Purpose	This guidance describes current recommendations for patients undergoing aerosol-generating procedures (AGP) and how to prioritize the use of Airborne Infection Isolation Rooms (AIIRs). **Please note, all guidance is subject to change as additional information becomes available.**
Scope	All NYC Health + Hospitals Health System Healthcare Personnel
Requirements	Centers for Disease Control and Prevention (CDC) New York State Department of Health (NYSDOH)
Aerosol Generating Procedures (AGP	The list of AGPs will be assessed on a regular basis for inclusion or exclusion of procedures.

- Airway Surgeries (e.g., ENT, thoracic, transsphenoidal surgeries)
- Endotracheal Intubation
- Endotracheal Extubation
- Cardiopulmonary resuscitation (Chest Compressions)
- Nebulization
- High flow oxygen, including nasal cannula, at >15L
- Non-invasive positive pressure ventilation (e.g., CPAP, BIPAP)
- Oscillatory ventilation
- Bronchoscopy
- Sputum induction
- Pulmonary function testing
- Activities where patient is breathing heavy or coughing and not consistently wearing a face mask, such as:
  - Exercise stress test
  - Cardiac rehabilitation therapy
  - Swallow studies

- Open suctioning of tracheostomy or endotracheal tube
- Tracheostomy change
- Manual ventilation (e.g., manual bag-mask ventilation before intubation)
- Disconnecting patient from ventilator
- Upper endoscopy (including transesophageal echocardiogram, nasal endoscopy)
- Lower endoscopy (COVID-19 positive patients or PUIs only)
- Venturi mask with cool aerosol humidification
- Ventilator circuit manipulation
- Dental surgeries
- Medical, surgical and post-mortem procedures using an oscillating bone saw

The following are not considered aerosol-generating:

- Non-rebreather or oxymask, face mask, or face tent up to 15L
- Humidified trach mask up to 20L with in-line suction
- Routine trach care (e.g., replacing trach mask, changing trach dressing)
- In-line suctioning of endotracheal tube
- Routine Venturi mask without humidification
- Suctioning of oropharynx
- Nasopharyngeal swab
- Proning is not inherently aerosol-generating but aerosols are possible if the endotracheal tube becomes disconnected during the proning process

Precautions for AGP	**Patient placement** 1. Ideally, all AGPs should be performed in a single occupancy AIIR with the door closed. 2. If there is a shortage of AIIRs, prioritize their use according to the guidelines below on "Use and Prioritization of AIIRs". 3. If AIIR is not available or if room is not negatively ventilated, AGPs can be performed in a single occupancy room with the door closed or in a diagnostic/procedure area with the door closed, if possible. a. For standard rooms or diagnostic/procedure areas where AGPs may be performed, install portable HEPA filters to increase the number of filtered air changes per hour. Consult with facilities/engineering to install the appropriate number of HEPA filtration units given the dimensions of the space. **Infection control measures <u>during</u> the AGP** 1. Visitors should not be present during the procedure. 2. All staff must don N95 respirators, eye protection, gown and gloves during all AGPs. 3. Limit the number of staff in the room to what is necessary for the procedure. 4. Whenever medically feasible, patients should be encouraged to wear a medical mask while in areas where patient care is occurring. **Infection control measures after the AGP** 1. After the procedure, wipe down all high touch surfaces with a hospital-approved disinfectant. 2. If the patient was colonized or infected with a pathogen that requires any transmission-based precautions, request EVS to perform terminal cleaning of the room prior to next patient use. 3. If a patient has a suspected or confirmed infection requiring airborne isolation precautions, ensure precautions are taken for the duration of required airing time to remove >99% of airborne contaminants. See **Table 1** below for required airing times based on number of air changes per hour (ACH) in the room. Work with local facilities/engineering and infection control to determine the ACH for the room where the AGP is occurring and appropriate airing time. <u>During the required airing time</u>: i. All staff must don N95 respirator or PAPR/CAPR for respiratory protection if entering the room where the AGP was performed. There is no need to delay staff entry into the room (e.g. for cleaning or turnover) after the AGP as long as appropriate PPE is worn (i.e., N95 respirator, eye protection, gown and gloves). ii. No patients should enter the room during the required airing time.

<table>
<tr>
<td>Use and Prioritization of AIIRs</td>
<td>Whenever possible, AGPs should be performed in an AIIR. When there is a shortage of AIIR rooms and there is a need for AGPs, patients will be assigned to an AIIR based on the priority schema below:
<table>
<tr><th>1st priority</th><th>2nd priority</th><th>3rd priority</th><th>4th priority</th></tr>
<tr><td>COVID-19 - confirmed</td><td>COVID-19 - Suspected</td><td>COVID-Exposed</td><td>Other Resp Viral Infection</td></tr>
</table>
Tuberculosis, varicella, and measles patients require an AIIR. Consult with Infection Control regarding patient placement for these infections.

Note: It is not always possible to anticipate the need for an AGP; lifesaving care (e.g. intubation, chest compressions) should not be delayed in order to transfer a patient to an AIIR.</td>
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<td>Approach to Unplanned Emergent AGPs</td>
<td>1. If a patient needs an urgent or emergent AGP and cannot be placed in an AIIR, a private room or in a semi-private without a roommate, ensure that the other patient (roommate) is either moved out of the room for the AGP and for the period of airing afterwards (see below) or, if this is not possible, ensure that the roommate is masked with a surgical mask during the time period.
2. Keep the door closed and follow all other infection control measures as described above during and after the AGP.</td>
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</table>

References	CDC Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronovirus Disease 2019 (COVID-19) Pandemic: https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html#aerosol CDC Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic: https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html Klompas M, Baker M, Rhee C. What is an Aerosol-Generating Procedure? JAMA Surg 2021;156(2):113-114. An excellent review on what factors contribute to risk of exposure to infectious aerosols.

Table 1

Airing time needed for airborne contaminant removal

Air changes/hour (ACH) and time required for airborne-contaminant removal 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

Source: https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html

Reviewed and/or Revised

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Previous Version of Guidance

Signature	Title	Date
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Machelle Allen	SVP/CMO	Version 2 - Revised April 28, 2023