

University of Virginia School of Medicine

Cells to Society: Next Generation

Assessment Philosophy

Medical practice is an evolving scientifically based endeavor serving the health needs of mankind. The following is a general statement of how to ensure that our students are able to master the learning objectives that are central to the contemporary practice of medicine and sustain the ability to continuously incorporate new knowledge into their future practice of medicine – starting with learning how new basic science knowledge is developed and exercising critical thinking in the application of scientific knowledge to clinical medicine.

Pre-clerkship Phase

The pre-clerkship phase of NxGen is designed to ensure that students acquire the foundational knowledge, attitudes, and clinical skills (both cognitive and physical) necessary to succeed on USMLE Step 1 and then to learn optimally from the clerkship phase of medical education. The pre-clerkship phase comprises four components: Foundations I (Cells to Society; Foundations of Medicine; Cells, Tissues and Mechanisms of Disease; Foundations II (the Integrated Organ Systems, including Microbes and the Immune System, Musculoskeletal and Integument; Gastrointestinal; Mind, Brain and Behavior; Renal; Pulmonary; Cardiovascular; Endocrine-Reproductive; and Hematology), Clinical Performance Development-1 and Social Issues in Medicine. The goals and learning objectives of each component of the pre-clerkship curriculum are available in separate documents.

The purpose of assessment is to ensure that our students are developing the required level of competence in knowledge, skills and attitudes for the practice of medicine in a supervised setting. The assessment strategy for each component is listed below. All test items must link to one or more learning objectives.

1. Foundations I (Foundations of Medicine; Cells, Tissues, and Mechanisms of Disease): This component of the curriculum provides students the opportunity to develop foundational knowledge, attitudes, and skills required for life-long learning, and in particular, for learning optimally from Foundations 2. Foundations I courses provide a level of basic science knowledge necessary to understand the foundational science that is applicable to clinical medicine.
 - Basic science facts will largely be assessed in a formative way, preferably at the student's own pace of learning. Self-paced computer-based learning modules, out-of-class quizzes and similar activities are ideal for the student to be assured that s/he possesses the fundamental facts and concepts necessary to learn more clinically applicable foundational science. Examples of this content are normal cell structure, membrane structure, ion flux, etc.

- Foundational science directly applicable to clinical medicine may be assessed in a variety of ways, including readiness assurance tests, problem sets, etc. It is also appropriate for larger (“weekend”) formative assessments or summative assessments, on which the test items must be consistent with USMLE formats and most should include a clinical or experimental scenario.
 - Clinical reasoning, principles of ethical decision-making, epidemiology and other material related to the professional practice of medicine will be assessed in formative and summative assessments. The test items must be written to be consistent with USMLE item formats.
 - Self-assessment and peer assessment are required within accountable teams.
2. Foundations 2 (Integrated Organ Systems):
- The integrated organ systems focus on foundational science as directly applicable to clinical medicine, further exploring the scientific basis underlying contemporary approaches to the diagnosis and management of disease. Purely foundational facts/concepts will be assessed as in Foundations I.
 - Foundational science is directly applicable to clinical medicine and may be assessed in a variety of ways, including readiness assurance tests, problem sets, etc. It is also appropriate for larger (“weekend”) formative assessments or summative assessments, on which the test items must be consistent with USMLE formats and most should include a clinical or experimental scenario.
 - Clinical reasoning, principles of ethical decision-making, epidemiology and other material related to the professional practice of medicine will be assessed in formatives and summative assessments. The test items must be written to be consistent with USMLE item formats.
 - Self-assessment and peer assessment are required within accountable teams.
3. Clinical Performance Development-1: The purpose of CPD-1 is for students to develop basic skills necessary for the professional practice of medicine, such as communication skills, physical examination skills, clinical reasoning skills, presentation skills, basic technical skills and skills necessary for active, self-directed learning. The assessment strategies are as follows.
- Faculty mentors assess students’ development over the course of each semester using a rubric designed to assess the stated learning objectives. Faculty evaluations are documented in Oasis.
 - At the end of each semester (CPD 1 a, b and c), each student will participate in a validated OSCE designed to assess the students’ developmental progress toward that level of competency necessary to enter clerkships.
 - Students participate in self-assessment using an established rubric.
 - Students participate in peer-assessment using an established rubric.
 - Weekly feedback from mentors and peers.
4. Social Issues in Medicine: The purpose of SIM is to help students understand social forces that influence health and health care, recognize community resources available to them and their patients who are in need of social supports of various types, and to provide students with an on-site community service learning experience. The assessment strategies are as follows:.

- Students are assessed by their level of participation in service learning, e.g., professionalism
- Students are assessed on their reflective writing.

Clerkship Phase/ CPD-2

The clerkship phase of NxGen is designed to provide students with core clinical apprenticeships in Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Family Medicine, Neurology, Psychiatry, Peri-operative Medicine, Emergency Medicine, Geriatrics and Surgical Specialties. Students continue to learn clinical facts and to enhance their physical exam and clinical reasoning skills with an emphasis on diagnosis and treatment of specific common diseases within and across the various disciplines. Students also continue to review, use, and learn new aspects of foundational science that are directly applicable to patient care. The goals and structure of assessment are consistent across the clerkships and are as follows:

- Frequent informal feedback from faculty and residents.
- Formal feedback with the clerkship director occurs mid-clerkship for rotations of 4 weeks or longer.
- Faculty and resident evaluations of students' performance are documented in Oasis.
- An objective formative assessment is given mid-clerkship.
- The USMLE "shelf" examinations are required for each applicable clerkship.
- Validated OSCE assessments are used to assess the development of students' clinical and professional skills toward the level of competence required for the supervised practice of medicine (graduation).

Post-Clerkship Phase/CPD-3

The post-clerkship phase of NxGen is designed to provide students with summary activities in health systems, place students in active supportive roles in the medical management of patients under appropriate physician supervision and guidance, allow time for research, and to offer opportunities for students to tailor their educational experience to their own interests and career aspirations under the guidance of a faculty advisor. Students continue to learn clinical facts and to enhance their physical exam and clinical reasoning skills, and also to review, use, and learn new aspects of foundational science applicable to patient care. This is also a time for students who demonstrate deficiencies to gain additional experience. The goals and structure of assessment for all educational activities in the post-clerkship phase are Pass/Fail and are largely narrative. Elective evaluations can be viewed in Oasis.

- Frequent informal feedback from faculty and residents.
- Formal feedback with the program or elective supervisor occurs mid-elective for rotations of greater than 2 weeks.
- Students are assessed based on their level of engagement and active participation.

- Students are often assessed based on their ability to access, assess and present pertinent literature.
- Faculty and resident evaluations of student performance are documented in Oasis.
- OSCE assessments are used to assess the development of students' clinical and professional skills toward the level of competence required for the supervised practice of medicine (graduation) where appropriate, i.e., in the Advanced Clinical Elective.