



Smithsonian  
Institution

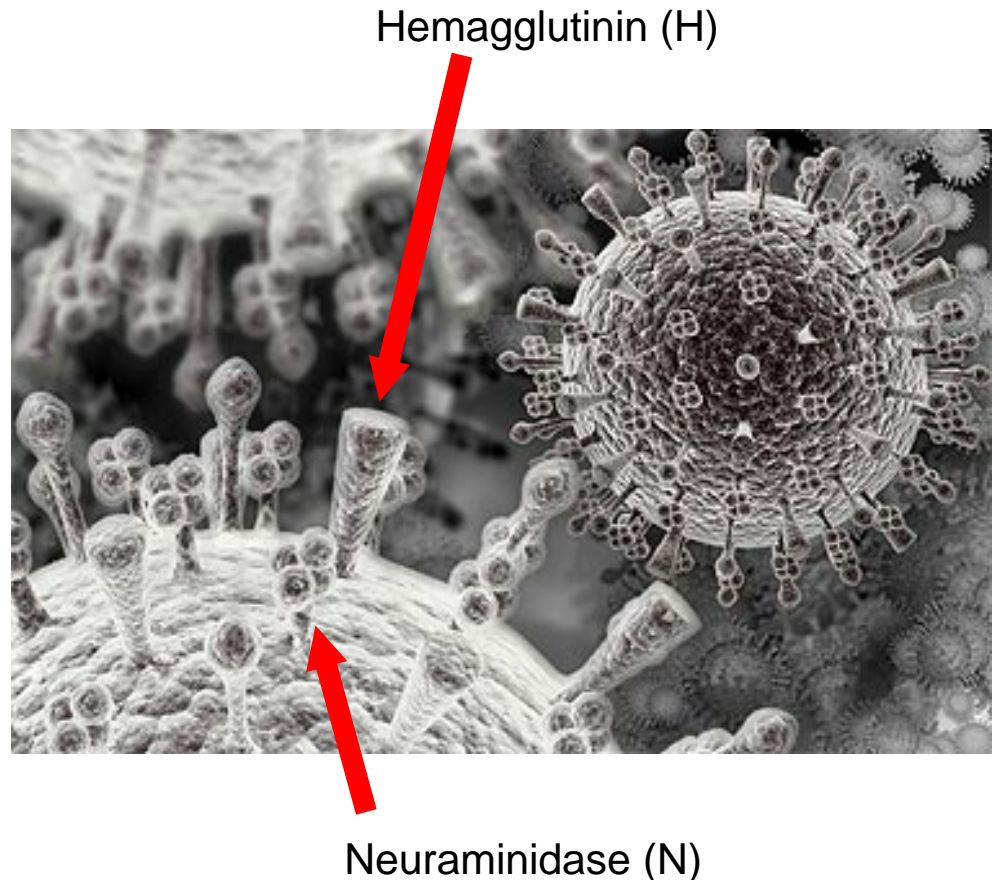


# **AVIAN AND PANDEMIC INFLUENZA PREPARATIONS**

JULES R. DUVAL, M.D.  
OFFICE OF SAFETY, HEALTH, AND  
ENVIRONMENTAL MANAGEMENT

# BACKGROUND: INFLUENZA

- Viral infection of the respiratory system
- “H” and “N” molecules (16 for “H” and 9 for “N”) on virus identify the subtype of the flu strain
- Wild waterfowl are the natural reservoir for all influenza A viruses



**Influenza A Virus Particle**

# AVIAN AND PANDEMIC INFLUENZA

- Avian Influenza and Pandemic Influenza are different:
  - Avian Influenza (AI):
    - An infection of birds; some strains (H5N1) can cause serious illness and death
    - H5N1 is showing the ability to survive at low temperatures and low humidity as well as in water and on surfaces for days to weeks
  - Pandemic Influenza (PI):
    - Infection representing a global outbreak of serious illness that spreads easily from person to person. Currently there is no pandemic flu
    - Have averaged 3 per century for past 500 years
    - AI - potential to become PI through mutation

# DEVELOPMENT OF PI



- Mechanism one:
  - AI slowly becomes more capable of being transmitted from person to person
    - Upside: Transmission should be slow enough that we have time to react
      - Vaccine development
      - Antiviral medications to control spread
      - Quarantine
    - Downside: Severe disease

# DEVELOPMENT OF PI (CONT'D)



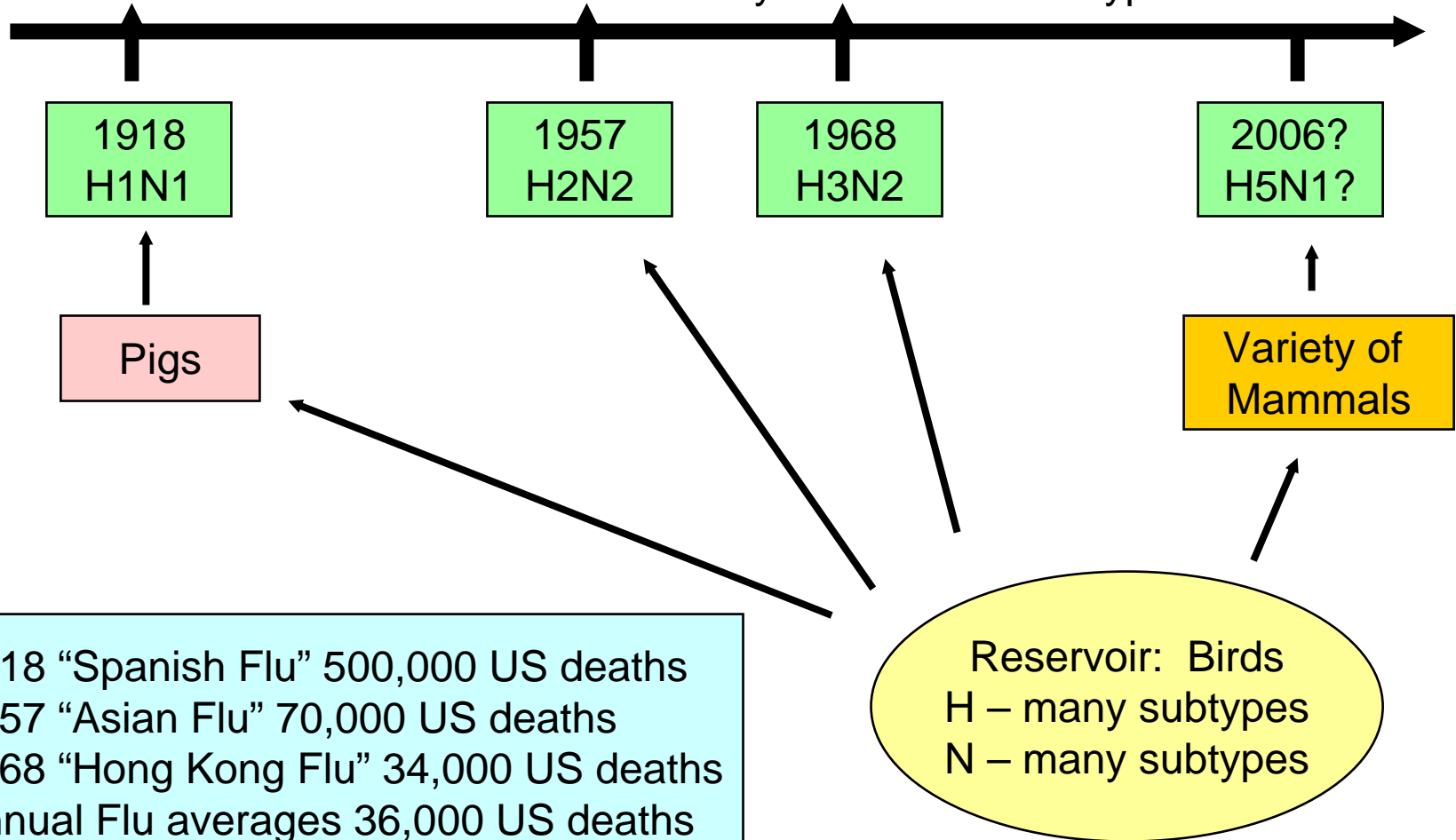
- Mechanism Two:
  - A person infected with human flu becomes infected with avian flu at the same time
  - The viruses can share genetic information such that a new human flu with bird capsule features (example: H5N1) develops
    - Upside: More than likely would be less severe than the current AI version of H5N1
    - Downside: Rapid spread across the globe

# WHO: 10 NEED TO KNOW FACTS ABOUT PANDEMIC INFLUENZA

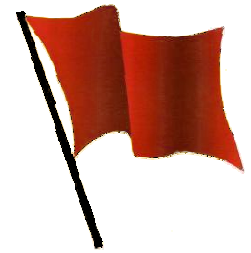
- Pandemic Influenza is different from avian influenza
- Influenza pandemics are recurring events
- World may be on brink of another pandemic
- All countries will be affected
- Widespread Illness will occur
- Medical supplies will be inadequate
- Large numbers of deaths will occur
- Economic and social disruption will be great
- Every country must be prepared
- WHO will alert world when pandemic is near

# 20<sup>th</sup> CENTURY PANDEMICS

Human Influenza: Primarily H1N1 strain subtypes



# H5N1: CAUSE FOR CONCERN



- There have been over 200 human cases and 100 associated deaths – the mortality rate has held steadily at approximately 55%
- Ducks infected with H5N1 now shedding more virus for longer periods with no symptoms of illness
- H5N1 viruses causing more disease in mammals
- Three steps necessary for the development of pandemic:
  - I. New subtype (Yes: H5N1)
  - II. Ability to infect people (Yes: 200+ cases noted)
  - III. Sustained human to human transmission (No)
- No human flu virus has ever had the H5 molecule in its make-up: world-wide immunological vulnerability



# READINESS REQUIREMENTS

- Avian Influenza (AI):
  - Education and training for all employees as well as personal protective equipment (PPE) for bird handlers
  - Develop protocols for limited use of antiviral medication
  - SI-wide seasonal flu vaccination strongly encouraged (mandatory for bird handlers?)
  - International travelers to visit OSHEM health clinic prior to leaving and then complete travel questionnaire upon return

# READINESS REQUIREMENTS (CONT'D)

---

- Pandemic Influenza (PI):
  - All units to have disaster plans updated and in order
  - Develop protocols for broad use of antiviral medication
  - Develop plans to distribute PI vaccine when available
  - Absenteeism and return-to-work monitoring

# OSHEM TIMELINE



- April – May 06:
  - Briefings
  - Cost estimates for PPE, medications, vaccines
- June – July 06:
  - Town hall meetings
  - Finalize purchase orders
- August – September 06:
  - Encourage all employees to obtain annual flu vaccine
- October – November 06:
  - Annual flu vaccination clinics begin
- December 06 – March 07:
  - Influenza season

# ROOM FOR OPTIMISM?



- H5N1 is incidental – pandemics are recurring events regardless of subtype
- 21<sup>st</sup> Century can be different if we are vigilant
- Readiness is the key – get in front of the next three events (think Katrina)
- Remember the basics: personal hygiene, safe practices (PPE), and staying informed

# GOAL: PREPARE AND PLAN TO WIN



“ Businesses will play a key role in protecting employees’ health and safety as well as limiting the negative impact to the economy and society”

Secretary Mike Leavitt

Health and Human Services

# SUMMARY



- Time available to prepare
- Comprehensive SI plan emerging as component of disaster management
- Educating employees now is vital
  - Employee influenza-like illness monitoring form if PI is declared
  - Shore up policies on absentee monitoring as needed
  - Proper personal hygiene, PPE, vaccination, role of medications

# SI UNITS

- NASM
- NMAH
- NMNH
- NMAI
- QUAD
- HMSG
- SISC
- Renwick
- NZP
- Postal
- Victor
- POB
- Castle
- Capital Gallery
- Royal
- NMAI-NY
- Cooper Hewitt
- SERC
- SAO (MA, HA, AZ)
- Garber
- MSC
- CRC
- Anacostia
- NZP-Front STRI
- Udvar-Hazy
- Ft. Pierce
- Herndon
- Crystal City

# Disaster Plans Required for Critical Smithsonian Offices

- OCIO
- OPA
- OHR
- OPMB
- OCON
- OC
- OFMR
- SBV
- OSHEM
- OPS
- OGC
- Archives
- SIL
- ORM
- OEDC



# Checklist for SI Families

- Ready-to-eat canned meats, fish, fruits, vegetables, beans, and soups
- Peanut butter or nuts
- Bottled water
- Canned or jarred baby food and formula
- Canned juices
- Pet food
- Prescribed medical supplies such as glucose and blood-pressure monitoring equipment
- Soap and water, or alcohol-based (60-95%) hand wash
- Medicines for fever, such as acetaminophen or ibuprofen
- Fluids with electrolytes
- Tissues, toilet paper, disposable diapers

# Improve and Maintain Biosecurity

## Steps to Take Now

- Employee Education

- Emphasize hand washing

- Seminars, posters
- Emphasize that employees with flu-like symptoms should stay home

- Employee education on AI preparedness

- Staff meetings, seminars, email, hotline, website
- Outreach presentations by OSHEM



# CITRIX Accounts

<http://prism.si.edu/ocio/cssd/customer/forms.htm>

Allows critical SI staff to work from home

Fill out form and FAX to OCIO: (202) 312-2838

# Information

## Phone Numbers

- DC: (202) 633-4400
- NY: (212) 514-3880

## US Government Websites

- [www.pandemicflu.gov](http://www.pandemicflu.gov)
- [www.cdc.gov](http://www.cdc.gov)
- [www.who.int](http://www.who.int)

## SI Websites

- [ofeo.si.edu/safety\\_health/osemhome.asp](http://ofeo.si.edu/safety_health/osemhome.asp)
- [www.alerts.si.edu](http://www.alerts.si.edu)

# CONTACTS



- OSHEM (Roger F. Yankoupe, Director)
  - Jules R. Duval M.D., Associate Director, 275 – 1218
    - Sharon A. Striker, COHN-S, 275 – 0968 or 633 – 4146
    - Bonnie R. Sidransky, OHN, 275 – 1027 or 633 – 4146
  - Rachel L. Gregory, Associate Director, 275 – 0701
    - Charles E. Fry, Industrial Hygienist, 275 – 0734
- OPS (James J. McLaughlin, Director)
  - Bayne R. Rector, Disaster Preparedness Coordinator  
786 – 2263

# QUESTIONS

