

**One Union  
One Voice**



# Briefing on Respiratory Protection for Health Care Workers

Scarce resources / dire need

**Organize  
&  
for a better future**



# Welcome!

- You can control your video on/off
- Q&A for general questions after each section
- Let us know if this is helpful, and if you want more of these briefings.
- Tell us how to improve and what information you need



# Agenda

- The employers' obligations to provide equipment
  - Containment level
  - Crisis level
  - When PPE is not available
- Possible sources of PPE
  - Differences between types of respirators and face masks
- Decontamination and re-use of equipment
- Your suggestions for future sessions



# Changing and Contradictory Information

- WHO says *“There is no need for healthy people to wear face masks”*
- CDC says *“Everyone should wear a cloth face cover when they have to go out in public”*



# Workers Should Document Exposures!

- When the pandemic is over employers are expected to deny work-related illness. All health care workers should document their exposures. Documentation should include date; duration of exposure; PPE provided; witnesses.
- *“Based on hospital data, broad implementation of CDC-guided infection control procedures at the MGH, and significant community spread in Massachusetts, we believe the vast majority of these individuals did not contract the virus at work.”*



# Employer's Obligations Under OSHA

- OSHA's General Duty Clause – employer must provide a safe workplace
- OSHA Guidance on Preparing Workplaces for COVID-19
  - Develop an infectious Disease Preparedness Plan
- Enforcement Guidance for Respiratory Protection
  - Good Faith effort to obtain respirators
  - Monitor supply and prioritize use
  - Surgical masks are NOT respirators
  - Implement engineering and administrative controls
  - <https://www.osha.gov/memos/2020-04-03/enforcement-guidance-respiratory-protection-and-n95-shortage-due-coronavirus>



## How will OSHA enforce the law?

- OSHA will, on a case-by-case basis, exercise enforcement discretion when considering issuing citations under 29 CFR § 1910.134(d) where the employer has met the following four conditions:





- The employer has made a good faith effort to obtain other alternative filtering facepiece respirators, reusable elastomeric respirators, or PAPRs appropriate to protect workers;

### Major Types of Respirators

*Air-purifying respirators, which remove contaminants from the air.*



Half mask/Dust mask  
APF=10  
*Needs to be fit tested*



Half mask (Elastomeric)  
APF=10  
*Needs to be fit tested*



Full facepiece (Elastomeric)  
APF=50  
*Needs to be fit tested*

Original illustrations created by Aitkin & Associates



Loose-Fitting Powered  
Air-Purifying Respirator (PAPR)  
APF= 25



Hood Powered Air-Purifying  
Respirator (PAPR)  
APF= 25

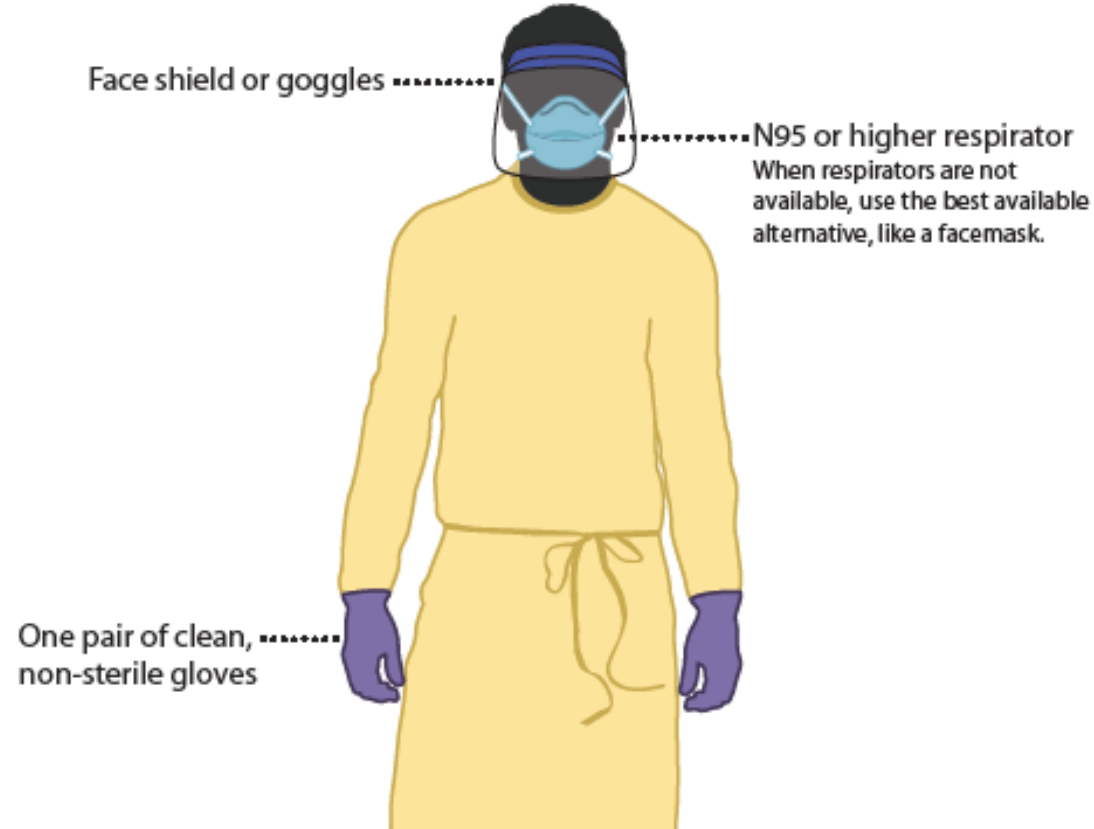
The employer has monitored their supply of N95s and prioritized their use according to CDC guidance

- Conventional
- Contingency
- Crisis



Surgical masks and eye protection (e.g., face shields, goggles) were provided as an interim measure to protect against splashes and large droplets (note: surgical masks are **not** respirators and do not provide protection against aerosol-generating procedures);

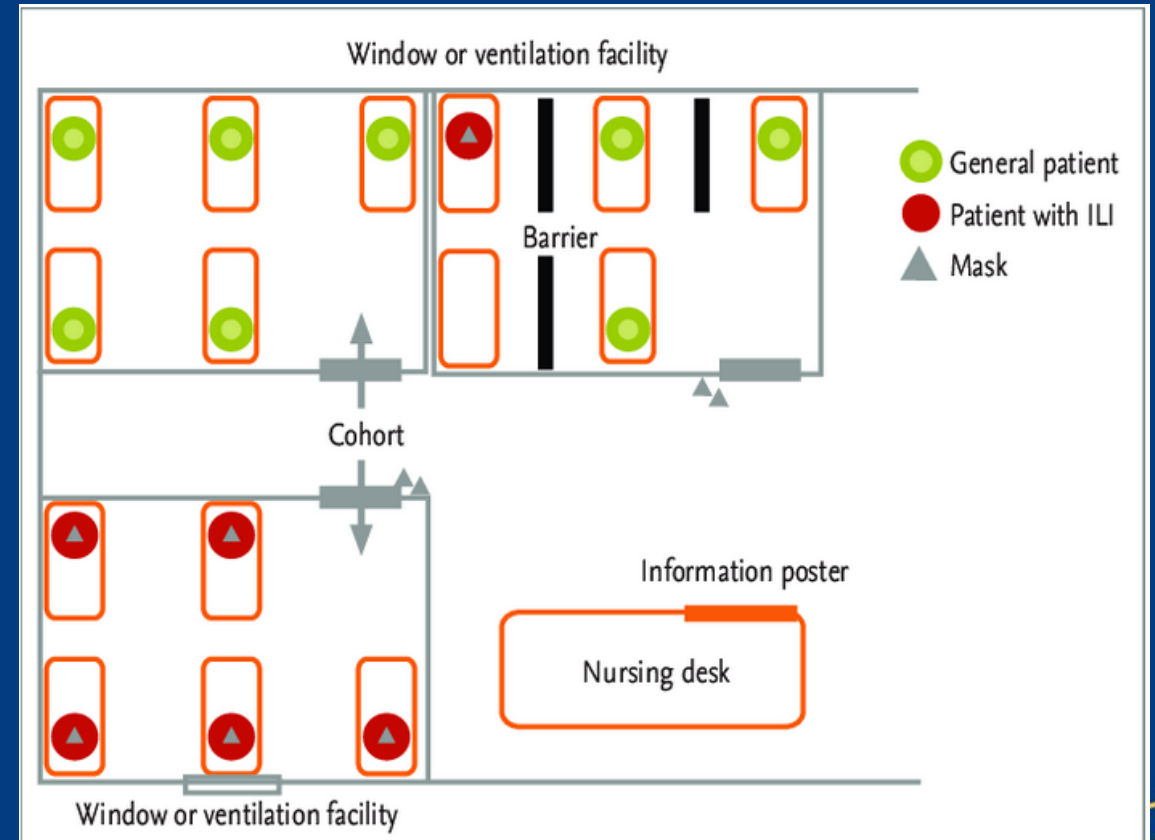
**Preferred PPE – Use N95 or Higher Respirator**



**Acceptable Alternative PPE – Use Facemask**



- Other feasible measures, such as using partitions, restricting access, cohorting patients (healthcare), or using other engineering controls, work practices, or administrative controls that reduce the need for respiratory protection, were implemented to protect employees.



# Negative Pressure Isolation Rooms

- Removing contaminated air from COVID 19 patient rooms or rooms used to evaluate suspect cases is an important engineering control that many small and rural hospitals are not doing.
- One solution is for employers that need to set up a temporary negative pressure isolation room to hire an asbestos abatement firm to set it up. Asbestos abatement firms are very experienced at setting up negative air pressure containment and the cost should not be prohibitive.



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Original illustrations created by AIAA & Associates



Loose-Fitting Powered  
Air-Purifying Respirator (PAPR)  
APF= 25



Hood Powered Air-Purifying  
Respirator (PAPR)  
APF= 25

# Presidential Memorandum on General Use Respirators

- To help prevent the spread of COVID-19, the Secretary of Health and Human Services shall take all appropriate and necessary steps with respect to general use respirators to facilitate their emergency use by healthcare personnel in healthcare facilities and elsewhere,



# “Normal” Supply Chain

- Contact state and local health departments
- Contact governor’s office
  - “If you do not request medical supplies you will not get them”
- Bidding wars may have driven up prices.  
Employers may be rationing PPE because of cost – this is not good faith!
- May start to see some FEMA coordination







**Loose-Fitting Powered  
Air-Purifying Respirator (PAPR)**  
APF= 25



**Hood Powered Air-Purifying  
Respirator (PAPR)**  
APF= 25



Powered Air Purifying Respirator – highest level of protection – 6 companies newly starting to manufacture in April

- Powered air-purifying respirators (PAPR) with HEPA filters are required when employees perform high hazard procedures on AirID cases, suspected cases, or cadavers potentially infected with ATPs. (Cal/OSHA)





**Half mask (Elastomeric)**  
APF-10  
*Needs to be fit tested*



**Full facepiece (Elastomeric)**  
APF-50  
*Needs to be fit tested*



# Reusable Elastomeric Respirators with Hepa Filters

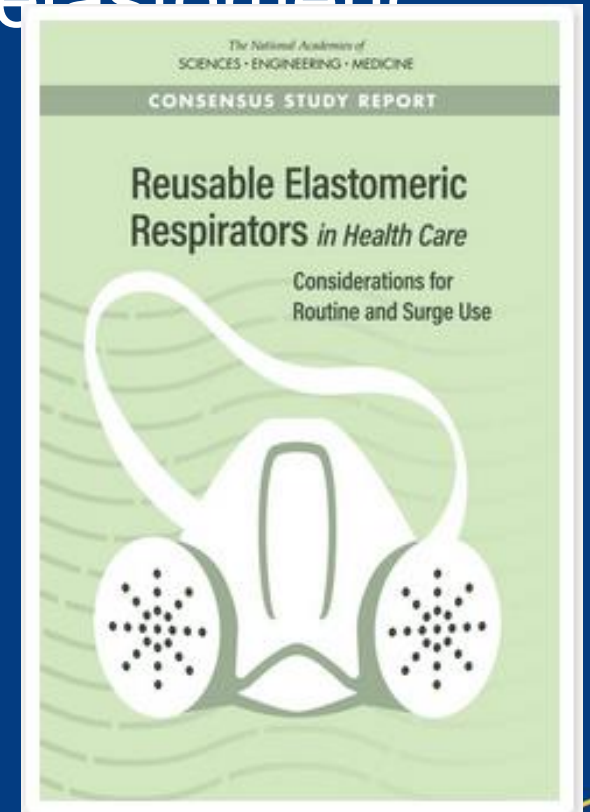




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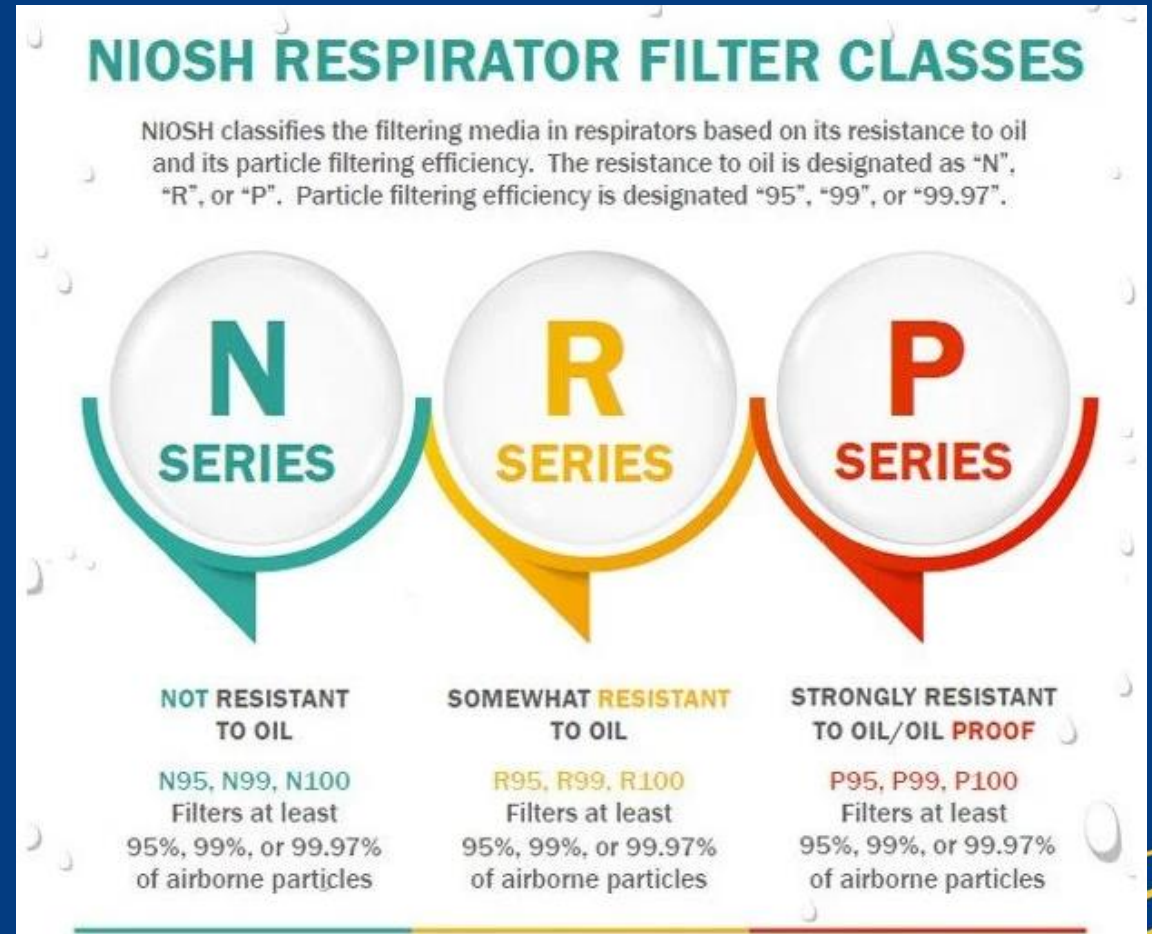


- Allegheny Health Network transitioning to elastomeric respirators
- CDC recommends full-face elastomeric and PAPRs because they also offer eye protection



# Alternative Filtering Facepiece Respirators

- Are not FDA Approved
- Are not tested for fluid resistance to blood
- Should be worn with face shield



**General Use respirator - Wear with  
Faceshield**



**Surgical N-95 – wear with eye  
protection**





- Many filtering facepiece respirators have exhalation valves and should not be used in surgical settings as unfiltered exhaled breath would compromise the sterile field.



# Where can we find general use respirators?

- Work with local and state health departments
- State and Local Labor Councils
- Building Trades/Asbestos Remediators
- Trade Schools
- Tattoo parlors and nail salons
- Manufacturing facilities
- Auto body shops
- Preppers



# NJ Disaster Control Act

- The head of New Jersey's State Police now has the authority to commandeer much-needed medical supplies and equipment from private companies and institutions in the state that have not yet donated it to health-care facilities to combat the coronavirus, under an executive order Gov. Phil Murphy signed Thursday.



The employer has monitored their supply of N95s and prioritized their use according to CDC guidance

- Conventional
- Contingency
- Crisis



# Conventional Capacity

- Ventilation
- Isolation
- Limiting patients and visitors
- Cohorting patients
- Qualitative fit-testing
- General use respirators
- Source control for patients



# Contingency

- Know inventory, supply chain, burn rate
- Communicate with local healthcare coalitions, federal, state, and local public health partners regarding identification of additional supplies
- Suspend annual fit testing
- Extended use of disposable respirators (8-12 hours)



# Crisis

- Know inventory, supply chain, burn rate
- Use of expired respirators
- Decontamination and extended re-use of respirators
- Prioritize use of n-95s and facemasks



# Expired Respirators

- Consideration can be made to use the listed N95s past their manufacturer-designated shelf life when responding to COVID-19.
- Problems with integrity of elastic – effect on face seal
- State of CA found 21 million expired N95 respirators in its emergency stockpile a few weeks ago.





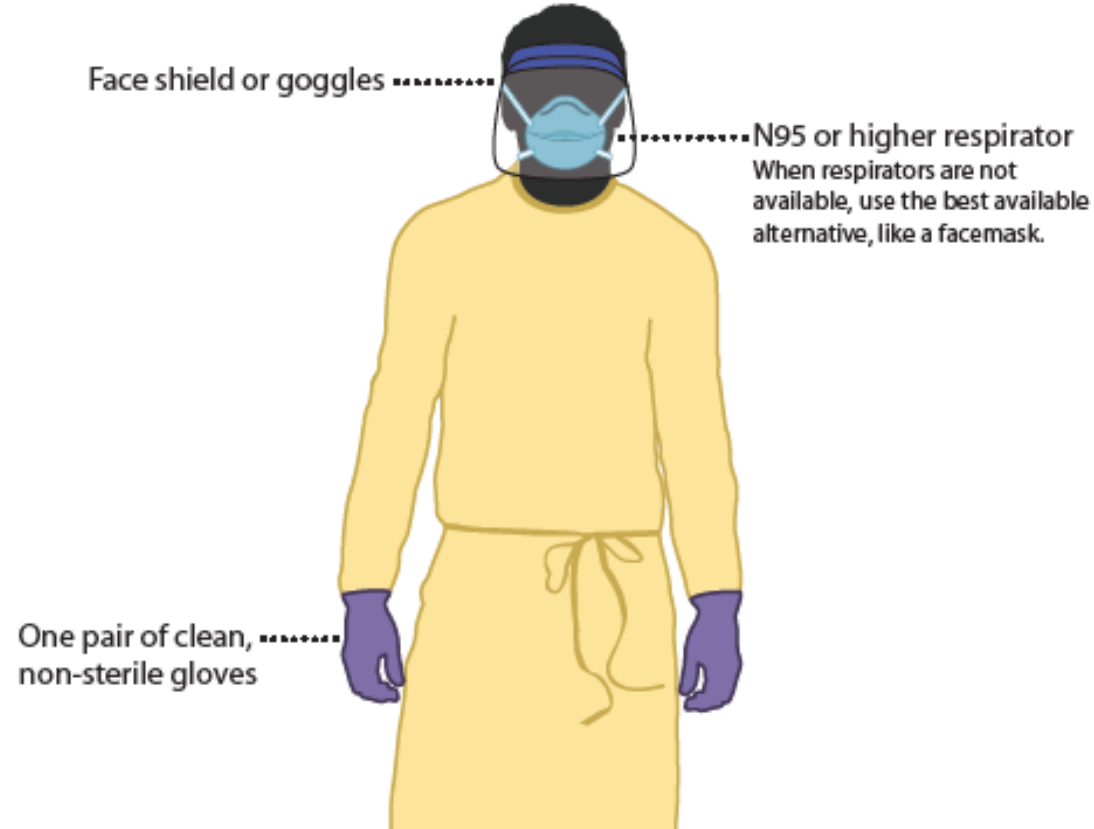
# Respirators that have been tested for integrity beyond expiration date

- 3M 1860
- 3M 1870
- 3M 8210
- 3M 9010
- 3M 8000
- Gerson 1730
- Medline/Alpha Protech
- NON27501
- Moldex 1512
- Moldex 2201



Surgical masks and eye protection (e.g., face shields, goggles) were provided as an interim measure to protect against splashes and large droplets (note: surgical masks are **not** respirators and do not provide protection against aerosol-generating procedures);

**Preferred PPE – Use N95 or Higher Respirator**



**Acceptable Alternative PPE – Use Facemask**





**Surgical Mask**

Cleared by the U.S. Food and Drug Administration (FDA)



**N95 Respirator**

Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84\*



**Elastomeric Half Facepiece Respirator**

Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84



# Effectiveness of surgical masks against influenza bioaerosols. J Hosp Infect. 2013 May

- ***FINDINGS:***
- *Live influenza virus was measurable from the air behind all surgical masks tested.*
- The most important factor in the lack of effectiveness of surgical masks is the lack of a seal.
- Mask material is of secondary importance if there is no seal



This prioritization approach to conservation is intended to be used when N95 respirators are so limited that routinely practiced standards of care for all HCP wearing N95 respirators when caring for a COVID-19 patient are no longer possible. N95 respirators beyond their manufacture-designated shelf life, when available, are preferable to use of facemasks



# FDA Authorized non-NIOSH Respirators

Jurisdiction <sup>7</sup>	Performance Standard	Acceptable product classifications	Standards/ Guidance Documents	Protection Factor $\geq$ 10
Australia	AS/NZS 1716:2012	P3, P2	AS/NZS 1715:2009	YES
Brazil	ABNT/NBR 13698:2011	PFF3, PFF2	Fundacentro CDU 614.894	YES
Europe	EN 149-2001	FFP3, FFP2	EN 529:2005	YES
Japan	JMHLW-2000	DS/DL3 DS/DL2	JIS T8150: 2006	YES
Korea	KMOEL-2017-64	Special 1 <sup>st</sup>	KOSHA GUIDE H-82-2015	YES
Mexico	NOM-116-2009	N100, P100, R100, N99, P99, R99, N95, P95, R95	NOM-116	YES

2. Disposable FFRs which have a marketing authorization in one of the following regulatory jurisdictions:

- European CE Mark
- Australian Register of Therapeutic Goods (ARTG) Certificate of Inclusion
- Health Canada Licence
- Japan Pharmaceuticals and Medical Device (PMDA)/Ministry of Health Labour and Welfare (MHLW)



# NPPTL Respirator Assessments to Support the COVID-19 Response

## International Respirator Assessment Request



# Conservation of PPE in Long Term Care Facilities

- HCW with exposure to Covid+ patients, symptomatic patients, or high risk procedures wear N-95 or comparable, eye protection, gown, gloves
- All HCW wear face mask, eye protection, gown, gloves
- Suspected and confirmed COVID-19 patients wear manufactured face masks
- Patients who have to leave and return to facility wear manufactured face masks
- All patients wear some kind of source control – can be home made fabric mask





# Decontamination and Re-use

- Decontamination and subsequent reuse of FFRs should only be practiced as a crisis capacity strategy.

**COVID N95  
DECON &  
REUSE**



**CAUTION  
WHEN  
REUSING**



# Decontamination and Reuse of Filtering Facepiece Respirators

- Each Health Care Worker receives 5 N-95s in 5 paper bags
- They use one respirator per shift and store it in the bag with the date noted
- There is a minimum of 5-days between the use of each respirator



# Decontamination and Reuse of Filtering Facepiece Respirators

One strategy ... is to issue five respirators to each healthcare worker... The healthcare worker will wear one respirator each day and store it in a breathable paper bag at the end of each shift. The order of FFR use should be repeated with a minimum of five days between each FFR use. This will result in each worker requiring a minimum of five FFRs, providing that they put on, take off, care for them and store them properly each day. Healthcare workers should still treat the FFRs as though they are still contaminated and follow the precautions outlined in our reuse recommendations. If supplies are even more constrained and five respirators are not available for each worker who needs them, FFR decontamination may be necessary.



# Note!

- Respirators for re-use should not be placed in air-tight containers such as ziplock bags as this could promote microbial growth



# Decontamination Methods to Avoid

- Bleach Immersion
- Overnight Storage
- Alcohol
- Soapy Water
- Autoclave
- Dry Heat
- Microwave



# Decontamination Methods that Work

- ultraviolet germicidal irradiation,
- vaporous hydrogen peroxide,
- moist heat



# Nurses: Reuse, decontamination of masks endangers health care workers

*National Nurses United* April 06, 2020



# When No Respirators are Left

- Exclude HCP at higher risk from caring for patients with confirmed or suspected COVID-19 infection
  - older age,
  - those with chronic medical conditions,
  - Pregnant
- Designate HCP who have clinically recovered from COVID-19 to provide care for patients with COVID-19. **Individuals who have recovered from COVID-19 infection may have developed some protective immunity, but this has not yet been proven.**





# When No Respirators are Left

- Use an expedient patient isolation room for risk-reduction
- Use a ventilated headboard to decrease risk of HCP exposure to a patient-generated aerosol



# Ventilated Headboards



# Summary

- Document exposures
- Contact state, local and federal programs
- General use re-usable (elastomeric) and disposable respirators
- Conservation strategies
  - Contingency / Crisis
- Non-NIOSH-approved respirators
- Expired respirators
- Decontaminated Respirators



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