

An integrated objective scoring system to assess CanMEDS Roles, skills and knowledge during crisis simulation

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The objective of this study was to develop an integrated objective structured evaluation tool (IOSET) to assess resident performance in crisis resource management. We wanted to integrate both technical and nontechnical skills with medical knowledge in a critical simulated situation.

We performed an English literature search for the last 10 years using the MeSH terms "assessment," "evaluation," "tools," "simulation," "crisis management," "education," "training," "anesthesia," "emergency medicine" and "critical care." Eighty-six potentially relevant articles were identified. The abstracts were reviewed and the 6 most relevant articles were selected and sent to a group of experts for critical review.

Using the Delphi process, we designed an integrated objective evaluation tool for application in critical situations in anesthesiology, emergency medicine, and intensive care. We included situational awareness, problem-solving and the CanMEDS Roles for non-technical skills.¹⁻² These Roles were evaluated using a global rating score with 4-point scale: poor, marginal, acceptable and good. A simplified checklist including diagnostic tests and three therapeutic agents and interventions were used to assess technical skills and medical knowledge.³

After institutional research ethics board approval, this IOSET is currently being used to evaluate the performance of a pilot group of anesthesiology residents managing two critical scenarios: laryngospasm and severe hyperkalemia. Informed consent was obtained from all the residents to be videotaped for research purposes. Three trained independent referees will rate the videotaped sessions. We are currently collecting data to perform validity and reliability analyses.

In conclusion, CanMEDS Roles can be evaluated in combination with crisis resource management and medical knowledge by means of a simplified evaluation tool during highfidelity simulation.

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