

# Endoscopy Unit Quality Indicators for Colonoscopy: The Canadian Association of Gastroenterology (CAG) Endoscopy Quality Initiative (EQI) Pilot Project

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## INTRODUCTION

- There are lengthening wait lists for colonoscopy in Canada.
- Delivery of timely service is partly dependent on efficient use of resources.<sup>1</sup>

## OBJECTIVE

- The aim of this study was to measure endoscopy unit quality indicators in the context of a national colonoscopy practice audit program.

## METHODS

- Colonoscopy data were gathered in real time by individual endoscopists over periods of at least 2 weeks using data collection software (ReForm XT, Goanywhere Software, Tulsa, OK) on a smartphone (Treo 650, Palm Inc., Mississauga, ON) (Figure 1).

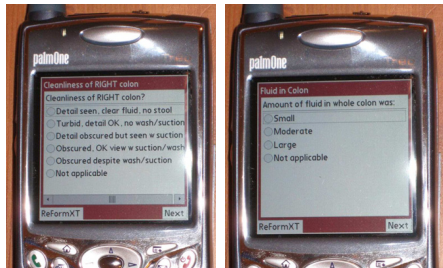


Figure 1. Treo screen views of bowel cleanliness practice audit questions.

- Reasons for colonoscopy were classified as 'Investigation of abnormality' (INV), 'Screening' (SCR) and 'Surveillance' (SUR).
- Bowel preparation quality was rated using the Ottawa bowel preparation scale (Figure 2). Scores of 0-4 = excellent; scores of 11-14 = poor.<sup>2,3</sup>
- Interval since the patient's last colonoscopy was also recorded.

## METHODS Continued...

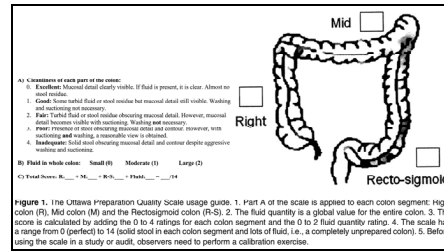


Figure 2. The Ottawa Scale.<sup>2,3</sup>

- Additional procedure data recorded included:
  - ✓ Patient's age bracket
  - ✓ Specific indications for colonoscopy (e.g. signs, symptoms, family history, etc.)
  - ✓ Insertion and withdrawal times
  - ✓ The extent of the examination (cecal intubation, terminal ileum, etc)
  - ✓ Findings (number of polyps, biopsies)
  - ✓ Sedation
  - ✓ Immediate complications
- Data were downloaded to the secure website (ECD Solutions, Atlanta GA) for subsequent review and comparison of personal data with previous data and comparison with national data (Figure 3).

My Summary Data		Review Data by Question		Comparison Charts	
User ID: capfemo					
<b>My Summary Data</b>					
Number of Colonoscopies: 25					
You have entered data on 25 colonoscopies. Currently, the national database contains information from 826 colonoscopies, performed by 50 participating physicians.					
<b>Wait Times: Patient (Days)</b>					
	My Data		National Data		
	Mean	+/- SD	Mean	+/- SD	
From Referral to Consultation	125	102	147	249	
From Consultation to Colonoscopy	29	45	61	102	
Total Wait Time for Patient	154	117	205	267	
<b>Procedure Times (Mins)</b>					
	My Data		National Data		
	Mean	+/- SD	Mean	+/- SD	
Insertion Times	06:33	03:01	08:02	05:19	
Withdrawal Times	06:50	05:51	07:03	05:17	
Total Procedure Time	13:23		15:06		
<b>Polyps</b>					
	My Data		National Data		
	Mean	+/- SD	Mean	+/- SD	
Polyps (Mean per patient with polyps)	2.8	1.8	2.1	1.5	
Patients with Polyps	6	24%	289	35%	
<b>Mucosal Biopsies</b>					
	My Data		National Data		
	#	%	#	%	
Patients with Mucosal Biopsies	2	8%	234	28%	
<b>Bowel Preparation</b>					
	My Data		National Data		
	Mean	+/- SD	Mean	+/- SD	
Ottawa Score (Min 0 / Max 14)	4	3.2	3.2	3.1	
Patients with Ottawa Score <5 (n)	15	60%	24	3%	

Figure 3. Summary page of reporting site.

## RESULTS

- Data collection was performed from February to September 2008.
- Forty-five endoscopists (34 gastroenterologists and 11 general surgeons) reported on 822 colonoscopic procedures (mean number 18.3 per physician).
- Thirteen communities were involved, including academic and community practices, in Nova Scotia, Alberta, Ontario, British Columbia, Saskatchewan, Manitoba and Quebec.
- The majority of bowel preparations in this series (73.9%) was rated as excellent. 192 (23.4%) bowel preparations were graded as fair but only 22 (2.7%) of preparations were poor quality.
- Screening colonoscopies (Table 1):
  - ⇒ 20% in this series were performed in subjects less than 50 years old.
  - ⇒ 8% were performed in subjects who were over 70 years old.
- Surveillance colonoscopies (Table 1):
  - ⇒ 24% were performed less than 2 years from the previous examination.
  - ⇒ 4% were performed more than 10 years from the last examination.

Table 1. Percentages [95% CI] of patients with respect to interval since last colonoscopy and age.

Interval (yrs)	INV (N=353)	SCR (N=324)	SUR (N=145)
Never	72.5 [67.6-77.1]	62.7 [57.1-67.9]	3.4 [1.1-7.9]
<1	6.2 [4.0-9.3]	-	6.2 [2.9-11.5]
1-2	4.5 [2.6-7.3]	1.2 [0.3-3.1]	17.9 [12.1-25.2]
3-5	8.8 [6.0-12.2]	11.4 [8.2-15.4]	40.0 [32.0-48.5]
6-10	4.8 [2.8-7.6]	21.6 [17.3-26.5]	28.3 [21.1-36.4]
>10	3.1 [1.6-5.5]	3.1 [1.5-5.6]	4.1 [1.5-8.8]
<b>Patient Age (yrs)</b>			
18-40	15.9 [12.2-20.1]	4.0 [2.2-6.8]	11.0 [6.4-17.3]
41-50	18.4 [14.5-22.9]	16.0 [12.2-20.5]	13.1 [8.1-19.7]
51-60	26.3 [21.8-31.3]	41.0 [35.6-46.6]	24.8 [18.0-32.7]
61-70	18.4 [14.5-22.9]	30.6 [25.6-35.9]	31.0 [23.6-39.2]
>70	21.0 [16.8-25.6]	8.3 [5.6-11.9]	20.0 [13.8-27.4]

## DISCUSSION & SUMMARY

- Most patients in this series have good quality bowel preparation. A minority of examinations was graded as poor.
- Many patients undergoing screening colonoscopy were less than 50 years old and some were more than 70 years old, suggesting that surveillance guidelines may not have been followed.
- These data suggest possible overuse of screening examinations in a relatively young population, particularly in the average risk group.
- Adherence to guidelines may reduce unnecessary pressure on colonoscopy resources.
- Point-of-care data collection on reasons for colonoscopy and quality of bowel preparation:
  - ⇒ Will permit practice audit by physicians and endoscopy units
  - ⇒ May improve resource utilization in the delivery of colonoscopy services.

Support for this research was provided by the Canadian Association of Gastroenterology.

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 2. Rostom A and Jolicoeur, E. *Gastrointest Endosc* 2004;59:482-486.  
 3. Erratum. *Gastrointest Endosc* 2004;60:326.