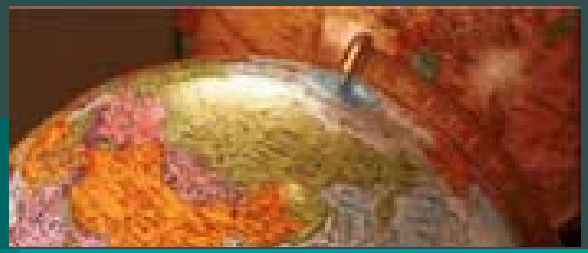

Pandemic Influenza Planning & Response

Presented by:
Iowa Department of Public Health

Judy Goddard, RN, BS, CIC
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Division of Acute Disease Prevention and Emergency Response

July 27, 2006

Iowa Dept. of Public Health
125 YEARS
Advancing Health Through the Generations

Objectives

- Provide an overview of IDPH
- Describe the history and current status of Pandemic Influenza
- Discuss the Pandemic Influenza Plan Annex
- Provide an overview of IDPH Resource Coordination and Management
- Questions

Overview of IDPH – What we do….

Mission: *Promote and Protect the Health of Iowans*

- Prevent epidemics and spread of disease
- Protect against environmental hazards
- Prepare for and respond to public health emergencies and assist communities in recovery
- Prevent injuries
- Promote and encourage healthy behaviors and mental health
- Assure the quality and accessibility of health services

History and Background of Pandemic Influenza

Judy Goddard, RN, BS, CIC
Regional Epidemiology Program Manager/Nurse Epidemiologist
Iowa Department of Public Health

Background

- A pandemic is an epidemic that has spread around the world, usually with high morbidity
- Seasonal influenza occurs every year and can cause significant morbidity and mortality

Pandemics of the 20th Century

1900 — 2000

1918-1919

- Known as Spanish flu
- 500,000 deaths
- During WWI
- It affected young adults most severely

1957-1958

- Known as Asian flu
- 70,000 deaths
- Began in China in Feb and by June was in the U.S.

1968-1969

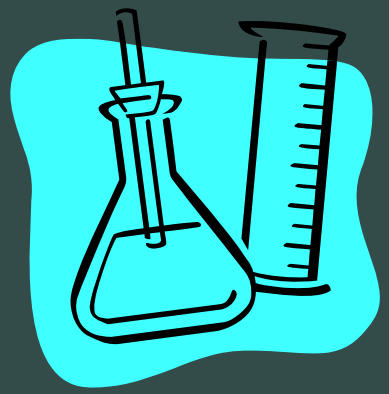
- Known as Hong Kong flu
- 30,000 deaths
- Began in China in early 68' and was in U.S. by the end of the year

Today's Concerns

- Pandemic flu traditionally occurs about 3 times per century
- Most agree that there will be another pandemic in the future, but it is not known what strain it will be or when it will occur
- We are watching avian influenza closely because of its potential to re-assort or mutate to a pandemic strain
- Remember about 1000 Iowans die of seasonal flu every year

The making of a pandemic…

- The population must be “immunologically naïve” (i.e. no one has ever had it before)
- Must be able to infect humans
- Must cause sickness and death
- Must spread easily from person to person



The Pandemic Potential of the Current Avian Strain…

- Humans are being infected with the bird virus, not a virus that has reassorted with a human virus or mutated into a human virus
- Almost no human to human transmission documented

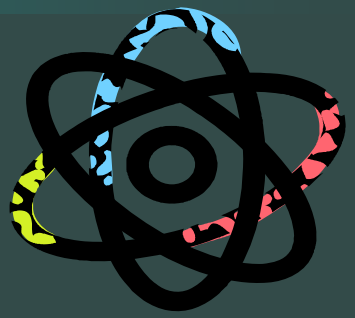
Pandemic Potential Continued…

- Often quoted 50% mortality rate most likely not accurate
  - Present surveillance captures only the most severely ill who seek medical care, and who are tested
  - Asymptomatic and mild cases are not identified, tested or reported
  - Sero-surveillance needed

Future

- 15-35% of the population may be affected
- If a pandemic were to occur, it is likely that it will not be a worse case scenario

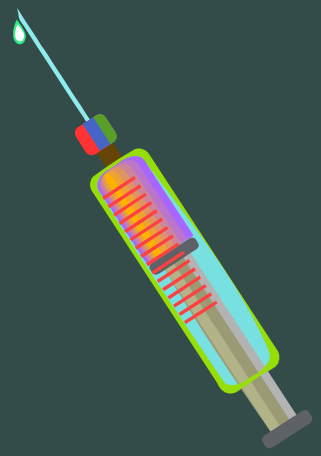
Future Continued…



- Modeling studies
  - "Medium level" case scenario with no vaccine and no drugs
    - 90,000-200,000 deaths in the U.S. which could mean *900-2,000 deaths in Iowa*
    - Estimated 300,000-700,000 hospitalizations in the U.S. equating to *3,000-7,000 hospitalizations in Iowa*
    - 1.8 million health care provider visits in the U.S. equating to *180,000 visits for Iowans*

Treatment Options

- **Vaccine** will not be immediately available
  - Will take 6-9 months
  - Initial amounts available will be small and will arrive in Iowa over time



Antivirals

- There are 2 groups of 4 different antivirals, any of which may or may not be effective
  - Adamantanes: amantadine and rimantadine
  - Neuraminidase inhibitors: zanamivir (Relenza) and oseltamivir (Tamiflu)
  - May not be taken for long periods of time
  - Overuse may create resistance (similar to antibiotic misuse)
  - Stockpiling issues

Current use of medications

- If the pandemic strain is the avian flu, Tamiflu may be effective (but some people already infected with resistant strains)
- Utilize and promote use of seasonal influenza vaccine to prevent reassortment with an avian strain within humans

Pandemic Influenza Plan Annex

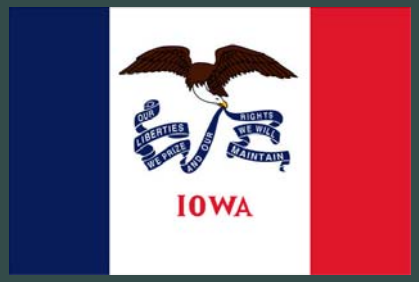
Mary J. Jones, BSEMS, PS
Division Director
Iowa Department of Public Health
Acute Disease Prevention and Emergency Response

The State of Iowa

Bioemergency Response Plan

is the base plan for the Pandemic Influenza Annex

Bioemergency Response Plan



- Command and Control
- Legal Authorities
- Communication – Public Information
- Surveillance
- Prevention and Containment Measures
- Managing Travel Related Risk
- Laboratory Diagnostics
- Mass Fatality Management
- Preparedness and Response Healthcare Facilities
- Preparedness and Response EMS

General Public Health Emergency Preparedness and Response

- **Surveillance** – collection and analysis of flu data, currently from 25 health care providers, 43 schools, 7 child care centers, 3 long term care facilities and UHL
- **Detection and Investigations** – reports from local public health, healthcare, laboratories, conduct surveys and questionnaires during investigation

General Public Health Bioemergency Preparedness and Response

- **Diagnosis** – verify from healthcare providers
- **Testing and Confirmation** – University Hygienic Laboratory
- **Prevention and Control** – education, vaccination, medications, quarantine/isolation, travel restrictions, social distancing, limit mass gatherings, closing public buildings
- **Resource Coordination and Management** - PHRT, SNS, Media, PH Orders, Capacity Reporting, Offsite Care Facilities, Vaccines and Antivirals, HAN etc…

Pandemic Influenza Response Plan Annex

- Based on the World Health Organization's (WHO) Pandemic Influenza Periods (three) and Phases (six)

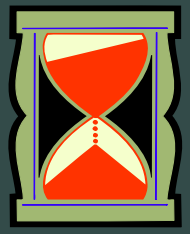
- IDPH has identified nine focus areas to be addressed during the pandemic influenza phases

WHO Pandemic Influenza Periods and Phases

- **Inter-Pandemic PERIOD – two phases**

  Phase 1: no new influenza virus subtypes in humans; subtype that has caused human infection may be present in animals

  Phase 2: as above, but circulating animal subtype poses substantial risk of human disease

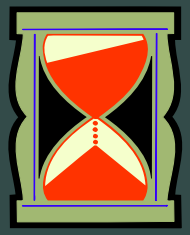


WHO Pandemic Influenza Periods and Phases

- **Pandemic Alert PERIOD – three phases**

Phase 3: human infection with new subtype, no human to human spread, or rare spread to people in close contact with patient

Phase 4: small clusters with limited human to human transmission, highly localized spread, suggesting virus is not well adapted to humans

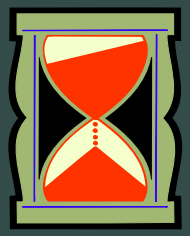


Phase 5: larger clusters, but human to human spread still localized, virus increasingly better adapted to humans, but not yet fully transmissible

WHO Pandemic Influenza Periods and Phases

- **Pandemic PERIOD – one phase**

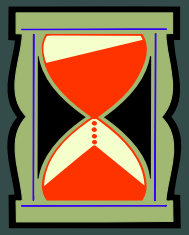
Phase 6: increased and sustained transmission in general population



Iowa Pandemic Period Progressions
Thresholds

Pandemic Period (phase six): three progressions that describe the location of the virus strain relative to Iowa and serve as thresholds for public health response

- **Strain is circulating in the world but not yet in U.S.**
- **Strain circulating in U.S. but not in Iowa**
- **Strain is circulating in Iowa**

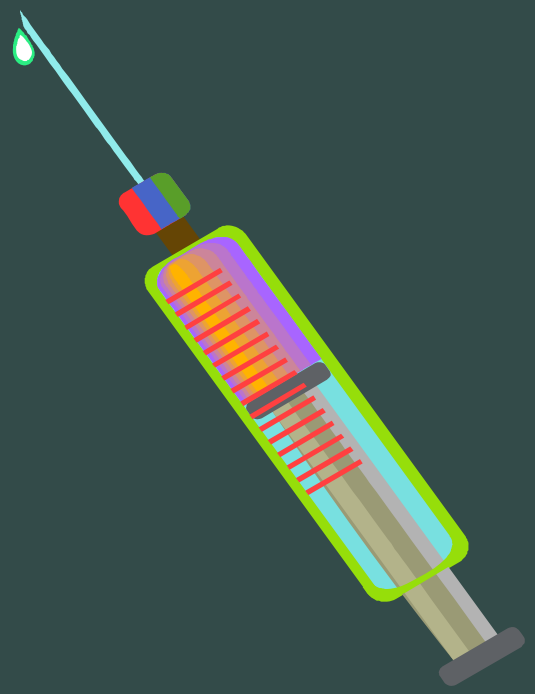


IDPH Pandemic Influenza Plan Annex - **Nine Focus Areas**

- Pre-vaccine preparedness
- Consideration for antivirals
- Prioritization of vaccine once available
- Distribution of vaccine and antivirals
- Surveillance
- Laboratory
- Personal protective equipment and infection control
- Travel related issues
- Healthcare surge capacity

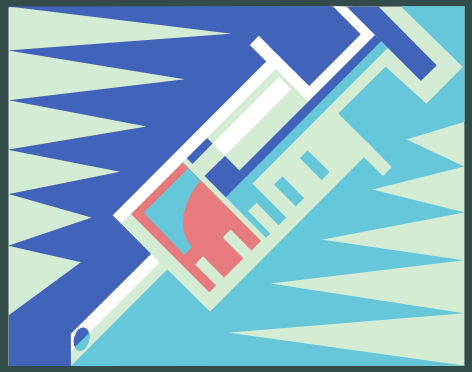
Prioritization of Vaccine

- Characteristics of the strain – population most affected
- Priority groups established by DHHS/CDC - Iowa specific
- Consultation with the Iowa Disease Advisory Council
- Guidance provided to local public health and healthcare providers – PH bulletin or order

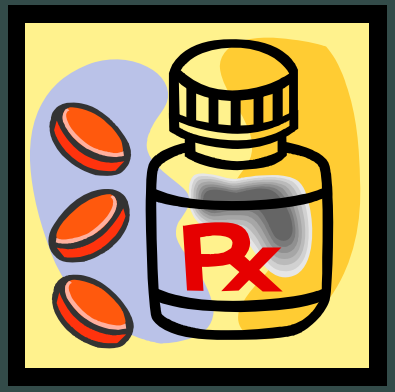


Distribution of Vaccine and Antivirals

- Public system (CDC or state) purchase and distribution - Strategic National Stockpile (SNS)



- Combination public-private system



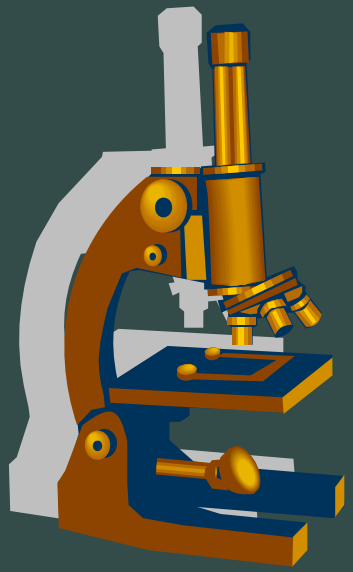
- Private system

Surveillance

- Iowa Influenza Surveillance Network current and expanded
- WHO and CDC international and national surveillance
- Systems will need to be flexible and adaptable to the situation

Laboratory - UHL

- Provide rapid and accurate testing services and report results to facilitate detection of cases
- Web-based reporting system in place
- Testing proficiency and biosafety containment
- On-demand courier system in place



Personal Protective Equipment (PPE) and Infection Control

- Reduce and or slow the spread of the virus between individuals and in the community

- CDC guidelines used for isolation in health care facilities

Quarantine and Isolation

- Social distancing, reduce exposure in public facilities, reduce travel

Travel Related Issues

- Virus can spread rapidly around the world through travel

- Reduce risk of introduction and spread of virus within Iowa by travelers

- Work with transportation conveyances to conduct surveillance, education and travel restrictions

Healthcare Surge Capacity

- Hospital and clinic capacity to rapidly expand beyond normal services

- Unable to admit patients to inpatient unit – beds full

- Set-up offsite care facilities

- Transfer patients (EMS) through the system to appropriate resources

Current Hospital Capacities: Bed Availability

- Determined by subtracting number of occupied beds from number of staffed beds
- Average capacity is 6,217
- Maximum capacity is 7,655

Emergency Capacity Reporting System

- Linked to Health Alert Network – Internet based
- IDPH can request information on anything with a numerical value
  - **Open beds**
  - **Supplies, equipment, pharmaceuticals**
  - **Surveillance information**
  - **Number of employees out with illness**

Current Hospital Capacities: Isolation

- All hospitals can isolate at least one patient in negative pressure isolation
- 485 isolation beds in Iowa
- Cohorting of patients

Morgue Capacities

- Local morgue capacity (in hospitals) 1,050 statewide
- Temporary morgue capacity (alternative morgues, such as funeral homes) 3,405

Infectious Disease Advisory Committee (IDAC)

- **State PH Medical Director/Epidemiologist:** Dr. Patricia Quinlisk
- **University of Iowa:** Robert Wallace, MD, Charles Helms, MD, Charles Gross, MD, Roy Werner, MD
- **Private practice physicians:** Lorn Matthews, DO, Steven Rinderknect, MD, Lisa Veach, MD
- **Public health physicians:** Lou Katz , MD,
- **Infection control practitioner/Nurse:** Shelley Zarling
- **University Hygienic Laboratory:** Mike Pentella;
- **Iowa Hospital Association:** Art Spies;
- **Medicare/Medicaid:** John Olds, MD
- **Local public health administrator:** Fran Sadden

Resources for you

- For The HHS Pandemic Influenza Plan and National Strategy for Pandemic Influenza: www.panflu.gov
- CDC Guidance: www.cdc.gov/flu/pandemic.htm
- CSTE: state plans http://www.cste.org/specialprojects/Influenzaplans/StateMap.asp
- For Fact Sheets and Iowa Specific Information: www.idph.state.ia.us/adper/flu.asp
- Protect Iowa Health: www.protectiowaheatlh.org

QUESTIONS

Thank You for Your Time!