Effects of a Robotic Specific Operating Room Checklist to Reduce Hospital Reutilization

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Introduction

To address surgical complications, the World Health Organization (WHO) developed the Safe Surgery Saves Lives Checklist. With the foundation of the WHO’s checklist, the Robotic Operating Room Computerized Checklist (RORCC) (Figure 1) was developed for use in a high volume gynecological (GYN) specialty group using minimally invasive robotic-assisted surgery (Figure 2).

Materials and Methods

Data were abstracted from patients undergoing GYN procedures from four GYN surgeons at an urban, community hospital during November 16th, 2010 to May 15th, 2011 (pre-checklist) n=89 and from the period May 16th, 2011 to November 16th, 2011 (post-checklist) n=121. The outcome variable was 30-day readmission (no vs. yes). Records were considered to be a readmission if the patient entered the hospital with surgical complications 30-days post procedure. This data was twice verified for consistency by examining the electronic records and the reason for readmission.

Results

- Variables were examined for normality and collinearity; all variables were normally distributed and none were collinear.
- Thirty day readmissions pre-checklist and post-checklist were 12 and 5, respectively (P=0.02).
- Variables significant in the bivariate analyses included period (odds ratio(OR)=0.28; 95% confidence interval (CI)=0.09, 0.82).
- In logistic regression, the exposure variable “period” was associated with a 74% reduction (CI=0.09, 0.78) in 30-day readmissions when controlling for age in the model.
- There were no observed confounding variables.

Discussion

The surgical environment is ever-advancing in technology that increases the volume and skills needed to perform robotic surgery correctly, consistently, and safely. The creation of the da Vinci® Surgical system checklist supported by Intuitive Surgical provides significant assistance for clinically relevant outcomes and value for the patient. The overall aim of the RORCC was to strengthen accepted safety practices and foster better communication between clinical disciplines. The study supported the fact that not only is the checklist alone important to patient care, but so is surgical team cohesiveness and communication.

Conclusion

Implementation of the RORCC resulted in a significant reduction in re-utilization at the 30-day period when controlling for age in the model. These findings are important as reductions in readmissions will result in lower expenditures for hospitals entering accountable care models.

References


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