NORTH Dakota | Health & Human Services
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Preventing Transmission During Aerosol Generating and Other Procedures

Some procedures performed on residents are more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. These aerosol generating procedures (AGPs) potentially put healthcare personnel (HCP) and others at an increased risk for pathogen exposure and infection. These aerosols may remain suspended in the air for hours following the procedure. This document provides guidance on preventing transmission of SARS-CoV-2 and influenza during AGPs and following AGPs when potentially infectious particles remain suspended in the air. Healthcare settings may consider these recommendations during outbreaks of other respiratory viral infections such as RSV, adenovirus, rhinovirus, etc.

HCP should follow:

- Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic
- Prevention Strategies for Seasonal Influenza in Healthcare Settings | CDC

Infection Prevention During Aerosol Generating Procedures

To protect the health and safety of healthcare personnel, if an AGP is performed on a resident during an outbreak, with symptomatic, suspected, and COVID-19 positive residents, with all suspected or confirmed influenza positive residents, or if community transmission is high, the following should occur:

- HCP should adhere to standard precautions, including wearing gloves, a gown, and either a face shield that fully covers the front and sides of the face or goggles.
- HCP in the room (or resident care area) should wear a NIOSH approved N95 or equivalent or higher-level respirator, eye protection, gloves, and a gown.
- The number of HCP present during the procedure should be limited to only those essential for resident care and procedure support. Visitors should not be present for the procedure.
- The door to the room should remain closed during the procedure and for the lengths of time indicated in the next section following the AGP.

Infection Prevention Following the Aerosol Generating Procedure

Because potentially infectious aerosols may remain suspended in the air following an AGP, facilities should take additional measures to reduce the risk of transmission following the AGP.

- Anyone entering the room or resident care area following the procedure must wear a NIOSH approved N95 or equivalent or better respirator.
- The door to the room where the AGP was performed should remain closed unless exemption criteria as detailed below are met.
    - If a facility knows the ventilation and filtration rate of the room, it may use CDC's clearance rates under differing ventilation conditions to determine the time a room should stay closed following the procedure.
        - One hour is sufficient in clinical space constructed under NDHHS clinical facility requirements (6 air changes per hour).
        - 15 minutes is sufficient in an airborne infection isolation room (AIIR).
    - On average, if facility has 12 air changes per hour (ACH) 30 minutes is sufficient. If less exchanges, consider longer period of time. See table Airborne Contaminates Removal.
    - Non-HCP (patients, residents, visitor, etc.) should not enter following the AGP until the clearance time per one of the above criteria has been met.
- Clean and disinfect room surfaces promptly after the allotted time using a disinfectant from the Environmental Protection Agency's (EPA) List N.

Healthcare Personnel Exemptions to Respirator Use Following an Aerosol Generating Procedure

Healthcare facilities and settings can implement specific risk mitigation measures that would exempt HCP from the requirement to wear a NIOSH approved N95 or other respirator in the area following the AGP.

- The facility is NOT experiencing a respiratory outbreak,
  AND
- The resident on whom the AGP is performed has not had any known exposures to COVID-19, influenza or other respiratory illnesses in the past 7 days,
  AND
- The resident on whom the AGP is performed has no new onset of symptoms, and is not known or suspected to be COVID-19 or influenza positive

Aerosol-generating procedures

Development of a comprehensive list of AGPs for healthcare settings has not been possible, due to limitations in available data on which procedures may generate potentially infectious aerosols and the challenges in determining if reported transmissions during AGPs are due to aerosols or other exposures.

- There is neither expert consensus, nor sufficient supporting data, to create a definitive and comprehensive list of AGPs for healthcare settings.
- Some procedures performed on patients/residents are more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. These aerosol generating procedures (AGPs) potentially put healthcare personnel and others at an increased risk for pathogen exposure and infection.

Commonly performed medical procedures that are often considered AGPs, or that might create uncontrolled respiratory secretions, include:

- open suctioning of airways
- sputum induction
- cardiopulmonary resuscitation
- endotracheal intubation and extubation
- non-invasive ventilation (e.g., BiPAP, CPAP)
- bronchoscopy
- manual ventilation

Based on limited available data, it is uncertain whether aerosols generated from some procedures may be infectious, such as:

- nebulizer administration*
- high flow O2 delivery

*Aerosols generated by nebulizers are derived from medication in the nebulizer. It is uncertain whether potential associations between performing this common procedure and increased risk of infection might be due to aerosols generated by the procedure or due to increased contact between those administering the nebulized medication and infected patients. For the purposes of this guidance, nebulizer administration should be considered an aerosol generating procedure.

Airborne Contaminant Removal

- Air changes/hour (ACH) and time required for airborne-contaminant removal (clearance) by efficiency.

ACH	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
2	138	207
4	69	104
6	46	69
8	35	52
10	28	41
12	23	35
15	18	28
20	14	21
50	6	8

Air | Appendix | Environmental Guidelines | Guidelines Library | Infection Control | CDC

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