



NIEHS H1N1 Response Training Tool

Protecting Yourself From H1N1 in the Workplace

Safety and Health Awareness for Responders to Swine Flu



<http://www.flu.gov/outreach/h1n1.html>

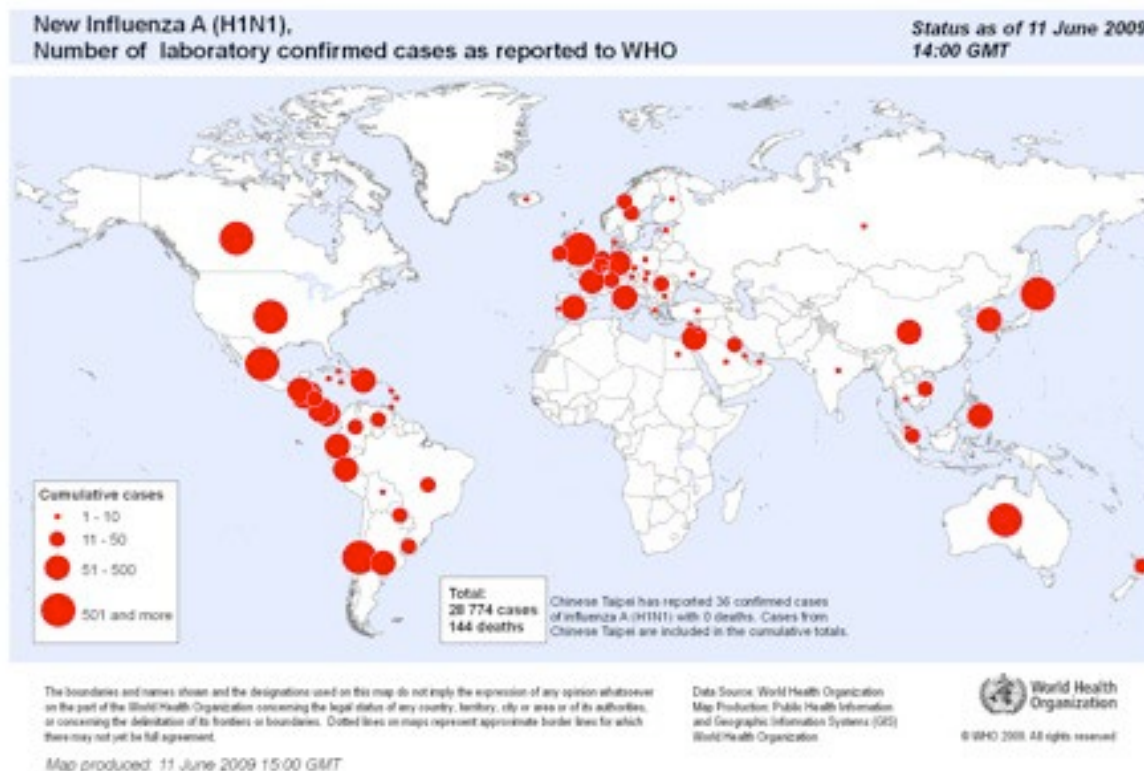


Employer and worker responsibilities

Employers and workers have responsibilities under the OSH Act.

- The Occupational Safety and Health Act requires that employers provide a safe and healthful workplace free of recognized hazards and follow OSHA standards. Employers' responsibilities also include providing training, medical examinations and recordkeeping.
- Workers must follow the employer's safety and health rules and wear or use all required gear and equipment; follow safe work practices for your job, as directed by your employer; report hazardous conditions to a supervisor; and may report hazardous conditions to OSHA if employers do not fix them.

The world is now at the start of the 2009 influenza pandemic. - Dr. Margaret Chan, Director-General of the World Health Organization, June 11, 2009





How bad could it get?

- Infect 30–50% of the U.S. population this fall and winter
- Cause 1.8 million U.S. hospital admissions
- Cause 30,000 - 90,000 deaths in the United States, concentrated among children and young adults
- Pose especially high risks for pregnant women and people with neurological disorders, respiratory impairment, diabetes, or severe obesity

[estimates from the President's Council of Advisors on Science and Technology (PCAST) Report, August 2009

http://www.whitehouse.gov/assets/documents/PCAST_H1N1_Report.pdf]



What can we do?

- BE informed
- BE prepared
- BE ready to adapt if:
 - H1N1 increases its ability to cause death and serious illness (virulence)
 - H1N1 becomes resistant to available treatments
 - There is a shortage of a safe and effective vaccine
 - Other prevention measures such as respirators are not available and/or effective



The response to H1N1 needs to be guided by the ‘precautionary principle’

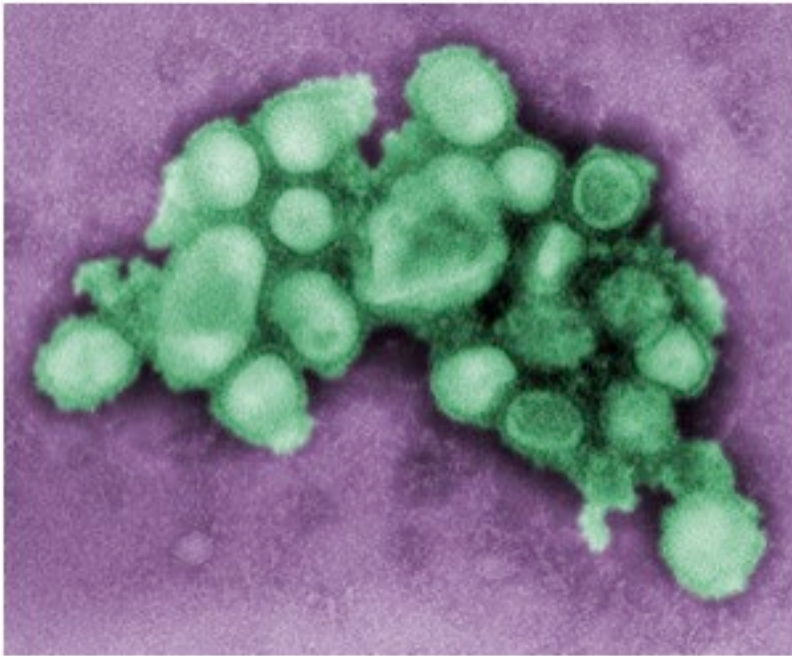
When it comes to worker safety, we should be driven by the ‘precautionary principle’ that reasonable steps to reduce risk should not await scientific certainty about the nature of the hazard or risk.

MODULE 1

H1N1 Basics



The swine flu pandemic is caused by the novel H1N1 virus



- Novel - not seen before
- Spreads easily
- Little if any immunity in humans

H1N1 is spread from person to person mainly through coughing or sneezing



- **Droplet** - respiratory secretions from coughing or sneezing landing on mucosal surfaces (nose, mouth, and eyes)
- **Contact** - Touching something with H1N1 virus on it and then touching mouth, nose or eyes
- **Airborne** - Breathing in infectious H1N1 particles

Contagious 1 day before symptoms and for 5-7 days after onset

H1N1 causes familiar flu symptoms

- Fever
- Cough
- Sore throat
- Runny or stuffy nose
- Body aches
- Headache
- Chills
- Fatigue

Diarrhea and vomiting have also occurred. Severe sicknesses and deaths have also resulted from illness associated with this virus.



H1N1 poses a greater risk for people with certain conditions

- Pregnancy
- Asthma
- Diabetes
- Suppressed immune systems
- Heart disease
- Kidney disease
- Nerve and muscular disorders



Seasonal flu and H1N1 influenza are different

- H1N1 has the potential to cause more deaths and hospitalizations
- H1N1 has caused greater disease in people younger than 25 than older people



Pandemic influenzas have happened before and will likely appear again



- Three pandemics killed millions of people worldwide in the last century
- 1918 – between 40 and 100 million
 - 1957 – 2 million
 - 1968 – 1 million



Vaccination is only a part of the strategy to combat H1N1

- H1N1 has already spread before a vaccine has become available to the whole population
- Some people will not be vaccinated
- The virus could change and reduce vaccine effectiveness





Certain groups will be given priority for vaccination against H1N1

CDC's Advisory Committee on Immunization Practices (ACIP) recommends* the vaccine be given first to:

- Pregnant women
- Household contacts and caregivers for children younger than 6 months of age
- Healthcare and emergency medical services personnel
- All people from 6 months through 24 years of age
- Persons aged 25 through 64 years who have health conditions associated with higher risk of medical complications from influenza

*<http://www.cdc.gov/h1n1flu/vaccination/acip.htm>

MODULE 2

Assessing the Risk of Exposure to H1N1 in the Workplace





The risk of exposure to H1N1 at work is related to

- Whether the type of setting you work in requires close proximity to people potentially infected with the pandemic influenza virus, and
- Whether your specific job duties require you to have close, repeated or extended contact with known or suspected sources of pandemic influenza virus

OSHA has classified workplaces into four categories of risk for pandemic influenza



http://www.osha.gov/Publications/influenza_pandemic.html

Very High exposure risk occupations are those with high potential exposure to high concentrations of known or suspected sources of pandemic influenza during specific medical or laboratory procedures

Examples of work settings

- health care
- laboratories
- autopsy suites



Examples of job activities

- bronchoscopy
- sputum induction
- working with specimens in laboratories
- some dental procedures
- some autopsy procedures

High Exposure risk occupations have a high potential for exposure to known or suspected sources of pandemic influenza virus

Examples of work settings

- hospitals and other types of health care facilities
- medical transport
- correctional facilities
- drug treatment centers
- homeless shelters
- home health care

Examples of job activities

- direct patient care
- emergency medical services
- housekeeping and maintenance in patient areas



Medium risk jobs involve high-frequency contact with the general population

Examples of work settings

- schools
- outpatient health care
- social services
- high density of coworkers
- high volume retail or other contact with the general public

Examples of job activities

- classroom instruction
- aiding clients
- serving customers





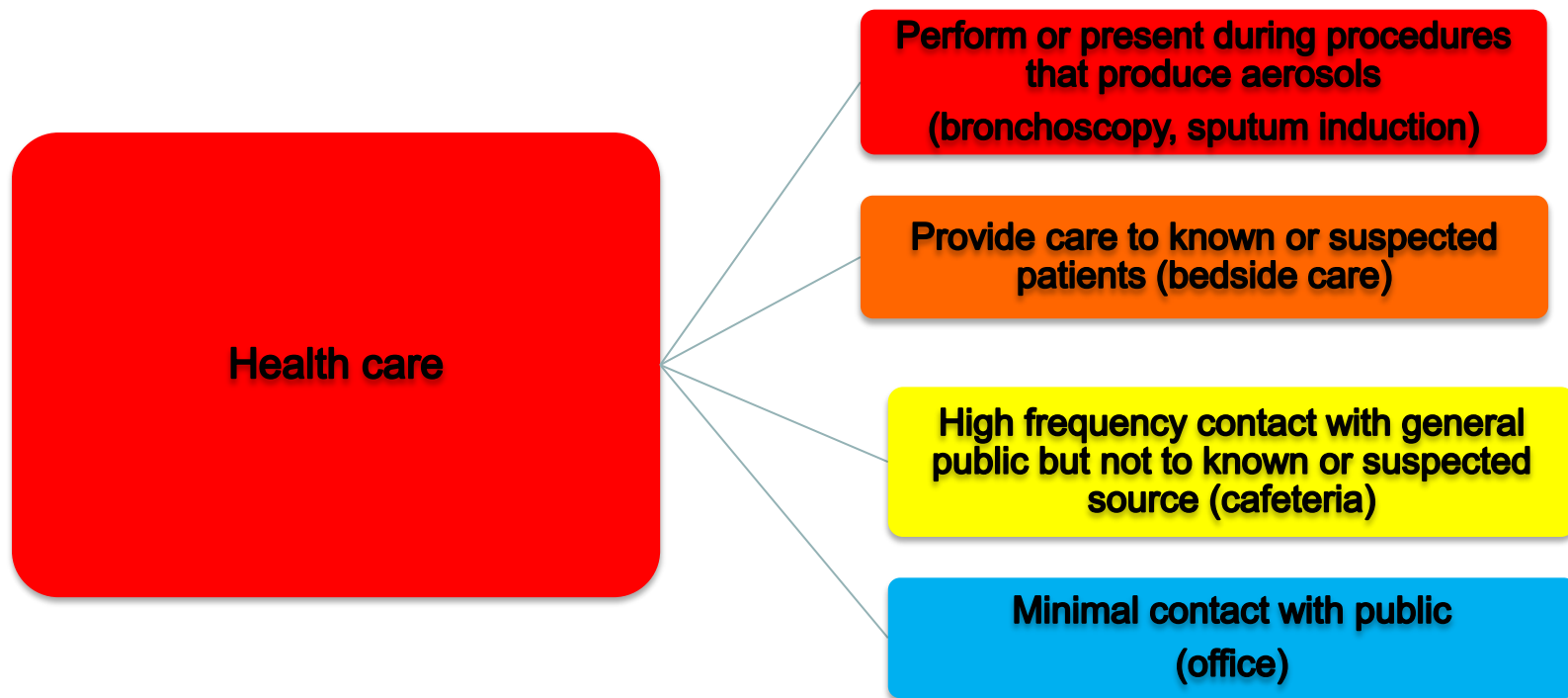
Lower exposure risk occupations are those that do not require contact with people known to be infected, nor frequent contact with the public



The level of risk to employees in a health care or other type of facility depends on their exposure to known or suspected sources of H1N1 resulting from their job duties

Setting

Job Activities



Emergency services and critical infrastructure must be able to function during a pandemic



Emergency services and critical infrastructure include:

- law enforcement
- emergency response
- public utilities



Keeping critical infrastructure and key resources operating is a priority

- Government Facilities
- Dams
- Commercial Facilities
- Nuclear Power Plants
- Critical Infrastructure
- Food and Agriculture
- Public Health and Healthcare
- Banking and Finance
- Chemical and Hazardous Materials
- Defense Industrial Base
- Water
- Energy
- Emergency Services
- Information Technology
- Telecommunications
- Postal and Shipping
- Transportation
- National Monuments and Icons



Contact with swine does not pose a serious threat of H1N1 in people at this time

- H1N1 could spread in the future through contact with infected pigs or environments contaminated with H1N1 flu virus
- Cannot catch H1N1 from eating pork





Pigs can get swine flu

Signs of flu in pigs can include any of the following:

- sudden onset of fever
- lethargy, lack of alertness
- going off feed (poor appetite)
- coughing (barking)
- discharge from the nose or eyes, eye redness or inflammation
- sneezing
- breathing difficulties

MODULE 3

Methods to Prevent H1N1 Exposure in the Workplace





Basic hygiene and social distancing steps that apply to every workplace

- Stay home when sick
- Wash hands or use sanitizer frequently
- Avoid touching your nose, mouth & eyes
- Cover coughs & sneezes with tissues or sleeve
- Dispose of tissues in no-touch bins
- Wash hands or use sanitizer after coughing, sneezing or blowing nose
- Avoid close contact with coworkers and customers
- Avoid shaking hands/wash hands after physical contact with others

Basic hygiene and social distancing steps that apply to every workplace (continued)

- If wearing gloves, wash hands after removing
- Keep common surfaces (such as telephones, keyboards, etc) clean
- Avoid using other workers' equipment if possible
- Minimize group meetings by using phone, email, etc., and avoid close contact when meetings are necessary
- Limit unnecessary visitors to the workplace
- Maintain your physical and emotional health with rest, diet, exercise and relaxation



H1N1 planning should be integrated into an existing safety and health system

- Management leadership and employee participation
- Hazard identification and assessment
- Hazard prevention and control
- Education and training
- System evaluation and improvement
- Plan for a pandemic with “increased severity”
 - CDC recommends planning for current severity and “increasing severity”



Use methods that protect workers, starting with the most effective



- Engineering controls

- Work practices

- Administrative controls

- Personal protective equipment



Engineering controls include

- Ventilation
- Drive through service
- Plastic shields and other barriers



Engineering controls for Very High and High risk jobs

Engineering controls for very high and high risk workers include:

- negative pressure isolation rooms
- biological safety cabinets



Work practices and administrative practices can reduce workers' exposures



Work practices to reduce H1N1 exposure include:

- hand washing/sanitizer
- no-touch trash cans
- vaccination
- cough/sneeze etiquette
- limiting the number of staff present for very high or high risk tasks
- training



Adjust policies to reduce exposures

Policies that can help to reduce exposure to H1N1 include:

- Encouraging workers who are ill to stay home without fear of reprisals or loss of pay or benefits
- Using email, phone, teleconferences instead of face-to-face contact



Personal protective equipment (PPE) includes

- Gloves
- Face shields
- Respirators
- Protective clothing





The use of personal protective equipment must comply with OSHA Standards

OSHA Standard 1910.132 has general requirements that employers must follow for PPE:

- Assess workplace for hazards that require the use of PPE
- Select the correct type of PPE for the hazards
- Ensure that PPE fits each wearer



Respirators are needed when there is a risk of airborne transmission

A N95 respirator is the minimum level of protection to prevent inhaling H1N1



There are reusable respirators that provide greater protection than disposal respirators

- Powered air-purifying respirator (PAPR)
- Half or full-face elastomeric respirators





Surgical masks are not respirators

Surgical masks do not:

- Fit tightly against the skin to form a seal
- Filter tiny particles, such as viruses or bacteria that are in the air





Respiratory protection must comply with all elements of OSHA Standard 1910.134

- Written program
- Selection hazard to match hazard
- Medically fit to wear
- Fit testing
- Ensure proper use of respirators
- Respirator maintenance
- Labeling/color coding filters
- Employee training
- Program evaluation
- Recordkeeping

Personal protective equipment for Very High and High risk jobs include:

- Face/eye protection
- Gloves
- Gowns
- Respirators
 - at least N95
 - PAPR or full face elastomeric for greater protection





Other OSHA standards apply to H1N1 response actions



**Occupational Safety
and Health Administration**

www.osha.gov



The hazard communication standard (1910.1200) is a worker's right to know about chemicals

OSHA's Hazard Communication Standard (1910.1200) requires:

- list of all hazardous chemicals in the workplace
- labels on containers
- chemical information sheets (material safety data sheets)
- training
- written program on how to inform workers

Portable containers must usually be labeled

Exception: portable containers do not have to be labeled if only the worker who transfers the chemical uses it during that shift





OSHA's Bloodborne Pathogens Standard (1910.1030) prevents other infections

- Bloodborne pathogens means diseases that are spread through contact with blood and other body fluids containing blood
- Bloodborne illnesses include, but are not limited to:
 - HIV/AIDS
 - Hepatitis B
 - Hepatitis C



The Bloodborne Pathogens Standard requires measures to prevent exposure to blood and body fluids

- Treat all blood and fluids that might contain blood as infectious – ‘standard precautions’
- Use safety needles and sharps to prevent cuts
- Put all used needles and sharps in sharps containers
- Provide hepatitis B vaccination
- Use gloves, face shields and other PPE
- Record needlesticks and sharps injuries



California OSHA issued an Aerosol Transmission Disease (ATD) Standard

<http://www.dir.ca.gov/Title8/5199.html>

The standard applies to many types of health care settings, facilities receiving persons from uncontrolled releases of hazardous substances, police services, correctional facilities, drug rehab centers, homeless shelters, and other settings

The standard requires different types of engineering controls, work practices and administrative controls, and PPE depending on the level of exposure risk

Acronyms

- **CDC** **Centers for Disease Control and Prevention**
- **EPA** **U.S. Environmental Protection Agency**
- **HEPA** **high-efficiency particulate air**
- **HHS** **U.S. Department of Health and Human Services**
- **JCAHO** **Joint Commission on Accreditation of Healthcare Organizations**
- **LRN** **Laboratory Response Network**
- **NIOSH** **National Institute for Occupational Safety and Health**
- **OSH Act** **Occupational Safety and Health Act of 1970**
- **OSHA** **Occupational Safety and Health Administration**
- **PAPR** **powered air-purifying respirator**
- **PPE** **personal protective equipment**
- **SNS** **Strategic National Stockpile**
- **WHO** **World Health Organization**

For more information go to

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov>

Occupational Safety and Health Administration (OSHA)

<http://www.osha.gov>

U.S. Pandemic Flu site

<http://www.flu.gov>

World Health Organization

<http://www.who.int/en/>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/NIOSH/>



Why this training tool was created

This training tool was created by the NIEHS National Clearinghouse for Worker Safety and Health Training under a contract (273-05-C-0017) from the National Institute of Environmental Health Sciences Worker Education and Training Program (WETP). WETP has trained over a million emergency responders and hazardous waste workers since 1987 to do their jobs safely. WETP is a part of the Department of Health and Human Services, which is a cooperating agency under the Worker Safety and Health Support Annex of the National Response Plan. As part of the coordinated effort, the National Clearinghouse worked with NIEHS, WETP to create this orientation briefing for those who may be exposed to H1N1 (swine flu).