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Influenza A(H3N2)v Virus Infections in the United States: Update for 4H

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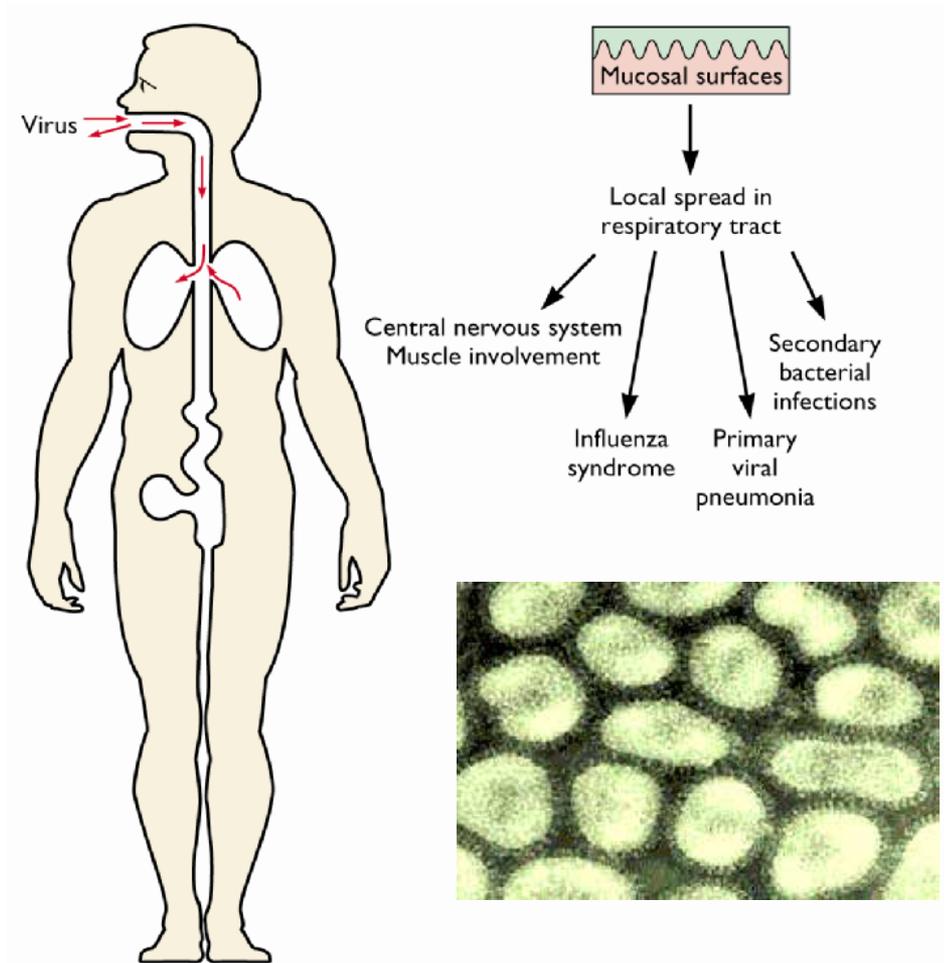
*The findings and conclusions in this presentation are those of the
presenter and do not necessarily represent those of CDC.*

Seasonal (Human) Influenza

- Influenza is a highly contagious respiratory illness caused by influenza virus
 - Types: A, B, (C)
- Annual epidemics in temperate zones and cyclical epidemics in tropics and subtropics
- Annual epidemics in the United States
 - 54,000 to 431,000 hospitalizations
 - 3,000 to 49,000 deaths
- Sporadic, unpredictable pandemics
 - 1918, 1957, 1968, and 2009

Influenza clinical characteristics

- Acute febrile respiratory illness characterized by
 - Fever
 - Cough
 - Sore throat
 - Runny nose
 - Muscle aches
 - Headache
 - Fatigue
- Complications
 - Pneumonia
 - Secondary infection
 - Worsening of underlying illness



Who Is At Risk?

- Increased risk for complications from seasonal influenza (and probably variant influenza)
 - Very young and very old
 - Those with compromised Immune systems
 - Pregnant women
 - Those with underlying medical conditions
 - Chronic lung, heart disease, diabetes, etc

Novel Influenza A Virus Infections

- Novel influenza A virus infections in humans are a nationally notifiable disease (since 2007)
- Human infections with influenza A virus subtypes *different from* currently circulating human subtypes (A/H1 and A/H3)
- Can include human infections with avian, swine or other influenza viruses that usually circulate in animals
- Efficient and sustained human-to-human transmission may signal the beginning of an influenza pandemic



Novel Influenza A Virus Infections

A Note on Nomenclature

- In 2011, influenza viruses that are known to circulate in pigs are called “swine influenza viruses” when isolated **from pigs**, but are called “variant viruses” when isolated **from humans**
- Variant viruses are designated with the letter “v”
 - An A(H3N2) virus that normally circulates in pigs, is called “A(H3N2) variant” or “A (H3N2v)” when isolated from a human
- “Variant” is not used for influenza viruses from animals other than pigs

Variant Influenza A Viruses – common exposures among cases

- Agricultural fairs
- Live markets
- Farms
- Occupational exposure
- Infected humans



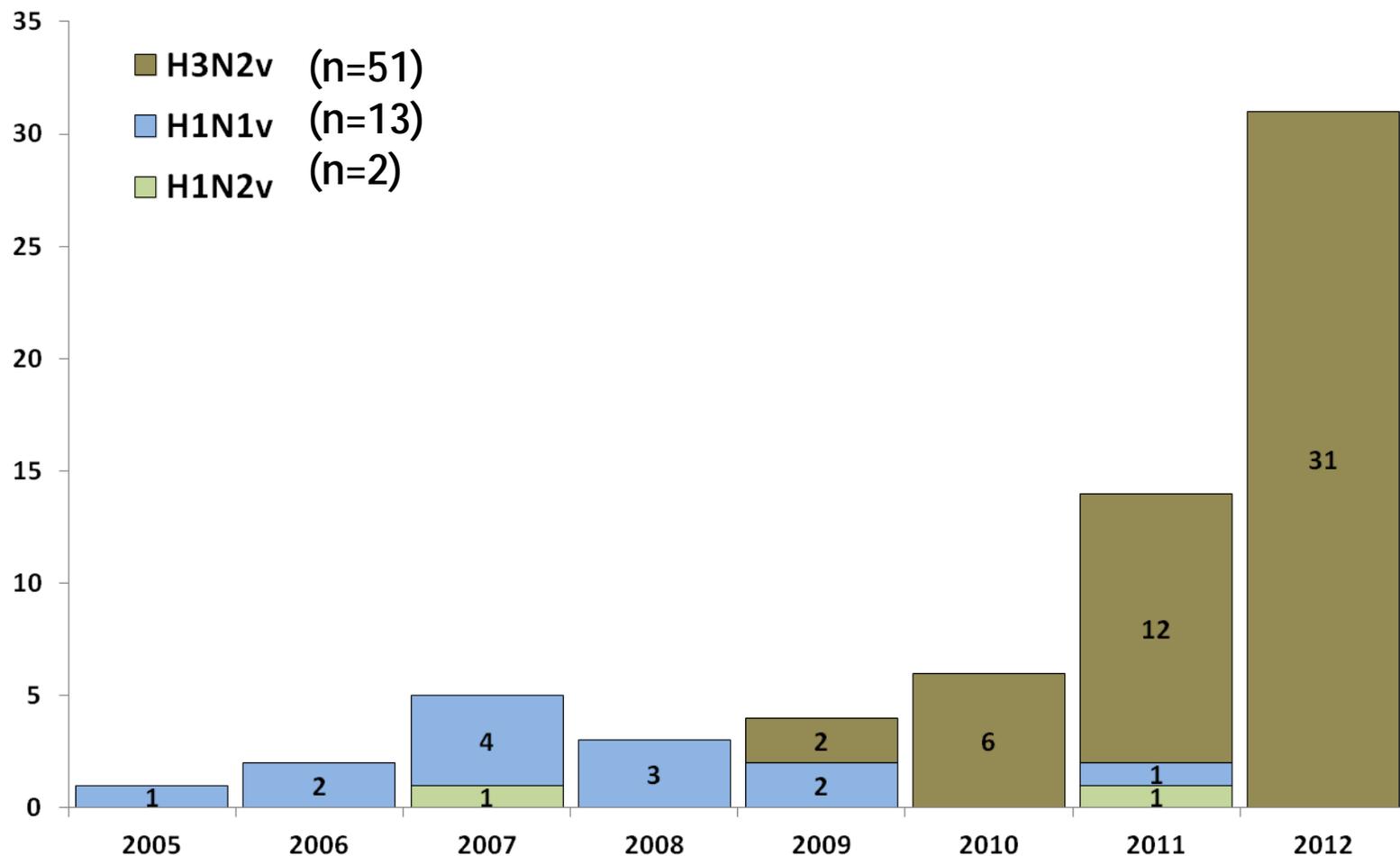
HUMAN INFECTIONS WITH VARIANT INFLUENZA A VIRUSES

Human Infections with Variant Influenza A

(as of Aug 7, 2012)

- 66 human cases of influenza A variant virus infections identified from Dec 2005 – Aug 7, 2012
 - H1N1v, H3N2v, H1N2v
- Previously ≈ 1 case every 1-2 years, but identification is increasing
 - In 2007, novel influenza A became a nationally notifiable condition – part of US pandemic preparedness
 - Better diagnostics at State Health Departments
 - rRT-PCR for influenza A (H1, H3, H5) capacity developed at US public health laboratories
 - Greater awareness due to 2009 H1N1 pandemic

Subtypes of US Variant Influenza A Cases, 2005 – Aug 7, 2012 (N=66)



Epidemiology of 41 variant influenza A cases (United States, 2005 – July 2012)

Characteristic	2005-2012 Variant Cases (n=41)
Median Age , years (range)	8 (<1 to 58)
Signs and Symptoms	Mostly mild, self-limited respiratory illness, but can be serious (like human seasonal influenza)
Hospitalized (%)	6 (15%)
Swine Exposure (%)	29 (70%)

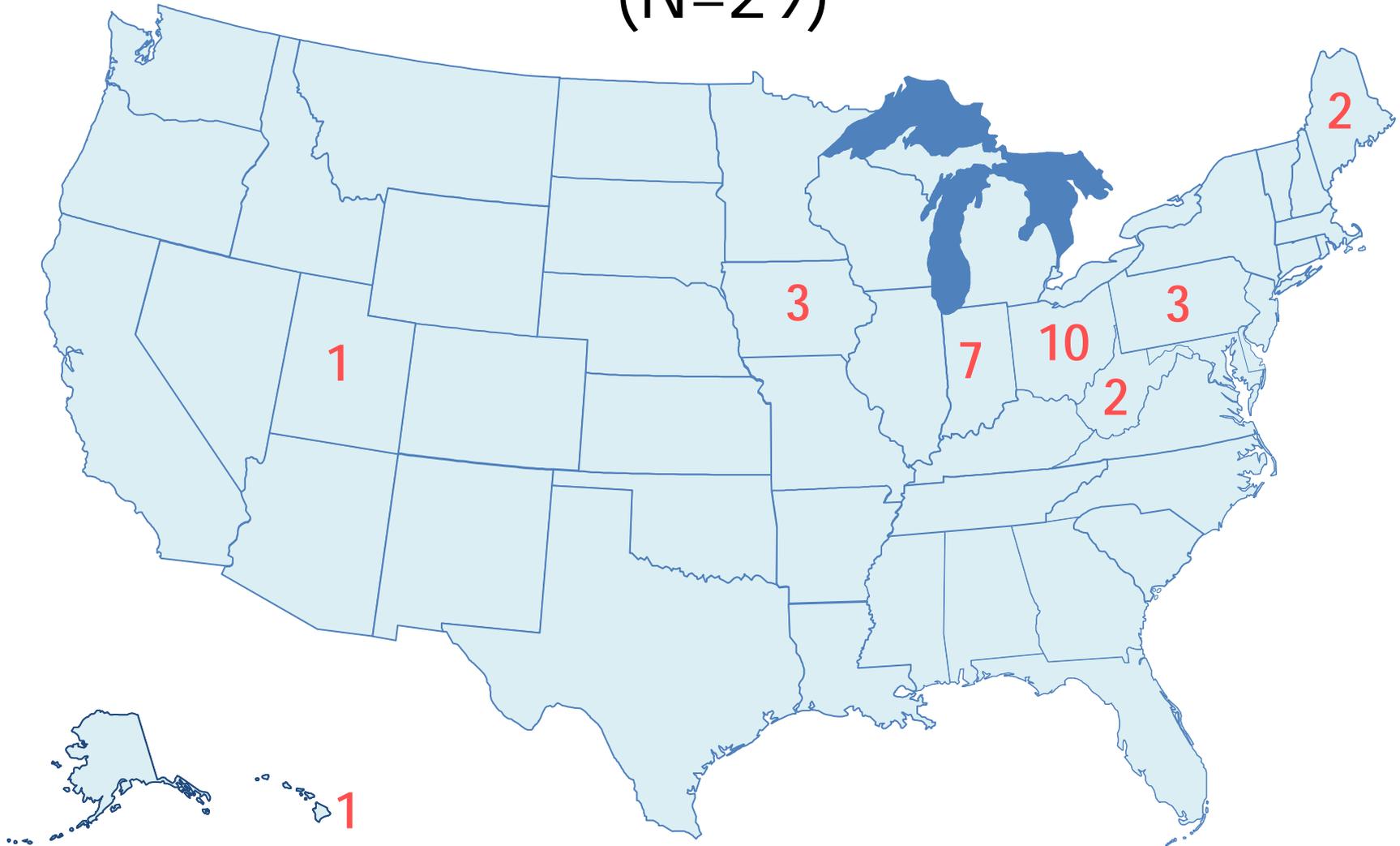
Variant viruses spread via respiratory droplet and fomite routes, similar to seasonal influenza viruses

Swine Exposure for 41 Variant Influenza A Cases (United States, 2005 – July 2012)

Setting	2005-2012 Variant Cases (n=41)
Agricultural Fair Attendee	10
Agricultural Fair Exhibitor	7
Live Animal Market	3
Farm	3
Occupational Exposure	4
Multiple Exposures	1
No Swine Exposure	13

**30 H3N2 VARIANT INFLUENZA A
CASES SINCE JULY 2012**

Confirmed cases of influenza H3N2v detected in 8 States July 2011— Aug 3, 2012 (N=29)



Summary of H3N2v cases as of August 7, 2012

- q **Confirmed cases geographically restricted to few states**
- q **Illness severity similar to seasonal influenza**
 - § Respiratory illness
 - § Most cases self-limited; recover without treatment
 - § No hospitalizations
- q **All viruses are sensitive to antiviral medications**
- q **No documented human to human spread in recent outbreak**
 - § Some cases in 2011 likely acquired infection from infected humans
 - § All current cases had contact with swine

Sign / Symptom	Number (%) of H3N2v Cases (N=19)
Fever	19 (100%)
Cough	16 (84%)
Sore Throat	9 (47%)
Muscle Ache	8 (42%)
Headache	6 (32%)
Nausea / Vomiting	4 (21%)
Shortness of Breath	4 (21%)
Fatigue / Lethargy	2 (11%)

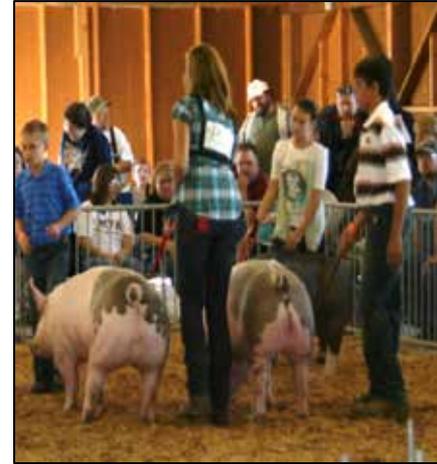
Current status – August 8, 2012

- q **Additional cases confirmed in Indiana and Ohio**
 - § Other states may be affected and have increased surveillance and prevention efforts
- q **Some severe disease under investigation, including hospitalizations**
 - § Most cases remain milder and self-limited
- q **While no confirmed spread among humans, we expect that this will occur**
 - § Will watch to see how efficient human to human transmission of the virus will become
- q **Main route of transmission from swine to humans in close contact**
 - § Children most affected thus far

VARIANT INFLUENZA PREVENTION

Prevention of Variant Influenza at Fairs: Fair Attendees and Exhibitors

- Infectious animals can look healthy
- Wash your hands frequently with soap and running water before and after exposure to animals.
- Never eat, drink or put things in your mouth while in animal areas and don't take food or drink into animal areas.
- Do not carry toys, pacifiers, spill-proof cups, baby bottles, strollers or similar items into areas with pigs.
- Avoid close contact with animals that look or act ill.
- Wash clothes when you get home
- Limit stroller and wheelchair use in animal areas
- Look for up-to-date instructions from state and local health and agriculture authorities



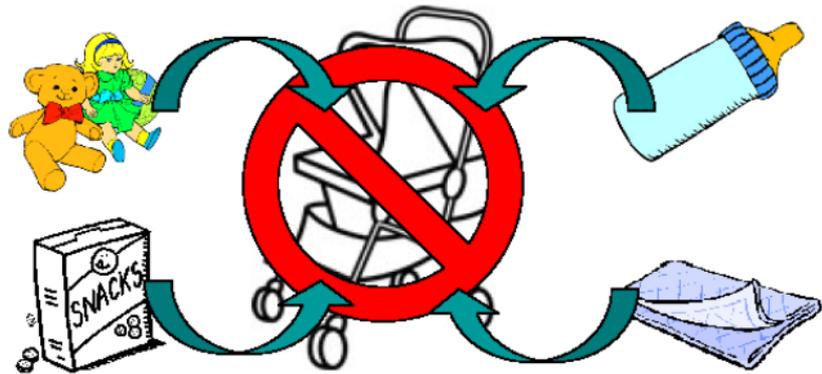
H3N2v and High Risk Groups: Fair Attendees, Exhibitors, and People with Exposure to Pigs

- Certain people are at greater risk of serious flu-related complications. This is true both for seasonal flu and novel flu virus infections.
- § High risk groups include:
 - § Children younger than 5 years
 - § People 65 years and older
 - § pregnant women
 - § People with certain chronic medical conditions (like asthma, diabetes, heart disease, weakened immune systems, and neurological or neurodevelopmental conditions)
- § These people should consider avoiding exposure to pigs and swine barns this summer, especially if sick pigs have been identified.
- § If you are part of one of these groups and develop ILI, contact your doctor as soon as possible. Your doctor may prescribe antiviral drugs that can treat flu.

Recommendations for Fair Organizers

Put up Signs about Safe Practices

For your health and safety, please stow strollers here before entering



Please also store your child's toys, food, drinks, and blankets in the stroller

Wash Hands When Leaving Animal Exhibits

WHO

 Everyone, especially young children, older individuals, and people with weakened immune systems

WHEN

Always Wash Hands:

-  After touching animals or their living area
-  After leaving the animal area
-  After taking off dirty clothes or shoes
-  After going to the bathroom
-  Before preparing foods, eating, or drinking



HOW

-  Wet your hands with clean, running water
-  Apply soap
-  Rub hands together to make a lather and scrub well, including backs of hands, between fingers, and under fingernails
-  Rub hands at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice
-  Rinse hands
-  Dry hands using a clean paper towel or air dry them. Do not dry hands on clothing



For more information, visit CDC's Healthy Pets, Healthy People website (www.cdc.gov/healthypets) and CDC's Handwashing website (www.cdc.gov/handwashing).

What To Do If You or Your Family Members Get Sick After a Fair

- Tell your doctor that you have had contact with swine
 - Antiviral medications
 - Nasal swab to test for flu
- Protect other humans and animals by limiting contact
- Practice good respiratory and hand hygiene
 - Cover your nose with tissue when coughing/sneezing
 - Wash hands after coughing or sneezing

Additional Rec's for Fair Organizers

- q Visitors to fairs and exhibitions, particularly to the animal barns including pigs, should receive information about disease risks and recommendations to protect visitors and animals from illness.
- q Whenever possible, facilities should minimize human-animal contact. (for detailed information refer to the following web page:
<http://nasphv.org/documentsCompendiumAnimals.html>)
- q Instruct visitors not to eat, drink, smoke, place their hands in their mouth, or use bottles or pacifiers while in areas with pigs.
- q Instruct visitors not carry toys, pacifiers, spill-proof cups, baby bottles, strollers or similar items into areas with pigs.
- q Instruct visitors to supervise children closely to discourage hand-to-mouth activities (e.g., nail-biting and thumb-sucking), contact with manure, and contact with soiled bedding.
- q Parents and children should be instructed to wash their hands after touching pigs or material contaminated by pigs (e.g. pig litter).
- q Control visitor traffic to prevent overcrowding.

H3N2v Communications

- Guidance Documents at: <http://www.cdc.gov/flu/swineflu/>
- More information about H3N2v
<http://www.cdc.gov/flu/swineflu/influenza-variant-viruses-h3n2v.htm>
- More information on swine influenza can be found in “What People Who Raise Pigs Need To Know About Influenza (Flu)” at <http://www.cdc.gov/flu/swineflu/people-raise-pigs-flu.htm>
- Additional information and materials, including educational posters that can be displayed around animal exhibits, also are available in “Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011” at <http://nasphv.org/documentsCompendiumAnimals.html>