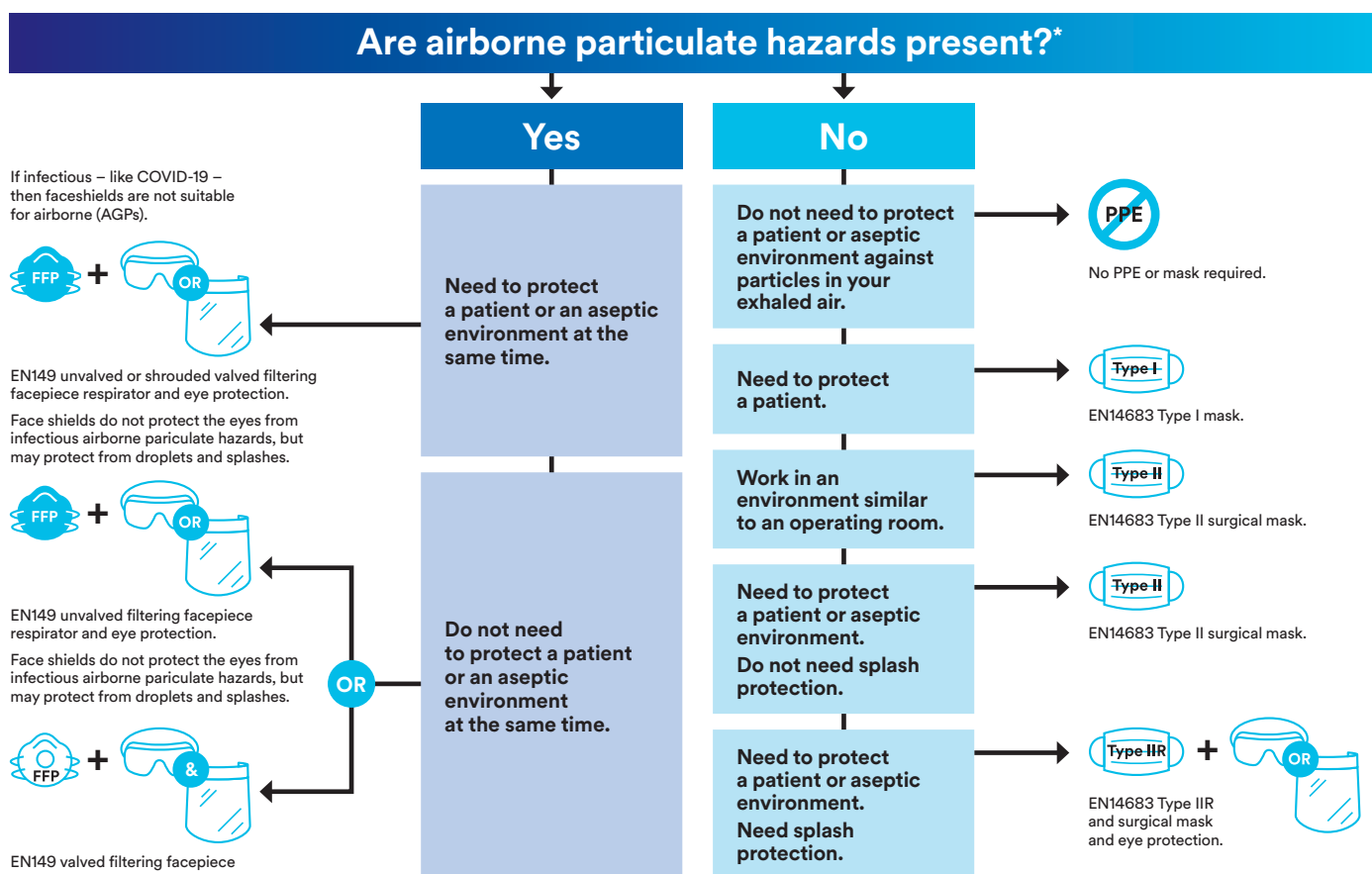


Selection guide for ‘above the neck’ personal protection for intensive care setting.

3M Health Care respirators and surgical masks do different jobs, depending on the situation and the respiratory protection you need. Be sure to take care of yourself and those around you by selecting the proper respiratory PPE. This guide is an overview to help you identify the hazard and assess the risk in your ICU environment.



Q What are airborne particulate hazards?

A Particulate hazards can be grouped in terms of their means of transmission

Aerosol: a mixture of small liquid and/or solid particles generally < 5 micron that can remain in the air for long periods of time and travel over long distances.^{1, 2}

Droplet: particles approximately 5–100µm in diameter). While the lower range of these particle sizes (<20µm) will remain airborne for many minutes, particles >20µm fall out of airborne suspension within seconds. Droplet particles penetrate the respiratory tract to above the alveolar level. However, if a liquid (aqueous) droplet evaporates before falling to the ground, it can shrink to become an aerosol particle known as a ‘droplet nucleus’.²

Splash: large particles (>100µm in diameter) that fall out of airborne suspension within a few seconds.²

Splash and droplet transmission may occur when particles are propelled and impact on a mucosal surface or conjunctiva of a susceptible individual, but is only effective over short distances before these particles fall out of the air.

Airborne transmission may occur when sufficiently small particles are inhaled by susceptible individual.

Q What are examples of aerosol generating procedures?

A AGPs can generate an aerosol hazard from an infection that may otherwise only be transmissible via splashes or droplets.

Aerosol generating procedures^{3,4}

- ▶ open suctioning of airways
- ▶ sputum induction
- ▶ cardiopulmonary resuscitation
- ▶ endotracheal intubation and extubation
- ▶ non invasive ventilation (e.g., BiPAP, CPAP)
- ▶ bronchoscopy
- ▶ manual ventilation
- ▶ the use of energy devices (laser, cautery, drills, micro-debriders, saws, and ultrasonic devices)

Note: This guide is intended for a healthcare audience. The term ‘surgical’ refers to the mask or respirator meeting the requirements of EN 14683 as a Type IIR medical mask (includes testing for ability to provide fluid resistance for the wearer from large droplets, splashes or sprays of bodily fluids) and certified to the Medical Device Directive/Regulation. This guide may not be inclusive of all options that could be used in the listed settings. It is the responsibility of the healthcare organisation to determine both the adequacy and suitability of any respirator, face mask and face shield used in their facility and ensure compliance with all applicable standards and local/national guidance or regulations.

Appropriate respirator selection depends on multiple factors, including hazard type, concentration and substancespecific standards

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*Including COVID-19 as an airborne particulate hazard.
Always follow local guidelines of your institutional protocol.
1 <https://study.com/academy/lesson/aerosol-definition-examples.html>
2 [https://www.journalofhospitalinfection.com/article/S0195-6701\(13\)00279-X/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(13)00279-X/fulltext)
3 https://www.wfsahq.org/components/com_virtual_library/media/232beeb71573bafbf6a2528bf327457e-18---List-of-Aerosol-Generating-Procedures--from-CDC-website-.pdf
4 https://www.entnet.org/sites/default/files/uploads/howard_highrisk_aerosol_generating_procedures_in_covid-19_respiratory_protective.pdf
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