CORRESPONDENCE

COVID-19 intubation teams—the Saskatoon experience

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To the Editor,

In response to the coronavirus disease (COVID-19) pandemic, the Saskatchewan Health Authority (SHA) directed the Provincial Department of Anesthesiology to form intubation teams. The teams were funded by a Pandemic Service Agreement provided by the SHA for pandemic related services. The concept of these teams and principles of patient management were derived from early recommendations from international groups in more advanced stages of the pandemic.^{1,2} They advocated for protocolized airway management by experts to minimize the risk of transmission to healthcare workers.^{2–4} This report describes our experience of implementing intubation teams in Saskatoon, a city of approximately 250,000 people that serves as a tertiary referral centre with a catchment area encompassing approximately the northern 70% of the province.

An intubation team comprised an anesthesiologist, anesthesia assistant, and a registered operating room nurse and was available in-house 24/7 at two locations—Royal University Hospital (RUH) and St. Paul's Hospital (SPH). The team could be activated through a dedicated pager by a physician treating a COVID-19 positive/suspect patient to assist with intubation, resuscitation, invasive monitoring, and transport to the intensive care unit (ICU). During an activation, team members donned personal

protective equipment (PPE) comprising of N95 respirator, head covering, face shield, full length fluid-impervious gown, and gloves, in keeping with recommendations by Lockhart *et al.*⁵ Following a pre-intubation team briefing (eAppendix, available as Electronic Supplemental Material), intubations were performed using a videolaryngoscope in a rapid sequence fashion with deep neuromuscular blockade to minimize generation of aerosols. Preoxygenation was achieved with a face mask and high-efficiency particulate air filter.^A Following transfer of the patient to the ICU, team members served as PPE doffing coaches for each other.

The University of Saskatchewan Biomedical Research Ethics Board approved this project (13 August 2020). We reviewed intubation team activations between 30 March and 19 June 2020. Of 161 activations, 146 (90%) had complete data. Approximately half (76/146, 52%) required intubation and 18% (26/146) additionally required arterial and central venous access. The average time to complete each activation was 53 (range 5–165) min. Of the 146 team activations, nine (6%) patients subsequently tested COVID-19 positive. Intubation was successful on the first attempt in 99% (145/146) of intubations. No patients required front-of-neck access. Intubation was complicated by hypotension or hypoxia in 23 of the 76 (30%) cases. Central venous catheter infection rates between April and June 2020 in our two hospitals with intubation team services (7.6 and 5.3/1,000 catheter days for SPH and RUH, respectively) were comparable to the same period in 2019 (9.8 and 0/1,000 catheter days, respectively). Among

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^A Although a clear plastic drape was also used to cover the patient's face during pre-oxygenation, as evidence emerged about concerns for increased contamination, it was subsequently discontinued at our institution.

all activations, there were four documented breaches in PPE (4/146, 3%). Nevertheless, no breaches occurred in patients who subsequently tested positive for COVID-19 during their hospital admission, nor were any infected healthcare workers reported (though testing was only performed in symptomatic team members).

The intubation teams were disbanded on 10 July 2020 as COVID-19 lockdown restrictions eased and elective surgeries resumed. Our findings suggest that these teams were able to achieve the goals of airway and arterial/central venous catheter placement in critically ill patients while minimizing risk of COVID-19 transmission to healthcare workers. While the overall number of COVID-19 positive patients was low, creation of the intubation teams allowed for expert management of these critically ill patients and also facilitated training of healthcare providers in other care areas to manage the airway of COVID-19 positive/suspect patients. With infection rates again rising across the country, the experience gained during the first wave should prove valuable should the need arise to reactivate.

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Disclosures Dr. Eugene Choo led the intubation team response following the start of the pandemic.

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