Preparing workers for Avian Influenza

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Avian Influenza Conference: Protecting Avian Influenza Responders
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The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.
Agenda

- NIOSH
- Risk, Avian Influenza and Protecting Workers
- Resources for Avian Influenza
- Advancing the Science
Occupational Safety and Health Act of 1970

- To assure safe and healthful working conditions for working men and women.
Occupational Safety and Health

Regulation/Enforcement

Department of Labor (DOL)

Mine Safety and Health Administration (MSHA)

Occupational Safety and Health Administration (OSHA)

Research, Training, and Prevention Recommendations

Department of Health and Human Services (HHS)

Centers for Disease Control and Prevention (CDC)

National Institute for Occupational Safety and Health (NIOSH)
NI OSH Mission

To provide leadership in research to prevent work-related illness, injury, disability, and death.
Strategic Goals

- Conduct research to reduce work-related illnesses and injuries.
- Promote safe and healthy workplaces through interventions, recommendations and capacity building.
- Enhance global workplace safety and health through international collaborations
In 1997, influenza A viruses of H5N1 subtype first isolated from a patient in Hong Kong

Spread to wild bird populations across Europe and Africa

Human spread has been limited

WHO reports 328 confirmed human cases (09/09/2007)

200 deaths for a 61% case fatality rate
Countries Reporting Confirmed A/H5N1 Infections Since September, 2007
Consider

- Current H5N1 apparently not well “fitted” to replication in humans.
- The specific receptor for H5N1 is found deep in the respiratory tract of humans.
- Perhaps only a minority of people have receptors for avian influenza viruses in their upper respiratory tract (Webster, NEJM, 2006).
- Reassortment research has not identified a highly virulent, transmissible strain.
Close or Direct Contact with Chickens Infected with H5N1
Occupations Potentially at Risk

Multiple Sectors Affected/Diverse Workforce
- Agriculture
- Health Care
- Laboratory
- Responder
- Other (airline flight crew, wildlife biologist, etc.)
Dichotomy in Worker Protection Guidance

Recommendations for those environmentally exposed in a poultry or laboratory setting are profoundly different than infection control recommendations for a health care worker exposed to an infected patient.

See: Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities
Ammended: 10 May 2007
Risk as a Product of Probability and Consequence

- **Probability (currently Low)**
  - Transmission

- **Consequence (High)**
  - >60% mortality
  - No cure or vaccine
  - Opportunity for reassortment event with every infection
  - Potential for adaptation to more transmissible strain with every case
Investigating Person-to-Person Spread
Bird Cullers
Veterinarians
Bird Handlers at Markets
Other Occupations Interfacing with Avian Influenza Patients

- Medical Care Support Staff
- Laboratory Workers
- Airline Flight Crews
Avian Influenza: Protecting Workers from Exposure

Overview

Avian influenza (or bird flu) is a poultry disease caused by viruses that normally infect birds. This disease is caused by a number of type A influenza viruses.

Domestic poultry may be infected with one of two types of avian influenza viruses:

- The highly pathogenic viruses spread quickly and may kill nearly an entire poultry flock within 48 hours.
- The low pathogenic viruses cause only mild symptoms in chickens (such as ruffled feathers or a drop in egg production).

These avian influenza viruses usually do not infect humans. However, cases have occurred in humans outside the United States. The disease can be transmitted to poultry workers or others who contact infected poultry or contaminated surfaces. Examples of workers at risk include the following:

- Poultry growers and their workers
- Service technicians in poultry processing companies

On This Page...

Overview
CDC Resources
Other U.S. Resources
International Resources
NIOSH Publications
Presentations
Related NIOSH Safety and Health Topics
Guidance Documents

- CDC Responder Recommendations: *Interim Guidance for Protection of Persons Involved in US Avian Influenza Outbreak Disease Control and Eradication Activities*
- *CDC Interim Recommendations for Infection Control in Health-Care Facilities Caring for Patients with Known or Suspected Avian Influenza*** Currently under revision
Avian Influenza
Protecting Poultry Workers at Risk

- Joint NIOSH and OSHA collaboration
- Intended audience: Poultry workers who could be at risk of prolonged exposure to infected poultry or avian influenza virus
- Posted on OSHA website
- Provides table listing advantages and disadvantages of various respirators
A Few Research Needs

- Seroprevalence surveys in poultry workers
  - task analysis
  - environmental evaluations
  - PPE evaluations
  - Low path AI outbreaks

- PPE efficacy and utilization during various activities (Response, Eradication)

- Environmental evaluations (air, surface, and bulk) during known outbreaks
  - Determine/characterize extent of contamination,
  - persistence
  - refine sampling methodologies
  - assess adequacy of controls
Thank you for your Attention!

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