

Blue Ridge HealthCare System

Mandatory Annual Compliance Education

Respiratory Protection Program Training Module

This self-directed learning module contains information you are expected to know to protect yourself, our patients, and our guests.

Target Audience: Teammates who may be exposed to airborne hazards, specifically biological and chemical respiratory hazards.

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Instructions:

This module introduces important general information about Carolinas HealthCare System Blue Ridge's Respiratory Protection Program. After completing this module, contact your manager to obtain additional information specific to your department and complete Job Aid.

- Read this module.
- If you have any questions about the material, ask your Department Fit Tester (DFT), the Director of Safety/Security (Program Manager), Teammate Health Department, or the Infection Prevention Nurse.
- Complete the posttest for this module.
- The Job Aid on page 12 should be customized to fit your care team's policies and procedures and then used as a quick reference guide.
- The date you complete this module will be provided to Learning Services to document your required education.

Learning Objectives:

When you finish this module, you will be able to:

- Locate/Discuss the OSHA Respiratory Protection Standard, 29 CFR 1910.134.
- Locate/Discuss the CHS Blue Ridge written Respiratory Protection Program.
- List examples of respiratory hazards, (biological hazards (i.e., airborne infectious diseases) and chemical hazards), and their health effects.
- Describe proper selection and use of respirators and their limitations.
- Describe how to put on a respirator and conduct user seal checks.
- Identify roles in the CHS Blue Ridge Fit Testing process.
- Describe emergency use procedures.
- Describe maintenance and storage.
- Describe medical signs and symptoms limiting effective, safe use of respirators.



OSHA Respiratory Protection Standard

The OSHA respirator standard, 29 CFR 1910.134 applies to all occupational airborne exposures to contaminated air where the employee is:

1. Exposed to a hazardous level of an airborne contaminant; or
2. Required by the employer to wear respirators; or
3. Permitted to wear respirators.

Four major duties are imposed by each of these standards. These duties are:

- Use engineering controls where feasible to control the hazard;
- Provide an appropriate respirator;
- Ensure the use of an appropriate respirator; and
- Institute a respiratory protection program complying with the rest of the standard.

The entire OSHA Respiratory Protection Standard can be viewed at www.osha.gov or contact the Director of Safety/Security for a copy.

Carolinas HealthCare System Blue Ridge Respiratory Protection Program (RPP)

The CHS Blue Ridge Environment of Care Manual contains the policy and written Respiratory Protection Program (EOC.15). The purpose of the program is to ensure that teammates at risk with respect to airborne contaminants are protected from exposure to these respiratory hazards and to ensure regulatory compliance. This comprehensive program provides specific information about hazards, respirators selected, fit testing, and responsibilities. Teammates may access it online via PolicyTech, then Environment of Care.

Respiratory Hazards – See Appendices B & C of RPP

Teammates may be exposed to patients with airborne biological contaminants including infectious diseases such as TB, disseminated chicken pox, measles, or SARS. Consult the Carolinas HealthCare System Infection Control Manual for additional information regarding these diseases, required infection control procedures, and required personal protective equipment (PPE). These infectious agents (bacteria, virus, etc.) are usually attached to small particles that cannot be seen, smelled, or tasted. If you breathe in enough of these particles, you may develop the disease.

To minimize risk to other patients and our teammates, hospitals place patients with airborne infectious diseases in special isolation rooms. Isolation rooms operate under negative pressure, preventing air and infectious particles from escaping.

When teammates enter an isolation room, they must use a NIOSH-approved respirator to minimize inhaling these particles. Also, healthcare workers (HCW) may



be exposed to infectious patients and particles in other areas. The written respiratory protection program specifies where and when HCWs must use a respirator for protection against airborne hazards. The following respirators can be utilized for protection against airborne infectious hazards, **not chemical hazards**.

Air-Purifying Respirators

A. *Particulate-Filtering Only Respirators: Used for Biological Hazards Only*

Air-purifying respirators filter the air you inhale. The filter traps particles, including the small infectious particles. CHS Blue Ridge uses the following respirators:



Kimberly Clark/Tecnol PFR95



3M N95 1860 and 1860S

Filtering face pieces are: 1. Disposable 2. OK for Sterile 3. Sized: Small, Regular

The above noted respirators use filter material for the entire face piece. OSHA regulations refer to these respirators as *filtering facepieces*. Some people may call them *dust masks*, but they are respirators. Because these respirators filter *both* the air you breathe in and *out*, they are the *only* kind allowed where a sterile field is important.

Nearly all teammates can be fit tested with one of these disposable respirators. These items are one time use only, then discard. Although both these respirators are available in our facilities, you should not use whichever is readily available. Use only the brand, model, and size fit tested for you.

If a HCW cannot be fit tested with one of these disposable, negative pressure respirators, CHS Blue Ridge requires a powered air-purifying respirator (PAPR) be employed. This uses a battery-powered blower to pull air through a filter. Clean filtered air blows through a hose to a loose-fitting hood around your face. Inside the hood, positive pressure continually pushes clean air out between your face and the hood. This prevents room air from leaking into the hood. *Do not use a PAPR for sterile procedures, unless also wearing a surgical mask.*





Respirator Limitations

All of these respirators filter particles. Use them only as intended. Do not use a particle respirator for vapors or gases or in an oxygen-deficient atmosphere. Respirators must be selected and matched to a specific hazard.

B. Respirators for Chemical Hazards

CHS Blue Ridge has 2 respirators that are appropriate for handling chemical hazards:

1. North 7700 – Non-disposable, negative pressure, half-face silicone respirator with attached canisters. Used by Plant Ops teammates.
2. 3M Breathe Easy PAPR – Used in hazardous materials/disaster response scenarios. Information for this respirator is not included in this module. The CHS Blue Ridge Disaster Management Director oversees training on this respirator.

If you are unsure if a respirator and its filters/canisters are appropriate, ask the Plant Ops Manager or contact the Facility Services Manager or Safety/Security Director.

How Do I Get a Good Fit? : Fit Testing

Your respirator must fit your face correctly, forming an airtight seal with the skin around your nose and mouth. If it does not fit correctly, it will leak, and you may breathe contaminated air. A *fit test* verifies the model and size of respirator fitting your face.

Teammate Health performs an initial *fit test* for new teammates whose job codes are included in the Respiratory Protection Program. Additionally, CHS Blue Ridge requires annual fit testing. In addition to verifying the correct brand, model, and size, an annual fit test provides teammates the opportunity to become more familiar with the respirator and proper use.

Specially trained individuals within your care team or facility conduct annual *fit tests*. The RPP Administrator, or designee, trains these individuals and designates them as Department Fit Testers (DFT). They conduct the annual fit tests following the qualitative fit testing protocol outlined in OSHA 1910.134. For those HCWs not fitting a respirator, the DFTs provide instruction regarding PAPR usage.

While wearing a respirator, the Department Fit Tester places a clear hood over your head. Then a nebulizer is used to produce an aerosol solution, either bitter or sweet, inside the hood.

You will complete several exercises, such as moving your head and talking, during the *fit test*. If you have the correct size and fit with no leaks, you will not taste the aerosolized solution.



Factors, which could prevent a proper seal, include:

- Facial hair, such as a beards or sideburns, facial scars, structural facial changes, etc. No hair is allowed under the sealing surface.
- A ten percent change in body weight.

If any of these situations apply to you, you must be excluded from potential exposures and you or your supervisor must notify Teammate Health and your Department Fit Tester to be re-fitted or trained on PAPR usage.

Putting On the Kimberly Clark/Tecnol PFR95 “Duckbill”



1. Separate the edges of the respirator to fully open it.
2. Slightly bend the nose wire to form a gentle curve.
3. Hold the respirator upside down to expose the two headbands.
4. Using your index fingers and thumb, separate the two headbands.
5. Holding headbands with index fingers and thumbs, cup respirator under your chin.



6. Pull the headbands up over your head.
7. Release lower headband from your thumbs and position it at base of your neck.
8. Position the remaining headband on the crown of your head.
9. Conform nosepiece across bridge of nose by firmly pressing down with fingers.
10. Continue to adjust the respirator and secure the edges until you feel you have achieved a good facial fit. Now, perform a *fit check*.

User Seal Check (“Fit Check”) for Kimberly Clark/Tecnol PFR95 “Duckbill”

To make sure respirators provide the intended level of protection, each user **MUST** perform a user seal check **each and every time it is worn**.



Forcefully inhale and exhale several times. The respirator should collapse slightly upon inhaling and expand upon exhaling. You should not feel any air leaking between your face and the respirator.

If the respirator does not collapse and expand, OR if air leaks out between your face and respirator, then you do NOT have a good seal. Adjust the respirator until the leak is corrected and you obtain a successful user seal check (*fit check*).



Putting on the 3M N95 1860 or 1860S Respirator (greenish-blue) – “Turtle Shell”



1. Cup the respirator in your hand, with the nosepiece at your fingertips, allowing the headbands to hang freely below your hand.



2. Position the respirator under your chin with the nosepiece up. Pull the top strap over your head resting it high at the top back of your head. Pull the bottom strap over your head and position it around the neck below the ears.



3. Place your fingertips from both hands at the top of the metal nosepiece. Using two hands, mold the nose area to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece. Pinching nosepiece using one hand may result in improper fit and less effective performance. Use two hands!

Fit Check for 3M N95 1860 or 1860S



Perform a user seal check (*fit check*) each time you put on the respirator. To check the respirator-to-face seal, place both hands completely over the respirator and exhale. Be careful not to disturb the position of the respirator. If air leaks around nose, readjust the nosepiece as described in Step 3. If air leaks at the respirator edges, work the straps back along the sides of your head. *If you CANNOT achieve proper seal, DO NOT enter the isolation or treatment area. See your supervisor.*

Care and Storage of Disposable Respirators

- Do not get the respirator wet.
- If it becomes contaminated or damaged, discard it and get a new respirator.
- Do not write on it as it may damage filter. You may write your name on straps.
- Disposable respirators are one time use only and need to be discarded after each use.
- Do not fold respirator or place items on top of it. This will negatively impact the integrity of the respirator and render it useless.
- Store respirator so masks and straps are not creased or stretched out of shape. Store it in the designated area, preferably in a special cabinet.



Putting on the North 7700 Half Mask Air Purifying Respirator – Plant Ops

Visually check the respirator to make sure all major components are in place and in working condition. Verify the correct cartridges and/or filters are being used and are securely attached to the facepiece. Use a mirror as needed to assure the respirator is positioned correctly on your face. Remove eyewear, hard hat, or other head gear before putting on the respirator. Replace after you put it on.

Steps:

- Adjust the respirator head straps and clips to their full outward position.
- With one hand holding the respirator, place your chin inside the chin cup and the top of the respirator over your nose.
- With the other hand, position the plastic so they are centered on your head. Remove any slack in the upper straps by pulling the two end tabs, back and toward your ears. Do not tighten.
- Fasten the bottom elastic straps behind your neck and under your hair. Remove any slack in the bottom straps by pulling the end tabs. Do not tighten.
- Tighten the upper head straps in small equal increments to ensure the top half of the respirator is tightened evenly and it is snug, comfortable, and centered on your face.
- Tighten the lower head straps by pulling evenly on the end straps in the back of the respirator until the entire respirator is snug, comfortable, and centered on your face.
- Pull the respirator away from your face and maneuver it to assure it's centered, comfortable, and snug. A final small adjustment may be made, by again tightening the upper and lower straps.
- The plastic loops on the top straps slide back to hold down any loose strap material.

Face-to-Facepiece Seal Check (“Fit Check”) – Positive Pressure Seal Check

- Perform this positive pressure seal check each time before entering an area containing hazardous atmosphere.
- Place the palm of your hand over the opening in the exhalation valve guard and exhale normally.
- If the facepiece bulges slightly and no air leaks between the facepiece and the face, an effective seal has been obtained.
- If air leaks out between the facepiece and the face, reseal the facepiece and/or readjust the tension on the head straps to eliminate the leakage.
- Repeat this check until an effective seal has been obtained. If a seal is not achieved, do not enter the contaminated area. Contact your supervisor.



3M Air-Mate Powered Air Purifying Respirator (PAPR)



PAPRs are pump- or blower-assisted air-purifying respirators. A battery-powered blower draws air across specially designed filters, removing particles. Clean filtered air blows through a tube connecting to loose-fitting headgear. Loose-fitting head covers do not require a tight face seal. PAPRs do not require fit testing. *PAPRs do not filter exhaled breath. Do not use during invasive procedures or where a sterile field is important, unless also wearing a surgical mask.*

Each hospital maintains some PAPRs for temporary use. Refer to the CHS Blue Ridge Respiratory Protection Program (EOC.15) for locations and departments. BioMedical maintains all PAPRs and operational problems should be promptly reported to them.

3M Air-Mate PAPR Operation

1. Be sure unit is fully charged and equipped with serviceable HEPA filter.
2. Check airflow from blower unit meets its minimum standard prior to each shift.
 - a. Connect breathing tube to Air-Mate blower/filtration unit. Hold free end of tube up grasping slotted connector with thumb and forefinger. Drop black bullet-shaped flow indicator, pointed end first, into slotted connector.
 - b. Turn the blower/filtration unit on.
 - c. Hold end of hose vertical and at eye level. Indicator should “float” on air coming out & lower band should be visible above connector’s rim.
 - d. If indicator fails to float at this level, check breathing tube and tube connections, verify battery is fully charged, and/or replace HEPA filter.
 - e. Connect breathing tube to the headgear, and unit is ready to use.
3. When using new hood, remove protective cover after attaching breathing tube but before you begin using the head cover.



Airflow Indicator

3M Air-Mate PAPR Care and Storage

1. Wipe outside of PAPR using a soft cloth dampened in a mild solution of warm water and mild detergent.
2. Disassemble breathing tube from the headpiece by pulling apart the snap connection (counterclockwise).
3. Cover both ends of the breathing tube and rinse it under clean running water. Wipe the outside only of the breathing tube with a soft, damp cloth to remove any dirt or grime.
4. Store PAPR at room temperature, in a dry area, protected from exposure to infectious agents and hazardous contaminants.



Medical Signs and Symptoms Limiting Effective Use of Respirators

Prior to any respirator usage, each teammate will undergo a medical evaluation for respirator usage clearance employing the OSHA Respirator Medical Evaluation Questionnaire, Appendix C of the Standard (29 CFR 1910.134).

Conditions which compromise respirator fit may include but are not limited to:

1. facial hair
2. missing or poorly fitting dentures, teeth, or implants
3. facial features such as scars, deep crease in skin or other facial disfigurements
4. glasses temple piece which prevent contact of the respirator with the skin

If the use of a respirator causes any of the following problems, please follow up with the Teammate Health Department, remove yourself from environments requiring respiratory protection, and discontinue respirator usage until medically re-evaluated:

- general weakness or fatigue
- difficulty breathing
- anxiety
- skin allergies or rashes
- eye irritation
- any other problem that interferes with use of a respirator

Important points to remember about wearing respirators:

- If you have difficulty breathing while wearing a respirator, **immediately** leave the area.
- Air purifying respirators do not supply oxygen and should never be used where you may encounter oxygen deficiency.
- Being fitted for one brand/size respiratory does not automatically mean that you will also fit in other brands and/or size. **Use only the brand, model, and size for which you were fit tested.**



JOB AID – Complete with your manager in Care Team Connections

1 *What airborne workplace hazards do you face in your department?*

2 *What equipment may prevent and/or minimize work-related illnesses or injuries from airborne workplace hazards?*

3 *Have you been fit-tested for a respirator? List the date(s) of the fit testing and training.*

4 *List the specific make, model, and size of the respirator assigned to you.*

5 *What steps must you take to care for your respirator?*

6 *If needed, look up and list the location(s) of available Powered Air Purifying Respirators (PAPRs) and contacts to make it easier to obtain these respirators for persons unable to be fit tested.*

Name: _____ **ID Badge #:** _____ **Date:** _____

Manager: _____ **Facility:** _____ **Dept:** _____