new triple reassortment:

- **Hemagglutinin** from Asian H7 subtype
- **Neuraminidase** from Asian N9 subtype
- **Internal genes** from A(H9N2) viruses



Gao et al, N Engl J Med 2013

- The new A(H7N9) viruses have increased ability to bind to mammalian cell receptors.
- Antigenically, the A(H7N9) viruses are different from seasonal influenza viruses infecting humans.

Transmission

- Most cases still continue to have exposure to poultry
- History of known exposure to poultry at notification
 - 1st wave: (59/77) 77%¹
 - 2nd wave: (67/103) 65% (based on IHR notification or verification of death from IHR NFP)
- Incubation period
 - 1st wave: 5 days (IQR: 2-8)²
 - 2nd wave: 3-4 days³

1. Li et al (2013) NEJM

2. Gao et al(2013) NEJM

3. NHFPC clinical management guidelines

Situation Update

- **On 31 Mar 2013**, China notified WHO of 3 human cases of H7N9 virus as an event that may constitute a public health emergency of international concern under IHR (2005).
- **Since 2013**, human cases have occurred in mainland China, Hong Kong SAR, Taiwan and Malaysia
- **As of 19 May 2014**, there have been 439 cases and 156 deaths
- There is no change in the current risk assessment (no sustained human to human transmission)

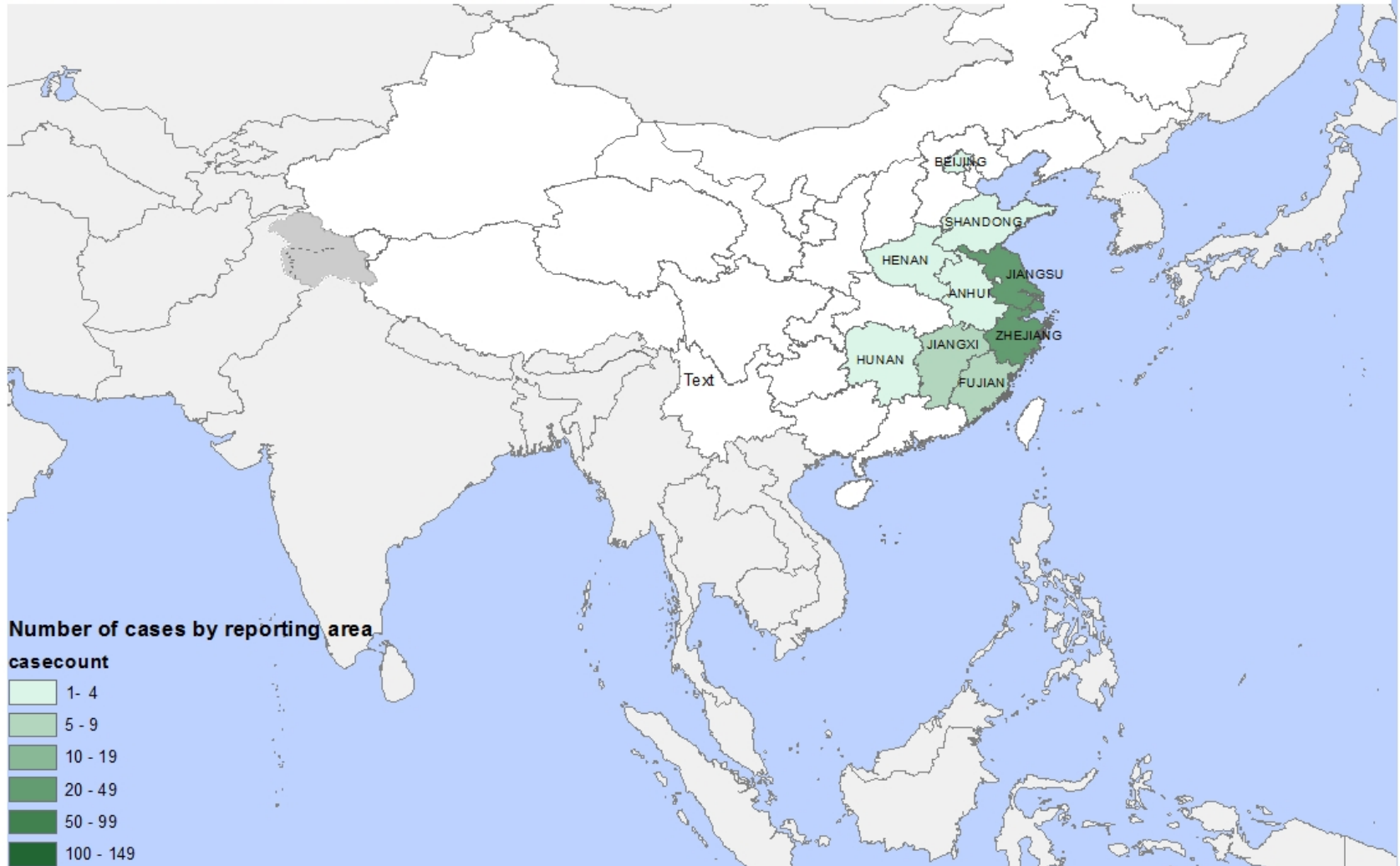
Overview of H7N9 cases

(as of 16 May 2014)

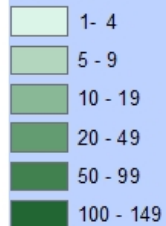
Total cases (Fatal)	435 (156) – CFR 36%
Onset date	19 Feb 13 – 2 May 14 1 st wave: 19 Feb 13 – 28 Jul 13 2 nd wave: 7 Oct 13 – 2 May 14
Places	- 15 provinces in China - Hong Kong SAR, China (2 nd wave) - Taiwan, China - Sabah, Malaysia (2 nd wave)
Age range (median)	5 months – 91 years (58 years)
Sex (%Male)	69% Male

Areas during the 1st wave

Areas reporting confirmed human cases for influenza A(H7N9) to WHO until 2013-05-31 *



Number of cases by reporting area
casecount

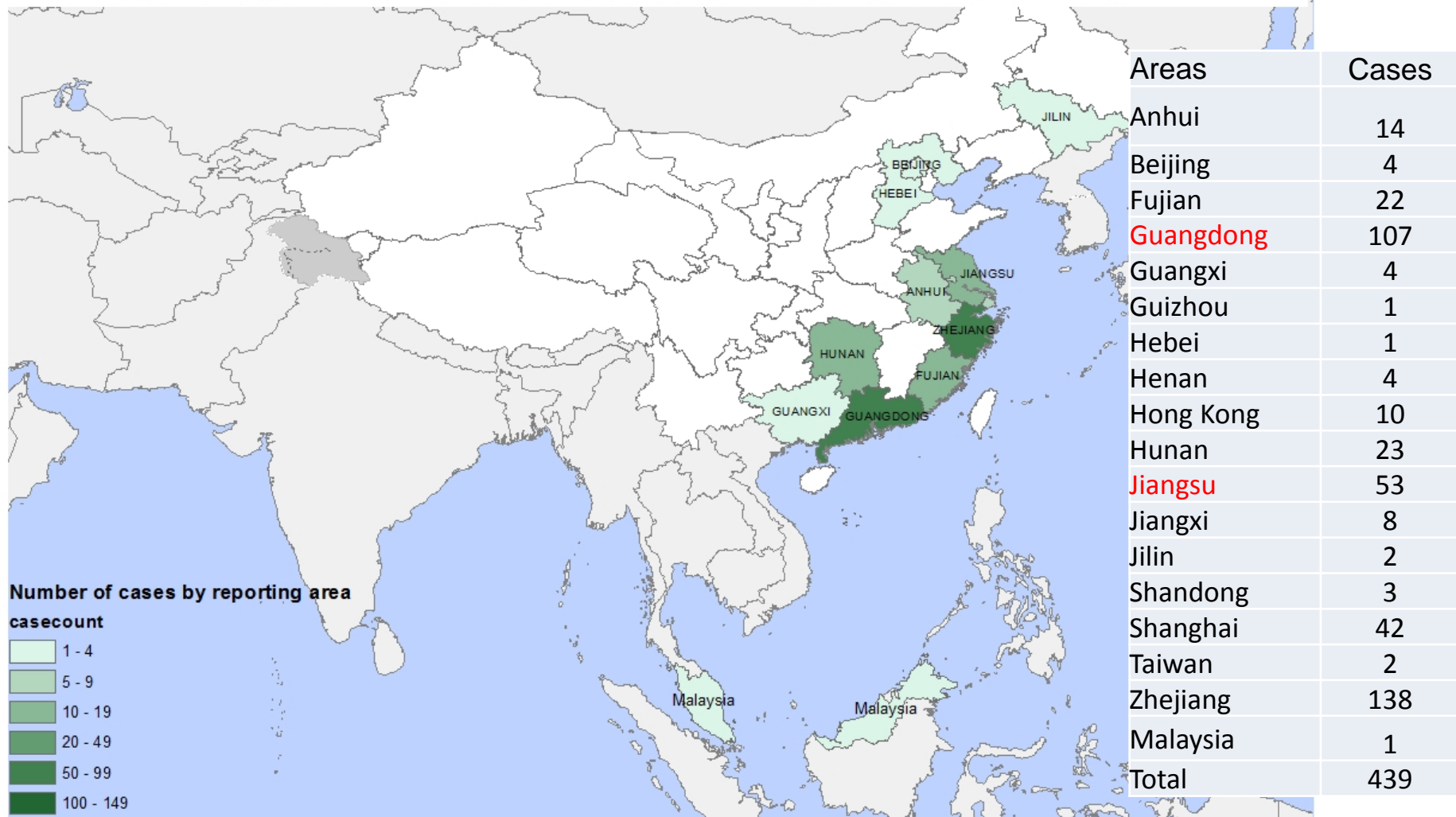


*All dates refer to onset of illness
Data as of 11/03/2014
Source: WHO

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
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Areas during the 2nd wave

Areas reporting confirmed human cases for influenza A(H7N9) to WHO from 2013-06-01 *

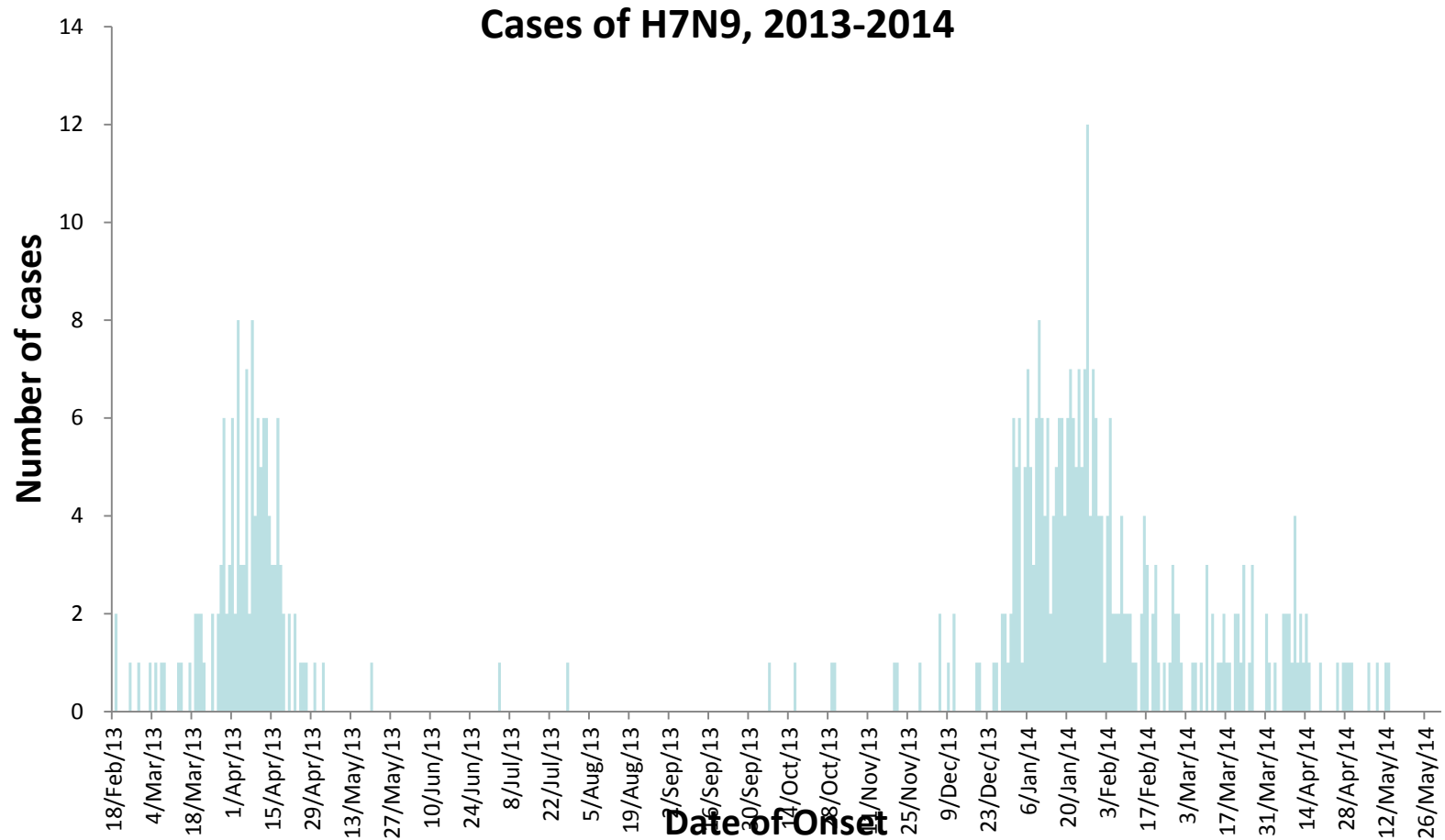


*All dates refer to onset of illness
Data as of 11/03/2014
Source: WHO

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Epicurve by date of onset



No cluster has been reported since 17 March 2014.
We expect to continue to see a number of sporadic cases.

Clusters in the 1st wave

No.	Time	Place	No. of cases	Relationship among cases	Presumed mode of transmission
1	Feb 2013	Shanghai	2	Father (87yr) and son (69yr)	Possibility of human-to-human transmission is high
2	Mar 2013	Shanghai	2	Couple (52yr and 56yr)	Possibility of human-to-human transmission is high
3	Mar 2013	Jiangsu	2	Father and daughter (32yr)	Possibility of human-to-human transmission is high
4	Apr 2013	Shandong	2	Father and son (36yr and 4yr)	Possibility of human-to-human transmission is high

Clusters of H7N9 in 2nd wave

Cluster No.	Case info (IHR notification)	Relationship	Location	Possible exposure*	Mode of transmission
1 [^]	57yo M: critical (onset 20 Nov 2013) 30yo M : critical (onset 29 Nov 2013)	Father-in-law/ son-in-law	Huzhou, Zhejiang	Father-in-law owns 9 poultry	Possibility of H2H transmission high China CDC conclusion (based on translation of slides shared on 30 Jan 2014)
2 [^]	49yo M: (died*) (onset 15 Jan 2014) 43yo F: stable (onset 23 Jan 2014) 23yo F: serious (onset 20 Jan 2014)	Parents/ daughter	Hangzhou, Zhejiang	Parents sold vegetables at a wet market, daughter briefly helped	Possibility of H2H transmission high China CDC conclusion (based on translation of slides shared on 30 Jan 2014)
3 [^]	29yo M: critical (onset 3 Jan 2014) 5yo F: stable (onset 14 Jan 2014) (onset 14 Jan)an)	Father/ daughter	Guangzhou, Guangdong	Father is a tofu seller in the market, girl was at market w/ parents	Common exposure to poultry, H2H transmission possible China CDC conclusion (based on translation of slides shared on 30 Jan 2014)
4*	4yo F: stable (onset 26 Jan 2014) 5yo M: stable (onset 29 Jan 2014)	Cousins who live together in same house*	Zhaoqing, Guangdong	Rooftop chickens at home	Common exposure to poultry probable, chance H2H transmission not high- Guangdong CDC*
5*	37yo M: critical (onset 26 Jan 2014) 2yo F: stable (onset 31 Jan 2014)	Father/ Daughter*	Zhongshan, Guangdong	Father worked in food preparation	Common exposure to poultry probable, H2H transmission cannot be ruled out- Guangdong CDC*
6*	41yo F: critical (onset 27 Jan 2014) 5yo M: stable (onset 3 Feb 2014)*	Mother/son*	Nanning, Guangxi	Unknown	Investigation ongoing*
7*	2yo F: mild (onset 23 Feb 2014) 7yo F: severe (onset 26 Feb 2014)*	Sisters*	Jinhua, Zhejiang	Sisters watched father preparing live chicken for food	pending further information from country office

* Media report [^]Officially confirmed clusters

Summary

- Susceptibility: Similar % exposure, male predominance
 - Fatality: Similar CFR between 1st wave and 2nd wave
 - No additional family cluster has been reported since March
 - Nosocomial cluster not recorded
 - Human to human: No evidence of sustained human-to-human transmission (2nd generation cases uncommon, no 3rd generation cases)
- Risk Assessment to public remains same

Risk assessment

- **What is the risk of the occurrence of further cases in the affected areas of China and other areas?**

The **epidemiology of this virus among animals**, including the main reservoirs of infection among animals and the extent of geographic spread, **is not yet established**. However, it is likely that most human H7N9 infections so far are associated with infection among as-of-yet undetermined animals and that **further human cases of infection should be expected**.

- **What is the risk of human-to-human transmission?**

There is no evidence of sustained human-to-human transmission. However the two possible family clusters suggest that limited human-to-human transmission may occur where there is close contact between cases and other individuals, as occurs in families and, potentially, healthcare settings. Moreover, the genetic changes seen among these viruses suggesting **adaptation to mammals is of concern, and further adaptation may occur**.

- **What is the risk of international spread?**

At this time, there is no information to indicate international spread of this virus. However, it is possible that an infected person, who may or may not have symptoms, could travel to another country. However, **if the virus cannot sustain human-to-human transmission**, as appears to be the current situation, then **extensive community spread is unlikely**.

- **WHO does not advise special screening at points of entry with regard to this event, nor does it recommend that any travel or trade restrictions be applied.**

WHO Advises..

- WHO advises that travelers to countries with known outbreaks of avian influenza should avoid
 - poultry farms, or
 - contact with animals in live bird markets, or
 - entering areas where poultry may be slaughtered, or
 - contact with any surfaces that appear to be contaminated with faeces from poultry or other animals.
- Travelers should also wash their hands often with soap and water
- Travelers should follow good food safety and good food hygiene practices

- WHO does not advise special screening at points of entry with regard to this event, nor does it currently recommend any travel or trade restrictions.
- As always, a diagnosis of infection with an avian influenza virus should be considered in individuals who develop severe acute respiratory symptoms while travelling or soon after returning from an area where avian influenza is a concern.

- WHO encourages countries to continue strengthening influenza surveillance, including surveillance for severe acute respiratory infections (SARI) and to carefully review any unusual patterns, in order to ensure reporting of human infections under the IHR (2005), and continue national health preparedness actions.

THANK YOU