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# The Use of SimCapture Videotaping to Improve Performance of Residents in Surgery in Obstetrics and Gynecology

By: Maryann Ho, Nathan Feiertag, Dr. Patruno, Dr. Pellini, Dr. Martino, Andrew Katz, and Michael Fink

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## BACKGROUND / INTRODUCTION

There is an increasing demand from society and the government for clear quality measurements in healthcare. Within an operating room, a patient's quality of care is often determined by the outcome of the procedure performed. This demand for quality is further explained by Dr. Dougherty et al., "Increasing public concerns about physician performance and patient safety have augmented the need to demonstrate competence in surgical skills." The desire for physicians to display their "competence in surgical skill" is supported by Dr. Birkmeyer et al., "The technical skill of practicing bariatric surgeons varied widely, and greater skill was associated with fewer postoperative complications and lower rates of reoperation, readmission, and visits to the emergency department." Surgeons and residents are increasingly being scrutinized for their performance. New techniques in surgery require new skills, which have different learning curves and require different training methods outside the operating room. A Resident's competency relies on, "Surgical skills [that] are attained through practice and include a combination of motor skills, judgment, and medical knowledge." (Dougherty et al., 333) These developments have resulted in an increased interest in objective assessment methods for surgical skills. They are currently used in surgical residency programs for assessing the performance of residents and to provide feedback on training. Documenting and recording a resident surgeon in training allows for further analysis of their technical skills by an attending physician in hopes for them to improve on their skills and reach a higher level of competency. Technical ability is associated with fewer postoperative complications, as well as lower rates of re-operation, readmission, and visits to the emergency room. With the use of a tool called SimCapture from B-line Medical, we can record surgeons in training and help them assess their abilities. SimCapture combines high quality video capture, data integration, and debriefing and assessment.

## METHODS

- By using the tool SimCapture to video record different surgical cases in the department of OBGYN, such as endoscopic, laparoscopic, hysteroscopic, and robotic surgical cases, we hoped to gather enough data in order to validate the reliability of using SimCapture technology to optimize the education, and evaluate surgical performance of residents.
- We collaborated with the attending physicians on the cases to get their feedback on the resident's performance. To do this, we created an evaluation sheet which consisted of general criteria such as depth perception and dexterity, and also procedure specific criteria and overall assessment. At the end of each surgery case we recorded, we asked the attending physician to fill out the evaluation that correlates with the type of surgery case.
- After collecting all the necessary data, we sent out the video links and more evaluations to other surgeons that were not present in the cases for a blind evaluation of the resident's performance. Our goal was to see different physicians' perspectives on resident competency during surgery and if it correlates to the attending physician's feedback.

## OUTCOMES



Figure 1. The evaluation scores of the original attending physician and the average of the external attending physicians for five separate cases are compared using a multi-bar graph. The evaluation scores are broken down into four categories labeled above.

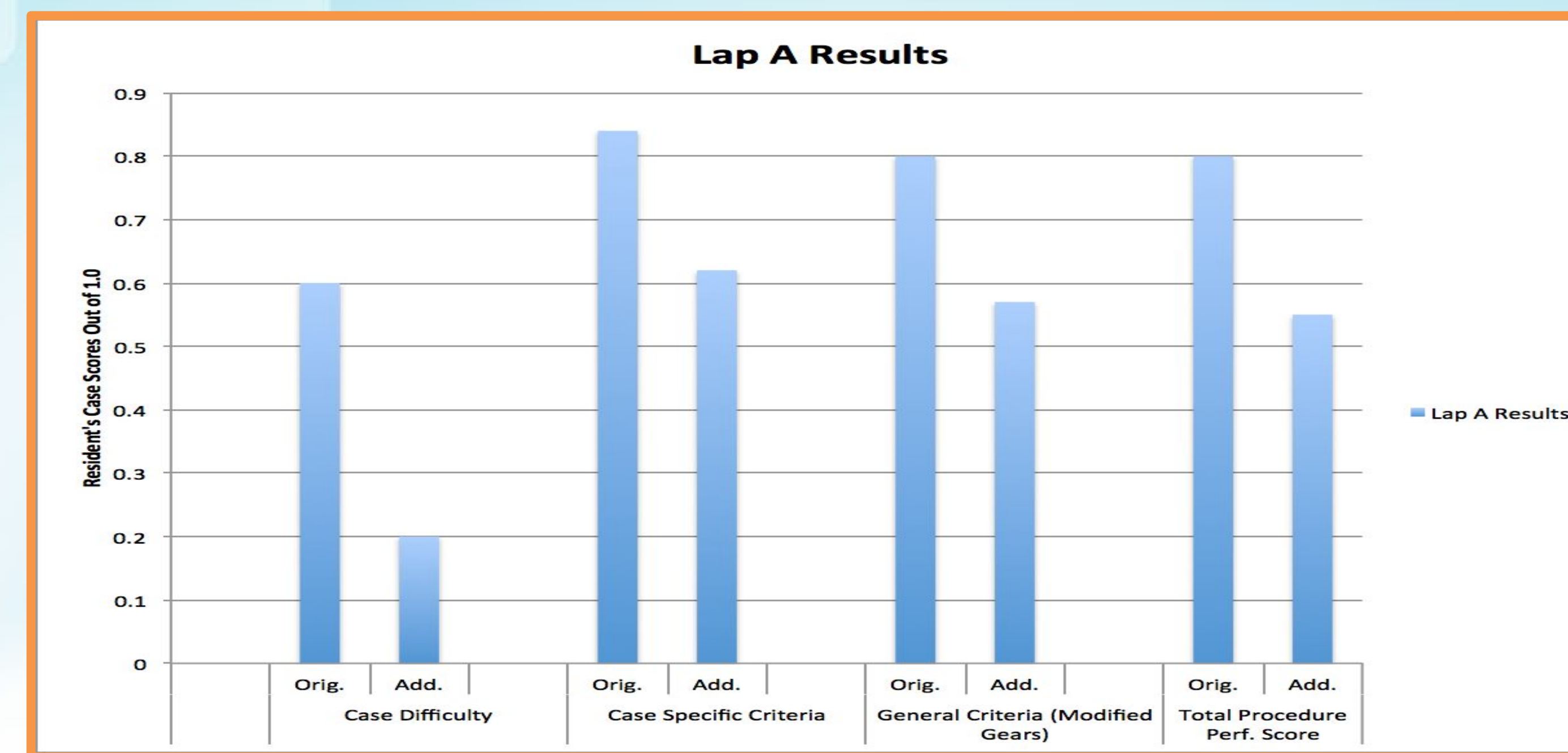


Figure 2. The laparoscopic adnexal surgery case is isolated from the multi-bar graph above into a double-bar graph to clarify our results.

## RESULTS

Figure 1 allows us to compare the biased evaluations from the original attending physicians to the blind evaluations from external physicians. The scores are broken down into four categories of the procedure and then further broken down into each specific case (e.g. laparoscopic hysterectomy or robotic). If you compare each of the five cases side-by-side, you can see that on average the original attendings scored the residents higher than the blind external physicians did. This seems to be the circumstance for most of the cases and categories except for the robotic surgical cases.

Figure 2 shows us an isolated bar graph of one laparoscopic case from figure 1. It further clarifies our finding that the blind evaluation physicians scored the evaluations lower for each resident than the attending physician.

## CONCLUSIONS

The results from figure 1 and 2 show that there is a difference in perspectives from internal and external attendings on resident competency during surgery. The original attending almost always scored the resident higher in every category. The difference could be due to a more lenient view of the procedure possibly due to their personal relationship with the resident. In contrast, the blind evaluators were stricter with the scoring, therefore resulting in the lower scores. Having blind evaluators is more beneficial to the resident's improvement because the feedback is more critical and harsh, which will result in a more accurate assessment.

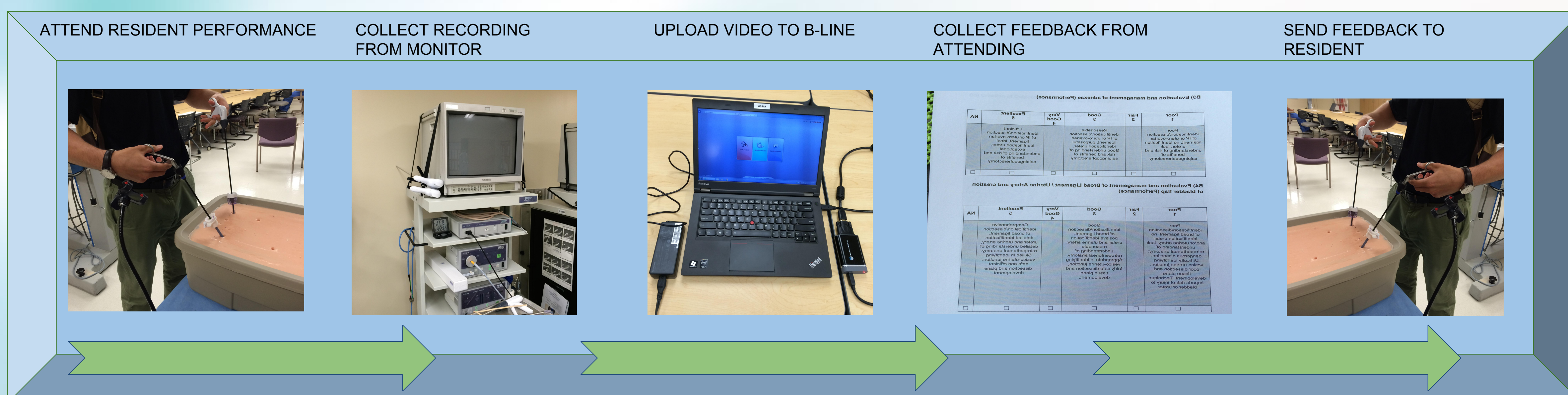
Using SimCapture videotaping technology to optimize resident education and evaluate their performance is an effective tool that should be implemented. The feedback we have gotten from the residents were very positive and they informed us that it has been helpful to their improvement. Therefore, SimCapture is an advantageous way to improve the health care quality of physicians.

Works Cited

Birkmeyer, John D., et al. "Surgical Skill and Complication Rates after Bariatric Surgery — NEJM." *New England Journal of Medicine* 369.15 (2013): 1434-1442. Massachusetts Medical Society, 13 Oct. 2013. Web. 20 July 2016.

Dougherty, Paul, Steven J. Kasten, R. Kevin Reynolds, Mark E. P. Prince, and Monica L. Lypton. "Intraoperative Assessment of Residents." *Journal of Graduate Medical Education* 5.2 (2013): 333-34. Web. 19 July 2016.

Fink, Michael. "SimCapture Photos" 2016. JPG



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