Additional Barrier to Protect Healthcare Workers During Intubation

To the Editor

With an impending shortage of personal protective equipment (PPE) and rising infection among health care providers, novel coronavirus transmission via aerosolization is promoting new barrier discoveries for provider protection. Recently, Taiwanese doctors created an “aerosol box” that has 3 openings—2 ports and 1 side, which restrict hand movements and patient positioning; is not feasible to use on emergent situations such as trauma, cardiopulmonary arrest, or a patient requiring emergent cesarean delivery; and has an accessibility with few limitations.¹ Although, Canelli et al² did not identify any leakage out of the aerosol box in their simulation.

We describe a novel barrier method made from an easily accessible, cheap, and disposable transparent plastic sheet (120 × 100 cm; Figure A) with a crosscut that is marked with a red sticker on the transparent sheet (1.5 × 1.5 cm; Figure A) that is positioned at the mouth. In our simulation, the anesthesiologist covered the head of an airway mannequin with this sheet before preoxygenation with a facemask that is connected to the artificial manual breathing unit through crosscut (Figure B). After induction of anesthesia, vocal cords are visualized either by a direct or video laryngoscope under the sheet (Figure C), and the endotracheal tube is passed through a marked crosscut in the sheet (Figure D). After successfully securing

the endotracheal tube cuff, the instruments used are isolated to avoid contamination. We proposed to keep the patients head covered during extubation and, if feasible, during surgery.

Described methods neither restrict hand movement nor require any additional training and still offer additional protection from aerosol spread in the vicinity and to the provider during any lifesaving procedure. Proper use of PPE and antiviral filters in close proximity to the patient’s airway with negative pressure rooms are strongly recommended for contamination and safety.

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Figure. A novel barrier method: “aerosol cover.” A, Disposable transparent plastic sheet (120 × 100 cm) with a crosscut (1.5 × 1.5 cm). Red sticker on plastic to identify the crosscut. B, Artificial manual breathing unit through a crosscut. C, Vocal cords visualization by laryngoscope. D, Endotracheal tube is passed through a marked crosscut.

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