

PROCEDURE: Reprocessing Single Use N95 Respirators due to Covid-19 in STERRAD sterilizers

DEPARTMENT: MDRD

REVIEWED BY: Albert Csapó

DISTRIBUTION: G/Ssupply/MDRD

APPROVED BY: MDRD Management

Purpose: To collect and sterilize with Hydrogen Peroxide Vapor and Plasma (HPVP) single used N95 respirators throughout the hospital to a **maximum of 2 sterilization cycles. This includes respirators from non-COVID and COVID patient procedures.** These will be stored and used as a backup supply to our regular inventory on the direction of the Provincial Ministry or Health Authority.

Types of N95 Respirators:

**** Due to incompatibility with the STERRAD Sterilization Systems, do not reprocess N95 respirators containing cellulose or cellulose-based materials. ****

N95 respirators that have been tested at Vancouver General Hospital as being compatible with this process include (please see Appendix C for full list by 3M):

3M 1860
3M 1870+

3M 1860S
3M 9210

3M 1870
KC 46867

This is not an exhaustive list but does represent 95% of the N95 respirators used in the Province of BC.



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Collection Bins:

- Use laundry hampers with plastic bags clearly marked with proper signage
- Placed in high use areas such as ICU, TB clinics, ENT Clinic, Bronch suites, OR, MDRD scope Reprocessing Area
- Optional: Respirators collected from COVID units or known COVID patients can be kept separate from non-COVID respirators by the user by placing the used respirator in a tied/sealed poly bag before placing it in the collection bin.



Collecting Respirators:

- Daily collection for each area
- 2 staff members & an appropriately sized cart
- 1st staff member wears gloves, procedural mask and eye protection (goggles) to collect the bags with used respirators, ties the top of the bag and places it on the cart.
- 2nd staff member puts a new bag on the laundry hamper
- 2nd staff inserts new bag.

Decontamination Area:

- Label each bag with the correct days colour tag. Write the date & time on the label
- Fill in the collection data sheet.
- Send contaminated collection carts through the cart-washer



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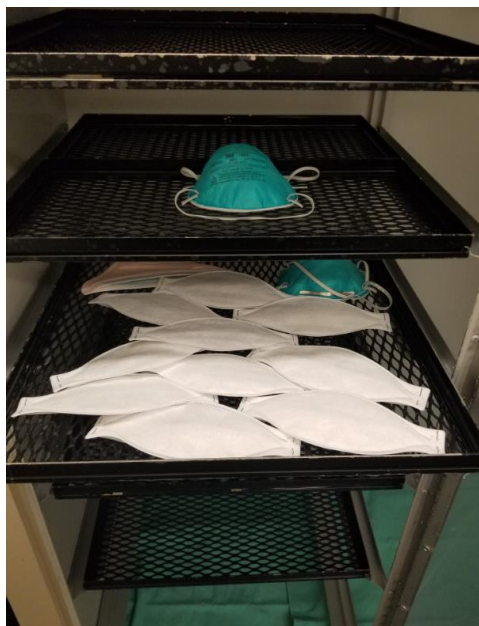
Sorting: After 48 hours only

- Put on full PPE (Gown, gloves, medical mask, eye protection)
- Collect bags that are ready to sort (have sat for 48 hours)
- Empty bags onto a clean, dry surface for sorting
- Discard any respirators that are visually contaminated, ripped or have broken straps, or have already been sterilized twice (have 2 small black lines on the side of the respirator)
- Sort respirators into "like" piles (type and size)

Drying:

Recommended to place a dryer in the decontamination area to be used for drying respirators. If not possible, place the respirators in a cabinet or on the shelves of wired carts to dry.

- Place respirators in a single layer on each shelf of the dryer (10 - 12 respirators per shelf)
- Set timer for 30 minutes on medium-low setting
- Continue sorting respirators for the next drying load.



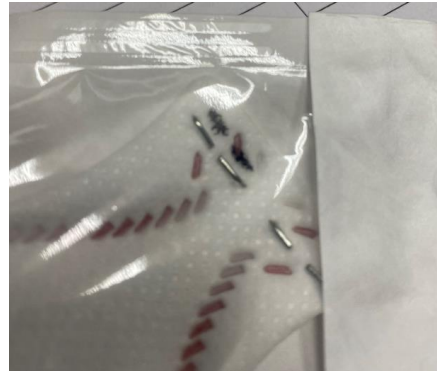
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Daily: Clean the inside of the air dryer with Disinfectant
wipes

Weekly: Send the dryer shelves through the cart-washer.

Packaging:

- Use full PPE (Gown, gloves, procedural mask, eye protection) when packaging respirators for sterilization
- Place a small line on the side of the mask to indicate it is being sterilized using a fine tip black marker. A second line indicates the respirator has gone through 2 sterilization cycles.

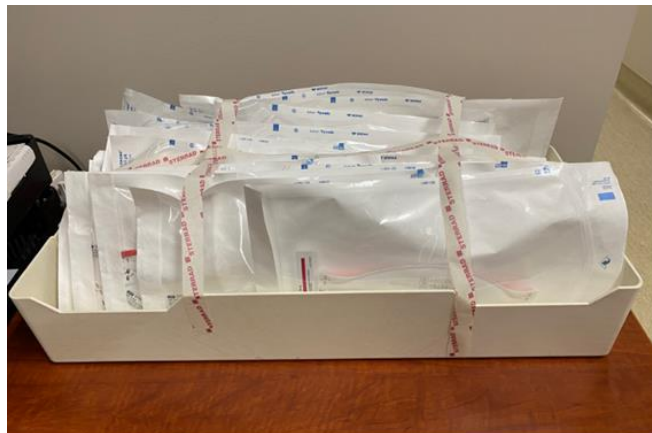


- Using 6" x 12.5" or 8" x 16" Tyvek pouches or equivalent product compatible with STERRAD sterilizers, place one N95 respirator in each pouch
- Place one STERRAD compatible chemical indicator in each pouch and seal the opening.



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- Using a STERRAD compatible tray, place the packed respirators on the long edge so that they are not layered on top of each other and secure the load using STERRAD compatible tape. The tape will ensure the pouches stay in place and do not touch the sides of the sterilization chamber.



Sterilization:

There are 3 different models of STERRAD sterilizers that can be used to sterilize N95 respirators, each with their own specific cycle.

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ASP System	Cycle	Cycle Time	Placement
STERRAD 100S System	Short	55 Minutes	Both shelves
STERRAD NX System	Standard	28 Minutes	Both shelves
STERRAD 100NX System	Express	24 Minutes	Bottom shelf only

** Failure to use the specific cycle and STERRAD sterilizer will result in an aborted load. **

STERRAD 100S:

- loaded and evenly distributed on both shelves using the short cycle.
- Cycle time 55 minutes
- Both shelves must be used or cycle will abort.



STERRAD NX:

- loaded and evenly distributed on both shelves using the standard cycle.
- Cycle time 28 minutes
- Both shelves must be used or cycle will abort.



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STERRAD 100NX:

- loaded on bottom shelf only using the express cycle.
- Cycle time 24 minutes
- Ensure All Clear feature is disabled



After sterilization, it is recommended to open each pouch and let sit for a minimum of 1 hour before using the respirators.

APPENDIX A: SUPPLIES

Purple Collection Bags:

- for high visibility (optional)
- Can be ordered through ePro 250/ct or direct from Uline.



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Sterilization Supplies:

The following materials may be used in STERRAD sterilizers for reprocessing N95 masks. (BC PHSA order codes included)

ITEMS	VMID	PeopleSoft ID	ORDER	QUANTITY
Sterrad 100S Cassette	10113	00012158	ePro	
Sterrad 100S Box	37-02632-1-001	NO PSOFT ID	ePro	
Sterrad Chemical Indicator Strip	14100	00000039	ePro	250/pack; 4 packs/case
Sterrad Indicator Tape	14202	00001190	ePro	60 yd/roll; 6 rolls/case
Sterrad 100S Plate	03-53046-1-001	00104391	ePro	Pkg of 2
Sterrad 100S Paper	40-03175-001	00012163	ePro	Cs/12
Sterrad 100S Ribbon Cartridge	40-03174-001	00117764	ePro	
STERRAD VELOCITY Biological Indicator	43210	NO PSOFT ID	Direct Purchase	30/box; 2 boxes/case
Tyvek Pouch with STERRAD Chemical Indicator, Self Seal, 6" x 12.5"	12332	NO PSOFT ID	Direct Purchase	2x250 shelf packs; 500/case
Tyvek Pouch with STERRAD Chemical Indicator, Self Seal, 8" x 16"	12340	NO PSOFT ID	Direct Purchase	2x250 shelf packs; 500/case
Tyvek Roll with STERRAD Chemical Indicator, 6" x 228'	12415	NO PSOFT ID	Direct Purchase	4/case
Tyvek Roll with STERRAD Chemical Indicator, 8" x 228'	12420	NO PSOFT ID	Direct Purchase	4/case
Tyvek Pouch with STERRAD Chemical Indicator, Heat Seal, 6" x 12.5"	12532	NO PSOFT ID	Direct Purchase	2x250 shelf packs; 500/case
Sterrad 100NX Cassette	10144	NO PSOFT ID	Direct Purchase	
Sterrad 100NX Cassette Box	20227	NO PSOFT ID	Direct Purchase	
Sterrad 100NX Thermal Paper	10305	NO PSOFT ID	Direct Purchase	

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APPENDIX B: LOGISTICS

- If sending to another site for sterilization, place pouched respirators into a double bag and seal. Place doubled bag of respirators into a clean container with lid. Include log of respirators (type, size, quantity)
- If sending to VGH for sterilization

VGH RECEIVING
Attn: Irena Tabachnicov
902 West 10th Avenue,
Vancouver BC, V5Z 1M9

APPENDIX C: N95 RESPIRATORS WITHOUT CELLULOSE

The following respirators have been confirmed by 3M not to contain cellulose:

- 3M™ VFlex™ Healthcare Particulate Respirator and Surgical Mask 1804, N95
- 3M™ VFlex™ Healthcare Particulate Respirator and Surgical Mask 1804S, N95, Small
- 3M™ VFlex™ Health Care Particulate Respirator and Surgical Mask 1805, N95
- 3M™ VFlex™ Health Care Particulate Respirator and Surgical Mask 1805S, N95, Small
- 3M™ Particulate Respirator 8200/07023(AAD), N95
- 3M™ Particulate Welding Respirator 8212, N95 with Facesal
- 3M™ Particulate Respirator 8214, N95, with Facesal and Nuisance Level Organic Vapor Relief
- 3M™ Particulate Respirator 8233, N100
- 3M™ Particulate Respirator 8293, P100
- 3M™ Particulate Welding Respirator 8512, N95
- 3M™ Particulate Respirator 8514, N95, with Nuisance Level Organic Vapor Relief
- 3M™ Particulate Respirator 9010, N95
- 3M™ VFlex™ Particulate Respirator 9105, N95
- 3M™ VFlex™ Particulate Respirator 9105S, N95

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The following respirators have been confirmed by 3M that they have not been formulated to contain cellulose and therefore do not knowingly contain cellulose:

- 3M™ Health Care Particulate Respirator and Surgical Mask 1860, N95
- 3M™ Health Care Particulate Respirator and Surgical Mask 1860S, N95
- 3M™ Aura™ Health Care Particulate Respirator and Surgical Mask 1870+, N95
- 3M™ Particulate Respirator 8110S, N95
- 3M™ Particulate Respirator 8210, N95
- 3M™ Particulate Respirator 8210Plus, N95
- 3M™ Particulate Respirator 8210V, N95
- 3M™ Particulate Respirator 8211, N95
- 3M™ Particulate Respirator 8240, R95
- 3M™ Particulate Respirator 8246, R95, with Nuisance Level Acid Gas Relief
- 3M™ Particulate Respirator 8247, R95, with Nuisance Level Organic Vapor Relief
- 3M™ Particulate Respirator 8271, P95
- 3M™ Particulate Respirator 8511, N95
- 3M™ Particulate Welding Respirator 8515/07189(AAD), N95
- 3M™ Particulate Respirator 8516, N95, with Nuisance Level Acid Gas Relief
- 3M™ Particulate Respirator 8576, P95, with Nuisance Level Acid Gas Relief
- 3M™ Particulate Respirator 8577, P95, with Nuisance Level Organic Vapor Relief
- 3M™ Aura™ Particulate Respirator 9210+/37192, N95
- 3M™ Aura™ Particulate Respirator 9211+/37193(AAD), N95