

Emergency Respiratory Protection Fit Testing Guidance
Health and Medical Branch
Vermont State Emergency Operations Center
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The pandemic caused by the coronavirus SARS-CoV-2 has created numerous challenges, including the use of respiratory protection by many who previously did not use it and the difficulty obtaining proper respiratory protection because market supplies do not meet world-wide demand. Another challenge is that the occupational use of respiratory protection is regulated to minimize the risks of exposure to harmful agents. The fit testing requirements of the occupational regulations is particularly challenging for users of the typical N95 respirator because it requires unique equipment, trained fit testers, a personal test of each user, and five to fifteen minutes of testing per person.

The supply of N95 respirators to which many users have been fit-tested during the COVID-19 response may not be available if N95 respirator usage is similar to rates in March through May of 2020. This is possible when a resurgence of coronavirus infections is occurring and exacerbated with seasonal influenza. The N95 respirators to which many users have been fit tested may no longer be available if current supplies run out. N95 respirator users in Vermont have to be fit tested again, and to different N95 respirators.

This document describes how long-term care facilities and skilled nursing operators may conduct fit testing as efficiently as possible. It describes how fit testing may best be conducted for those facilities that have already implemented a Vermont Occupational Safety and Health Administration (VOSHA) respiratory protection program (medical evaluations and training of each user and a formal written Respiratory Protection Program or RPP). It also describes how facilities for which respiratory protection is new may build an RPP.

Respirator Fit Testing for Current N95 Respirator Users Working Under an RPP

It is imperative to understand that the 3M 8000 N95 respirators supplied to many users in Vermont are not available for resupply by the usual medical equipment suppliers nor the Medical Counter Measures (MCM) Warehouse. Other 3M and other model respirators are in short supply, too. As with other PPE, every effort to conserve N95 respirator supply is critical. As a part of that, please refer to the N95 sterilization guidance below to see how you can sterilize your current N95 respirators. The SEOC is working to verify that new respirators in stock or on order at the MCM Warehouse may be sterilized, too.

Under VOSHA [regulations](#), respirator fit testing is among the elements of an RPP that must be conducted annually, though this is currently relaxed due to COVID-19. It is possible that users and their employer may find the N95 respirators to which their employees were originally fit tested are no longer available when they go to order them. This will necessitate fit testing to different N95 respirators for many users.

The SEOC has evaluated its inventory of N95 respirators in the MCM Warehouse. These exist as a supply of last resort in Vermont. The SEOC PPE Strategy Team has anticipated N95 respirator supply limitations and has worked with the State Commodity Procurement Administrator of the Vermont Office of Purchasing and Contracting to obtain specific N95 respirators to replace those no longer available. When the supply of current N95 respirators is exhausted, the current user community should order a sufficient number of **Prestige Ameritech ProGear, Honeywell DC365, or 3M 9205+ N95 respirators** in their appropriate and available sizes to meet fit testing needs as well as the needs of healthcare users.

Because a resurgence of COVID-19 illness is underway and expected to worsen in the near future, it is recommended that resurgence fit testing be undertaken now. Experience has shown that fit testing is best accomplished using in-house resources or one of the following contractors:

- The ATC Group in Williston at 802-862-1980; Waterbury at 802-241-4131 and Brattleboro at 802-257-1195
- Concentra Urgent Care in Barre at 802-223-7499 where the contact is Sharyl
- Champlain Medical Occupational Health and Urgent Care in South Burlington at 802-448-9370
- Occupational Health Partners in Rutland at 802-747-1753 where the contact is Caitlin Conner or info@ohp.healthcare
- Vermont Air Testing Services (Jericho) at 802-373-3037 where the contact is David Wechsler or dave@vtairtesting.com

Fit testing may be qualitative in nature or quantitative. Both are described in the Occupational Safety and Health Administration document *Hospital Respiratory Protection Program Toolkit*. This has been designed to help employers create an RPP. It is available [here](#). Either a qualitative or quantitative fit test is acceptable. Note that powered air purifying respirators (PAPRs) are also useful for respiratory protection, do not require fit testing and are very useful for work in a respirator for extended time periods. PAPRs are also in high demand in the healthcare community worldwide because of shortages created by COVID-19 now and in the spring of 2020.

N95 Sterilization Procedures

The SEOC has provided seven hospitals with Steris V-Pro low temperature hydrogen peroxide sterilizing units. These units are typically used for sterilizing other medical devices but were recently granted an Emergency Use Authorization (EUA) by the U.S. Food and Drug Administration (FDA) to sterilize certain N95 respirators.

Northwestern Medical Center has recently agreed to sterilize N95 respirators for users in their community, too. This provides excellent N95 sterilization service coverage for the State during the COVID-19 Response. **N95 sterilization is critical because the supply of N95 respirators is extremely low and supply lines are not likely to recover for months.**

The eight hospitals with points of contact are:

- University of Vermont Medical Center
 - Drew Robinson; Andrew.Robinson@uvmhealth.org; 802-847-4258

- Southwestern Vermont Medical Center
 - Joy Bull; Joy.Bull@svhealthcare.org; 802-440-8927
 - Tanya Cowder; Tanya.Cowder@svhealthcare.org; 802-442-6361
- Brattleboro Memorial Hospital
 - Mike Geissler; mgeissler@bmhvt.org; 802-257-8288
- Springfield Hospital
 - Nichole Young; nyoung@springfieldmed.org; 802-885-7489
- Northeastern Vermont Regional Hospital
 - Pete Tomczyk; p.tomczyk@nvrh.org; 802-748-7348
- Rutland Regional Medical Center
 - Brian Olsen; bolsen@rrmc.org 802-747-3647
- North Country Regional Hospital
 - Michael Sanville; msanville@nchsi.org; 802-334-3270
- Northwest Medical Center
 - Deirdre Young; dyoung@nmcinc.org; 802-524-1062

While other hospitals may have similar sterilizer capabilities, they are not obligated to sterilize outside agency N95 respirators like this, though they may choose to do so independently.

You should reach out to your region’s hospital from the above list soon to discuss. Email may be better to reduce the impact. ***They will have requirements that must be met as you package your respirators for sterilization for you.*** We have asked them to diligently work with you during the COVID-19 Response for N-95 respirator sterilization. After COVID-19 Response ends, this obligation to sterilize for you will end, too.

Respirators for sterilization must be very clean – **no writing, no lipstick or other makeup.** Steris states there system can effectively decontaminate compatible N95 or N95-equivalent respirators (those that do not contain cellulose) up to 10 times. The tested and acceptable respirator types to date include the 3M 8000, 8210, 1860, 1860S, 1870P, 9205+ and Moldex 1510Z, 1511, 1512, 1513, 1517, but more models may have been tested for sterilization as well. The FDA Emergency Use Authorization and Steris documents state the units may work for all non-cellulose N95 or N95 alternative respirators.

Discard soiled or damaged respirators in accordance with normal procedures – if in doubt, throw it out; **keep only used respirators that are in good condition.** The sterilizing facility may not return all of your respirators if they determine that they are too soiled for sterilization or are damaged and unacceptable for reuse. N95 sterilization may occur a finite number of times.

Put used respirators together into a biohazard labeled plastic bag, line a box with a large plastic bag and put the bagged respirators into the bag lining the biohazard labeled cardboard box. The box should be labeled with the facility name and point of contact.

Respiratory Protection Program (RPP) Requirements for Facilities Without an RPP

The use of respiratory protection in healthcare requires the employer meet specific regulatory requirements enforced by the Vermont Occupational Safety and Health Administration (VOSHA). The

respiratory protection regulations enforced by VOSHA are found [here](#). VOSHA can be contacted [here](#) to help answer questions about these regulations.

The most important requirements protect the health of the employee wearing a respirator. The regulations require a formal written Respiratory Protection Program (RPP), a medical evaluation by a physician or other licensed healthcare provider, training in the use of the particular respirator worn by the employee, and a respirator fit test that qualitatively or quantitatively verifies the specific user is actually protected by a specific brand, model and size of respirator assigned for their usage.

The purpose of an RPP is to reduce the risk from harmful airborne exposures, in this case that is the risk of infection from aerosolized coronavirus. After other risk reduction efforts have first been employed, a respirator may be needed to reduce the risk further. For SARs-CoV-2 coronavirus, respiratory protection is provided by air purifying respirators like the N95 respirator or a powered air purifying respirator (PAPR).

The N95 is a negative pressure air purifying respirator. While it filters out at least 95% of particles and aerosols (including SARS-CoV-2), negative pressure created while breathing in may allow leakage between the face and respirator in a poorly fitting respirator. This is why the fit test is so important.

PAPRs, often a hood that covers the head and an attached air pump that supplies filtered fresh air to the hood, operate with a positive pressure so any leakage is out of the PAPR. For that reason, a PAPR does not require a fit test. PAPRs may be an excellent alternative for healthcare providers that spend most of their workday engaged in higher risk activities as might be the case in dental practices. While the fit test is not required, a written RPP, user medical evaluation and user training are.

When an N95 is worn, particles and aerosols slowly clog the filtering material until the N95 must be replaced. This adds respiratory stress which can lead to cardiovascular stress and it is why a user must have a thorough medical evaluation before being allowed to wear an N95. The medical evaluation is through a review of the person's medical history as revealed in a questionnaire the person completes. Some people also need a physical evaluation, as with a pulmonary function test.

Caution is appropriate when purchasing N95 respirators. There are some that are industrial grade. These may not provide droplet protection as they are for dry work. Wearing a face shield with it can provide droplet protection. When an N95 respirator has an exhalation valve, it provides wearer protection but does not provide source control on the wearer. The wearer must add a facemask over the N95 with an exhalation valve so others are protected from the exhalations of the N95 wearer. There are N95 alternatives, including the KN95. Currently, we are not recommending that N95 alternatives be used. Should N95 supplies reach crisis standards of supply, N95 alternatives including the KN95 may be recommended.

The behaviors of the respirator user are also important to proper protection so training helps cultivate those best practices. The RPP with designated roles and responsibilities meeting VOSHA standards must also provide additional controls on user behavior such as periodic inspection and annual program review.

VOSHA has provided a *Hospital Respiratory Protection Program Toolkit* to help employers create an RPP. It is available [here](#). It includes a Respiratory Protection Program Template for Hospitals in Appendix D.

While the development of an RPP for SARS-CoV-2 is a significant effort, it will assist healthcare providers caring for those with other airborne infectious diseases such as measles, chickenpox and tuberculosis.

As explained in the Toolkit, medical evaluations must be accomplished by a physician or other licensed healthcare professional. The medical questionnaire to be completed by the employee can be found in Appendix C of the Toolkit. Fit testing can be provided by one of several consultants in Vermont. They often also provide respiratory protection training if the employer cannot do so. They are listed in the guidance above.:

- The ATC Group in Williston at 802-862-1980; Waterbury at 802-241-4131 and Brattleboro at 802-257-1195
- Concentra Urgent Care in Barre at 802-223-7499 where the contact is Sharyl
- Champlain Medical Occupational Health and Urgent Care in South Burlington at 802-448-9370
- Occupational Health Partners in Rutland at 802-747-1753 where the contact is Caitlin Conner or info@ohp.healthcare
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Where healthcare facilities are confronted with higher risk activities while building their RPP, they must follow the Vermont Department of Health Personal Protective Equipment (PPE) Guidance found [here](#). Where the guidance requires a respirator, some contingency actions may help. To illustrate, consider the following scenario. Note that Infection control guidance for COVID-19 from the CDC found [here](#) is equally essential.

In a healthcare practice where symptomatic patients need to be seen in close contact (less than 6 feet), the practitioner must follow the guidance in Vermont Department of Health Personal Protective Equipment (PPE) Guidance. Given no RPP exists yet and the healthcare provider cannot wear a respirator, the provider must control the source by ensuring the patient wears a facemask (typically a procedure mask) and seek to isolate the patient perhaps by seeing the patient in a drive-up or outdoor setting. If conditions arise where the risk of exposure is unavoidable, the healthcare provider could layer PPE including a facemask and face shield along with their eye protection, gloves and gown or coveralls. The face shield provides droplet protection that the facemask does not.

Additional technical assistance can be provided by SEOC Health and Medical Branch Co-Director Bill Irwin at william.irwin@vermont.gov.