

PET 2018



WEO Program for Endoscopic Teachers.
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Trainee Assessment & Competency

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**Acknowledgement and Thanks to the following
leaders in Endoscopy Assessment:**

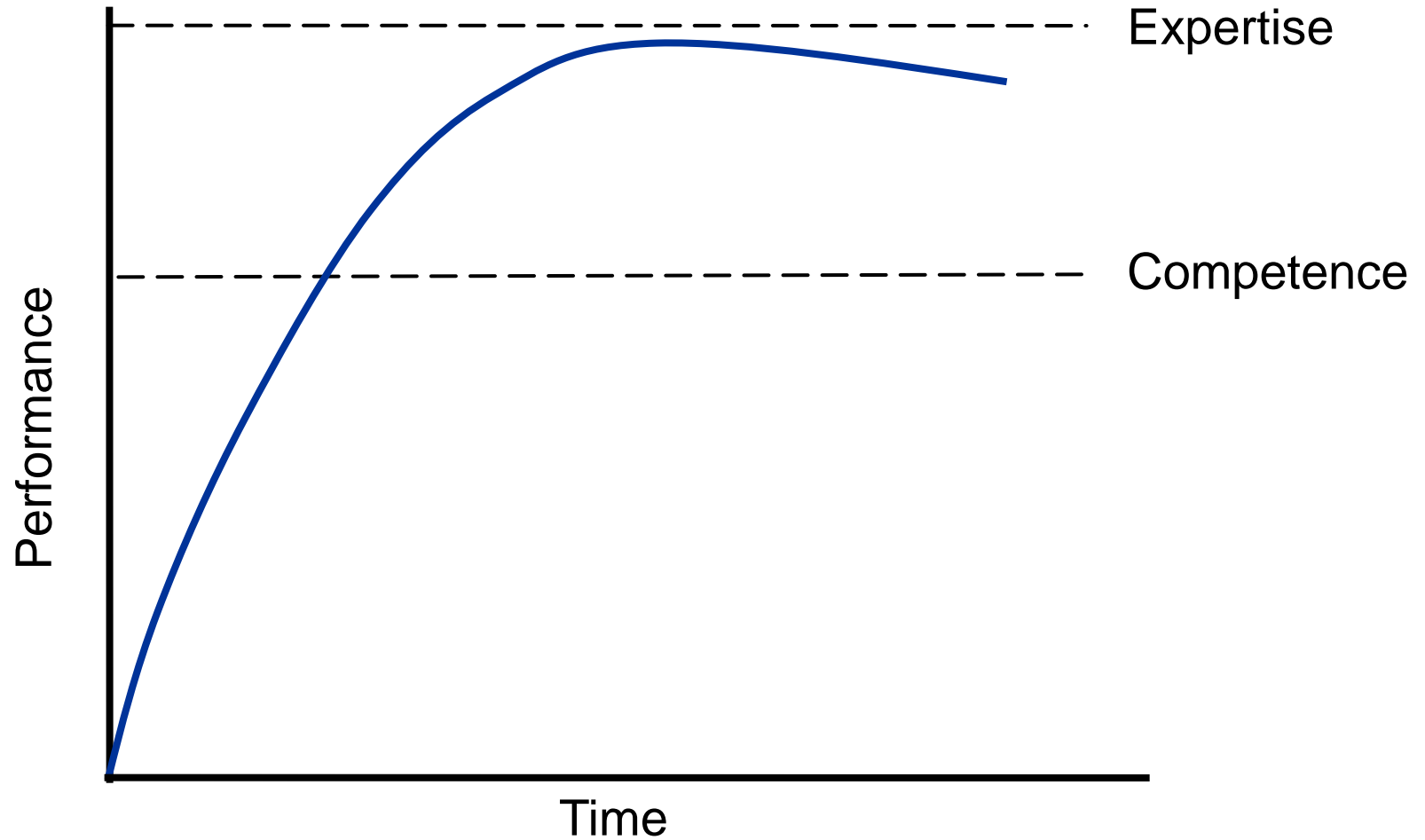
- Robert Sedlack Mayo Clinic
- Walt Coyle San Diego
- Kathryn Walsh Toronto
- Adam Haycock UK NHS
- John Anderson UK NHS
- Roland Valore UK NHS

Competence

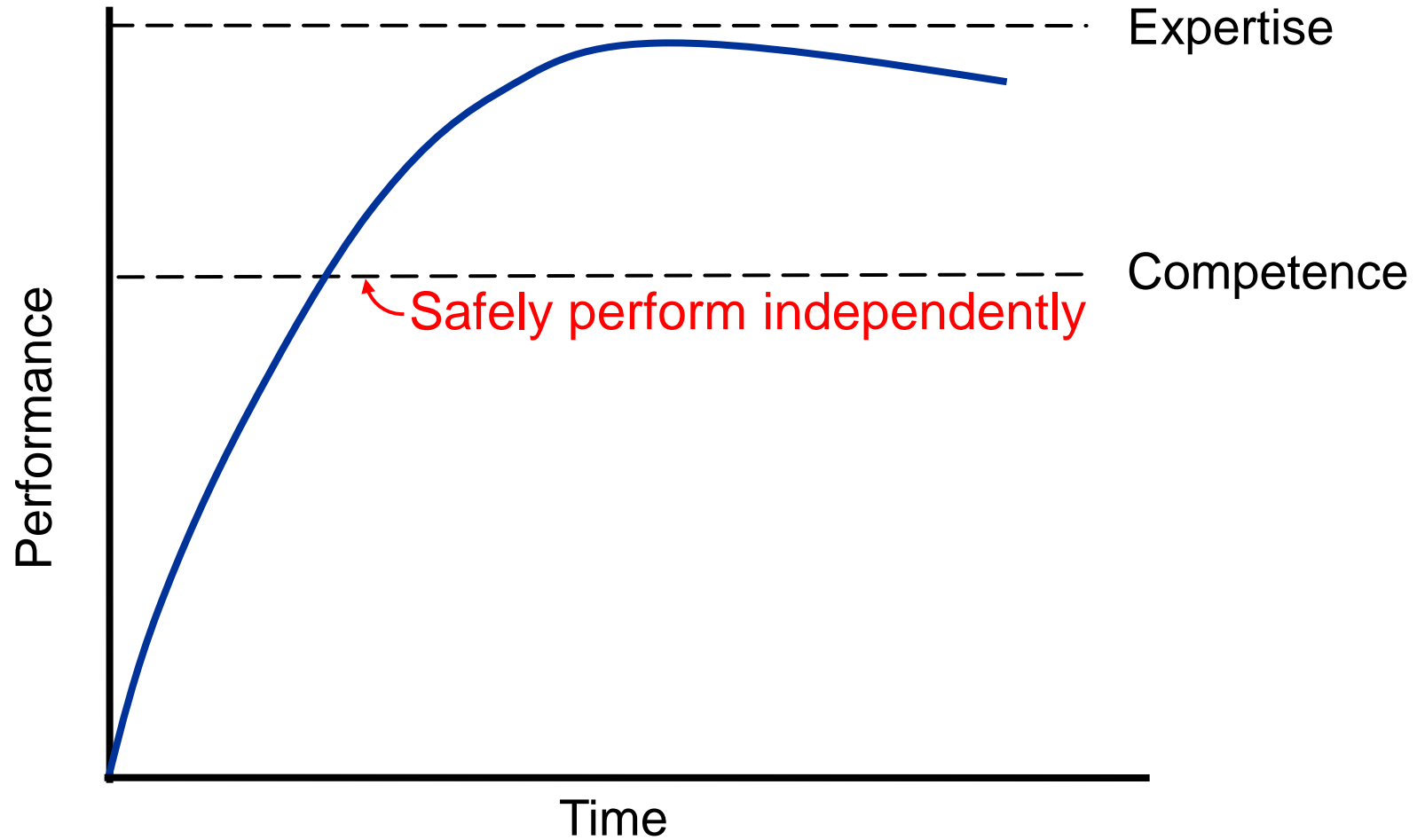
“The **minimum** level of skill, knowledge and/or expertise, derived through training and experience, required to safely and proficiently perform a task or procedure”

ASGE Guidelines for Credentialing and Granting Privileges
for Gastrointestinal Endoscopy. *GIE*. 1998;48:679-82.

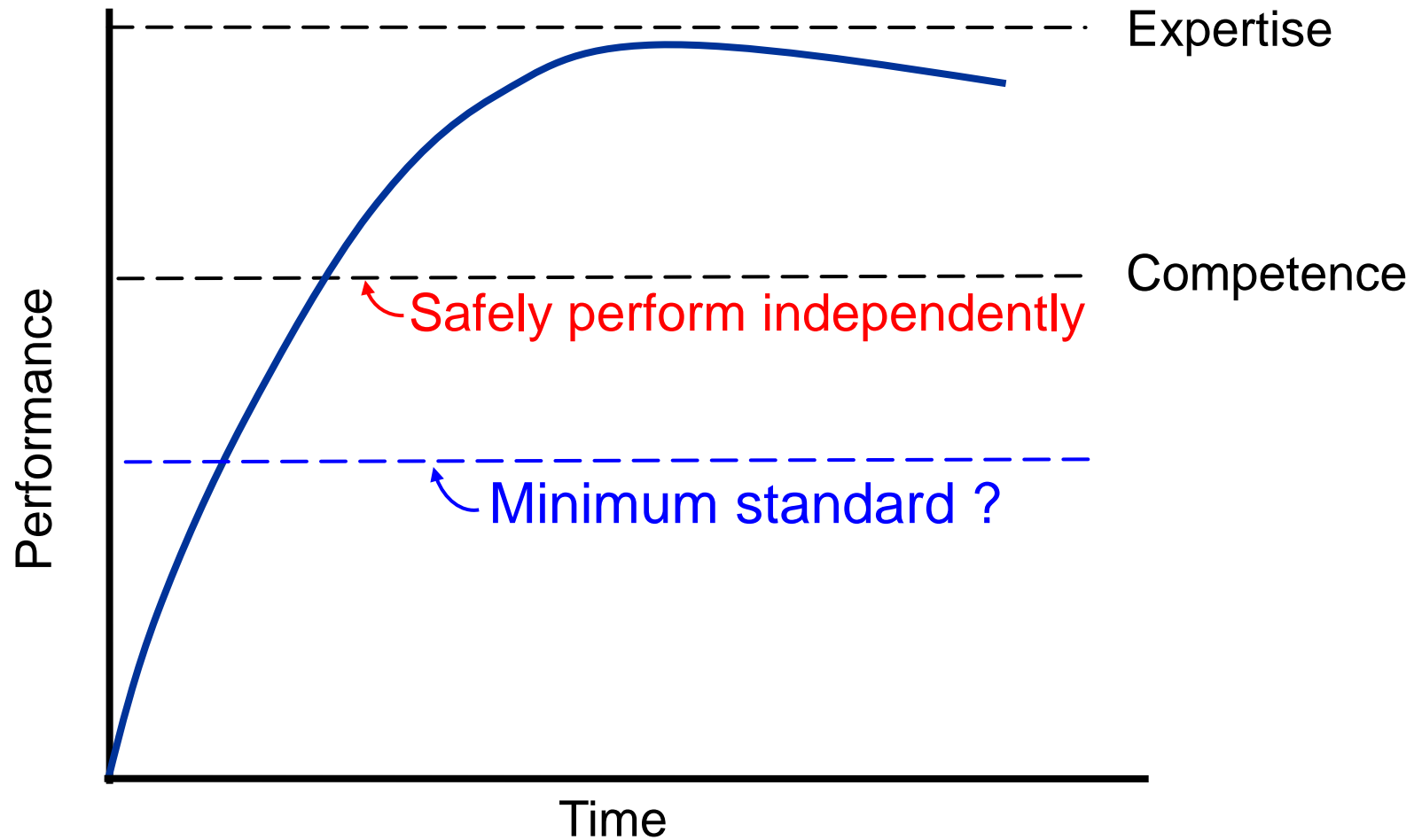
Skills acquisition



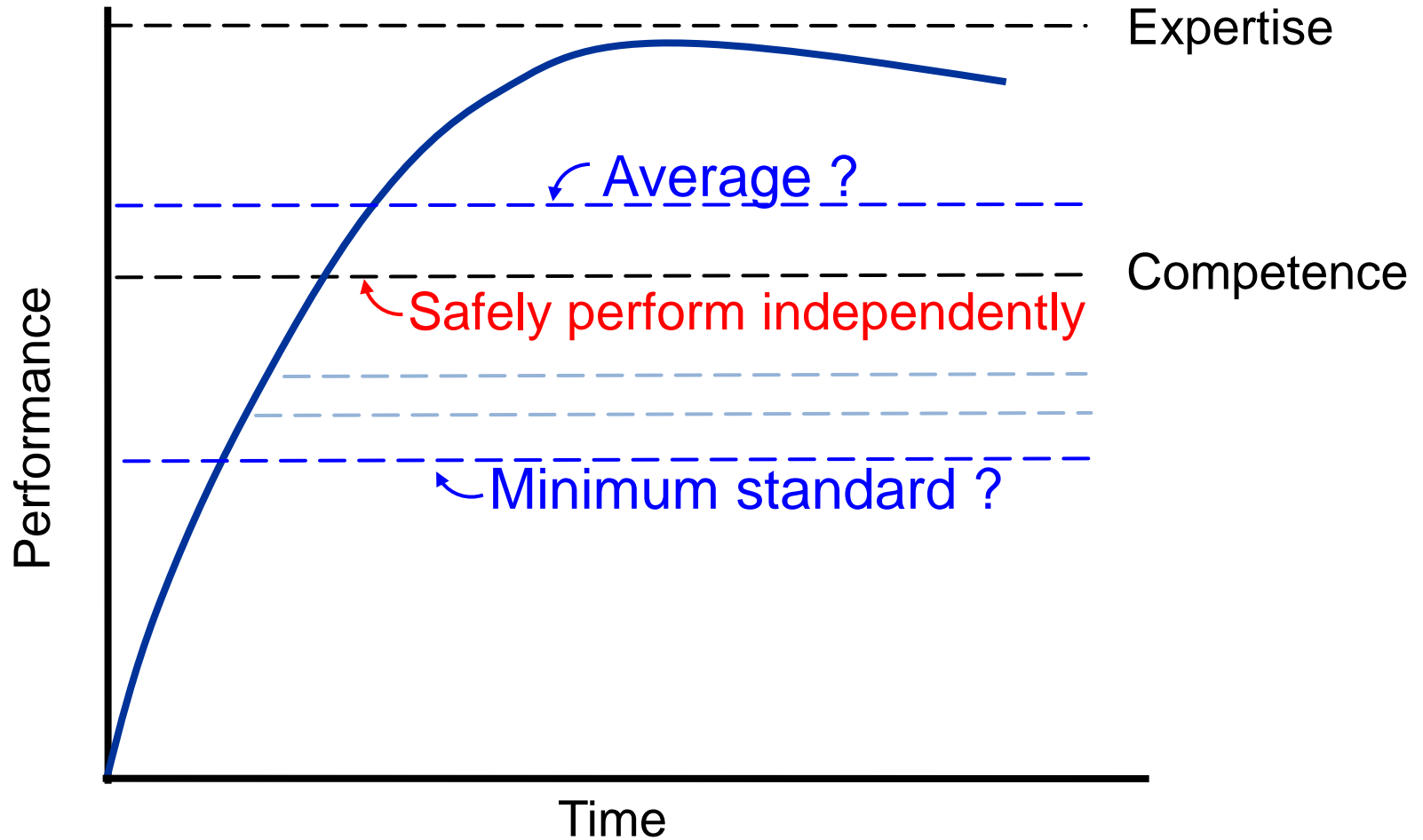
Skills acquisition



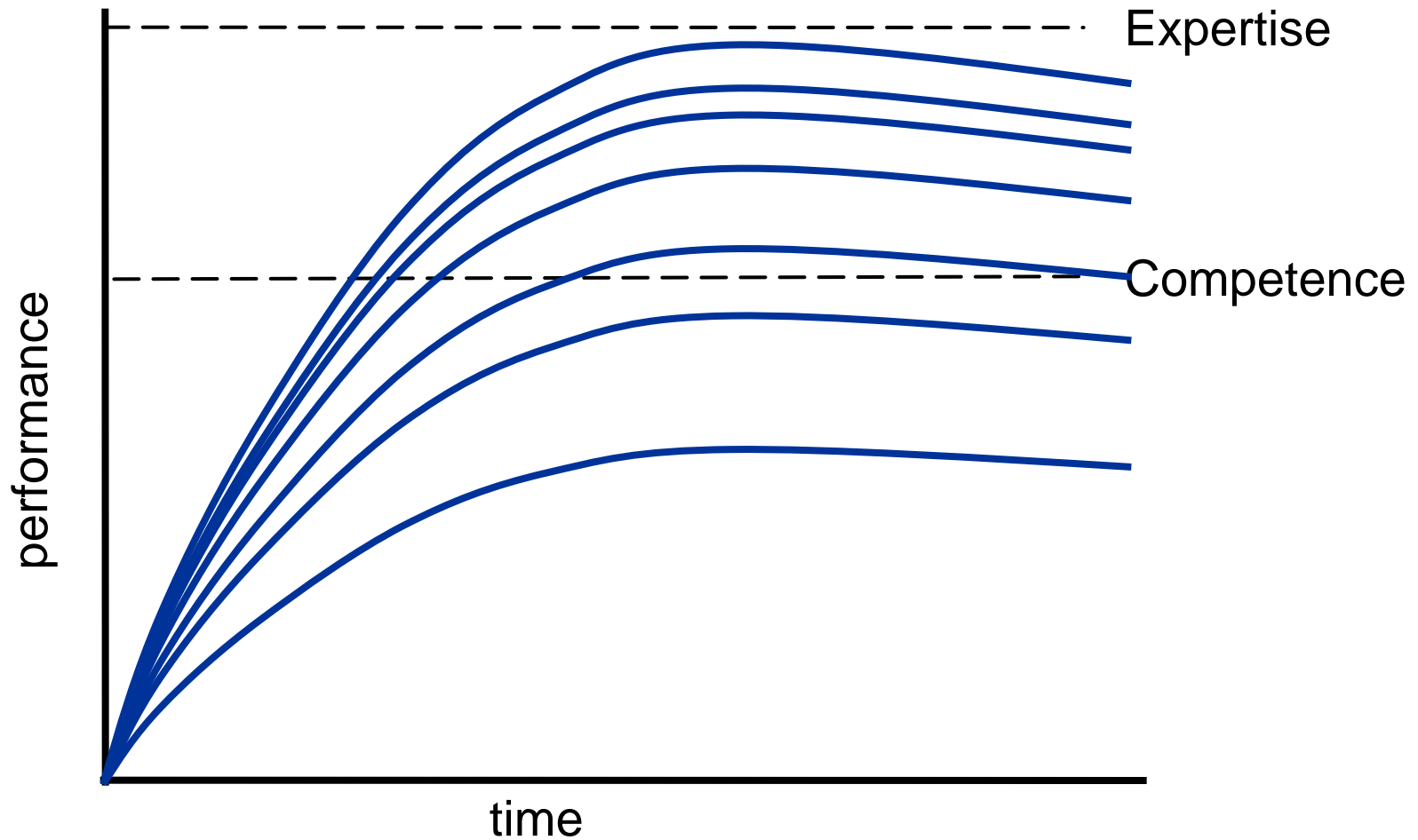
Skills acquisition



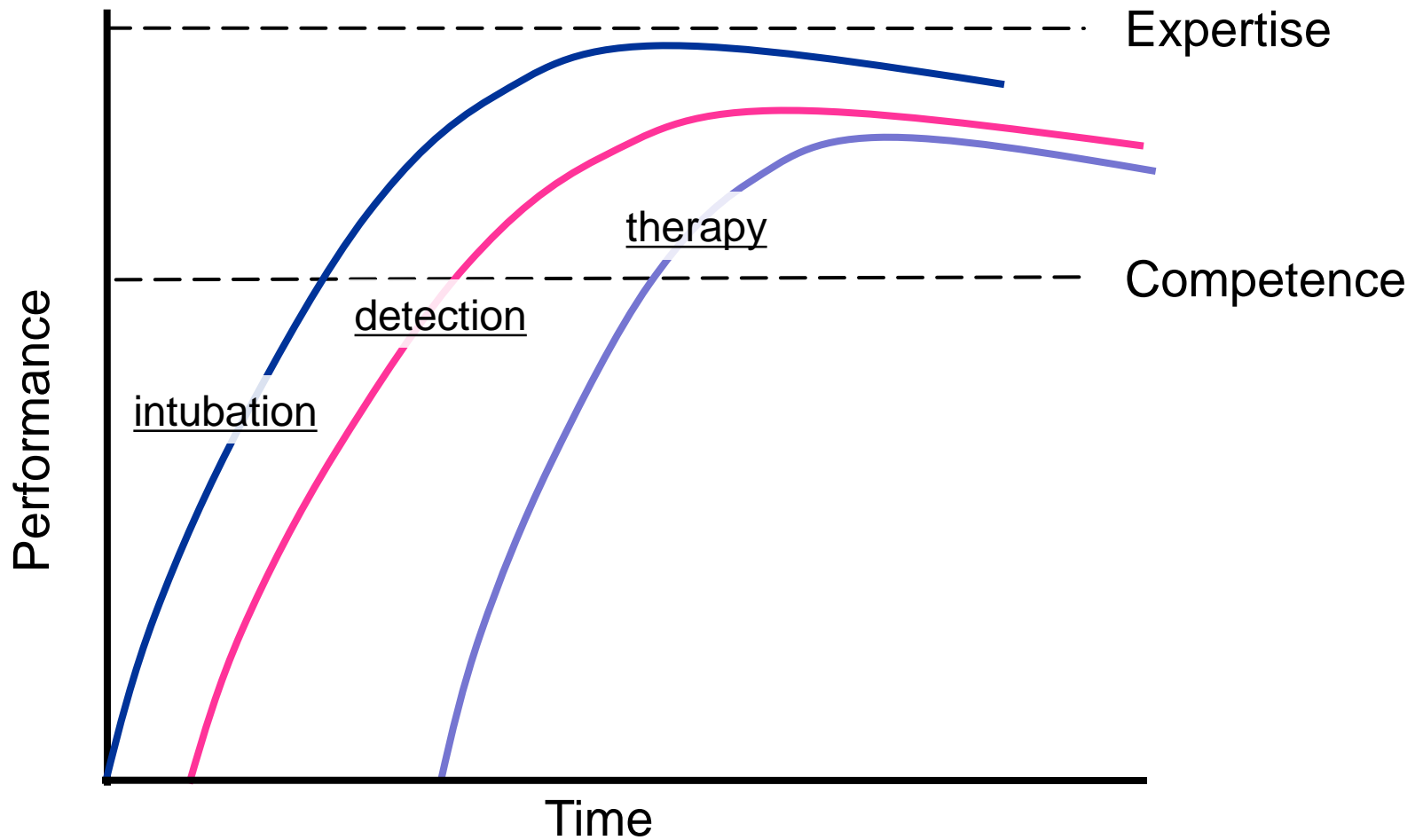
Skills acquisition



Skills acquisition



Skills acquisition



Problems with Competence Assessment Prior to 2010

- **Subjective** - No standardized assessment
- **Standards favored number driven endpoints**
(Cecal intubation rate, Polyp detection rate)
- **Skill & improvement not continually monitored**
- Thus, competence assessment varied from teacher-to-teacher and place-to-place

Skills measurement

	Direct Measure	Surrogate Measure
Intubation		
Detection		
Therapy		

Skills measurement

	Direct Measure	Surrogate Measure
Intubation	Pain	Sedation levels CIR
Detection	PCCRC	PDR ADR
Therapy	Perforation PCCRC	Polyp retrieval rate <i>Completeness of excision</i>

Skills measurement

	Direct Measure	Surrogate Measure
Intubation	Pain	Sedation levels CIR
Detection	PCCRC	PDR ADR
Therapy	Perforation PCCRC	Polyp retrieval rate Completeness of excision

Granularity and Specificity in Assessment & Feedback

- Estimate of Systematic variability among assessors: (leniency/stringency) = 11.04 % of variation
- Task deconstruction enhances conscious competence of trainer & fellow
- Reduces bias, Enhances corrections

2010-Present: Developments in Competence Assessment

- Broadening the definition of competence to include Cognitive, Motor skills, Attitudinal skills
- Development of standardized assessments for colonoscopy skills (e.g. MCSAT & ACE, DOPS)
- Realistic guidelines for procedural numbers
- Uniform standards for all specialties

Modern Multi-parameter Assessment tools

MCSAT - Colon

ACE – EGD, Colon

GAGES – EGD, Colon

GiECAT – Colon

GiECATKIDS – peds Colon

DOPS - OGD, colon/flexi, ERCP, EUS, PEG,
GI bleeds, dilatation/stenting,
pediatrics, polypectomy

Mayo Colonoscopy Skills Assessment Tool (MCSAT)

(Sedlack, Mayo)

- 3 year prospective study
- Performance data on all fellows

14 Survey Items:

6 - Core Motor Skills

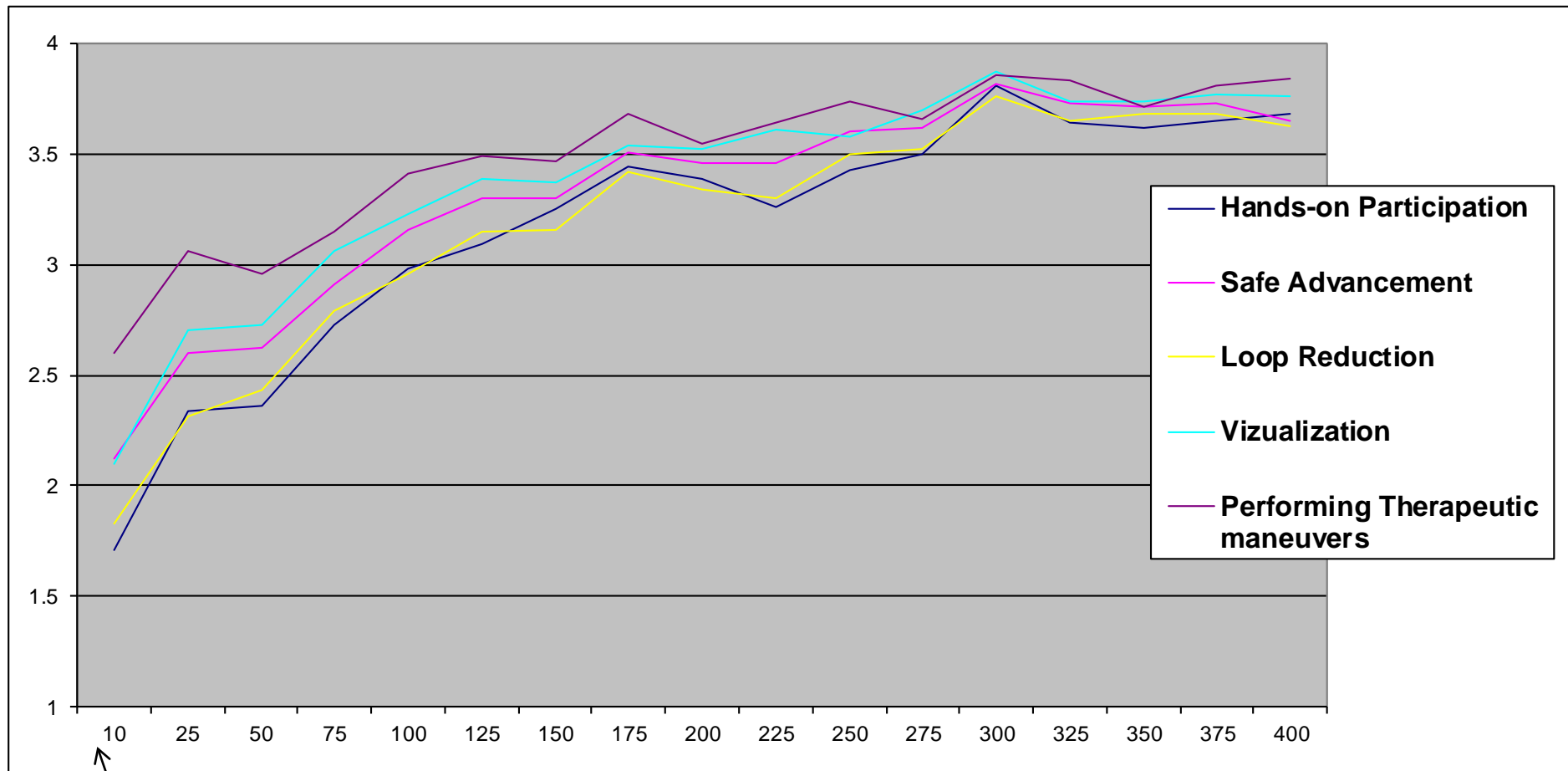
- Scope advancement
- Cecal Intubation
- Therapy Application
- Mucosal Visualization
- Loop Reduction
- Depth of Intubation

6 - Core Cognitive skills

- Indication
- Pain Management
- Sedation
- Landmark Recognition
- Pathology Identification
- Tool Selection

2 - Overall Motor and Cognitive competence

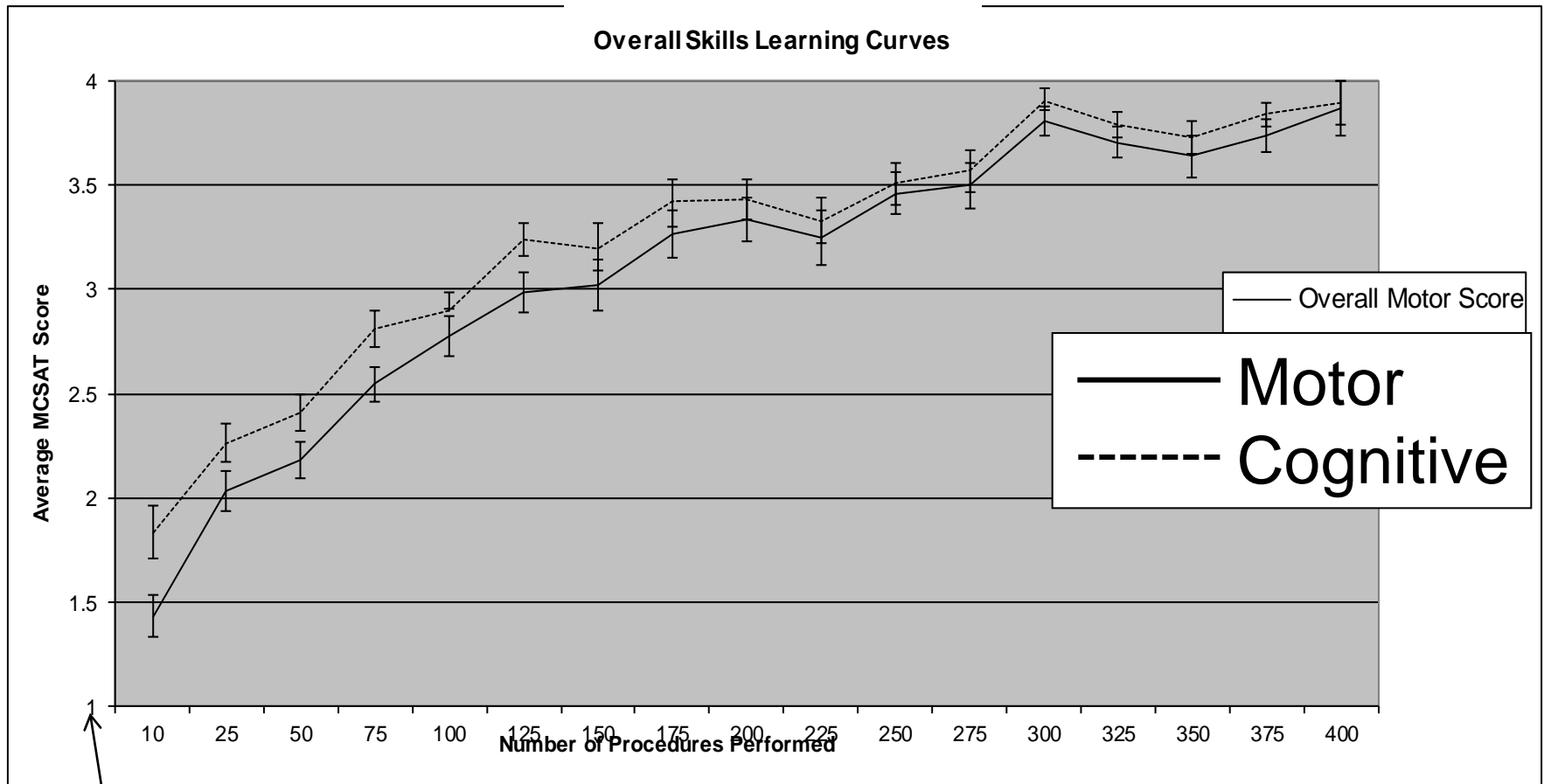
Learning Curves for 5 Core Motor Skills on MCSAT



1- Novice, 2-Intermediate, 3-Advanced, 4-Competent

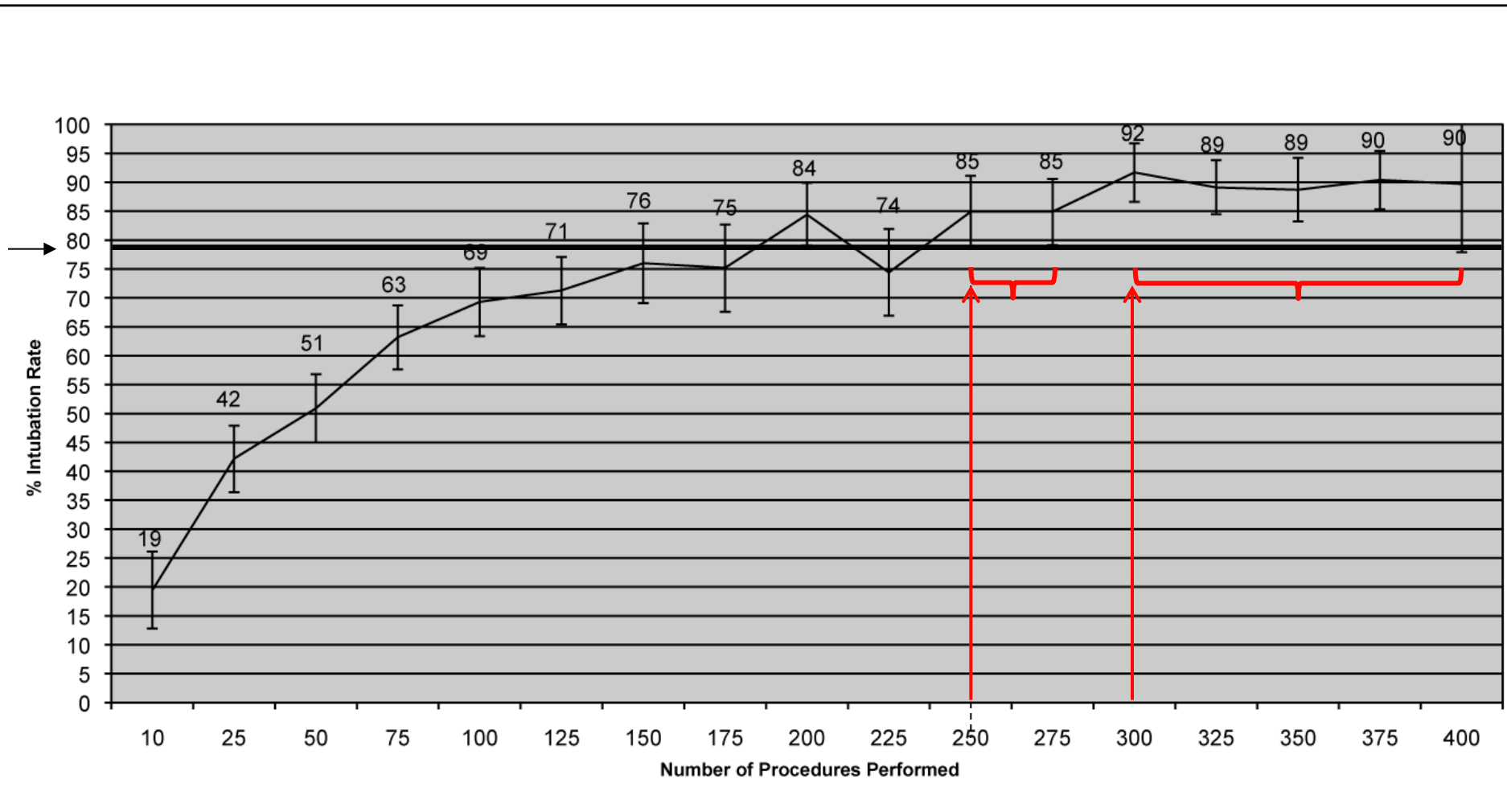
- 41 fellows, 6635 Colonoscopies

Overall Motor and Cognitive Skill Curves on MCSAT

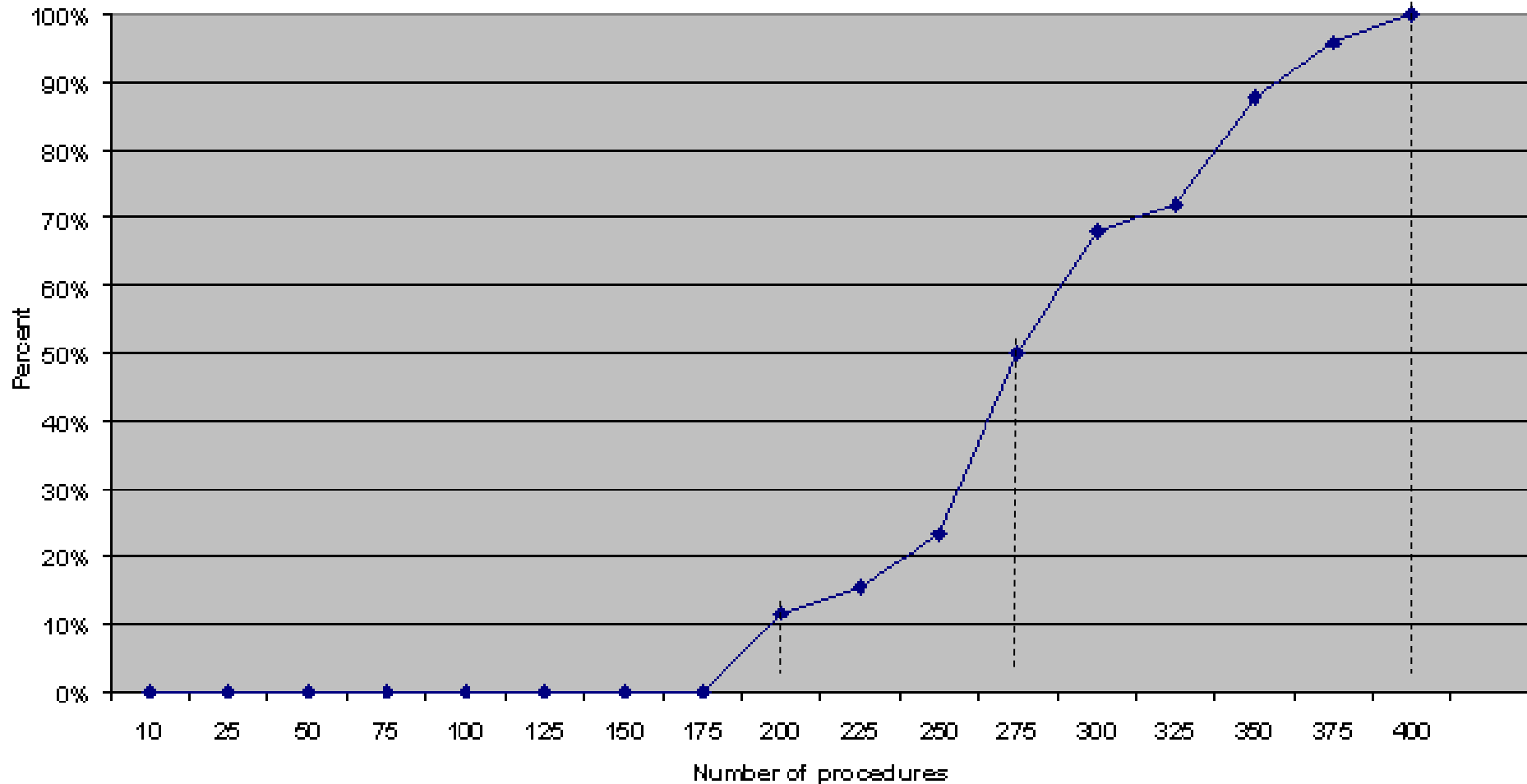


1- Novice, 2-Intermediate, 3-Advanced, 4-Competent

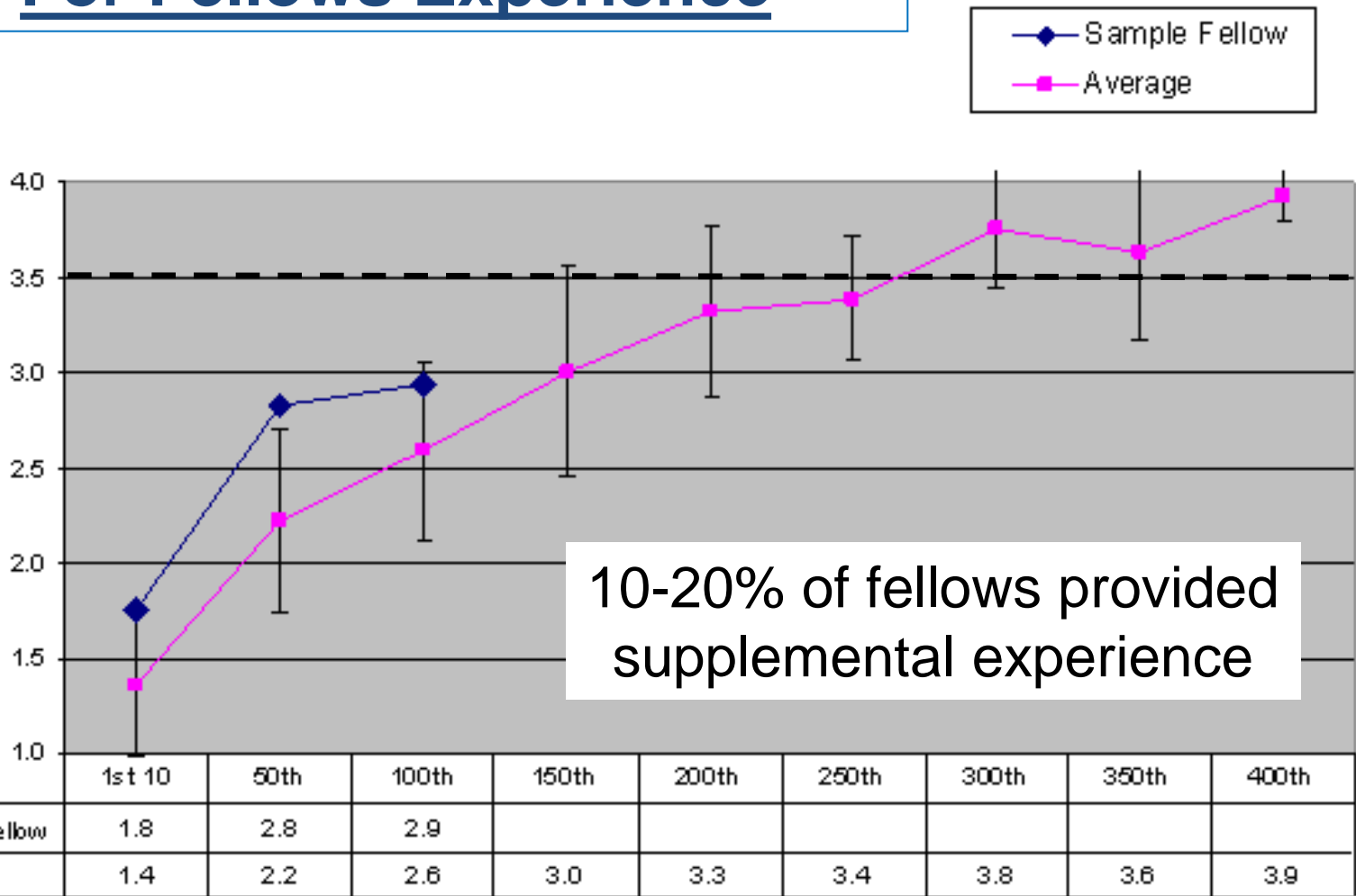
Learning Curve – Cecal Intubation Rates



Percent of Fellows Meeting Competency Criteria



Prospective Use of the MCSAT For Fellows Experience



Assessment of Competency in Endoscopy (ACE): generalizable competency benchmarks for colonoscopy

- Update MCSAT – Validated & generalized to multiple centers
- **ACE tool**: 4 point grading scale for Motor & Cognitive Skills:

Motor Skills (8):

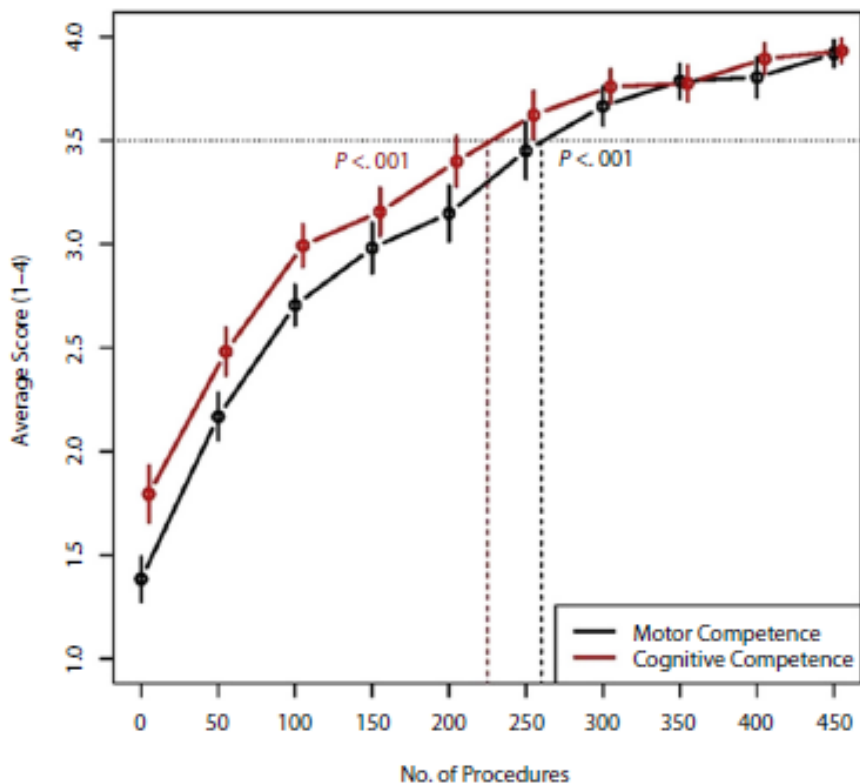
- Use of air, water, suction
- Steering technique
- Fine tip control
- Loop reduction techniques
- Depth of independ. advance
- Visualization of mucosa
- Ability to apply Rx tools
- Overall Motor Skills

Cognitive Skills (8):

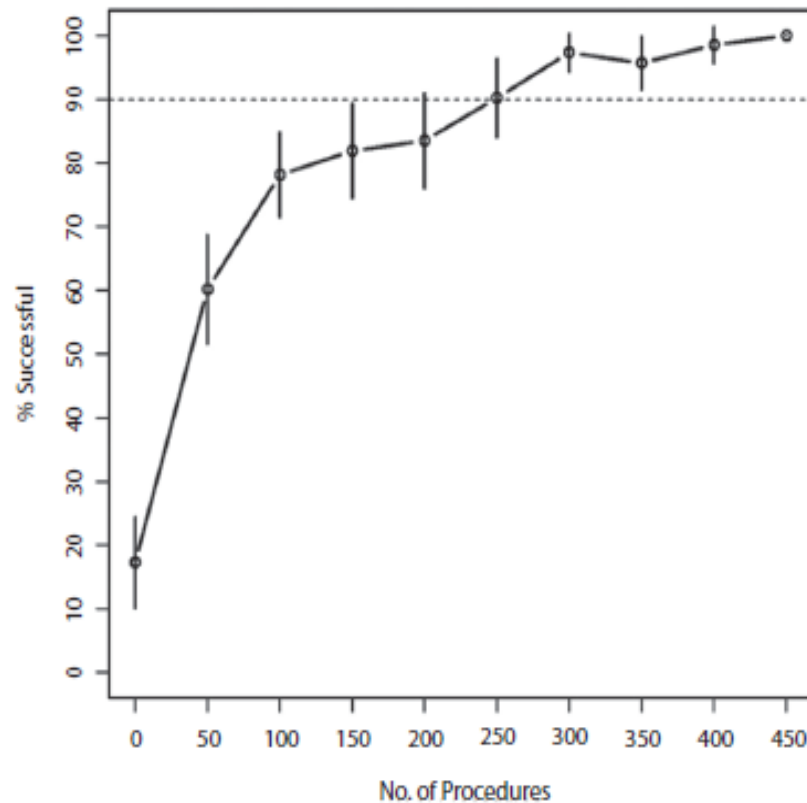
- Lumen identification
- Knowledge of indication, hx
- Mgt. of discomfort
- Pathology ID & Interpretation
- Identifying pathology location
- Polyp Detection
- Knowledge - therapeutic tools
- Overall Cognitive Skills

Assessment of Competency in Endoscopy:

Average Competence by Experience

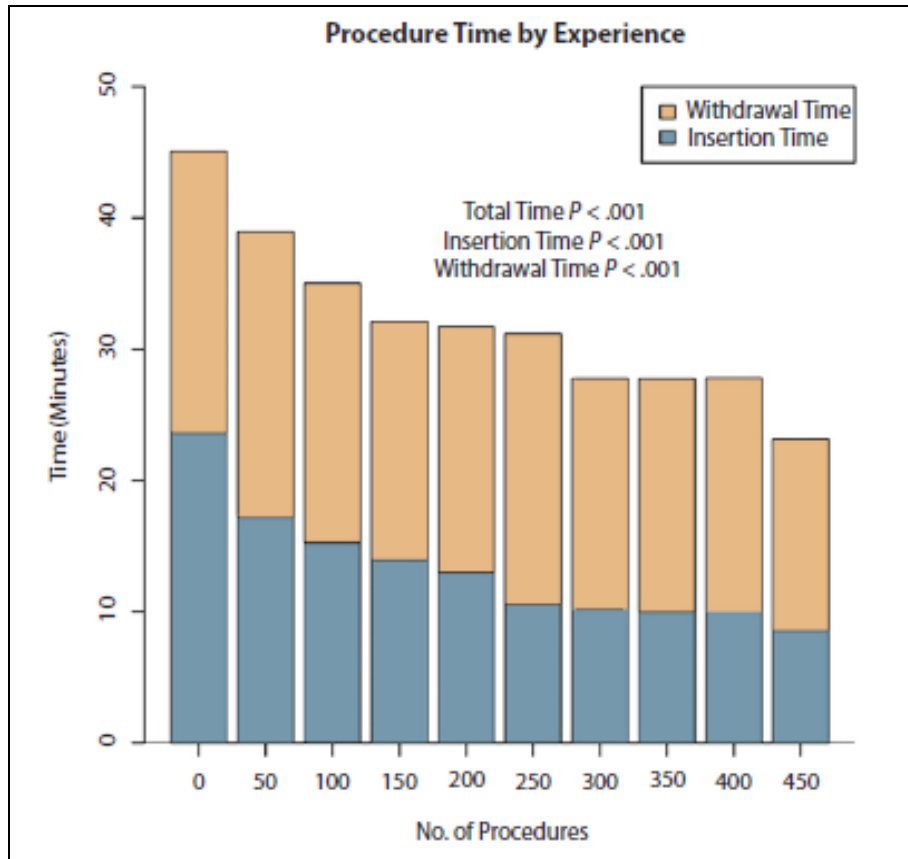


Cecal Intubation by Experience

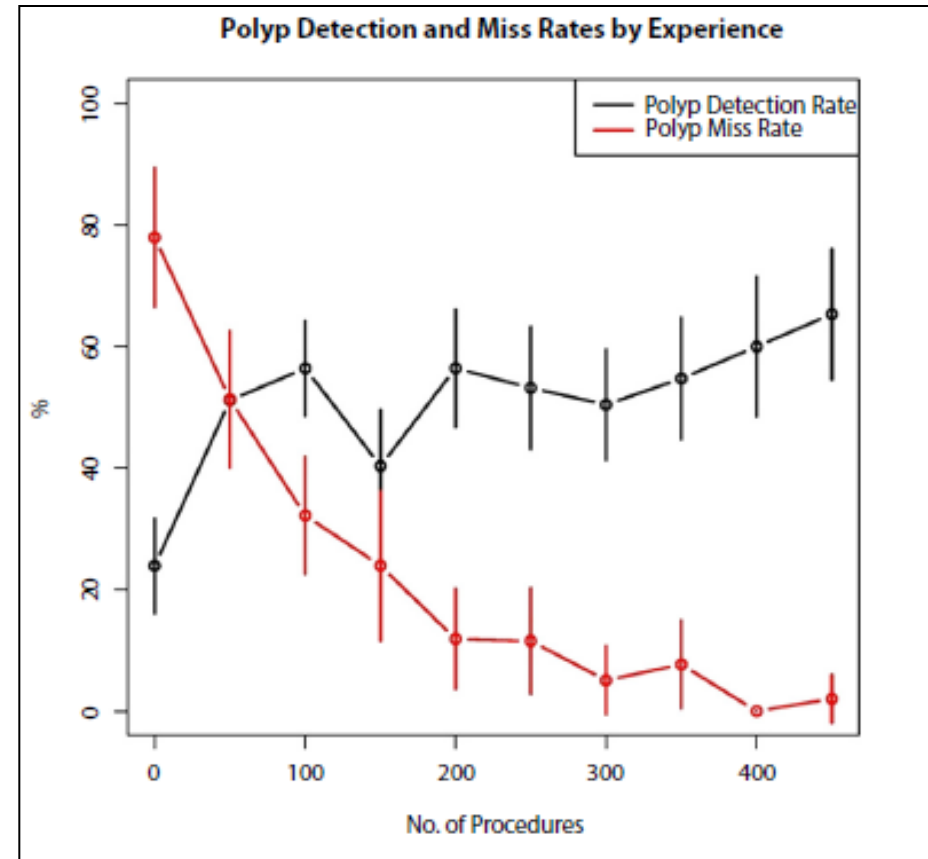


Assessment of Competency in Endoscopy:

Procedure Time by Experience



Polyp Detection, Miss Rate by Experience



Sedlack, Coyle. GIE 2016;83:516-523

Gastrointestinal Endoscopy Competency Assessment Tool (GiECAT)

- Prospective, Multicenter Validation Study
 - Checklist – 19 items in 5 domains
 - Global Rating Scale - 7 items
- 61 Endoscopists (GI & Gen Surg) → 116 Colonoscopies
- *Dual raters, Dual Procedures, Non-blinded*



Results:

High or Excellent:

- Inter-rater reliability
- Retest reliability
- Discriminative validity between novice → exp'd
- Concurrent validity

DOPS

Directly Observed Procedure Score


Royal College of Physicians

Joint Advisory Group on GI Endoscopy

Summative DOPS: Colonoscopy and Flexible Sigmoidoscopy

Date of procedure			
Trainee name		Membership no. (eg. GMC/NMC)	
Assessor name		Membership no. (eg. GMC/NMC)	
Outline of case			
Difficulty of case	Easy	Moderate	Complicated
Please tick appropriate box			

Complete DOPS form by ticking box to indicate whether trainee is competent for independent practice	Not competent for independent practice supervision required	Competent for independent practice no supervision required
Pre-procedure		
Indication		
Risk		
Confirms consent		
Preparation		
Equipment check		
Sedation		
Monitoring		
Comments		

Procedure		
Scope handling		
Tip control		
Air management		
Proactive problem solving		
Loop management		
Patient comfort		
Pace and progress		
Visualisation		
Comments		
Management of findings		
Recognition		
Management		
Complications		
Comments		
Post-procedure		
Report writing		
Management plan		
Comments		

DOPyS

Direct

Observation of

Polypectomy

Skills

- 33 criteria
- Skills
- 'Live'
- 'Video'

DOPyS: Polypectomy Assessment Score Sheet

Colleague(s): _____ Case ID: _____ Date: ____/____/____ Assessor: _____ Poly Number: _____

Polypectomy: EMR/EMR/EMR/EMR/EMR/EMR/EMR

- Scale: 4 - Highly skilled performance
 3 - Competent & safe throughout procedure, no uncorrected errors
 2 - Some standards not yet met, aspects to be improved, some errors uncorrected
 1 - Accepted standards not yet met, frequent errors uncorrected
 N/A - Not applicable/Not assessable SHOI

The underlined parameters can only be assessed during 'live' polypectomy

Generic	Score	Comments		
Optimising view of / access to the polyp:				
1. Attempts to achieve optimal polyp position				
2. Optimises view by aspiration/loop/polyp loss h				
3. Dehydrates full extent of lesion (+/- use of adjunctive spray etc) if appropriate				
4. Advances/retracts scope as needed				
5. Uses appropriate polypectomy technique (e.g. taking				
6. Checks all polypectomy equipment (Connections checked)				
7. Checks for adequate distal airway clearance prior to				
8. Checks individual for airway obstruction of endotracheal tube				
9. Checks diathermy settings are appropriate				
10. Photo documents area of colonic polypectomy				
Stalked polyp(s): Generic, then				
11. Pre-injects stalk (eg. saline) (loop/dilate polypectomy) if deemed appropriate				
12. Selects appropriate snare size				
13. Directs snare accurately over polyp head				
14. Correctly selects en-bloc or piecemeal removal depending on ad				
15. Advances snare sheath towards stalk as snare closed				
16. Places snare at appropriate position on the stalk				
17. Adjusts polyp to ensure appropriate amount of tissue is trapped within snare				
18. Applies appropriate degree of diathermy				
Small sessile lesions / Endoscopic mucosal resection: Generic, then				
19. Adequate (appropriate) injection using appropriate injection technique, maintaining view				
20. Only proceeds if the lesion lifts adequately				
21. Directs appropriately sized snare accurately over the lesion head				
22. Correctly selects en-bloc or piecemeal removal				
23. Appropriate positioning of snare over lesion				
24. Ensures appropriate amount of tissue is trapped				
25. Tents lesion gently away from the mucosa				
26. Uses cold snare technique or applies appropriate diathermy, as applicable				
27. Ensures adequate (appropriate) prior to further resection				
Post-polypectomy				
28. Examines remaining stalk/polyp base				
29. Identifies and appropriately treats residual polyp				
30. Identifies bleeding and performs adequate electrocauterisation				
31. Retrieves, or attempts retrieval of polyp				
32. Checks for retrieval of polyp				
33. Tattoo placed appropriately, where appropriate				
Overall Competency at polypectomy:	4	3	2	1

**Assessment/
pre-polypectomy**

Stalked polyps

Sessile polyps/EMR

Post-polypectomy



Summary

- Well validated competency assessment tools have been established
- Multifactorial: Knowledge, Skills, Attitudes
- Application reduces reliance on subjective assessments
- Serial 'formative' application enables individualized training schedules
- Determination of Competence via Serial Formative vs. Summative Assessments

