

## Overview of Student Assessment – Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (2004-2005)

The Cleveland Clinic Lerner College of Medicine uses a unique approach to student assessment designed to promote self-directed learning by specifically developing students' skills of reflective practice – their ability to accurately describe, analyze and evaluate their performance and to identify and follow through on effective learning plans. Assessment is based on a mastery learning model, using criterion-referenced, rather than time-referenced, performance assessments. Students build an electronic educational portfolio across all five years of the curriculum, complete Formative Portfolio Reviews with their assigned Physician Advisers (PAs) several times each year, and are promoted based on annual Summative Reviews for which students present a summary portfolio documenting their mastery of the program's nine competencies (Figure and Table). Demonstration of competencies cuts across courses, learning experiences within courses, and years in the program. There are no grades or numerical scores for any courses, clerkships or components of the portfolio.

Evidence in the educational portfolio includes self assessments and feedback from faculty, peers, and other professionals on assessment forms that are linked directly to the competencies and use behavioral descriptors of the expected level of achievement, rather than numerical rating scales. Assessors must provide narrative comments on areas needing improvement and areas of strength. For medical knowledge, students track their own mastery of factual information using self-assessment quizzes and receive faculty feedback on answers to essay questions requiring integration and application of concepts. Clinical skills and reasoning are assessed by OSCEs (Objective Structured Clinical Examinations), direct observations by clinical preceptors, and patient logs and journals. Students also include other assignments, such as PowerPoint presentations, concept maps and other materials prepared for PBL (Problem Based Learning) sessions, and written research proposals, in their evidence databases.

Most evidence is online and immediately available to the PAs, allowing them to track performance of their students closely. Before each Formative Portfolio Review, students review the evidence, write essays reflecting on their professional development and their mastery of the competencies, and meet with their PAs to agree upon learning plans to address areas of weakness and develop areas of strength. In Year 1, as they develop skill in analyzing evidence, students add new, curriculum specific competencies for each Formative Review (Figure).

At the end of each year, students assemble a summary portfolio for review by the College's Medical Student Promotions and Review Committee. This faculty committee determines if the evidence presented by the student indicates a level of achievement sufficient for promotion to the next year of the program. Students are expected to choose evidence that is representative of their work over the year. The College's goal is for graduates not only to achieve a defined level of mastery of each of the competencies but also to use their reflective ability to accurately assess their own strengths and weaknesses and become effective life-long learners.

The first class of students matriculated in the College Program in July 2004. During the first year of implementation, the College has used frequent written and focus group feedback from students, PAs and other faculty and consultations with experts from other US and international medical schools to develop, modify, and enhance the portfolio assessment process. The College Program's "competencies, with tightly linked learning objectives and outcomes measures," and its "novel approach to student performance assessment" were cited by the LCME as strengths of the program in its February, 2005 letter of accreditation to the Case School of Medicine. Development of all aspects of the portfolios is supported in part by a generous two-year grant from the Cleveland Foundation.

FIGURE. PORTFOLIO PROCESS FOR YEAR 1 (2004-2005)  
 Shaded boxes indicate competencies tracked for each block of the Year 1 schedule.

Year 1 Courses	Jul 12–Sep 17	Sep 27–Nov 24	Nov 29–Feb 18	Feb 21–Apr 22	Apr 25–Jun 10
	Research	CV/Pulm/ Heme I	Renal and MS/Neuro	GI and Endo/Repro	Heme II, Immunol, Micro
Foundations of Clinical Medicine					
COMPETENCIES	Research	Research	Research	Research	Research
	Medical Knowledge	Medical Knowledge	Medical Knowledge	Medical Knowledge	Medical Knowledge
	Communication	Communication	Communication	Communication	Communication
	Professionalism	Professionalism	Professionalism	Professionalism	Professionalism
		Personal Development	Personal Development	Personal Development	Personal Development
			Clinical Skills	Clinical Skills	Clinical Skills
			Clinical Reasoning	Clinical Reasoning	Clinical Reasoning
					Health Care Systems
	Reflective Practice				
Formative		Formative		Formative	
Formative		Formative		Summative	
STUDENT PORTFOLIO REVIEWS					

TABLE. DEFINITIONS OF THE COMPETENCIES

<b>Research:</b> Demonstrate knowledge base and critical thinking skills for basic and clinical research, skill sets required to conceptualize and conduct research and understand the ethical, legal, professional and social issues required for responsible conduct of research.
<b>Medical Knowledge in the Basic, Clinical and Social Sciences:</b> Demonstrate and apply knowledge of human structure and function, pathophysiology, human development and psychosocial concepts to medical practice.
<b>Communication:</b> Demonstrate effective verbal, nonverbal and written communication skills in a wide range of relevant activities in medicine and research.
<b>Professionalism:</b> Demonstrate knowledge and behavior that represents the highest standard of medical research and clinical practice, including compassion, humanism, and ethical and responsible actions at all times.
<b>Personal Development:</b> Recognize and analyze personal needs (learning, self-care, etc.) and implement plan for personal growth.
<b>Clinical Skills:</b> Perform appropriate history and physical examination in a variety of patient care encounters and demonstrate effective use of clinical procedures and laboratory tests.
<b>Clinical Reasoning:</b> Diagnose, manage and prevent common health problems of individuals, families and communities. Interpret findings and formulate action plan to characterize the problem and reach a diagnosis.
<b>Health Care Systems:</b> Recognize and be able to work effectively in the various health care systems in order to advocate and provide for quality patient care.
<b>Reflective Practice:</b> Demonstrate habits of analyzing cognitive and affective experiences that result in identification of learning needs leading to integration and synthesis of new learning.