
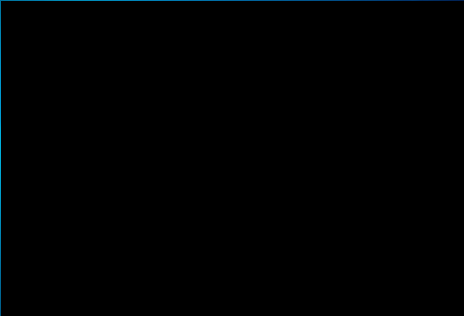


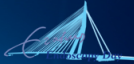
Competence in Endoscopy

learning, curves, and moving averages


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unconscious incompetence 

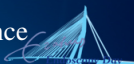


unconscious incompetence 

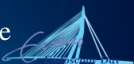
Unconscious Incompetence	Conscious Incompetence
Unconscious Competence	Conscious Competence

the concept of conscious incompetence 

Unconscious Incompetence	Conscious Incompetence
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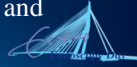
the concept of conscious competence 

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from incompetence to competence 

Unconscious Incompetence	Conscious Incompetence
Unconscious Competence	Conscious Competence

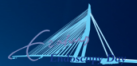
Endoscopy training accreditation and credentialing



- **Competence:** The minimum level of skill, knowledge and expertise, derived through training and experience, to safely and proficiently perform endoscopy
- **Accreditation:** Authorisation by a local institution to perform a particular procedure
- **Credentialing Process:** Involves the assessment of the qualifications of a practitioner to perform a procedure

The evaluation of the individual's knowledge base, *training* or experience & current *competence* to perform a procedure is – in the Netherlands - based on threshold numbers only

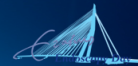
threshold numbers



- **Threshold number:** the minimum number of supervised (unassisted) procedures, documented in a prospective logbook, needed for certification

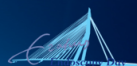


threshold numbers



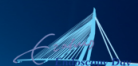
- Minimum threshold numbers for procedural competence vary widely
- Minimum threshold numbers are inadequate surrogate markers for competence
- Procedural competence should be based on objective performance criteria

Australian training requirements



- Gastroscopy
- 200 unassisted, complete examinations
- 20 therapeutic procedures
- Colonoscopy
- 100 unassisted, complete examinations to the caecum,
- 30 patients with snare polypectomies
- ERCP
- Previous gastroscopy certification
- 200 successful unassisted ERCP's
- 80 sphincterotomies
- 60 stents ± nasobiliary drains

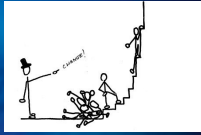
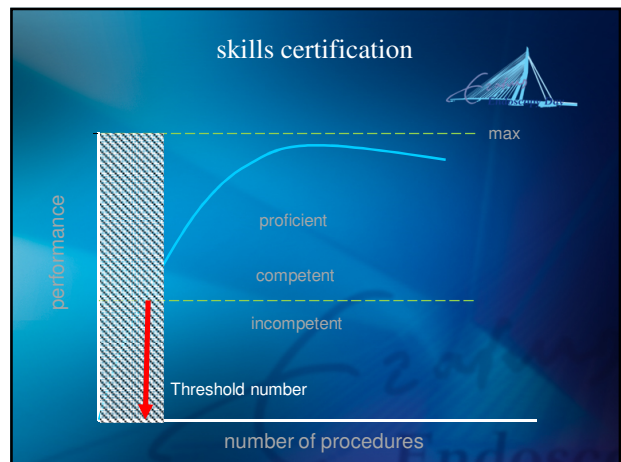
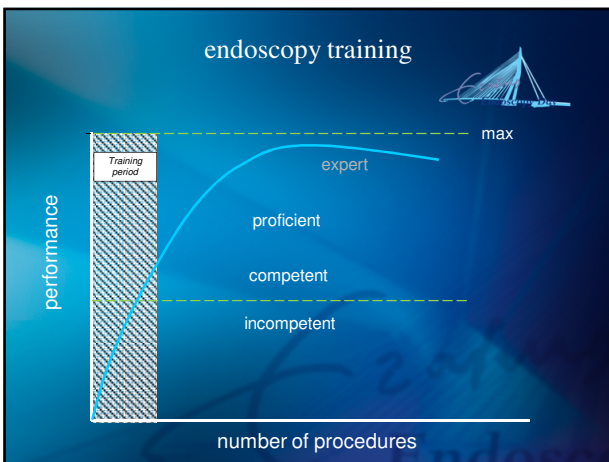
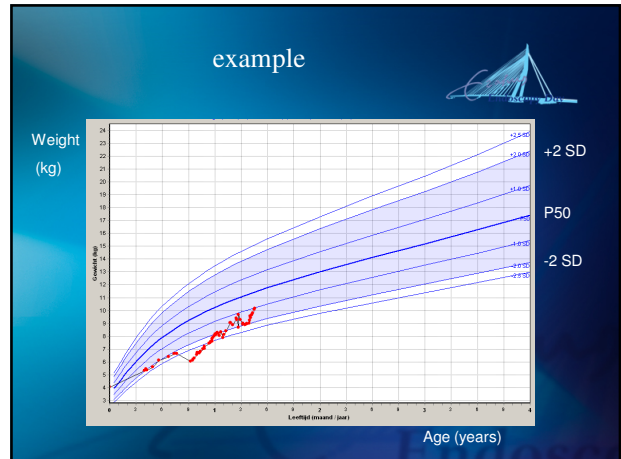
competence in endoscopy



- ACGME/ASGE guidelines state that procedural competence should be based on objective performance criteria
- Measures for endoscopy competence are ill defined
- We generally *recognise* a minimum standard of training rather than providing a certificate of competence
- Minimum standard of training is defined by threshold numbers

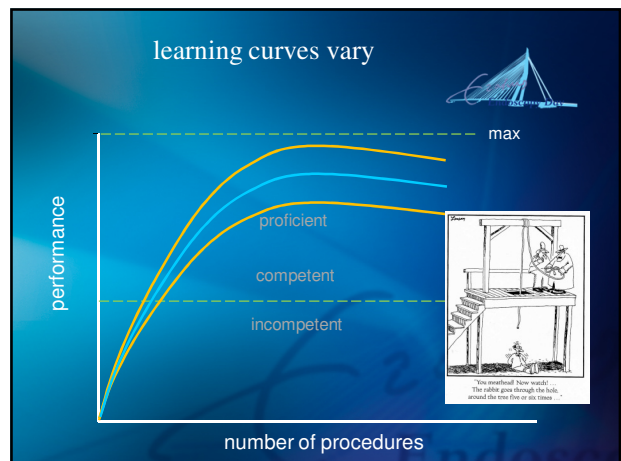
the learning curve

- a convenient tool for the characterization of improvement in knowledge or skill
- Describes **Incremental change** over time
- Follows an **S-curve**
- Applicable to groups and individuals

numbers and competence

		Cecal intubation rates			
		Trainees	149 procedures	328 procedures	90%
Marshall	1995	Single centre	7	54%	86%
Cass	1996	Multicentre	35	-	140
Cass	1999	Multicentre	80	-	341



measuring competence



Rotterdam Assessment Program (RAF)

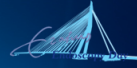
tool to monitor procedural competence based on objective performance criteria

various objective parameters are scored

Generates group progress curves for a training program, as well as individual learning data

Increases individual self-awareness

Measuring competence



Rotterdam Assessment Program (RAF)

1. Objective assessment:

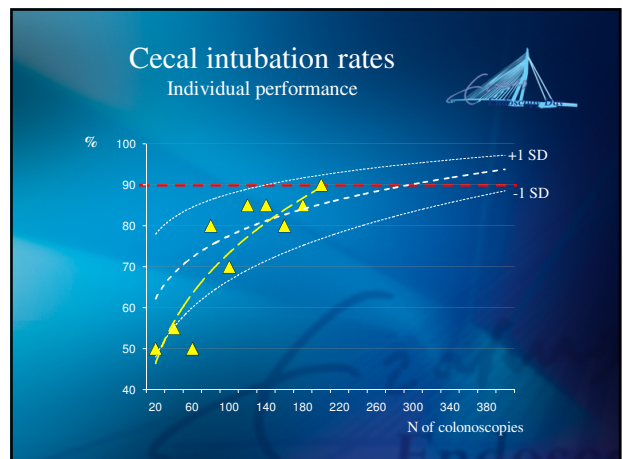
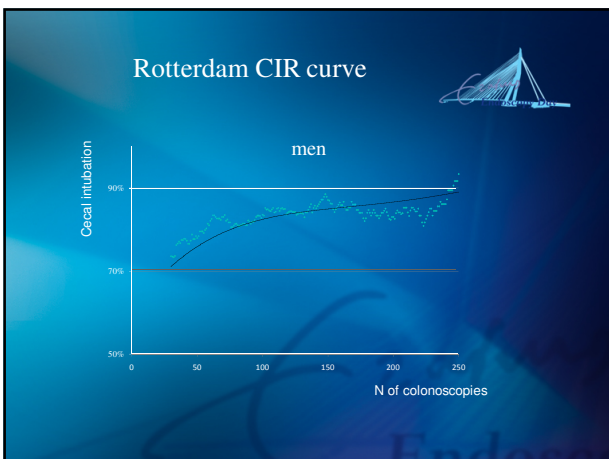
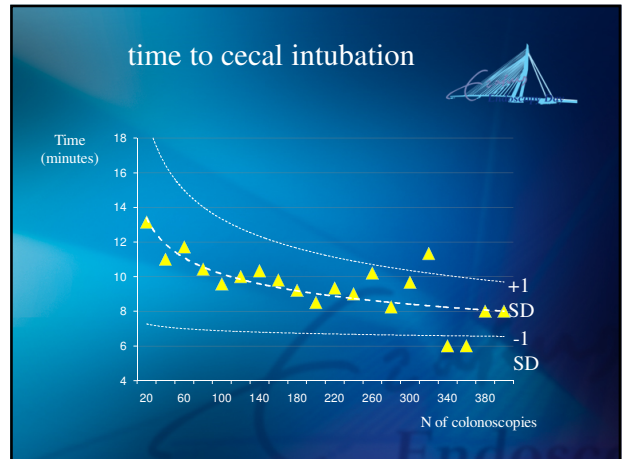
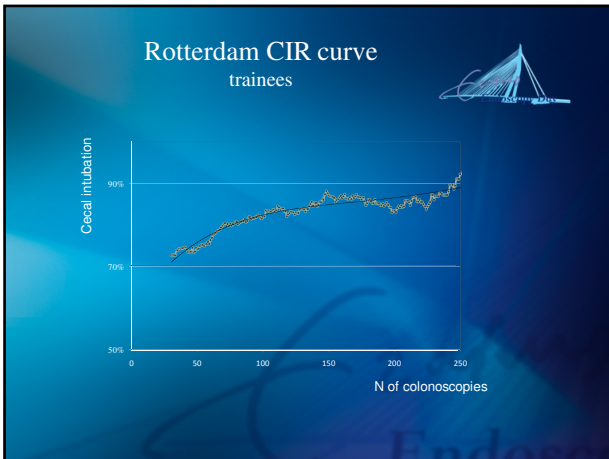
Reached the cecum? yes no What time? min

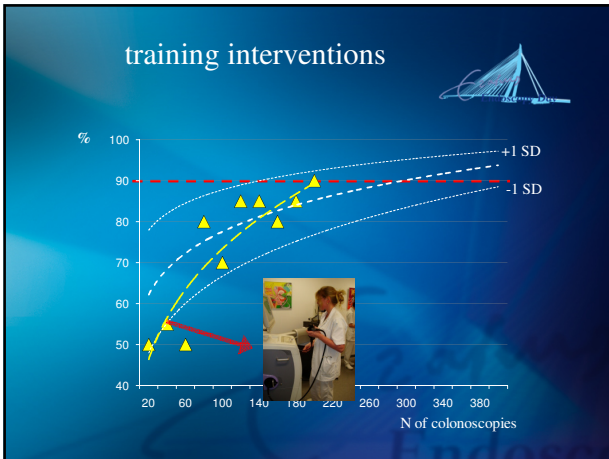
1.2 If not reached cecum:
 Reached Sigmoid? yes no Time? min

Reached Flexure? yes no splenic hepatic Time? min

1.3 Time spent independent endoscopy? Min

1.4 Insertion depth in centimeters: cm





Results

The mean number of colonoscopies performed to reach the $\geq 90\%$ cecal intubation rate in our institution is 250

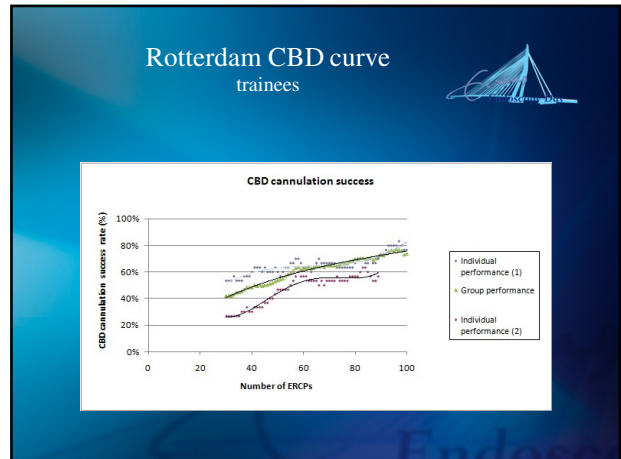
Only one fellow was able to reach a cecal intubation rate of $\geq 90\%$ after having performed the ACGME threshold of 140 colonoscopies

Learning curve studies

Technical competency of trainees performing colonoscopy

		Success rates				
		Trainees	149 procedures	328 procedures	90%	
Marshall	1995	Single centre	7 & 6	54%	86%	NA
Cass	1996	Multicentre	35	NA	NA	140
Cass	1999	Multicentre	80	NA	NA	341

NA = Not Applicable

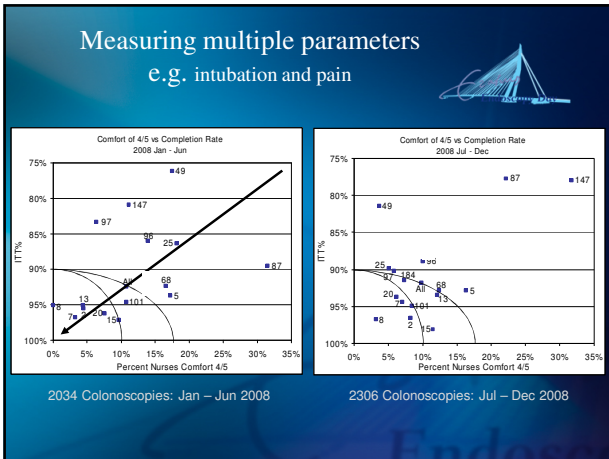


Question

Would you have your bile duct stone removed by a colleague with a 70% cannulation rate

Measuring changes behaviour

When trainees are aware that a performance parameter is assessed, it changes behaviour



Conclusions

- Learning curves are a valuable means of assessing competence
- RAF is a rapid and easy tool to monitor group performance, as well as individual endoscopic skills acquisition
- Self-assessment has a potential to create self-awareness in skills development
- Current minimal threshold number of procedures should be replaced by learning curves to monitor competence performance

