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TRAINEE INVOLVEMENT IN COLONOSCOPIES IN COLORECTAL SURGERY IS SAFE BUT INCREASES PROCEDURE TIME AND SEDATION USE

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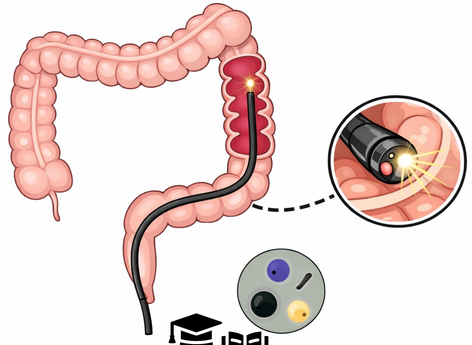
Introduction

- Colonoscopies are paramount for early detection of adenomas and colorectal malignancy.
- It has been shown that **adenoma detection rate (ADR**) is directly associated with decrease in colorectal cancer incidence.
- Longer cecal intubation time and low cecal intubation rates (CIR) are associated with lower ADR, higher adenoma miss rates, and higher post-colonoscopic colorectal cancer risk
- General and colorectal surgery residents are required to complete colonoscopies as part of training, but one recent study found that trainee involvement reduced sessile serrated polyp detection rate (ssPDR).
- **We predict that trainee involvement may prolong time** for cecal intubation and total colonoscopy time, thereby decreasing ADR.

Methods

- This was a retrospective cohort study involving patients who underwent colonoscopy at a single institution by a single colorectal surgeon **between July 2020 and May 2025**.
- Clinical data and trainee involvement was collected through electronic medical record review.
- Variables such as duration of procedure, cecal intubation time, complication presence, PDR, ADR, ssPDR, and CIR were recorded.
- Descriptive and univariate analyses were conducted in SPSS with independent samples t-tests and Fischer's exact tests



Colonoscopy Data	Trainee	No Trainee (Attending only)	P-Value
Sedation			
Fentanyl, mean (SD), mcg	103.24 (34.04) mcg	95.40 (28.96) mcg	**0.035**
Midazolam, mean (SD), mg	4.30 (1.38) mg	3.90 (1.57) mg	**0.042**
Time			
Insertion time, mean (SD), min	**14.02** (6.74) min	**9.38** (5.36) min	**<0.001**
Total procedure time, mean (SD), min	**39.21** (14.54) min	**28.73** (12.71) min	**<0.001**
Quality Measures			
PDR, %	65.81	66.63	0.917 (NS)
ADR, %	50.86	50.80	1.000 (NS)
ssPDR, %	6.03	6.92	0.847 (NS)
Adverse Events			
Failure to intubate cecum, %	0.00	2.32	0.161 (NS)
Complications, %	0.85	0.10	0.200 (NS)

Results

- A total of 1,106 colonoscopies were performed during the study, of which 117 **(10.6%) had trainee involvement**.
- The **mean colonoscopy time** was **10.48 minutes longer with trainees, p=<.001**).
- **Mean cecal intubation time was 4.64 minutes longer with trainees**, p=<.001).
- Colonoscopies WTI also had significantly more fentanyl use (mean 103.24 vs 95.40 mcg, p=0.035) and midazolam use (mean 4.30 vs 3.90 mg, p=0.042).
- There were no significant associations between trainee involvement and PDR (p=0.917), ADR (p=1.00), or ssPDR (p=0.847).
- Complication rates did not differ significantly by trainee involvement (p=0.200).
- 23 colonoscopies failed to intubate the cecum, but none of these had trainee involvement.

Conclusions

- In our cohort, **trainee involvement increased colonoscopy procedure time and cecal intubation time with greater sedation use**.
- However, trainee involvement in colonoscopy **did not significantly influence CIR, complication rate, PDR, ADR, or ssPDR.**
- Although these procedures take more time and sedation, trainee involvement in colonoscopy is safe and does not compromise detection rates.
- These findings may have important ramifications when scheduling patients at teaching institutions.