Research Snapshot Theater: Professional Development and Education, Adult III

Feasibility of Tele-Mentored Remote Intubation Training for Rural Residents Using Smart Glasses

Sunday, March 22, 2026 2:30 PM - 3:30 PM Central Time

Location: Connections Central - RST 15

Jasmit K. Heera, MD (she/her/hers)

Cayuga Medical Center at Ithaca

Disclosure(s): *No relevant financial relationship(s) to disclose.*

EJ

Edison Jyang, MD

Resident
Cayuga Medical Center

Disclosure information not submitted.

HA

Hamza T. Ansari, MBBS

Resident
Cayuga Medical Center

Disclosure information not submitted.

SG

Sushilkumar Satish Gupta, MD, FCCP

Medical Doctor
St. Joseph's University Medical Center

Disclosure information not submitted.

TH

Tran Tu Huynh, DO

Medical Doctor
Cayuga Medical Center

Disclosure information not submitted.

Introduction: Residents in rural hospitals often lack adequate access to procedural training. A significant portion of internal medicine residents report low confidence in performing endotracheal intubation, especially those in rural or community hospitals. Innovative tele-education tools, such as smart glasses, may help bridge this gap. We evaluated the feasibility of

using smart glasses to provide remote, real-time intubation training by an intensivist to rural residents.

Methods: This single-center feasibility study enrolled three internal medicine residents at a rural hospital. Participants used smart glasses to perform mannequin-based intubations while receiving live, bidirectional audiovisual guidance from a remote intensivist. The glasses transmitted the wearer's point of view, enabling real-time feedback. Group sessions allowed observers to see the same perspective and hear instructions. Pre- and post-training surveys using a 5-point Likert scale assessed confidence in four domains including procedural performance, complication management and perceived skill acquisition. Primary outcome was feasibility, defined as absence of major technical failure. Secondary outcomes included confidence changes and user satisfaction.

Results: All sessions were completed without technical interruptions. Mean procedural confidence improved from 1.5 to 3.25. Understanding of intubation steps increased from 2.0 to 4.5. All participants agreed the training improved their ability to identify airway anatomy and prepared them for intubating real patients. Confidence in managing complications improved variably. While only one participant could intubate at a time, the speaker-based instruction allowed observers to learn effectively. Participants also valued the shared visual perspective and real-time audio feedback.

Conclusions: Remote intubation training using smart glasses is feasible, safe, and effective in a rural setting. It significantly improved procedural confidence and skill acquisition. Despite the small sample size and lack of hands-on demonstration from the remote instructor, participants reported high satisfaction. This scalable study may help address procedural training gaps in underserved settings.