Ambulatory Care Clinic Tool Kit

Preparing your clinic and your staff for an influenza pandemic

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Ambulatory Care Pandemic Preparedness

Table of Contents

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How to Use This Toolkit

This toolkit contains material for the clinic management team to use in planning for and responding to infection control aspects of an influenza pandemic. Provided are useful policies, fact sheets, templates, and checklists that can be adapted to fit your facility type and size. The information should be integrated with your clinic's emergency management plan.

Overview of Infection Control Precautions

Infection control precautions are a set of standard recommendations designed to reduce the risk of transmission of infectious agents from body fluids or environmental surfaces.

These precautions include the use of personal protective equipment, hand hygiene and cleaning / disinfection.

Standard Precautions

Standard precautions are the basic level of infection control to reduce the risk of transmission of microorganisms from both known and unknown sources.

- Use Standard Precautions in the care of all patients all of the time.
- Standard Precautions applies to blood, all body fluids, secretions and excretions (except sweat) whether or not they contain visible blood; non-intact skin; and mucous membranes.

Standard Precautions include:

- Hand hygiene
    - Always - following any patient contact. Wash hands for 15 seconds with soap and warm water – especially if visibly soiled. Clean hands with alcohol-based hand rub if not visibly soiled

- Gloves
    - Wear clean, non-sterile gloves when touching or coming into contact with blood, body fluids, secretions or excretions
    - Apply gloves just before touching mucous membranes or contacting blood, body fluids, secretions, or excretions
    - Remove gloves promptly after use and discard before touching non-contaminated items or environmental surfaces, and before providing care to another patient
    - Clean hands immediately after removing gloves

- Gowns
    - Fluid resistant, non-sterile
    - Protect soiling of clothing during activities that may generate splashes or sprays of blood, body fluids, secretions and excretions
    - Apply gown prior to performing such activities

- Mask, face shield, eye protection
    - Protect eyes, nose, mouth and mucous membranes from exposure to sprays or splashes of blood, body fluids, secretions and excretions
    - Apply appropriate protection prior to performing such activities

- Patient Care Equipment
    - Avoid contamination of clothing and the transfer of microorganisms to other patients, surfaces and environments
    - Clean, disinfect or reprocess non-disposable equipment before reuse with another patient
    - Discard single-use items properly

See www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/ for more information about the use of glove, gowns masks and eye protection.

Contact Precautions

Contact precautions should be used when direct or indirect contact with contaminated body fluids, equipment or the environment is anticipated. Use Contact Precautions:

- In the care of patients known or suspected to have a serious illness easily transmitted by direct patient contact or by indirect contact with items in the patient's environment
- In addition to Standard Precautions (see above)

Illnesses requiring contact precautions may include, but are not limited to: Gastrointestinal, respiratory, skin or wound infections or colonization

How contact transmission occurs:

- Direct Contact
  - Body-surface to body-surface contact and physical transfer of microorganisms between a susceptible person (host) and an infected or colonized person
  - More often occurs between a healthcare worker and a patient than between patients
- Indirect Contact
  - Involves contact of susceptible person (host) with a contaminated intermediate object such as needles, dressings, gloves or contaminated (unwashed) hands
- Disease is more likely to develop as a result of contact transmission when 1) the pathogen is highly virulent, or 2) only a small dose is required to cause infection, or 3) the patient/HCW is immunocompromised.
- Poor hand hygiene is most often cited as a cause of contact transmission
- Contact precautions are indicated for persons with gastrointestinal (diarrheal) illness, and incontinent persons including those who use incontinent products

Contact Precautions include:

- Standard Precautions
  PLUS
- Gloves
  - For possible contact with an infected or colonized patient and their environment
- Gown
  - If substantial contact with the patient or their environment is anticipated

- In an acute care facility, the patient should be in a private room or cohorted (roomed) with patients infected or colonized with the same organism.

Droplet Precautions

Droplet precautions should be used when in the presence (within 3 feet) of a person with an infection transmitted via the droplet route. Droplets can be generated from the source person during coughing, sneezing, talking and during the performance of certain procedures such as suctioning or bronchoscopy

- Droplets may contain microorganisms and generally travel no more than 3 feet from the patient. These droplets can be deposited on the host's nasal mucosa, conjunctivae or mouth.
- Diseases requiring droplet precautions include, but are not limited to: Pertussis, Influenza, Diphtheria and invasive Neisseria meningitis

Droplet Precautions include:

- Standard Precautions
  PLUS
- Surgical mask
  - When working within 3-6 feet of the patient
    See Mask, face shield, eye protection on the MDH website at
    www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/

Airborne Precautions

Airborne precautions are required to protect against transmission of infectious agents spread via the airborne route.

Diseases requiring airborne precautions include, but are not limited to: Measles, Varicella (chickenpox), and Mycobacterium tuberculosis (TB).

Preventing airborne transmission requires personal respiratory protection and special ventilation and air handling

How airborne transmission occurs:

- Airborne droplet nuclei (small-particles [5 micrograms or smaller] of evaporated droplets containing microorganisms that remain suspended in the air for long periods of time) or
- Dust particles that contain an infectious agent
- Microorganisms spread by the airborne route can be widely dispersed by air currents and may be inhaled by a susceptible host in the same room or at a long distance from the source patient – depending on environmental factors such as temperature and ventilation.

Airborne Precautions include:

- Standard Precautions
  PLUS
- Personal respiratory protection
  - N95 respirator
    - Prior fit-testing that must be repeated annually and fit-check / seal-check prior to each use
      See N95 Respirator on the MDH website at
      www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/

    OR
  - Powered Air-Purifying Respirator (PAPR)
    See PAPR on the MDH website at www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/

  PLUS
- Airborne Infection Isolation Room (AIIR)
  - At a minimum, AIIR rooms must:
    - Provide negative pressure room with a minimum of 6 air exchanges per hour
    - Exhaust directly to the outside or through High Efficiency Particulate Air (HEPA) filtration

Airborne precautions apply to patients known or suspected to be infected with microorganisms transmitted by airborne droplet nuclei

Full Barrier Precautions

Full Barrier Precautions are the combination of airborne and contact precautions, plus eye protection, in addition to standard precautions

Diseases requiring full barrier precautions include, but are not limited to: Severe Acute Respiratory Syndrome (SARS), hemorrhagic disease, and all known and suspect avian and pandemic influenza patients

Posters showing personal protective equipment (PPE) placement and removal can be downloaded from the MDH website at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/. These two posters show donning and doffing of personal protective equipment when using an N95 respirator and donning and doffing of personal protective equipment when using a PAPR.

- Full Barrier Personal Protective Equipment (PPE) with N95 Respirator
  Donning and doffing of personal protective equipment when using an N95 respirator.
- Full Barrier Personal Protective Equipment (PPE) with Powered Air Purifying Respirator (PAPR)
  Donning and doffing of personal protective equipment when using a PAPR.

Full barrier precautions include:

- Standard Precautions
  PLUS
- Contact Precautions
  PLUS
- Airborne Precautions
  PLUS
- Eye protection
  See Eye Protection on the MDH website at www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/
  PLUS
- Shoe covers
  - Use for patients with hemorrhagic disease
    See Shoe Covers on the MDH website at www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/

  PLUS
- Head covers (optional)
  See Head Covers on the MDH website at www.health.state.mn.us//divs/idepc/dtopics/infectioncontrol/ppe/comp/

Standard Precautions, Respiratory Hygiene, and Cough Etiquette

During an Influenza Pandemic

Minnesota Department of Health
February 2007

The SARS outbreak illustrated the critical importance of basic infection control precautions in health care facilities. Transmission of SARS in health care facilities was frequently associated with noncompliance with standard precautions. If pandemic influenza occurs, it will present a grave threat to health care workers (HCWs) and patients in health care facilities and compliance with infection control precautions will be crucial to prevent transmission of infection. Standard precautions should be the minimum level of precautions that are used in all health care facilities when providing care for patients. These precautions can protect HCWs from becoming infected. When patients are coughing or sneezing, standard precautions include the use of facial protection (nose, mouth, and eye protection). Although it has not been the practice of HCWs in many health care facilities worldwide to use this protection routinely, it is more important than ever, for this to become routine practice.

The concepts of respiratory hygiene and cough etiquette involve using source control measures to prevent patients with respiratory infections from transmitting their infection to others. These measures include asking coughing or sneezing persons to: 1) cover their mouth and nose with a tissue and dispose of used tissue in waste containers; 2) use a mask if coughing (when a mask can be tolerated); 3) perform hand hygiene (wash with soap and warm water for 15 seconds or clean hands with alcohol-based hand product if hands are not visibly soiled) after contact with respiratory secretions; and 4) to stand or sit at least 3 feet from other persons, if possible.

Words of advice

- Standard precautions should be the minimum level of precautions used when providing care for patients with acute febrile respiratory illness. Of the elements of these precautions, facial protection (eyes, nose, and mouth) and hand hygiene are the most critical and should be prioritized if resources are scarce.
- Standard precautions apply to blood; all body fluids, secretions and excretions (except sweat) whether or not they contain visible blood; non-intact skin; and mucous membranes.
- Hand hygiene is a critical component of standard precautions, respiratory hygiene, and cough etiquette.

Standard precaution checklist

Hand hygiene

- ☐ Clean hands after touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves have been worn.
- ☐ Clean hands immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments.
- ☐ Perform hand hygiene by using an alcohol-based hand rub (unless hands are visibly soiled) or wash hands with soap and water.

Personal protective equipment

- ☐ Use clean nonsterile gloves when touching blood, body fluids, secretions, excretions, mucous membranes, and nonintact skin.
- ☐ Use a clean, nonsterile fluid-resistant gown to protect skin and to prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.
- ☐ Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.

Key health care facility recommendations for standard precautions,* respiratory hygiene, and cough etiquette†

Key elements: Standard Precautions		Respiratory hygiene and cough etiquette	
1. Hand hygiene	• Clean hands after touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves are worn. • Use soap and water or an alcohol-based hand rub immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments. • It may be necessary to clean hands between tasks and procedures on the same patient to prevent cross-contamination of different body sites.	1. Visual alerts	• Post visual alerts (in appropriate languages) at the entrance to outpatient facilities (e.g., emergency departments, physician offices, outpatient clinics) instructing patients and persons who accompany them (e.g., family, friends) to inform healthcare personnel of symptoms of a respiratory infection when they first register for care and to practice Respiratory Hygiene/Cough Etiquette. • Post *STOP: Protect Our Patients* alerts to inform ill visitors not to enter healthcare facility.
2. Gloves	• Wear gloves (clean, nonsterile gloves are adequate) when touching blood, body fluids, secretions, excretions, and contaminated items. • Put on clean gloves just before touching mucous membranes and non-intact skin. • Change gloves between tasks and procedures on the same patient after contact with material that may contain a high concentration of microorganisms. • Remove gloves promptly after use, before touching noncontaminated items and environmental surfaces, and before going to another patient, and clean hands immediately to avoid transfer of microorganisms to other patients or environments.	2.Respiratory protection and cough hygiene	Patients with acute febrile respiratory symptoms should: • Cover the nose and mouth when coughing/sneezing • Use tissues to contain respiratory secretions and dispose of them in the nearest receptacle after use • Perform hand hygiene after having contact with respiratory secretions or contaminated objects Ensure the availability of materials so that patients can adhere to these measures: • Tissues and no-touch receptacles for used tissue disposal • Alcohol-based hand rub and/or handwashing supplies (soap and water, clean towels)
3. Mask, eye protection, face shield	• Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.	3. Masking and separation of persons with respiratory symptoms	• Offer surgical or procedure masks to persons who are coughing. • When space and chair availability permit, encourage coughing persons to sit at least 3 feet away from others in common waiting areas.
4. Gown	• Wear a gown (a clean, nonsterile gown is adequate) to protect skin and to prevent soiling of clothing during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Select a gown that is appropriate for the activity and amount of fluid likely to be encountered. Remove a soiled gown as promptly as possible, and wash hands to avoid transfer of microorganisms to other patients or environments.	4. Droplet precautions	• Advise healthcare personnel to wear a surgical or procedure mask for close contact, in addition to standard precautions, when examining a patient with symptoms of a respiratory infection, particularly if fever is present. • These precautions should be maintained until it is determined that the cause of symptoms is not an infectious agent that requires droplet precautions.

*****"Guideline for isolation precautions in hospitals." CDC, at: http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html

†"Respiratory hygiene/cough etiquette in healthcare settings." CDC, at: http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm

Full Barrier Infection Control Precautions

During an Influenza Pandemic

Minnesota Department of Health
January 2007

The Minnesota Department of Health recommends airborne and contact precautions, plus eye protection, in addition to standard precautions ("full barrier precautions") for all known and suspect avian and pandemic influenza patients. Personal protective equipment (PPE) for full barrier precautions,* includes:

- respirator at least as protective as a NIOSH-certified N95 respirator;
- gown;
- gloves; and
- eye protection (faceshield/goggles)

In making this recommendation, MDH acknowledges that supplies of PPE necessary to implement full barrier precautions, particularly respirators, may be limited during a pandemic. MDH will provide guidance on prioritization and possible reuse of PPE when supplies are limited.

*Detailed information about standard, droplet, contact, and airborne precautions and full barrier PPE posters are available at: http://www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/

§Respirators should be used in the context of a complete respiratory protection program as required by OSHA. This includes training, fit testing, and fit-checking to ensure appropriate respirator selection and use. To be effective, respirators must seal properly to the wearer's face. Detailed information on respiratory protection programs are available at: http://www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/

Rationale

- There is evidence that influenza may be transmitted by small particle aerosols and that surgical masks do not offer adequate protection against the inhalation of these small particles.
- To minimize exposure of health care workers to avian and pandemic influenza virus, MDH recommends that health care workers use full barrier precautions, including respirators (if available), when working with known or suspect avian or pandemic influenza patients.
- Providing appropriate protection to health care workers during a pandemic is critical because:
  - vaccine for the pandemic influenza strain is unlikely to be available in the initial stages of a pandemic;
  - antiviral supplies are likely to be limited; and
  - pandemic influenza may cause disproportionate morbidity and mortality in younger, healthier people, such as health care workers, as it did in the 1918 pandemic.

Checklist for full barrier personal protective equipment (PPE)

- ☐ Clean, nonsterile, fluid-resistant, long sleeved gowns.
- ☐ Clean, nonsterile, gloves, which should cover the cuffs of the gown.
- ☐ Face shield or goggles.
- ☐ Fit tested, seal checked disposable particulate respirator that is at least as protective as a U.S. NIOSH-certified N95 respirator.

Placement and removal

- ☐ PPE should be put on before entering the avian or pandemic influenza patient room or area.
- ☐ Careful placement of PPE before patient contact will help avoid the need to make PPE adjustments and risk self-contamination and self-inoculation during use.
- ☐ Careful removal of PPE is also critical to avoid self-contamination and self-inoculation.
- ☐ When PPE supplies (including respirators) are limited, they should be prioritized and pursued as resources permit, particularly for aerosol-generating procedures.

Key health care facility infection control recommendations for avian (AI) and pandemic (PI) influenza

Key elements			
1. Basic infection control recommendations for all health care facilities	Standard precautions for all patients, plus droplet precautions for patients with acute febrile respiratory illness	11. Dishes/eating utensils	Use standard precautions.
2. Respiratory hygiene/cough etiquette	Patients/family members cover cough with mask or tissue and perform hand hygiene. Exclude symptomatic visitors.	12. Linen and laundry	Use standard precautions; avoid shaking of linen/laundry.
3. Early recognition and reporting of AI or PI cases	Consider AI or PI in patients with acute febrile respiratory illness who have been in AI or PI affected regions within the prior 2 weeks and who had bird exposure or exposure to human AI or PI cases while in the region.	13. Environmental cleaning and disinfection	Use routine hospital disinfectants, clean and disinfect frequently touched surfaces in AI or PI patient room twice daily, other surfaces once a day.
4. Isolation precautions for suspected and confirmed AI or PI cases	Full barrier precautions (standard, droplet contact, and airborne) and patient placement in negative pressure room.	14. Patient care equipment	Dedicate to AI or PI patient. If not possible, clean and disinfect before reuse.
5. Additional measures to reduce the possibility of nosocomial AI or PI transmission	Limit numbers of health care workers/family members/visitors exposed to AI or PI patient.	15. Current WHO recommendations for duration of AI or PI infection control precautions	Adults $\geq$ 12 years: 7 days after resolution of fever. Children < 12 years: 21 days after symptom onset.
6. Specimen collection/transport within health care facilities	Full barrier precautions for health care workers collecting specimens, careful transport of specimens to laboratory.	16. Patient discharge	If patient still infectious, instruct family members on home infection control precautions.
7. Family member/visitor recommendations	Family members/visitors should be limited to those essential for patient support and should use full barrier precautions.	17. Occupational health recommendations	Monitor health of exposed health care workers, use antiviral prophylaxis if available. Provide seasonal vaccine.
8. Patient transport	AI or PI patient should wear surgical mask. Health care workers doing transport should wear gown and gloves.	18. Health care facility administrative controls	Health care worker AI or PI education, training, and risk communication. Adequate staffing and PPE.
9. Pre-hospital care	Standard and droplet precautions for all patients with acute febrile respiratory illness, full barrier precautions for suspected AI or PI patients.	19. Prioritization of PPE when supplies are limited	Hand hygiene and facial protection of health care workers (eyes, nose, and mouth) are priorities if PPE is limited.
10. Waste disposal	Treat waste possibly contaminated with AI or PI virus as clinical waste.	20. Health care facility engineering controls	Spatial separation, barriers between patients. Ventilation, negative pressure.

Respiratory Protection Program

The purpose of a respiratory protection program is to ensure that all employees required to wear respiratory protection as a condition of their employment are protected from respiratory hazards through the proper use of respirators.

Components of a Respiratory Protection Program

(This is not meant to be a full summary of OSHA's Respiratory Protection Standard, see OSHA standards for respiratory protection, including information about Respiratory Protection Standard 1910.134. at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/osha.html for more information)

1. Risk Assessment

Risk assessment is the estimation of the likelihood of adverse effects resulting from exposure to a disease or from absence of beneficial influences.

When conducting a risk assessment, consider:

1. What the likelihood is of employee exposure to an airborne infectious disease?
2. Can exposure to an airborne infectious disease reasonably be anticipated?

2. Selection of Respirators

Based on risk assessment:

3. evaluate the respiratory hazards
4. look at any other relevant factors
5. select the “right” respirator

Selecting the "Right" Respirator

NIOSH-approved

Any respirator selected must be NIOSH-approved.

- See www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/respselect.html for more information about choosing respirators.

Types of respirator

A respirator is a protective facepiece, hood or helment that is designed to reduce the exposure of the wearer to airborne hazards by filtering sub-micron aerosols.

- See www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/respselect.html for more information about choosing respirators.

Type of respirator	More information on the MDH website
Powered Air Purifying Respirator (PAPR)	www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/ppe/comp/papr.html
N95 - Disposable Respirators	www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/ppe/comp/n95.html
Self-Contained Breathing Apparatus (SCBA) Respirators	www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/ppe/comp/scba.html

Respirator limitations

All respirators have limitations:

- improper fit
- improper donning
- damage
- contamination

Choosing a respirator for Tuberculosis exposure

The 1994 CDC Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities specify the following criteria for respirators for exposure to TB:

- Ability to filter 1 micron in size in the unloaded state with a filter efficiency greater than 95%.
- Ability to be qualitatively or quantitatively fit tested in a reliable way to obtain face-seal leakage of less than 10%.
- The minimal acceptable level of respirator protection for TB is the Type 95 respirator.
- See Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 1994 at http://www.cdc.gov/mmwr/preview/mmwrhtml/00035909.htm for more information about TB and respirator use.

3. Standard Operating Procedures

Hospitals must develop and implement a written respiratory protection program.

Written standard operating procedures should contain information concerning all aspects of the respiratory protection program.

- See Public Health Respiratory Protection Program Template at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/template/index.html for a template Respiratory Protection Program that will help public health and health care to create a Respiratory Protection Program.

The program must be administered by a "suitably trained" respiratory program administrator.

4. Medical Screening

"Employer shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace."

Components of medical evaluation

A physician or other licensed healthcare professional must perform the medical evaluation using OSHA's respirator medical evaluation questionnaire or an initial medical exam that obtains the same information as the OSHA questionnaire.

Physician or Other Licensed Health Care Professional: An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him/her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e), Medical evaluation."

- OSHA's respirator medical evaluation questionnaire is mandatory and must be performed prior to fit testing.
  - See OSHA Respirator Medical Evaluation Questionnaire (Mandatory) at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/evaluation.html for this form (Appendix C to Respiratory Protection Standard; respirator medical evaluation questionnaire).
- Physical exam-at physician's discretion.

- Chest X-ray, pulmonary function tests, EKG at physician's discretion.

Information Needed By Physician

Information needed by physician (before or at evaluation):

- Type of respirator used
- Frequency of use
- Duration of use
- Physical demands while wearing respirator
- Environmental conditions (heat, etc.)
- Other protective equipment worn

Follow-up Physical Examination

A follow-up physical evaluation is required for anyone who gives a positive response to any question 1-8 and can be given at physician's discretion.

- As required by initial certification
- Will include any tests the physician determines are necessary

Physiologic effects of respirator use

Possible physiologic effects of respirator use:

- Pulmonary effects:
  - increased breathing resistance
  - increased work of breathing
  - decreased endurance
  - decrease in exercise performance
- Cardiac effects:
  - increased cardiac work
  - increased heart rate
  - increased blood pressure
- Claustrophobia
- Anxiety
- Hyperventilation

Potential contraindications to respirator use

Potential contraindications to respirator use:

- Severe pulmonary disease
- Severe cardiac disease
- Uncontrolled hypertension
- Claustrophobia
- Facial abnormalities that prevent good fit

When to medically certify

Respirators place several physiological stresses on wearers-stresses that particularly involve the pulmonary and cardiac systems.

Respirators typically used by health care workers are generally lightweight, and the physiological stresses they create are usually small.

Therefore, most workers can safely wear respirators.

Primary pre-use certification

- Because most healthcare workers wear the very light, disposable half-mask respirator, CDC Guidelines recommend that a health questionnaire be the initial step in the evaluation.
- If results from this evaluation are essentially normal, the employee can be cleared for respirator wear.
- Further evaluation, possibly including a directed physical examination and/or spirometry, should be considered in cases in which potential problems are suggested on the basis of the questionnaire results.

Routine periodic recertification

- The provider may request to periodically recertify the wearer. There is no definite standard or requirement.

Evaluation of users having problems

- Recertification is recommended if the employee reports medical signs or symptoms related to the ability to use a respirator, the employer determines that an employee needs to be reevaluated, or a change occurs in workplace conditions that may substantially increase the physiological burden on an employee.
- Recertification may also be necessary if information from the respirator program indicates a need.

How often should recertification be performed?

- No definite standard or requirement
- Physician discretion
- Some recommendations:
  - <35 years of age, every 4-5 years
  - 35-45 years of age, every 2 years>
  - 45 years of age, every year

Medical recommendation forms

- See Medical Screening at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/evaluation.html for links to the medical recommendation forms.

5. Provide Training

Employers must provide effective training to employees who are required to use respirators.

Training Requirements

- Why the respirator is necessary
- Limitations and capabilities of the respirator
- How to inspect, put on and remove, use and check the seal
- Maintenance and storage
- Recognition of medical signs and symptoms that may limit or prevent effective use
- General requirements of the OSHA standard

Training also includes education on such issues as:

- The mode of airborne infectious disease transmission
- Signs and symptoms of airborne infectious diseases
- Medical surveillance and therapy
- Site specific protocol

Training must be provided prior to use, unless acceptable training has been provided by another employer within the past 12 months

Retraining is required annually, and when:

- changes in the workplace or type of respirator render previous training obsolete
- there are inadequacies in the employee's knowledge or use
- any other situation arises in which retraining appears necessary

6. Fit Testing

Respirator fit testing performed to determine if an employee can maintain an acceptable respiratory fit and seal.

Fit testing must be done prior to use, whenever a different respirator is worn, and at least annually thereafter (pending).

Fit testing will be administered using an OSHA-accepted qualitative fit test or quantitative fit test protocol.

The employee must be tested with the same make, model, style, and size of respirator that will be used.

When to fit test

- After subject is medically cleared for respirator use
- Before the subject wears the respirator in the workplace
- Facial changes
- Significant weight change
- Change of respirator size, make, model
- Whenever employee reports a problem with fit
  *The OSHA requirement for annual fit testing of respirators in healthcare settings is currently under review.

Factors affecting respirator seal

- Facial hair
- Facial bone structure
- Dentures
- Facial scars
- Eyeglasses
- Excessive makeup

Qualitative fit testing

A Qualitative fit test:

- is a pass/fail test to assess the adequacy of respirator fit
- relies on the individual's response to the test agent

No eating, drinking (water is allowed), gum or smoking for 15 minutes prior to test.

Sensitivity test procedure:

- Subject is placed in hood without respirator
- Subject should open mouth and extend tongue
- Subject should breathe through mouth
- Apply 10 bulb squeezes of testing solution into the hood
- DO NOT spray testing solution into the subject's face
- If subject does not taste fit test solution in 10 squeezes, apply another 10 squeezes
- If subject can't taste solution by 30 squeezes, use another fit testing solution

Testing solutions:

- Denatonium benzoate (Bitrex)
- Saccharin

Form

- See Fit Testing at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/qlftform.pdf to download a copy of the Qualitative Fit Test (QLFT) Form.

Quantitative fit test

An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Test procedure:

- Subject should wear respirator for 5 minutes prior to test
- Subject is placed into fit testing hood
- Apply same number of squeezes as in sensitivity test
- Every 30 seconds, introduce additional fit testing solution equal to one-half the number of sensitivity test squeezes

Exercises:

- Normal breathing
- Deep breathing
- Moving head side to side – breathe in at far extreme
- Moving head up and down – breathe in at far extreme
- Speaking – read Rainbow Passage out loud
- Touching toes/jog in place
- Normal breathing

TSI PortaCount:

- Compares concentration of dust particles outside respirator to concentration of particles in respirator

Respirator seal

Respirators with tight-fitting facepieces must not be worn by employees who have facial hair or any condition that interferes with the face-to-facepiece seal

Corrective glasses or goggles or other PPE must be worn in a manner that does not interfere with the face-to-facepiece seal

Employees wearing tight-fitting respirators must perform a user seal check each time they put on the respirator using the procedures in Appendix B-1 or equally effective manufacturer's procedures

Respirator seal requirements:

- Facial hair, jewelry, and glasses must not come into contact with the respirator seal.

User seal check

- An action conducted by the respirator user to determine if the respirator is properly seated to the face
  - See User Seal Check Procedures (Mandatory) at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/fittest.html for this form

(Appendix B-1 to Respiratory Protection Standard; facepiece positive and/or negative pressure checks, manufacturer's recommended user seal check procedures).

7. Maintenance Program

The employer must provide for the cleaning and disinfecting, storage, inspection, and repair of respirators used by employees.

Cleaning and Disinfecting

Respirator inspection, cleaning, maintenance, and storage.

- Conscientious respirator maintenance should be an integral part of an overall respirator program.
- This maintenance applies both to respirators with replaceable filters and respirators that are classified as disposable but that are reused.
- Manufacturers' instructions for inspecting, cleaning, and maintaining respirators should be followed to ensure that the respirator continues to function properly. (Excerpt from Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 1994. [http://www.cdc.gov/mmwr/PDF/rr/rr4313.pdf])

- See Maintainance Program at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/maintain.html to view a portion of the Public Health Respiratory Protection Program Template pertaining to respirator maintenance.

8. Evaluating the Program

- Evaluations of the workplace must be conducted annually or as necessary to ensure effective implementation of the program
- Employees required to use respirators must be consulted regularly to assess their views on program effectiveness and to identify and correct any problems factors to be assessed include, but are not limited to:
  - respirator fit (including effect on workplace performance)
  - appropriate selection
  - proper use
  - proper maintenance
- Records of medical evaluations must be retained
- A record of fit tests must be established and retained until the next fit test is administered
- A written copy of the current program must be retained
- Written materials required to be retained must be made available upon request to affected employees and OSHA

Challenges to N95 Use and Suggested Employer Steps to Improve Compliance

Respirators can be difficult to wear, especially for long periods of time. Incorrect use of respirators and other personal protective equipment (PPE) increases healthcare workers' risk of exposure to airborne pathogens. Some reasons for variable healthcare worker compliance with respirator use are summarized below[1] along with steps employers can consider to improve healthcare worker compliance with respiratory protection.

Challenges to N-95 Use and Suggested Employer Steps to Improve Compliance	
N-95 Respirators:	**Possible Employer Actions:**
Are hot and uncomfortable.	Adjust staffing patterns to accommodate "PPE breaks."
Produce "pain spots" if poorly fitted.	Assure that all staff are fit-tested prior to N-95 use, using all available styles/sizes of respirators to obtain best fit.
Interfere with communications and performance.	Consider revised protocols and work flow to decrease required staff verbal communication when wearing PPE.
Are not easily accessible when you need them	Assess work flow and storage to determine most accessible placement of N-95s and other PPE supplies.
Put the burden of safety on the wearer rather than the employer.	The wearer is responsible for practicing proper infection control measures per facility recommendations; employers must assure that staff are fit-tested and trained in proper don/doff techniques and have access to appropriate PPE.
Make the wearer look "funny," alarmist, not macho, or unattractive.	Education can enforce the essential and practical nature of this equipment in protecting staff against potentially dangerous pathogens.
Produce labored breathing, increased heart rate, and perspiration.	N-95 respirators increase the physiological workload on the cardiac and pulmonary systems. Staff must successfully complete a medical screening and fit-testing prior to N-95 use. Educate staff to notify their supervisor if they experience health problems while wearing an N-95. Include "PPE breaks" in staffing plans. Assure adequate ventilation in areas where PPE is in use.
Impair vision and can be a safety hazard.	Assure that N-95 is the correct size for the wearer; consider alternatives to staffing, lighting, or room arrangements to facilitate improved vision field of N95 or Powered Air-purifying Respirator (PAPR) wearer.
Produce feelings of claustrophobia and anxiety.	Not all staff will be able to wear an N-95 respirator. Consider staff reassignments psychological barriers to N-95 use.

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[1] Pandemic Influenza Preparedness and response Guidance for Healthcare Workers and Healthcare Employers May 2007

Frequently Asked Questions about Ambulatory Care and Pandemic Influenza Preparedness

How can we decide what staff to fit-tested for N95 respirator use?

- MDH recommends that ambulatory care staff use "Full Barrier Precautions" (airborne and contact precautions plus eye protection in addition to standard precautions) when providing care to any patients known or suspected to have avian or pandemic influenza.
  (See MDH Full Barrier Infection Control Precautions During an Influenza Pandemic available at http://www.health.state.mn.us/divs/idepc/diseases/flu/avian/hcp/fullbarrier.html.)
- Identify staff that might reasonably be expected to provide care to these patients and prioritize a fit-testing schedule based on the likelihood that these staff may provide this type of care.

Can N95 respirators be reused?

- There are no published guidelines for the reuse of N95 respirators. In 2006 the Institute of Medicine (IOM) concluded that there is not enough data about the effectiveness of cleaning/disinfection methods or the performance of the N95 after cleaning/disinfecting. Additional research is needed in this area. (See below and *Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers*, OSHA, 2007 for reuse in the event of insufficient supplies.)

How can ambulatory care facilities protect healthcare workers if there is a shortage of N95 respirators?

- OSHA has published guidance for the reuse of N95 respirators only in the event of a respirator shortage. (See *Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers*, OSHA, 2007 at http://www.osha.gov/SLTC/respiratoryprotection/index.html). Reuse of N95 respirators may be considered only under conditions where respirator supplies are insufficient during a pandemic. Guidance includes:
  - Assure that the device has not been obviously soiled or damaged and that it retains its ability to function properly.
  - Respirator must be designated to one person. Label respirator with a user's name before use.
  - Place a face shield over the N95 respirator. Face shield must be positioned so that it does not interfere with the fit or seal of the N95 respirator, but provides protection to the external components of the N95 respirator. Remove the face shield upon leaving the patient's room and perform hand hygiene. Dispose of face shield or clean and disinfect it per facility policy.
  - After removing the respirator, hang it in a designated area or place it in a clear plastic bag. Store the respirator so that the physical or functional integrity of the respirator is not compromised.

What fit-testing resources are available to ambulatory care facilities?

Fit testing resources:

- MDH Respiratory Protection Plan Toolkit: http://www.health.state.mn.us/terrorism.html
- OSHA: http://www.osha.gov/dsg/guidance/avian-flu.html
- Minnesota Emergency Readiness Education and Training (MERET): http://cpheo.sph.umn.edu/meret/
- Contact your Regional Hospital Resource Center Coordinator (RHRC), Public Health Preparedness Consultants (PHPC) or MDH District Office staff to determine what regional resources are available.

How should surfaces and contaminated objects be cleaned/disinfected?

- Avian influenza virus is inactivated by a range of disinfectants, including:
  - phenolic disinfectants,
  - quaternary ammonia compounds,
  - household bleach,
  - alcohol,
  - other germicides with a tuberculocidal claim on the label, and
  - other registered/licensed disinfectants.
- A list of EPA-registered disinfectants can be found at; http://www.epa.gov/oppad001/chemregindex.htm
- Use manufacturer's recommendations for use/dilution, contact time, and handling.
  - If a bleach solution is used, the dilution should be 3 1/3 teaspoons household bleach (6 – 6.25%) to 1 gallon of water. Mix solution fresh daily and label the container with dilution and date.
- Disposable gloves should be worn when performing cleaning tasks; remove and dispose of gloves and perform hand hygiene.
- Patient rooms/areas should be cleaned at least daily and terminally cleaned at discharge.
- Potentially contaminated objects and surfaces should be cleaned and disinfected after each patient use.
- Clean frequently touched surfaces (e.g. door knobs, faucets, etc.) at least daily and more often if possible.

How can ambulatory care settings limit human-human transmission (i.e. limit visitors, secure facility, etc)?

- Develop protocols that limit the number of healthcare workers and visitors who have direct contact with patients known / suspected to have pandemic influenza
  - See *Pandemic Influenza Preparedness and Response Guidelines for Healthcare Workers and Healthcare Employers*. Washington, D.C.: U.S. Department of Labor, Occupational Safety and Health Administration; 2007.
  - Consider agreements with neighboring providers to designate for ill vs well care sites.
  - If possible, consider waiting room arrangements that increase the distance between people.
  - Consider alternate patient scheduling to decrease the interaction of ill and well persons.

Clinic Administration

Ambulatory Care Action List: Pre-Pandemic Infection Control Planning

	Date / To Whom Delegated	Date Completed
Assure staff receive infection control training and education • "Protect Yourself First!" video (see www.health.state.mn.us to order video) • See Overview of Infection Control Practices • See Appendix A: MERET		
Develop facility communication plan • Maintain current knowledge of MDH/CDC clinical recommendations • Assure staff are aware of pandemic plans and protocol • Develop/maintain Emergency Contact information		
Collaborate with neighboring hospitals and ambulatory care facilities to designate "well" and "ill" locations to reduce disease transmission among facilities. Establish memorandums of understanding or other legal documents as needed.		
Identify a Respiratory Protection Program Administrator		
Assure implementation of annual influenza vaccination program for all staff and patients. • Establish protocols to assess influenza vaccination status of all patients at every visit during influenza season • Consider implementing program to increase influenza vaccination rates among staff		
Assure hand hygiene stations are readily accessible to staff and patients throughout the facility, including waiting areas and exam rooms. See Appendix B.		
Determine staff responsibilities during normal operations and during pandemic setting		
List and prioritize services provided by the facility. • Identify services that may not be available during a pandemic • Identify services that may be performed from home		
Assess surge capacity for increased numbers of appointments and special needs. • Consider alternate appointment scheduling (e.g. postponing well visits) • Route to alternate facilities in order to reduce risk of exposure to symptomatic patients and disease transmission.		
Complete an inventory assessment on equipment and supplies. • Increase supplies of appropriate Personal Protective Equipment (PPE), (e.g. N-95 respirators, goggles, face shields, gowns, gloves, disposable PPE kits) • Research PPE product options or alternate vendors • Identify funding sources for additional PPE and clinic supplies. • See www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/ppe/		

Clinic Supervisors/Leads

Ambulatory Care Action List: Pre-Pandemic Infection Control Planning

	Date / To Whom Delegated	Date Completed
Assure that staff receive appropriate Infection Control training and staff education • "Protect Yourself First!" video (see www.health.state.mn.us to order) • See Appendix A		
Assure that adequate infection control supplies are available and accessible. • Secure information from administration on which vendor contracts are to be used • Implement process for restocking supplies and identify responsible person (surgical masks, tissues, alcohol-based hand sanitizer)		
Post visual alerts in waiting areas and other appropriate places. • See Appendix C for "Cover Your Cough" posters or download at www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/cover/		
Promote social distancing • Designate an area of the waiting room for "ill" and "well" patients • Space chairs at least 3-6 feet apart, if possible		
Instruct staff to request that patients wear a surgical mask if they are coughing or sneezing frequently • Ask staff to alert triage personnel of symptomatic respiratory patients o Refer to Telephone Triage Guidelines • Direct symptomatic respiratory patients to designated area of waiting room • Assess patient to determine if immediate rooming is warranted.		

Respiratory Protection Program Administrator/Nurse Manager

Ambulatory Care Action List: Pre-Pandemic Infection Control Planning

	Date / To Whom Delegated	Date Completed
Develop a Respiratory Protection Program for the clinic • Program must meet OSHA standards, see www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/clinictemplate/index.html • Collaborate with other facility managers and supervisors to identify job titles/positions that may need to provide care to patients with respiratory symptoms during pandemic influenza • Assure that medical evaluation and fit-testing are completed prior to using an N95 respirator		
Collaborate with Administration to assure availability of appropriate inventory of respiratory protection supplies and other PPE. • Consider assembling an isolation container/bucket to store a small supply of Full Barrier PPE; (e.g. N95 respirators, disposable PPE kits, etc.) to assure rapid access to needed supplies • Educate staff on contents, location, and restocking procedure		
Conduct staff education and training regarding Infection Control and Full Barrier Precautions. (See Appendix) • Utilize available staff education resources to assure that staff receive appropriate education and training o "Protect Yourself First!" video o Overview of Infection Control Precautions		
Maintain knowledge of current MDH and CDC recommendations. • Revise and implement facility procedures/protocols to reflect current MDH and CDC recommendations for: o Infection Control o Cleaning and disinfection o Clinical assessments and patient management (see: www.health.state.mn.us/divs/idepc/diseases/flu/avian/hcp/index/html) • Assure that key facility staff receive timely updates to ensure appropriate clinical management of patients and protection of staff		

Service Continuation Priority

Clinic managers should agree upon which services their clinics normally provide for patients and write those services in the far-left column. Each service should then be prioritized in order to determine which services must remain at full capacity and which services can be delayed for a given amount of time during a pandemic event.

(Check priority for each service item listed)					
Facility:					
Department / Section:					
	Priority 1	**Priority 2**	**Priority 3**	**Priority 4**	
Services Provided	Must continue / be provided regardless of situation	Could be deferred temporarily (e.g. 1-2 weeks)	Could be deferred for longer periods of time, must be re-established within 6-8 weeks	Could be suspended for more than 8 weeks	Key job functions that could potentially be performed from home

Adapted from St. Mary's / Duluth Health Care System

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Ambulatory Care Staff Responsibilities and Requirements under Normal and Pandemic Settings

Normal and Pandemic Responsibilities and Requirements					
Position	**Normal Responsibilities**	**Pandemic Responsibilities**	**Licensing / Certification Required**	**Additional Training Required**	**Immunizations Required**
Physicians					
PAs					
NPs					
RNs					
LPNs					
Medical Assistants					
Receptionists					
Billing					
Office Managers					
Laboratory personnel					

Other

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Emergency Contact Information

Name	Home Phone	Cell Phone	Pager	E-Mail	Fax
Physicians					
PAs / NPs / RNs / LPNs					
Medical Support Staff					
Administration Staff					
Other					

Note: It may be most efficient to establish a mass messaging service that would automatically contact all clinic personnel during a state of emergency

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Surge Capacity Work Sheet

(Capacity = Number of appointment slots per day)

Prioritation of Appointment Type

Prioritize types of appointments into three categories:

1) Appointments that require in-person physician consultaion during a pandemic

2) Appointments that could be adapted to phone consultation during a pandemic

3) Appointments that could be postponed duing a pandemic

Subtract appointment savings from average number of daily appointments to determine surge capacity.

Average number of weekly appointments under normal conditions		
(Well visits, sick visits, yearly check-ups, sports physicals, etc.)		
Average number of weekly appointments that could be adapted to phone consultation	-	
(Well visits, yearly check-ups, etc.)		
Average number of postponable appointments	-	
(Sports physicals, etc.)		
Surge capacity by prioritization of appointments	=	

Extension of Hours of Operation

Identify normal hours of operation during each day. Consider consolidating "closed" business hours (staff meetings, etc.), staggering lunch/break schedules, and extending operation hours.

Additional appointments gained from opening during "closed" hours each week	+	
(Average appointment length / average time "closed" per week)		
Additional appointments gained from staggering breaks each week	+	
(Average appointment length / average time for breaks per week)		
Additional appointments gained from extending open hours each week	+	
Surge capacity by extending hours of operation	=	

Physical Space Capacity

Identify spatial capacity for simultaneous patients. Consider adapting space to examination rooms.

Patient examination rooms available during normal operations		
Additional appointments gained per week from reorganizing office space	+	
Surge capacity by reorganizing office space	=	

Total Surge Capacity

Total appointments during normal operations per week		
Surge capacity by prioritization of appointments	+	
Surge capacity by extending hours of operation	+	
Surge capacity by reorganizing office space	+	
Total surge capacity above normal operations	=	

Normal Operations Appointments + Surge Capacity Appointments = Surge Operations

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Surge Capacity Inventory Calculations

Multiply the average rate of usage for each supply by the number of surge operations appointment slots (calculated on the previous page) to determine the supply needed for one week of surge operations. Each item should only be checked off when the calculated quota is met and stored.

Item	Average Number Used for Each Appointment	Surge Operations Appointment Slots	Needed Supplies for One Week of Surge Operations	Surge Quota Achieved
Medical Equipment and Supplies				
Examination Tables				
Sterilizers				
Sphygmomanometers				
Stethescopes				
Thermometers				
Oxygen Tanks				
Motor-Driven Nebulizers				
Suction Machines				
Sheets				
Gowns				
Bag-and-Valve Masks				
Oxygen Masks				
Oxygen Tubing				
Catheters				
Intra-Osseous Needles				
Surgical Masks				
N-95 Respirators				
Tissue Culture Supplies				
Syringes				
Needles				
Miscellaneous Supplies				
Antiseptics				
Dressings				
Bandages				
Steristrips				
Gloves				
Alcohol-Based Sanitizers				

Miscellaneous Supplies (cont.)				
Alcohol Sponges				
Gauze Sponges				
Emergency Medications				
Epinephrine				
Diazepam				
Albuterol				
Compazine				
Office Supplies				
Directional Signs				
Patient ID Tags				
Emergency Contact Info				
Telephones				
Fax Machines				
Cell Phones				
Pagers				
Computers w/ Internet				
Radio				
Television				

Adapted from the King County Health Care Coalition's *Ambulatory Care Response to Pandemic Influenza*

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Infection Control Supply Resource Management/Assessment

Supply Resource Assessment (Section 8: Resource Management - Form 5)

This form is designed to assist in planning for infection prevention and control materials and supply requirements and alternative supply sources. The form should be reviewed and updated annually.

Use prearranged memoranda of agreement with vendors to make sure supplies will be available if needed. Constantly evaluate stock on hand during the disaster. Any stockpile amount should be based on the facility's system of receiving supplies (e.g., just-in-time) and knowledge of potential events).

The length of time many items may be stockpiled will depend on the manufacturer's expiration date. These supplies need to have a process for turnover based on those dates. In the absence of a known expiration date, contact manufacturer for recommended expiration period. Alternatively, use event-related principles.

Alcohol hand rinse	
Amount of stock in regular inventory:	
Estimated need	
Shortage inevitable	☐ No ☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of alcohol hand rinse?	
Liquid hand soap	
Amount of stock in regular inventory	
Estimated need	
Shortage inevitable	☐ No ☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of liquid hand soap?	
Masks - regular (e.g., surgical or procedure masks)	
Amount of stock in regular inventory	
Estimated need	
Shortage inevitable	☐ No ☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of masks (or practices if use will be extended)?	
Masks - submicron filtration mask (e.g., N95/FFP3)	
Amount of stock in regular inventory	
Estimated need	
Shortage inevitable	☐ No ☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of masks (or practices if use will be extended)?	

Face shields or goggles (reusable or disposable)		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No	☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of face shields or goggles (or practices if will use be extended)?		
Gowns/Aprons		
Amount of stock in regular inventory		
Type:		
Type:		
Type:		
Estimated need		
Shortage inevitable	☐ No	☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of gowns/aprons?		
Gloves		
Amount of stock in regular inventory		
Type:		
Type:		
Type:		
Estimated need		
Shortage inevitable	☐ No	☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of gloves?		
Immunization supplies: syringes, alcohol swabs, bandages		
Amount of stock in regular inventory		
Item:		
Item:		
Item:		
Estimated need		
Shortage inevitable	☐ No	☐ Yes ☐ Maybe
If yes or maybe, what will be used in place of immunization supply?		

Sharps disposal container		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of needle disposal unit?		
Disinfectants, e.g., bleach, alcohol		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of routine disinfectant?		
Disposable thermometers		
Amount of stock in regular inventory		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of thermometers?		
Paper towels		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of paper towels?		
Medical waste disposal bags		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of medical waste bags?		
Medical waste disposal		
Alternate area for storage:		
Airborne isolation rooms		
Specific locations by room number:		

Body bags		
Amount of stock in regular inventory (all types)		
Estimated need		
Shortage inevitable	☐ No ☐ Yes ☐ Maybe	
If yes or maybe, what will be used in place of body bag?		
Mortuary locations		
Toilets		
Alternatives		
☐ Place plastic bag in bucket Need plastic bags		
☐ Chemical. Where obtain		
☐ Portable. Where obtain		
Bedpans		
☐ Amount in routine stock		
☐ To reuse when no water: Place pan inside a large plastic bag before use. Discard plastic bag. Need plastic bags		
☐ Disposables Amount in routine stock		

HealthEast Care System

Avian and Pandemic Influenza CLINIC Management Algorithm (NO transmission in U.S.)

Patient with Febrile Respiratory Illness
Identification of possible avian or novel (pandemic) influenza patient.

(Follow cough etiquette procedures).

TRAVEL AND EXPOSURE HISTORY

- Within 10 days of symptom onset, patient visited or lived in an area with documented avian or novel (pandemic) influenza virus transmission occurring in poultry and/or humans and either direct contact with affected poultry or close contact with confirmed or suspected ill persons (within 3 feet). Direct contact is touching poultry, their feces or surfaces contaminated with feces or consuming uncooked affected poultry. (Updates on affected areas: www.pandemicflu.gov).

NO

Negative history for avian or pandemic influenza exposure. Consider alternate diagnosis differential.

YES

CLINICAL ASSESSMENT

- **Severe respiratory illness** or ARDS not explained by other diagnosis *OR*
- **Fever**: >100.4°F (>38°C) *AND*
- **Respiratory symptoms**: at least one of cough, shortness of breath, or sore throat.
- Other possible symptoms: conjunctivitis, muscle ache.

NO

Negative assessment for avian/pandemic influenza OR alternative diagnosis made. If no alternative is identified, consider monitoring and follow-up in 72 hours.

YES

Triage as possible avian or pandemic influenza case

INITIAL PRECAUTIONS AND TRIAGE

- Level I (LI): Full Barrier Precautions *(N95 respirator, eyewear, gown, gloves, exam room with doors closed).*
- Level II (LII): Droplet Precautions and surgical mask. *(Level I measures will be used unless otherwise instructed by Infection Control. Use of Level II measures will be based on public health recommendation or surge capacity necessity).*
- Place a surgical mask on the patient.
- Remove patient from waiting area and bring directly to exam room or holding area.
- Triage using clinic airborne disease protocol (e.g. chickenpox).
- Place patient in exam room with door closed.
- Staff to wear N95 mask (use surgical if N95 is not available) with eye protection, gloves and gown.
- Hand hygiene (after patient contact and PPE removal).

NOTIFICATION

- **Call/page Infection Control immediately.** Notify site medical director and manager/lead.
- Notify lab before ordering tests or sending any specimens. MDH approval is required.

- **Clinic medical director to initiate Code Zebra after contacting IC** (see Code Zebra Policy).
- **Contact MN Department of Health (MDH)** (651-201-5414); www.health.state.mn.us

Infection Prevention and Control Precautions

Transport

- Patient is to remain in room unless movement is essential.
- Place surgical mask on patient and assist with hand hygiene before leaving room.
- Notify transportation and/or hospital ED or admitting if patient is to go to the hospital.

Patient

- LI: Private exam room with Airborne and Contact Precautions.
- LII: Private room with Droplet Precautions.
- Avoid use of nebulizers unless necessary.
- Consult with infection control for any questions.

Visitors

- Screen persons accompanying patient for influenza symptoms.
- Educate on infection control measures.

Environment

- Use disposable equipment as possible.
- Clean/disinfect reusable equipment before removal from exam room.
- Bag linen/waste in room. Do not leave in hall.
- Clean/disinfect all frequently touched exam room surfaces with normal disinfectant product.

Staff

- Strict adherence to hand hygiene, use of mask and eye protection (particularly for aerosol generating procedures - e.g. nebulizers), gown & gloves.
- Report unprotected exposures and respiratory illness to Employee Occupational Health.

Laboratory

- Notify lab when ordering tests or sending specimens.
- All specimens will be handled per MDH Public Health Lab requirements.
- HE Microbiology Laboratory: 651-232-3680

This triage tool and the precautions are subject to change based on new information or recommendations from the WHO, CDC or MN Department of Health. 3/06

HealthEast Care System

Avian and Pandemic Influenza CLINIC Management Algorithm (Transmission in U.S. and/or MN)

Patient with Febrile Respiratory Illness
Identification of possible avian or novel (pandemic) influenza patient.

(Follow cough etiquette procedures).

CLINICAL AND EPI ASSESSMENT

- ***Fever** >100.4°F (>38°C) *AND*
- ***Respiratory symptoms** (at least one of - cough, shortness of breath, or sore throat) *AND*
- ***Travel/exposure history** (within 10 days of symptom onset) visited or lived in an area with documented avian or novel (pandemic) influenza virus transmission occurring in poultry and/or humans and either direct contact with affected poultry or close contact with confirmed or suspected ill persons (within 3 feet). Direct contact is touching poultry, their feces or surfaces contaminated with feces or consuming uncooked affected poultry. (Updates on affected areas and outbreaks: www.pandemicflu.gov).

YES

Triage as possible avian or pandemic influenza case

INITIAL PRECAUTIONS AND TRIAGE

- Level I (LI): Full Barrier Precautions *(N95 respirator, eyewear, gown, gloves, exam room with doors closed).*
- Level II (LII): Droplet Precautions and surgical mask. *(Level I measures will be used unless otherwise instructed by Infection Control. Use of Level II measures will be based on public health recommendation or surge capacity necessity).*
- Place a surgical mask on the patient.
- Remove patient from waiting area.
- Triage using clinic airborne disease protocol (e.g. chickenpox).
- Place patient in exam room with door closed.
- Staff to wear N95 mask (use surgical if N95 is not available) with eye protection, gloves and gown.
- Hand hygiene (after patient contact and PPE removal).

NO

Negative assessment for avian/pandemic influenza or alternative diagnosis made. If no alternative is identified, consider monitoring for 72 hours. Consider need to initiate Droplet Precautions and notify Infection Control.

NOTIFICATION

- **Call/page Infection Control immediately.** Notify site medical director and manager/lead.
- Notify lab before ordering tests or sending any specimens.

- **Clinic medical director to initiate Code Zebra after contacting IC** (see Code Zebra Policy).
- **Contact MN Department of Health (MDH)** (651-201-5414); www.health.state.mn.us

Infection Prevention and Control Precautions

Transport

- Patient is to remain in room unless movement is essential.
- Place surgical mask on patient and assist with hand hygiene before leaving room.
- Notify transportation and/or hospital ED or admitting if patient is to go to the hospital.

Patient

- LI: Private exam room with Airborne and Contact Precautions.
- LII: Private room with Droplet Precautions.
- Avoid use of nebulizers unless necessary.
- Consult with infection control for any questions.

Visitors

- Screen persons accompanying patient for influenza symptoms.
- Educate on infection control measures.

Environment

- Use disposable equipment as possible.
- Clean/disinfect reusable equipment before removal from exam room.
- Bag linen/waste in room. Do not leave in hall.
- Clean/disinfect all frequently touched exam room surfaces with normal disinfectant product.

Staff

- Strict adherence to hand hygiene, use of mask and eye protection (particularly for aerosol generating procedures - e.g. nebulizers), gown & gloves.
- Report unprotected exposures and respiratory illness to Employee Occupational Health.

Laboratory

- Notify lab when ordering tests or sending specimens.
- All specimens will be handled per MDH Public Health Lab requirements.
- HE Microbiology Laboratory: 651-232-3680

This triage tool and the precautions are subject to change based on new information or recommendations from the WHO, CDC or MN Department of Health. 3/06

Ambulatory Care Telephone Triage Guidelines for Suspect Pandemic Influenza

Appointment Desk Telephone Triage

These questions will be used for triage purposes by non-clinical staff.
NOTE: Specific triage symptoms may need to be adapted, depending on the presenting clinical signs / symptoms of the circulating influenza strain,

Name: _____

DOB: _____ Gender: M F

Does the patient have*:

- Fever? Y N
- Cough? Y N
- Shortness of breath? Y N
- Difficulty breathing? Y N

* If the patient answers “yes” to any of the above questions, transfer the call for clinical triage.

Ambulatory Care Telephone Triage Guidelines for Suspect Pandemic / Avian Influenza

Nurse / Clinical Telephone Triage

These questions will be used by medical personnel for triaging potential patients. This sheet should be placed in the patient's chart for medical records.

	Yes / No	Severity	Onset
Fever			
Cough			
Shortness of breath			
Difficulty breathing			

Has the patient*:

Traveled internationally in the past two weeks? Yes No

If "Yes," Location _____

Dates _____

Had contact with poultry? Yes No

If "Yes," Location _____

Dates _____

*If the patient answered "Yes" to any of the above questions, schedule for a clinic appointment

Instruct the patient when and where to enter the facility. Make efforts to schedule ill patients at the end of the day and ask them to use an entrance that will result in the least number of encounters with others. Inform symptomatic patients that they will be asked to wear a surgical mask at the entrance of the facility.
*Note: Check MDH / CDC websites for current epidemiological / clinical criteria.

On-site Volunteer Staff Clinical Triage Form

Instructions

The goal of the RN Triage Form is to utilize the assessment skills of the experienced RN. Its design allows for the RN to use her/his nursing judgment in an unrestricted format and allows for speed of assessment.

Triage vitals involve look, listen, and feel.

1. Look
    a. Patient walking? They have enough blood pressure to sustain themselves.
    b. What does the patient look like? Ashen, flushed, sweaty, shivering, etc
    c. What is their breathing like? Short of breath standing in line? Short of breath walking up to line? Can they speak a complete sentence without having to catch their breath?
2. Listen
    a. Coughing?
    b. Wheezing?
    c. Listen to symptoms.
3. Feel
    a. Take a quick pulse, you can tell if its quality and rate, is it tachy or brady.
    b. Can feel skin temp, can feel a fever over 100
    c. Is it hot and sweaty, cold and clammy?

Question one (What brings you to clinic today?)

This is the first opt out question. This question is intended to quickly sort out the non flu people such as falls, injuries, diabetic checks, etc.
Circle NF (Non-Flu) at the bottom of the form. Patient can then go to non-flu area.

Question two (exposure to avian flu)

This question is intended to quickly sort out the suspected flu cases that are not currently showing any symptoms.
Circle the SF (Suspected Flu) at the bottom of the form. Patient can proceed to Tamiflu station, or Behavioral Health station, ect.

Question three (symptom description)

This area is intended for the RN to briefly describe the patient's symptoms at which point that RN will answer the question Flu Symptoms by circling the Y or N and write down the date of onset for those symptoms.
Circle KF (Known Flu) at the bottom of the form. Patient can then proceed to flu station.

On-site Nursing Clinical Triage and Evaluation Form

Demographic Information (Patient to complete)							
Patient's name:							
Address:							
City/State:		Zip code:		County:			
Phone:	H)	W)		C)			
Birthdate:		Age:					
Gender:	☐M ☐F						
Race:							
Language:		Interpreter needed? ☐Y ☐N					
If patient is a minor:							
Your name:		Relationship:					
Phone:	H)	W)					
Insurance:		ID#:		Group #:			

Triage Evaluation (Nursing staff to complete)

Clinical Criteria:

1. What brings you to clinic today? _____

2. Have you had close contact with someone known or suspected to have avian flu during or up to 10 days prior to that's person's onset of symptoms?
   ☐Y ☐N

3. Please describe your symptoms: _____

3a. Flu Symptoms ☐Y ☐N Date of onset: _____

KF	SF	NF
(Known Flu)	(Suspected Flu)	(Non-Flu)

Clinical Evaluation (Provider to complete)

1. **Assessment:**
   a. Disease onset date: ____/____/____
   b. Initial symptoms and clinical presentation: _____
   _____
   _____
   _____
   c. Temperature _____ d. O2 Sat. _____
   e. Check all that apply:
   □ Dyspena □ Cough □ Fever >100.4˚F
   □ Sore throat □ Diarrhea □ Altered mental status
   f. Has pneumonia been diagnosed?
   □ Yes, X-ray confirmed □ Yes, not X-rayed
   □ No □ Unknown
   g. Does patient have acute respiratory distress syndrome (ARDS)?
   □ Yes □ No □ Unknown
   h. Received Influenza vaccine?
   □Yes Date received: ___/___/___ □ No
   i. Received pneumococcal vaccine?
   □Yes Date received: ___/___/___ □ No

2. **Testing:**
   a. Influenza test:

Results:	Positive	Negative	Unknown
□Rapid influenza test	□	□	□
□Influenza direct fluorescent antibody	□	□	□
□Enzyme Immuno-Assay (EIA)	□	□	□

   b. Specimen type:
   □ Throat swab □ NP swab □ NP wash □ Sputum
   c. Viral or microbiologic testing:
   □ CBC □ Blood cultures □ Sputum culture □ other: _____
   d. Chest X-ray: □Yes □ No
   Results: _____

3. **Treatment:**
   a. Antiviral Drug: _____ Dose: _____ Route: _____
   _____ _____ _____
   b. Antibiotic: _____ Dose: _____Route: _____
   _____ _____ _____

4. **Instructions/Comments:** _____
_____
_____
_____
_____
_____

On-site Volunteer Staff Clinical Triage Form

Demographic Information (Patient to complete)							
Patient's name:							
Address:							
City/State:		Zip code:		County:			
Phone:	H)	W)		C)			
Birthdate:		Age:					
Gender:	☐M ☐F						
Race:							
Language:		Interpreter needed? ☐Y ☐N					
If patient is a minor:							
Your name:		Relationship:					
Phone:	H)	W)					
Insurance:		ID#:		Group #:			

Triage Evaluation (Nursing staff to complete)

Clinical Criteria:

1. What brings you to clinic today? _____

2. Have you had close contact with someone known or suspected to have avian flu during or up to 10 days prior to that's person's onset of symptoms?
   Y N

3. Have you had one or more of the following?
   Fever or Chills: Y N Date of onset: _____
   Cough: Y N Date of onset: _____
   Productive: Y N Color: _____
   Difficulty breathing: Y N Date of onset: _____
   Chest discomfort: Y N Date of onset: _____
   Sore throat: Y N Date of onset: _____
   Headache: Y N Date of onset: _____
   Muscle pain: Y N Date of onset: _____
   Watery diarrhea: Y N Date of onset: _____
   Vomiting: Y N Date of onset: _____
   Extreme exhaustion: Y N Date of onset: _____
   Stuffy nose: Y N Date of onset: _____
   Sneezing: Y N Date of onset: _____

   For Children also assess for:
   Ear ache: Y N Date of onset: _____
   Nausea: Y N Date of onset: _____

Clinical Evaluation (Provider to complete)

1. **Assessment:**
   a. Disease onset date: ____/____/____
   b. Initial symptoms and clinical presentation: _____
   _____
   _____
   _____
   c. Temperature _____ d. O2 Sat. _____
   e. Check all that apply:
   □ Dyspena □ Cough □ Fever >100.4˚F
   □ Sore throat □ Diarrhea □ Altered mental status
   f. Has pneumonia been diagnosed?
   □ Yes, X-ray confirmed □ Yes, not X-rayed
   □ No □ Unknown
   g. Does patient have acute respiratory distress syndrome (ARDS)?
   □ Yes □ No □ Unknown
   h. Received Influenza vaccine?
   □Yes Date received: ___/___/___ □ No
   i. Received pneumococcal vaccine?
   □Yes Date received: ___/___/___ □ No

2. **Testing:**
   a. Influenza test:

Results:	Positive	Negative	Unknown
□Rapid influenza test	□	□	□
□Influenza direct fluorescent antibody	□	□	□
□Enzyme Immuno-Assay (EIA)	□	□	□

   b. Specimen type:
   □ Throat swab □ NP swab □ NP wash □ Sputum
   c. Viral or microbiologic testing:
   □ CBC □ Blood cultures □ Sputum culture □ other: _____
   d. Chest X-ray: □Yes □ No
   Results: _____

3. **Treatment:**
   a. Antiviral Drug: _____ Dose: _____ Route: _____
   _____ _____ _____
   b. Antibiotic: _____ Dose: _____Route: _____
   _____ _____ _____

4. **Instructions/Comments:** _____
_____
_____
_____
_____
_____

Telephone Voice Message Guidelines During Pandemic Influenza

During an influenza pandemic, clinic office telephone lines should be set for telephone triage in which the listener is provided updated information regarding the symptoms of the disease, what precautions to take, and directions on how to access additional information (i.e. MDH hotline numbers, website information, etc.). The purpose of the automated triage is to provide the public with helpful information while alleviating some of the burden for clinic office triage personnel. Only those who are experiencing symptoms or are caring for those experiencing symptoms will be held on the line to talk to triage personnel.

Example of automated triage recording:

"Thank you for contacting (clinic name). Please understand that during a severe pandemic, hospital and clinic resources will be stretched beyond capacity and attention must be focused to who are ill. As such, we ask for your cooperation and that you only remain on the line if you believe that you or someone you are caring for is in need of medical attention. Symptoms of influenza include fever, headache, muscle aches, weakness, and respiratory symptoms such as a cough, a sore throat, or difficulty breathing. The disease may be spread from person to person by means of inhaling infectious particles expelled when an infected individual talks, coughs, or sneezes or by touching an infected individual or a contaminated surface and subsequently touching your eyes, nose, or mouth. Those at highest risk of becoming infected include children, the elderly, and those with underlying immunodeficiency or other medical ailments. The best methods to prevent the spread the disease include social distancing, proper hand hygiene, and covering your cough. Please refer to (website) or call the MDH pandemic influenza hotline at (number) for additional information regarding pandemic influenza. If you are experiencing any of the symptoms previously mentioned, please remain on the line to speak to a clinic employee."

Phone triage tips:

- Pandemic influenza is a respiratory disease that is easily spread from person to person by coughing and sneezing or by touching mucous membranes (eyes, nose, and mouth) with hands that are contaminated with influenza virus.
- Pandemic influenza is caused by a virus. Antibiotics won't help. Don't demand antibiotics; your healthcare provider will decide whether or not you need them.
- Everyone can help prevent the spread of influenza!
    - Clean your hands often by using soap and water for 20 seconds or an alcohol-based hand rub if your hands are not visibly soiled.
    - Cover your cough / sneeze with your upper arm or a tissue (and dispose of the tissue immediately after use).
- Inform patients with symptoms that they will be asked to wear a mask upon arrival at the clinic.

Please refer to the surge capacity toolkit to determine available appointment slots. This toolkit will aid in maximizing your clinic's emergency operational capabilities by prioritizing appointment types and reorganizing workday structure.

UNIVERSITY OF MINNESOTA

Minnesota Emergency Readiness Education and Training (MERET)

MERET is a program designed to educate and train Minnesota's health care workers in emergency preparedness. MERET's goal is to reduce the risk of disease and injury by improving coordination among health care disciplines and the various organizations and jurisdictions involved in health emergencies.

Education and Training

MERET's training is tailored to

- build on readiness plans already in place,
- give consideration to demands on health workforce time,
- fit training to the needs of different communities,
- and incorporate the increasing diversity of our state.

MERET provides education and training in a variety of ways, including face-to-face trainings, interactive web-based courses, CD-ROMs, and through group events such as state meetings. CEU credits are available for many courses.

MERET Modules

Each MERET module contributes to preparing the health care workforce to function during public health emergencies or bioterrorism events by providing competency based awareness-level online training for hospitals, clinics, long-term care, public health agencies and other community emergency responders, including volunteers.

MDH Recommends completing these MERET modules:

- Standard Precautions and Respiratory Hygiene
- Transmission-Based Precautions
- Protect Yourself First with Full Barrier Precaution
- Respiratory Protection*

(*This module is not currently available on the MERET website, it is still in progress. 4/2007)

Registration

When you visit the MERET website (http://cpheo1.sph.umn.edu/meret/) and click on one of the trainings listed, the system will ask you to enter your email address and to create a password. After you receive a confirmation email, you can log in to the system and access any module.

MINNESOTA MDH DEPARTMENT OF HEALTH

Minnesota Department of Health - Infectious Disease Epidemiology, Prevention and Control Division

651-201-5414 - TDD/TTY 651-201-5797 - www.health.state.mn.us

Handwashing Print Materials Available for Download on the MDH Website

These signs, posters, brochures and other handwashing materials can be printed from the MDH website (www.health.state.mn.us/handhygiene) and posted in your facility.

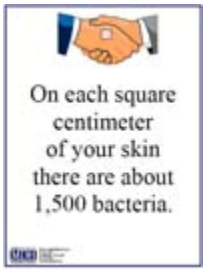
Clean Your Hands: It is as Easy as 1-2-3 Poster
Flyer showing the three steps to using alcohol hand sanitizers and washing with soap and water.

I'm a Fan of Handwashing Sign
Restroom sign created from the 2003 Minnesota State Fair handwashing campaign.

Be A Germ Buster Poster (How-to Handwashing)
Six steps to cleaner hands poster.

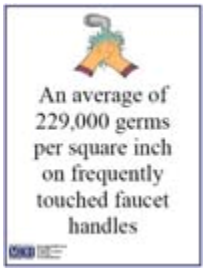
When Should I Wash My Hands Poster
Fun poster showing important times to wash hands.

The New Way to Get Clean
MDH poster about alcohol based hand rubs.



Hands and Bacteria Poster
Poster showing number of bacteria on hands.

Wash Your Hands Posters
These simple posters remind people to wash their hands.



Hands and Faucet Poster
Poster showing that even faucets are dirty.

Cover Your Cough Print Materials Available for Download on the MDH Website

These signs, posters, brochures and other Cover Your Cough materials can be printed from the MDH website (www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/cover/) and posted in your facility. Some items are available in other languages.

Posters for Schools, Childcare, and the Community

Posters for Health Care Facilities

Brochures for Schools, Childcare, and the Community

Brochures for Health Care Facilities

Protect Our Patients Posters for Health Care Facilities

Protect Our Residents Posters for Long Term Care Facilities

Clinic Respiratory Protection Program Template

Policy

The purpose of this program is to ensure that all employees required to wear respiratory protection as a condition of their employment are protected from respiratory hazards through the proper use of respirators.

Program Components

- Program Administration
- Program Scope/Application
- Identifying Work Hazards
- Respirator Selection
- Medical Evaluations
- Fit Testing
- Proper Respirator Use
- Cleaning and Disinfecting
- Inspecting, Maintenance and Repairs
- Respirator Training
- Evaluating/Updating Program
- Roles and Responsibilities
- Documentation and Record-keeping

Program Administration

- _____ *(example: clinic supervisor, employer's name, human resources person)* will be responsible for the administration of the respiratory protection program and thus is called the Respiratory Program Administrator (RPA).

- _____ *(example: clinic supervisor, employer's name, human resources person)* will be responsible for monitoring the ongoing and changing needs for respiratory protection.

These functions can be performed by an RN or other appropriate employee as determined by the facility.

Program Scope and Application

This program applies to all employees who could potentially be exposed to airborne respiratory illnesses during normal work operations, and during non-routine or emergency situations. Some of the types of work activities required to wear respirators are outlined in the table below:

Work Process	Location	Type of Respirator
Contact tracing/disease investigation (Airborne Precautions)	Community Settings	N95- disposable PAPR
Patient contact/care (Airborne Precautions)	Patient Care Areas	N95- disposable PAPR

Identifying Work Hazards

The respirators selected will be used for respiratory protection from potentially airborne infectious diseases; they do not provide protection from chemical exposure. Through normal working situations employees may be asked to have contact with clients who could be infected with a potentially airborne infectious agent such as *Mycobacterium tuberculosis*. Examples of other potentially airborne infectious diseases that Public Health employees may be exposed to in emergency situations include: Severe Acute Respiratory Syndrome (SARS), measles, and smallpox.

Respirator Selection

- Only respirators approved by the National Institute for Occupational Safety and Health (NIOSH) will be selected and used.
    - N95 respirators are available for contact tracing, disease investigation and patient contact/care. (Airborne Precautions)

    - A powered air-purifying respirator (PAPR) is available for contact tracing, disease investigation and patient contact/care (*include this only if your agency has one or intends to buy one):*
        - A PAPR may be selected for use if:
            1. The N95 respirator choice(s) does not fit
            2. Employee has facial hair or facial deformity that would interfere with mask-to-face seal
            3. The N95 respirator choice(s) are unavailable
            4. Desired for high-risk aerosol-generating procedures

Medical Evaluation

- Persons assigned to tasks that require respiratory protection must be physically able to perform the tasks while wearing a respirator.

- _____ *(example: occupational health physician, personal physician)* will determine individual medical clearance by a medical questionnaire and/or medical exam. Employees refusing a medical evaluation will not be allowed to work in conditions requiring respirator use.

- Re-evaluation will be conducted under these circumstances:
    1. Employee reports physical symptoms that are related to the ability to use a respirator. (wheezing, shortness of breath, chest pain, etc.)

    2. It is identified that an employee is having a medical problem during respirator use.

    3. The healthcare professional performing the evaluation determines an employee needs to be re-evaluated and the frequency of the evaluation.

    4. A change occurs in the workplace conditions that may result in an increased physiological burden on the employee.

    5. Employee facial size/shape/structure has changed significantly.

- All examinations and questionnaires are to remain confidential between the employee and _____ *(example: occupational health physician, personal physician)*.

Fit Testing

After the initial fit test, fit tests must be completed at least annually, or more frequently if there is a change in status of the wearer or if the employer changes model or type of respiratory protection (see below). As of 7/1/04 the OSHA Respiratory Protection Standard 29 CFR 1910.134 applies to health care workers. This template will be changed to reflect the most current OSHA regulations as new information becomes available.

Fit testing procedures can be found in _____ *(example: policy and procedure manual)*.

- Fit tests are conducted to determine that the respirator fits the user adequately and that a good seal can be obtained. Respirators that do not seal do not offer adequate protection.

- Fit testing is required for tight fitting respirators.

- Fit tests will be conducted:
    1. Prior to being allowed to wear any respirator.
    2. If the clinic changes respirator product.
    3. If employee changes weight by 10% or more.
    4. If employee has changes in facial structure or scarring.
    5. As Occupational Safety and Health Administration (OSHA) standards require.

Proper Respirator Use

General Use

- Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of the selected model(s). In addition, the respirator shall not be used in a manner for which it is not certified by the National Institute for Occupational Safety and Health (NIOSH) or by its manufacturer.

- All employees shall conduct positive and negative pressure user seal checks each time they wear a respirator.

- All employees shall leave a potentially contaminated work area to clean (PAPR) or change (N95 - disposable) their respirator if the respirator is impeding their ability to work.

Cleaning and Disinfecting

- N95 - disposable
    - If patient not in Contact Precautions (e.g., TB), discard if soiled, if breathing becomes labored, or if structural integrity is compromised.

    - If patient in Airborne Precautions is also in Contact Precautions (e.g., SARS, smallpox), discard after use.

- PAPR
    - *(Recommendation on cleaning and disinfection differ among manufacturers. Include these recommendations here.)*

Inspecting, Maintenance and Repairs

All types of respirators should be inspected prior to use.

- N95 - disposable
    1. Examine the face piece of the disposable respirator to determine if it has structural integrity. Discard if there are nicks, abrasions, cuts, or creases in seal area or if the filter material is physically damaged or soiled.
    2. Check the respirator straps to be sure they are not cut or otherwise damaged.
    3. Make sure the metal nose clip is in place and functions properly (if applicable).
    4. Disposable respirators are not to be stored after use. They are to be discarded.

- PAPR
    1. Inspect the breathing tube and body of the High Efficiency Particulate Air (HEPA) filter for damage.
    2. Examine the hood for physical damage (if parts are damaged, contact the Respiratory Program Administrator).
    3. Check for airflow prior to use.
    4. Follow manufacturer's recommendations on maintenance, including battery recharging.

Respirator Training

- Workers will be trained prior to the use of a respirator and thereafter when deemed necessary by the Respiratory Program Administrator.

- Training will include:
    - Identify hazards, potential exposure to these hazards, and health effects of hazards.
    - Respirator fit, improper fit, usage, limitations, and capabilities for maintenance, usage, cleaning, and storage.
    - Emergency use if applicable.
    - Inspecting, donning, removal, seal check and trouble shooting.
    - Explaining respirator program (policies, procedures, OSHA standard, resources).

Evaluating/Updating Program

The Respiratory Program Administrator will complete an annual evaluation of the respiratory protection program.

- Evaluate any feedback information or surveys.

- The Respiratory Program Administrator will review any new hazards or changes in policy that would require respirator use.

- The Respiratory Program Administrator will make recommendations for any changes needed in the respiratory protection program.

Roles and Responsibilities

Respiratory Program Administrator (RPA)

The Respiratory Program Administrator is responsible for administering the respiratory protection program.

Duties of the RPA include:

- Identify work areas, processes, or tasks that require respiratory protection.
- Monitor OSHA policy and standards for changes and make changes to agency's policy
- Select respiratory protection products.
- Monitor respirator use to ensure that respirators are used in accordance with their certification.
- Distribute and evaluate education/medical questionnaire.
- Evaluate any feedback information or surveys.
- Arrange for and/or conduct training and fit testing.
- Ensure proper storage and maintenance of respiratory protection equipment.

Supervisor

The supervisor for the respiratory protection program may also be the Respiratory Program Administrator. Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular units.

In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge.

Duties of the supervisor include:

- Knowing the hazards in the area in which they work.
- Knowing types of respirators that need to be used.
- Ensuring the respirator program and worksite procedures are followed.
- Enforcing/encouraging staff to use required respirators.
- Ensuring employees receive training and medical evaluations.
- Coordinating annual retraining and/or fit testing.
- Notifying _____ *(example: RPA, clinic supervisor, employer's name, human resources person)* with any problems with respirator use, or changes in work processes that would impact airborne contaminant levels.
- Ensure proper storage and maintenance of all respirators.

Employee

- Participate in all training.
- Wear respirator when indicated.
-
- Maintain equipment.
- Report malfunctions or concerns.

Other

- *Responsibilities may vary with your clinic*

Documentation and Record-keeping

- A written copy of this program can be found in _____ *(example: policy and procedure manual)*.

- _____ *(example: RPA, clinic supervisor, employer's name, human resources person)* maintains the medical information for all employees covered under the respiratory program.

- The completed medical forms and documented medical recommendations are confidential and will remain with/in _____ *(example: RPA, the healthcare provider conducting the evaluation, clinic supervisor, employer's name, human resources person).*

- All relevant medical information must be maintained for the duration of the employment of the individual plus thirty years.

References

- NIOSH Respiratory Protection Program (http://www.cdc.gov/niosh/topics/respirators/)

- US Department of Health and Human Services, 1999, OSHA Technical Manual: Respiratory Protection 29 CFR 1910.134 (http://www.osha.gov/SLTC/etools/respiratory/oshafiles/otherdocs.html)

Ambulatory Care Toolkit
Web Resources

Minnesota Department of Health

- Institutional Infection Control
  http://www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/index.html

- Pandemic Influenza Infection Control Guidance
  http://www.health.state.mn.us/divs/idepc/diseases/flu/pandemic/plan/4infectionc.pdf

- Infection Control for Avian Influenza
  http://www.health.state.mn.us/divs/idepc/diseases/flu/avian/hcp/ic.html

- Respiratory Protection Program
  http://www.health.state.mn.us/divs/idepc/dtopics/infectioncontrol/rpp/

- Office of Emergency Preparedness
  http://www.health.state.mn.us/divs/idepc/diseases/flu/avian/hcp/ic.html

Centers for Disease Control and Prevention

- Avian influenza
  http://www.cdc.gov/flu/avian/

- Resources for Pandemic influenza
  http://www.cdc.gov/flu/Pandemic/

- Infection control in healthcare settings (general)
  http://www.cdc.gov/ncidod/dhqp/a_z.html

- Infection control and seasonal influenza
  http://www.cdc.gov/flu/professionals/infectioncontrol/

- OSHA respiratory protection program requirements
  http://www.ehso.com/respprotection02.htm

Minnesota Emergency Readiness Education Training (MERET)

- http://cpheo.sph.umn.edu/meret/

Association for Professionals in Infection Control and Epidemiology (APIC)

- http://www.apic.org/

Appendix F: Preparedness Timeline

This timeline is a dynamic outline of activities that should occur during various phases of pandemic preparedness. Activities start prior to the event and progress sequentially through to recovery. Evaluation of potential strategies should begin while the threat of pandemic influenza is low. The timeline will evolve as external events, guidance, and internal planning dictate. The phases are based on the World Health Organization's pandemic phases. Each phase is associated with an action list.

SECTION	Low Threat (Identified – World)	Identified – United States	Identified - Minnesota	Identified Here	Recovery
Administration	- Develop All Hazards Plan ▪ Address behavioral, mental health, and security issues ▪ Develop volunteer competencies - Establish contact with key public health, healthcare, and community partners - Conduct education/training for staff - Establish Annual	- Clarify role within regional plan - Maintain close contact with state and local health departments and healthcare facilities - Network with other facilities	- Implement phone triage protocols - Enforce Respiratory Etiquette - Use special segregation or separate waiting rooms	- Determine when to "call" the disaster - Implement plan for Service Continuation	

	Influenza Immunization Program - Appoint Respiratory Protection Program Coordinator - Develop Business Continuity Plan - Budget for contingency plan				
Training and Education	- Train Respiratory Protection Program Administrator - Identify educational resources - Develop competencies for HH, PPE, triage - Educate staff on IC principles and issues				
Communication	- Develop key contact list - Keep staff current on recommendations from CDC and MDH				
Human Resource Management	- Require immunizations to be current - Encourage annual influenza vaccination	- Initiate symptom identification protocol	- Determine which staff are able to perform duties at home - Actively screen		

	- Complete assessment of staff responsibilities under normal and pandemic settings - Complete Emergency Contact Information		those with symptoms		
Resource Management	- Complete a resource assessment using template in All Hazard's Plan - Stockpile supplies and medications as appropriate - Investigate alternative sources for supplies	- Review and update inventory control assessment - Review contents of stockpile to ensure adequate amounts of supplies	- Increase inventory of supplies as appropriate - Contact alternative suppliers as appropriate	- Monitor supply inventory daily	
Patient Management	- Post signs for Respiratory Etiquette - Determine surg capacity - Complete Service Continuation assessment - Educate staff on symptom identification and triage guidelines	- Implement Triage Guidelines - Promote social distancing			
Laboratory	- Evaluate capacity	- Develop internal			

	of testing - Establish communication with reference laboratory	protocols for collection and testing of specimens - Sentinel reporting of predetermined specimens			
Vaccine-Treatment	- Outline how to set up immunization clinic - Evaluate facility requirements for vaccination - Identify key groups - Evaluate ability to purchase required medicaitons	- Implement immunization strategy - Determine what is available and secure resources	- Set up immunization center	- Continue to provide vaccination and prophylaxis	
Facilities	- Complete a Hazard Vulnerability Analysis				
Nontraditional Sites	- Identify the qualities required for a nontraditional site - Determine the “threshold” or burden of illness which will trigger the opening of the nontraditional site			- Open the nontraditional site	