

## POINT: Direct Laryngoscopy: The Building Block to Airway Expertise? Yes



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Tracheal intubation of critically ill adults is a dangerous procedure that demands clinician preparation, expertise, and flexibility. Failure to intubate on first attempt is common among the more than 1.5 million critically ill adults who undergo intubation outside of the operating room each year.<sup>1,2</sup> Failure to intubate on the first attempt is associated with an increased risk of life-threatening complications.<sup>3</sup> To perform emergency tracheal intubation safely, clinicians must develop intimate familiarity with airway anatomy, the methods of manipulating that anatomy, and the confidence to employ secondary and tertiary techniques when the first attempt at intubation is unsuccessful. Mastering direct laryngoscopy (DL) is necessary to achieve expertise in airway management, ensure adequate backup to video laryngoscopy (VL), and give clinicians the skills necessary to intubate in any environment.

The results of the recently published Direct Versus Video Laryngoscope (DEVICE) trial provide compelling evidence that the first attempt at emergency tracheal intubation should be made with VL.<sup>4</sup> These findings, however, do not obviate the need for clinicians who

perform emergency tracheal intubation to acquire and maintain proficiency in DL, both to improve skill with VL and to provide a margin of safety for instances when video laryngoscopes fail or are unavailable.

Arguing to abandon the instruction of novice intubators in the fundamentals of DL presupposes that the mechanics of DL are irrelevant to VL. On the contrary, the mechanical forces applied to a DL blade to displace the tongue and soft tissues of the hypopharynx and elevate the epiglottis are the same skills necessary for using VL to achieve a view and to create adequate space to pass a bougie or endotracheal tube. The technical skill attained through DL repetitions is irreplaceable and informs expert VL technique. Unfortunately, the development of intimate familiarity with the interplay between the laryngoscope blade and the anatomical structures of the airway is degraded by the ease with which a laryngeal view can be obtained using VL. This familiarity is crucial in troubleshooting when, even with VL, laryngeal views are difficult, including in the management of disrupted anatomy, angioedema, and contaminated airways, and in the proper application of adjunctive techniques such as bimanual laryngoscopy and occipital lifting. Training clinicians without DL risks failing to develop their skills in laryngoscopy itself.

Despite the growing ubiquity of VL, more than 80% of emergency intubations worldwide are performed with a direct laryngoscope.<sup>5</sup> Many practice locations, even in high-income countries, have only a single video laryngoscope. In such settings, relying on the availability of VL for all intubations would be unsafe. Two patients may need to be intubated at the same time, technological failure may occur as devices age, or human factors may influence the availability of VL—eg, reusable components such as fiber-optic wands can be inadvertently discarded within the disposable plastic sheath intended to cover them. In low- and middle-income countries, remote and austere settings, during mass casualty events, and in the prehospital environment, VL simply may be unavailable. Although these circumstances might seem marginal or unlikely, most educators would agree that teaching and maintaining proficiency in cricothyroidotomy should be compulsory, despite the use of surgical rescue in just 0.28% of intubations.<sup>6</sup> Trainees will practice in a variety

**ABBREVIATIONS:** DEVICE = Direct Versus Video Laryngoscope; DL = direct laryngoscopy; VL = video laryngoscopy

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of settings over their careers, and we are obligated to teach comprehensive airway management skills that will allow them to thrive in diverse environments, including those with limited access to advanced technologies.

Educators in the critical care disciplines must expose trainees to the most basic method of definitive airway management to transform them into emergency airway experts. Trainees should experience progressive exposure to DL through didactic education, simulation, cadaver labs, and then time in the relatively safe, controlled environment of the operating room. Once trainees are comfortable with the fundamentals of intubation, supervising physicians in EDs and ICUs should encourage the use of standard geometry VL for first attempts. In physiologically normal patients, supervisors can turn the video screen out of the trainee's line of sight, instead using the video view to provide real-time feedback about blade position and mechanics. Supervisors must resist the urge to surrender and reveal the video screen, absent impending desaturation or failure of optimal DL technique. There is no substitute for understanding the importance of proper positioning, progressive epiglottoscopy and laryngoscopy, and the timely application of bimanual laryngoscopy as learned through the repetitive performance of DL. We cannot allow DL to go the way of the obstetrical forceps—a potentially lifesaving technique should not be lost to the ether because residents have limited training time available to intubate in the OR, because cadaver labs or high-fidelity simulators are costly, or because supervising physicians have experienced skill atrophy themselves.<sup>7</sup> We cannot declare ourselves airway experts without a firm grasp on the fundamental techniques that undergird, but do not supplant, VL for emergency tracheal intubation.

## Financial/Nonfinancial Disclosures

None declared.

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## COUNTERPOINT: Direct Laryngoscopy: The Building Block to Airway Expertise? No



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Because critically ill patients undergoing endotracheal intubation frequently experience severe complications during the procedure,<sup>1</sup> it is essential to choose the equipment that has the best chance of mitigating these risks. Historically, most intubations have been performed using direct laryngoscopy (DL). This technique uses a direct line of sight to the glottis, allowing guidance and passage of an endotracheal tube.<sup>2</sup> The most common reason for failure of intubation with DL is an inability to obtain a sufficient view of the glottis. When video laryngoscopy (VL) was introduced into clinical practice in 2001, it attempted to solve this problem by placing a camera on the laryngoscope blade and transmitting a close-up view of the glottis to aid endotracheal tube placement.

Although VL use has increased over time, wholesale adoption has not occurred, as demonstrated by recently published international data showing that DL persists as

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