Novel metrics of operative performance in surgical training:

a pan-specialty, international, Delphi consensus study

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Introduction

Technology-enhanced assessment of operative performance improves objectivity and reliability. Which metrics have the greatest importance for the future of surgical training remains unclear. This study aimed to establish the **importance of operative performance metrics** in surgical training, identify **relevant metrics** and **applications** to enhance feedback

Methods

A three-round Delphi methodology was used to reach consensus amongst a **pan-specialty**, **international** panel of 57 surgical trainers, trainees and researchers. (1) A comprehensive set of statements were rated iteratively using a 7-point Likert scale. Statements reaching the a priori consensus threshold were included in the final consensus statement.

Key message

Aim

Identify **technology-enhanced** operative performance **metrics** for **surgical training**

Method

Pan-specialty, international **Delphi study** (n=57)

Result

10

Metrics for surgical training **reached consensus**

Conclusion + future work

Establish **validity** of existing metrics and develop metrics to assess **non-technical skills**

Results: the consensus statement

Of the 22 statements reaching consensus, **10 reflected specific metrics.**

Technical skills

Correct dissection plane
Economy of motion
Technical errors

Non-technical skills

Situation awareness
Decision making
Communication
Cognitive load

Outcome-based

A safety score
A global score
Duration to react to adverse events

Conclusion and future work

Through international expertise, this study sets the **foundation** for a future in which operative performance metrics are universally adopted, meaningful, and transformative in surgical training.

Over the next decade, **validating existing metrics** and **innovating new domains** of assessment will be critical steps toward a global, data-driven culture of feedback that continually advances surgical care.

References:

Dick L et al. Identifying novel metrics of operative performance in surgical training: protocol for a Delphi consensus study. J Surg Res Method Prot, Volume 2024, Issue 3, July-September 2024, snae010,