

EXPECTATIONS VERSUS REALITY: TRAINEE PARTICIPATION ON THE ROBOTIC CONSOLE IN ACADEMIC SURGERY

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INTRODUCTION

- Robotics in general surgery are being formally incorporated into general surgery residency programs but are not standardized.
- Trainees underperceive their autonomy in open and laparoscopic cases, whereas faculty overperceive trainee involvement; this has not yet been studied in robotics.
- Dual-console robotics facilitates easy swapping of instrument controls between faculty and trainee, and the active time of each da Vinci console (Intuitive Surgical, Inc.) can be captured.

AIMS: 1) To understand the percentage of trainee console participation time (CPT) in general surgery robotic cases at our institution, and 2) to assess the CPT perceptions and expectations of our faculty and trainees

METHODS

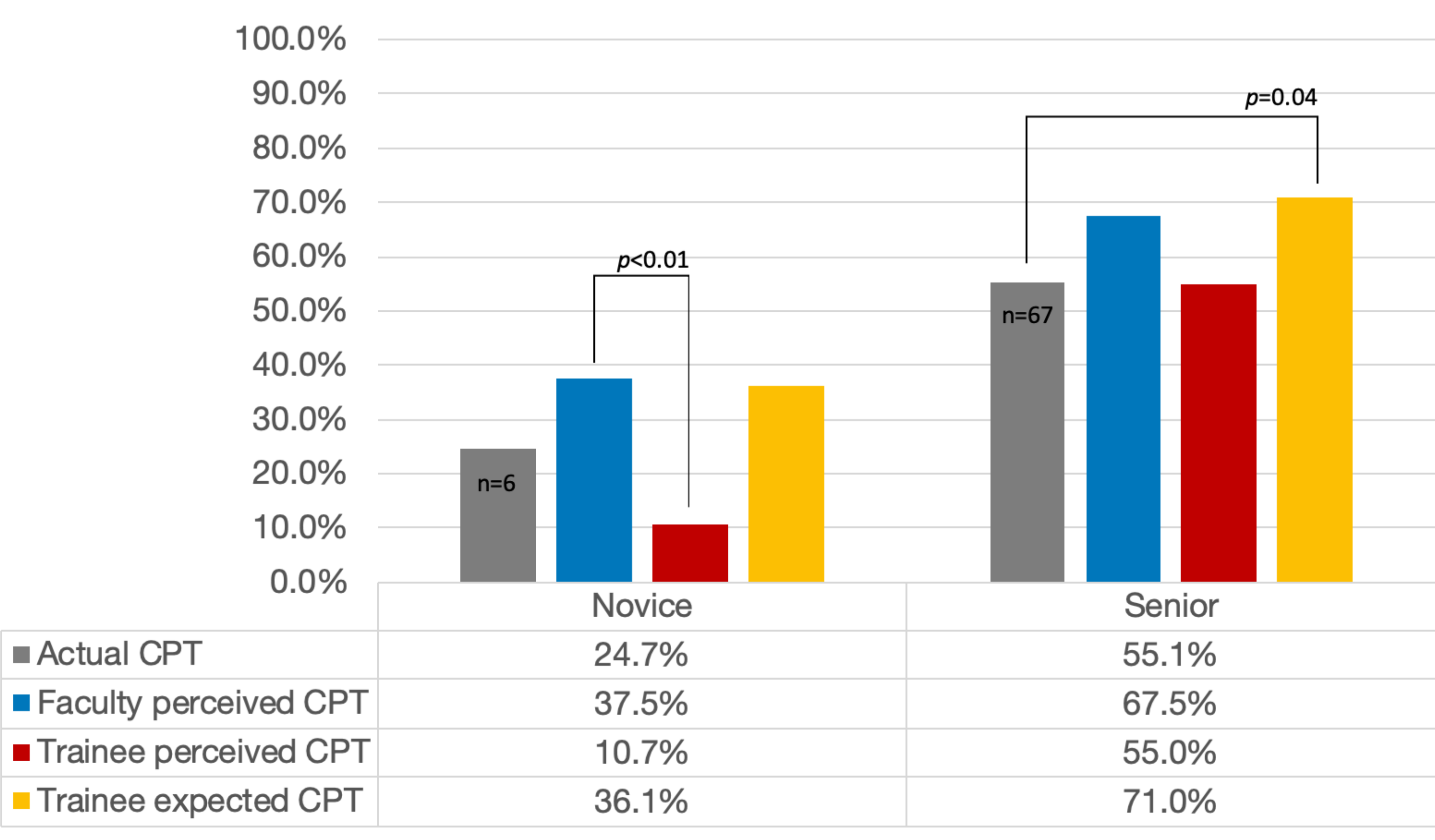
Participants	• General surgery robotic faculty (n=5) • Trainees eligible to sit at console, who completed robotic prerequisite training (n=23), subdivided into: • Novices: minimal to no console experience • Seniors: in final years of training with prior console experience
Data collection	• General surgery robotic cases January-June 2019 with one faculty and one trainee on dual consoles (n=192) • Each trainee logs into his/her console, which captures the percentage of active console participation time (CPT) per case: • Faculty: n=5, novices: n=5, seniors: n=7
Survey	• For inguinal hernia repairs (IHR) and cholecystectomies (CCY): • Faculty (n=4 of 5) estimate average CPT of novice vs. senior trainees • Novice and senior trainees (n=15 of 23) estimate their average CPT and their expectations for CPT at their level of training

RESULTS

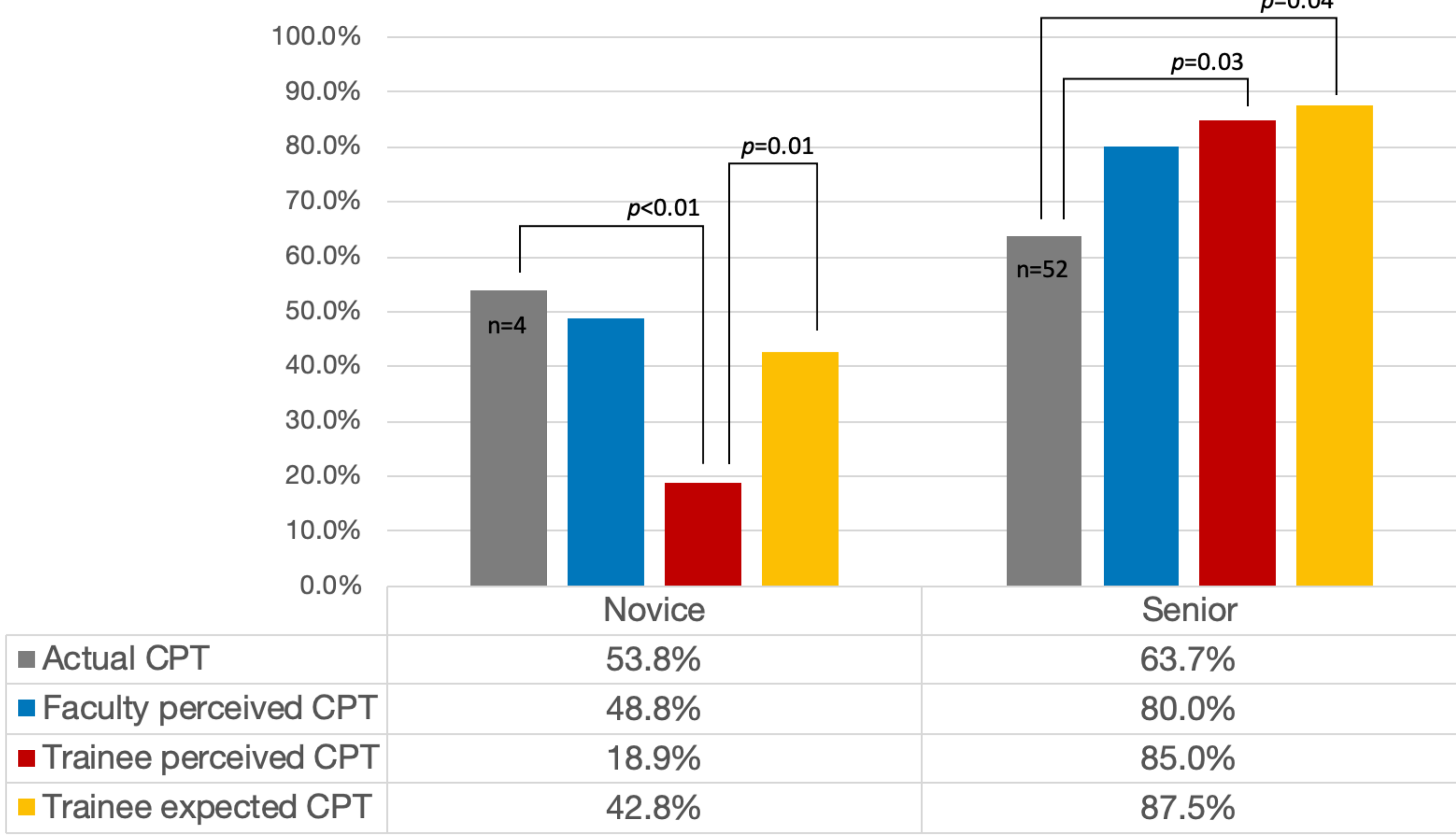
General surgery robotic cases during study and average trainee CPT

Case type	# of cases, n=192	Average trainee CPT (range)
Inguinal hernia repair (IHR)	93 (48%)	56% (0-100%)
Cholecystectomy (CCY)	58 (30%)	64% (0-100%)
Ventral hernia repair	22 (12%)	38% (0-86%)
Hiatal hernia repair	10 (5%)	38% (25-50%)
Partial colectomy	3 (2%)	37% (18-52%)
Pyloroplasty	2 (1%)	54% (49-59%)
Others	4 (2%)	18-57% (n/a)

Trainee CPT in Robotic Inguinal Hernia Repair



Trainee CPT in Robotic Cholecystectomy



SUMMARY

- Faculty thought they gave trainees 12.8-16.3% more CPT than in actuality ($p>0.05$).
- Novices in reality had 14.0% more CPT in IHR ($p=0.10$) and 34.9% more CPT in CCY ($p<0.01$) than perceived. Novices expected 11.4% more CPT in IHR than they performed, but in CCY they actually performed 11% more CPT than expected ($p>0.05$).
- Senior trainees perceived having more CPT compared to actual CPT by 21.3% in CCY ($p=0.03$), but were accurate for IHR (55.0% vs 55.1%, $p=0.99$). They also expected more CPT than received by 15.9% in IHR and 23.8% in CCY.
- The gap between trainee perception and expectation decreases from novices to seniors ($p>0.05$).

CONCLUSIONS

In novices, the discrepancy between actual CPT and perception may be due to needing more time to complete a step of the case. Senior trainees have familiarity and experience that may result in more aligned perceptions and expectations with reality. Standardizing robotic curricula to include expectation setting may improve trainee experience. Further research that measures how many steps of CCY and IHR that trainees complete, rather than just time allotted, may have more revealing results.

