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Indirect laryngoscopy allows practitioners to "see around the corner" of a patient's airway during intubation. Inadequate airway management is a major contributor to patient injury, morbidity and mortality. The purpose of the present study was to evaluate the video quality of commercially available video laryngoscopy systems. A team of four investigators at the University of Nebraska at Omaha and the Peter Kiewit Institute performed intubation simulations using a number of video laryngoscopy systems. Testing was done with a Laerdal Difficult Airway Manikin (Laerdal Medical Corp., Wappingers Falls, NY) in a setting that simulated difficult airways, adverse lighting conditions and various system configurations (e.g., maximizing screen contrast, minimizing screen brightness, maximizing screen color hue, etc.). Systems included the STORZ C-MAC™ (KARL STORZ Endoscopy, Tuttlingen, Germany), a prototype developed by STORZ (a McIntosh #3 video blade with USB connectivity to an ultra mobile PC; "UMPC") and a GlideScope® Portable GUL (Verathon Inc., Bothell, WA). Equipment was evaluated based on investigator's perceptions of the color ("C"), clarity ("L") and brightness ("B") of the image onscreen for each of the systems. Perceptions were given one of three possible ratings: High=3, Moderate=2 or Low=1. Statistics were performed using a two-tailed Wilcoxon Rank Sum test for independent samples. A summary of the results of the testing are shown below (shown as "Mean±Standard Deviation"):

- C-MAC–L=2.13±0.99, C=1.75±0.89, B=2.5±0.93, Total=6.38±2.5
- GlideScope®–L=2.38±0.92, C=1.38±0.52, B=2.38±0.92, Total=6.13±1.96
- UMPC–L=1.88±0.83, C=1.75±1.04, B=1.88±0.83, Total=5.5±2.2

Testing showed that there were no significant differences between image clarity, color, brightness or overall score of any of the tested systems (α=0.05). Since there were no significant differences in video quality between the three systems, the choice of system falls to user preference, which can vary from person to person, and qualitative analysis of features that are outside the scope of this study. Investigators plan to evaluate additional video laryngoscopy solutions in an effort to create a platform-agnostic video laryngoscopy suite. Funding by KARL STORZ Endoscopy. Investigators were blinded to funding source until after testing was completed. The authors wish to thank Dr. W. Bosseau Murray for his insightful comments.