

Avian Influenza: Worker Health and Safety

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Background on Avian Influenza A Viruses

- Infect respiratory and gastrointestinal tracts of birds
 - Usually do not cause disease in wild waterfowl
 - Genetic reassortment occurs frequently
 - Can cause morbidity and mortality in domestic poultry

Background on Avian Influenza A Viruses

- Can survive at low temperatures and low humidity for days to weeks
- Can survive in water
- Can survive on surfaces
- Disinfection of the environment is needed

Transmission of Influenza A Viruses Between Animals and People

- Antigenic “shift” results in new human influenza A virus subtype through:
 - Genetic reassortment (human and animal viruses)
 - Direct animal (poultry) to human transmission
- Pandemic can occur if:
 - Efficient and sustained virus transmission occurs among humans (sustained person-to-person spread)

Transmission to Humans

- Majority through direct contact with infected poultry or surfaces infected with feces or respiratory secretions
- Virus may also be aerosolized and land on the mouth, nose, or eyes or be inhaled

Responder Recommendations

- **Web posting on February 17, 2004**
- **Joint CDC and USDA guidance**
 - Individuals involved in activities to control and eradicate outbreaks in poultry
 - High pathogenic and (possibly) low pathogenic strains
- **Follows SOPs used by USDA**
 - Prevent transmission between bird populations
 - Adds component of protecting against human disease
- **Evaluation of ill worker/responder**
 - Emphasis on laboratory testing

Responder Recommendations

- Basic Infection control
 - Hand washing with soap and water for 15-20 seconds or the use of hand disinfection procedures
 - Access to PPE

Responder Recommendations

- **Personal Protective Equipment**
 - **Disposable gloves**
 - Nitrile
 - Vinyl
 - Heavy duty rubber
 - **Protective clothing**
 - Disposable outer garments or coveralls
 - Impermeable apron
 - **Disposable protective shoe cover or boots that can be disinfected**

Responder Recommendations

- **Personal Protective Equipment**
 - **Safety goggles**
 - Nonvented preferred
 - Indirectly vented with antifog coating
 - **Respiratory Protection**
 - Disposable filtering facepiece respirators (e.g., N-95) at a minimum
 - Full facepiece, hood, helmet, or loose-fitting facepiece will protect eyes from exposure

Responder Recommendations

- Surveillance and Monitoring
 - Watch for symptoms
 - Seek medical care for illness
 - Stay home until 24 hours after resolution of fever
 - Practice good respiratory and hand hygiene to lower transmission risk to contacts

Responder Recommendations

- Vaccination with current season's influenza vaccine
- Administration of Antiviral Drugs for Prophylaxis
 - Daily for the duration of the time responders have direct contact with infected poultry or contaminated surfaces

Poultry Workers: Medical Guidance

- Should be aware of signs of disease in poultry
- Should be aware of signs and symptoms of human infection
- Seek medical care if they experience signs and symptoms
- Talk to healthcare provider about obtaining flu vaccination

PPE Guidance: Respiratory Protection

- Respiratory protection
 - Provides protection against breathing in contaminated materials
 - NIOSH website contains information on the advantages and disadvantages of the use of different respirators
 - Implement complete respiratory protection program including training and fit testing

PPE Guidance: Eye Protection

- Eye protection
 - Reduces direct exposure to contaminated dust and aerosols through the eyes
 - Helps keep workers from touching their eyes with contaminated fingers

<http://www.cdc.gov/niosh/topics/eye/eye-infectious.html>



PPE Guidance: Protective Clothing

- Protective clothing
 - Prevents direct skin contact with contaminated materials and surfaces
 - Reduces the likelihood of transferring contaminated materials
- Follow proper donning and doffing procedures

PPE Guidance: Protective Clothing

- Wash hands thoroughly with soap and water, waterless soaps, or alcohol-based sanitizers after glove removal
- Discard disposable items properly
- Clean and disinfect non-disposable items according to outbreak-response guidelines

OSHA Safety and Health Information Bulletin for Poultry Workers

- Joint NIOSH and OSHA Bulletin
- Intended audience: Poultry workers who could be at risk to prolonged exposure to infected poultry or avian influenza virus
- Posted on OSHA website
 - <http://www.osha.gov/dts/shib/shib121304.html>
- Provides table listing advantages and disadvantages of various respirators

Respirator Filter Classification

- Filters classified under 42CFR84 regulation
- Provides 9 classes of filters based on filter efficiency and degradation
- N-, R-, and P-series filters depends on the presence or absence of oil particles
- Selection of filter efficiency (i.e., 95%, 99%, or 99.97%)
- For example, N-95, P-100

Minimum Protection Respirators

Advantages

- Lightweight
- Low maintenance
- No effect on mobility

• Disadvantages

- Minimum protection level
- No protection against gases (ammonia)
- No eye protection
- Variability of fit by model

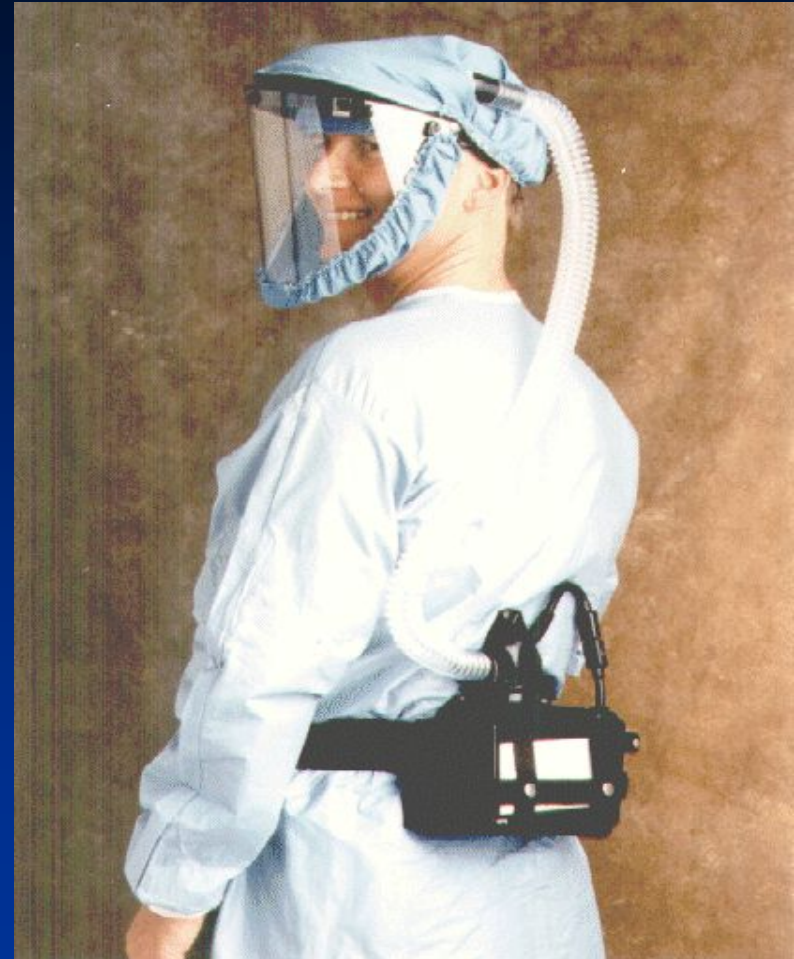
N 100 Filtering Facepiece Respirator



More Protective Respirators

Advantages

- more protective
 - NIOSH APF: Hooded: 25, Tight-fitting: 50
 - ANSI APF: 1000 for both
- cooling
- Disadvantages
 - cost
 - weight
 - battery dependence
 - noise



Respirator Use and Selection

- Consider all potential contaminants in environment when selecting appropriate respirator
- Review table of advantages and disadvantages of air-purifying respirators in the NIOSH OSHA Safety and Health Bulletin
- Consult 2004 NIOSH Respirator Selection Logic
 - <http://www.cdc.gov/niosh/docs/2005-100/default.html>





For Additional Information

- **NIOSH**
 - 1.800.35.NIOSH (1.800.356.4674)
 - Outside the U.S. 513-533-8328
- **CDC Avian Influenza website**
 - <http://www.cdc.gov/flu/avian/index.htm>
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