

Should paramedics intubate patients with SARS-like symptoms?

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Preventing the transmission of severe acute respiratory syndrome (SARS) from patients to health care workers is of paramount importance. Endotracheal intubation, in particular, is a high-risk procedure that has been associated with the transmission of SARS despite the use of personal protection, including gloves, gown, face mask and protective eye wear.¹ Paramedics routinely intubate patients who are in respiratory failure, which raises concern about the safety of these health care workers as they perform this life-saving procedure.

Recently issued directives² describing procedures for intubating SARS patients include using an enclosed, ventilated protective suit known as a personal protective system (PPS); conducting the intubation in a negative-pressure room in teams of 2 to 4 members; using adjunctive paralytic agents; and having an assistant to help remove the PPS after intubation is completed. Furthermore, it is acknowledged that intubation should be performed only by highly skilled individuals in a setting that is free from distraction, with adequate space, excellent lighting and the patient supine on a stretcher.

Can paramedics, then, safely intubate patients according to these recommendations? For a variety of reasons, we believe that this is not possible.

One challenge faced by paramedics is discerning which patients have SARS. The current case definition of SARS relies on establishing an epidemiologic link to a person known to have SARS or known to have been exposed to a setting or geographic area linked to SARS transmission.³ Such information is almost never available on a timely basis in the prehospital setting. Emergency physicians have addressed this information gap by wearing a PPS when intubating any patient with SARS-like symptoms (i.e., those with an unexplained febrile respiratory illness). However, use of a PPS by paramedics for all patients with SARS-like symptoms is fraught with difficulty. We submit that the decision to introduce PPS use for paramedics must be considered in the broader context of the unique nature of delivering critical care and performing intubation in the prehospital environment. Given that paramedics always work in pairs, performing intubation according to the guidelines would require that both paramedics wear a PPS. During transport to hospital, the paramedic providing patient care would continue wearing the PPS, but the driver would have to remove his or her PPS before entering the ambulance to avoid gross contamination of the driver's area

and to avoid restricting peripheral vision. Should the driver not remove his or her PPS, we believe that the driver compartment of the ambulance could not be reliably decontaminated because of the numerous surfaces that would be contacted during the act of driving (e.g., seat belt, seats, door handles, steering wheel, gear shift, air conditioning controls, ignition switch, radio transmitter, lights and sirens console). The ambulance itself could then become a means of transmission.

In addition, PPS removal creates logistic problems because of the requirement for a trained assistant. One paramedic would have to act as the assistant for the other, which would leave the awake, nonparalyzed, intubated patient unattended. Under these circumstances, instances of accidental extubation or unrecognized dislodgement of the endotracheal tube into the patient's esophagus could be predicted to occur. In addition, Health Canada guidelines on PPS (as updated on June 3, 2003) state that "the increased complexity involved in the removal and disposal of this equipment may increase the potential risk of self contamination."⁴

Furthermore, although paramedics are trained in intubation, they vary widely in experience. For example, a recent graduate could not be considered an expert in this procedure. As well, the use of paralytic agents is not part of current paramedic practice in most emergency medical service systems. Finally, the prehospital environment is often distracting and characterized by adverse environmental conditions such as poor lighting, confined spaces, distraught bystanders and noise. These factors would increase the risk of inadvertent exposure to respiratory droplets.

The inescapable conclusion is that there is no reliable way to intubate patients with SARS-like symptoms in the prehospital setting while attaining the level of safety that is currently recommended. The use of a PPS in the prehospital setting could compromise the safety of both paramedic and patient. The paramedic's safety could be compromised by the creation of a false sense of adequate protection during intubation and removal of the PPS in an uncontrolled setting, whereas the patient's safety could be compromised if he or she is left unattended while one paramedic's PPS is being removed.

An obvious concern is that proscription of prehospital intubation would itself compromise patient safety, while favouring paramedic safety, especially given that most patients with SARS-like symptoms do not actually have the disease. There is no escaping this imbalance. This is but

one of many situations in prehospital care in which the principle of paramedic safety is paramount. For example, paramedics will not enter a building that has collapsed, is on fire or has sustained chemical or biological contamination until the building has been declared safe for entry, even if large numbers of patients requiring urgent care may be present within the building. In these situations, determining safety is not the paramedic's role. Likewise, patients with SARS-like symptoms should not be intubated until it is safe to do so, and this cannot be rapidly and reliably achieved in a prehospital setting.

Therefore, our recommendation is 2-fold: that paramedics should not intubate patients with SARS-like symptoms in the prehospital setting, even if a PPS were available, and that these patients should be rapidly transported to the nearest emergency department for definitive airway management according to current guidelines. If some form of ventilatory support is needed (e.g., for patients who are significantly obtunded or have respiratory compromise), a bag valve mask outfitted with a submicron filter could be used. Proper application of a bag valve mask is an essential skill in airway management and is a core feature of paramedic training, according to the National Occupational Competency Profile for paramedic practitioners.⁵

Developing solutions to the extraordinary problems created by SARS necessitates careful and complete consideration of the risks and benefits for paramedics and patients alike. We believe that the use of a PPS to accomplish prehospital intubation of patients with SARS-like symptoms is

the wrong solution from the perspectives of both paramedic and patient safety.

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New research initiatives in Canada for end-of-life and palliative care

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Almost 2000 years after the Roman philosopher Seneca told us that "the wise man will live as long as he ought, not as long as he can," the Canadian Senate Subcommittee's report on palliative care has stated that quality end-of-life care is the right of every Canadian.¹ Despite this laudable notion, there is a paucity of data to help determine what constitutes quality care at the end of life, particularly from the perspectives of patients with life-threatening illnesses and their family members. In addition, we lack performance indicators to determine whether the estimated \$3 billion spent annually on dying patients is optimally allocated. In response to the research void, the Institute of Cancer Research recently announced that end-of-life and palliative care was its top strategic research theme.

Although we welcome this initiative because it will further strengthen palliative care of cancer patients, we must remember that most people in Canada die of other causes. In a study involving patients with advanced chronic obstructive pulmonary disease (COPD) and those with lung cancer, the COPD patients reported deficiencies in quality of life, symptom control and access to palliative care that exceeded the deficiencies experienced by the patients with lung cancer.² This study and others have shown that, for patients with advanced lung and heart disease, we fail to address their needs to discuss satisfactorily treatment options, prognosis, advance directives, symptom relief, and use and nonuse of mechanical ventilation, their wishes to know what dying might be like or their fears of what they are fac-