CHRISTUS Health®

Title: COVID-19 N95 Respirator and Medical Mask Extended Use and Reuse Guidelines	Policy Number: 3.411	
Approved by: Chief Clinical Officer	Created: 03/2020	Revised/ Reviewed: 3/16/2020

CHRISTUS Health Clinical Guidelines

I. **KEY WORDS:** Isolation, Airborne, N95, Respirator, Extended, Reuse, Mask, COVID, COVID-19

II. **OBJECTIVE/S:** Supplies of N95 respirators and medical masks can become depleted during supply shortages, recalls, an influenza pandemic, or widespread outbreaks of other infectious respiratory illnesses. Existing CDC and FDA guidelines recommend a combination of approaches to conserve supplies while safeguarding health care workers in such circumstances.

III. **POLICY STATEMENT**: CHRISTUS Health is committed to protecting our Associates from exposures to infectious diseases by providing appropriate personal protective equipment, when caring for infectious patients. During times of shortages to our PPE supplies, measures are required to conserve and extend our resources. This guideline specifically addresses processes needed for implementation when conservation of N95 respirators and/or medical masks is needed.

IV. **DEFINITIONS:**

N95 Respirator - a respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The 'N95' designation means that when subjected to careful testing, the respirator blocks at least 95 percent of very small (0.3 micron) test particles

Medical Masks – Surgical, procedural, or isolation masks that are flat or pleated and are affixed to the head with straps or loops

Extended Use - Refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the respirator between patient encounters

Reuse - Refers to the practice of using the same N95 respirator for multiple encounters with patients but removing it ('doffing') after each encounter

Close contact - being within approximately 6 feet (2 meters) of a patient for a prolonged period of time or having direct contact with infectious secretions of a patient

Aerosol-generating procedure - Procedures that are believed to generate aerosols and droplets as a source of respiratory pathogens; examples include, but are not limited to high flow oxygen, positive pressure ventilation (BiPAP and CPAP), endotracheal intubation, airway suction, high frequency oscillatory ventilation, tracheostomy, chest physiotherapy, nebulizer treatment, sputum induction,

and bronchoscopy. Collection of oropharyngeal and nasopharyngeal swabs should also be considered under this category.

V. **PROCESS OR PROCEDURES:**

The initiation of extended use or limited reuse of N95 respirators or medical masks shall be made in consultation with the ministry's respiratory protection program, including ministry infection prevention, occupational health, and executive leadership, along with CHRISTUS system leaders as needed. The decision to implement and discontinue these practices should be made on a situational basis taking into account respiratory disease epidemic/pandemic potential, 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 or medical masks available, etc.). In the event that the implementation of these guidelines are needed, individual components or sections may be implemented or, if needed, the entirety of the actions.

Consideration to implement extended use and/or limited reuse before shortages of supplies may be necessary before shortages of supplies are identified to ensure adequate supplies are available at times of greatest need.

1. The removal of facial hair is required for Associates with facial hair who are assigned to any airborne isolation patient if it is determined that alternatives (e.g. CAPR, PAPR) to N95 respirators are being strictly reserved for aerosol-generating procedures. Facial hair prevents N95 respirators from sealing properly against the skin and increased exposure the wearer to airborne pathogens.
2. All patients presenting with any respiratory symptom and/or fever will be provided with a medical mask immediately upon identification of symptoms. The patient will be moved away from the general visiting population and into a room as soon as possible.
   A. Once in the room, droplet and contact isolation with eye protection will be initiated.
   B. This isolation will be maintained throughout visit until all viral etiologies, including COVID-19, are ruled out.
   C. Patients positive for COVID-19 will be maintained under droplet and contact isolation with eye protection.
   D. N95 respirators and alternatives (e.g. PAPR, CAPR) are to be reserved for use during aerosol-generating procedures.
3. During times of routine availability, N95 respirators and medical masks should only be used by Associates when caring for patients requiring Airborne or Droplet Isolation in accordance with CDC Appendix A Isolation Guidelines or other environmental circumstances where respiratory protection is needed.

A. N95 respirators should never be provided to or worn by patients.
B. Airborne Isolation discontinuation should be determined in coordination with Infection Prevention to ensure discontinuation is appropriate and correct discontinuation steps are followed.
C. Associates should only wear medical masks as dictated by standard and transmission based isolation policies. The routine wearing of surgical masks when unnecessary is highly discouraged.

4. Specific situations warranting activation of this guideline in part or whole may include, but are not limited to:
   A. Disruption of supply of N95 respirators or medical masks, regardless of cause, creating a shortage or the possibility of a shortage of product available for use within the ministry.
   B. Product recalls resulting in temporary large loss of inventory
   C. Influx of patients requiring Airborne Isolation resulting in quick depletion of normal supply levels if used as normal
5. **N95 Respirators -** Upon activation of this guideline due to shortage of N95 respirators
   A. N95 respirators should be reserved, as much as possible, for use during aerosol-generating procedures. Examples include, but are not limited to:
      i. High flow oxygen
      ii. Positive pressure ventilation (BiPAP and CPAP)
      iii. Endotracheal intubation
      iv. Airway suction
      v. High frequency oscillatory ventilation
      vi. Tracheostomy
      vii. Chest physiotherapy
      viii. Nebulizer treatment
      ix. Sputum inductionB
      x. Bronchoscopy
      xi. Collection of oropharyngeal and nasopharyngeal swabs
   B. Materials Management in coordination with Infection Prevention and Ministry Leadership will determine clinical locations of highest need for immediate access to N95 respirators.
   C. N95 respirators stored in supply rooms outside of these areas will be moved to controlled storage by Materials Management.

i. If N95 respirators are needed outside of identified high risk areas, they will be provided in limited supply by Materials Management as needed with guidance from Infection Prevention regarding appropriateness of requested need

ii. N95 respirators will only be provided to Associates when caring for patients confirmed as needing Airborne Isolation in accordance with the CDC Appendix A Isolation Guidelines.

iii. Par levels in areas identified as high risk for immediate use will be monitored closely by Materials Management to ensure overuse is not occurring and appropriate quantities of supplies are available.

D. Associates requiring N95 respirator use while caring for a patient will be directed to not discard their mask after each use.

i. Respirators can function as designed for up to 8 hours of continuous use, up to 12 hours of intermittent extended use, or up to five reuses.

ii. Respirators will be discarded if:

a. Used during an aerosol generating procedure

b. Contaminated with blood, respiratory, or nasal secretions, or other bodily fluid from patients

c. Following close contact with any patient co-infected with an infectious disease requiring contact precautions.

1. Examples of close, prolonged contact may include:

a) Providing patient bath or changing linens

b) Performing the insertion of a Foley catheter or intravenous catheter

c) Assisting in ambulating a patient around their room

d) Manually obtaining vitals

2. The following are not examples of close, prolonged contact:

a) Standing in the room at a distance from the patient discussing their status

b) Hanging medication while not coming into contact with patient

3. If respirator is contacted by contaminated gloves after contact with the patient or environment of a Contact Isolation, the mask must be discarded

d. Visibly damaged, seal/fit is compromised, or the mask becomes difficult to breathe through

iii. Associates must perform hand hygiene with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator.

iv. Associates may be encouraged to use face shields or other engineering controls to limit respirator surface contamination.

v. Implementing extended use or limited reuse strategies, or a combination of both, will be determined by assessing the specific risks of the situation by a multidisciplinary team including Infection Prevention, Materials Management, clinical leadership, and executive leadership.

   a. Extended use implementation should only be considered for Associates who are cohorted to Airborne Isolation patients due to the same illness.

vi. If extended use of N95 respirators is implemented

   a. Associates will be advised to not touch the exterior of their respirator in order to avoid contaminating hands. If the exterior is touched, hand hygiene must be immediately performed.

   b. Associates will be given the ability to monitor their mental and physical needs and will be given the latitude to take breaks from wearing the mask as determined by their own need. Prolonged breathing through N95 respirators can be physically and mentally taxing.

   c. Whenever an Associate removes their respirators, they should either discard it or follow the reuse guidelines below. Perform hand hygiene after removing the respirator.

vii. If limited reuse of N95 respirators is implemented

   a. N95 respirators must only be used by a single wearer. They may not be shared between Associates.

   b. Between uses, respirators shall be stored and labeled in a manner that clearly identifies the wearer.

   c. Between uses, respirators shall be stored in a manner that prevents damage, deformation, or contamination. Used respirators should not come into contact with other used respirators.

      1. Storage may not occur inside of the patient room.

      2. If hanging, hang so respirators do not touch.

      3. If bagging or placing in a container, place respirators in separate clean, breathable bag/container. Do not store multiple respirators in a single bag/container.

a) The preferred method for storage is in a clean, labeled paper bag. Other products can be used if this is not available.

b) A new bag should be used with a new respirator. Discard used bag and no not reuse.

c) Reusable containers should be cleaned and disinfected at least once per shift or prior to a new respirator being stored in it.

d. Evaluation of fit and integrity of the N95 respirator should be assessed by Associate every time the mask is donned. Evaluation should include, but is not limited to, the tightness of straps to maintain proper seal and/or the integrity of the nosepiece.

E. Routine/annual fit testing procedures may be modified or suspended as determined by multidisciplinary evaluation

i. Just-in-time fit testing may be needed to preserve supplies.

ii. All Associates undergoing fit testing will be provided with the respirator they were fitted to for clinical use upon next determined need.

iii. Respirators used during fit testing will only be discarded if used for testing but determined to not fit the Associate, if damaged, or if contaminated during testing.

iv. Quantitative fit testing, using devices that puncture the mask to measure pressures during testing, should be discontinued in favor of qualitative methods using, for example, aerosolized sugar water to test for fit. Any respirators used during quantitative testing must be discarded after the test.

v. Fit testing processes of new hires should be assessed through risk assessment to determine if there are units or roles who should be fit tested at hire versus just-in-time. Those at high risk for coming in contact with respiratory contagions (e.g. ER staff, respiratory therapists, ICU staff) may still require fit testing before starting work.

F. Environmental Services (EVS) Associates will perform discharge terminal cleaning on Airborne Isolation rooms after the room is left to sit empty for one hour to allow for proper air exchanges to remove airborne particulates.

i. After the hour, EVS may terminally clean room without wearing an N95 respirator. If Contact Isolation was being used in the room, EVS will still be required to use isolation gowns and gloves during terminal cleaning.

6. **Medical Masks** - Upon activation of this guideline due to shortage of medical masks

A. Materials Management in coordination with Infection Prevention and Ministry Leadership will determine clinical locations of highest need for immediate access to medical masks.

i. Medical masks used in surgical areas or procedural areas are exempt from these guidelines and should not be considered for extended use.

B. Medical masks stored in supply rooms outside of these areas will be either limited on volume or moved to controlled storage by Materials Management.
    i. If medical masks moved under Material Management control are needed outside of identified high risk areas, they will be provided in limited supply by Materials Management as needed with guidance from Infection Prevention regarding appropriateness of requested need
    ii. N95 respirators will only be provided to Associates when caring for patients confirmed as needing Airborne Isolation in accordance with the CDC Appendix A Isolation Guidelines.
    iii. Par levels in areas with available medical mask supply will be monitored closely by Materials Management to ensure overuse is not occurring and appropriate quantities of supplies are available.

C. All locations where medical masks are available to the public (e.g. Cover your Cough stations in ER, other mask stands, etc.) should be identified and reviewed for appropriateness of need. In order to keep individuals from collecting more masks than immediately needed, stations should:
    i. Be moved adjacent to desks or locations that are continually manned by a CHRISTUS Associate who can ensure only individuals needing a mask are taking a mask, and that only one mask is being taken per individual.
    ii. Masks may be completely removed from the station and allocated only by the Associate as requested. Signage may be placed on the station to alert individuals to ask for a mask if needed.

D. Medical masks may not be reused once they are worn and removed due to risk of contamination of the inside of the mask. Once removed, medical masks must be immediately discarded into normal trash.

E. Conservation of medical masks may be accomplished by the following in order of preference:
    i. Provide medical mask to patient in Droplet Isolation for their own use. If patient can tolerate wearing mask while hospitalized, Associates will not be required to wear a mask upon room entry.
        a. If any care is given while patient is unable to maintain mask (e.g. oral care, suctioning, swallow studies), Associate will be required to wear a medical mask during care
        b. Patients will be educated on proper mask use by their nurse.
        c. If mask becomes compromised or damaged, a new mask will be provided to the patient
    ii. If patient is unable to tolerate wearing a medical mask or is non-compliant with usage, Associates may utilize extended use practices as described below.

a. If possible, Associates should be cohorted to patients under Droplet Isolation. If cohorting is not feasible, extended use of medical masks may still be utilized.

b. Associates will be provided a single medical mask for use throughout their work. Once the mask is placed on the face, the mask will remain worn until:

1. Visibly soiled, damaged, torn, or otherwise compromised
2. Associate leaves their unit either during their shift or at the end of their shift
3. Mask must be discarded whenever removed from the face
4. A new mask will be worn after discarding at the time of next exposure to Droplet patient

c. Associates must perform hand hygiene using soap and water or alcohol-based hand sanitizer before and after donning medical mask.

d. Associates will be instructed to not touch the outside of the mask due to risk of contaminating hands. Hand hygiene must be performed immediately after touching the outside of a mask being worn.

F. Associates entering Droplet Isolation rooms when the patient is not present will not be required to wear a medical mask. This includes Environmental Services Associates performing room cleaning after discharge.

7. Processes should be implemented to limit patient contact

i. Only Associates and physicians providing direct patient care should enter Airborne or Droplet Isolation rooms.

ii. Meal trays will be delivered by clinical Associate caring for the patient during that shift. Food and Nutrition Staff should not enter Airborne or Droplet Isolation patient rooms

iii. Visitation should be significantly restricted or prohibited.

a. Visitors of patients under Droplet Isolation will be asked to wear a medical mask, if the patient is not wearing a medical mask, while in the patient room.

b. Under circumstances where visitation is allowed under Airborne Isolation (e.g. parent of a child, end of life situations),lis31426 visitors will be directed on the use of N95 respirators and will be guided to follow all extended use or reuse processes.

4. Unused, expired N95 respirators and medical masks will not be discarded, but stored by Materials Management for potential use. Use of expired respirators or masks will only be as directed by Infection Prevention and Ministry leaders is accordance with manufacturer and public health guidance.

VI. REGULATIONS/REQUIREMENTS: None

VII. RELATED POLICIES: *Standard precautions, transmission based precautions, influx, respiratory protection plan*

VIII. REFERENCES:

CDC Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings: https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html

CDC Strategies for Optimizing the Supply of N95 Respirators: https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html

CDC Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007): https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/index.html

FDA Masks and N95 Respirators: https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/masks-and-n95-respirators#s2

WHO advise on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus (2019-nCoV) outbreak: https://www.who.int/docs/default-source/documents/advice-on-the-use-of-masks-2019-ncov.pdf

IX. OFFICE OF PRIMARY RESPONSIBILITY: Clinical Excellence Division

Approved by:

Dr. Sam Bagchi
Executive Vice President & Chief Clinical Officer

3/16/2020
Date