

Briefing Overview and Summary

Reuse of N-95 Masks

Subject: Recommendation For The Re-Use Of N-95 Respirators

Concerns:

1. Current stocks of disposable N-95 respirators will not be sufficient to meet demands within the health care community.
 - a. Increased number of sick individuals;
 - b. Decreased stores and available stock-on-hand;
 - c. Limited production with dependence on international production facilities;
 - d. Production and delivery may be impacted by staff and employee absenteeism;
 - e. The pandemic may result in the prolonged requirement for respiratory protection.

Authors:

1. Dr. Albert Romanosky
2. Dr. Brenda Roup
3. Dr David Blythe
4. Dr. Lucy Wilson
5. Dr. Clifford Mitchell

Date: Created on 30/4/2009 10:31:00

Data Sources:

1. **Institute of Medicine: Reusability of Facemasks During an Influenza Pandemic: Facing the Flu;** Committee on the Development of Reusable Facemasks for Use During an Influenza Pandemic; ISBN: 0-309-66000-9, 106 pages, 6 x 9, (2006); <http://www.nap.edu/catalog/11637.html>
2. **Proposed Guidance on Workplace Stockpiling of Respirators and Facemasks for Pandemic Influenza;** <http://www.osha.gov/dsg/guidance/stockpiling-facemasks-respirators.html>
3. **APIC Position: Reuse of Respiratory Protection in Prevention and Control of Epidemic- and Pandemic-prone Acute Respiratory Diseases (ARD) in Healthcare;** Co-Authored by APIC Public Policy and Emergency Preparedness Committees
4. **CDC/HHS Interim Guidance on Planning for the Use of Surgical Masks and Respirators in Health Care Settings during an Influenza Pandemic October 2006;** <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>

Information and Data:

1. Respirators are not the same as surgical masks.
 - a. *Surgical masks* are loose-fitting and allow air particles to leak in around the edge of the mask.
 - i. They are designed to help keep potentially infectious droplets from being spread by the person wearing them;
 - ii. To keep sprays from coughs and sneezes of others from reaching the mouth and nose of the wearer.
 - iii. They allow leakage around the mask;
 - b. N95 respirators:
 - i. Designed to protect the wearer from breathing in very small particles:
 1. Viruses or bacteria.
 - ii. They fit tightly against the face so that most of the air inhaled goes through the filtering material.
2. The Institute of Medicine committee suggested that, if necessary, a disposable N95 respirator can be reused with the following precautions:
 - a. A protective covering such as a procedure mask with ear loops or a clear plastic face shield should be worn over the respirator to protect it from surface contamination;

For Official Use Only

1

Briefing Overview and Summary

Reuse of N-95 Masks

- b. The respirator should be carefully stored between uses in a receptacle that allows for some breathability; e.g. a paper bag, a plastic container with holes in the top, a closable plastic bag with holes in it.
- c. The wearer should wash his or her hands before and after handling the respirator and the device used to shield it.
- d. These steps are intended for reuse of a respirator by a single person.

Assessment:

1. This is a guidance and for informational purposes.
2. Filtering face piece respirators have been reused during public health crises in resource-limited settings,
 - a. The safety and efficacy of this approach has yet to be confirmed.
 - b. It is not possible to give definitive guidance on the safety or efficacy of reuse or decontamination of disposable respirators.
3. Respirator users should not attempt to disinfect filtering face piece respirators such as N95s;
 - c. It may create a health hazard for the user;
 - i. Reuse may increase the potential for contamination through contact transmission.
 - d. It may render the respirator ineffective in providing respiratory protection.
4. The risk of contaminating the inside of the respirator through improper handling must be weighed against the need to provide respiratory protection.

Recommendations For Reuse Of Respirators, Surgical And Procedure Masks During Periods Of Scarce Resources

1. Do NOT share personal protective equipment.
2. Reuse may be considered but only under conditions where there is a scarcity of resources;
3. *If supplies are limited, use of particulate respirators should be prioritized to staff providing care for patients who are on airborne infection isolation (AII);*

Healthcare Facility Administrative and Environmental Actions to Limit Employee Exposure:

1. *Minimize the demand for respirators by undertaking the following measures:*
 - a. Dedicate entrances and passageways for infectious patients;
 - b. *Reduce Healthcare Worker Exposure:*
 - i. *All patients with symptoms consistent with flu should wear a surgical mask;*
 - ii. Minimize the number of personnel required to come in contact with suspected or confirmed infectious patients,
 1. *Establish cohort unit and limit crossover of staff* from affected units.
 - a. Establish specific wards for patients with infectious conditions;
 2. Assign dedicated staff (e.g., healthcare, housekeeping, custodial) to provide care for infectious patients and restricting those staff from working with non-infectious patients;
 - c. **Cohorting:** *Workers assigned to an infected cohort can keep the device on while in the unit, not removing or manipulating the device*
 - i. Only if patients with flu are cohorted in a common area or in several rooms on a nursing unit, and multiple patients will be visited:
 - ii. It may be practical for a HCW to wear one particulate respirator for the

Briefing Overview and Summary

Reuse of N-95 Masks

duration of the activity (see recommendations below);

- iii. This type of use requires that the respirator is not removed at any time during the activity and that the user does not touch the respirator.
- iv. If the respirator gets wet or dirty with secretions, it must be changed immediately.
- v. Hands should be considered contaminated after contact and hand hygiene should be performed.
- d. Facility areas and staff involved with the high probability of performing aerosol generating procedures:
 - i. When reusable respirators (e.g., elastomeric [rubber], powered air purifying respirators [PAPR]) are used, the reusable elements should be cleaned and disinfected after use, in accordance with manufacturer's recommendations.
 - ii. If reusable respirators are used by more than one individual, filters must be replaced between individual users.
 1. Used filters must be safely discarded.
 - iii. If unavailable, performance of aerosol-generating procedures associated with a documented increased risk of pathogen transmission should be avoided;

Recommendations if re-use of respirators is required or indicated:

1. Any mask which becomes wet should be changed and replaced immediately;
2. Consider wearing a loose-fitting barrier that does not interfere with fit or seal (e.g., surgical mask, face shield) over the respirator.
 - a. A protective covering such as a medical procedure mask with ear loops or a clear plastic face shield should be worn over the respirator to protect it from surface contamination;
 - b. Remove the barrier upon leaving the patient's room and perform hand hygiene.
 - i. Surgical masks should be discarded;
 - ii. Face shields should be cleaned and disinfected.
3. The respirator should be carefully stored between uses;
 - a. In a receptacle that allows for some breathability; e.g. a paper bag, a plastic container with holes in the top, a closable plastic bag with holes in it.
 - b. Consider labeling respirators with a user's name before use to prevent reuse by another individual;
4. The wearer should wash his or her hands before and after handling the respirator and the device used to shield it.
5. These steps are intended for reuse of a respirator by a single person.