

Portable HEPA Filtration Unit Recommendations

When is a portable HEPA filtration unit necessary as an infection prevention intervention?

We would consider using a portable HEPA filtration unit as an additional agent to clear the room air when dealing with patients with contagious infectious pathogens that spread by the airborne route (especially those that linger in the air and travel some distance [>6 feet]). The major method to clear the ambient air that may be contaminated with these pathogens is via air exchanges of the circulating room air. Air exchanges refer to the number of times the air is replaced in a room each hour. Portable HEPA filtration units, which only filter the air and do not alter the room pressure gradient (i.e. do not convert room from positive or neutral pressure to negative pressure) are NOT required but may serve as an added precautionary measure. Allowing time for air exchanges to occur and wearing appropriate PPE during the air exchange timeframe often eliminates the need for a portable HEPA filtration units. Thus, use of portable HEPA filtration units are prioritized for those patients with infectious diseases that can travel at distance in the air for a duration of time.

Priority List for portable HEPA filtration units:

PRIORITY 1:

A negative pressure room is required for the conditions below. If no negative pressure room is available, portable HEPA filtration units will be prioritized for the following:

- 1) Suspect or known measles
- 2) Suspect or known pulmonary or laryngeal tuberculosis
- 3) Suspect or known varicella

PRIORITY 2:

Use in areas where a higher-risk emergent aerosol-generating procedure (e.g., emergent intubation or airway suctioning) in patients with respiratory viral infections may occur. Often patients in these locations may not have been placed into a negative pressure room at first triage, thus creating potential increased risk in the event that an emergent procedure occurs. Those locations that have the highest risk for this scenario and have lower air exchange rates (patient room with 6 exchanges/hr vs. an area like the operating room, which has minimum 15-20 air exchanges/hr) are as follows:

- Adult Emergency Department (recommend minimum 3 HEPA Units)
- 8MCE (recommend minimum 2 HEPA UNITS)
- 8T3 Medical ICU (recommend minimum 3 HEPA UNITS)
- 5C (recommend minimum 2 HEPA UNITS)
- PICU (recommend minimum 1 HEPA UNITS)
- Pediatric Emergency Department (recommend minimum 2 HEPA UNITS)

Process to Obtain a Portable HEPA Filtration Unit if not on an Assigned Unit/Area:

Call the Service Center or page 615-835-8340 and the Supply Chain equipment team will bring the HEPA to the requesting unit/area.

Air Exchange Chart:

For more information regarding the time necessary to achieve 99% removal of Airborne pathogens after an AGP based on the air exchange rates in each room. Please refer to the [Air Exchange Chart](https://www.vumc.org/coronavirus/clinical-guidance) on the <https://www.vumc.org/coronavirus/clinical-guidance> website.