Telesimulation uses remote internet access and the principles of medical simulation to link two different locations. Telesimulation can be technically challenging, especially for scheduling and connecting issues. The goal of this management case report was to develop and implement a cross-cultural anesthesiology resident simulation session, using real-time videoconferencing. Eight anesthesiology residents from Lyon1 University, France and eight anesthesiology residents from the University of California, Irvine, United States participated simultaneously, using shared audio-video displays, in a two-hour high-fidelity mannequin based simulation session. Resident satisfaction was evaluated.

Methods
Two scenarios took place, one executed by the French and one by the US resident group. The scenarios chosen were: difficult airway management (Simulated Learning Environment 1 or SLE1) in the intra-operative setting and local anesthetic toxicity (SLE2). American residents completed SLE1 scenario, followed by the French residents participating in the SLE2 scenario. Each scenario involved two to three residents, who were debriefed by their ‘home’ instructors and peers. Residents and instructors from the opposite country also actively participated in the discussion.

Results
• Scheduling the telesimulation session was logistically challenging due to the 8-hr time difference between the 2 countries.
• Constraints due to clinical duties in France and necessity to integrate the simulation session into the resident anesthesiology curriculum in the US, added to the scheduling challenges.
• During the simulation session, the connection was disrupted twice. This disruption hindered the French residents’ ability to follow up on the simulation component of the American scenario for the first five minutes of the scenario.

No statistical difference was noted between American and French evaluations on the satisfaction scale for instructors, scenarios and intercultural experiences. However, sound and video qualities were rated less by the French when compared with the US group (p=0.0047), most likely due to internet connection issues during the US scenario.

Conclusions
Connecting issues and video quality problems have been reported in the medical literature. Audio and video, provided by laptop computer’s built in microphone and webcam, and simulation center’s internal audiovisual infrastructure, could be improved by utilizing external webcams, computer speakers, and microphones. The future use of HDMI or DVI connection could represent a potential improvement to video. A secured virtual point-to-point connection or secured virtual private network (VPN) between the two simulation centers would further elevate the level of security and confidentiality between the two sites.

Telesimulation involving international collaboration could be routinely integrated into anesthesiology residents’ curriculum, and provide a valuable adjunct to more traditional methodology of learning in preparation of medical professionals preparing to work in foreign countries, or with health professionals from different cultural background.

References:

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*Statistically significant