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7th National Vietnam Medical Education Conference
Assessment in Competency-Based Medical Education: Challenges and Solutions
10-11 November 2023, Ho Chi Minh City, Vietnam

Workplace-Based Assessment in Competency-Based Medical Education

Workshop

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Chào buổi sáng
Cảm ơn bạn rất nhiều vì lời mời nói chuyện

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Disclosure

No Conflicts of Interest to Disclose

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Aim and agenda

Aim: Understanding CBME and programmatic workplace-based assessment

Agenda:

1. Introduction – 30 minutes
2. discussion exercise – 30 minutes
3. Plenart debrief – 30 minutes

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Approaches to assessment: Miller's Pyramid 1990

Workplace-based assessment	Does	KSA integrated and observed in context
Standardized performance tests in simulation	Shows how	Integrated knowledge & skill
Written tests with MCQs or constructed response	Knows how	Applied knowledge
	Knows	Knowledge

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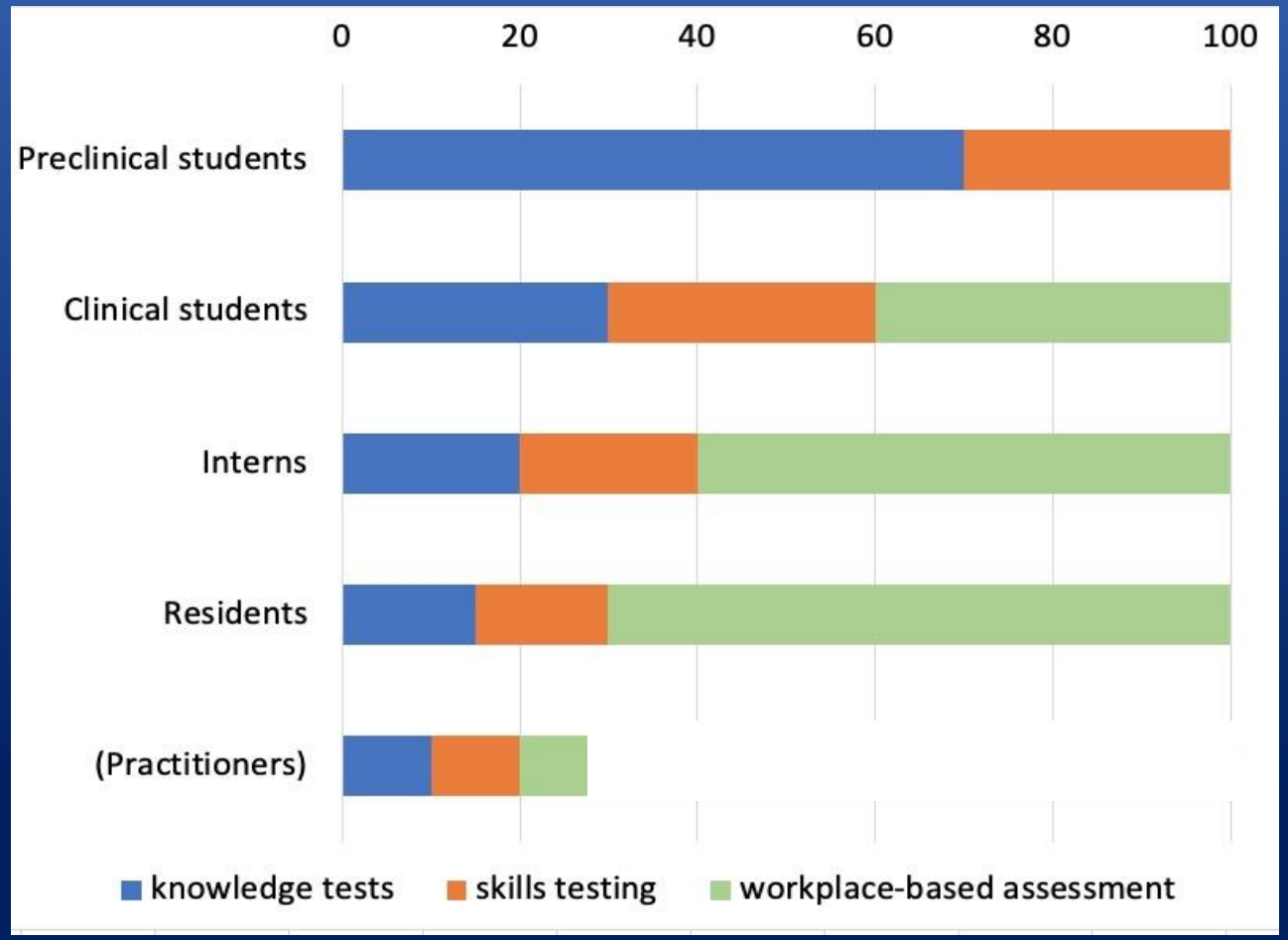
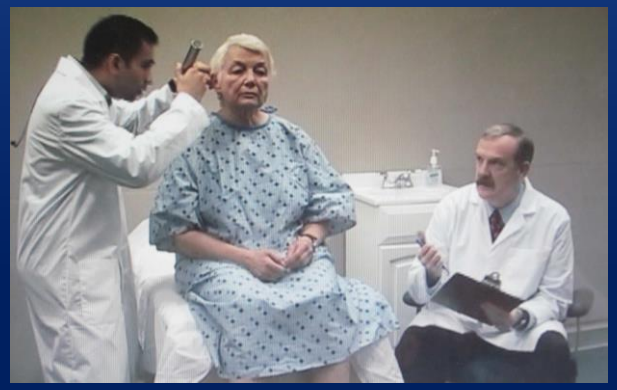
Predominance of assessment approaches across the educational continuum (fictitional data)





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Dominant assessment modalities in medical education

Assessment modalities	Explanations and examples
ASSESSMENT OUTSIDE THE WORKPLACE + examples	
1. Written (or online) tests	Knowledge and reasoning
2. Standardized skills tests	Psychomotor and communication skills in simulation
3. Product evaluation	Papers, theses, designs, presentations
WORKPLACE-BASED ASSESSMENT + examples	
1. Brief, direct observation	Patient encounter, procedure
2. Longitudinal observation	Multisource feedback
3. Conversation	Case-based or Entrustment-based discussion
4. Product evaluation	Treatment plans, discharge summaries, EHR entries etc

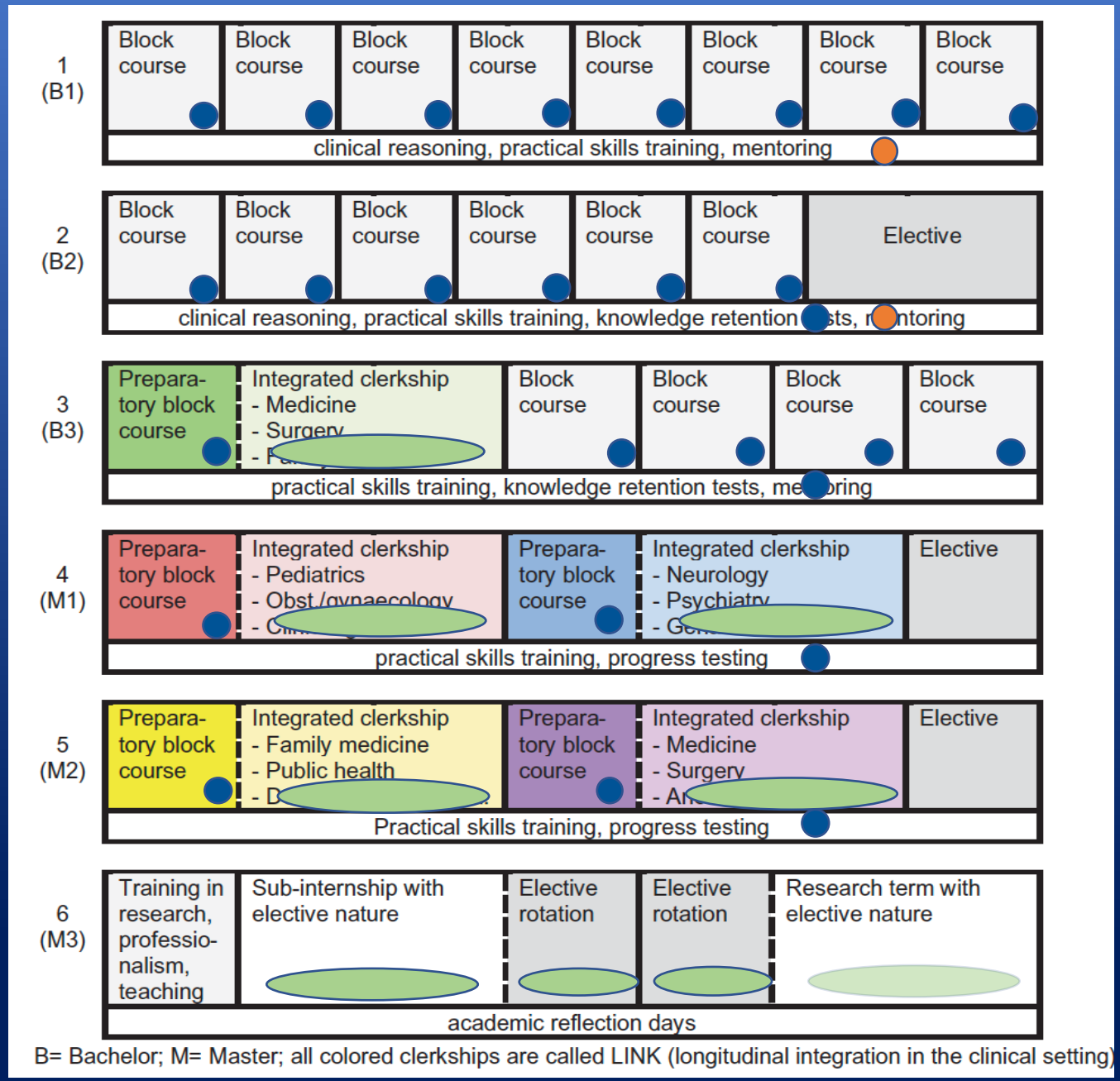
One example: the Utrecht undergraduate medical curriculum

'KNOWS' and 'KNOWS HOW' ASSESSMENT

'SHOWS HOW' ASSESSMENT

'DOES' / WORKPLACE-BASED ASSESSMENT

More details in: ten Cate et al 2018, *Medical Teacher*



B= Bachelor; M= Master; all colored clerkships are called LINK (longitudinal integration in the clinical setting)

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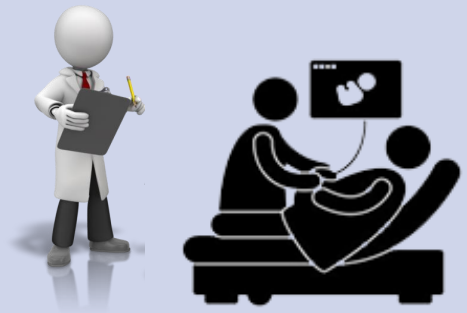
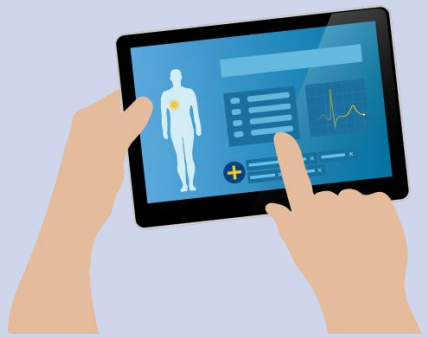
Four dominant modes of WBA

1. Direct observations	2. Longitudinal observations	3. Conver-sations	4. Product evaluation
			

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1. Direct observations

Limited in time (10-20 minutes), directly observing a student performing a natural clinical activity

- In consultation room, at the bedside, in a conference room
- History, physical examination, procedure
- Patient presentations as oral reports or patient handovers

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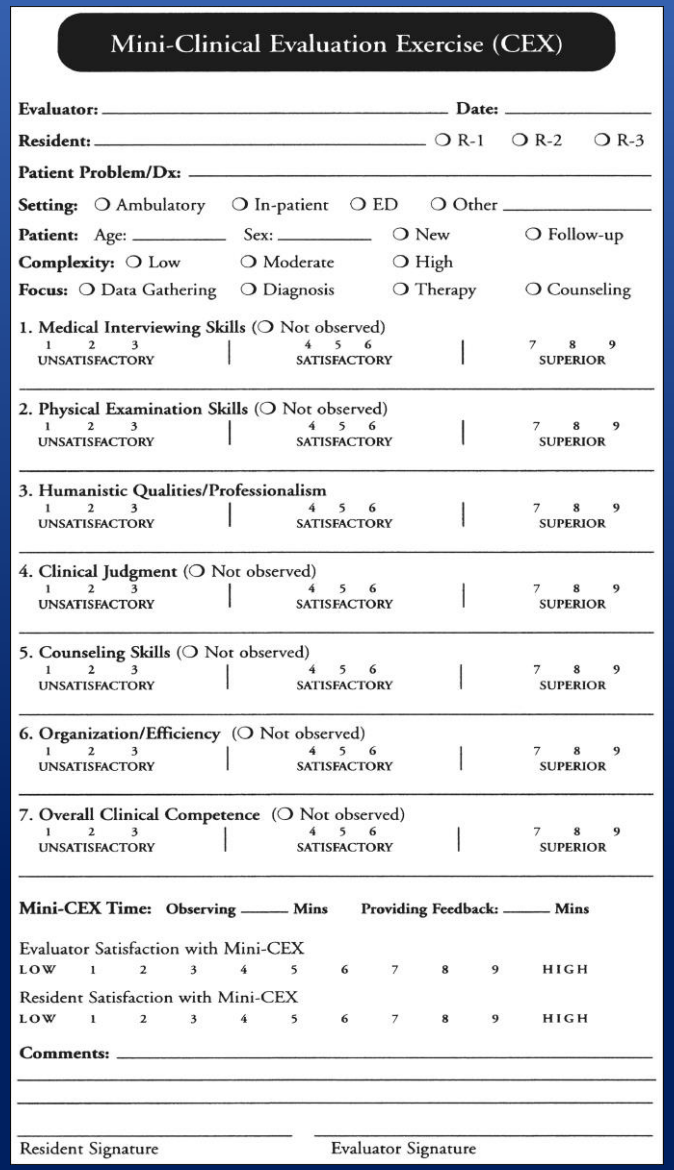
Recommended flow in direct observations



Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:** _____

Resident: _____ ❍ R-1 ❍ R-2 ❍ R-3

Patient Problem/Dx: _____

Setting: ❍ Ambulatory ❍ In-patient ❍ ED ❍ Other _____

Patient: Age: _____ Sex: _____ ❍ New ❍ Follow-up

Complexity: ❍ Low ❍ Moderate ❍ High

Focus: ❍ Data Gathering ❍ Diagnosis ❍ Therapy ❍ Counseling

1. Medical Interviewing Skills (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

2. Physical Examination Skills (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

3. Humanistic Qualities/Professionalism
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

4. Clinical Judgment (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

5. Counseling Skills (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

6. Organization/Efficiency (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

7. Overall Clinical Competence (❍ Not observed)
1 2 3 UNSATISFACTORY | 4 5 6 SATISFACTORY | 7 8 9 SUPERIOR

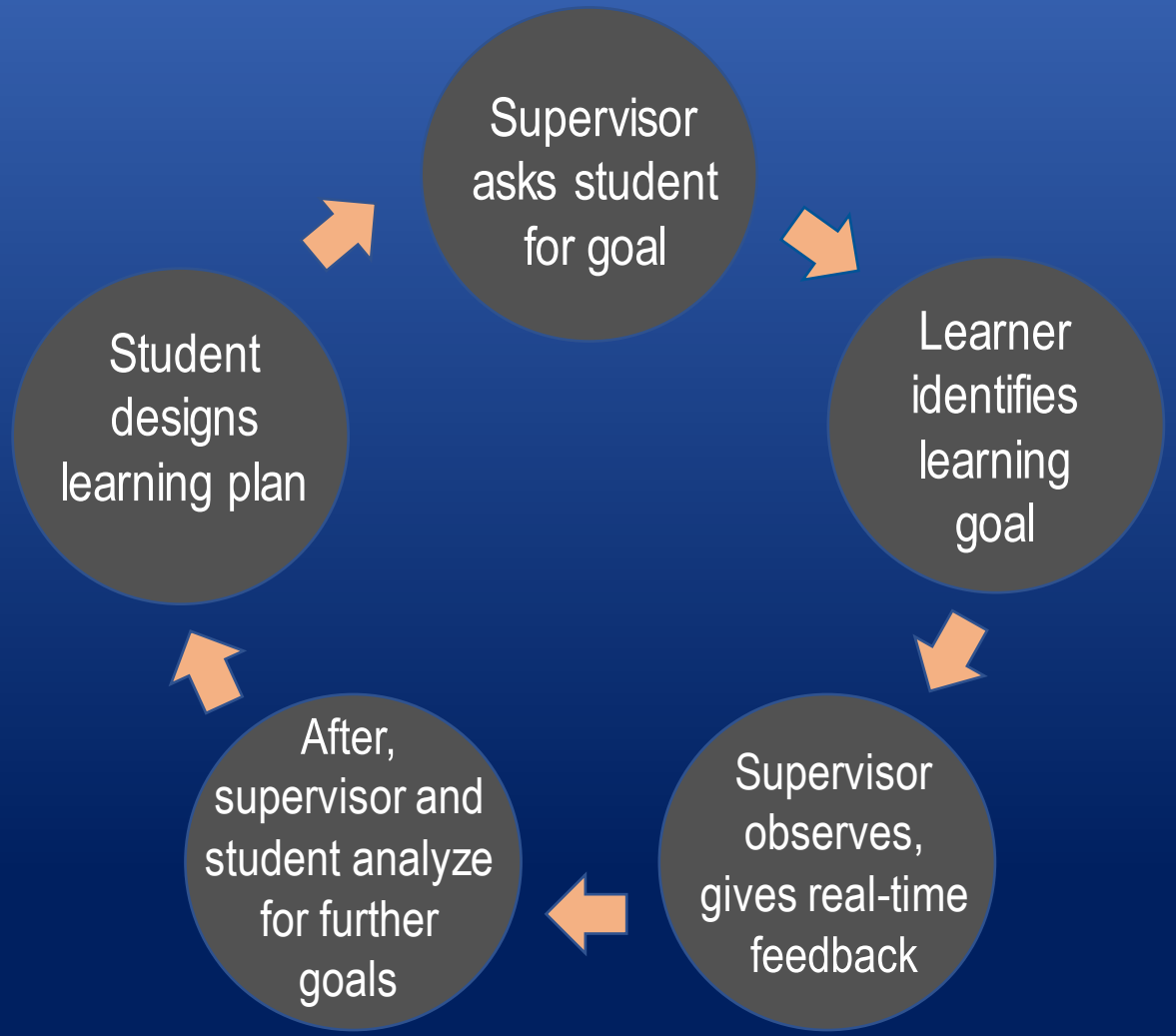
Mini-CEX Time: **Observing** _____ **Mins** **Providing Feedback:** _____ **Mins**

Evaluator Satisfaction with Mini-CEX
LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX
LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments: _____

Resident Signature Evaluator Signature



Kogan et al. 2017, Perspectives on Medical Education

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Some recommendations in direct observation

- observe authentic clinical work in actual clinical encounters
- prepare learners by goal setting and anticipating consequences
- be aware of potential bias and impression formation in supervisor
- focus feedback after observation on observable behaviour
- create safe environment to enhance student's will to be observed
- supervisor should be skilled in the task to be observed
- use a validated observation (scoring) tool
- avoid hind-sight evaluations

Kogan et al. 2017, Perspectives on Medical Education

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2. Longitudinal observation

- Often: *multi-source* feedback (clinicians, nurses, other health professionals, near-peer learners, patients)
- Focus on holistic, general professionalism features for entrustment (agency, reliability, integrity, humility)
- Recommended procedures (once or twice per year):
  - Agreed-upon time period (shift, week, rotation)
  - Observations are natural and unplanned
  - Observers may be chosen; reports anonymized
  - Narrative feedback better than scores
  - Use report for facilitated feedback & action plan
  - Automation through email

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Suitability of competency domains for MSF

CanMEDS roles	I. Medical colleagues	II. Non-medical colleagues	III. Patients
Medical Expert			
Communicator			
Professional			
Manager/leader			
Collaborator			
Scholar			
Health advocate			

Suitable			Not suitable

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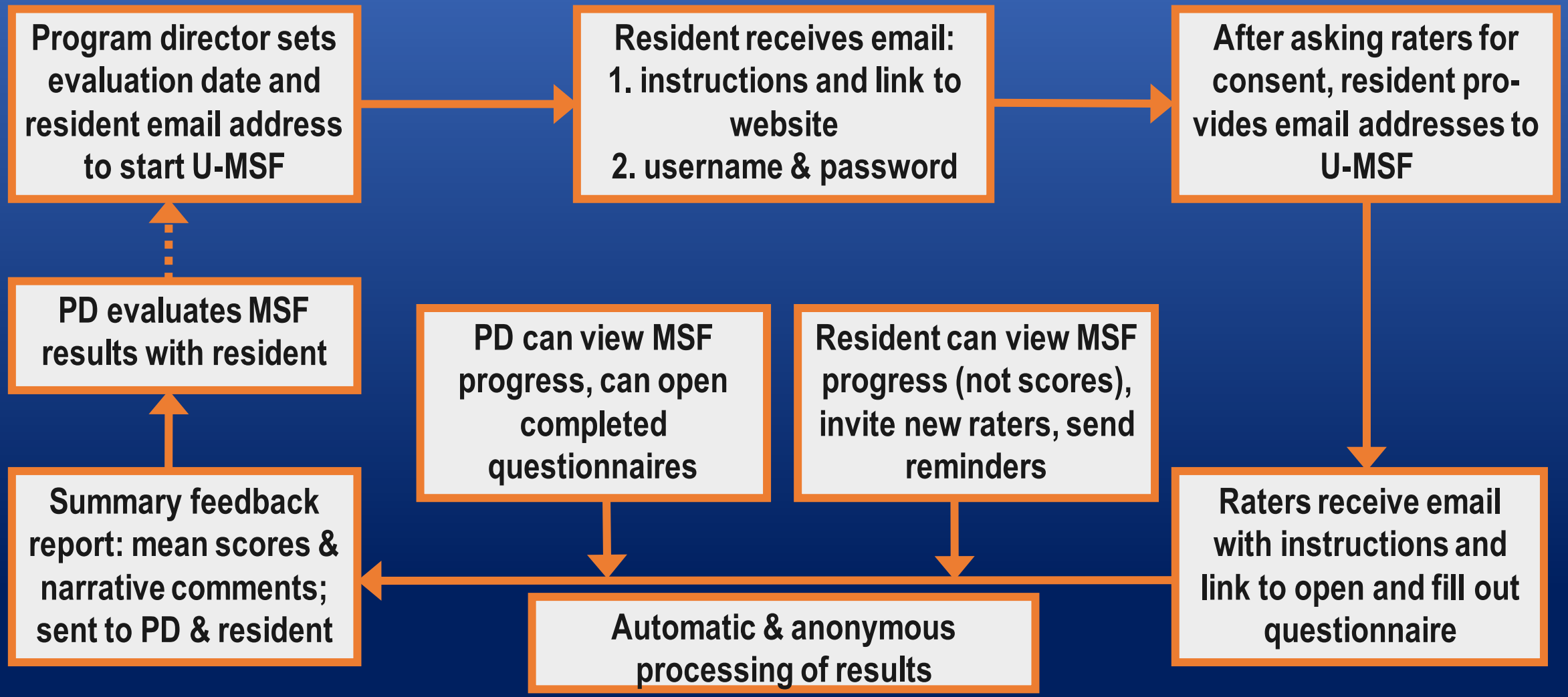
Flow of web-based Utrecht MSF procedure*



*national tool, operated 2008-2018

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3. Conversations

Purpose: testing knowledge, reasoning, and anticipated action

- Case-Based Discussion (British), Chart-Stimulated Recall or CSR (American): conversation based on data in patient record to probe for clinical reasoning
- EBD = Entrustment-Based Discussion: conversations about action, with focus on '*what would you do if..*?', to assess risks when considering entrustment
- Structured one-the-fly conversations (One-minute-preceptor, SNAPPS)

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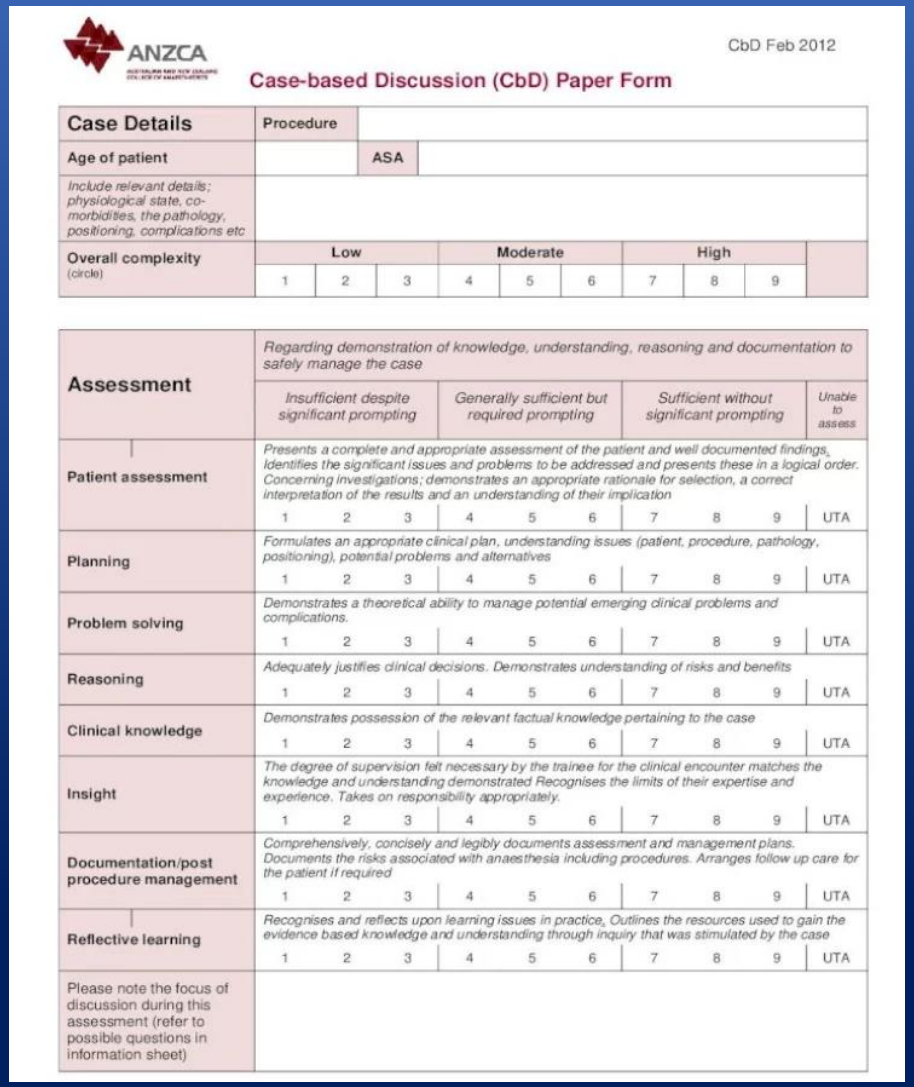
Case-based discussion / chart stimulated recall

- 15-20 mins + 5-10 mins for feedback; every 1 to 2 months (UK rule)
- Case review, based on selected patient record(s), studied by assessor
- Probing for learner's understanding, clinical reasoning, decision making

Example from Australia-New Zealand College of Anaesthetists



ANZCA

CbD Feb 2012

Case-based Discussion (CbD) Paper Form

Case Details	Procedure									
Age of patient		ASA								
Include relevant details; physiological state, co-morbidities, the pathology, positioning, complications etc										
Overall complexity (circle)	Low			Moderate			High			
	1	2	3	4	5	6	7	8	9	

Assessment	*Regarding demonstration of knowledge, understanding, reasoning and documentation to safely manage the case*									
	Insufficient despite significant prompting			*Generally sufficient but required prompting*			*Sufficient without significant prompting*			*Unable to assess*
Patient assessment	*Presents a complete and appropriate assessment of the patient and well documented findings. Identifies the significant issues and problems to be addressed and presents these in a logical order. Concerning investigations; demonstrates an appropriate rationale for selection, a correct interpretation of the results and an understanding of their implication*									
	1	2	3	4	5	6	7	8	9	UTA
Planning	*Formulates an appropriate clinical plan, understanding issues (patient, procedure, pathology, positioning), potential problems and alternatives*									
	1	2	3	4	5	6	7	8	9	UTA
Problem solving	*Demonstrates a theoretical ability to manage potential emerging clinical problems and complications.*									
	1	2	3	4	5	6	7	8	9	UTA
Reasoning	*Adequately justifies clinical decisions. Demonstrates understanding of risks and benefits*									
	1	2	3	4	5	6	7	8	9	UTA
Clinical knowledge	*Demonstrates possession of the relevant factual knowledge pertaining to the case*									
	1	2	3	4	5	6	7	8	9	UTA
Insight	*The degree of supervision felt necessary by the trainee for the clinical encounter matches the knowledge and understanding demonstrated Recognises the limits of their expertise and experience. Takes on responsibility appropriately.*									
	1	2	3	4	5	6	7	8	9	UTA
Documentation/post procedure management	*Comprehensively, concisely and legibly documents assessment and management plans. Documents the risks associated with anaesthesia including procedures. Arranges follow up care for the patient if required*									
	1	2	3	4	5	6	7	8	9	UTA
Reflective learning	*Recognises and reflects upon learning issues in practice. Outlines the resources used to gain the evidence based knowledge and understanding through inquiry that was stimulated by the case*									
	1	2	3	4	5	6	7	8	9	UTA
Please note the focus of discussion during this assessment (refer to possible questions in information sheet)										

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Entrustment-Based Discussion

- 10-15 min oral discussion, after a (critical) activity, to evaluate risks before summative entrustment

1. *What have you done?*
2. *Explain why this was needed* (anatomy, physiology, tests, indications, treatment)
3. *Which risks and potential complications are involved?*
4. *What would you do of have done if..* ..things had been different (unexpected patient, culture, medical history, lab or other findings, (lack of) cooperation, mental, physical abnormality, multimorbidity, etc)?

The Clinical Teacher, 2017

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4. Product Evaluation

Product= anything that results from a trainee's actions in patient care that does not require their presence for evaluation

- Entries into electronic health record
- Physical products (dentistry, orthopedics, plastic surgery etc)
- Patient experiences and patient-related outcome measures
- Reflective self-report, including logbook of patient encounters (age, sex, setting, diagnosis, level of involvement, procedure, supervision)
- Written reports (evidence-based case reports, research etc)

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How does this all fit with competency-based medical education?

Core components of CMBE

1. **Outcomes**: Competencies must be clearly defined
2. **Sequence**: There must be develop-mental progression
3. **Learning experiences**: must be tailored to learner needs
4. **Instruction**: must be focused on relevant competencies
5. **Learner assessment**: must follow a *programmatic* approach

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What are principles of *programmatic assessment*?

1. Assessment of clinical competence in the workplace on any single moment is unreliable; these moments should be low stakes but all should yield feedback to the learner
2. Multiple assessment datapoints from multiple occasions, raters, and methods, must be documented and aggregated, each with their own weight
3. High-stakes, summative, decisions on progress or permission to practice must be made by a team/committee, based om sufficient data, seeking expert consensus

A ‘program of assessment’ should formulate these rules

More elaborate exolanations in: Ottawa consensus statement 2020. Med Teach 2021;43(10)1139-1148

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Formative – summative principles in WBA

- Formative: Low stakes assessment decisions (focus on feedback)
  - decision by single supervisors or teachers
  - decisions are reversible
  - *Example "You handle the next patient; I will watch only, and we will debrief"*
- Summative: High stakes assessment decisions (focus on progress decisions and qualification for patient care privileges)
  - decision by team or committee
  - informed by multiple formative assessments
  - decisions are 'irreversible'
  - *Example "We have now decided that from now on you are allowed to serve at this outpatient clinic with distant supervision only"*

Note: students often *feel all* assessments as summative and stressful

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Exercise: create a *program of assessment* in the final year of medical school (30 minutes)

- Please make teams of 4-5; everyone receives a handout
- Please read the entrustable professional activity “Providing care to non-hospitalized adult patients presenting with a new complaint” in the handout
- Please review the workplace-based assessment approaches and WBA tools
- Group task:
  - which assessment tools should be used, how often, when by who?
  - when should an average student be ready for indirect supervision?

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Plenary Q & A