Disinfecting N95 Respirators and other Personal Protective Equipment (PPE): How the Process Works

BIDMC is ensuring that all steps in reprocessing of N95 respirators, surgical masks and other Personal Protective Equipment (PPE) are performed carefully and match or exceed industry standards. A multi-disciplinary team consisting of Environmental Health and Safety (EHS), Facilities, Infection Control, Materials Management, and Central Processing developed a Vaporous Hydrogen Peroxide (VHP) disinfection process aligned with FDA standards as well as practices at other major medical centers throughout the country.

Here’s how previously used N95 respirators and other types of PPE are disinfected for reuse.

1) Used N95 respirators are collected and brought to a lab in the Dana building.

2) Staff members unpack and inspect each item to ensure that it will be able to be disinfected and is appropriate for re-use.

   N95 respirators that have visible make-up or staining, or are torn, deformed or have broken straps are excluded from being reused.

3) N95s deemed reusable are bundled in groups of 15 and placed in bins to be processed for disinfection.

4) Bins containing N95s for reprocessing are transported to a trailer on BIDMC’s campus for disinfection.
5) Items are removed from the bins and placed on lines within the disinfection chamber. All N95s are carefully spaced apart to ensure that all surfaces are adequately disinfected.

6) Bioquell, the disinfection equipment, utilizes hydrogen peroxide vapor to disinfect the respirators and other PPE within the trailer.

   Note: VHP is a very safe process. The only chemical byproducts of VHP reprocessing are water and oxygen.

7) The disinfection process will run for about 8 hours. Timing is based on temperature and humidity during the disinfection cycle to ensure proper saturation of hydrogen peroxide.

   Each disinfection cycle also will be monitored by chemical indicators. If any method does not reach or exceed standards, the entire cycle will be repeated.
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<th>After the disinfection process is complete, PPE items are collected and brought back to the clean processing lab for further inspection.</th>
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<td>Approved N95s are then bundled into packages for redeployment. The boxes of disinfected N95s are stamped with sterilized sticker indicating the date the item was disinfected.</td>
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<td>This unique number is associated with the indicators in the disinfection chamber so we are able to know that the respirators are ready for redeployment.</td>
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