

Fri 5/29/2020 5:34 PM

Hello [*Manager Name*],

I hope this message finds you well. Please feel free to forward as you see fit. I'll cut right to the chase... The new mask requirement (attached) is an outright infringement on our civil liberties. I can tell you that I am not the only one that feels this way. I even have a mask that I wear when I feel it necessary to wear at my own discretion, but the idea of being forced to wear a mask or face punitive measures has me dumbfounded.

I'd like to take this opportunity to elaborate on some of the specific concerns that I have:

From the attached “[*Company or Organization Name*] Mask Requirement FAQ”:

5. Why did we wait until now to implement this policy?

a. On April 7, 2020, we informed employees they could bring their own masks to wear onsite while we worked to procure our supply. We also provided DIY instructions from the CDC on how to construct a mask if you were not able to purchase them.

Since March, resources like masks, hand sanitizers, and thermometers have been scarce and difficult to obtain. The pandemic has affected supply chains across the world as everyone scrambles for the same resources. We finally received the proper supplies and are ready to implement the mask distribution as part of our continued efforts to keep you, our customers, and the community safe.

After evaluating the answer provided, additional follow up questions that I have are: Why was the decision made to continue operations without “the proper supplies” from the beginning of the pandemic? For those of us that were required to be here on site, was our personal safety truly not valued? Are we now considering allowing more personnel back on site such as professionals that have previously been working from home? If so, did those professionals have input on the decision to implement this new policy?

I'll also point out that portions of the new policy (or at least the FAQ) are self-conflicting. How can there be an accountability issue for needing a new mask every day when a mask should be discarded before the end of a shift for those of us that work more than 8 hours? At the very least, we should be receiving a new mask every day according to guidelines referenced in the FAQ. Please see below:

From the attached “[*Company or Organization Name*] Mask Requirement FAQ”:

7. If I forget to bring my mask in, will I be issued another one when I arrive? Is there a limit to how many I will be able to get if I forget multiple days?

a. Yes. If you forget your mask, you will be issued another one. Ensuring that we can maintain masks for all site personnel is expensive and masks are hard to obtain. Although there is not a set limit, we are tracking the distribution of

masks. If you continue to forget your mask that is an accountability issue that will be addressed by your manager.

11. Do employees who utilize respirators throughout the day need a fresh mask every time they put on/take off a respirator?

a. Per the guidelines, you should discard the disposable mask if it (1) hinders normal breathing, (2) is dirty, (3) is damaged or (4) it has been used for eight hours.

Additionally, since the CDC is referenced as the authority and basis for a large part of this new policy, I'd like to point out that the CDC also has "Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings" that should also be considered during the implementation of such a policy. This doesn't really apply to a Manufacturing Setting, but then when has a facemask policy ever really applied to our Manufacturing Setting? Certain guidelines shouldn't be ignored while others are followed. All guidelines should be considered. One such guideline suggests that a mask should not be worn more than five times. Please see highlighted portions of the CDC guidance below as items of note:

From the CDC "*Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings*" (this can be found on their website at <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html#respreuse>):

Implementation

The decision to implement policies that permit extended use or limited reuse of N95 respirators should be made by the professionals who manage the institution's respiratory protection program, in consultation with their occupational health and infection control departments with input from the state/local public health departments. The decision to implement these practices should be made on a case by case basis taking into account respiratory pathogen characteristics (e.g., routes of transmission, prevalence of disease in the region, infection attack rate, and severity of illness) and local conditions (e.g., number of disposable N95 respirators available, current respirator usage rate, success of other respirator conservation strategies, etc.). Some healthcare facilities may wish to implement extended use and/or limited reuse before respirator shortages are observed, so that adequate supplies are available during times of peak demand. For non-emergency (routine) situations, current CDC recommendations (6, 9) specific to that pathogen should also be consulted.

The following sections outline specific steps to guide implementation of these recommendations, minimize the challenges caused by extended use and reuse, and to limit risks that could result from these practices.

Respirator Extended Use Recommendations

Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission. Please see the section on [Risks of Extended Use and Reuse of Respirators](#) for more information about contact transmission and other risks involved in these practices.

A key consideration for safe extended use is that the respirator must maintain its fit and function. Workers in other industries routinely use N95 respirators for several hours uninterrupted. Experience in these settings indicates that respirators can function within

their design specifications for 8 hours of continuous or intermittent use. Some research studies (14, 15) have recruited healthcare workers as test subjects and many of those subjects have successfully worn an N95 respirator at work for several hours before they needed to remove them. Thus, the maximum length of continuous use in non-dusty healthcare workplaces is typically dictated by hygienic concerns (e.g., the respirator was discarded because it became contaminated) or practical considerations (e.g., need to use the restroom, meal breaks, etc.), rather than a pre-determined number of hours. If extended use of N95 respirators is permitted, respiratory protection program administrators should ensure adherence to administrative and engineering controls to limit potential N95 respirator surface contamination (e.g., use of barriers to prevent droplet spray contamination) and consider additional training and reminders (e.g., posters) for staff to reinforce the need to minimize unnecessary contact with the respirator surface, strict adherence to hand hygiene practices, and proper Personal Protective Equipment (PPE) donning and doffing technique.(16) Healthcare facilities should develop clearly written procedures to advise staff to take the following steps to reduce contact transmission after donning:

- Discard N95 respirators following use during aerosol generating procedures.
- Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
- Discard N95 respirators following close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions.
- Consider use of a cleanable face shield (preferred³) over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls) to reduce surface contamination.
- Perform hand hygiene with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).

Extended use alone is unlikely to degrade respiratory protection. However, healthcare facilities should develop clearly written procedures to advise staff to:

- Discard any respirator that is obviously damaged or becomes hard to breathe through.

Respirator Reuse Recommendations

There is no way of determining the maximum possible number of safe reuses for an N95 respirator as a generic number to be applied in all cases. Safe N95 reuse is affected by a number of variables that impact respirator function and contamination over time.(18, 19) However, manufacturers of N95 respirators may have specific guidance regarding reuse of their product. The recommendations below are designed to provide practical advice so that N95 respirators are discarded before they become a significant risk for contact transmission or their functionality is reduced.

If reuse of N95 respirators is permitted, respiratory protection program administrators should ensure adherence to administrative and engineering controls to limit potential N95 respirator surface contamination (e.g., use of barriers to prevent droplet spray contamination) and consider additional training and/or reminders (e.g., posters) for staff to reinforce the need to minimize unnecessary contact with the respirator surface, strict adherence to hand hygiene practices, and proper PPE donning and doffing technique, including physical inspection and performing a user seal check.(16) Healthcare facilities

should develop clearly written procedures to advise staff to take the following steps to reduce contact transmission:

- Discard N95 respirators following use during aerosol generating procedures.
- Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
- Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions.
- Consider use of a cleanable face shield (preferred³) over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls), when feasible to reduce surface contamination of the respirator.
- Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so that they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.
- Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).
- Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, discard the respirator and perform hand hygiene as described above.
- Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Discard gloves after the N95 respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.

To reduce the chances of decreased protection caused by a loss of respirator functionality, respiratory protection program managers should consult with the respirator manufacturer regarding the maximum number of donnings or uses they recommend for the N95 respirator model(s) used in that facility. If no manufacturer guidance is available, preliminary data(19, 20) suggests limiting the number of reuses to no more than five uses per device to ensure an adequate safety margin. Management should consider additional training and/or reminders for users to reinforce the need for proper respirator donning techniques including inspection of the device for physical damage (e.g., Are the straps stretched out so much that they no longer provide enough tension for the respirator to seal to the face?, Is the nosepiece or other fit enhancements broken?, etc.). Healthcare facilities should provide staff clearly written procedures to:

- Follow the manufacturer's user instructions, including conducting a user seal check.
- Follow the employer's maximum number of donnings (or up to five if the manufacturer does not provide a recommendation) and recommended inspection procedures.
- Discard any respirator that is obviously damaged or becomes hard to breathe through.
- Pack or store respirators between uses so that they do not become damaged or deformed.

Secondary exposures can occur from respirator reuse if respirators are shared among users and at least one of the users is infectious (symptomatic or asymptomatic). Thus, N95 respirators must only be used by a single wearer. To prevent inadvertent sharing of

respirators, healthcare facilities should develop clearly written procedures to inform users to:

- Label containers used for storing respirators or label the respirator itself (e.g., on the straps(11)) between uses with the user's name to reduce accidental usage of another person's respirator.

Risks of Extended Use and Reuse of Respirators

Although extended use and reuse of respirators have the potential benefit of conserving limited supplies of disposable N95 respirators, concerns about these practices have been raised. Some devices have not been FDA-cleared for reuse(21). Some manufacturers' product user instructions recommend discard after each use (i.e., "for single use only"), while others allow reuse if permitted by infection control policy of the facility.(19) The most significant risk is of contact transmission from touching the surface of the contaminated respirator. One study found that nurses averaged 25 touches per shift to their face, eyes, or N95 respirator during extended use.(15) Contact transmission occurs through direct contact with others as well as through indirect contact by touching and contaminating surfaces that are then touched by other people.

Respiratory pathogens on the respirator surface can potentially be transferred by touch to the wearer's hands and thus risk causing infection through subsequent touching of the mucous membranes of the face (i.e., self-inoculation). While studies have shown that some respiratory pathogens (22-24) remain infectious on respirator surfaces for extended periods of time, in microbial transfer (25-27) and reaerosolization studies (28-32) more than ~99.8% have remained trapped on the respirator after handling or following simulated cough or sneeze.

Respirators might also become contaminated with other pathogens acquired from patients who are co-infected with common healthcare pathogens that have prolonged environmental survival (e.g., methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant enterococci, *Clostridium difficile*, norovirus, etc.). These organisms could then contaminate the hands of the wearer, and in turn be transmitted via self-inoculation or to others via direct or indirect contact transmission.

The risks of contact transmission when implementing extended use and reuse can be affected by the types of medical procedures being performed and the use of effective engineering and administrative controls, which affect how much a respirator becomes contaminated by droplet sprays or deposition of aerosolized particles. For example, aerosol generating medical procedures such as bronchoscopies, sputum induction, or endotracheal intubation, are likely to cause higher levels of respirator surface contamination, while source control of patients (e.g. asking patients to wear facemasks), use of a face shield over the disposable N95 respirator, or use of engineering controls such as local exhaust ventilation are likely to reduce the levels of respirator surface contamination.(18)

While contact transmission caused by touching a contaminated respirator has been identified as the primary hazard of extended use and reuse of respirators, other concerns have been assessed, such as a reduction in the respirator's ability to protect the wearer caused by rough handling or excessive reuse.(19, 20) Extended use can cause additional discomfort to wearers from wearing the respirator longer than usual.(14, 15) However, this practice should be tolerable and should not be a health risk to medically cleared respirator users.(19)

References

1. Murray, M., J. Grant, E. Bryce, P. Chilton, and L. Forrester: Facial protective equipment, personnel, and pandemics: impact of the pandemic (H1N1) 2009 virus on personnel and use of facial protective equipment. *Infection Control and Hospital Epidemiology* 31(10): 1011-1016 (2010).
2. Beckman, S., B. Materna, S. Goldmacher, J. Zipprich, M. D'Alessandro, D. Novak et al.: Evaluation of respiratory protection programs and practices in California hospitals during the 2009-2010 H1N1 influenza pandemic. *American Journal of Infection Control* 41(11): 1024-1031 (2013).
3. Hines, L., E. Rees, and N. Pavelchak: Respiratory protection policies and practices among the health care workforce exposed to influenza in New York State: Evaluating emergency preparedness for the next pandemic. *American Journal of Infection Control* (2014).
4. Srinivasan, A., D.B. Jernign, L. Liedtke, and L. Strausbaugh: Hospital preparedness for severe acute respiratory syndrome in the United States: views from a national survey of infectious diseases consultants. *Clinical Infectious Diseases* 39(2): 272-274 (2004).
5. OSHA: "Enforcement procedures and scheduling for occupational exposure to tuberculosis." [Online] Available at https://www.osha.gov/pls/oshaweb/owadis.show_document?p_table=DIRECTIVES&p_id=1586external icon, 1996).
6. Siegel, J.D., E. Rhinehart, M. Jackson, and L. Chiarello: "2007 Guideline for isolation precautions: preventing transmission of infectious agents in health care settings." [Online] Available at <https://www.cdc.gov/hicpac/pdf/isolation/isolation2007.pdf>pdf icon, 2007).
7. CDC: "Guidelines for preventing the transmission of Mycobacterium tuberculosis in health care facilities." [Online] Available at <https://www.cdc.gov/mmwr/pdf/rr/rr4313.pdf>pdf icon, 1994).
8. Bollinger, N., J. Bryant, W. Ruch, J. Flesch, E. Petsonk, T. Hodous et al.: "TB Respiratory Protection Program in Health Care Facilities, Administrator's Guide." [Online] Available at <https://www.cdc.gov/niosh/docs/99-143/>, 1999).
9. Jensen, P., L. Lambert, M. Iademarco, and R. Ridzon: "Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005." [Online] Available at <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm>, 2005).
10. CDC: "Questions and Answers Regarding Respiratory Protection For Preventing 2009 H1N1 Influenza Among Healthcare Personnel" [Online] Available at https://www.cdc.gov/h1n1flu/guidelines_infection_control_qa.htm, 2010).
11. Rebmann, T., S. Alexander, T. Cain, B. Citarella, M. Cloughessy, and B. Coll "APIC position paper: extending the use and/or reusing respiratory protection in healthcare settings during disasters." [Online] Available at http://www.apic.org/Resource_/TinyMceFileManager/Advocacy-PDFs/APIC_Position_Ext_the_Use_and_or_Reus_Resp_Prot_in_Hlthcare_Settings12091.pdfpdf iconexternal icon, 2009).
12. IOM: *Reusability of facemasks during an influenza pandemic: facing the flu*. Washington, D.C.: National Academies Press, 2006.

13. Lin, C.S.: "FDA Regulation of Surgical Masks and Respirators." [Online] Available at <http://www.iom.edu/~media/Files/ActivityFiles/PublicHealth/ReusableFluMasks/FDAPresentation12306.ashxexternal icon>, 2006).
14. Radonovich Jr, L.J., J. Cheng, B.V. Shenal, M. Hodgson, and B.S. Bender: Respirator tolerance in health care workers. *JAMA: The Journal of the American Medical Association* 301(1): 36-38 (2009).
15. Rebmann, T., R. Carrico, and J. Wang: Physiologic and other effects and compliance with long-term respirator use among medical intensive care unit nurses. *American Journal of Infection Control* 41(12): 1218-1223 (2013).
16. CDC: "Sequence for donning personal protective equipment PPE/Sequence for removing personal protective equipment." [Online] Available at <https://www.cdc.gov/HAI/pdfs/ppe/ppeposter148.pdfpdf icon>
17. Roberge, R.J.: Effect of surgical masks worn concurrently over N95 filtering facepiece respirators: extended service life versus increased user burden. *Journal of Public Health Management and Practice : JPHMP* 14(2): E19-26 (2008).
18. Fisher, E.M., J.D. Noti, W.G. Lindsley, F.M. Blachere, and R.E. Shaffer: Validation and Application of Models to Predict Facemask Influenza Contamination in Healthcare Settings. *Risk Analysis* in press(2014).
19. Fisher, E.M., and R.E. Shaffer: Considerations for Recommending Extended Use and Limited Reuse of Filtering Facepiece Respirators in Healthcare Settings *Journal of Occupational and Environmental Hygiene*: (in press) (2014).
20. Bergman, M.S., D.J. Viscusi, Z. Zhuang, A.J. Palmiero, J.B. Powell, and R.E. Shaffer: Impact of multiple consecutive donnings on filtering facepiece respirator fit. *American Journal of Infection Control* 40(4): 375-380 (2012).
21. FDA: "510(k) Premarket Notification." [Online] Available at <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmn.cfmexternal icon>, 2014).
22. Casanova, L., W.A. Rutala, D.J. Weber, and M.D. Sobsey: Coronavirus survival on healthcare personal protective equipment. *Infection Control and Hospital Epidemiology* 31(5): 560-561 (2010).
23. Coulliette, A., K. Perry, J. Edwards, and J. Noble-Wang: Persistence of the 2009 Pandemic Influenza A (H1N1) Virus on N95 Respirators. *Applied and Environmental Microbiology* 79(7): 2148-2155 (2013).
24. Fisher, E.M., and R.E. Shaffer: Survival of bacteriophage MS2 on filtering facepiece respirator coupons. *Applied Biosafety: Journal of the American Biological Safety Association* 15(2): 71 (2010).
25. Lopez, G.U., C.P. Gerba, A.H. Tamimi, M. Kitajima, S.L. Maxwell, and J.B. Rose: Transfer Efficiency of Bacteria and Viruses from Porous and Nonporous Fomites to Fingers under Different Relative Humidity Conditions. *Applied and Environmental Microbiology* 79(18): 5728-5734 (2013).
26. Fisher, E.M., C.M. Ylitalo, N. Stepanova, and R.E. Shaffer: Assessing Filtering Facepiece Respirator Contamination During Patient Care in Flu Season: Experimental and Modeling Approaches. In ISRP — Sixteenth International Conference: A Global View on Respiratory Protection. Boston, 2012.

27. Rusin, P., S. Maxwell, and C. Gerba: Comparative surface-to-hand and fingertip-to-mouth transfer efficiency of gram-positive bacteria, gram-negative bacteria, and phage. *Journal of Applied Microbiology* 93(4): 585-592 (2002).
28. Fisher, E.M., A.W. Richardson, S.D. Harpest, K.C. Hofacre, and R.E. Shaffer: Reaerosolization of MS2 bacteriophage from an N95 filtering facepiece respirator by simulated coughing. *Annals of Occupational Hygiene* 56(3): 315-325 (2012).
29. Birkner, J.S., D. Fung, W.C. Hinds, and N.J. Kennedy: Particle release from respirators, part I: determination of the effect of particle size, drop height, and load. *Journal of Occupational and Environmental Hygiene* 8(1): 1-9 (2011).
30. Kennedy, N.J., and W.C. Hinds: Release of simulated anthrax particles from disposable respirators. *Journal of Occupational and Environmental Hygiene* 1(1): 7-10 (2004).
31. Qian, Y., K. Willeke, S.A. Grinshpun, and J. Donnelly: Performance of N95 respirators: reaerosolization of bacteria and solid particles. *American Industrial Hygiene Association Journal* 58(12): 876-880 (1997).
32. Willeke, K., and Y. Qian: Tuberculosis control through respirator wear: performance of National Institute for Occupational Safety and Health-regulated respirators. *American Journal of Infection Control* 26(2): 139-142 (1998).

Please note that I took the time to pull this information together on my regularly scheduled day off. It is clear to me that this policy was rushed, and I can only assume it is driven by a certain amount of fear. For those of us that have been working on site for the past three months, we've already had to confront that fear. Thankfully, this pandemic has not been what the experts said it would be, and we are all ready to get back to our normal lives and routines. Making the masks available to all employees and implementing a voluntary policy would have made much more sense, and likely would have resulted in most employees wearing the masks. At the end of the day, I don't agree with this policy. I just hope that I have been able to convey the frustrations that we are experiencing from having a policy like this forced on us after three months of uncertainty, when the feeling is that we are finally beginning to emerge from this COVID scare.

Sincerely,

Brent S. Jeffcoat