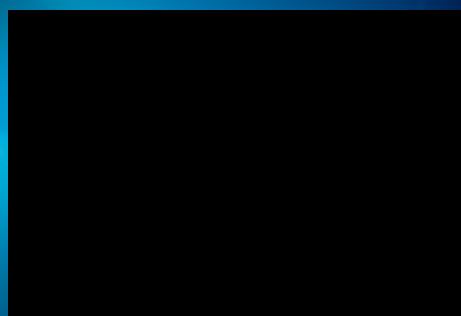


Competence in Endoscopy

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
Unconscious Competence	Conscious Competence

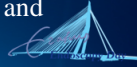
the concept of conscious competence

Unconscious Incompetence	Conscious Incompetence
Unconscious Competence	Conscious Competence

from incompetence to competence

Unconscious Incompetence	Conscious Incompetence
Unconscious Competence	Conscious Competence

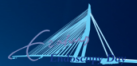
Endoscopy training accreditation and credentialing



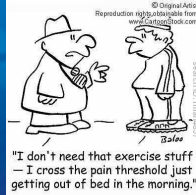
- **Competence:** The minimum level of skill, knowledge and expertise, derived through training and experience, to safely and proficiently perform endoscopy
- **Accreditation:** Authorisation by a local institution to perform a particular procedure
- **Credentialing Process:** Involves the assessment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

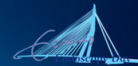
threshold numbers



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

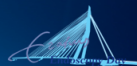


threshold numbers



- 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

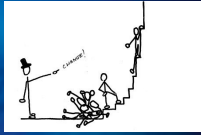
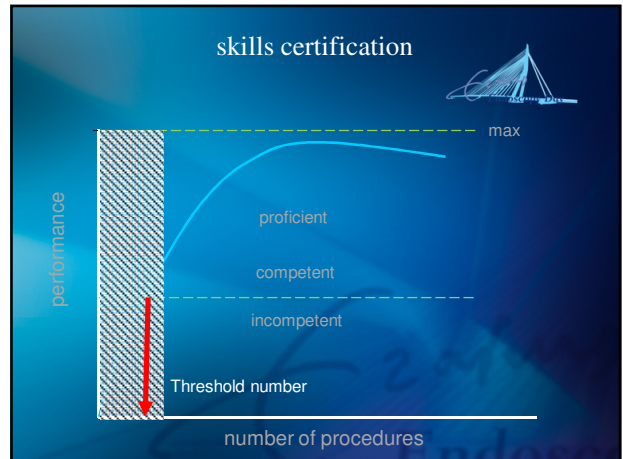
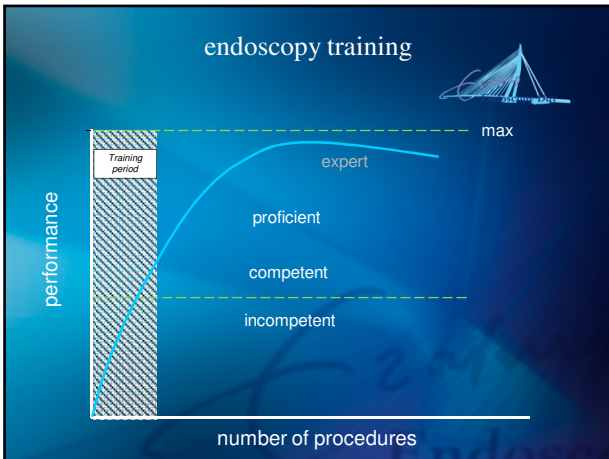
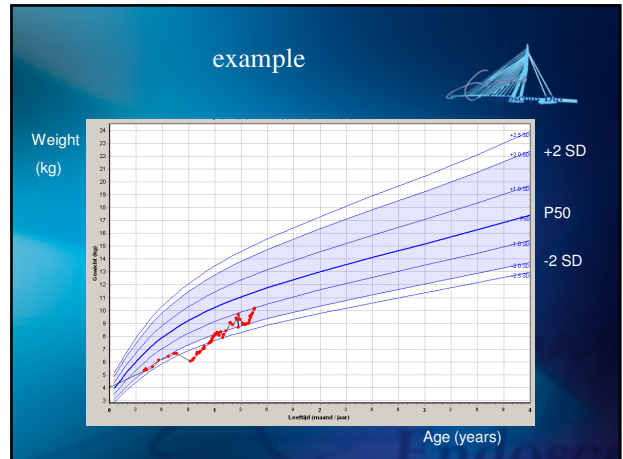
competence in endoscopy



- 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

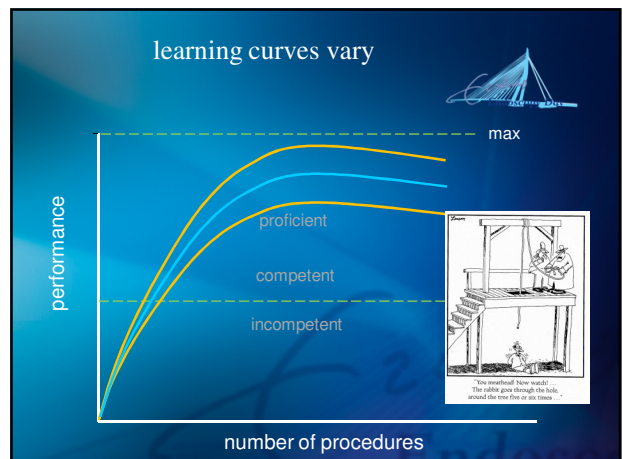
the learning curve

- 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)

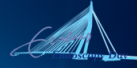
tool to monitor procedural competence based on objective performance criteria

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:

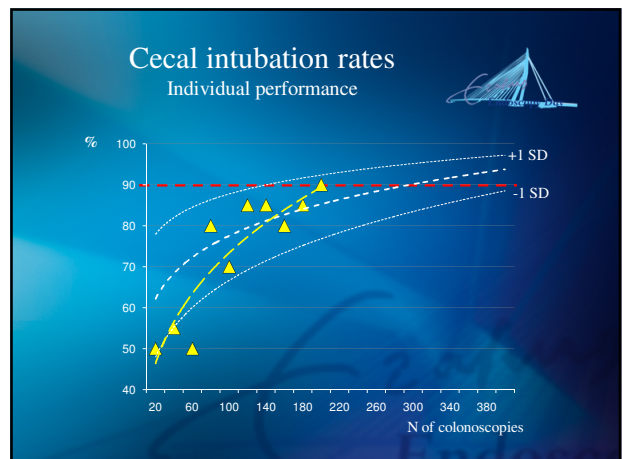
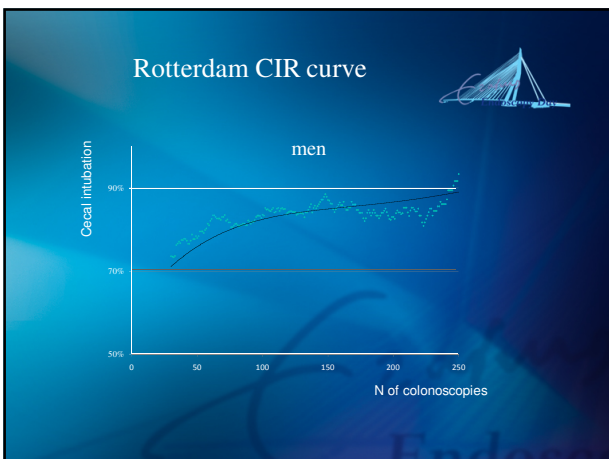
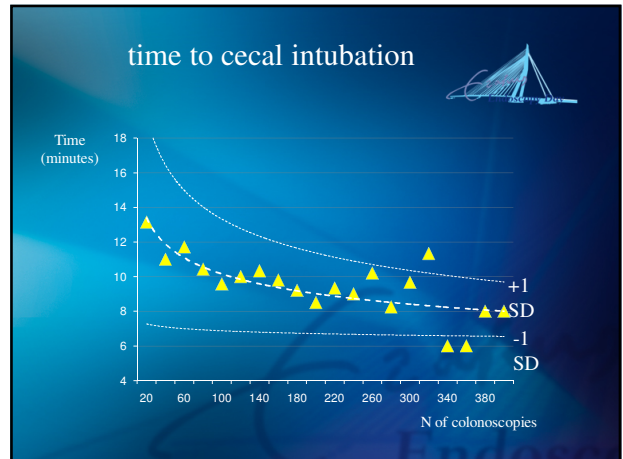
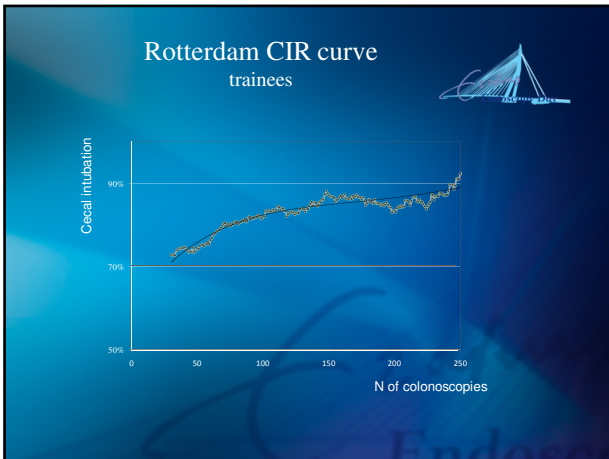
Reached the cecum? yes no What time? min

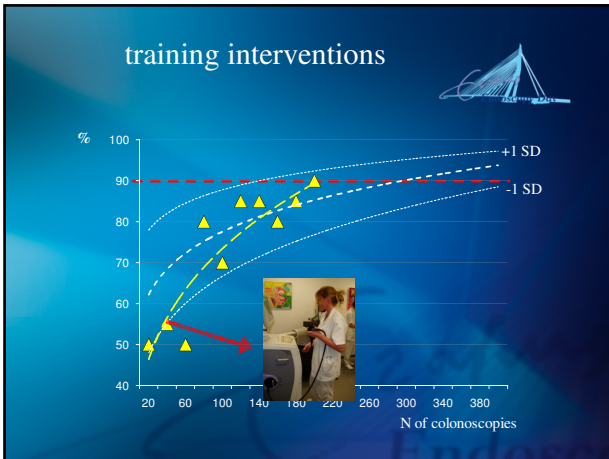
1.2 If not reached cecum:
 Reached Sigmoid? yes no Time? min

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

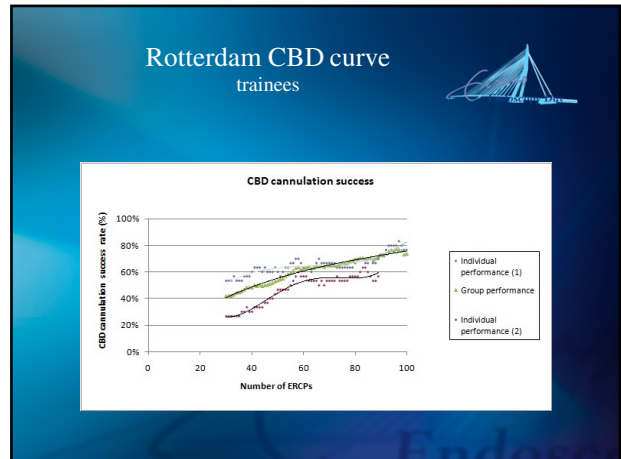
Only one fellow was able to reach a cecal intubation rate of $\geq 90\%$ after having performed the ACGME threshold of 140 colonoscopies

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

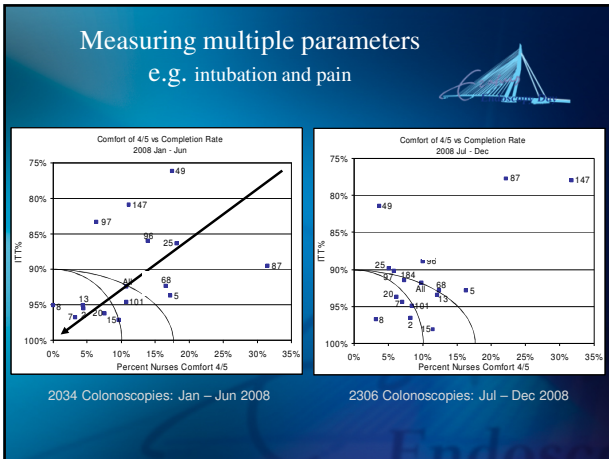


Question

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

