

# Using Infection Control to Prevent the Spread of Flu in Health Care Settings

With all the news today about flu, health care workers and health care facilities should be planning now for how they will manage future outbreaks of flu.

Flu spreads from person to person through the air and by contact with infected surfaces such as telephones and doorknobs. There are three well-established methods for managing an outbreak of the flu virus:

- 1) Vaccines to prevent catching the flu or to reduce its symptoms;
- 2) Antiviral medications to treat symptoms of flu, and
- 3) Implementation of standard infection control procedures to prevent spread of infection.

## Frequently Asked Questions

**Q. Do vaccines really work?**

**A.** There currently are good vaccines available to prevent the spread and/or reduce the severity of seasonal flu symptoms. However, where pandemic flu is concerned, there is no magic bullet. Scientists have not yet developed a vaccine that could prevent its spread. Should pandemic flu appear, strict infection control will be the best protection.

**Q. Is there a treatment for flu?**

**A.** The Food and Drug Administration has approved four different antiviral medications to treat and/or prevent seasonal flu: amantadine; rimantadine; oseltamivir; and zanamivir. These usually are effective to some degree against seasonal flu.

Because scientists don't know the make-up of future outbreaks, they don't yet know for certain the best way to treat them. Medicine that works for seasonal flu may not work well for pandemic flu. This is because the virus strains keep changing and mutating, and newer strains of virus may be resistant to current treatments.

Although pandemic flu is rarer—it has happened only three times in the past century—it is far more serious. Experts predict that a new pandemic flu outbreak could infect millions of people around the world and kill a large percentage of those infected. It could come at any time of year, spread easily from person to person, travel quickly around the globe, and take months or years to run its course

**Q. Why is infection control so important?**

**A.** From the first moment that a flu pandemic strikes, infection control may be our best tool for controlling the spread of the virus. Rather than sufficiently promoting the need for effective infection control, the media has been focusing on the possibility of yet-to-be-developed "magic-bullet" vaccines that will not be ready for at least six months following a pandemic outbreak, and antivirals that so far have shown limited effectiveness. However, infection control will likely be the cornerstone of any early prevention effort. It is critical to our future success in limiting the spread of a pandemic flu that we begin now to plan and implement good infection control procedures.

**Q. How would pandemic flu affect the average health care setting?**

**A.** Because a new pandemic flu could cause illness in large numbers of people, its onset could severely affect the health care community's ability to respond. First responders and health care workers would be doubly exposed to the virus, both through their normal, everyday community activities and in the health care environment where sick patients come for care.

In a pandemic, hospitals may be unprepared for the huge surge in numbers of patients needing care. To protect patients and other workers, hospitals will need policies that encourage sick workers to stay home without fear of losing pay or benefits. At the same time, they would need access to additional staff, perhaps even volunteers, to substitute for large numbers of health care workers who become ill.

There are many unknowns about how health care organizations would handle pandemic flu. Will there be an effective vaccine available at the time of an outbreak? Could health care facilities obtain and stock the quantity of vaccine needed for local populations? Would the facilities have enough stock of infection control and personal protective equipment (PPE) such as particulate respirators and gloves for staff? Would they have enough space to isolate large numbers of infected patients?

Because of these many unknowns, hospitals and other health care facilities should begin preparing NOW for how they would manage an outbreak of pandemic flu. Planning should begin with establishing and enforcing a strict standard infection control policy.

**Q. How does infection control protect workers and their patients?**

**A.** A new pandemic flu could have a 50 percent death rate. Don't take chances. Health care workers in every health care setting should always follow standard infection control guidelines to control and prevent spread of airborne infection. Every health care workplace should have infection control policies and practices in place and train staff in their use.

The National Institute of Occupational Safety and Health (NIOSH) at CDC recommends standard precautions for health care workers against airborne infection. These steps are based on the assumption that ANY patient could be infectious. Precautions are governed by a strict hierarchy of control that begins with staff education and training and include use of PPE and other infection control practices. (Decisions about PPE use would be determined by the type of clinical interaction taking place with patients.)<sup>1</sup>

**Q. What are standard infection control precautions?**

**A.** Standard infection control precautions include hand hygiene, use of PPE and good respiratory hygiene/cough etiquette for patients.

▪ **What is considered good hand hygiene?**

**Hand washing is the foundation of any infection control program.** Employers need to create a positive work place environment that encourages workers to thoroughly clean hands with soap and water, antimicrobial soap and water, or alcohol-based hand-rub products between patient contacts, immediately after removing gloves, and after touching blood, body fluids, secretions, excretions, or contaminated items.

<sup>1</sup> Centers for Disease Control and Prevention. Public Health Guidance for Community-Level Preparedness and Response to Severe Acute Respiratory Syndrome (SARS) Version 2. Supplement 1: Infection Control in Healthcare, Home, and Community Settings. January 8, 2004. <http://www.cdc.gov/ncidod/sars/guidance/i/word/i.doc>

Instead of workplace culture that rewards workers for working faster, employers should support workers who work more safely. This may require the employer to address staff shortages that cause workers to cut corners—and not wash their hands as thoroughly as they should as they rush from one patient to the next.

- **What types of PPE are available?**

PPE is specialized clothing or equipment that protects against infectious materials. PPE includes particulate respirators (which are much more protective than surgical masks); eye protection, face shields, surgical masks, gowns, and gloves. Appropriate PPE should be used during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, or secretions.

- **What is the difference between a particulate respirator and a surgical mask?**

Respiratory protection helps you avoid inhaling airborne infection. Surgical masks have **not** been tested and are **not** certified by NIOSH, the only recognized authority that tests equipment for protecting workers from respiratory hazards. Unfortunately, other government agencies incorrectly recommend untested, uncertified surgical masks to use against airborne infections. Surgical masks are much less protective against inhaling airborne infection.



Surgical masks do not protect workers from airborne infections like influenza. The flu virus can slip right through a surgical mask. See chart on page 4.

A particulate respirator does provide protection against inhaling airborne infection. A particulate respirator, which NIOSH does certify, costs on average only 25 cents more than a flimsy surgical mask. This is a small price to pay to assure that workers can avoid becoming sick from inhaling infectious diseases and that they can continue providing care their patients deserve.

The chart on page 4 compares the measuring filtration efficiency of a bandanna, a surgical mask and a N95 respirator. Though the SARS virus is the infectious disease described in this 2003 study, the test results easily apply to the flu virus.

**Measuring filtration efficiency:  
Test results for different mouth/nose coverings**

<b>A cotton bandanna folded twice</b>	<b>6 % to 8 %</b> of sub-micron particles filtered out.
<b>A surgical mask</b>	<b>61.9 % to 62.3 %</b> of sub-micron particles filtered out
<b>A N95 respirator</b>	<b>97.9 % to 99.7 %</b> of sub-micron particles filtered out.

During the height of the SARS epidemic in 2003, Nelson Laboratories in Salt Lake City, Utah tested different mouth and nose coverings to determine which covering was best to wear to protect the wearer against an airborne infectious disease like SARS.

To test the coverings, the lab sprayed a fine salt solution (made up of particles the size of SARS viruses – particles as small as 0.3 microns) on the covering. The lab tests measured “filtration efficiency,” the percentage of these sub-micron particles the covering filtered out. **The higher the number, the greater the number of particles filtered out.**

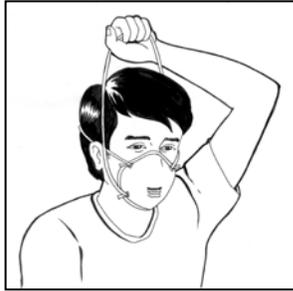
These tests demonstrated that N95 respirators are safer to use against SARS than surgical masks or cotton bandannas.

Source: Canadian Broadcasting Corporation (CBC) “Marketplace,” April 8, 2003.

Therefore, at a minimum, we need to work to ensure that all health care workers use NIOSH-certified particulate respirators labeled N95 during flu season. The N95 respirator helps prevent you from breathing in airborne particles because it has filtering materials that are superior to surgical masks. N95 respirators form a tight seal around the nose, mouth, and chin and are secured by elastic bands on the head, preventing leakage where the respirator touches the face.

Keep in mind that facial hair can compromise the effect of a seal and may require a different type of respirator. In that case, your union health and safety representative can help you determine the type of mask that works best for you.

You should only use respirators with NIOSH certification labels for this purpose. Before you use these respirators at work, the Occupational Safety and Health Administration, and the Joint Commission on Accreditation of Healthcare Organizations require your employer to train you on their proper use, including when and how to dispose of them. Your employer must also complete a medical approval (typically using a questionnaire) and conduct a proper fit test to select the brand and size that fits you and properly seals to your face. This fit test must be done at least annually and takes 10-to-15 minutes.



A worker puts on his N95 particulate respirator.



A particulate respirator displaying the NIOSH certification notation.

**Q.** How do other types of PPE help control infection?

**A.** There are several other types of equipment that help protect workers from infection including:

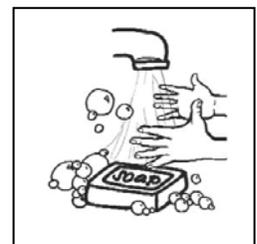
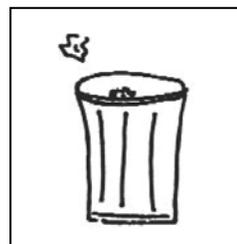
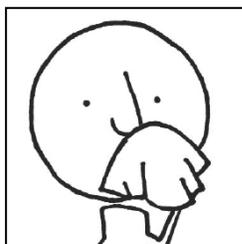
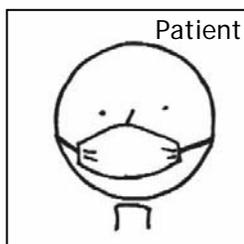
- **Goggles** protect eyes by fitting snugly over and around eyes. . . Goggles with antifog features improve clarity. Personal glasses are not a substitute for goggles
- **Face shields** protect the face, nose, mouth, and eyes. They should cover the forehead and extend below the chin, wrapping around the side of the face.
- **Gowns** are for use during procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated.
- **Gloves** are for use when touching blood, body fluids, secretions, excretions, contaminated items, mucous membranes, and nonintact skin. Nonlatex gloves should be made available for workers who are allergic to latex.

**Q.** What steps should patients take for proper respiratory hygiene/cough etiquette?

**A.** In one instance, it is appropriate to advocate the use of surgical masks: patients should wear them when symptomatic. For the protection of all health care workers and their patients, hospitals need strong policies requiring that patients who are coughing wear surgical masks. This may require facilities to change the way they interact with patients. It is essential to educate patients about wearing surgical masks to reduce the likelihood of infecting health care workers and to prevent spread of infection to other patients. Large posters stating this policy should be placed in the emergency room and in other patient waiting areas. Managers should implement and support a policy that identifies waiting patients who are coughing and enforces the use of these masks.

Symptomatic patients should be required to follow these standard precautions:

- Wear surgical masks when symptomatic—including coughing;
- Use a tissue to cover the mouth and nose when sneezing;
- Dispose of used tissues in no-touch receptacles; and
- Observe hand hygiene after soiling hands with respiratory secretion (for example, after coughing or sneezing into hands).



**Q. What steps can I take to protect myself against airborne infection?**

**A.** You can be a key player in protecting yourself, your patients, and your coworkers by following infection control procedures set up by your health care facility.

- 1) Follow the standard airborne infection control steps outlined above, starting today. Encourage coworkers to also implement these steps. The sooner these steps become a part of your regular routine, the better prepared you'll be should a serious airborne infection break out in your work place.
- 2) Each employer should have a pandemic flu plan in place that includes standard precautions against infection. (See Employer Checklist on last page of this FAQ.) If standard precautions outlined above are not already a part of your workplace operations, educate your coworkers and bring the outline of standard precautions to the attention of your supervisor. Your union representative can work with your management team to ensure that good infection control policy is in place, that everyone is trained in prevention control procedures, and that everyone in your facility has as much protection as needed against airborne infection.
- 3) **Get your flu vaccine every year.** It has never been more important to than it is now. The vaccine not only helps protect against the current strain of flu, but also may reduce the likelihood of being co-infected with new strains that may appear in the future.

The CDC recommends that all health care workers have the most recent vaccine available. Surprisingly, CDC estimates that only 36% of health care workers have an annual influenza immunization.<sup>2</sup> Workers may not get vaccinated for a variety of reasons, for example: their facilities may not conduct educational sessions about the importance of volunteering to get vaccinated against the flu; it may be difficult for workers to get the vaccine during work hours and/or to get it free; workers may think that they "never get sick" and don't need the vaccine, that they had the vaccination and got the flu anyway—or perhaps, they just don't like needles. **But every health care worker needs the protection the vaccine offers.**

**Q. How can I get more information about flu and protecting myself, my coworkers, and patients from becoming infected?**

**A.** For more details about flu and infection control:

- See SEIU's 1199's FAQ, "*Seasonal, Avian, and Pandemic Flu: What's the same, what's different?*"
- Visit the CDC website: <http://www.cdc.gov/flu/>
- For additional information about respirators, visit these web sites on the Internet:
  - <http://www.cdc.gov/niosh/npptl/respirators/respasars.html>
  - <http://www.cdc.gov/niosh/99-143.html>
  - <http://www.cdc.gov/niosh/topics/respirators>
- For additional information on respiratory etiquette visit: [www.health.state.mn.us](http://www.health.state.mn.us)
- For additional information about your union's response to influenza prevention and infection control, visit: [www.seiu.org](http://www.seiu.org) and [www.1199seiu.org](http://www.1199seiu.org)

# Pandemic Flu Response Plan

1. Is your employer providing training to all workers who may confront patients with active seasonal or pandemic flu about how to recognize and differentiate the two types of flu, and how to prevent potential exposures to both kinds?

Yes       No

2. Is your employer:  
Providing respirator training?

Yes       No

Providing workers with a selection of N95 and more protective respirators to choose from?

Yes       No

Fit testing these respirators so that they achieve a good respirator face seal for all workers with potential exposure to seasonal flu, pandemic flu, and other airborne biological threats?

Yes       No

3. Does your employer have a written plan for you to review that covers how they will retain and increase staffing to deal with a surge in patients as a result of a flu pandemic or other catastrophic event?

Yes       No

4. Has your employer explained how workers will get vaccinated when a new pandemic flu vaccine becomes available, and how workers will be covered if they become sick or injured by the vaccine?

Yes       No

5. Has your employer addressed how workers will be paid for their lost work time if they are sent home from work when under flu pandemic quarantine conditions?

Yes       No