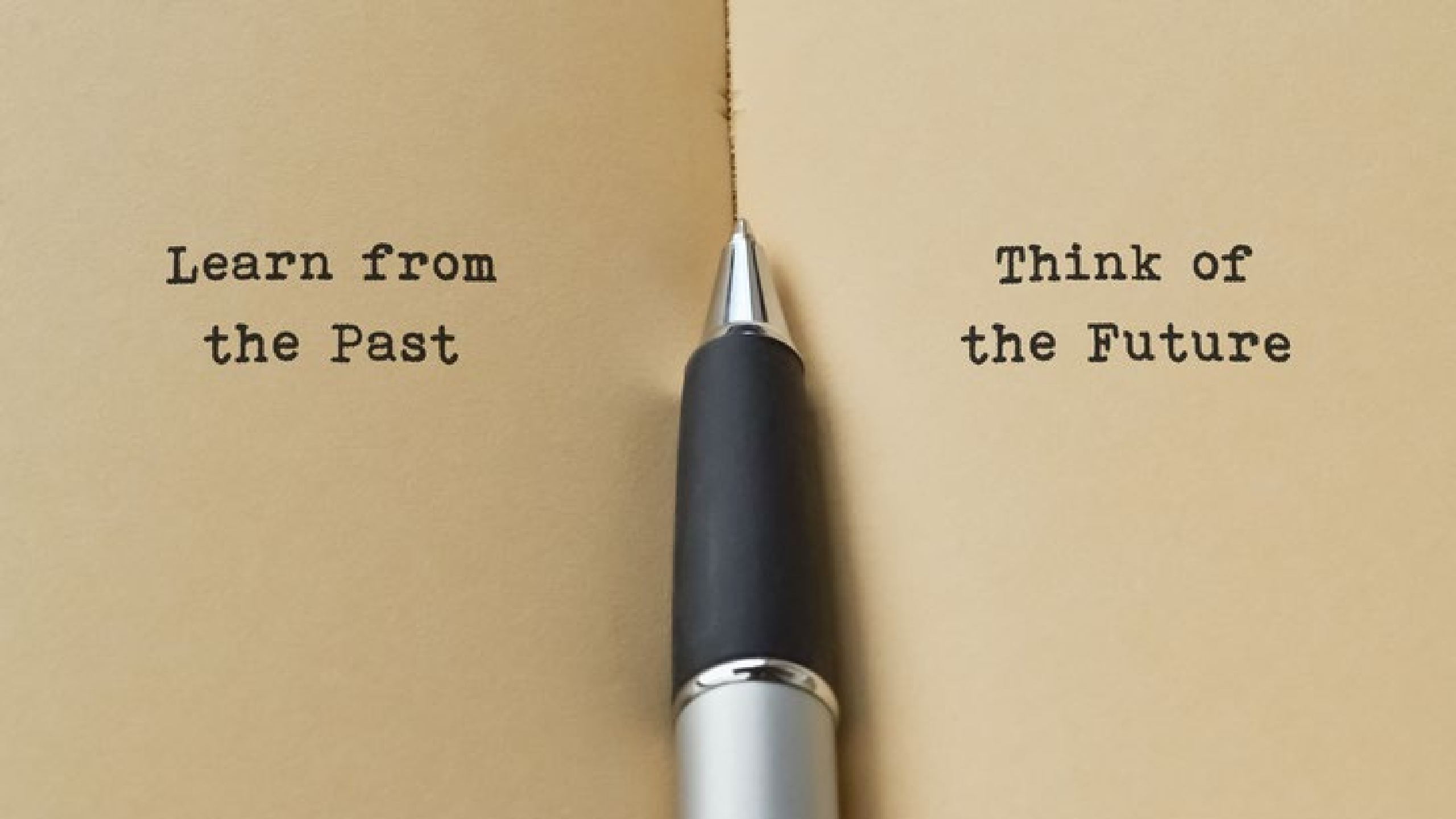
Three paradigms in assessment: Where are you?

Association of University Professors of Neurology (AUPN)
4 February, 2022

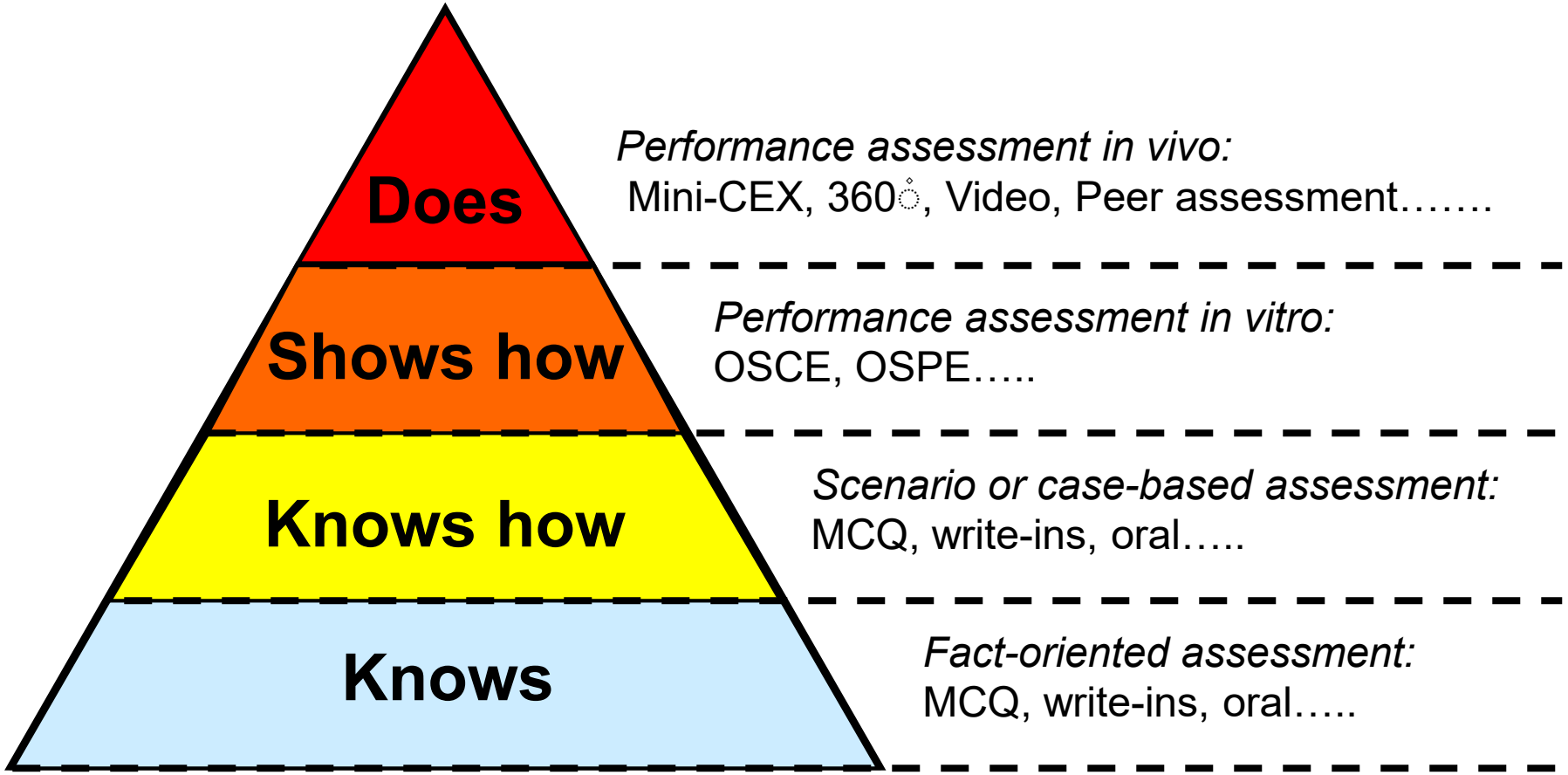
Cees van der Vleuten, Maastricht University,
The Netherlands
www.ceesvandervleuten.com


Learn from
the Past
Think of
the Future

Three paradigms of assessment

1. Assessment *of* learning
2. Assessment *for* learning
3. Systems integrated approach to assessment

Miller’s pyramid

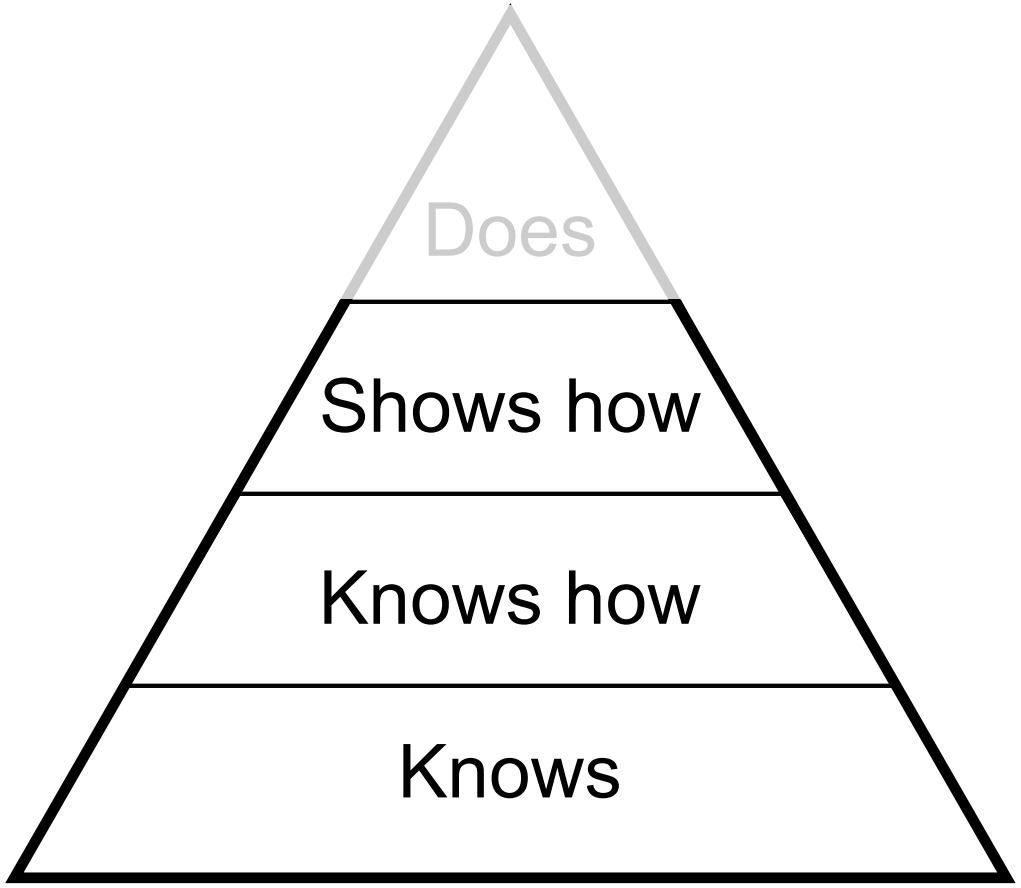


Miller, G. E. (1990). The assessment of clinical skills/competence/performance. *Academic Medicine*, *65*(9), S63-7.

Three paradigms of assessment

1. Assessment *of* learning
2. Assessment *for* learning
3. Systems integrated approach to assessment

Standardized assessment



Assessment of learning

- Focus on end-of-course pass/fail decisions
- Emphasis on reliability, validity and objectivity
- Removal of any human judgment.

Lessons learned

- Simple scenarios work best for clinical reasoning assessment
- Authentic OSCEs work best, using global rating scales of performance
- Quality assurance around test development and test scoring has significant impact on validity
- Performance is context bound; large sampling is imperative

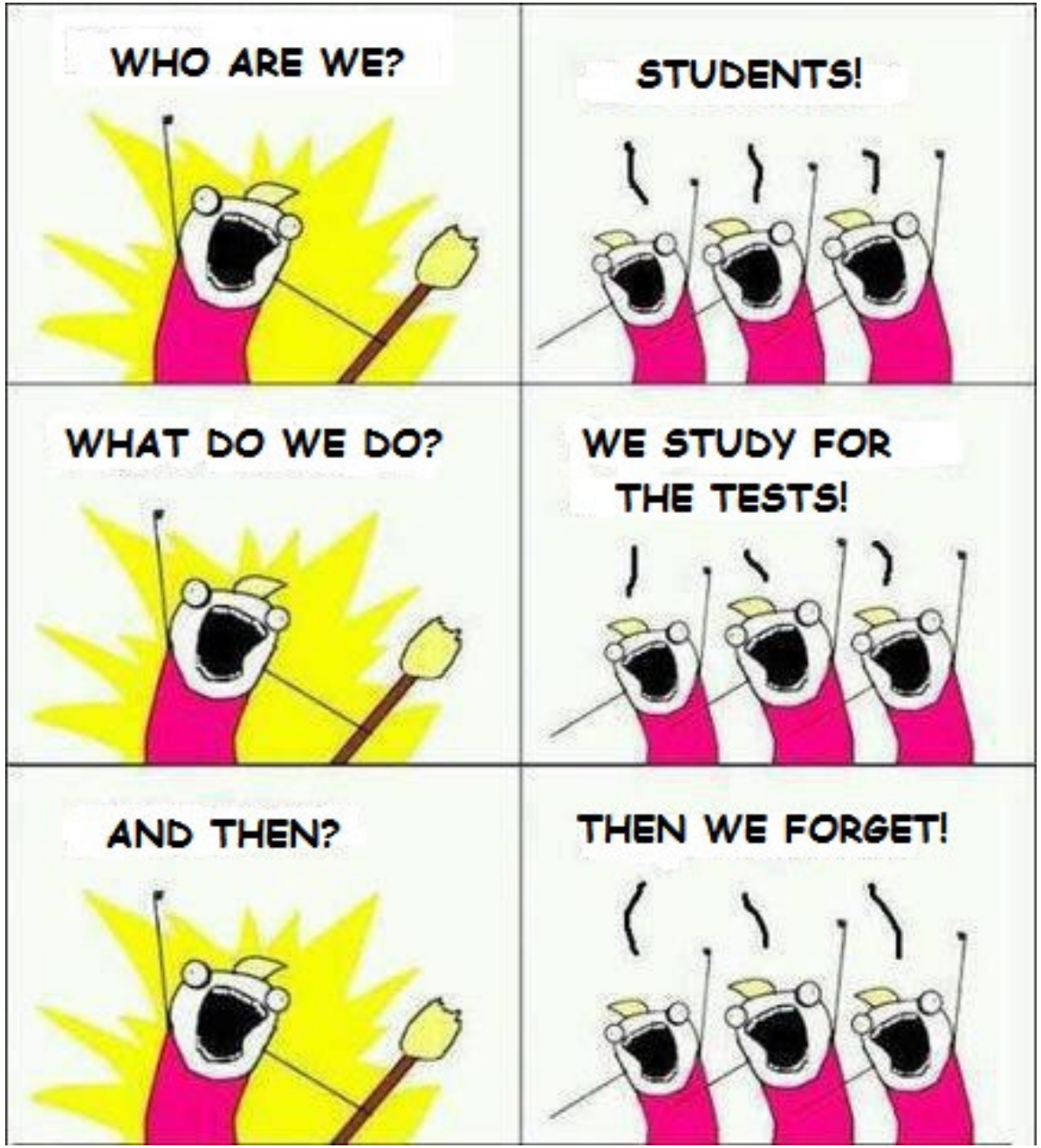
Method reliability as a function of testing time

Testing Time in Hours	MCQ	Case-Based Short Essay	Problem solving Test (PMP)	Oral Exam	Long Case	OSCE	Mini-CEX	Practice Video Assess-ment	In-cognito SPs
1	0.62	0.68	0.36	0.50	0.60	0.54	0.73	0.62	0.61
2	0.77	0.81	0.53	0.67	0.75	0.70	0.84	0.77	0.76
4	0.87	0.89	0.69	0.80	0.86	0.82	0.92	0.87	0.86
8	0.93	0.94	0.82	0.89	0.92	0.90	0.96	0.93	0.93

Source: Van der Vleuten, C. P., & Schuwirth, L. W. (2005). Assessing professional competence: from methods to programmes. *Medical Education, 39*(3), 309-317.

Lessons learned

- Simple scenarios work best for clinical reasoning assessment
- Authentic OSCEs work best, using global rating scales of performance
- Quality assurance around test development has significant impact on validity
- Performance is context bound; large sampling is imperative
- Assessment drives learning (negatively).


WHO ARE WE?
STUDENTS!
WHAT DO WE DO?
WE STUDY FOR THE TESTS!
AND THEN?
THEN WE FORGET!

Educational developments

- Competency-based medical education (CBME)
- Student centred learning; constructivist curricula
- Workplace-based assessment (WBA)

- Driven by:
  - Societal needs
  - Educational insights (transfer, contextual learning, group learning).

Competency-frameworks

CanMeds

- Medical expert
- Communicator
- Collaborator
- Manager
- Health advocate
- Scholar
- Professional

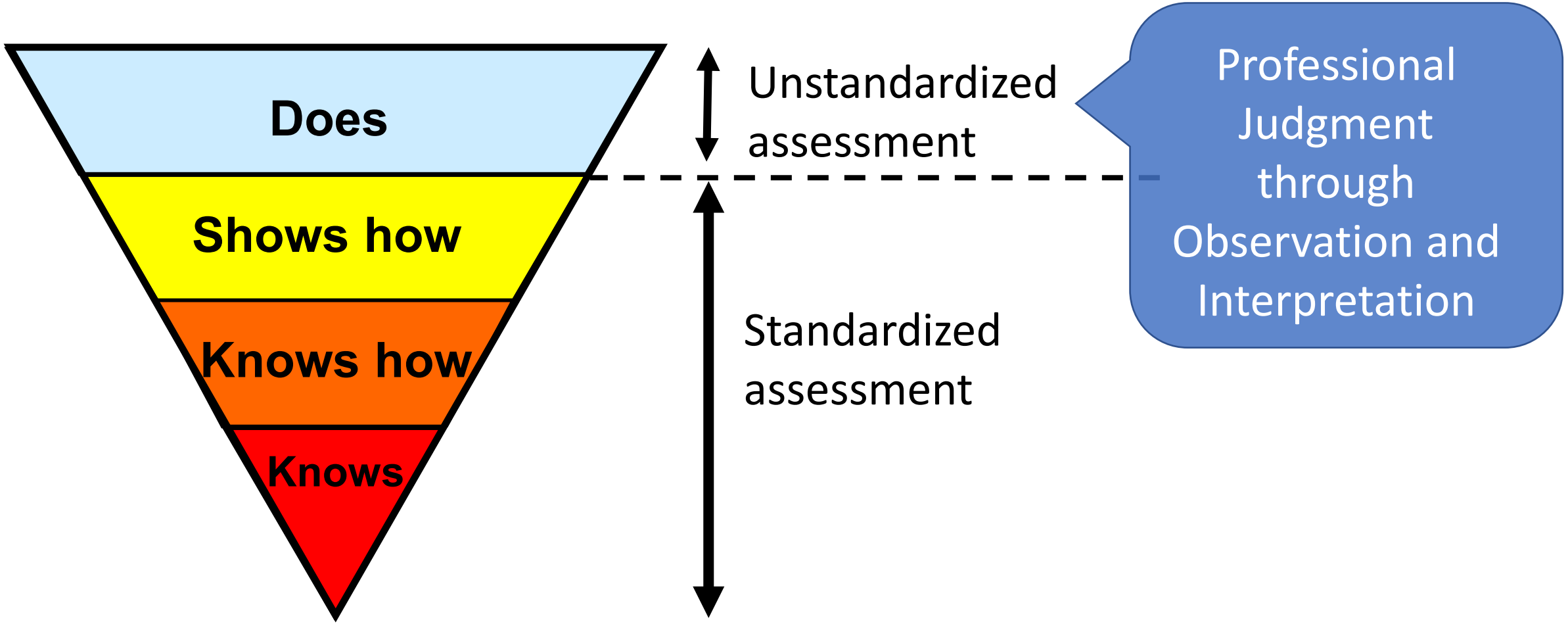
ACGME

- Medical knowledge
- Patient care
- Practice-based learning & improvement
- Interpersonal and communication skills
- Professionalism
- Systems-based practice

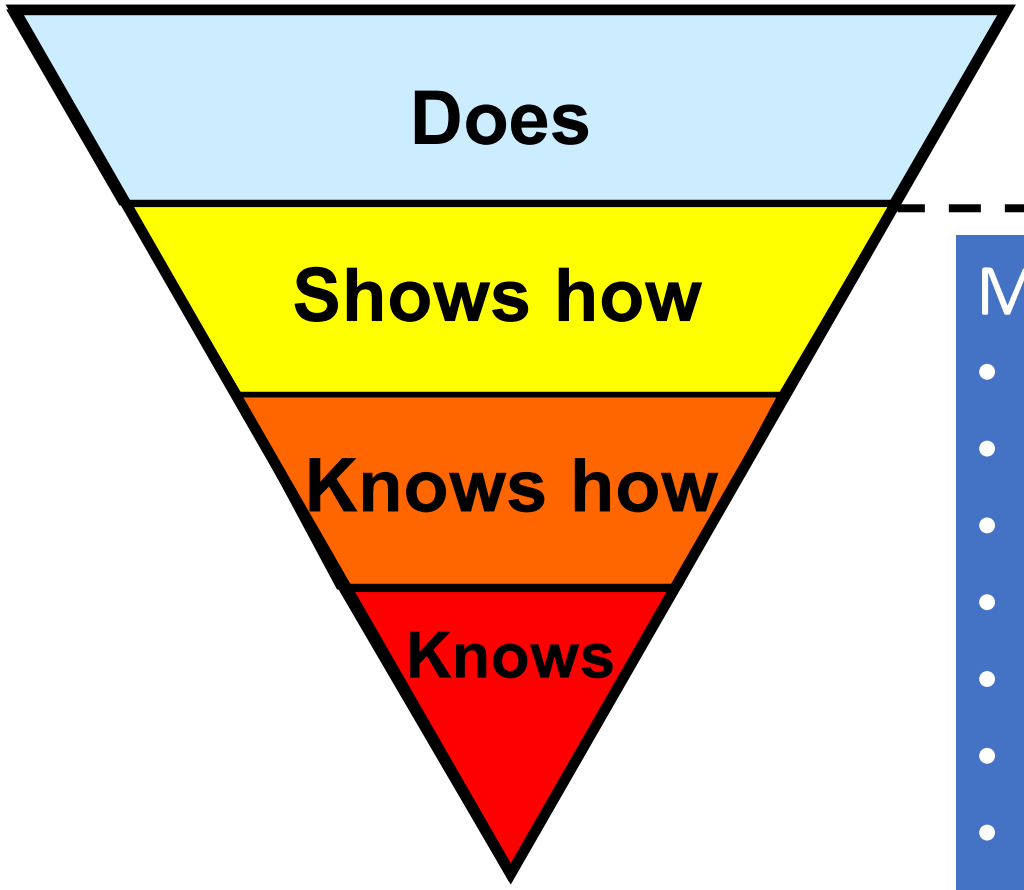
GMC

- Good clinical care
- Relationships with patients and families
- Working with colleagues
- Managing the workplace
- Social responsibility and accountability
- Professionalism

Assessing complex behavioural skills



Assessing complex behavioural skills



Unstandardized assessment

Methods used:

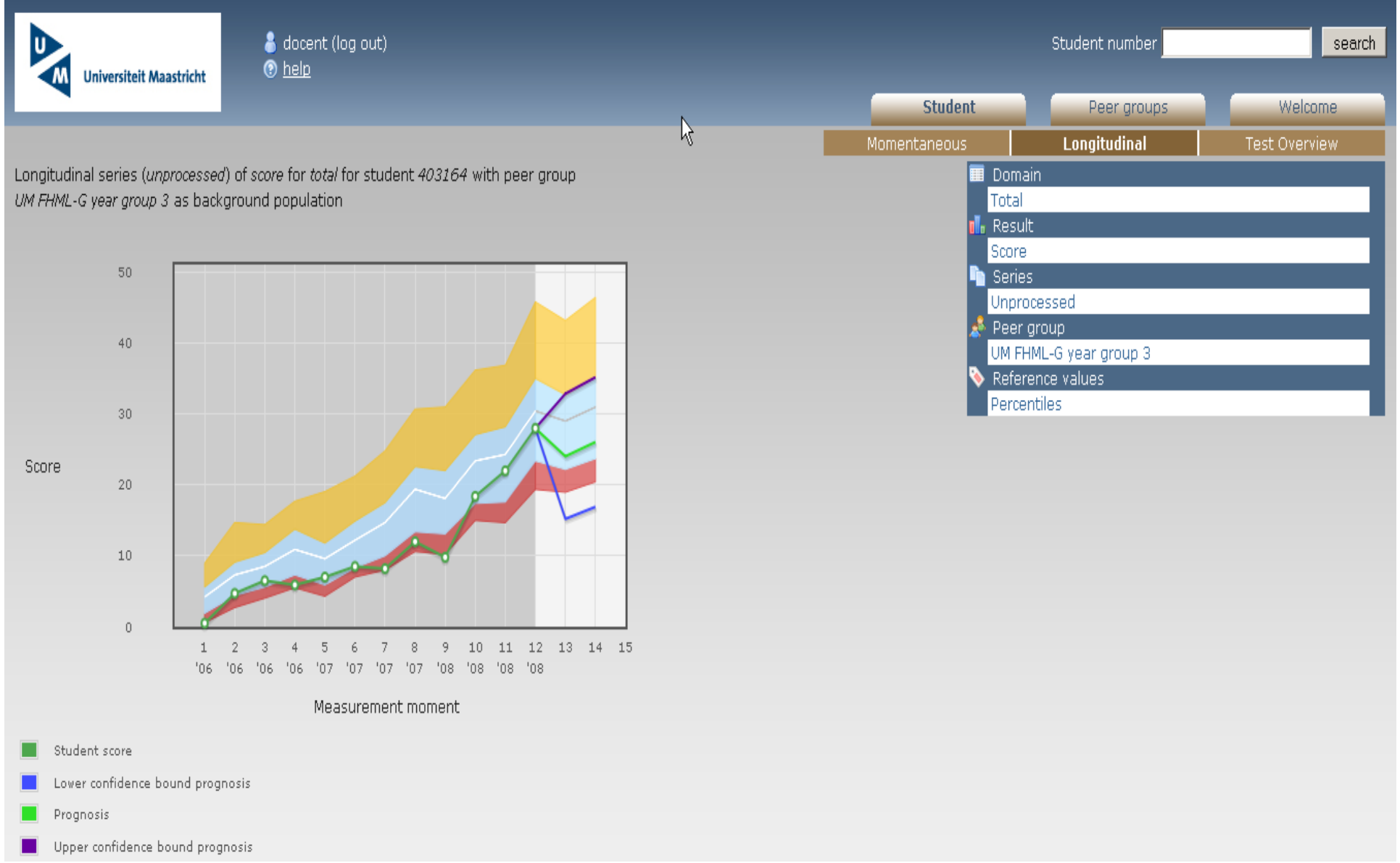
- Mini-CEX
- Field notes
- Case-based discussion
- Peer observation
- Video assessment
- Multi-source feedback
- Incognito Simulated Patients
- Portfolio

Three paradigms of assessment

1. Assessment *of* learning
2. Assessment *for* learning
3. Systems integrated approach to assessment

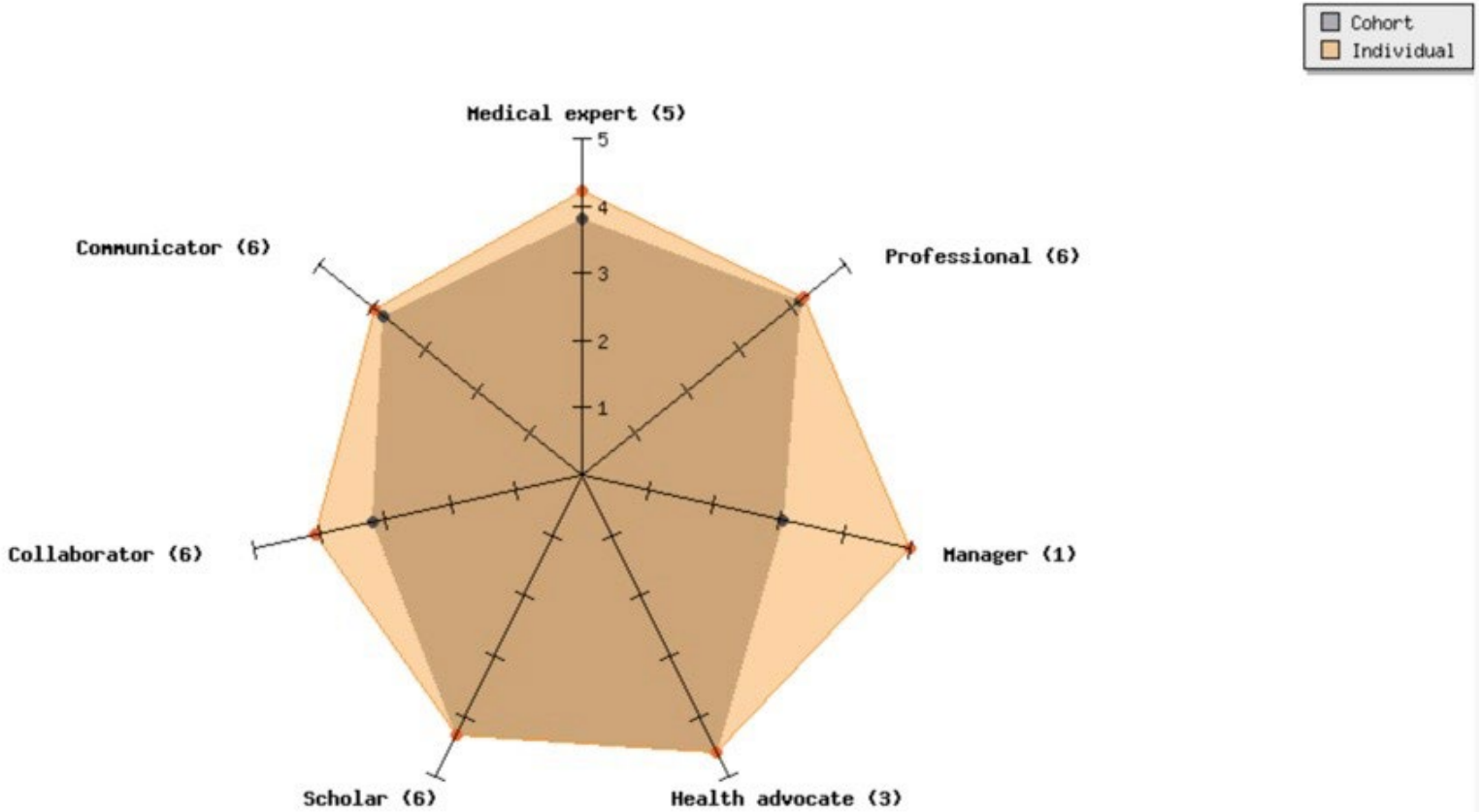
Assessment *for* learning

- Assessment used to optimize learning (formative assessment)
- Assessment to provide feedback to learners
- Assessment as part of learning.



Longitudinal total test scores across 12 measurement moments and predicted future performance

Electronic portfolio (ePass)



Comparison between the score of the student and the average score of his/her peers.

Narrative feedback

Feedbacktype: all Competency: all

Date	Feedbacktype	Competency	Narrative feedback	Form
06-11-2013	Improvement	General	don't repeat too much, no irrelevant details Conclusion: antenatal care in pregnancy may be done by a midwife and delivery will be done by a gynecologist, I revise	Mini-CEX-N
06-11-2013	Strength	General	included all information.	Mini-CEX-N
06-11-2013	Improvement	General	don't repeat too much, no irrelevant details. Conclusion: antenatal care in pregnancy may be done by a midwife, delivery will be done by a gynecologist, I revise.	Mini-CEX-N
06-11-2013	Strength	General	included all info.	Mini-CEX-N
18-10-2013	Improvement	General	more communication with the patient, in this case difficult because of language barrier more communication with supervisor	OSATS

Overview of narrative feedback from electronic portfolio

Lessons learned

- Work-based assessment in a summative way misses its goals
- Feedback is ignored in summative assessment regimes
- Feedback is a dialogue
- Narrative feedback has more impact
- The people are more important than the instrument
- Self-directed learning needs scaffolding through (longitudinal) coaching.

feedback has been unclear. This study demonstrates the benefits of moving away from a behaviouristic approach to assessment, based on punishment and rewards. It reveals the potential benefits of applying three constructivist principles to assessment: authenticity, empowering students with a more active role and gradual descaffolding to enable transformation towards a learning orientation.

Three paradigms of assessment

1. Assessment *of* learning
2. Assessment *for* learning
3. Systems integrated approach to assessment

Systems integrated approach

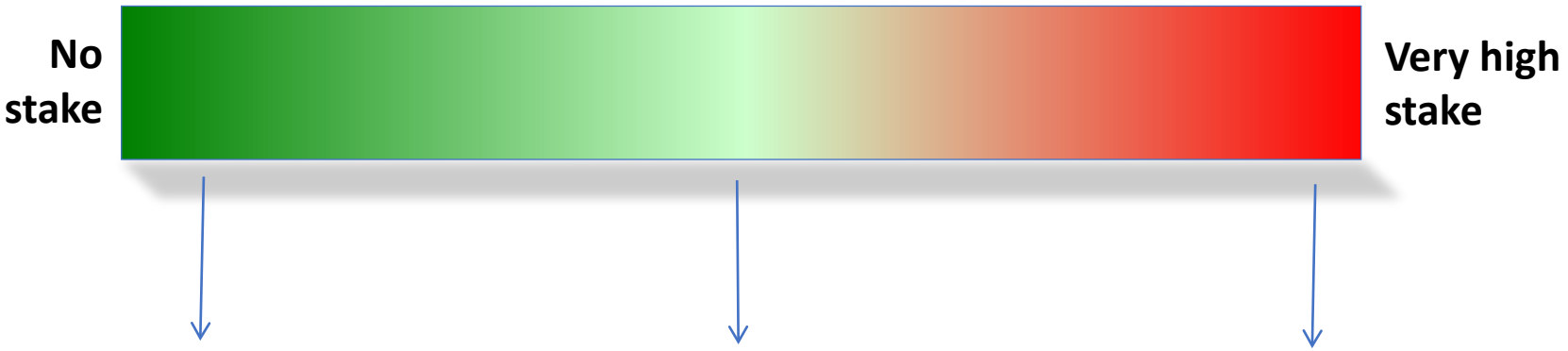
- Integrates lessons from the first and second paradigm
- Assessment program as a whole is optimized (not the individual method)
- The whole is more than the sum of its parts

- Marked example is **programmatic assessment**.

5 principles in programmatic assessment

1. No decision (pass/fail or grading) is based on a single data point, the purpose is to provide (rich) feedback
2. There is a mix of methods and choices are made on educational justifications
3. The number of data points needed is dependent on the stakes of the decision
4. There is a constant reflective dialogue with the learner based on the feedback
5. High stake decisions are taken in a group of experts.

Continuum of stakes, number of data point and their function



One Data point:

- Focused on information
- Feedback oriented
- Not decision oriented

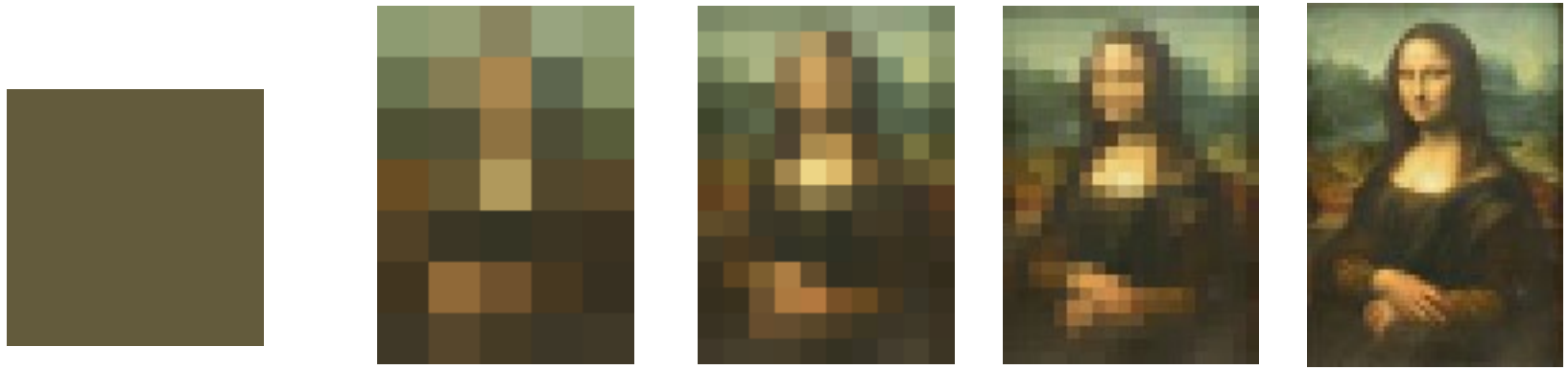
Intermediate progress decisions:

- More data points needed
- Focus on diagnosis, remediation, prediction

Final decisions on promotion or selection:

- Many data points needed
- Focused on a (non-surprising) heavy decision

Assessment information as pixels



Review Article

Perspect Med Educ
https://doi.org/10.1007/s40037-020-00625-w

Where the rubber meets the road — An integrative review of programmatic assessment in health care professions education

Suzanne Schut · Lauren A. Maggio · Sylvia Heeneman · Jan van Tartwijk · Cees van der Vleuten · Erik Driessen

Received: 26 July 2020 / Revised: 21 September 2020 / Accepted: 29 September 2020
© The Author(s) 2020

Abstract

Introduction Programmatic assessment was introduced as an approach to design assessment programmes with the aim to simultaneously optimize the decision-making and learning function of assessment. An integrative review was conducted to review and synthesize results from studies investigating programmatic assessment in health care professions education in practice.

Methods The authors systematically searched PubMed, Web of Science, and ERIC to identify studies published since 2005 that reported empirical data on programmatic assessment. Characteristics of the included studies were extracted and synthesized, using descriptive statistics and thematic analysis.

Results Twenty-seven studies were included, which used quantitative methods ($n=10$), qualitative methods ($n=12$) or mixed methods ($n=5$). Most studies were conducted in clinical settings (77.8%). Programmatic assessment was found to enable meaningful triangulation for robust decision-making and used as a catalyst for learning. However, several prob-

www.ceesvandervleuten.com

Lessons learned

- Programmatic assessment fits (only) with a constructivist educational program (undergraduate or postgraduate)
- A learning culture can be achieved
- Implementation is pivotal
  - Leadership
  - Involvement of stakeholders right from the start.

Characteristic	Assessment *of* Learning	Assessment *for* Learning	Systems-integrated Assessment
Learning philosophy	Behaviorist	Learner-centered	Constructivist
Data source	Quantitative	Qualitative (and quantitative)	Both
Data type	Grades/marks	Feedback	Feedback and decision-making on aggregated data
Data aggregation	Algorithmic	Professional judgment	Professional (committee) judgment
Method focus	Single method	Single method	Mix of methods
Purpose	Passing/failing	Growth	Both

Conclusion

- Assessment has evolved dramatically over time
- Assessment has gone through multiple paradigm shifts
- Where are you and where would you like to be?

UCSF Health

Building a Program of Assessment at UCSF

Megan Richie, MD
Department of Neurology

Acknowledgements

Karen Hauer, MD, PhD

Associate Dean for Competency Assessment and Professional Standards

Professor of Medicine

Catherine Lucey, MD

Vice Dean for Education and Executive Vice Dean for the School of Medicine

Professor of Medicine

John Davis, MD, PhD

Associate Dean for Curriculum

Professor of Medicine

History: Developing a Program of Assessment

- 2007: First Longitudinal Integrated Clerkship model at UCSF
- 2016: Coaching program
  - Competency milestones
  - Student Dashboard
- 2017: Family and Community Medicine became 100% longitudinal
- 2019: Pass/fail grading in core clerkships
  - Brief observation-based assessments added (“BBOTS”)
- 2020: Thematic Clinical Blocks model
- 2022: Student Progress Committees PILOT

Longitudinal Integrated Clerkships (8 students/yr)

Early inspiration and source of best practices

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AM		Medicine clinic	Family and Community Medicine clinic	Psychiatry clinic	Patient panel and self-directed learning*	Surgery (operating room)	Emergency Medicine day call
Lunch							
PM		Urgent Care	Patient panel and self-directed learning*	Pediatrics clinic	Surgery clinic	PISCES school	
Evening		Reflections group					

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AM		Medicine clinic	Family and Community Medicine clinic	Psychiatry clinic	Gynecology clinic	Anesthesia (operating room)	
Lunch							
PM		Patient panel and self-directed learning*	PISCES school	Patient panel and self-directed learning*	Neurology clinic	Anesthesia (operating room)	
Evening			Emergency Medicine night call				

*Unscheduled time during which the student follows panel patients in the hospital, to outpatient clinic visits, and to consultations, or returns phone calls. The time is also intended for reading and self-directed learning.

UCSF Health

History: Developing a Program of Assessment

- 2007: First Longitudinal Integrated Clerkship model at UCSF
- 2016: Coaching program
  - Competency milestones
  - Student Dashboard
- 2017: Family and Community Medicine became 100% longitudinal
- 2019: Pass/fail grading in core clerkships
  - Brief observation-based assessments added (“BBOTS”)
- 2020: Thematic Clinical Blocks model
- 2022: Student Progress Committees

Coaching

A foundation of longitudinal student support

Noriko Anderson, MD, MPH

Current Clinical Practice
General Neurology
Neuromuscular Medicine

Professional Interests
Neuromuscular medicine, medical education, brachial neuritis, diversity, equity and inclusion

Personal Interests
Reading, spending time with family, travel, board games

An Important Lesson
Simple acts of kindness like a smile or a listening ear can bring light and joy to people you meet.

Naomi Anker, MD
Assistant Clinical Professor
Department of Medicine
Division of Nephrology
VA Medical Center

Naomi Anker, MD
Assistant Clinical Professor; School of Medicine Coach

NAOMI ANKER, MD PROFILE

Training
Tufts University School of Medicine
UCSF Internal Medicine Residency
UCSF Nephrology Fellowship
UCSF Advanced Training in Clinical Research (ATCR) Certificate
UCSF Teaching Scholars Program

Current clinical practice and medical education roles
Attending for Nephrology Consult Service, Hemodialysis Clinic, and Internal Medicine Inpatient Wards, SFVA
SFVA Site Director, UCSF Nephrology Fellowship

Professional interests
Medical education, electrolyte and acid-base disorders, dialysis, social determinants of health, systems improvement.

Personal interests
Exploring the Bay Area with my husband and child, craft projects, cooking.

An important lesson you have learned from a mentor
In challenging situations, believe in the positive intent of those around you.

Melissa Bachhuber, MD
Associate Clinical Professor
Department of Medicine, Division of Hospital Medicine

Training
University of Wisconsin School of Medicine and Public Health
UCSF Internal Medicine Residency
UCSF Teaching Scholars Program

Current clinical practice and medical education roles
Attending for Internal Medicine Inpatient Wards, Co-Management Service, and Primary Care Clinic, SFVA
Core Faculty, Center of Excellence in Primary Care Education, SFVA
Faculty Mentor, VALOR Clerkship, SFVA
Deputy Associate Chief of Staff for Education, SFVA

Professional interests
Interprofessional education, health professions education and policy.

Gabe Ortiz, MD, PhD
Associate Professor; School of Medicine Coach

GABE ORTIZ, MD, PHD PROFILE

Personal interests
Being a great dad and husband, playing softball, coaching baseball, hiking, dancing, and time with friends

An important lesson you have learned from a mentor
Improvement requires dedicated intention.
Make your efforts count twice, or more, wherever possible!
If you do not plan and study before you act, you just do do do.

Nanah Suk Park, MD
Professor
Department of Pediatrics

Nanah Park, MD
Professor; School of Medicine Coach

NANAH PARK, MD PROFILE

Training
Chicago Medical School
University of Chicago Pediatrics Residency

Current clinical practice and medical education roles
Outpatient General Pediatrics, Pediatric Asthma

Professional interests
Asthma education and medical education

Personal interests
Golf, traveling

An important lesson you have learned from a mentor
Holly Humphrey, Dean of Medical Education at the University of Chicago Pritzker School of Medicine introduced me to this quote by Dr. Francis Peabody: "For the secret of the care of the patient is in the caring of the patient." It's such a simple quote but so meaningful. I think actually caring for your patient will give you the motivation to go the extra mile for them whether it's finding a different way to communicate and bond with them, reviewing the latest evidence-based literature, or spending the extra time to just listen.

Christopher (Toff) Peabody, MD, MPH
Assistant Clinical Professor
Department of Emergency Medicine

Christopher Peabody, MD, MPH
Assistant Professor; School of Medicine Coach

CHRISTOPHER PEABODY, MD, MPH PROFILE

Training
UCSF School of Medicine
University of Southern California and Los Angeles County Hospital Emergency Medicine Residency and Chief Residency
Harvard School of Public Health
Zuckerman Fellowship, Center for Public Leadership, Harvard Kennedy School of Government

Current clinical practice and medical education roles
Attending Physician, ZSFG Emergency Department
Director, Acute Care Innovation Center

Professional interests
Acute care innovations, patient safety and quality improvement, emergency department teamwork, physician mentorship and leadership, caregiver burnout

Personal interests
Service, politics, east bay hiking

An important lesson you have learned from a mentor
A mentor: is available, trustworthy, interested in your success, has high expectations, actively listens, and connects you to a broader network.

Sneha Daya, MD
Assistant Professor; School of Medicine Coach

SNEHA DAYA, MD PROFILE

Professional Interests
Feedback and learning climate in medical education
Use of simulation in teaching and assessment in medical education
Development of OEI and structural competency curricula for medical students, residents, faculty
Transitions of care from pediatric to adult health systems

Personal Interests
Baking bread, cakes, and cookies, tea tasting, hot yoga, audiobooks, and East Coast ventures

An important lesson you have learned from a mentor
Keep working hard and striving to be better. Your time will come.

Odinakachukwu Ehie, MD
Assistant Clinical Professor
Department of Anesthesiology and Perioperative Medicine

Odi Ehie, MD
Assistant Professor; School of Medicine Coach

ODI EHIE, MD PROFILE

Training
University of Wisconsin – Madison School of Medicine and Public Health
NYU Anesthesiology Residency
Stanford/Lucile Packard Children's Hospital Pediatric Anesthesia Fellowship

Current clinical practice and medical education roles
Attending for Pediatric Anesthesia at UCSF
Faculty Mentor, UCSF Anesthesia Residency

Professional interests
Global health – currently involved with the Health Volunteers Overseas / Society of Education in Anesthesia, primarily at Vietnam site, but looking to teach in other countries.

Personal interests
Enjoy traveling – 43 countries thus far! Also enjoy salsa dancing.

An important lesson you have learned from a mentor
Remember compassion and respect. Take quality time for yourself and don't put life on hold for later.

Kathryn Eubank, MD
Professor
Department of Medicine, Division of Geriatrics

Kathryn Eubank, MD
Professor; School of Medicine Coach

KATHRYN EUBANK, MD PROFILE

Training
University of Texas at Houston Health Science Center Medical School
Johns Hopkins Bayview Medical Center Internship and Residency
Johns Hopkins University Geriatrics Fellowship
Johns Hopkins Bloomberg School of Public Health Epidemiology and Biostatistics of Aging Fellowship

Current clinical practice and medical education positions
Internal Medicine and Geriatrics Attending, San Francisco VA Medical Center
Medical Director, Acute Care of Elders Unit, San Francisco VA Medical Center
Ethics Steward, UCSF
Intersession 2 Co-Course Director, UCSF

Professional interests
Acute care of older adults, delirium, polypharmacy, geriatrics, clinical ethics, interprofessional education and practice

Personal interests
Cooking/baking, hiking, travel

An important lesson you have learned from a mentor
Seek advice. No one is successful without help/mentoring, and there

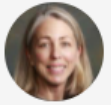
Brent Kobashi, MD
Associate Professor; School of Medicine Coach

BRENT KOBASHI, MD PROFILE

Professional Interests
Hiking, baking bread, brewing kombucha, complicated board games, cultivating a San Francisco garden

An important lesson you have learned from a mentor

Marta Kosinski, MD
Professor
Department of Pediatrics



Marta Kosinski, MD
Professor; School of Medicine Coach

MARTA KOSINSKI, MD PROFILE

Training
UCSF School of Medicine
Children's Hospital Pediatrics Residency

Current Clinical Practice
Outpatient General Pediatrics
Preceptor, Pediatric Resident Continuity Clinic

Professional Interests
Primary care pediatrics
Medical education
Mentoring

Personal Interests
My family and friends, backpacking, cooking

An important lesson
Your patient is your partner. Take time; sit down and listen. The answer is there.

Catherine Lau, MD
Associate Professor
Department of Medicine, Division of Hospital Medicine

Catherine Lau, MD
Associate Professor; School of Medicine Coach

CATHERINE LAU, MD PROFILE

Training
New York University School of Medicine
Beth Israel Deaconess Medical Center Internal Medicine Residency
UCSF Institute for Physician Leadership

Current clinical practice and medical education roles
Hospitalist, Moffitt-Long Medicine Service, Neurosurgery Comanagement Service, Hospitalist Proceduralist Service
Director, Quality and Patient Safety, Division of Hospital Medicine
Caring Wisely Director, UCSF Health

Professional interests
Patient safety, quality and systems improvement, high-value care, patient-centered communication, transitions of care, QI medical education

Personal interests
Cooking, travel, watching Stanford football, running after my kids and labradoodle

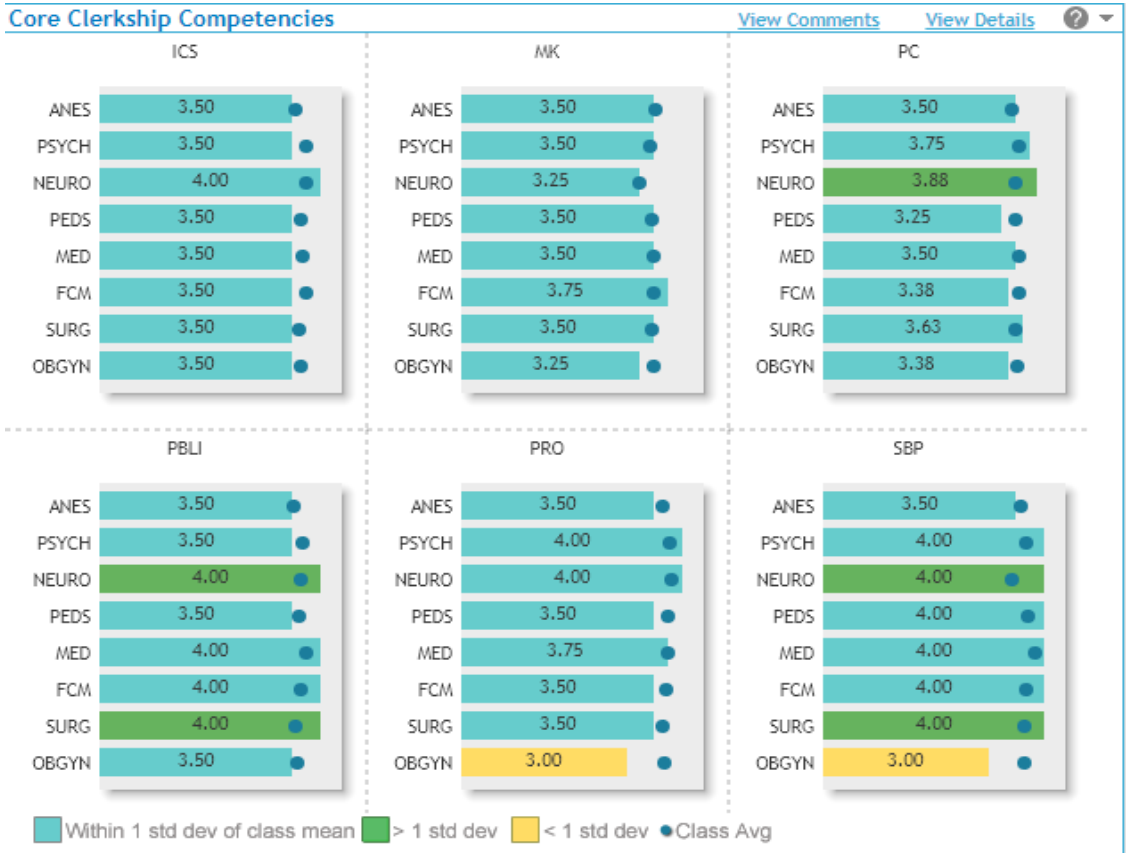
Competency milestones

A universal framework for growth

Foundations 1 (through December of 2nd year)	Foundations 2 (through December of 3rd year)	Graduate will be able to ... (Graduation Milestone)
PC1 F1. Gather basic histories from patients, families, and electronic health records relevant to clinical presentation, patient concerns, and structural factors that impact health	PC1 F2. Gather complete and focused histories from patients, families, and electronic health records in an organized manner, appropriate to the clinical situation and the individual, interpersonal, and structural factors that impact health	PC1 (graduation). Gather complete and focused histories from patients, families, and electronic health records in an organized manner, appropriate to the clinical situation and the individual, interpersonal, and structural factors that impact health
PC2 F1. Perform basic elements of a physical exam relevant to clinical presentation and patient concerns and identify common abnormalities, with attention to patient comfort	PC2 F2. Conduct a complete or focused physical exam in an organized, efficient, and fluid sequence, interpreting abnormalities and maintaining patient comfort	PC2 (graduation). Conduct complete and focused physical exams, using technology-enhanced physical diagnosis tools where appropriate, interpreting abnormalities and maintaining patient comfort
PC3 F1. Present patient information with an assessment and differential diagnosis in an	PC3 F2. Present patient information with an assessment, differential diagnosis, and initial plans in an	PC3 (graduation). Present encounters efficiently, including relevant gathered information, assessment, and plan

Student Dashboard

A transparent platform to track student progress



History: Developing a Program of Assessment

- 2007: First Longitudinal Integrated Clerkship at UCSF
- 2016: Coaching program
  - Competency milestones
  - Student Dashboard
- 2017: Family and Community Medicine became 100% longitudinal
- 2019: Pass/fail grading in core clerkships
  - Brief observation-based assessments added (“BBOTS”)
- 2020: Thematic Clinical Blocks model
- 2022: Student Progress Committees

Challenges with equity in assessment

Assessment	Intended use of assessment information	Instrumental use of assessment information	Inequity resulting from assessment	Consequence of inequity
USMLE Step 1 licensing examination scores	Determination of minimal competence for licensure to practice medicine, to ensure safety of the public	Sorting applicants for residency training into groups who will or will not be invited for interviews	Students from backgrounds underrepresented in medicine are at risk for lower scores due to structural factors throughout their education	UIM students do not match into top residency programs
Clerkship grades	Quantitative ratings and qualitative comments from team members ensure that students have achieved expected competence and inform future learning	Ranking students and sorting students to determine who will receive the highest grades	Bias in quantitative and qualitative ratings favors students who are White; bias exacerbated when faculty providing ratings may comprise a less diverse group than the student population	UIM students are less likely to be elected to the AOA honor medical society
Examinations of medical knowledge during clerkships	Assurance that all medical students achieve the expected minimum medical knowledge across varied clerkship sites and settings	Numerical data serve as easy, "objective" metrics that can be weighted heavily alongside clinical performance data to rank or sort students into groups for purposes of grade assignments	Medical knowledge contributes more to or drives clinical grade assignments rather than other competencies essential for high-quality patient care	UIM students earn fewer honors in core clerkships
Milestone ratings of resident performance	Monitor and support all residents' developmental trajectory	Quantitative milestone ratings enable ranking of residents	Women residents receive lower milestone ratings than men in certain domains that are traditionally valued as "male" characteristics	Women residents are less likely to be selected for chief resident positions or faculty appointments

Abbreviations: UIM, underrepresented in medicine; AOA, Alpha Omega Alpha Honor Society.

Pass/fail grading in core clerkships

Stepping towards a growth mindset

Aspect of assessment	Current procedures	Future vision
Purpose of clerkship evaluation and grading	To classify students	To promote learning and development
Clarity of expectations	Opaque, confusing	Transparent, understandable
Feedback	Often misaligned with summary evaluations; high stakes	Frequent, immediate, actionable
Learning progress	Time based	Individualized, based on milestones
Nature of learning context	Frequent changes in team, service, specialty	Continuity with peers, supervisors, setting, patients, and/or team
Assessment tools	Few tools, used mostly for summative assessment, assessment of knowledge as a priority	Multiple tools, frequent formative assessment; assessment of all competency domains a priority
Data that inform performance decisions	Inference based on oral presentations, limited direct observation of patient care	Frequent direct observation of students with patients
Student role in assessment	Passive	Active partner

Brief Bridges Observation Tools ("BBOTs")

Formative, low-stakes, frequent feedback

. Skill observed: choose one*

- ☐ History taking and/or physical exam- observation of student with patient
- ☐ Documentation: review of student's written note
- ☐ Oral presentation
- ☐ Other

. Feedback: *

_____

_____

_____

_____

_____

History: Developing a Program of Assessment

- 2007: First Longitudinal Integrated Clerkship at UCSF
- 2016: Coaching program
  - Competency milestones
  - Student Dashboard
- 2017: Family and Community Medicine became 100% longitudinal
- 2019: Pass/fail grading in core clerkships
  - Brief observation-based assessments added (“BBOTS”)
- 2020: Thematic Clinical Blocks model
- 2022: Student Progress Committees

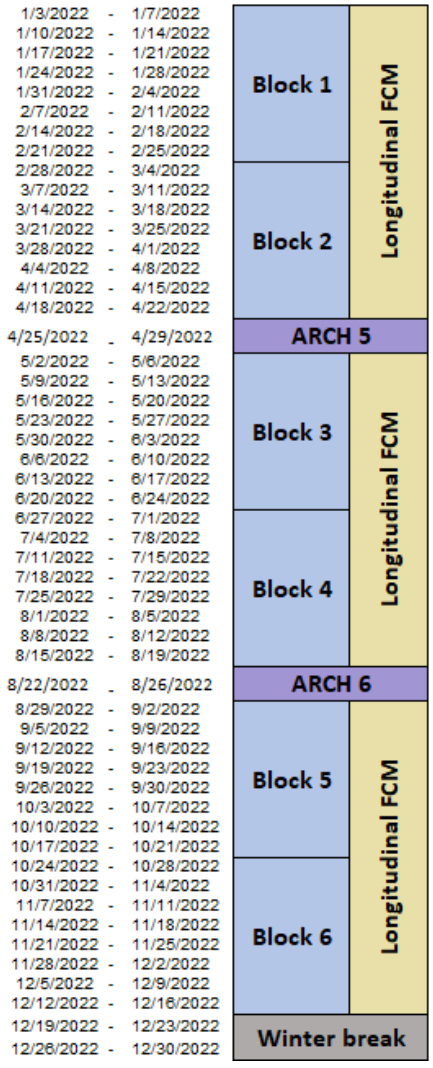
Thematic Clinical Blocks

Collaboration opportunities across clerkships

Medical Core – 16 weeks
- Medicine – 8
- Neurology – 4
- Psychiatry – 4

Surgical Core – 16 weeks
- Surgery – 8
- Anesthesia – 2
- Elective – 6

Life Stages – 16 weeks
- Ob/Gyn – 6
- Peds – 6
- Elective – 2



History: Developing a Program of Assessment

- 2007: First Longitudinal Integrated Clerkship at UCSF
- 2016: Coaching program
  - Competency milestones
  - Student Dashboard
- 2017: Family and Community Medicine became 100% longitudinal
- 2019: Pass/fail grading in core clerkships
  - Brief observation-based assessments added (“BBOTS”)
- 2020: Thematic Clinical Blocks model
- 2022: Student Progress Committees

A Gap in our assessment curriculum

A student, near the **end of the year, is surprised to receive a call from the clerkship director about her grade.** They review her supervisor evaluations that indicate she was **below expected competency** in several domains and did not pass the clerkship. The student is surprised because on prior rotations, she was told she was doing "fine" throughout the year, and on this current clerkship, she felt she did not receive constructive feedback. Other clerkships report that there were no big concerns but there were **consistently low-average comments** and ratings on several competencies **over multiple clerkships**.

Student Progress Committees *Pilot 2022

Longitudinal feedback to all students including:

Strengths ◦◊◦ **Next steps in growth** ◦◊◦ **Recommended resources**

Student generates self-reflection with guidance from coach

Thematic Clinical Blocks convene Student Progress Committees:

- Suggested Next steps
- Identifies students needing intervention

Student and coach review and process feedback

Milestone-Based ◦◊◦ Supportive Only ◦◊◦ Multiple Data Sources

Course Correction Opportunities ◦◊◦ Curricular & Assessment Feedback

Summary: Program of Assessment at UCSF

- Multiple supportive mechanisms for longitudinal assessment
  - Milestone-based curriculum
  - Longitudinal coaching program
  - Technological platform for student self-monitoring
  - Pass/fail grading system
  - Collaborative clerkship structure

- Multiple assessment sources
  - Formal clerkship assessments
  - Brief observation-based assessments
  - Early integrated assessment (Student Progress Committees)

References

Hauer KE, Lucey CR. Core clerkship grading: The illusion of objectivity. Acad Med 2019; 94:469-472.

Lucey CR, Hauer KE, Boatright D, Fernandez A. Medical Education's Wicked Problem: Achieving Equity in Assessment for Medical Learners. Acad Med 2020 Dec; 95(12S Addressing Harmful Bias and Eliminating Discrimination in Health Professions Learning Environments):S98-S108.

Poncelet A et al. Development of a longitudinal integrated clerkship at an academic medical center. Med Educ Online 2011; 16: 10.3402/meo.v16i0.5939

Thank you

Additional slides if needed…

Value Add: Individual students

- A structured (competency-based) critical self assessment with multiple guiding mechanisms (coach, clerkship, SPC)
  - Not just another box to check
- Identification of "low level" student performances
- Clarification of discrepant feedback or other grading questions
- Normalization of personal context as a relevant factor in assessments data plus the opportunity to provide it
- Recognition that ALL students have potential for growth

Value Add: Feedback for curriculum

- Reviewing student questions may reveal common misconceptions or areas of confusion where discrepant, incomplete or misleading information arises
- Core competencies with disproportionate need for “action recommended” may suggest a gap in curriculum (too many) or grade inflation (too few)
- Disproportionate vulnerability triggers across student demographics (race, gender identity, etc) and clerkship variables (site, service) will help identify areas of bias to address
- Inter-clerkship review of preceptor evaluations will provide richer feedback about quality of assessments
- A natural setting to foster development of opportunities for curricular or assessment collaboration between clerkships

Strategies to Minimize Bias

- SPC is supportive only, with no potential punitive impact
- All sensitive information discussed at SPC meetings is heard only by previous clerkships, admins or SET team
- Student completely controls any information passed along to current/future clerkships
- Inclusion of FCM Interim Summary evaluation for SPC meeting #2
- Multiple feedback mechanisms for SPC
  - Initial Student preparation submission
  - “Action Recommended” follow-up feedback after Student/Coach meeting
  - Systematic review of data every 6-12 months (see Value Add: Curriculum)

Data collected for SPC to review

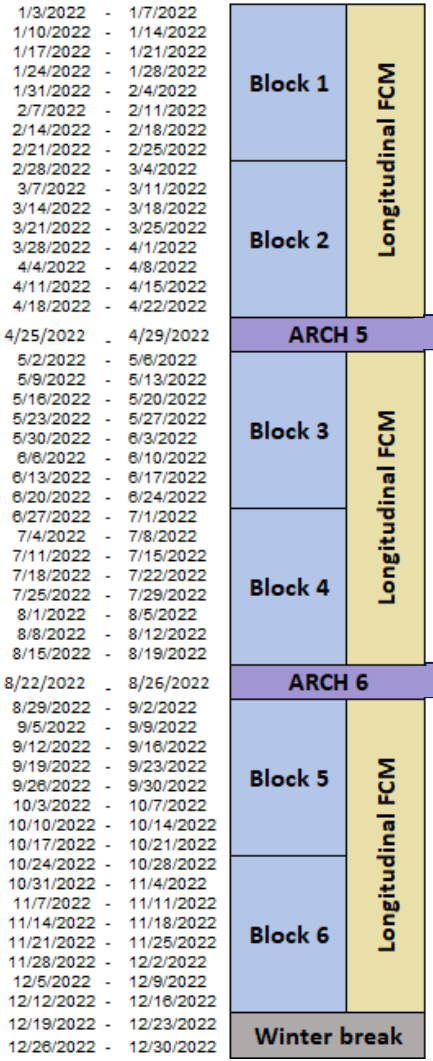
- All summary evaluations from TCB #1 clerkships
  - Mapped onto F2 milestones
- Student preparation: Core competency-based strengths & areas for growth, SMART goals, personal context, questions
  - *Note: Students will not have had access to most recent summary evaluation*
- Dashboard core competency graphs
- All constructive comments from preceptors
- Summary of Medhub alerts – Total # and competency domains
- **Novel variables**

Thematic Clinical Blocks

Medical Core – 16 weeks
- Medicine – 8
- Neurology – 4
- Psychiatry – 4

Surgical Core – 16 weeks
- Surgery – 8
- Anesthesia – 2
- Elective – 6

Life Stages – 16 weeks
- Ob/Gyn – 6
- Peds – 6
- Elective – 2



Formal student/coach meeting
Student Progress Committees meet

- Medical Core
- Surgical Core
- Life stages

Formal student/coach meeting
Student Progress Committees meet

- Medical Core
- Surgical Core
- Life stages

UCSF Health

Massachusetts General Hospital
Founding Member, Mass General Brigham

Neurology clerkship assessment

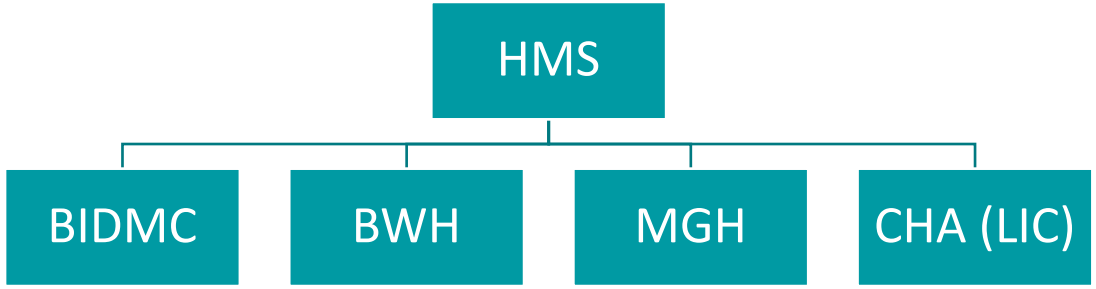
Haatem Reda, MD
Site director, MGH Neurology Clerkship
Massachusetts General Hospital/Harvard Medical School

January 2022

HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

HMS clerkship structure

“One clerkship” model



Shared/centralized

Assessment
Didactics
NBME exam (shelf)
Mini-CEx

Site-specific

Rotations/services
Conferences
Mid-clerkship feedback
Other experiences

MGH clerkship structure

Week 1	Week 2	Week 3	Week 4
General neurology		Vascular neurology	ED/clinic

EPAs (starting in 2016): Progress-based

- 1A: Gather a history
- 1B: Perform a physical examination
- 2: Prioritize a differential diagnosis
- 3: Recommend/interpret common tests
- 5: Document a clinical encounter
- 6: Oral clinical presentation
- 7: Form clinical questions
- 9: Collaborate as a team member

Other evaluative components

- Mid-clerkship feedback & self-reflection
- Narrative evaluations (core competencies)
- Mini-CEx
- Shelf examination (pass ≧ 5th percentile)

Assessment: EPA

13. **Prioritize a differential diagnosis following a clinical encounter (EPA 2):**

- o **PRE-ENTRUSTABLE**:Generates 1-2 possible Dx, largely based on pattern recognition; has difficulty generating alternative hypotheses or explaining supporting mechanisms of disease. Unable to outline dx evaluations to confirm/exclude certain Dx.
- X **EMERGING:Generates short list of possible Dx based on pattern recognition and reasoning about pathophys. Eliminates a few Dx based on H&P/initial labs. Outlines a simple evaluation using commonly available tests to confirm/exclude certain Dx.**
- o **ENTRUSTABLE**:Generates a thorough/appropriate/reasoned list of possible Dx based on pathophys & epidemiology. Determines most likely based on H&P/initial labs. Outlines high value test strategy to confirm/exclude most likely &/or dangerous Dx.
- o Unable to assess

Core competencies →

PART 2: Please provide a narrative evaluation of this student's performance. Please use the following HMS core student competencies (as appropriate) to direct the content of your narrative:

(1) Medical Knowledge
(2) Critical Thinking and Inquiry
(3) Patient Care
(4) Professionalism
(5) Interpersonal/communication skills
(6) Organizational/social determinants of care

5. Please provide a **formative assessment** of the student's **clinical strengths**, with specific examples.

6. Please provide a **formative assessment** of the student's **areas for improvement**, with specific examples.

7. Please provide a **formative assessment** of the student's **professionalism**, with specific examples (e.g. accountability, responsibility, reflective skills, time management, responsiveness to patient/team needs, situational awareness, respectful interactions).

8. How and when was formal feedback given about issues raised in this evaluation?

9. Other **course-specific assessment data** (e.g. shelf exam, oral exam, OSCE, mini CEX).

21. **Prioritize a differential diagnosis following a clinical encounter (EPA 2):**

Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	2 - **EMERGING**:Generates short list of possible Dx based on pattern recognition and reasoning about pathophys. Eliminates a few Dx based on H&P/initial labs. Outlines a simple evaluation using commonly available tests to confirm/exclude certain Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	2 - **EMERGING**:Generates short list of possible Dx based on pattern recognition and reasoning about pathophys. Eliminates a few Dx based on H&P/initial labs. Outlines a simple evaluation using commonly available tests to confirm/exclude certain Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	3 - **ENTRUSTABLE**:Generates a thorough/appropriate/reasoned list of possible Dx based on pathophys & epidemiology. Determines most likely based on H&P/initial labs. Outlines high value test strategy to confirm/exclude most likely &/or dangerous Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	3 - **ENTRUSTABLE**:Generates a thorough/appropriate/reasoned list of possible Dx based on pathophys & epidemiology. Determines most likely based on H&P/initial labs. Outlines high value test strategy to confirm/exclude most likely &/or dangerous Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	2 - **EMERGING**:Generates short list of possible Dx based on pattern recognition and reasoning about pathophys. Eliminates a few Dx based on H&P/initial labs. Outlines a simple evaluation using commonly available tests to confirm/exclude certain Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	3 - **ENTRUSTABLE**:Generates a thorough/appropriate/reasoned list of possible Dx based on pathophys & epidemiology. Determines most likely based on H&P/initial labs. Outlines high value test strategy to confirm/exclude most likely &/or dangerous Dx.
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		

Aggregated evaluators' ratings

Average answer: (2.5) ENTRUSTABLE:Generates a thorough/appropriate/reasoned list of possible Dx based on pathophys & epidemiology. Determines most likely based on H&P/initial labs. Outlines high value test strategy to confirm/exclude most likely &/or dangerous Dx.

22. **Prioritize a differential diagnosis following a clinical encounter - summary (EPA 2):**

- ○ Pre-entrustable Behavior
- ○ Pre-entrustable <-> Emerging
- ○ Emerging Behavior
- ✻ Emerging <-> Entrustable
- ○ Entrustable Behavior
- ○ Unable to assess

11. Please provide a **formative assessment** of the student's **areas for improvement**, with specific examples.

Evaluation:	**Student Performance Evaluation - CLINICAl [NEUROLOGY]**	
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		
Evaluation:	**Student Performance Evaluation - CLINICAL [NEUROLOGY]**	
Course:	**107-NN500M.3**	
Dates:	**11/22/2021-12/19/2021**	
Completed By:		

Aggregated evaluators' comments

Copy answers to text area

Assessment: Grading

Final Course Grade	
Passing grades are bold. The final course grade can only be saved when submitting the evaluation form.	
PCE Grading	○ **S** Satisfactory ○ U Unsatisfactory ○ I Incomplete ○ W Withdrawal ○ IP In Progress
Comments	Rich text

Criteria for a passing grade:

- Shelf exam score ≧ 5th percentile
- ≦ 2 “pre-entrustable” EPA ratings

Students who do not pass → remediate

Advising and remediation

Academic Society (HMS) and House (MGH) structure

Society advisor

PCE (principle clinical experience) advisor

House director

PCE/UME committee (all clerkship site directors)

Collaborative approach at the PCE level

Concerns fed forward with discussion and input from student

Trigger for more directed advising, resources, tutoring, etc

Challenges

- Reliance on quality narrative evaluations and feedback
- Evaluators are busy and therefore often brief
- Short clerkships face the biggest challenges—limited longitudinal observation
- Senior residents tend to give the most detailed and reliable feedback

Departmental summative assessment (DSA)

Assigned to department of student's chosen specialty

Aggregates assessments from all relevant courses

Core neurology clerkship (S/U)

Advanced neurology elective (HD/H/P/F)

Any other coursework relevant to neurology (eg, neuropathology, away electives)

Each student reviewed and discussed by entire clerkship committee

Focus on progress over time

DSA grade and narrative evaluation included in MSPE

The course ahead

- We are in the early stages of yet another overhaul of clinical education
- Competency-based narrative assessment (from longitudinal observation) remain the goal