



ASSESSMENT PLAN

Introduction

California Northstate University College of Medicine is focused on an evidence-based educational process to produce students who embody the mission, vision, and goals of the College of Medicine. To achieve this end, there must be consistent collection of data regarding all aspects of the educational program. Institution-wide and program-specific assessments will be used to continuously improve the quality of courses, curricula, student services, educational environment, and extra-curricular activities. Evaluation and monitoring of the assessments is the feedback mechanism essential to the ongoing improvement and quality assurance component of the program.

The College of Medicine Assessment Plan consists of three components:

1. **Academic Assessment:** Addresses student academic progress and the issues related to enhancing student progress.
2. **Programmatic Assessment:** Addresses the outcomes of the educational program.
3. **Environmental Assessment:** Addresses the educational environment.

The assessment plan provides for measurable activities associated with each principle mission of the College of Medicine and collects pertinent data to evaluate its progression towards these goals. After these data are collected, they are stored securely, analyzed and disseminated to the students, faculty, and administration for continuous program improvement. The Assessment and Evaluation Committee will review these data and report on them along with recommendations to the appropriate faculty, committees, and administrators to enable continuous quality improvement.

Student Data Collection

A significant amount of data for each student will be collected. The range of information that will be collected and stored will be determined in cooperation with the Director of Student Affairs and Admissions, the Senior Associate Dean of Medical Education and Accreditation, the Senior Associate Dean of Clinical Medicine, the Admissions Committee, and the Student Promotions Committee. This information includes, but is not limited to, name, date of birth, hometown, contact information, ethnicity, sex, sexual identity, pre-matriculation program(s) of study, grades for pre-matriculation coursework, medical college admission test (MCAT) score(s) and sub-scores, pre-matriculation volunteer work, pre-matriculation employment, pre-matriculation research activities, socioeconomic factors, parental occupations, and family educational background. Admissions interview sessions are all evaluated and the data from the admissions interviews are also collected and tracked. Additional information collected from each student will include quiz scores, exam scores, qualitative and quantitative evaluations from CNUCOM-based faculty, clinical faculty, and standardized patients, comprehensive exam scores, Shelf exam scores, NBME scores, attitudinal measures, OSCE reviews, clinical evaluations, narrative and reflection evaluations, and patient encounter data, among others. Data about postgraduate placements (residencies, fellowships, specialty selection, etc.) will also be collected. It should be noted that the data will be stored in a secure system. While the results of the analysis will be made available to a large number of persons, the information will be de-identified and made anonymous to ensure that personal information remains private and complies with all applicable federal, state, and local privacy laws and regulations.

Academic Assessment

The main goals of academic assessment are:

1. To evaluate the progress of students and to inform both the individual students, as well as their advisors and administrators, of the progress of each student.
2. To determine demographic information and pre-matriculation predictors of academic success in the California Northstate University College of Medicine program.
3. To determine what elements in the program of the College of Medicine are predictors of success on national board examinations.

California Northstate University has defined three University learning objectives that its graduates will master:

1. Highly developed critical thinking skills;
2. Effective oral and written communication skills; and
3. Exemplary professional behavior, attitude, and values.

These three University learning objectives are the epitome of all the learning objectives at the College of Medicine. All the learning objectives of the College of Medicine can be mapped to these University learning objectives.

The College of Medicine has adapted and expanded the six ACGME competencies to execute the vision and mission of our school and has adopted those as our expected program learning objectives (PLOs).

CNUCOM PROGRAM LEARNING OBJECTIVES:

1) PATIENT CARE [PC]

Scope: Students must be able to provide evidence-based care that is compassionate, respectful of patients' differences, values, and preferences. They should demonstrate the ability to listen, clearly inform, communicate and educate patients for the promotion of health and the treatment of illness; they must advocate for disease prevention, wellness and the promotion of healthy lifestyles including a focus on population health. They must be able to accurately evaluate relevant social and clinical information in the context of the patient's visit.

The graduate will be able to:

- *Demonstrate the ability to organize all relevant clinical history in a timely manner (1.2)*
- *Identify alternative sources and or intuitively fill in the history gaps (1.2)*
- *Share knowledge in topics of disease prevention with patient (1.7,1.9)*
- *Document how social/cultural situations have impacted the treatment recommendations (1.2, 2.5)*
- *Demonstrate ability to inquire (non-judgmentally) about alternative medical practices being utilized by the patient at the time of presentation (1.2)*
- *Perform a full or focused physical exam on an adult patient in a logical sequence appropriate for the scheduled visit in a timely manner for pediatric, adolescent, adult and elderly patients (1.1)*
- *Perform a complete, full mental and functional assessment of an elderly patient (1.1)*
- *Fully assess a pediatric patient for developmental delay and genetic abnormalities (1.2)*
- *Identify pertinent positives and negatives in the exam to accurately determine stage of medical condition (1.4)*
- *Utilize clinical findings to prioritize additional anatomic or physiologic testing (1.3, 1.5)*
- *Accurately complete a written H&P in a timely fashion with a well developed differential diagnosis using the CP algorithms to develop a differential diagnosis (1.2, 4.2, 4.5)*
- *Complete a SOAP note using CP algorithms to assist in developing a problem list (1.1, 4.2)*
- *Utilize the problem list to develop a well thought out plan for ongoing treatment. (1.6)*

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- *Integrate periodic evaluation of said plan above to re-evaluate the efficacy of the plan to ensure treatment success (1.2, 2.1)*
- *Accurately present a H&P or SOAP note to an attending without the use of note cards in a timely fashion indicating when to use “not relevant” or “no pertinent positives” (4.2)*
- *Include a differential or problem list with treatment updates (1.2, 1.5, 1.6)*
- *Include accurate assessments with prioritized diagnosis or problem list using relevant CP algorithms (1.6)*
- *Participate in a discussion of prioritized diagnostic approaches and is able to identify where patient teams and consultants are needed (4.2, 4.3)*
- *Describe and practice the basic principles of universal precautions in all settings (1.3)*
- *Explain how the composition of an adult and pediatric hospital Patient Care Team (PCT) differs on each clinical service and can recognize and evaluate when their services should be ordered to facilitate recovery (4.2, 6.1)*
- *Explain how the composition of an adult and pediatric hospital Patient Care Team (PCT) differs on each clinical service setting (primary care versus specialty) and can evaluate when their services should be requested (4.2, 6.1)*
- *Describe a well thought out plan of management of all patients with acute and chronic illnesses in the adult population (1.5, 1.6)*
- *Construct, with appropriate supervision, a detailed patient management plan utilizing appropriate PCT members (6.2)*
- *Recognize that there are differences in the cost of treatment options (6.3)*
- *Discuss treatment costs in the context of efficacy, social and cultural factors (6.3)*
- *Use information to recommend a stepped approach to the treatment of common medical conditions in the adult patient (6.3)*

In addition, the graduate will have:

- *Collected a signature to demonstrate observed performance of the skills outlined in the required clerkship MS3 year (6.1, 6.6)*
- *Achieved certification in BLS (1.1, 6.6)*
- *Achieved certification in ACLS (1.1, 6.6)*

The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the “Patient Care” competency:

- Faculty feedback in pre-clerkship settings including team-based learning, Masters Colloquium and Medical Skills courses.
- Faculty and resident direct observation and evaluations during clinical clerkships.
- Patient case logs.
- Standardized Patient Examination (SPE).
- Medical Skills Lab: Standardized patient, simulation exercises
- Objective Structured Clinical Examination (OSCE)
- Self-assessment and Peer assessment.
- USMLE Step 2 Clinical Knowledge Exam and Clinical Skills Exam.
- Multiple choice questions (MCQ's)
- 360 degree evaluation instrument

2) MEDICAL AND SCIENTIFIC KNOWLEDGE [MSK]

Scope: Students must demonstrate knowledge of established and evolving biomedical and clinical sciences, and understand how/when to apply this knowledge to their practice of medicine. This requires an understanding of the scientific process, evidence-based approach to medicine, and research study “strengths” and “weaknesses”. The students must demonstrate their ability to appraise and assimilate scientific evidence into their own ongoing learning, research, and patient care as part of a life-long medical education process.

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The graduate will be able to:

- Evaluate how the major organ systems contribute to both health and disease (1.2, 1.3, 1.4)
- Explain how the organ system pathophysiology is reflected in the CP algorithms and can relate this information to a clinical team (1.2, 1.3, 1.4)
- Construct CP algorithms (1.2, 1.3, 1.4)
- Explain the anticipated clinical response to correctly selected medications for a specific number of medical conditions to patients, family members and team members (1.2, 1.3, 1.4, 1.7)
- Recognize the most common drug interactions and their likely signs of presentation in the elderly and can explain them to patient and family (1.2, 1.3, 1.4)
- Recognize what types of medical knowledge are specific to individual members of the PCT (patient care team) (6.1, 6.2)
- Correlate the findings of a patient at clinical presentation with specific CP algorithms and prioritize the conditions in the order of most to least likely (1.1, 2.1)
- Recognize and is able to explain both typical as well as atypical presentations for commonly seen clinical conditions in MS3 clerkships (1.1, 2.1)
- Construct comprehensive problem lists categorized as both acute versus chronic conditions and prioritize therapeutic interventions (1.6, 1.5)
- Order appropriate diagnostic tests needed to facilitate both diagnosis and evaluate response to therapy in a cost and time effective manner (1.5)
- Analyze and evaluate diagnostic tests in regards to sensitivity/specificity (1.1, 2.1, 2.3)
- Identify preventive, curative, and palliative therapeutic strategies (1.5, 1.6)
- Identify and judge, from direct observation/experience, how cost and social/cultural issues affect the selection of therapeutic interventions (6.3)
- Select and defend basic therapeutic recommendations for preventive, curative and palliative therapies seen in the MS3&4 clerkships (1.5, 2.3)
- Effectively utilize ongoing diagnostic tests to modify recommended therapeutic strategies (1.4, 2.1)
- Discuss the study design, data analysis and scientific findings of a journal article relevant to their patient's medical condition (2.1, 2.2, 2.3, 3.6)
- Routinely read medical journals (2.1)
- Organize a self-educating approach for life-long learning (3.1, 3.2, 2.1)
- Develop, apply, translate and/or communicate medical knowledge to their peers and/or community through research and/or community service, in the context of the "Self-Directed Student Scholarly Project". (2.6)

The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the "Medical & Scientific Knowledge" competency:

- Written examinations (both individual and team-based) in basic science courses and clinical clerkships
- NBME shelf exams
- Faculty feedback in pre-clerkship settings including small groups, team-based learning, Masters Colloquium and Medical Skills courses
- Self-Directed Student Scholarly Project
- Faculty and resident evaluations during clinical clerkships
- Written and oral case presentations
- Medical Skills Lab: Standardized patient, simulation exercises
- Objective Structured Clinical Examination (OSCE)
- Peer assessment and self-assessment
- USMLE Step 1 and Step 2
- Multiple choice questions (MCQ's)
- 360 degree evaluation instrument

3) COMMUNICATION AND INTERPERSONAL SKILLS [C]

Scope: Students must demonstrate compassionate and effective interpersonal communication skills toward patients and families necessary to deliver effective medical care and promote shared decision making. Students

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must be able to articulate information and ideas (written and oral) in an organized and clear manner to educate or inform patients, families, colleagues, and community.

The graduate will be able to:

- *Utilize communication strategies involving nonverbal, verbal and written modalities to communicate with patients (4.1)*
- *Demonstrate how to ask clarifying questions in a way that is socially and culturally sensitive (4.1)*
- *Create rapport with the patient in order to generate an effective environment for counseling on wellness and disease prevention strategies (4.1)*
- *Effectively use health coaching strategies (3.8, 4.1)*
- *Effectively communicate medical errors to patients (4.6)*
- *Utilizes effective communication strategies involving nonverbal, verbal and written skills to communicate with family members (4.1)*
- *Recognize and effectively communicates his/her legal limitations due to patient privacy (5.3)*
- *Ask for the support/assistance of family members for encouraging changes in disease prevention or wellness strategies (4.1)*
- *Effectively communicate medical errors to family members (4.6)*
- *Effectively communicate a H&P and SOAP note in both written and oral format (4.2, 4.3)*
- *Effectively communicate new patient problems or complaints in healthcare to the medical team (4.2, 4.5, 4.4)*
- *Question medical decisions in a non-confrontational manner (3.9, 7.1)*
- *Effectively share relevant information with the team (3.9)*
- *Identify gaps or deficiencies in understanding on each clerkship and can effectively communicate educational needs to the interns, residents, and faculty to increase knowledge (3.1, 3.3)*
- *Discuss personal ethical/social or cultural issues with faculty members to resolve any personal conflicts that may arise in the management or treatment decisions made for the benefit of the patient (4.1, 4.7, 7.1)*
- *Communicate medical knowledge to the community at large in a professional manner (3.8)*

The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the “Communication & Interpersonal Skills” competency:

- Faculty feedback in pre-clerkship settings including team-based learning, Masters Colloquium and Medical Skills course
- Faculty and resident direct observation and evaluations during clinical clerkships
- Patient case logs
- Presentation of written and oral clinical information
- Standardized patient evaluations, simulation and inter-professional exercises
- Objective Structured Clinical Examination (OSCE)
- Peer assessment, self-assessment
- USMLE Step 2 Clinical Skills Exam
- Multiple choice questions (MCQ’s)
- 360 degree evaluation instrument

4) PROFESSIONALISM [P]

Scope: Students must demonstrate a commitment to the highest standards of professional responsibility and adherence to ethical principles. Students must display the personal attributes of compassion, honesty, integrity, and cultural competence in all interactions with patients, families, and the medical community.

The graduate will be able to:

- *Demonstrate respect, compassion and honesty in his/her approach to all patients and family members (5.1)*

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- *Recognize and disclose one's errors to appropriate residents/Clerkship Directors and when they involve patient care, seeks guidance on how and with whom that disclosure will be made to the patient or family (4.6)*
- *Always display professional attire and behavior (1.10)*
- *Demonstrate the ability to maintain professional behavior in encounters with quarrelsome, hostile, abusive, arrogant or dismissive patients, family members or clinical staff (4.7, 7.1)*
- *Identify gaps in knowledge/skills and seeks appropriate assistance/clinical consults (3.1, 3.2, 3.3, 3.5)*
- *Use clinical hygiene for the prevention of nosocomial infection transmission (3.10, 1.3)*
- *Obtain patient consent for all therapies and/or procedures in which s/he is involved (5.6)*
- *Identify and relate full disclosure of the risks and benefits of a therapy or procedure (1.5)*
- *Discuss alternative therapies/procedures with their relevant risks and benefits (5.1, 5.6)*
- *Identify and adhere to institutional standards involved in patient care (6.1)*
- *Recognize his/her role as the patient's advocate for clinical care (5.2, 7.2)*
- *Demonstrate evidence of maintaining patient privacy (5.3)*
- *Demonstrate ability to treat all patients with dignity even when the approach is not reciprocated (5.1, 5.5)*
- *Recognize his/her legal limits on imposing medical care that is considered to be in the best interest of the patient when it is being refused (5.6)*
- *Demonstrate integrity, honesty, and authenticity in interactions with faculty and the medical community (7.1, 7.3, 8.5)*
- *Identify conflicts of interest in financial and organizational arrangements in the practice of medicine (6.5, 5.6)*
- *Identify and utilize standards established by specific professional societies (1.2, 1.5, 2.3)*

The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the "Professionalism" competency:

- Faculty feedback in pre-clerkship settings including team-based learning, Masters Colloquium and Medical Skills courses
- Faculty and resident direct observation and evaluations during clinical clerkships
- Presentation of clinical information
- Completion of HIPAA training
- Standardized patient evaluations
- Simulation and inter-professional exercises
- Objective Structured Clinical Examination (OSCE)
- Praise/concern professionalism incident reports
- Peer assessment
- Self-assessment
- USMLE Step 2 Clinical Skills Exam
- Multiple choice questions (MCQ's)
- Masters Colloquium on professionalism
- 360 degree evaluation instrument
- Patient survey

5) HEALTH CARE SYSTEMS [HC]

Scope: Students must demonstrate knowledge of and responsiveness to the larger context of health care (social, behavioral, economic factors) and the ability to effectively call on system resources to provide care that is of optimal value to the health of the individual and of the community.

The graduate will be able to:

- *Identify all members and their roles in a patient care team (PCT) and explain which are specific to certain specialty areas of medical practice (7.2)*
- *Identify the major components of a healthcare system and understands how they can impact access, cost and compliance (7.2, 6.1, 6.3)*

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- *Navigate different hospital/clinic infrastructures in providing patient care (6.1)*
- *Identify major monetary investment and legal needs in designing a student-run free clinic (6.3)*
- *Interpret and use multiple forms of health information technologies including electronic medical records, patient registries, computerized order entry and prescribing systems (3.7)*
- *Recognize the importance of current models of medical practice performance evaluation (6.6, 3.5)*
- *Recognize the importance of quality assessment and benchmarking in practice improvement (3.1, 3.2, 3.3, 3.5, 3.10)*

In addition, the graduate will have:

- *Used system approaches to prevent common medical errors and hazards (6.1)*
- *Participated in Phase B and/or C clinic rotation quality assessment for education performance improvement (3.1, 3.2, 3.3, 3.4, 3.5)*

The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the “Healthcare Systems” competency:

- Faculty feedback in pre-clerkship settings including team-based learning, Masters Colloquium and Medical Skills courses
- Faculty and resident direct observations and evaluations during clinical clerkships
- Patient case logs
- Presentation of written and oral clinical information
- Standardized patient evaluations, simulation center evaluations
- Objective Structured Clinical Examination (OSCE)
- Peer assessment, Self-assessment
- 360 degree evaluation instrument
- Multiple choice questions (MCQ’s)

6) REFLECTIVE PRACTICE AND PERSONAL DEVELOPMENT [RP]

Scope: Students must demonstrate habits of analyzing cognitive and affective experiences that result in the identification of learning needs, leading to the integration and synthesis of new learning; they must also demonstrate habits of analyzing experiences that affect their well-being, productive relationships with groups and individuals, and self-motivation and limitations.

The graduate will be able to:

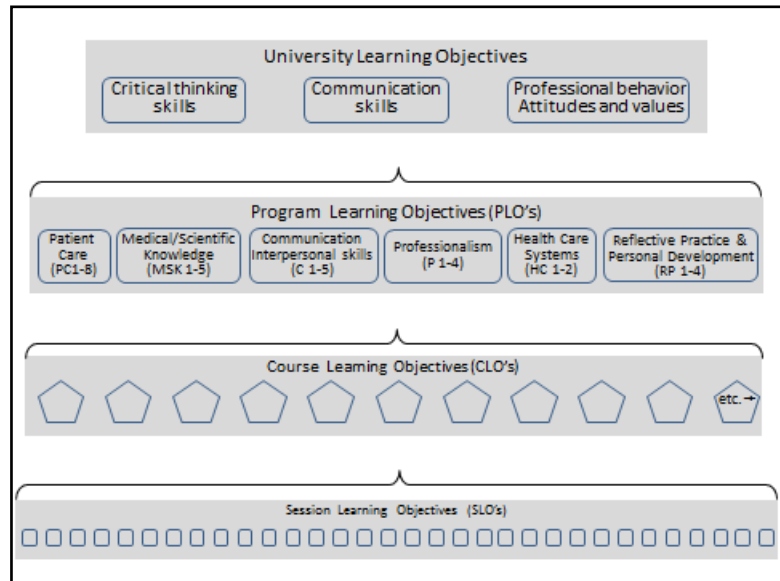
- *Accept and respond appropriately to suggestions/constructive criticisms of performance including changing when necessary and discarding inappropriate feedback (8.1)*
- *Demonstrate the use of self-assessment and reflection skills for growth and development (8.1)*
- *Use self-assessment to identify gaps in knowledge and skill sets and finds an approach to fill such gaps. (8.1)*
- *Give a balanced description of personal performance in a confident and skillful manner (3.1)*
- *Develop realistic plans and timelines to achieve desired outcomes (3.2, 3.3)*
- *Refine and implement correction to timelines when appropriate (3.5, 3.10)*
- *Implement corrective actions/changes to correct deficiencies and/or promote personal growth (8.1, 8.4)*
- *Work to identify a passion within the field of medical practice (2.1, 3.1, 3.3)*
- *Identify an outlet for personal stress and anxiety (8.2)*
- *Identify the signs, symptoms and triggers of personal stress and anxiety (8.1, 8.2)*
- *Develop a personalized program for physical/mental health (8.2)*
- *Recognize and identify when to seek help (8.1)*
- *Demonstrate open-mindedness to the opinions and approaches of others (8.3)*
- *Articulate opinions in a non-confrontational manner (8.3)*
- *Formulate strategies to diffuse confrontational situations between team members and/or patient/family members and the patient care team (8.3)*
- *Effectively negotiate with patients/family members to gain cooperation in the medical plan of treatment (1.7)*

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The following represent the spectrum of assessment methods that are available for use to evaluate the achievement of the “Reflective Practice and Personal Development” competency:

- Self-assessment writing
- Patient case logs/journal
- Evaluation by team members and peers in small group activities/clinical teams
- Faculty feedback in pre-clerkship settings including team-based learning, Masters Colloquium and Medical Skills courses
- Faculty and resident evaluations during clinical clerkships
- Standardized patient evaluations, simulation and inter-professional exercises
- Objective Structured Clinical Examination (OSCE)
- 360 degree evaluation instrument
- Patient survey

Each of the academic courses has a set of learning objectives (CLO’s). For each session or exercise within a course, there are also sets of learning objectives (SLO’s) each of which is mapped to the appropriate course learning objective. Each course learning objective is mapped to the appropriate program learning objective within the six competencies: program learning objectives are ultimately mapped to the three University learning objectives (see figure).



By creating these maps of how the learning objectives are related from the single SLO to the final University learning objectives and by having the ability to view the data collected for these maps, it is possible to determine the achievement of individual students with respect to the specific learning University objectives.

Thus, the critical component of this plan is that the faculty must write learning objectives that are appropriate. Learning objectives cannot be too broad; they cannot be too specific. They must address specific targeted skills, attitudes, or collections of information that the student must master. Moreover, learning objectives must be valid across years of the program. The best learning objectives for an exam question, for example, are those that are sufficiently specific, but broad enough to be used in subsequent years when the tested concept is repeated but the precise question is not used. The Associate Dean of Faculty Affairs and Assessment will develop training programs and have appropriate staff to assist faculty in developing learning outcomes so that they meet the needs of the program. Additionally, the faculty must be required to participate in this critical process. The correct learning objectives and their associated mappings form the core foundation of the data used to build the College of Medicine Assessment Plan.

For each quiz or examination question, a set of metadata will be collected including, but not limited to, the lecture/exercise learning objective(s) addressed by the question, author of the question, whether the question was used in formative or summative examinations, date(s) when the question was used, exam question item analysis such as student success on the question (p-values) and discrimination (point biserial correlation coefficient), and any other metadata that need to be associated with each question. Other metadata associated with each question that will be collected includes level of difficulty of the question, question type,

and whether the question is reserved or released, with the relative date.

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In addition to the metadata described above, students will be given the opportunity to submit a commentary on examination questions. The precise mechanism by which this will be done is under development. This opportunity affords students the ability to challenge examination questions and provide feedback that faculty and the Office of Assessment can use to improve future examination questions. The information also allows an opportunity to provide feedback to faculty to evaluate information that is being presented to students and whether corrections or modifications need to be made in the presentation.

It is presumed that to meet the five main goals set for Academic Assessment, it is necessary to meet the following five targeted objectives:

1. Each student should be able to track his/her day-to-day progress throughout the academic program through an on-line mechanism. This tracking should allow the student to determine areas of competence and areas of weaknesses as related to the learning objectives.
2. Each faculty member should be able to track the progress of advisees through an on-line mechanism. The tracking should allow the faculty to determine the advisees' areas of competence and areas of weaknesses as related to the learning objectives.
3. Faculty members and administrators should be able to track the progress of each class as a whole with respect to each level of learning objectives using an on-line mechanism. Additionally, they should be able to review, compare, and analyze current data with respect to any aspect of collected student demographic data or data collected from previous classes.
4. Faculty should be able to determine strengths and weaknesses in the curriculum on the basis of student performance relative to the learning objectives. By using this information, changes can be made to the curriculum and resources can be allocated to address identified needs to ensure that the institutional educational goals are met.
5. Faculty are assessed to allow for continual improvement of the educational quality provided to the students.

The method for meeting these targets entails the development of an analytic database or data warehouse whereby data are gathered from the student information system, the learning management system, student examination system, student survey and course management systems, and curricular management. Information extracted from the analysis of this compiled data may be reviewed by individual students, faculty, staff, and administrators.

Types of Assessments and General Process for Their Management

Written Examinations

There are two types of written examinations that will be given to the students, formative exams and summative exams. Written examinations will consist of board-style exam questions which probe the students' understanding of the core concepts that have been taught. Formative exams are administered at least twice within each course and do not contribute to a student's grade; summative exams are administered at the end of each course and make up the majority of a student's grade for that course. The Office of Assessment will work with the faculty and Course Directors to develop an examination that is representative of the material that the student is expected to master.

Examinations are administered at scheduled times. Faculty and staff will proctor the examinations. Students requiring accommodation are examined through the Office of Student Affairs. It is the intent that all examinations will be administered electronically.

The Office of Assessment will work with the individual faculty in writing questions and with the Course

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Directors for the Phase A (years 1 and 2) courses to develop the exam questions and to ensure that the question format and content are appropriate, the learning objectives tested by the questions are identified, and the metadata associated with each question are collected and entered. For the required Phase B (year 3) clerkships, the National Board of Medical Examiners (NBME) Clinical Science Exam appropriate for clerkship discipline will be used.

Practical Examinations

Practical examinations, including laboratory exams and skills exams, may include short answer, multiple choice, and/or rubric-based assessments. Examinations are administered by the Office of Assessment in cooperation with the responsible Course Director and faculty at scheduled times. Faculty and staff will proctor the examinations. Students requiring accommodation are examined through the Office of Student Affairs.

The Associate Dean of Faculty Affairs and Assessment will work with the individual faculty preparing questions and with Course Directors to ensure that the question format and content are appropriate, the learning objectives tested by the questions are identified, and the metadata associated with each question are collected and entered.

Quizzes

Quizzes may take the form of electronically-administered short tests or questions administered and recorded through the audience response system. The Office of Assessment is available to work with individual faculty in writing questions and with Course Directors to develop the questions and to ensure that the question format and content are appropriate, the learning objectives tested by the questions are identified, and the metadata associated with each question are collected and entered.

iRAT and tRAT

Individual Readiness Assessment Tests (iRAT) and Team Readiness Assessment Tests (tRAT) are integral parts of the team-based learning exercises. As assessment exercises, these are managed as quizzes. The Office of Assessment will work with the individual faculty in preparing questions and with Course Directors to ensure that the question format and content are appropriate, the learning objectives tested by the questions are identified, and the metadata associated with each question are collected and entered.

Capstone Examinations

At the conclusion of the MS1 year, the faculty develops an examination to assess student learning in the subject areas covered in the first academic year. The examination is written using the standardized USMLE format. At the conclusion of the MS2 year, the faculty administers the Comprehensive Basic Science examination from the National Board of Medical Examiners (NBME) as the milestone examination.

Peer Assessments

Students will participate in a series of peer assessments throughout the academic program. Peer assessments include evaluations of peer performance and contributions to team-based activities. Peer performance evaluations will be conducted for a variety of activities, including, but not limited to evaluation of team activities in team-based exercises, observations of skills activities and simulated patient interactions in OSCE activities. Other peer assessments will be available as requested.

The times, purposes, and frequency of administration of the peer assessments will be specified by the faculty and/or the Senior Associate Dean of Medical Education and Accreditation.

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Self-Assessments

Students will be required to do formal self-assessments on a regular basis. These assessments consist of rubrics, short multiple choice questions or short essays.

Case Logs

All students will be required to maintain a case log of all the patients that they see and all medical procedures observed, participated in or performed. The patient component of the data is collected in a de-identified fashion, but information regarding the student will be collected. Thus, while patient information is de-identified, the types of patient problems seen by the student and the student response to the interaction are not de-identified. The data will be reviewed on a student-by-student basis and in the aggregate to ensure that students are meeting the institutional educational requirements regarding the types of medical conditions to which they must be exposed. Students must obtain a signature from their preceptor or resident for each item on the list or required clinical encounters and required medical skills/procedures. This will ensure direct observation by the preceptor that the student has completed the encounter or procedure at the appropriate level of student responsibility.

OSCE and Simulation Center Evaluations

As part of every OSCE and simulation exercise, student performance is assessed using a rubric that is developed by the Assessment and Evaluation Committee and approved by the clinical faculty. The students who serve as observers will assess their peers using the rubric. Faculty members responsible for evaluating student performance will have access to the recording of the OSCE or simulation exercise and the rubric. The faculty member will use the rubric and/or checklist to grade the exercise. The Director of Medical Skills will oversee the administration of these assessments.

Standardized Patient Evaluations

At the end of every standardized patient encounter by a student, the standardized patient will complete an evaluation form for the encounter. Additionally, the standardized patient will have an opportunity to provide a textual response. The purpose of these evaluations is to provide information regarding the performance of the student in the standardized patient encounter. The questions will be designed by the clinical faculty.

Self-Directed Student Scholarly Project

The Self Directed Scholarly Project will allow students to hone their analytical and investigative skills by participating in an active research project under a faculty mentor to produce data usable for the preparation of an oral communication and/or the writing of an abstract or manuscript, suitable for publication. Assessments of students are based on periodic progress reports submitted by the mentor and other faculty resources. The final assessment is primarily based on the quality and innovation of the submitted abstract. Abstracts are reviewed and graded by the research advisor. Rubrics for these assessments and the mapping of the assessments to learning objectives are developed by the Assessment and Evaluation Committee and approved by the Course Committee. The metadata associated with these assessments are collected and stored electronically. The abstract is also submitted to the Office of Research for review by the Course Committee and will be selected for either an oral or poster presentation.

Clinical Case Example Presentation Rubrics

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Clinical case examples exercises enable students to review and demonstrate their mastery in understanding and working with the algorithm and clinical reasoning guide for that clinical presentation. Many of the clinical case example exercises will be done through a case presentation by individual or teams of students. The evaluation of these clinical case exercises are mapped to the learning objectives for the exercise and are graded by means of a rubric developed by the Office of Medical Education. The metadata associated with these assessments are collected and entered.

Faculty Evaluations

Faculty evaluations are essential elements of the educational program. These evaluations provide insight into the effectiveness of faculty in their responsibilities. Each faculty member will receive evaluations for their teaching from students. Additionally, faculty will also receive peer review. Additionally, every five years, faculty will participate in a 360° evaluation. These evaluations will be collected and distributed to the appropriate persons for review purposes. For institutional purposes, de-identified information regarding each faculty member taken from the numerical data will be used to look at the overall performance of the faculty as a collective group. This allows the individual faculty to be reviewed by the appropriate persons and the faculty as a whole to be reviewed by the institutional administration.

Student Assessment by Faculty with Narrative

Perceptions and observations of the strengths, weaknesses, and general characteristics of students are collected from clinical faculty using surveys, interviews, or focus groups and used for narrative assessments. During the clinical years (years 3 and 4; Phase B and C of the curriculum), narrative formative assessments are provided at the conclusion of each rotation and earlier if there is a perceived deficiency. At the end of each preclinical course (Phase A), students are provided a narrative assessment that is included in the final grade. This assessment is based on professional performance including student effort, participation, interpersonal skills, attitudes and behaviors.

Course Evaluations

Data collection methods are numerous including surveys, course evaluations, focus groups, one-on-one interviews, advisory groups, class meetings, exit interviews, and faculty meetings (every 3 to 12 months). Basic types of data to be collected include, perception of what is needed from the academic program and student service, overall satisfaction and specifically for courses, major curriculum strengths, weaknesses, missing components, unnecessary elements, and suggestions for improvement.

Table of Assessments - Clinical					
Assessment Category	Data Set	Data Type	Reporting Source	Timeline	Final Analysis Responsibility
Medical Skills	Clinical Rotation Evaluations	Formative Summative Direct Observation	Instructors, Clinical Faculty, Students	Ongoing each semester	Clinical Dept.
Medical Skills	Written and Oral Clinical Presentations	Summative; Direct Observation	Clinical Practice	Ongoing each semester	Dept. Chair
Curriculum	Interim tests, quizzes, observations	Formative; Indirect	Instructors, Dept. Chair	Ongoing each semester	Instructors, Assoc. Dean; Dept. Chairs

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Medical Skills	OSCE and Simulation Center Evaluations, Standardized Patient Evaluations, Peer Assessments	Formative; Summative; Direct Observation	Instructors, Peers	Ongoing each semester	Instructors, Assoc. Dean; Curriculum Committee
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Table of Assessments - Curriculum					
Assessment Category	Data Set	Data Type	Reporting Source	Timeline	Final Analysis Responsibility
Curriculum	Final Course Grade	Summative;	Instructors, Faculty, Dept. Chair	Each semester	Assessment & Evaluation and Curriculum Committee
Curriculum	Course Evaluation	Survey; Indirect (perceptual)	Students; Dept. Chair	Each semester	Assessment & Evaluation, Curriculum Committee, Rank Promotion and Retention Committee
Curriculum	OSCE and Simulation Exercises	Summative; Direct	Medical Skills, Clerkships	Range covers monthly to several months	Assessment & Evaluation and Curriculum Committee
Curriculum	Quizzes, iRAT, tRAT, Written Examinations, Practical Examinations, Observations	Formative;	Faculty, Dept. Chair	Ongoing each semester	Instructors, Dept. Chair, Senior Associate Dean of Medical Education and Accreditation, Associate Dean of Fac. Aff. & Assessment
Curriculum	Attrition Rate	Summative; Direct	Admissions	Yearly	Registrar, Admissions Committee

Table of Assessments - Programmatic					
Assessment Category	Data Set	Data Type	Reporting Source	Timeline	Final Analysis Responsibility
Programmatic	Faculty/Staff satisfaction survey	Survey; Direct	Dean's office	Yearly	Associate Dean of Fac. Affairs & Assessment
Programmatic	Admissions criteria	Demographic	Admissions Office	Yearly	Admissions Committee

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Programmatic	Student Org. Reports	Indirect	Student Officers	Yearly	Office of Medical Education and Accreditation; Director of Student Affairs and Admissions
Programmatic	Alumni Survey	Direct	Alumni	1 yr. and 5yrs, post graduate	Alumni Office
Programmatic	Graduation Rate	Demographic	Office of the Registrar	Yearly	Executive Office; Office of Medical Education and Accreditation, Student Promotions Committee
Programmatic	Annual Faculty Report	Summative, Indirect	Medical Science and Faculty	Yearly	Dept. Chair

Quality Improvement as a Result of Assessment Activities

An important goal of the assessment plan is to ensure that there is feedback from the data. Gathering data and having this data for the purposes of accreditation and institutional research is important. However, the most important reason to collect the data is to have a means of providing continuous feedback to the appropriate persons to ensure quality improvement.

The process includes faculty and students, clinical faculty and other medical practitioners as well as the report of licensure exam results. The Assessment and Evaluation Committee's review of the curriculum, with recommendations for improvements, is forwarded in a timely manner to the Curriculum Committee. The findings and recommendations for change are provided to the faculty in the form of an annual report. The Curriculum Committee reviews the results and presents its recommendations for improvement to the full faculty for their consideration and action.

Quality Improvement for Students

The Assessment Plan allows for continuous feedback to students regarding their progress through the program. This information is used by the students themselves to assess their understanding of the concepts and material they are expected to master. Moreover, since students become aware of their progress during a course, they can seek additional help from faculty and tutors to assist them to understand the material better. In addition, faculty and advisors will also have access to these data which will allow them to develop appropriate early intervention plans to assist students. Remediation of students during a course is much more effective and productive than trying to remediate after a student has failed a course. It will also be possible for faculty and advisors to help the student address extracurricular issues that may cause a dip in student performance. This should aid the College of Medicine in overall retention of students, improved quality of their education, and enhancement of student learning.

Quality Improvement for Faculty

The Assessment Plan allows for continuous feedback to faculty regarding student understanding of the material in the program. By reviewing the overall class performance, it will be possible for faculty to determine whether or not the students – as a whole – are having difficulty with a concept or a problem. Through the mapping of every assessment opportunity to learning objectives, it is possible for the faculty to examine overall performance on specific learning objectives. The faculty can then review the cause for the performance parameters and allow for improvements to maximize student learning.

Another component of the Assessment Plan is to provide for more traditional faculty review. This information is provided to the individual faculty member on a continual basis. Moreover, the information is also provided to the Department Chair, the Associate Dean of Faculty Affairs and Assessment, and the College's Committee on Rank, Promotion, and Retention. Through these three sets of offices, the strengths and weaknesses of the faculty can be reviewed and appropriate remedial measures, such as professional development opportunities, can be provided by the institution to the faculty.

Quality Improvement for Administration

The Assessment Plan provides the College and University Administration with an understanding of the status of the students and faculty. This process reveals the strengths and weaknesses of the educational program. Some of the issues related to the academic program are addressed through the curriculum and is part of the process of continual improvement by the faculty. Furthermore, areas of strengths and weaknesses can help guide budgetary decisions to focus institutional spending to ensure that the institutional mission is accomplished.

Programmatic Assessment

The main goal of programmatic assessment is to calibrate the educational program at the College of Medicine with respect to our peer Institutions. The focus of these evaluations is on how well the College of Medicine prepares its students relative to the rest of the country. The areas of data that are collected and reviewed include:

Shelf/Subject Examination Results

The National Board of Medical Examiners (NBME) has a series of “Subject Examinations” that can be used by the College of Medicine. The ones that the College of Medicine will commit to are the Comprehensive Basic Science Shelf Examination (which covers the pre-clinical subjects) and clinical shelf exams. These examinations will provide an external review of whether or not students appear to be prepared in the areas of study and how they can be benchmarked against all medical students nationally who take the same examination.

The USMLE Step 1 results will provide information on how well the College of Medicine students perform on a standardized examination relative to all the other students taking this exam nationally. By looking at the distribution of student scores, it will be possible to determine how well the program prepares the student for this examination.

USMLE Step 2 (Clinical Knowledge (CK) and Clinical Skills (CS) Result will provide information on how well the College of Medicine students perform on a standardized examination and on a standardized patient skills examination relative to all the other students taking these exams nationally. By looking at the distribution of student scores, it will be possible to determine how well the program prepares the student for these examinations.

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Residency Placements

With the increasingly competitive environment surrounding residency placements, it is important for the College of Medicine to be successful in helping students place at their desired residency locations. We will collect information from the students regarding their choices in residency placements and the ranking of those choices. By examining the actual number of students who receive placements at their selected programs (especially those which are high on their list of desired locations) and the number of students who need to scramble, it will be possible for the College of Medicine to determine how well it aids students in preparing them for their career goals. Additionally, by examining the types and locations of residency programs the students choose, the College of Medicine will be able to review how well it achieves its objectives, particularly with respect to the goal of producing primary care physicians for the State of California.

Graduation Survey

As students graduate from the College of Medicine, a survey is conducted of all students who are completing their studies. This provides information to the College of Medicine regarding student attitudes as they leave the College of Medicine as well as important feedback regarding those aspects of the program that require review. Data collection methods include surveys and one-on-one interviews.

Alumni Surveys

As alumni move into their careers (residency, fellowships, and practice), their attitudes and opinions of the educational program will change. These changes are shaped by attenuation of their emotions and by the reality of professional life. Thus, alumni surveys which are paired with graduation surveys allow the program to evaluate the change in student attitudes and consequently to improve the overall review of the program.

Faculty Research Project Evaluations

Research funding will be provided by the College of Medicine for internal grants. These grants are reviewed by knowledgeable peers both within and outside the College of Medicine using rubrics developed by the Office of Research. Data from these reviews will be collected and analyzed for trends and to identify factors that may lead to extramural funding. These factors will be used to enhance the quality of the internal grants, which may lead to additional extramural grant support.

External Grant Achievements

Grants submitted to extramural sources will be tracked for success in funding. A rubric will be developed by the Office of Research to evaluate grant applications submitted for external funding in order to identify those factors that may lead to successful grant applications. Extramural grant support is essential to the educational mission of the College of Medicine. Grant support enables the institution to maintain an intellectual, academic environment which values inquiry and scientific progress, considered hallmarks of centers of medical education excellence.

Publications, External Service, Awards, Honors, and Acknowledgements

Activities of faculty, staff, and students will be tracked for their publications (refereed, non-refereed), external service (academic, research, editorial boards, invited lectures, etc.), awards,

honors, and other acknowledgements. These activities support the institution's educational mission by encouraging academic productivity in its faculty, staff, and students and are hallmarks of centers of medical education excellence.

Utilization of Data for Program Improvement

The programmatic data will be used to verify success of the academic program and to identify areas that may require review. More importantly, by collecting these data over time, it will show trends in the graduates of the College of Medicine. By combining these data with data collected for Academic Assessment, it will be possible to start identifying specific attributes within the program that enhance or detract from the academic mission of the College of Medicine. Thus, it will be possible to identify those elements in the program that may enhance the ability of the College of Medicine to produce physicians who embody the vision, mission, and goals of the College.

Environmental Assessment

The goal of environmental assessment is to determine whether or not the environment is adequate and appropriate for the mission of the College of Medicine. The environment includes, but is not limited to:

- Physical plant of the College of Medicine
- Locations for rotations and outside events
- Educational infrastructure
 - Research facilities
 - Information technology
 - Library
 - Student resources
- Student life
 - Student study facilities
 - Facilities for student activities
 - Facilities and opportunities for student recreation
 - Student government activities
 - Extracurricular activities

Data will be collected annually through student, faculty, and staff surveys. These surveys can provide snapshots of the environment and whether or not it is perceived to be able to meet the mission of the institution. With additional trends over years, it will be possible to determine whether or not this perception changes over time.