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Inter Rater Reliability of Using Video Capture Technology and OPRS as a New Assessment for Surgical Competency in Ob/Gyn Residencies

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Background
- Technical skill is critical in the operating room and assessing surgical skill, technique, and procedure knowledge is critical in most procedural based specialties.
- A variety of different evaluation tools have been advocated for the assessment of surgical performance.
- Operative performance Rating Scales (OPRS) have been studied and validated as an effective assessment tool in other surgical specialties, but not in the OB/GYN setting.
- Recent literature has confirmed the effectiveness of using video taped operative footage and peer evaluation as an effective and objective evaluation tool, and as a predictor of patient outcome and safety.

Methodology
- Using SimCapture® videocapture technology, residents from a single OB/GYN training program at 3 levels of training were filmed participating and performing common surgical procedures (Cesarean sections, Hysteroscopy, Laparoscopy, Robotic Hysterectomy).
- Immediately following the procedure, standard evaluation forms were distributed to blinded expert surgeons to evaluate resident surgical performance using the same evaluation tools.
- A variety of different evaluation tools have been advocated for the assessment of surgical performance using the same evaluation tools.
- The feedback and evaluation process and tools were well received by residents and attendings.
- Residents generally rated themselves less favorably on their performance (both OPRS and Milestone evaluations) then did attendings at the point-of-care.

Results
- During the 6-week study period 40 cases were performed and underwent adequate data collection.
- The process of Simcapture-Feedback process was well received by residents, attendings, patients, and operating room staff.
- 13 of the 40 video-captured cases were processed and distributed to blinded expert surgeons to evaluate resident surgical performance using the same evaluation tools.
- 87.5% of blinded expert evaluators adequately completed OPRS assessments, whereas only 50% completed milestone surveys.
- The feedback and evaluation process and tools were well received by residents and attendings.
- Residents generally rated themselves less favorably on their performance (both OPRS and Milestone evaluations) then did attendings at the point-of-care.
- External, blinded, expert evaluators rated resident performance through the use of video footage similarly to resident and attending at the point-of-care demonstrating inter-rater reliability.

Limitations
- Small sample size of residents subject to evaluation self-evaluation, in addition to small sample of attendings at point of care and expert, blinded attending evaluators.
- Limited number and assortment of cases.
- Time constraints in having expert reviewers complete case reviews to contribute to the data set.
- Technological limitations, such as poor video quality in some cases which compromised expert evaluator’s ability to adequately assess procedures.

Conclusion
- OPRS assessments appear to be an effective tool for evaluation at point of care and for expert, blinded evaluation.
- Milestone scores may be too general and non-specific to be used as an assessment tools at point of care, only 50% of evaluators felt able to complete the milestone assessment based on video footage.
- We found reasonable inter-rater reliability between residents and the attendings, who were both working with and blinded to the residents performance.
- Based on the variation of the ratings between attendings at the point-of-care and those blinded to the resident, bias and other metrics may play a factor in the evaluation process.
- Videocapture viewing of surgical procedures is feasible and may be an effective means of providing feedback and assessing surgical performance of residents.

REFERENCES
- Totterman M, Siddiqui N, Patruno J, Patruno J. Videocapture viewing of surgical procedures is feasible and may be an effective means of providing feedback and assessing surgical performance of residents.

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Figure 1: Example OPRS Form
Figure 2: Milestone Evaluations
Figure 3: Evaluation Scores