

# The diagnostic work-up of suspected and probable human cases of avian influenza during a pandemic alert period

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## ***3<sup>rd</sup> INTERNATIONAL BIRD FLU SUMMIT***

GENEVA

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# Pandemic alert period: WHO plan 2005

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## *Phase 3:*

- human infections with new sub-type
- rare human-to-human spread to close contacts

## *Phase 4:*

- small clusters
- limited human-to-human transmission

## *Phase 5:*

- larger clusters
- human-to-human transmission still localized

# WHO definitions: Suspected and probable cases

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## *Suspected case:*

- exposure to human cases
- exposure to animals, animal products or contaminated environment
- laboratory exposure

## *Probable case:*

- infiltrates or evidence of pneumonia  
*PLUS*
- respiratory failure (hypoxemia, severe tachypnea)  
*OR*
- laboratory finding influenza A-positive (H5 uncertain)

# Possible scenarios

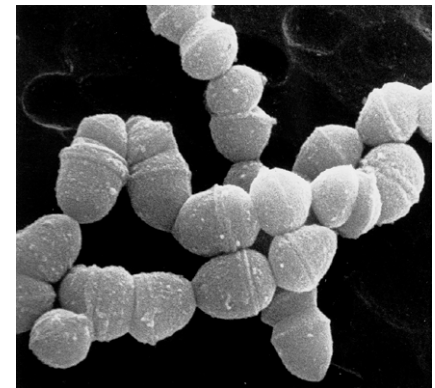
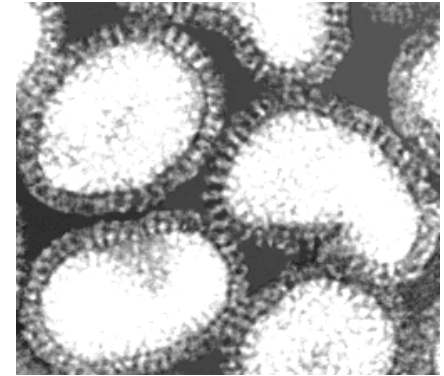
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- One or several suspected or possible cases
- Exposure abroad
- Exposure locally
- Contacts

# Differential diagnosis

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- Influenza virus
  - seasonal strain
  - H5N1
  - other novel subtype
- Other respiratory virus
- Other virus
- Bacterial pathogen



# Clinical presentation

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- Patient meets case-definitions
- Gastro-intestinal symptoms
- Neural symptoms
- Other, yet unknown



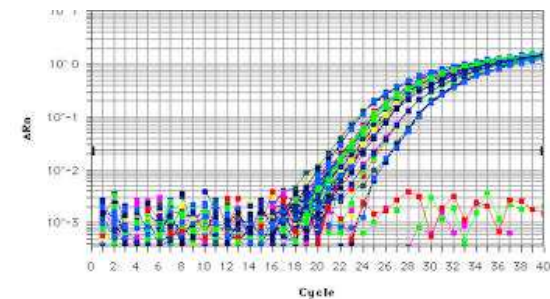
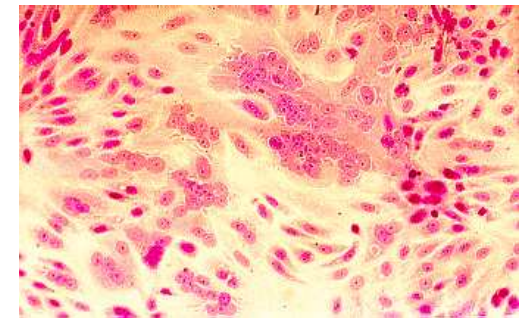
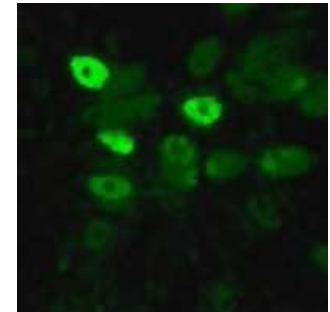
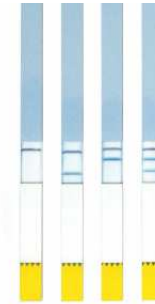
# Clinical samples

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- What kind?
- When?
- How often?
- What tests?

# Diagnostic tests

- Point-of-care test
- Other antigen-detection tests
- Virus culture
- Gene amplification tests
- Serology

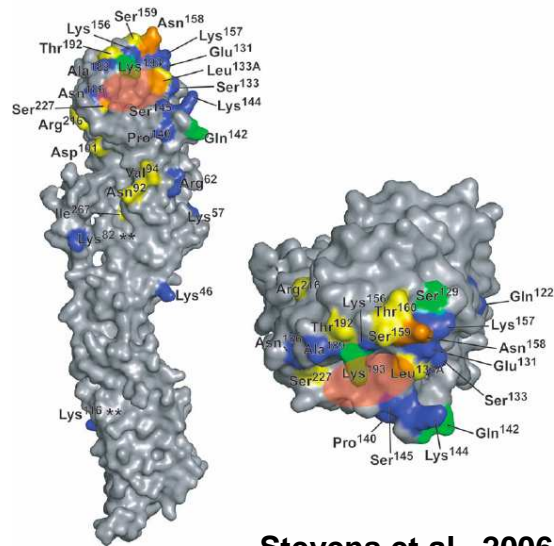


# Technical problems

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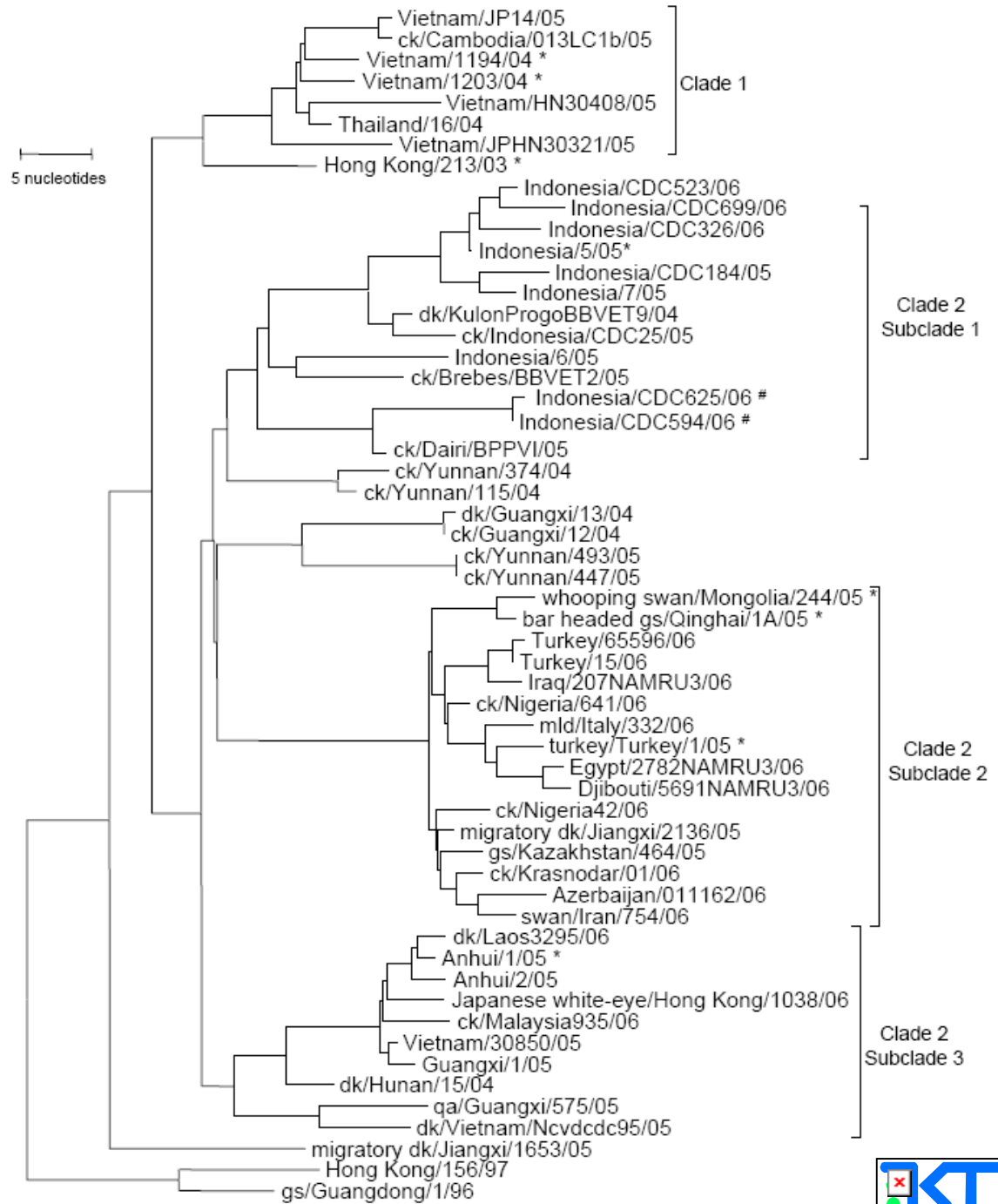
- Biosafety aspects
- Test selection
- Test validation
- Test standardization
- Evolution of H5N1 viruses

# Evolution of the H5N1 HA gene



Stevens et al., 2006

WHO, 2006



# Conclusions

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- Wide range of possible etiologies
- Rapidly evolving virus
- Continued need for updating reagents
- Importance of reference laboratories
- Access to appropriate reagents