Clinical Safety and Effectiveness Course
Cohort #17

Colonoscopy Competency Assessment

Team #11 (Gastroenterology)

Financial Disclosure

- Juan Echavarria, MD, MS, has no relevant financial relationship with commercial interests to disclose

- Charles Obinna Ukabam, MD, MBA, has no relevant financial relationship with commercial interests to disclose

Our team

Faculty

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Fellows

- Obi Ukabam
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- Cari Sorrell

CSE facilitator

- Karen Aufdemorte, MHA

Our Aim statement

“We aim to implement a bedside evaluation tool to improve assessment of competency in colonoscopy training by January 2016 with a goal of 5 colonoscopy evaluations per fellow per rotation”

Project Milestones

• Team creation	8/2015
• Review of the literature: quality metrics in colonoscopy	8/2015
• Aim statement	9/2015
• Weekly meetings	8/15 – 12/2015
• Process Analysis/Fishbone	9/2015
• Survey (Fellows and Faculty)	9/2015
• Pre-intervention	
• Implementation of Colonoscopy Assessment tool	10/2015
• Data Collection/Analysis and post-intervention	10/2015-12/2015
• Post-intervention survey	1/2016
• CSE Final Presentation	1/15/16

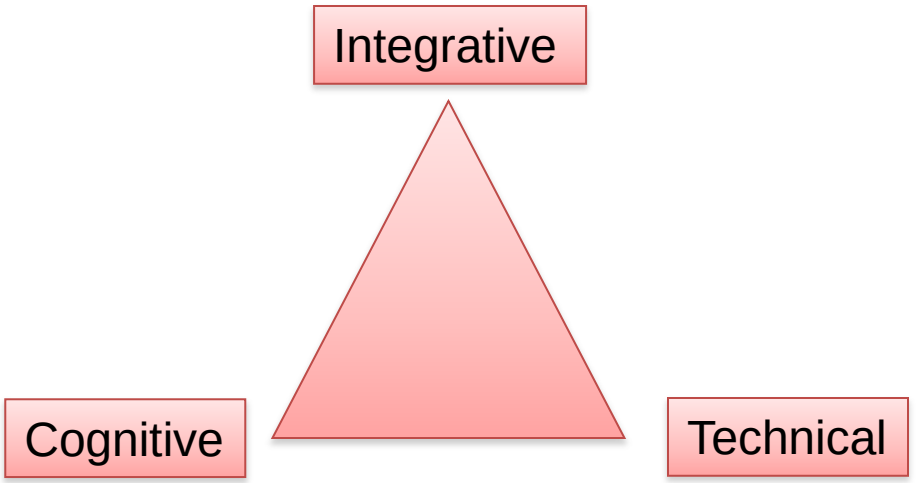
Background

- Increasing emphasis placed on quality metrics and competency assessment in health care
- Moving away from apprentice model training and normative evaluations to competency-based outcomes training and assessment
- Next Accreditation System (NAS) replaced Accreditation Council for Graduate Medical Education (ACGME) longstanding reporting system
  1. Ensure that milestones are reached at various points in training
  2. Ensure that competence is achieved by all trainees
  3. Make certain that these assessments are documented by their programs
- Previous guidelines of performing 140 colonoscopies alone not adequate to achieve competence in colonoscopy
- Emphasis has shifted away from the number of procedures performed to performance metrics with defined and validated competency thresholds of performance

Benchmarks in colonoscopy training

TABLE 1. List of the core motor and cognitive skills required to be competent in colonoscopy

Motor	Cognitive
Correctly holding the colonoscope	Anatomy
Use of the colonoscope controls	Patient selection
Colonoscope insertion	Preparation
Colonoscope advancement	Colonoscope selection
Tip control	Informed consent
Torque	Sedation management
Lumen identification	Assessment of indication and risks
Withdrawal/mucosal inspection	Pathology identification
Loop reduction	Therapeutic device settings
Angulated turns	Integration of findings into management plans
Terminal ileum intubation	Report generation and communication
Biopsy	Complication management
Snare polypectomy	Quality improvement
	Professionalism



Colonoscopy core curriculum. Gastro Endo 2012; Vol 76 (3)

TABLE 3. Global rating items reaching consensus for inclusion in the *GiECAT*

	Global rating item	Definition	Competency domain(s)	Round 5, mean (SD) (max score = 5)	Round 5, consensus level (% rating item ≥4)
1	Technical skill	Demonstrates an ability to manipulate the endoscope by using angulation control knobs, advancement/withdrawal, and torque steering for smooth navigation	Technical	4.67 (0.47)	100.0%
2	Strategies for endoscope advancement	Demonstrates an ability to use insufflation, pull-back, suction, loop-reduction, external pressure, and patient position change to advance the endoscope independently, expediently, and safely	Technical	4.76 (0.43)	100.0%
3	Visualization of mucosa	Demonstrates an ability to maintain a clear luminal view required for safe endoscope navigation and complete mucosal evaluation	Technical	4.70 (0.46)	100.0%
4	Independent procedure completion (need for assistance)	Demonstrates an ability to complete the procedure expediently and safely without verbal and/or manual guidance	Technical	4.54 (0.55)	97.3%
5	Knowledge of procedure	Demonstrates general procedural knowledge including procedural sequence, endoscopy techniques, equipment maintenance and trouble-shooting, indications and contraindications, and potential adverse events	Cognitive	4.65 (0.58)	94.6%
6	Interpretation and management of findings	Demonstrates an ability to accurately identify, interpret, and appropriately manage pathology and/or adverse events	Integrative	4.78 (0.48)	97.3%
7	Patient safety	Demonstrates an ability to perform the procedure in a manner that minimizes patient risk (atraumatic technique, minimal force, minimal red-out, recognition of personal and procedural limitations, safe sedation practices)	Technical and Integrative	4.84 (0.37)	100.0%

GiECAT, Gastrointestinal Endoscopy Competency Assessment Tool.

Walsh et al. Gastrointestinal Endoscopy Competency Assessment Tool: development of a procedure-specific assessment tool for colonoscopy. Gastro Endo 2014; Vol 7 (5)

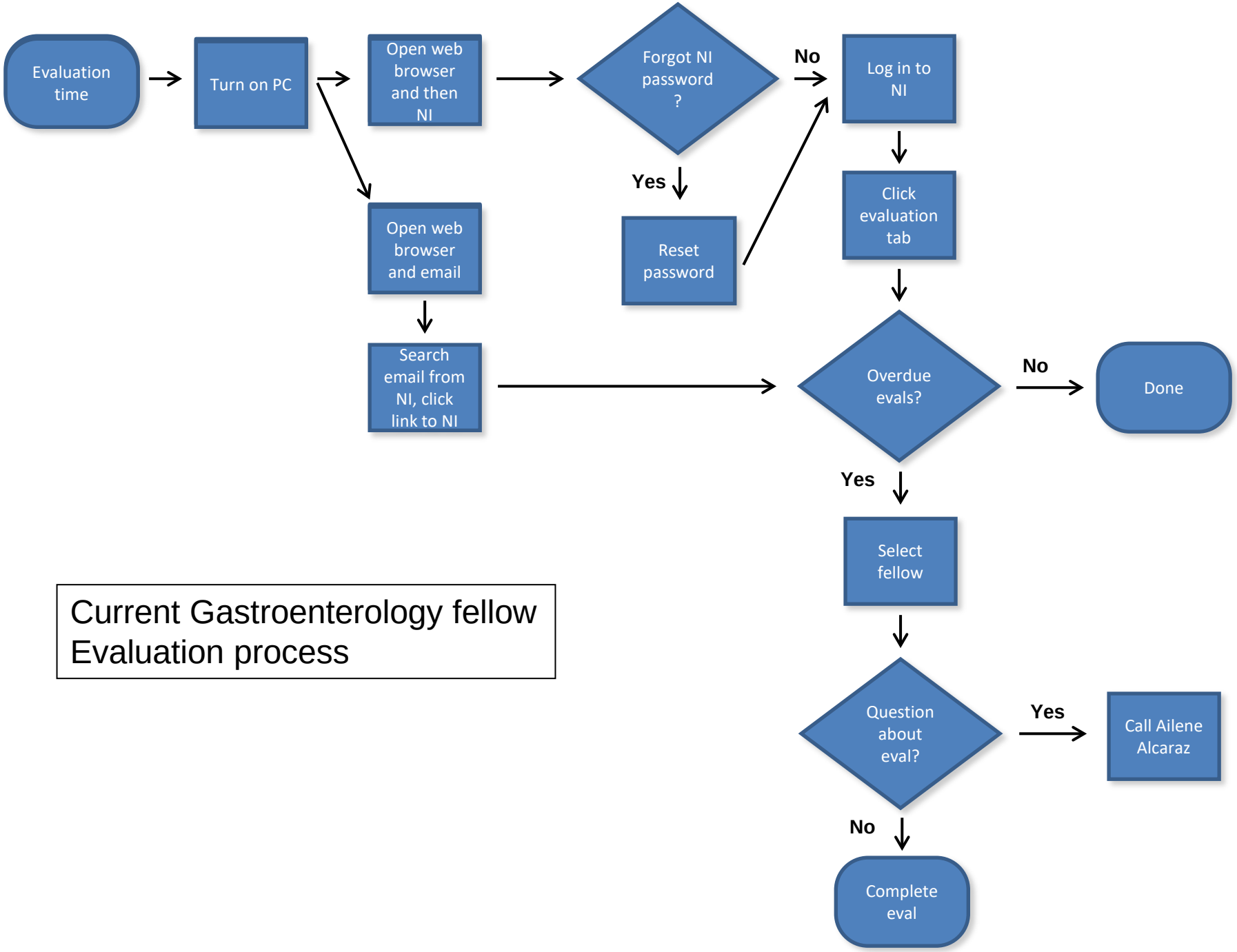
- As more attention and resources are directed at developing CBE curricula, reliable assessment methods and measurable competency benchmarks are, by definition, necessary to ensure that curricula goals are met

Background

- Assess and document competence in basic endoscopic procedures in a continuous fashion
- To accomplish this task, validated assessment tools are necessary
  - Direct Observation of Procedural Skills (DOPS) used by the Joint Advisory Group for Gastrointestinal Endoscopy
  - Global Assessment of Gastrointestinal Endoscopic Skills (GAGES)
  - Mayo Colonoscopy Skills Assessment Tool (MCSAT)
  - Assessment of Competency in Endoscopy (ACE) tool reported by the American Society for Gastrointestinal Endoscopy training committee

Current Colonoscopy Assessment tool

- None
- Evaluation entered in New Innovations



Current Gastroenterology fellow Evaluation process

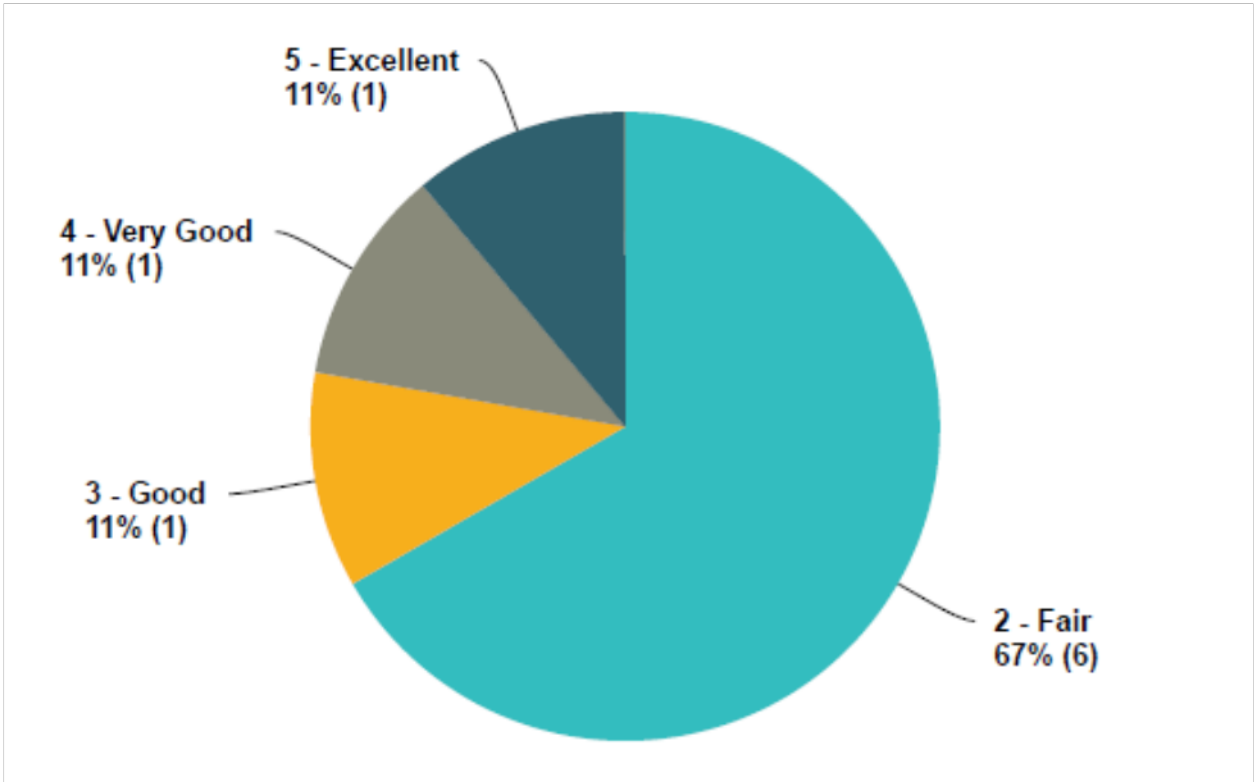
Demonstrates skill in performing and interpreting invasive procedures. (PC4a)

Critical Deficiencies			Ready for unsupervised practice	Aspirational
Attempts to perform invasive procedures without sufficient technical skill or supervision	Possesses insufficient technical skill for safe completion of common invasive procedures with appropriate supervision	Possesses basic technical skill for the completion and interpretation of some common invasive procedures with appropriate supervision	Consistently demonstrates technical skill to successfully and safely perform and interpret invasive procedures	Demonstrates skill to independently perform and interpret complex invasive procedures that are anticipated for future practice
Fails to recognize cases in which invasive procedures are unwarranted or unsafe	Inattentive to patient safety and comfort when performing invasive procedures	Inconsistently manages patient safety and comfort when performing invasive procedures	Maximizes patient comfort and safety when performing invasive procedures	Demonstrates expertise to teach and supervise others in the performance of invasive procedures
Does not recognize the need to discuss procedure indications, processes, or potential risks with patients	Applies the ethical principles of informed consent	Inconsistently recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures	Consistently recognizes appropriate patients, indications, and associated risks in the performance of invasive procedures	Designs consent instrument for a human subject research study; files an Institution Review Board (IRB) application
Fails to engage the patient in the informed consent process, and/or does not effectively describe risks and benefits of procedures	Recognizes the need to obtain informed consent for procedures, but ineffectively obtains it	Obtains and documents informed consent	Effectively obtains and documents informed consent in challenging circumstances (e.g., language or cultural barriers)	
	Understands and communicates ethical principles of informed consent		Quantifies evidence for risk-benefit analysis during obtainment of informed consent for complex procedures or therapies	
○	○ ○	○ ○	○ ○	○

☐ Not yet assessable

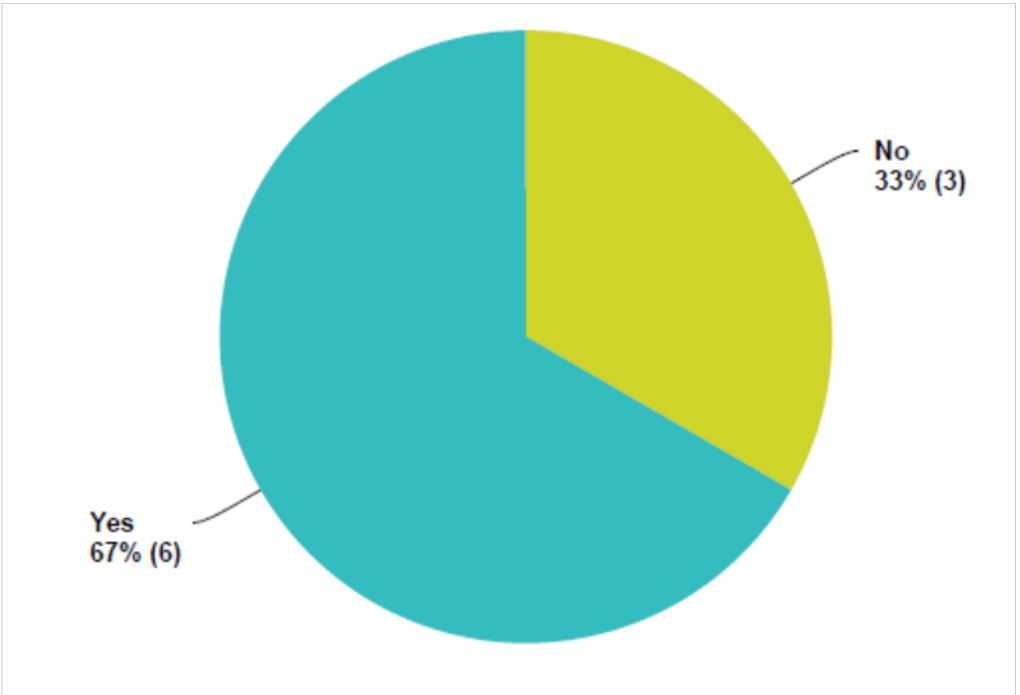
Initial survey

On a scale of 1 to 5, with 1 being Poor and 5 being Excellent, how familiar are you with the benchmarks in colonoscopy training?

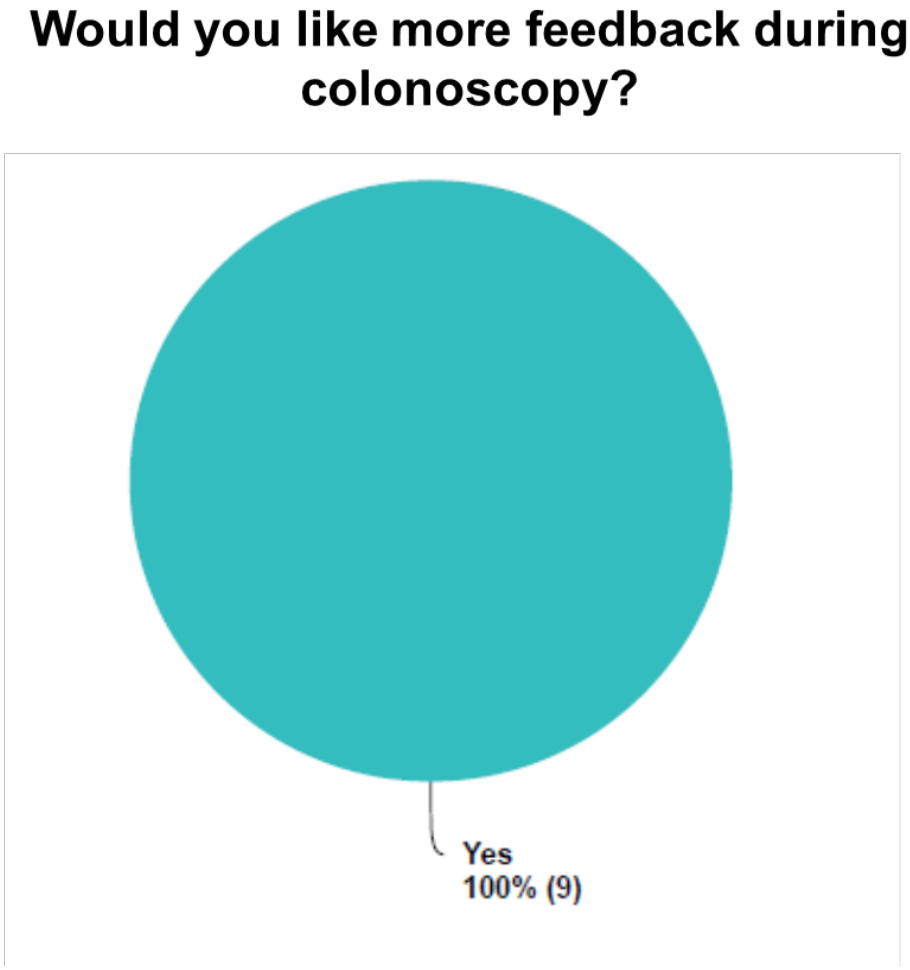


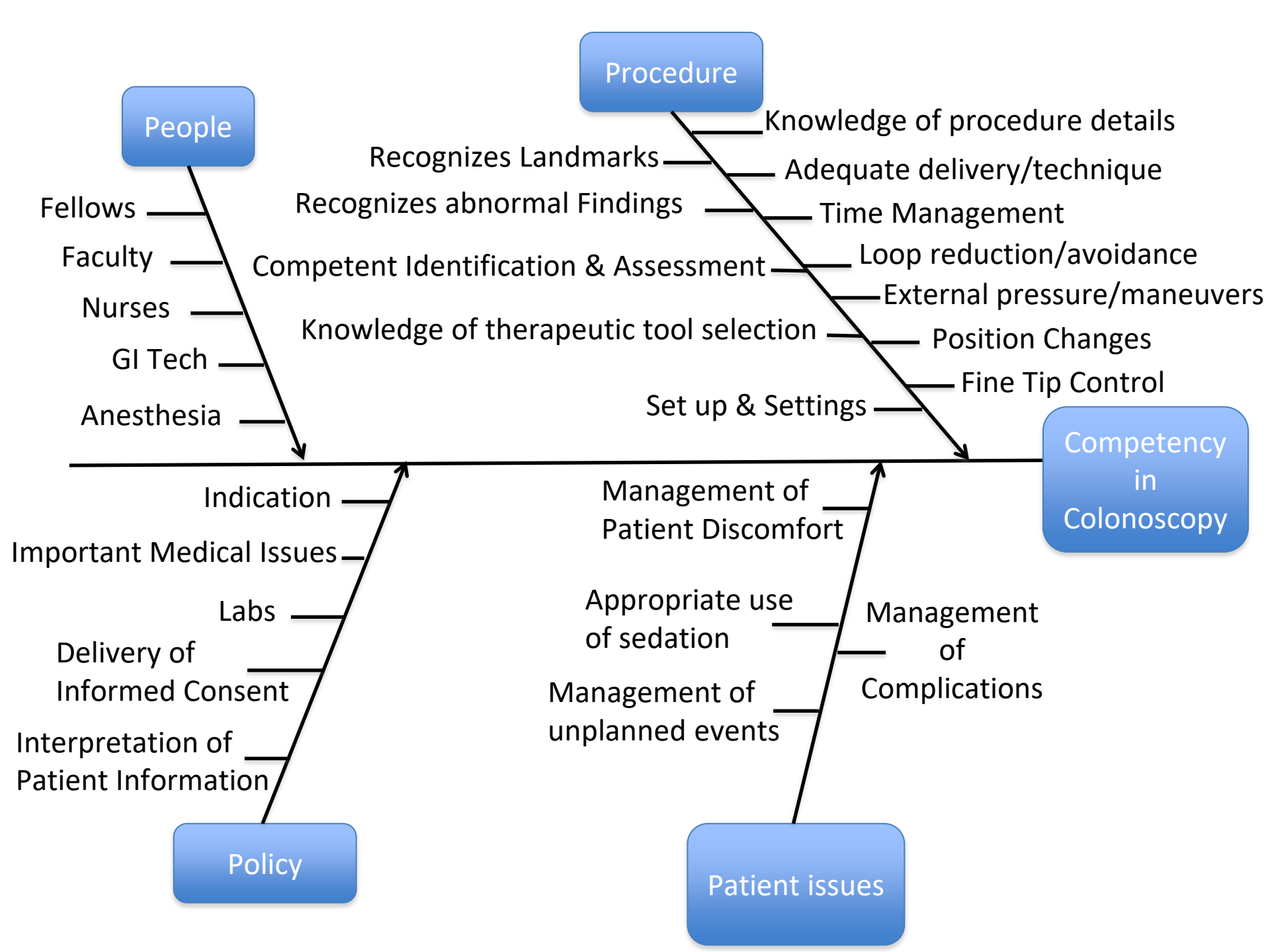
Initial Survey

Do you think there is a need for additional training and assessment tools in colonoscopy at your program?



Initial Survey




Procedure
People
Knowledge of procedure details
Recognizes Landmarks
Adequate delivery/technique
Recognizes abnormal Findings
Time Management
Fellows
Faculty
Competent Identification & Assessment
Loop reduction/avoidance
External pressure/maneuvers
Nurses
Knowledge of therapeutic tool selection
Position Changes
GI Tech
Fine Tip Control
Anesthesia
Set up & Settings
Competency in Colonoscopy
Indication
Management of Patient Discomfort
Important Medical Issues
Appropriate use of sedation
Management of Complications
Labs
Delivery of Informed Consent
Management of unplanned events
Interpretation of Patient Information
Policy
Patient issues

Implementing the change

- Use validated, ACGME-compliant instrument to evaluate competency in colonoscopy
- Educate faculty and fellows

Colonoscopy assessment tool

- Bedside clinical competency assessment that can be used in a continuous fashion throughout fellowship training
- Evaluates both cognitive and motor skills in a balanced manner
- Milestones specific; used for specific feedback
- Allows our program director to continuously monitor and compare each individual fellow's performance at any time during training
- Allows for early identification and intervention for those fellows who may require additional training time and to ensure that competence is ultimately achieved

Colonoscopy assessment tool

- Assessment tool: based on Mayo score (MCSAT)
- Competencies/milestones
  - Achieving average scores of 3.5 or higher for each specific core skill correlates with having achieved the minimal competence criteria
  - Additionally, minimum competency thresholds entail reaching the cecum independently in at least 85% of completed procedures in a time of no longer than 16 minutes

Evaluation Tool for Assessment of Competency in Colonoscopy

Gastroenterology Fellowship
University of Texas Health Science Center at San Antonio

Fellow:
Staff:
Date of procedure:
Cecum intubation time: ☐Assisted ☐ Independent
Withdrawal time:
Total procedure time:

1. Fellow's knowledge of the indication and pertinent medical issues (INR, Vital Signs, Allergies, PMH, anticoagulants, labs)
   - ☐ N/A
   - ☐ 1. Poor knowledge of patient's indication AND medical issues, labs, medications
   - ☐ 2. Missed important elements (i.e. labs, medications, history)
   - ☐ 3. Missed minor elements (i.e. not affecting safety of patient during procedure)
   - ☐ 4. Appropriate knowledge and integration of patient information

2. Management of patient discomfort during procedure
   - ☐ NA
   - ☐ 1. Does not recognize patient discomfort/requires repeated staff prompting to act
   - ☐ 2. Recognizes discomfort but unable to address cause
   - ☐ 3. Adequate recognition and corrective measures
   - ☐ 4. Competent continuous assessment, management and prevention

3. Effective and efficient use of air, water, and suction
   - ☐ NA
   - ☐ 1. Repeated prompting with too much/little air, inadequate washing or repeated suctioning of the mucosa
   - ☐ 2. Occasional prompting with too much/little air, inadequate washing or repeated suctioning of the mucosa
   - ☐ 3. Adequate use of air, water, and suctioning, but room to improve on efficiency
   - ☐ 4. Efficient and effective management of washing, suctioning, and air

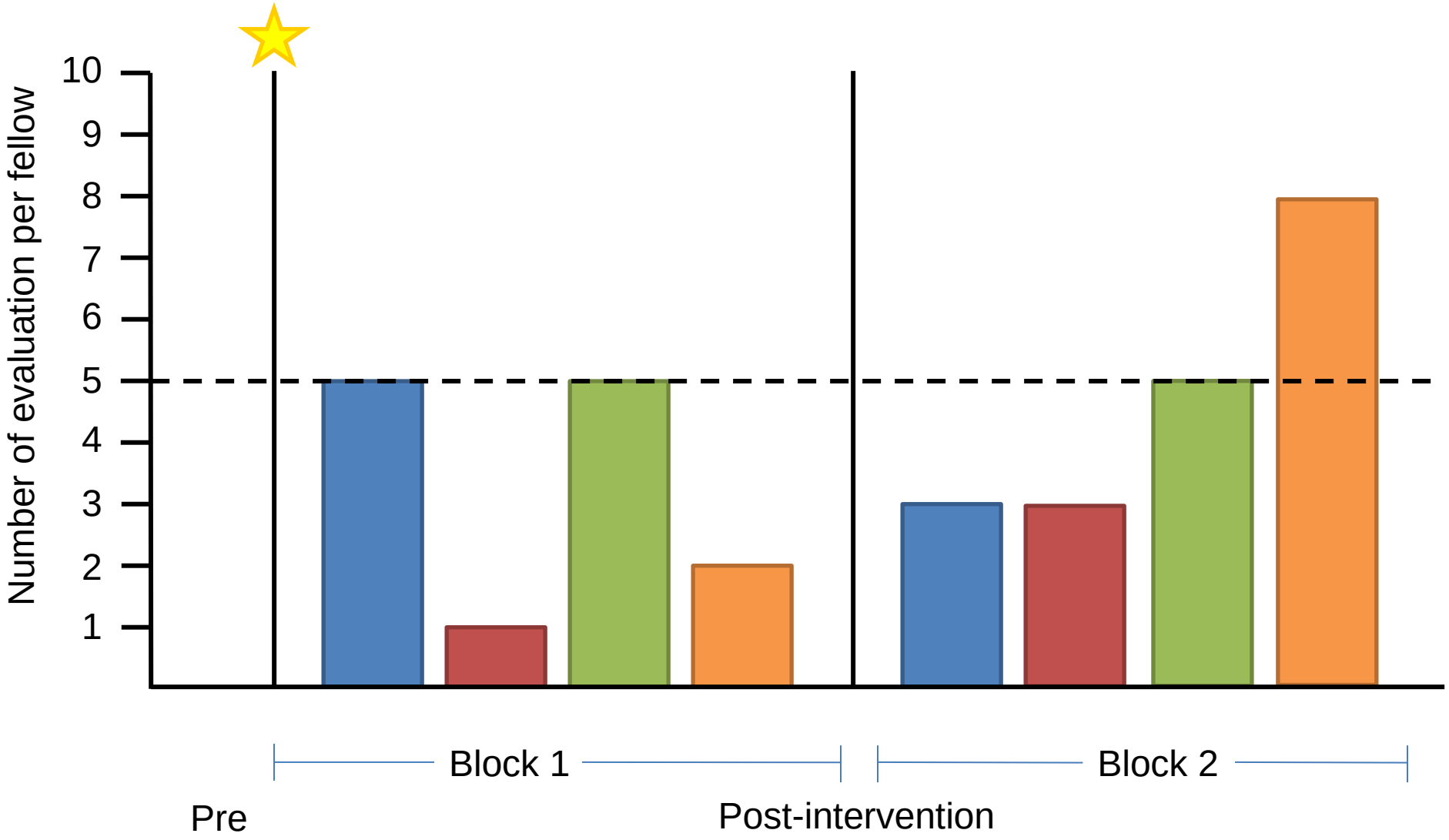
4. Lumen identification
   - ☐ NA
   - ☐ 1. Only able to recognize lumen if in direct view
   - ☐ 2. Can grossly use large folds to help locate which direction the lumen is located
   - ☐ 3. Can use more subtle clues (light/shadows, arcs of circular muscles in wall) but struggles
   - ☐ 4. Consistently, quickly and reliably recognizes where lumen should be based on subtle clues

5. Scope steering technique during advancement
   - ☐ NA
   - ☐ 1. Primarily "two-hand knob steering". Unable to perform two steering maneuvers simultaneously
   - ☐ 2. Frequent two hand steering. Limited use of simultaneous steering maneuvers (torque, knob, advance)
   - ☐ 3. Primarily uses torque steering. Can perform simultaneous steering techniques but not as effective in difficult turns. Uses withdrawal (as an advancement strategy) appropriately. Limited coaching.
   - ☐ 4. Effortlessly combines simultaneous steering techniques to navigate even difficult turns

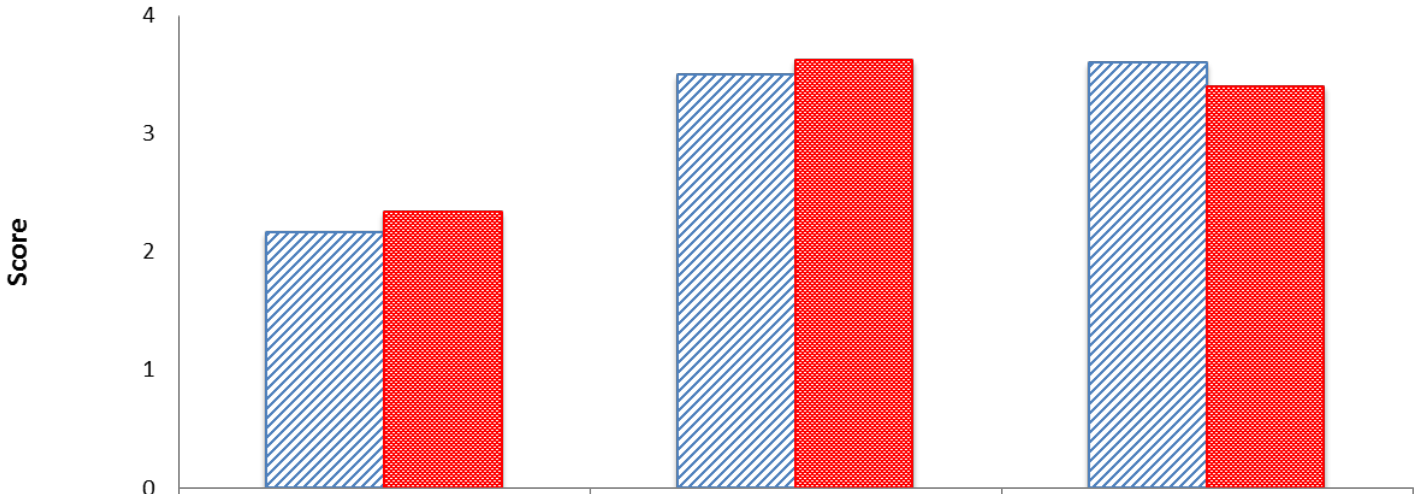
Our goal

- Implement a bedside evaluation tool to improve assessment of competency in colonoscopy training by January 2016 with a goal of 5 colonoscopy evaluations per fellow per rotation
- Study period starting 10/2015 – 12/2015
- 1st-3rd year fellows
- 5 minute feedback after each evaluation – specific benchmarks to improve
- Evaluations should be spread throughout the month

Run Chart


Number of evaluation per fellow
10
9
8
7
6
5
4
3
2
1
Block 1
Block 2
Pre
Post-intervention

Average overall hands-on skills per PGY

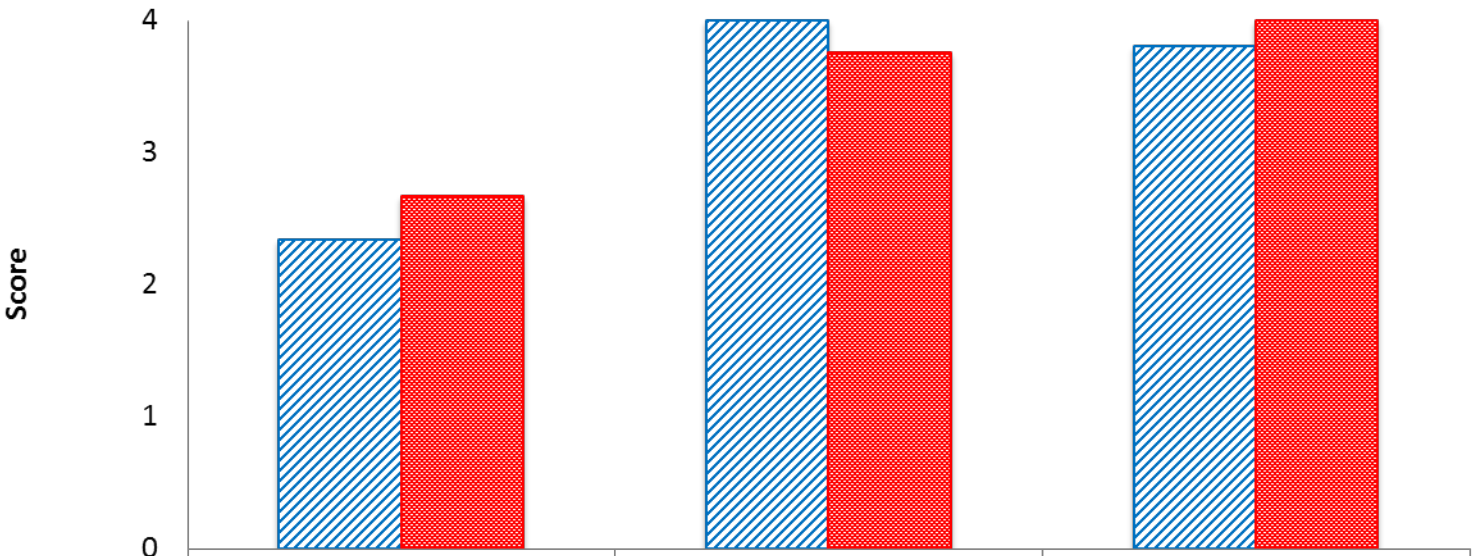


	PGY4	PGY5	PGY6
October	2.166666667	3.5	3.6
November	2.333333333	3.625	3.4

Scoring scale:

0. NA
1. Learning basic scope advancement; requires significant assistance and coaching
2. Acquired basic motor skills but still requires limited hands-on assistance or significant coaching
3. Able to perform independently with limited coaching; requires additional time to complete
4. Competent to perform independent colonoscopy effectively

Average overall cognitive skills per PGY



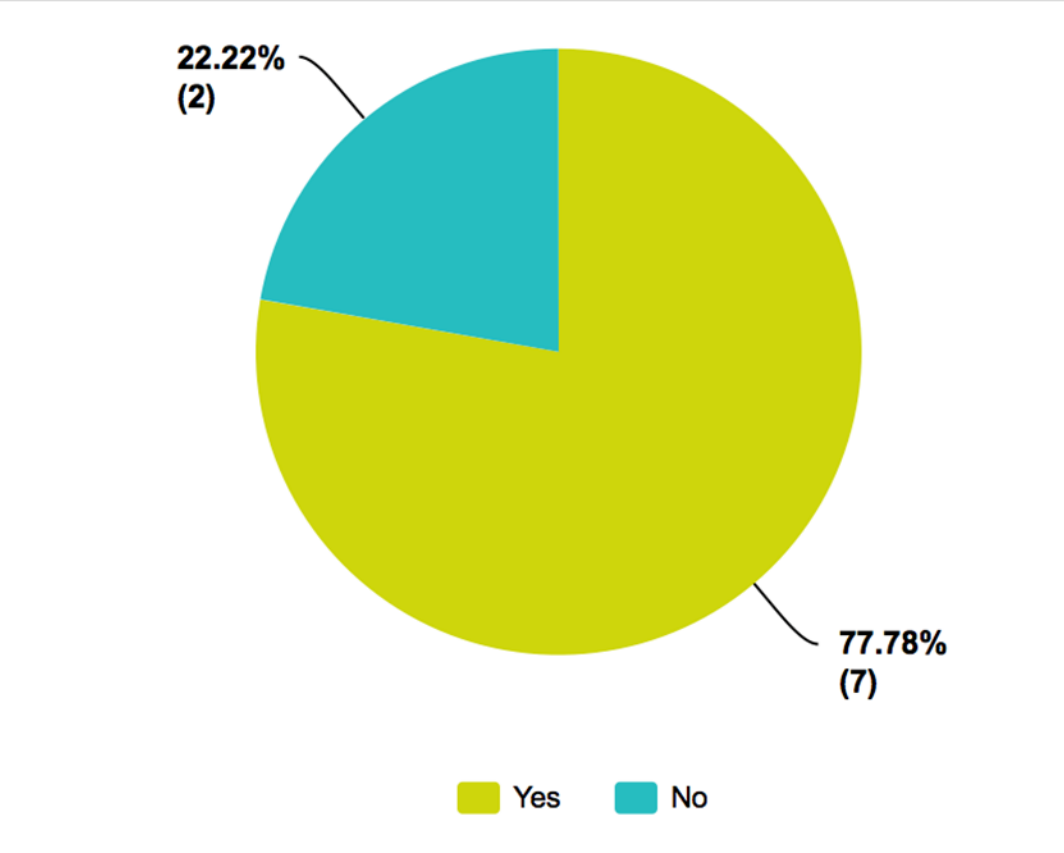
	PGY4	PGY5	PGY6
October	2.333333333	4	3.8
November	2.666666667	3.75	4

Scoring scale:

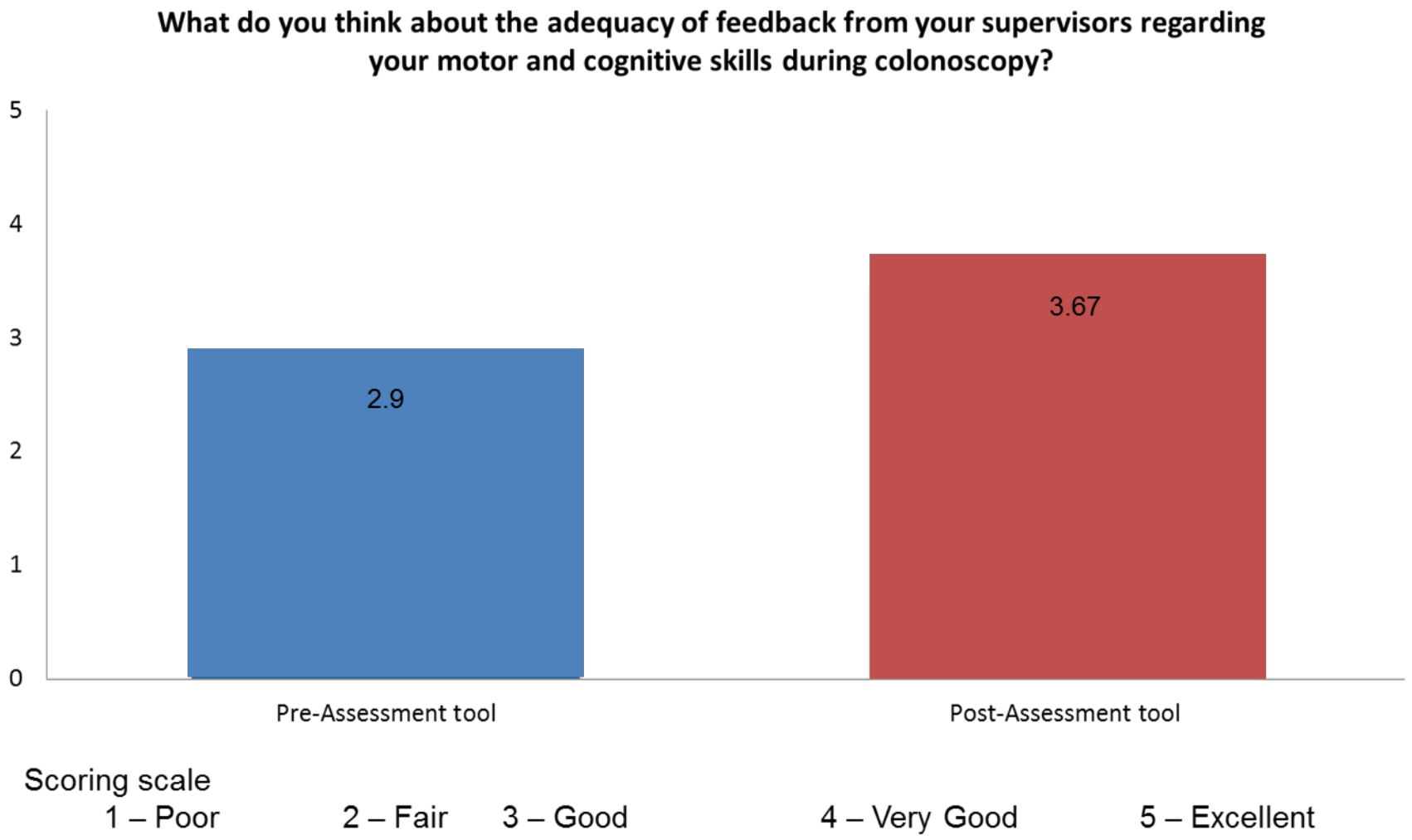
0. NA
1. Significant prompting, correction, or basic instruction by staff
2. Intermittent coaching or correction by staff
3. Good situation awareness and interpretation/decision making skills
4. Competent to make interpretations and treatment decisions independently

Final survey

Did you receive more feedback during colonoscopy after implementation of the colonoscopy assessment tool?



Final survey



Limitations

1. Different evaluation sites
2. Time consuming/Busy schedule
3. Forget
4. Dislike evaluation
5. Not needed
6. Use seems limited to 1st year fellows

Return of Investment

- More objective measurement
- Increase feedback to fellows
- More engaged faculty
- Reportable to ACGME
- Identify at risk fellows and early intervention