

Northeast Public Health District 10-0 Respiratory Protection Program

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

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1. Program Administration

- a. The district Infectious Disease Coordinator, Epidemiologist or district Employee Health Nurse will be responsible for the administration of the respiratory protection program and thus is called the Respiratory Program Administrator (RPA). The RPA responsibilities may transition between those listed, with the district Employee Health Nurse as a backup.
- b. The district Infectious Disease and Epidemiology section in conjunction with Emergency Preparedness will be responsible for monitoring the ongoing and changing needs for respiratory protection.

2. Program Scope and Application

- a. 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 I below:

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

3. Identifying Work Hazards

- a. 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. See attachment A for a more thorough list of potential airborne infectious diseases.

4. Respirator Selection

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

5. Medical Evaluation

- a. Persons assigned to tasks that require respiratory protection must be physically able to perform the tasks while wearing a respirator.
- b. The district Employee Health Nurse, Emergency Preparedness staff member holding the appropriate licensing or designated nurse will determine individual medical clearance by a medical questionnaire (Attachment B) and/or medical exam. Employees refusing a medical evaluation will not be allowed to work in conditions requiring respirator use.
- c. Re-evaluation will be conducted under these circumstances:
 - i. Employee reports physical symptoms that are related to the ability to use a respirator. (wheezing, shortness of breath, chest pain, etc.)
 - ii. It is identified that an employee is having a medical problem during respirator use.
 - iii. The healthcare professional performing the evaluation determines an employee needs to be re-evaluated and the frequency of the evaluation.
 - iv. A change occurs in the workplace conditions that may result in an increased physiological burden on the employee.
 - v. Employee facial size/shape/structure has changed significantly.
- d. All examinations and questionnaires are to remain confidential between the employee and the clinician, listed above in subsection (b).

6. Fit Testing

- a. 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.
- b. Fit testing procedures can be found in Attachment C at the end of this document.
 - i. 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.
 - ii. Fit testing is required for tight fitting respirators.
- c. Fit tests will be conducted:
 1. Prior to being allowed to wear any respirator.
 2. If the public health department 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.

7. Proper Respirator Use

a. General Use

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

b. Cleaning and Disinfecting

N95 - disposable

- i. If patient not in Contact Precautions (e.g., TB), discard if soiled, if breathing becomes labored, or if structural integrity is compromised.
- ii. If patient in Airborne Precautions is also in Contact Precautions (e.g., SARS, smallpox), discard after use.

8. Inspecting, Maintenance and Repairs

All types of respirators should be inspected prior to use.

- a. N95 - disposable
 - i. 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.
 - ii. Check the respirator straps to be sure they are not cut or otherwise damaged.
 - iii. Make sure the metal nose clip is in place and functions properly (if applicable).
 - iv. Disposable respirators are not to be stored after use. They are to be discarded.

9. Respirator Training

- a. Workers will be trained prior to the use of a respirator and thereafter when deemed necessary by the Respiratory Program Administrator.
- b. Training will include:
 - i. Identify hazards, potential exposure to these hazards, and health effects of hazards.
 - ii. Respirator fit, improper fit, usage, limitations, and capabilities for maintenance, usage, cleaning, and storage.
 - iii. Emergency use if applicable.
 - iv. Inspecting, donning, removal, seal check and trouble shooting.
 - v. Explaining respirator program (policies, procedures, OSHA standard, resources).

10. Evaluating/Updating Program

- a. The Respiratory Program Administrator will complete an annual evaluation of the respiratory protection program and evaluate any feedback information or surveys.
- b. The Respiratory Program Administrator will review any new hazards or changes in policy that would require respirator use.
- c. The Respiratory Program Administrator will make recommendations for any changes needed in the respiratory protection program.

11. Roles and Responsibilities

a. Respiratory Program Administrator (RPA)

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

i. Duties of the RPA include:

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

b. 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:

1. Knowing the hazards in the area in which they work.
2. Knowing types of respirators that need to be used.
3. Ensuring the respirator program and worksite procedures are followed.
4. Enforcing/encouraging staff to use required respirators.
5. Ensuring employees receive training and medical evaluations.
6. Coordinating annual retraining and/or fit testing.
7. Notifying the RPA with any problems with respirator use, or changes in work processes that would impact airborne contaminant levels.
8. Ensure proper storage and maintenance of all respirators.

c. Employee

1. Participate in all training.
2. Wear respirator when indicated.
3. Maintain equipment.
4. Report malfunctions or concerns.

d. Other

- *Responsibilities may vary with your Local Public Health Department*

12. Documentation and Record-keeping

- a. A written copy of this program can be found on the district website, www.publichealthathens.com under HR policies and Information, subsection Health Protection.
- b. RPA maintains the medical information for all employees covered under the respiratory program.
- c. The completed medical forms and documented medical recommendations are confidential and will remain with/in the RPA at the district office.
- d. The most recent medical questionnaire (Attachment B) will be kept on file for reference with the RPA and will be appropriately destroyed if no longer an employee or no longer able to participate in the respiratory protection program.

Attachment A

Diseases/Pathogens Requiring Airborne Infection Isolation

Aerosolizable spore-containing powder or other substance that is capable of causing serious human disease, e.g. Anthrax/*Bacillus anthracis*
 Avian influenza/Avian influenza A viruses (strains capable of causing serious disease in humans)
 Varicella disease (chickenpox, shingles)/Varicella zoster and Herpes zoster viruses, disseminated disease in any patient. Localized disease in immunocompromised patient until disseminated infection ruled out
 Measles (rubeola)/Measles virus
 Monkeypox/Monkeypoxvirus
 Novel or unknown pathogens
 Severe acute respiratory syndrome (SARS)
 Smallpox (variola)/Variola virus
 Tuberculosis (TB)/*Mycobacterium tuberculosis* --Extrapulmonary, draining lesion; Pulmonary or laryngeal disease, confirmed;
 Pulmonary or laryngeal disease, suspected
 Any other disease for which public health guidelines recommend airborne infection isolation

Diseases/Pathogens Requiring Droplet Precautions

Diphtheria pharyngeal
 Epiglottitis, due to *Haemophilus influenzae* type b
Haemophilus influenzae Serotype b (Hib) disease/*Haemophilus influenzae* serotype b -- Infants and children
 Influenza, human (typical seasonal variations)/influenza viruses
 Meningitis
Haemophilus influenzae, type b known or suspected
Neisseria meningitidis (meningococcal) known or suspected
 Meningococcal disease sepsis, pneumonia (see also meningitis)
 Mumps (infectious parotitis)/Mumps virus
 Mycoplasma pneumoniae
 Parvovirus B19 infection (erythema infectiosum)
 Pertussis (whooping cough)
 Pharyngitis in infants and young children/Adenovirus, Orthomyxoviridae, Epstein-Barr virus, Herpes simplex virus,
 Pneumonia
 Adenovirus
 Haemophilus influenzae Serotype b, infants and children
 Meningococcal
 Mycoplasma, primary atypical
 Streptococcus Group A
 Pneumonic plague/*Yersinia pestis*
 Rubella virus infection (German measles)/Rubella virus
 Severe acute respiratory syndrome (SARS)
 Streptococcal disease (group A streptococcus)
 Skin, wound or burn, Major
 Pharyngitis in infants and young children
 Pneumonia
 Scarlet fever in infants and young children
 Serious invasive disease



DPH Employee Medical Questionnaire

NAME _____ DOB _____ AGE _____ DATE _____

GENDER: Male Female

HEIGHT _____ WEIGHT _____

YOUR JOB TITLE: _____

PHONE NUMBER: _____

(where you can be reached by the health care professional who reviews this questionnaire)

HAVE YOU EVER WORN A RESPIRATOR? Yes No

If yes, what types? _____

(ex. disposable respirator, full-facepiece type, powered-air purifying, SCBA)

MANDATORY QUESTIONS

(ALL QUESTIONS IN THIS SECTION MUST BE COMPLETED BY EMPLOYEE AND REVIEWED BY A CLINICIAN PRIOR TO MEDICAL CLEARANCE)

Please check the appropriate box for each question

1. Have you ever had any of the following conditions?

- Seizures Yes No
- Diabetes Yes No
- Allergic reactions that interfere with your breathing Yes No
- Claustrophobia (fear of closed-in places) Yes No
- Trouble smelling odors Yes No

2. Have you ever had any of the following pulmonary or lung problems?

- Asbestosis Yes No
- Asthma Yes No
- Chronic bronchitis Yes No
- Claustrophobia (fear of closed-in places) Yes No
- Emphysema Yes No
- Pneumonia Yes No
- Tuberculosis Yes No
- Silicosis Yes No
- Pneumothorax (collapsed lung) Yes No
- Lung cancer Yes No
- Broken ribs Yes No
- Any chest injuries or surgeries Yes No
- Any other lung problem that you've been told about Yes No

Comments: _____

3. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month Yes No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

Shortness of breath	Yes <input type="checkbox"/> No <input type="checkbox"/>
Shortness of breath when walking fast on level ground or walking up a slight hill or incline	Yes <input type="checkbox"/> No <input type="checkbox"/>
Shortness of breath when walking with other people at an ordinary pace on level ground	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have to stop for breath when walking at your own pace on level ground	Yes <input type="checkbox"/> No <input type="checkbox"/>
Shortness of breath when washing or dressing yourself	Yes <input type="checkbox"/> No <input type="checkbox"/>
Shortness of breath that interferes with your job	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coughing that produces phlegm (thick sputum)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coughing that wakes you early in the morning	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coughing that occurs mostly when you are lying down	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coughing up blood in the last month	Yes <input type="checkbox"/> No <input type="checkbox"/>
Wheezing	Yes <input type="checkbox"/> No <input type="checkbox"/>
Wheezing that interferes with your job	Yes <input type="checkbox"/> No <input type="checkbox"/>
Chest pain when you breathe deeply	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other symptoms that you think may be related to lung problems (<i>please explain</i>):	Yes <input type="checkbox"/> No <input type="checkbox"/>

5. Have you ever had any of the following cardiovascular or heart problems?

Heart attack	Yes <input type="checkbox"/> No <input type="checkbox"/>
Stroke	Yes <input type="checkbox"/> No <input type="checkbox"/>
Angina (chest pain)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heart Failure	Yes <input type="checkbox"/> No <input type="checkbox"/>
Swelling in your legs or feet (not caused by walking)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heart arrhythmia (heart beating irregularly)	Yes <input type="checkbox"/> No <input type="checkbox"/>
High blood pressure	Yes <input type="checkbox"/> No <input type="checkbox"/>
Coughing that wakes you early in the morning	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other heart problem that you've been told about (<i>please explain</i>):	Yes <input type="checkbox"/> No <input type="checkbox"/>

6. Have you ever had any of the following cardiovascular or heart symptoms?

Frequent pain or tightness in your chest	Yes <input type="checkbox"/> No <input type="checkbox"/>
Pain or tightness in your chest during physical activity	Yes <input type="checkbox"/> No <input type="checkbox"/>
Pain or tightness in your chest that interferes with your job	Yes <input type="checkbox"/> No <input type="checkbox"/>
In the past two years, have you noticed your heart skipping or missing a beat	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heartburn or indigestion that is not related to eating	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other symptoms that you think may be related to heart or circulation problems (<i>please explain</i> :)	Yes <input type="checkbox"/> No <input type="checkbox"/>

7. Do you currently take medication for any of the following problems?

Breathing or lung problems	Yes <input type="checkbox"/> No <input type="checkbox"/>
Heart trouble	Yes <input type="checkbox"/> No <input type="checkbox"/>
Blood pressure	Yes <input type="checkbox"/> No <input type="checkbox"/>
Seizures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other medications that may interfere with your use of a respirator (please explain):	

8. If you've used a respirator, have you *ever had* any of the following problems?

If you've never used a respirator, check this box and proceed to question 9

Eye irritation	Yes <input type="checkbox"/> No <input type="checkbox"/>
Skin allergies or rash	Yes <input type="checkbox"/> No <input type="checkbox"/>
Anxiety	Yes <input type="checkbox"/> No <input type="checkbox"/>
General weakness or fatigue	Yes <input type="checkbox"/> No <input type="checkbox"/>
Any other problem that interferes with your use of a respirator (please explain):	Yes <input type="checkbox"/> No <input type="checkbox"/>

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes No

EMPLOYEE SIGNATURE _____

This concludes the Employee portion of the questionnaire. Thank you for your time.

MEDICAL CLEARANCE

This portion must be completed by a designated clinician before employee can proceed with fit testing.

Clinician Name _____ Date _____

- I have reviewed the medical questionnaire with the employee
- I have reviewed the medical questionnaire without the employee

Based upon my findings, I recommend that:

- | | | |
|---|--|---|
| <input type="checkbox"/> The employee proceeds with fit testing and <i>does not</i> require presence of clinician | <input type="checkbox"/> The employee proceeds with fit testing with the presence of a clinician | <input type="checkbox"/> Further physical examination by a physician be performed in order to determine if employee is medically suited for fit testing |
|---|--|---|
-

Clinician Signature _____

Fit Test Procedure

1. Have the test subject don the respirator and perform a user seal check per the instructions provided on the respirator package.
2. Have subject wear any applicable safety equipment that may be worn during actual respirator use that could interfere with respirator fit.
3. Have the subject put on and position the test hood as before, and breathe through his/her mouth with tongue extended.
4. Using Nebulizer #2 with Fit Test Solution, inject the fit test aerosol using the same number of squeezes as required in the Sensitivity Test (10, 20 or 30). A minimum of ten squeezes is required, fully collapsing and allowing the bulb to expand fully on each squeeze. The nebulizer must be held in an upright position to ensure aerosol generation.
5. To maintain an adequate concentration of aerosol during this test, inject one-half the number of squeezes (5, 10, or 15) every 30 seconds for the duration of the fit test procedure.
6. After the initial injection of aerosol, ask the test subject to perform the following test exercises for 60 seconds each:
 - A. Normal breathing (60 seconds) – In a normal standing position, without talking, the subject shall breath normally.
 - B. Deep breathing (60 seconds) – In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
 - C. Turning head side to side (60 seconds) – standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
 - D. Moving head up and down (60 seconds) – standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (when looking toward the ceiling).
 - E. Talking – The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text, count backward from 100, or recite a memorized poem or song, such as the Rainbow Passage (see excerpt below):

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- F. Bending over (60 seconds) – The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place may be substituted for the exercise.
 - G. Normal breathing – Same as exercise a.
7. **The test is terminated at any time the bitter taste of aerosol is detected by the subject because this indicates an inadequate fit. Wait 15 minutes and perform the sensitivity test again.**
 8. Repeat the fit test after redonning and readjusting the respirator. A second failure may indicate that a different size or model respirator is needed.
 9. If the entire test is completed without the subject detecting the bitter taste of the aerosol, the test is successful and respirator fit has been demonstrated.
 10. Periodically check the nebulizer to make sure that it is not clogged. If clogging is found, clean the nebulizer and retest.

Before removing the hood

Ask the person to put their hand inside the hood and then, with one finger, break the seal of the respirator on their face. Ask them to take a breath through their mouth. They will probably grimace in surprise at the sudden taste of the strong solution inside the hood. This is a very good way of building people's confidence in the respirator, because they will realize that if it can be this effective at keeping out an apparently high concentration of test agent for so long, then it will be able to protect them in the workplace, provided they have been careful to fit it correctly each time. Make this point to them afterwards.

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/oshfiles/otherdocs.html>)