

**Michigan Medicine MOC Part IV Program
COVID-19 Project Report**

Project Title: Minimizing Staff Exposure to COVID-19 during Intubation in the Pediatric Emergency Room

Project Leader: Michele Carney, M.D.

Start/End Dates: March 16, 2020 – ongoing

Patient Population: Patients seen in the Pediatric Emergency Department requiring intubation

General Aim: To increase the self-efficacy of pediatric emergency department physicians in performing endotracheal intubation and their confidence in keeping all team members safe from infectious exposure under pandemic conditions.

Measure 1: Level of self-efficacy with performing endotracheal intubation in line with pandemic-specific recommendations

Baseline: 18.5%

Target: increase to the extent feasible under pandemic conditions

Measure 2 (optional): Level of provider confidence in keeping all team members safe from infectious exposure as the procedure operator

Baseline: 44.4%

Target: increase to the extent feasible under pandemic conditions

Key Interventions:	Who Participated:
Developed a modified pediatric airway algorithm considering pediatric anatomic and physiologic differences that necessitated differences from adult algorithms and pre-pandemic pediatric algorithms.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Performed In-situ simulations of the modified COVID-19 pediatric airway algorithm daily. All faculty and fellows were required to participate at least once.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
COVID-19-specific airway supply bags were created and categorized by weight	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Limit need for interruption during the procedure by performing out-of-room time-outs prior to in-room time outs.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Limit in-room team members by using two-way communication devices in resuscitation bays.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Clamped of endotracheal tube between placement and initiation of positive pressure ventilation and used viral filter with all assisted ventilation.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members

Final Report: 9/15/2021

Require most experienced airway operator present to perform the intubation.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Limit to one intubation attempt. Subsequently place supraglottic airway.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Recommend video laryngoscopy for single intubation attempt, in order to distance proceduralist from patient airway.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members
Require full personal protective equipment including N-95 or PAPR used for all patients regardless of clinical presentation.	Physicians, nurses, respiratory therapists, technicians, clinical pharmacists, learners, and care team members

Results: It is possible to develop a PEM provider-based airway management algorithm specific to the pediatric population during the COVID-19 pandemic in a nimble and iterative fashion. In doing so, our PEM group saw increases in confidence and self-efficacy of a critical procedure that had been adjusted for pandemic precautions.

Data:

Measures	Baseline March 2020	Post-Intervention May 2020
self-efficacy with performing endotracheal intubation in line with pandemic-specific recommendations (“somewhat” or extremely comfortable”)	18.5%	88.9%
confidence of the members of our PEM group in keeping all team members safe from infectious exposure as the procedure operator (“somewhat” or “extremely confident”)	44.4%	96.3%

Survey completion 100% (n=27)

Keys to success were: A focus on engaging all members of the team through key stakeholders, which is critical to successful process implementation and team safety.

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