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In reply:



We thank Drs. Adams and Moore for their commentary on our article. In accordance with our qualitative findings, we agree that leadership is the key to success in addressing emergency department (ED) crowding, rather than the “what” or “how.” These exemplar leaders in our cohort were able to design and execute solutions that were specific to their hospital.¹ We saw this in multiple hospitals, which reported that strategies were implemented, but not well executed. Thus, survey studies that focus on solutions such as inpatient boarding or providers in triage do not describe the entire picture.²

We believe the C-suite personnel who understand the theoretical model of crowding may have competing interests and goals that may not align with alleviating hospital crowding. Until executive leadership provides resources and holds all staff accountable, ED crowding will not be alleviated.

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Bougie Use and First-Pass Intubation Success in the Emergency Department



To the Editor:

With great interest, we read the recent article by Driver et al¹ assessing the association of bougie use with first-pass intubation success in the emergency department. They showed that bougie use was associated with increased first-pass intubation success, but with prolonged median first-attempt duration. In addition to the limitations described in the “Discussion” section of their article, we noted other issues in this study that were not well addressed.

First, the readers were not provided with the type of bougie used in this study. The bougie has a tendency to uncurl during passage toward the glottis, resulting in a failed insertion. This is particularly true when a modern disposable bougie is used, which often lacks the plasticity (“memory”) of the original gum elastic bougie.²

Second, sensitivity analyses were performed for 70 patients with no video available who had an orotracheal approach using a video laryngoscopy device or Macintosh blade for the first attempt. If an endotracheal tube with stylet was used in all 70 cases, at a success rate of 68 of 70 (97%) or higher (overall success rate without a bougie 161/178 [90%]), bougie use would no longer be associated with first-pass success. Thus, we were very interested in knowing whether an endotracheal tube with stylet was allowed for 108 study patients without bougie use. Actually, use of a stylet is valuable in controlling the direction of passage of an endotracheal tube with laryngoscopy, especially when the speed of intubation is important (as with ICU or emergency patients).³ Given that use of an endotracheal tube with stylet is a 1-step technique and use of bougie is a 2-step technique, the authors should be encouraged to further compare the performance of the 2 techniques for emergency intubation.

Third, the median first-attempt duration was significantly longer with than without bougie (40 versus

27 seconds; difference 14 seconds). For emergency patients requiring intubation, other than first-pass success, the time required for intubation also is a concern, especially for patients at risk of hypoxia and aspiration.⁴ If a reasonable cutoff time had been included in the definition of first-pass success, then this study would have provided more useful information about the use of a bougie for emergency intubation.

Fourth, the readers were not provided the laryngoscopic view classifications for all patients and the indications for bougie-guided emergency intubation in this study. It was unclear how intubators made a decision for selection of a bougie or a nonbougie technique. In fact, bougie-guided intubation is most suitable for patients whose glottis cannot be seen under direct visualization with a laryngoscope, such as laryngoscopic view grade 3 as described by Cormack and Lehane.⁵ Under these circumstances, the bougie is “hooked” underneath the epiglottis and is advanced into the trachea. Then the endotracheal tube is advanced distally over the bougie into the trachea. Furthermore, the authors should have provided possible reasons and risk factors for failed bougie-guided intubations. We believe that avoiding the relevant reasons and risk factors of failed bougie-guided intubations is useful for others who would like to try this emergency airway management technique.

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In reply:



We thank Xue et al for their interest in bougie-assisted intubation in the emergency department (ED).

Not all modern disposable bougies lack plasticity or have a tendency to uncurl. We use a 70-cm-long, 15-French, malleable, semirigid, straight bougie with a coude tip (SunMed, Largo, FL). The malleable and semirigid properties allow it to be shaped by the intubator before passage. Because it is packaged straight, this bougie does not uncurl as it approaches the glottic inlet. We agree that bougies that are coiled in the packaging can be problematic and may be more difficult to pass through the glottis.

All nonbougie-assisted intubations in our ED are performed with a styletted endotracheal tube. Thus, the comparison presented in the article is between bougie-assisted intubation and styletted endotracheal tube intubation.

We agree that the longer intubation duration for bougie-assisted cases may be a limitation of bougie use. As mentioned in the article, rapid intubation is particularly important for patients with a low baseline oxygen saturation ($\text{SpO}_2 < 96\%$) or those with a propensity for rapid desaturation.¹ We fail to see how modifying the definition of first-pass success to incorporate an arbitrary time cutoff provides more useful information than presenting both first-pass success and intubation duration for both groups, which allows the reader to weigh both outcomes when determining whether to use the bougie in a particular case. We contend that, for most patients, first-pass success with a slightly longer attempt is better than first-pass failure, with its associated complications.²

To maximize first-pass success without unnecessarily prolonging intubation time, a reasonable strategy (which many emergency physicians use at Hennepin County Medical Center) may be to have both a styletted endotracheal tube and bougie available during intubation; an endotracheal tube can be used if a view of the larynx is obtained (modified Cormack-Lehane views I and IIa), and a bougie can be used when a modified Cormack-Lehane IIb view or worse is obtained. However, because laryngeal views were not recorded in this study, we cannot conclusively state this is the best strategy. It is possible that the bougie improves first-pass success even with good laryngeal views, perhaps because it does not obscure the laryngeal inlet as it is approached, as the endotracheal tube does.