**Learning Objectives:** Participants will be prepared to develop and implement assessments and assessment systems in their education work

- Analyze a wide range of assessment methods and their applicability to education programs
- Apply measurement concepts to actual health professions assessment considerations
- Use assessment data to make competency decisions for learners and quality evaluations for curricula and programs
- Make iterative improvements to assessments based on this experience

**Materials:**

- Syllabus
- Homework is due via email to instructors by 5 PM on the Monday following class.
- This course will operate under the University of Pittsburgh Honor Code
- Readings from sources aside from textbooks

**Textbooks:**


**Attendance Policy:** Please inform the course directors of any planned absences (e.g., meetings) in advance. Notify as soon as possible of unexpected absences, like illnesses. Part of the grade is class participation, which will be negatively impacted by missing class. Missing more than 2 classes will result in an incomplete grade.

**Classroom:**

- Record session as needed
- Projection
- White Board
- Easels for group work

**Grading:**

Class Participation: 20%
Clinical Evaluation Form: 20%
MCQ Homework: 20%
Designing Grading System: 20%
PBA Homework 20%
Session I: General Principles and Domains of Learner Assessment

Objectives
- Describe principles of learner assessment
- Describe domains of learner assessment
- Describe key considerations in selecting assessments for medical education activities
- Use these considerations to develop or critique an assessment program

Pre-Session Activities (*=mandatory, others optional/skim)
Holmboe Chapter 2 (Issues of Validity and Reliability)
Pangaro Chapter 2 (A Primer of Evaluation Terminology)

Topics
- Course overview
  - Course objectives
  - Homework expectations
  - Evaluation
  - Overview of the textbooks & other assigned reading (what, why, quirks, resources)
- Principles and domains of learner assessment

Learning Activities
- Review nuts and bolts of course
- Brief didactic with multiple group discussion prompts and opportunities for questions
- Analyze an assessment program (not related to health professions)

Materials in class
- Slides
- Review of Syllabus

Homework
- See Pre-Session Activities for next class
Session II: Work Based Assessments and Frameworks for Assessment

Objectives

- Analyze the major frameworks for clinical performance assessment
- Identify the interplay of the major frameworks in current assessment system construction
- Perform a “cross-walk” of ACGME milestones and a residency curriculum

Pre-Session Activities (*=mandatory, others optional/skim)

- *Download and Review your specialty’s milestones from [www.acgme.org](http://www.acgme.org) (hit “specialties” button on right of mid-banner to go to your page). Focus on the following
  - Imagine how milestones could for the basis of assessment tool/s. What do you think about the pros and cons of this?
- *Read pp. 18-21 of ACGME Milestone Guide. Begin halfway down p. 18. This segment has very practical advice about milestones and assessment programs in general.
- Pangaro Chapter 8 (Descriptive Evaluations), Chapter 9 (Direct Observation)
- Holmboe Chapter 3 (Evaluation Frameworks, Forms, and Global Rating Scales); Chapter 4 (Direct Observation) pp. 61-65 stop at “Improving the Frequency of Direct Observation” and pp. 73-75 stop at” Overview of Faculty Development Approaches to Improve Assessment Quality”

Topics

- Frameworks for clinical performance assessment
- Practical considerations for application of these frameworks
- Milestones (or other frameworks) as an organizing structure for curriculum and assessment

Learning Activities

- Brief didactic with multiple group discussion prompts and opportunities for questions
- Analyze the ACGME “Core Competency” framework applied to a resident rotation
- form a “cross-walk” of ACGME milestones and a residency curriculum
- Application of frameworks to medical student or other health professions’ education—what have you seen, what would you think might & might not work and why?
- Analyze University of Pittsburgh’s M3 Clerkship evaluation.

Materials in class

- Slides
- Core Competency evaluation with 1-9 scale, Resident rotation curriculum grid
- Milestone sets (IM 9 System Errors and IM 5 Consult Care) and Block Schedule for a resident for groups
- M3 clerkship assessment

Homework

Design or select an established/published work based clinical evaluation form relevant to your work in education or clinical. Target learner can be students or residents/higher level trainees. Education venue can be a whole course or a finite experience. Describe the framework/s of the tool. Justify why you think this form can work in your area.
Submit this prior to 5pm

See Pre-Session Activities for next class
Objectives

- Describe the key characteristics of high quality multiple choice questions
- Describe the key characteristics of effective exams made of MCQ’s
- Critique the use of MCQ-based exams for various education decisions including individual course grading, education program recruitment, in-service exams, board certification

Pre-Session Activities (*=mandatory, others optional/skim)
1. Pangaro Chapter 16 (Clerkship exams and MCQ)
2. Holboe Chapter 6 (Using Written Examination to Assess Medical Knowledge and Its Application)
3. *Write a single MCQ in NBME format. Submit as a Powerpoint slide for discussion in class (not for a grade). If applicable, write a question you may need for curricula you are working on.

Topics
1. MCQ Principles
2. Discuss homework
3. Small group question writing activity

Learning Activities
- Brief didactic with multiple group discussion prompts and opportunities for questions
- Critique your pre-session MCQ
- In small groups write 3 MCQs in NBME format
- Groups critique others’ MCQs

Homework
Write and submit 5 MCQs in NBME format. If applicable, write questions you may need for curricula you are working on. Submit this prior to 5 pm

See Pre-Session Activities for next class
Session IV: Standard Setting and Grading

Objectives
- Describe key principles of standard setting approaches.
- Describe relevance of standard setting approaches to the assessments we use in real life
- Design and critique a grading system for a course.

Pre-Session Activities (*=mandatory, others optional/skim)
1. Pangaro Chapter 19 (Setting Standards), Chapter 20 (Converting Evaluations to Grades)

Topics
- Discuss homework
- Concepts of standard setting (so you can contribute to the teams that do this—you likely won’t do it independently)
- Introduction of the specific standard setting methods
- Application of standard setting to grading in medical education

Learning Activities
- Brief didactic with multiple group discussion prompts and opportunities for questions
- Work through a standard setting exercise
- Develop a grading system for a basic science course and/or residency training program
- Introduction of homework. Decide what assessment tools you have in the clerkship.

Materials in class
- Slides
- Standard setting task materials
- Grading system task materials

Homework
Design a grading scheme for a medical school’s clinical clerkship, given the assessment tools you determine at the end of class.
Determine cut points for each tool
Determine how heavily each tool will weigh in the final grade.
Justify your answers, 1 page maximum
Submit this prior to 5 pm Monday

See Pre-Session Activities for next class
Session V: Performance Based Assessment

Objectives

- Identify the role of performance based assessment in medical education
- Analyze key considerations in using simulation for performance based assessment
- Analyze key considerations for assessing procedural and technical skills
- Create an approach to construct reliable and valid performance assessments

Pre-Session Activities (*=mandatory, others optional/skim)

1. Pangaro Chapter 17 (Standardized Patient), 18 (Assessment Using Simulation)
2. Pangaro Chapter 10 (Evaluating Medical Procedures)
3. Holmboe Chapter 5 (Direct Observation: Standardized Patients). Chapter 8 (Workplace-Based Assessment of Procedural Skills); Chapter 12 (Simulation-Based Assessment) pp. 215-224 stop at “Available Technologies”.

Topics

- Discuss homework
- Performance based assessment in medical education overview
- OSCE for assessment
- Procedure skill development
- Procedure assessment tools

Learning Activities

- Brief didactic with multiple group discussion prompts and opportunities for questions
- Groups will construct an assessment for a standardized patient case, a simulation, or a procedural skill and explain their approach to the class
- Use an assessment tool to score a videotaped procedure before and after “rater training”
- Orientation to homework

Materials in class

Flip charts
Tools for assessment construction activity [direct observation of procedures tools document]
Video score sheet (excerpted GOALS)

Homework

Working with 3 of your classmates, create a rating form and a plan.
Submit your form and plan by 5 PM on Monday

- The Hospital wants to be sure medical students have demonstrated proficiency in suturing before doing this in live surgery. You’ve been given the charge to create the plan to assess and document this.
  - Describe and justify your assessment and implementation plan

See Pre-Session Activities for next class
Session VI: Assessment Programs

Objectives
- Participants will analyze the following (including issues related to undergraduate, graduate, etc. learner level)
  - Regulatory bodies and their requirements for learner assessment
  - Building blocks of assessment program
  - Longitudinal tracking and documentation of progress
  - Summative assessment

Pre-Session Activities (*=mandatory, others optional/skim)
- *Brown DR et al. Finding a Path to Entrustment in Undergraduate Medical Education: A Progress Report from the AAMC Core EPA for Entering Residency Entrustment Concept Group. Academic Medicine 2017
- Pangaro Chapter 3 (System Approach), Chapter 7 (Integrating Assessment Methods with Blueprints), Chapter 15 (Clerkship Exams)

Topics
- Discuss Homework
- Regulatory bodies and principles of their requirements for learner assessment
- When does the level of learners have important relevance for the anatomy of an assessment program?
- Build an assessment program for a year of school/training

Learning Activities
- Brief didactic with multiple group discussion prompts and opportunities for questions
- Build a UME or GME assessment program for an academic year & report observations to class
  - Clerkship year
  - Residency/Fellowship year
- Longitudinal tracking of learners & feeding forward performance data: point counterpoint activity
- Key components of summative documents for learners’ overall performance in the education program

Materials in class
- Slides
- Block schedule for a UME (pre-clinical or clinical) or GME year, tool for group to record assessment program for that year using either Knowledge/Skills/Attitudes or ACGME 6 Core Competencies framework
- List of assessment types
- Example of MSPE and residency final letter

Homework
See Pre-Session Activities for next class
Objectives

- Describe key concepts for evaluation of a health professions education program (school, post-graduate training)
- Compare and contrast program evaluation approaches for single curricular elements vs large programs
- Create a review template for a program evaluation

Pre-Session Activities (*=mandatory, others optional/skim)
1. Holmboe Chapter 16 (Program Evaluation)
2. Pangaro Chapter 3 (System Approach)

Topics

- Discuss purposes of regular review of an education entity
- Discuss key principles of reviewing education entities
- Discuss the anatomy of program evaluation and key considerations for preparation, follow through, and reporting

Learning Activities

- Brief didactic with multiple group discussion prompts and opportunities for questions
- Create and justify a template for a program evaluation for a single curriculum, medical school course, and a residency annual program evaluation

Materials in class

- Slides
- White board, Easels (places to write for 3 groups)

Homework
See Pre-Session Activities for next class
Session VIII: Admissions

Objectives

- Discuss how assessment is used in admissions to UME and GME programs
  - Summative assessments from prior education
  - Assessment process used by receiving program to screen and evaluate applicants
- Use assessments to make decisions in the admissions process such as invite for interviews and accept/rank candidates

Pre-Session Activities (*=mandatory, others optional/skim)


Topics

- Framework for admissions decision making
- Screening considerations to invite for interviews
- Interview process
- Applicant experience
- Using data to make admissions decisions
- Course wrap up

Learning Activities

- Brief didactic/panel sharing with group discussion prompts and opportunities for questions
- Make mock selection decisions
- Q & A

Materials

- Decision activity sheets