Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Dangerous Misperceptions About Negative-Pressure Rooms

To the Editor:

We would like to shed light on a common yet dangerous misperception in the medical community about so-called negative-pressure rooms. The preferred terminology is airborne infection isolation room, which is defined as having negative pressure, 6 to 12 air exchanges per hour (12 preferred), and direct exhaust to the outside or through a high efficiency particulate air filter.[1]

In its zeal to protect health care professionals, the Centers for Disease Control and Prevention recommends that aerosol-generating procedures, such as noninvasive positive-pressure ventilation and intubation, "ideally" be conducted in an airborne infection isolation room.[2] Many of our colleagues believe this is endorsed because they are safer in such a room. Unfortunately, these rooms do little to protect individuals in the room with the patient during the aerosol-generating procedure. They help protect individuals outside the room by keeping more aerosol within the room when the doors are opened and offer the benefit of enhanced air exchanges, which reduces the time from completion of an aerosol-generating procedure until it is safe to reenter the room without complete airborne personal protective equipment precautions.

Twelve air exchanges per hour is recommended for an airborne infection isolation room, meaning 23 minutes is required for 99% air removal efficiency and 35 minutes for 99.9% efficiency. For comparison, a standard patient room with 6 air exchanges per hour requires 69 minutes for 99.9% efficiency.[1] Even with enhanced air exchanges in airborne infection isolation rooms, we have no evidence that physicians, nurses, or respiratory therapists performing an aerosol-generating procedure are protected in any way. If the patient is continuously generating aerosolized particles, as occurs with normal breathing without a mask, coughing, or ongoing noninvasive respiratory support, negative pressure and air exchanges will not make the room much safer, especially if one is close to the patient.

Our greatest concern about this misconception is that providers will use insufficient personal protective equipment precautions or withhold essential treatments because such a room is not available. If providers are performing an aerosol-generating procedure for a patient with known or suspected COVID-19, we recommend that they take the same airborne and contact precautions whether or not the procedure occurs in an airborne infection isolation room. If an airborne infection isolation room is not available, aerosol-generating procedures may still be safely performed as long as the providers are wearing appropriate respiratory personal protective equipment, extra attention is paid to keeping the doors closed, and reentry without airborne precautions does not occur until the time needed to ensure at least 99% removal efficiency, based on air exchanges per hour for each room as determined by hospital engineering.

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2. Centers for Disease Control and Prevention. Interim infection prevention and control recommendations for patients with suspected or confirmed coronavirus disease 2019 (COVID-19) in healthcare settings. Available at: https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html. Accessed May 1, 2020.

Time to Implement the European Society of Cardiology 0/1-Hour Algorithm

To the Editor:

We read with great interest the High-Sensitivity Cardiac Troponin I Assays in the United States (HIGH-US) study conducted by Nowak et al,[1] which found that the European Society of Cardiology 0/1-hour algorithm has a high sensitivity and specificity when applied to a diverse US population. The high-sensitivity cardiac troponin–based 0/1-hour algorithm has been mainly studied in European cohorts, with fewer data from outside the region. This is a landmark study that showed that the 0/1-hour algorithm can be safely applied to patients in the United States.