# Has the Robotic Surgery Era Impacted the Minimally Invasive Surgery Fellowship Trainee's Operative Role?

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## Introduction and Purpose

- Robotic surgery has experienced exponential growth in the past decade.
- Few studies have evaluated the impact of robotic surgery on trainees' operative roles and level of case involvement.
- The learning curve and lack of widespread utilization of the dual console may have an impact on the trainee's operative experience.

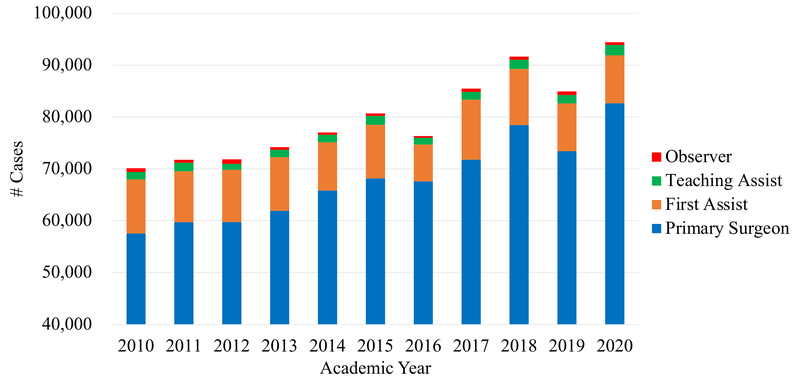
Purpose: Examine recent trends in trainee reported operative roles and whether this has been impacted by increased robotic utilization settings.

## Methods

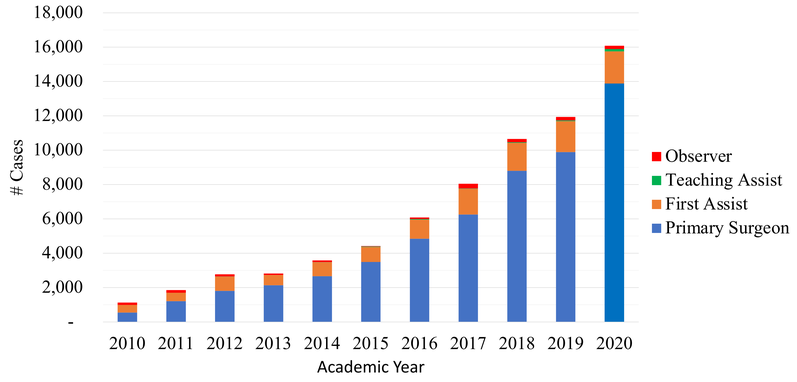
- De-identified case log data from the Fellowship Council from academic years 2010-2021 was evaluated.
- The percentage of cases logged by the fellow as the primary surgeon, first assist, teaching assist, and observer were assessed and compared over time.
- Case logs were further stratified by approach (robotic, laparoscopic, open, or endoscopic), and trends in the trainees' operative role were evaluated for each approach.

## Results

Total Fellow Cases Logged




Fellow Role in Robotic Cases




## Results

1. The percentage of all cases where the trainee was the primary surgeon had a slight increase from 82.0% (57,526/70,138) in 2010 to 87.5% (82,633/94,412) in 2021.
2. The number of robotic cases logged by trainees increased from 1,127 to 16,081.
3. The percentage of robotic cases where the trainee was the primary surgeon increased from 49.1% (553/1,127) to 86.4% (13,889/16,081).
4. The percentage of robotic teaching cases increased from 0.09% (1/1,127) to 0.85% (137/16,081).
5. The percentage of robotic first assist and observer cases both decreased, 38.9% (438/1,127) to 11.6% (1,869/16,081) and 12.0% (135/1,127) to 1.16% (186/16,081)] respectively.

## Conclusions

1. There has been relatively little impact on the trainees' reported level of case involvement during the era of robotic surgery.
2. The largest magnitude of change has been seen within robotic cases, but the trend has been toward more trainees as primary surgeon and teaching assist cases.
3. The trainee experience and reported level of autonomy remains very robust and this does not appear to have been dramatically impacted by increased robotic utilization.