PE80 Early exposure to robotic surgery is improving urology resident robotic skills

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Introduction & Objectives: To evaluate whether urology resident trainee robotic skills are improving due to earlier exposure during training and widespread acceptance of robotic technology into urologic practice.

Materials & Methods: Urologic resident trainees from across the southeast attended a 2-day robotic training course. While in attendance the trainees filled out questionnaires which obtained information about their individual access to robotic simulation, general robot experience, and time spent on the console. Each trainee completed a set of specific tasks on the Mimic Robotic Simulator (Mimic Technologies, Inc., Seattle, Wa). Baseline scores were obtained on 4 specific exercises and these scores were compared across four different groups. These groups included all resident course participants in 2012, 2015, and 2019, as well as, a fourth group which consisted of practicing surgeons new to robotics who had their skills evaluated on day 1 of a 5-day training course. These surgeons participated in the same tasks on the Mimic Simulator as the residents. A total of 83 resident trainees from across the Southeast Section of the American Urological Association, participated in a 2-day robotic training course in Celebration, Fl. There were also 28 novice international robotic surgeons attending a separate 5-day robotic training course.

Results: The metric values were normalized by looking at the maximum and minimum metric values for all exercise attempted. These were analyzed and mapped to a 0-1 scale. Mean and median values were determined for each group and decreasing raw metric values signified improved performance (less time, less motion of instruments, fewer errors, etc.). The 2019 resident trainees outperformed the 2012 and 2015 course participants on every evaluated task. The 2019 residents had an average score of 0.110, while 2012 and 2015 had scores of 0.143 and 0.119. The improvement for 2019 participants was seen in earlier PGY groups and without a reported increase in simulator access or actual robotic console time. The 2019 residents also outperformed the international surgeons with scores of 0.110 and 0.126, respectively.

Conclusions: Resident trainees are achieving better scores on basic simulator exercises in 2019 when compared to two previous groups of residents, 2012 and 2015. Current Urology residents are also outperforming practicing international surgeons new to robotics. This linear progression is displayed by residents that are in an earlier stage of their urological training and is not dependent on simulator access or console time.