



MECKLENBURG EMS AGENCY

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Respiratory Protection Program



## Purpose

The purpose of this program is to provide optimal respiratory protection to all employees that may come into contact with an airborne particulate that may cause serious injury, illness, or death. This program will outline the required materials, training, fit testing, respiratory use, and up keep of the respirators. The Respiratory Protection Program will meet all compliance with OSHA regulations 29 CFR 1910.134.

## Definitions

**Program Administrator**- Person in charge of implementing the Respiratory Protection Program and maintaining the Respiratory Protection Program

**Occupational Health Nurse**- Person in charge of coordinating all medical aspects and screening for the Respiratory Protection Program

**Affected Employees**- Any employee that may be placed in a circumstance where use of a respirator is permitted

**IDLH**- Immediate Danger to Life or Health

**Qualified Instructor**- One who is knowledgeable on the Agency Respiratory Protection Program, OSHA 29CFR 1910.134 guidelines, and all respirators in use by Medic

**Critical Failure**- Event in which an employee's respirator fails to operate properly and puts the employee's health and/or life at risk

## Program Administrator

Risk and Safety will be designated as the *Program Administrator* for the Respiratory Protection Program. The responsibilities of the *Program Administrator* will be as listed below:

- Review Sanitation/ storage procedures
- Perform periodic audits to ensure respirators are properly stored, inspected, and maintained
- Monitor compliance for this program
- Provide training for *affected employees*
- Provide annual respirator fit testing

The *Program Administrator* does not need to be physically present for all of these duties, but must ensure their completion. Many of the duties may be delegated to other trained employees to include the *Occupational Nurse*.

## Occupational Health Nurse

The *Occupational Nurse* will be responsible for coordinating all medical aspects of the Respiratory Protection Program.



These aspects being listed below:

- Pre-screening survey
- Guidance for further medical evaluation, if needed
- Exposure control and guiding

Some of these aspects will be done off-site through a private company. The offsite agency will work in close contact with the *Occupational Nurse* until completed.

### Record Keeping

The Agency will keep written record regarding all training, fit testing, medical evaluations, and exposures. This information will facilitate employee involvement in the respirator program, assist Medic in auditing the adequacy of the program, and provide a record for compliance by OSHA standard 29 CFR 1910.134. Medic has established a record of the fit test administered to employees including:

- The name or badge number of the employee tested
- Type or fit test performed
- Specific make, model, style, and size of respirator tested
- Date of test
- Pass/Fail results

### Equipment

Mecklenburg EMS Agency uses a N95 surgical mask (those who are unable to accurately fit an N95 will be issued a half-faced filtered mask).

**NOTE:** Employees on Designated Operations Teams may use full faced respirators and will be fit tested/trained separately on their use.

The N95 surgical mask is a disposable mask to be used when there is a possibility of infectious disease being spread by airborne particles. This is primarily used when tuberculosis is suspected but is not limited to such.

### Training

Training will take place for all employees that may come into contact with patients. Training must be comprehensive, understandable, and recur annually; if needed more training will occur throughout the year. The training will ensure that all *Affected Employees* will demonstrate the knowledge of:

- Why the respirator is necessary
- How improper fit, usage, and maintenance can be detrimental to the employee
- When to use the respirator
- How to maintain and store the respirator
- How to use the respirator in emergency situations (i.e.- respirator malfunction)
- Limitations and capabilities of the respirator

- How to inspect, don, and remove the respirator
- How to recognize medical signs and symptoms that may limit or prevent the effective use of the respirator
- The general requirements of this program

The respirator training will be completed only by *Qualified Instructors*. It will include all of the following:

- Overview of Respiratory Protection Program/ Respirator Use Policy
- OSHA regulations for respirator use
- Medic requirements
- Medical screening
- Understanding of the respirator
- When to don the respirator
- Donning and removing procedure
- Why the respirator is necessary
- How improper fit, usage, and maintenance can compromise the protection
- Limitations and capabilities of the respirator
- Storage and maintenance of the respirator
- Respirator placement on Medic unit
- Medical signs and symptoms that may compromise the effectiveness of the respirator
- Fit test exercises
- Respirator inspection
- Respirator fit check
- Emergencies and adaptation

Retraining will be conducted annually and when:

- A change has been made to the Respiratory Protection Program
- A trend presents in an employee failure to properly use either respirator
- Other situation arises in which retraining appears necessary to ensure safe respirator use
- A change in weight or physical aspect of the face is noted

Additional fit test will occur when the employee, Medic, physician, supervisor, or Risk and Safety makes a visual observation of changes in the employees physical condition that could affect respirator fit. These changes could be, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

### Fit Testing

Fit testing will be done on every employee that will be placed in a situation where in which the possibility may arise for respirator use. The N95 will undergo a qualitative fit testing (QLFT) using Bitrex. The fit test procedures and requirements are as shown below:

### **Threshold Test**

- This is done to determine the candidates ability to recognize the taste of Bitrex
- This will be performed without wearing a respirator, however, the enclosure hood will be worn
- The candidate will don the test enclosure. During the threshold screening the candidate will breathe in and out through their slightly opened mouth. The candidate will report when they taste the Bitrex
- The solution is then placed in the bulb pump nebulizer
- The nebulizer is then squeezed into the hood in increments of ten (10) squeezes
- This is done until the candidate tastes the Bitrex or until a maximum of thirty (30) squeezes is met
- If a taste response is elicited then the candidate will be asked to note the taste of the Bitrex. The number of squeezes required to elicit taste will be taken note and will be used for each exercise during the fit test
- If no taste response is noted, then the candidate may not perform the Bitrex fit test

### **Fit Test**

- The candidate may not eat, drink (except plain water), smoke, or chew gum 15 minutes prior to fit test administration
- The candidate will appropriately don the respirator and have the enclosure placed over their head; this is the same enclosure used in the threshold test
- As done in the threshold test, the candidate will be asked to breath in and out through their mouth
- The nebulizer will be placed into the front of the enclosure and will be squeezed the appropriate number of times to elicit a taste response (determined during the threshold test)
- After generating the aerosol, the candidate will be asked to perform the following tasks for one minute each:
  - Normal breathing
  - Deep breathing
  - Side to Side head movement
  - Up and Down head movement
  - Talking (the candidate will be asked to read a passage)
  - Grimacing
  - Bending over
  - Normal breathing
- Every thirty seconds the aerosol concentration will be replenished using one half the number of squeezes as initially done
- The candidate will inform the administrator if the taste of Bitrex is detected. If no taste is elicited then the test is successfully passed

- If the taste of Bitrex is elicited then the test is a failure. A different respirator shall be tried and the entire test procedure is repeated

| <u>Exercise</u> | <u>Exercise Procedure</u>  | <u>Measurement Procedure</u>                                    |
|-----------------|--|---|
| Facing Forward  | Stand and breathe normally, without talking, for 30 seconds                                  | Face forward, while holding breath for 10 seconds               |
| Bending Over    | Bend at the waist, as if going to touch his or her toes, for 30 seconds                      | Face parallel to the floor, while holding breath for 10 seconds |
| Head Shaking    | For about three seconds, shake head back and forth vigorously several times while shouting   | Face forward, while holding breath for 10 seconds               |
| REDON 1         | Remove the respirator mask, loosen all face piece straps, and then redon the respirator mask | Face forward, while holding breath for 10 seconds               |
| REDON 2         | Remove the respirator mask, loosen all face piece straps, and then redon the mask again      | Face forward, while holding breath for 10 seconds               |

- After completing each of the exercises, the test administrator will question the employee on the comfort of the respirator. If the employee states that this is unacceptable, then Medic must ensure the fit test is repeated using a different model respirator

### Basic Respiratory Protection Safety Procedures

1. Only authorized and trained employees will be allowed to use respirators. Those employees will only be allowed to use the respirator in which they have been trained on.
2. Only medically cleared and qualified employees will be allowed to use the respirator. Any changes to the employee's health or condition will be reported to the *Occupational Nurse*. The Occupational Nurse will then ensure that employee has proper medical clearance.
3. All respirators will be kept in a clean, convenient, and sanitary location.
4. Risk and Safety will establish and maintain surveillance of all jobs and work done within Medic. Appropriate adjustments will be made as job duties change.
5. Each emergency event (respiratory failure), will be investigated for root cause and possible education for prevention.



6. Risk and Safety will establish and maintain safe operational procedures for the safe use of the respirator, with strict enforcement by department supervisors to include disciplinary action for failure to follow all general and specific safety rules.

### Identification and Maintenance

All filters, if applicable, will be labeled and color coded with the proper NIOSH approved label. The N95 does not have an expiration date; however, all N95 respirator stock will be assessed quarterly for degradation and structural integrity.

### Respirator Replacement

After each use, the N95 will be disposed of appropriately. This will be done with proper removal procedure, taught during training. Replacement N95 respirators are placed on all Medic units.

Replacement of N95 respirators will commence if/when it presents with damage and unsanitary conditions. If any damage is noted that could compromise structural and functional integrity, then the respirator will be replaced.

### Respiratory Protection Schedule by Job and Working Condition

Medic Maintains a Respiratory Protection Schedule by job and working condition. This schedule is provided, during training and upon request, to every employee that will use a respirator at any time. This schedule provides the following information:

- Job title
- Working conditions
- Working location
- Potential hazards

The schedule can be found in *Appendix B* of this program. This schedule will be reviewed annually and adjusted for any changes that may arise.

### Physical and Medical Qualifications

**NOTE:** Any current employee who is unable to pass the medical evaluation will work with HR to determine next steps.

#### **Medical Evaluation**

Medical evaluation is required in order to operate with a respirator. The Agency upholds a two-tiered system for medical clearance. The first tier is completing the Respirator Medical Questionnaire that is distributed to all affected employees. The questionnaire has health specific questions on it that may lead to an understanding of who may or may not be at risk for health issues when using a respirator. This questionnaire will be reviewed by the *Occupational Nurse* and the reviewing Physician when applicable. The second tier is a medical examination (if deemed necessary by the reviewing Physician). The medical examination shall include any medical test, procedures, or consultations that the Physician deems



necessary to make a final decision. Once medical clearance has been granted then the employee may undergo fit testing for respirator use. The Agency will cover all cost associated with medical clearance for respirator use.

#### ***Follow-up***

Any changes in the employees' health will be reported to Risk and Safety. If these changes require further medical evaluation for respirator use clearance, then it will be scheduled as quickly as possible.

#### ***Supplemental Information for the Physician***

The following information will be provided to the Physician prior to any the Physician making any determination on the employee's ability to use a respirator:

- Type and weight of the respirator(s) to be used
- Duration and frequency in which the respirator(s) may be used
- The expected physical work effort
- Additional protective clothing that may be worn
- Temperature and humidity extremes that may be encountered
- Copy of the Mecklenburg EMS Agency Respiratory Protection Plan

#### ***Medical Determination***

Once the employee has been cleared by the Physician for respirator use, then Medic will obtain a written recommendation from the Physician. The recommendation shall provide only the following information:

- Any limitations on use of any of the respirators, related to the medical condition of the employee or relating to workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator
- The need, if any, for follow up medical evaluations

#### **Respirator Operation and Use**

The respirator(s) will only be used within parameters of the Mecklenburg EMS Agency Respiratory Protection Program. The operations and use manuals will be kept by Risk and Safety. Surveillance by direct supervisors will be maintained of work environment conditions and degree of employee exposure and/or stress. When a change is noted in either the degree of employee exposure or stress and in work environment conditions, then Medic will reevaluate the continued effectiveness of the respirator.

*For continued protection of respirator users, the following general use rules apply:*

- Users shall never remove the respirator while in a hazardous environment
- Respirators are to be stored in sealed containers out of harmful atmospheres
- Store respirators away from heat and moisture
- Store respirators such that the sealing area does not become warped or distorted





### Medic requirements

Medic does not permit the wearing of a respirator if:

- Facial hair comes between the sealing surface of the face piece and the face that interferes with valve function
- Any condition that interferes with the face-to-face piece seal or valve function
- If glasses are worn, Medic will ensure that such equipment is worn in a manner that does not interfere with the integrity of the seal on the respirator

### Cleaning and Disinfecting

Medic will always provide new N95 respirators that have been sealed. After each use the N95 will be disposed of via biohazard waste.

### Respirator Inspection

*Respirators shall be inspected as follows:*

- All respirators used in routine situations shall be inspected before each use



## Appendix B

### **Mecklenburg EMS Agency Respiratory Protection Schedule**

#### Purpose

The purpose of the Respiratory Protection Schedule is to outline, by job, hazards present, type of respirator to be worn, and the location of the respirator. This is meant to decrease the confusion when placed in stressful situations and to reduce the incidence of critical failures of respirators.

#### Atmospheres

Respirators will be worn when there is a possibility of contracting an airborne communicable disease. These situations must be immediately recognized by the employee, and respiratory protection should be implemented immediately.

Atmospheres involving suspected or confirmed airborne communicable. The N95 will be used at this point in time. The N95 will be properly donned and worn throughout the entire call.

#### Schedule

| <u>Position</u>   | <u>Respirator</u> | <u>Hazard</u>                    | <u>Respirator Location</u>           |
|---|-------------------|----------------------------------|--------------------------------------|
| EMT,<br>Advanced EMT,<br>Paramedic,<br>Telecommunicator | N95               | Airborne<br>Communicable Disease | Airway Cabinet on<br>Medic Ambulance |

#### Special Operations Paramedics

Mecklenburg EMS Agency has Special Operations Paramedics that work in conjunction with CMPD on the Special Weapons and Tactics team and the Civil Emergency Unit. These paramedics operate under the CMPD respiratory program, due to the use of the CMPD respirators.

## Respirator Use Policy

### Purpose

The purpose of this policy is to outline the Respiratory Protection Plan and to provide guidance for respirator use and upkeep. This policy, in conjunction with the *Respirator Protection Schedule*, will provide all employees with adequate information on when to use the respirator, proper use, and disposal/cleaning of the respirator.

### N95 Surgical Respirator

Mecklenburg EMS Agency uses the N95 Surgical Respirator for respiratory protection in the event of transporting a patient with an airborne communicable disease. If the Crew Chief on the ambulance suspects that any patient presents signs and symptoms of an airborne communicable disease, then the N95 mask will be properly donned and worn while patient care takes place. The mask will not be removed until patient care has been transferred to the receiving facility and the crew is not in immediate contact with the patient.

The N95 can be worn to protect against, but is not limited to, all of the following:

- Tuberculosis
- H1N1
- Bacterial Meningitis
- SARS
- Bacteria enriched atmospheres

After use the N95 will be disposed of via biohazard containment. The N95 does not have an expiration date, but will be assessed quarterly for degradation and damage. Damaged or degrading N95 respirators will be removed from the unit, turned into the Operations Support Team, and replaced.

### Training

Training will commence annually and the training will take place as outlined in the *Respiratory Protection Program*. Upon hiring, employees will be placed through an in-depth class on respirator operation and function. Each employee will be proficient in donning and doffing the respirator. The employee will be trained on when to use the respirator, proper use of the respirator, and how to adjust in the incident of a *critical failure*.

All retraining will take place during the annual health fair. This will allow for hands on training and for employees to ask any questions that may need to be answered by Risk and Safety.

### Fit Test

Fit testing will be conducted annually. The N95 Respirator will use a Qualitative Fit Test, as outlined in the *Respiratory Protection Program*. There will be a threshold test done, prior to the fit test, to ensure the candidate is able to taste the Bitrex. The test is a pass/fail test. If the employee fails the test, then an alternate respirator will be found for that employee. All fit tests will be conducted annually during the health fair. Failure to comply with fit test requirements may result in discipline, PIO/PIPD process.



### Medical and Physical Requirements

OSHA requires a medical health questionnaire be filled out prior to fit testing. Using the answers on the questionnaire, the reviewing Physician will determine if a medical exam is needed. The Physician visit will be fully paid for by Mecklenburg EMS Agency. The Physician will determine whether or not the employee is medically or physically cleared for respirator use.

### Critical Failures

In the event that a respirator fails to work properly while in a hazardous atmosphere, this will be considered a *critical failure*. This will be reported immediately to Risk and Safety and to the Occupational Nurse. An in-depth investigation will take place to determine the cause of the failure and ways to prevent the failure in the future.

**NOTE:** All information contained in this program that refers to N95 use also applies to the use of half-faced masks and/or other types of N95 masks.