

Section II. Educational Program

Self-Study Committee Report

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Self-Study Response

Educational Program for the MD Degree

A. Educational Objectives

- 1. Indicate the level of understanding of the objectives for the educational program among administrators, faculty members, students, and others in the medical education community. How are the objectives used as guides for educational program planning, and for student and program evaluation?**

The general objectives of the educational program leading to the M.D. degree are delineated in the document “Curriculum for the 21st Century”, which was originally prepared and adopted by the faculty in 1996 and subsequently updated by the faculty in March 2003. This document has been distributed to all administrators, faculty members, and resident physicians involved in medical student education. All students receive a copy of the document during orientations in the M1 and M2 years. New faculty members receive a copy of the “Curriculum for the 21st Century” document from the department chair, a copy of the document is sent to each academic department annually, and the document is posted on the Creighton University School of Medicine website.

The Center for Medical Education presents an annual educational orientation program for faculty members of the School of Medicine. This program is organized by the Director of the Center for Medical Education with participation by the Associate Dean for Medical Education and the component directors. The program details the process by which curricular and educational policies are formulated, the instructional formats and student assessment methods used by the School of Medicine, and the teaching resources available to all faculty members.

Specific course/clerkship objectives add detail to the general objectives of the School of Medicine educational program. The general objectives serve as guidelines for the development of the specific course/clerkship objectives. These specific course/clerkship objectives are distributed to the faculty participating in the courses/clerkships and are available on the School of Medicine website. Individual lecture objectives are based on course/clerkship objectives. At the start of a course/clerkship, students receive both course/clerkship and individual lecture objectives.

The assessment of student achievement and performance is based on course/clerkship objectives. After each iteration of a course (or yearly in the case of a clerkship), faculty members review and revise their course/clerkship and individual lecture objectives. In this review process, faculty members evaluate information about the

relationship between course/clerkship objectives and the knowledge and skills acquired by the students. The Component Committees, the Evaluation Committee, and the Educational Policy Committee use course/clerkship objectives as a part of their ongoing assessment of the curriculum.

Faculty members are also intimately involved in the curriculum at a variety of other levels such as task forces and strategic planning committees. For example, a faculty committee developed the Strategic Plan for Education, which was approved at a meeting of the entire faculty in October 2001.

2. Evaluate the adequacy of patient resources and clinical settings for achieving the school's clinical objectives.

Patient resources and clinical settings are carefully chosen, closely monitored, and frequently evaluated to assure their adequacy for meeting the School of Medicine clinical objectives. Clerkship faculty members and the Component III Committee are responsible for monitoring the adequacy of the patient resources to fulfill the objectives, instructional methods, and assessment needs of the curriculum. Each clerkship also relies on the guidelines issued by their national specialty educational groups (e.g., Clerkship Directors of Internal Medicine, Association for Surgical Education, etc.) for external input on how to determine adequate patient resources. The Component III Committee ensures consistency in the provision of the expected number and variety of patient encounters. The Evaluation Committee and the Educational Policy Committee provide oversight to assure that clerkships offer consistent experiences to the medical students utilizing adequate patient resources.

PEDIATRICS

The Pediatrics Clerkship is an eight-week rotation. During the four-week inpatient experience at Children's Hospital, approximately three to four medical students are assigned to each attending physician. Students are expected to be the first to evaluate the patient, working up at least two new patients per week and following four established patients per week. The remaining four-week experience includes teaching in the Creighton University Medical Center Neonatal Intensive Care Unit and Newborn Nursery and ambulatory pediatrics experiences in the Creighton University Medical Center Pediatrics Clinic and community ambulatory pediatrics sites. In these ambulatory settings, there are typically two students assigned to each attending physician, and students are expected to work up one new patient visit per week and see between ten to twelve established patients per week. The sites for the community ambulatory pediatrics experiences provide exposure to common pediatric diagnoses, therapies, and procedures. The sites are identified by the Clerkship Director and reviewed periodically to assure adequacy of teaching and clinical materials. Student logbooks are reviewed and feedback from students obtained about the various clinical sites.

PSYCHIATRY

The Psychiatry Clerkship is an eight-week rotation utilizing multiple clinical sites for student education to provide a breadth of exposure to a full range of psychiatric disorders from the child patient to the geriatric patient. A medical student spends four weeks on adult inpatient psychiatry at one of the following inpatient sites: Omaha Veterans Affairs Medical Center (ten new admissions per week), Alegent Immanuel Hospital and Heritage Center (thirty new patients per week), and Douglas County Hospital (ten new patients per week). Inpatient services at Immanuel Hospital have six students per month, the Heritage Center has two students per month, Omaha Veterans Affairs Medical Center has two to three students per month, and Douglas County Hospital has one or two students per month. Students assigned to the VAMC complete one week on the Substance Abuse Unit.

The student is expected to be the first to perform the evaluation on the patient, working up approximately two to four new patients per week and following about four to six established patients per week. Typically one to two medical students are assigned to each attending physician. There are four options offered to the medical students for the additional four weeks of the rotation: inpatient geriatric psychiatry, inpatient child psychiatry, inpatient consult/liaison psychiatry, and outpatient ambulatory psychiatry (at Alegent Immanuel Hospital outpatient clinic, Douglas County Hospital, or a Bellevue, Nebraska outpatient clinic). Those students assigned to the inpatient services spend three afternoons during the four-week rotation at an outpatient psychiatry clinic. For those students assigned to the ambulatory psychiatry experience, the student is expected to be the first to evaluate the patient, working up about eight to fifteen patients per week. At least once during the eight-week rotation, each student attends one session of the Board of Mental Health, where hearings for the involuntary commitment of patients are conducted. Clinical sites are reviewed periodically by the Clerkship Director to assure adequacy of teaching and clinical materials. Student logbooks are reviewed and feedback from students obtained about the various clinical sites.

OBSTETRICS/GYNECOLOGY

The Obstetrics/Gynecology Clerkship is an eight-week rotation utilizing Alegent Bergan Mercy Medical Center and Creighton University Medical Center. Students rotate for four-week blocks at each hospital (approximately ten students per month at each clinical site). These sites are monitored to assure exposure to diagnoses, treatments, and procedures that are crucial for the practice of obstetrics and gynecology. There are one to three students paired with each faculty member at the clerkship sites. The student has the responsibility of performing the initial history-taking and physical examination, working up about five new patients per week and following between four to eight patients per week. The experience in the ambulatory clinics at Creighton University Medical Center, in which the student has the responsibility of performing the initial history-taking and physical examination, exposes the students to a variety of women's health and obstetrical issues from a

diverse patient population. Close attention is paid to the variety of clinical experiences to assure consistency in meeting the educational objectives of the clerkship. The student is given a yellow card in the clerkship orientation packet to use in recording the number and type of each required obstetric and gynecologic procedure performed. These cards are carefully reviewed by the Clerkship Director during midterm evaluations to assure that the student is progressing toward fulfilling the clerkship requirements. The Clerkship Director also reviews written and oral feedback about the clerkship experience from faculty and residents.

SURGERY

The Surgery Clerkship is an eight-week experience in which a student is assigned to a combination of general, vascular, neurological, and/or orthopedic surgery in blocks of two to four weeks. The clerkship takes place at Creighton University Medical Center, Alegant Bergan Mercy Medical Center, and the Omaha Veterans Affairs Medical Center. Students observe surgical procedures in the operating room Monday through Friday at variable times during the day. They have contact with attending surgeons, surgery fellows and residents, and other surgeons during morning report prior to surgery, afternoon rounds, ward work, and clinic assignments. In addition, students check on their patients on either Saturday or Sunday and have one or two call nights during the eight-week rotation. The Surgery Clerkship is primarily an inpatient experience. Students work up approximately two new patients per week and follow approximately five established patients during the week. The student is expected to be the first to evaluate and examine the patient. Students function as an integral part of the rounding team, are involved with the daily care of patients, and participate in the surgical interventions performed by the team. One or two students are assigned to an attending physician at a clinical site. Although primarily an inpatient rotation, medical students on the Surgical Clerkship are required to spend approximately fifteen to twenty percent of the time participating in the respective ambulatory clinic for that service. The Surgical Educational Committee has been formed to improve the educational experience on the clerkship, identify and deal with issues that arise on the clerkship, and continue to evaluate the adequacy of clinical sites for students. Student logbooks are evaluated, and oral and written feedback is reviewed regarding clinical sites.

AMBULATORY PRIMARY CARE

The Ambulatory Primary Care Clerkship is an eight-week student experience jointly coordinated by the Department of Family Practice and the Department of Internal Medicine. Students complete either one month of internal medicine and one month of family practice or one month of urban and one month of rural family practice. Clinic sites are identified and selected by the Clerkship Directors. Community-based faculty interested in providing a site for the Ambulatory Primary Care Clerkship submit a demographic profile, detailing the number of providers in the practice, the number and age mix of patients, procedures performed (including deliveries), and additional aspects of the practice such as emergency department coverage, sports medicine, and

geriatric care in nursing homes. A visit is made prior to designating a site as a participating clinic. Typically, one or two students are assigned to a clerkship preceptor in the Ambulatory Primary Care Clerkship. Students are expected to have first contact with the patients and have at least one patient encounter per hour of clinic time. Annually, the clerkship sites are evaluated at the departmental level with the Clerkship Director. Information used in the evaluation includes a review of the student logbooks of patients, materials from site visits to the clinics by the Clerkship Director, and meetings with preceptors, and student evaluations.

INPATIENT MEDICINE

The Inpatient Medicine Clerkship is an eight-week clinical experience. A student is assigned to four weeks at two different sites: Creighton University Medical Center, Veterans Affairs Medical Center, Alegant Immanuel Medical Center, Alegant Bergan Mercy Medical Center, or St. Mary's Medical Center (San Francisco). Up to four students per month complete their rotation at the St. Mary's Medical Center. One or two students are assigned to each faculty member. In general, there are twenty students per eight-week rotation assigned in the following manner:

- Creighton University Medical Center has eight students divided between four attending physician teams.
- St. Mary's Medical Center has four students divided between four separate attending physician teams.
- Omaha Veterans Affairs Medical Center has four students divided between two attending physician teams.
- Alegant Bergan Mercy Medical Center has two students with one Nephrology faculty.
- Alegant Immanuel Medical Center has two students with one attending physician.

The adequacy of teaching sites is reviewed periodically in the department and by the Clerkship Director. Students are expected to play an integral role on the rounding team and in the day-to-day care of the patients. Areas such as the breadth of patient diagnoses, numbers of patients, teaching, and involvement in the care of patients are reviewed by the Clerkship Director through discussion with students during the month and discussions with attending physicians and residents at the various teaching sites. Student logbooks are periodically reviewed to assure the students are exposed to important clinical diagnoses as defined by the Clerkship Directors of Internal Medicine/Society of General Internal Medicine's Core Curriculum Guide. The Clerkship Director visits the various clinical sites and evaluates their appropriateness for continuation as a teaching/rotation site. At minimum the student is expected to complete three new patient work ups per week, and frequently this number is exceeded if the student happens to be on call during the week. The number of patients followed per student averages between two to four daily. Potential clinical sites are evaluated based by their ability to provide an excellent Internal Medicine experience

for the students. Departmental committees and task forces (including Chief Residents and faculty involved with leadership roles in teaching) discuss the adequacy of the clinical sites and address issues that arise throughout the course of the academic year.

The clinical rotation at St. Mary's Medical Center in San Francisco, California has posed some unique challenges since its introduction in the 2001-2002 academic year. Close communication by the Curriculum Coordinators has been imperative for the success of the clerkship. Attention to multiple aspects of the rotation by the Clerkship Director has been necessary. Discussion with students about the experience at St. Mary's Medical Center has been important. Also necessary has been tracking of the clinical skills gained by the students who rotate in at this San Francisco site and monitoring of student performance on the NBME Subject Test and other clerkship examinations to assure appropriate cognitive and clinical learning has occurred. Overall the rotation has been successful given the diversity of patients at St. Mary's Medical Center and the opportunity to experience a strong community hospital.

B. Structure of the Educational Program

3. Does the education program provide a general professional education that prepares students for all career options in medicine? Explain and justify.

As stated in the "Curriculum for the 21st Century" document, a goal of the curriculum is "to enable students to acquire a strong foundation in the basic and clinical sciences and in those aspects of the humanities, social and behavioral sciences that are relevant to medicine." To this end, the first two years of the curriculum provide a thorough grounding in the principles of medicine that derive from the disciplines of anatomy, behavioral science, biochemistry, embryology, ethics, genetics, histology, immunology, microbiology, molecular biology, pathology, pharmacology, physiology, and preventive medicine. This learning is assured through a combination of discipline-based and interdisciplinary courses.

DISCIPLINE-BASED FOUNDATION COURSES

Discipline-based courses in the M1 year present basic principles of anatomy-histology-embryology (in the Anatomy course), behavioral science, ethics, immunology (in the Host Defense course), microbiology, pharmacology, and psychology and sociology (in the Patient and Society course). In the second year, a Department of Psychiatry course (Psychological and Social Dimensions of Medical Practice) runs parallel to the organ system courses.

INTEGRATED COURSES

Beginning in the M1 and continuing through the M2 year, organ system courses integrate clinical medicine with biochemistry, cell biology, histology, molecular biology, pathology, pharmacology, physiology, and preventive medicine.

PROFESSIONAL & CLINICAL SKILLS

The M1 and M2 years also provide students with the basic clinical skills and professional attitudes and behaviors required in clinical medicine. These include interviewing, history-taking and physical examination, evidence based medicine, and patient assessment. These skills and attitudes are learned by practice in the Physical Diagnosis course, by observation and practice in the Longitudinal Clinics Course, by practice with standardized patients, and by small group and didactic instruction in the Patient and Society course (Component I) and the Psychological and Social Dimensions of Medical Practice course (Component II). Ongoing curricular improvements of the past two years led to an improvement and expansion of the interviewing and communication units of the Patient and Society course and the Psychological and Social Dimensions of Medical Practice course.

REQUIRED CLINICAL EXPERIENCES IN THE THIRD AND FOURTH YEARS

The clinical years (M3 and M4) continue the general professional education in required eight-week clinical experiences in Ambulatory Primary Care (formerly called Family Healthcare), Inpatient Medicine, Obstetrics/Gynecology, Pediatrics, Psychiatry, and Surgery. Exposure to both inpatient and outpatient settings occurs in the Obstetrics/Gynecology, Pediatrics, Psychiatry, and Surgery clerkships. Ambulatory Primary Care is an outpatient primary care experience offered jointly by the Department of Medicine and the Department of Family Practice. The Ambulatory Primary Care clerkship offers students the option of spending four of its eight weeks with a rural Family Practice preceptor; the balance is spent in an urban primary care setting.

A curriculum change effective July 1, 2003 adds a required two week neurology clinical clerkship in the M4 year. Students are required to include among their M4 year electives a one-month surgery rotation and two one-month critical care electives. The critical care electives expose students to critically ill patients that require complex decision making and to the use of state of the art technology in a critical care, intensive care, or pediatric intensive care unit. Currently students complete a sub-internship in a variety of specialties, but starting in 2004-05 students will complete a one-month sub-internship in Medicine, Family Practice, or Pediatrics in which the student is required to demonstrate a high level of responsibility in coordinating care, presenting patients, and tracking patient data.

ELECTIVE EXPERIENCES IN THE M4 YEAR

M4 students choose five additional electives from over 100 offerings that provide experiences in primary and specialty care, laboratory diagnosis, and research. Among others, these electives include Emergency Medicine, Geriatric Psychiatry, Diagnostic Radiology, Introduction to Pathology Practice, Microbial Laboratory Diagnosis, and Integrative and Alternative Medicine.

ACADEMIC MEDICINE

Students interested in exploring career options in Academic Medicine have opportunities for exposure to clinical and basic science research. These opportunities begin in the summer between the M1 and M2 years, during which the School of Medicine provides stipends to cover the living expenses of ten students who choose to conduct research in collaboration with the medical school faculty. In the M4 year, students can choose one-month research electives, in such specialties as psychiatry or surgery. More extensive research experience is also available: for example, during the past three years, the School of Medicine has offered students the opportunity to apply for a one year sponsored research experience at a number of leading research centers under the auspices of the Sarnoff Foundation. Medical students can also apply to the Creighton University Graduate School to enter a six-year M.D./Ph.D. program. Five medical students are currently participating in this program, and two of these have completed their research and had their dissertations approved.

CAREER COUNSELING

Career and residency counseling begins with the introduction of the AAMC Careers in Medicine Program during the first semester of the first year. Students are also administered the Myers-Briggs Type Indicator, which is interpreted by University Counseling Center staff. All M2 students attend a Careers in Medicine Program that emphasizes self-assessment and career exploration. Students are encouraged to explore the Careers in Medicine Program and to consult with the Associate Dean for Student Affairs and faculty members. The career and residency counseling program continues into the M3 year through mandatory class meetings that incorporate components of both the Careers in Medicine Program and the Glaxo Pathway Evaluation Program, as well as presentations by M4 students. As students progress into the M3 year, they are assigned a faculty advisor based on their desired specialty area. Students are encouraged to meet with the advisor on a regular basis. Individual counseling is available on an as-needed basis and as requested by the student. The Associate Dean for Student Affairs provides this counseling and refers students to physician faculty.

ACCEPTANCE INTO RESIDENCY

The success of the program in preparing students for all career options in medicine can be seen in the wide range of residency programs into which students graduating in the classes of 2002 and 2003 were accepted. The most common choices were anesthesiology, obstetrics and gynecology, internal medicine, pediatrics, and family practice. Other students chose emergency medicine, internal medicine/pediatrics, neurology, ophthalmology, orthopedic surgery, otolaryngology, pathology, physical medicine and rehabilitation, psychiatry, diagnostic radiology, and surgery.

- 4. Discuss the types and sufficiency of educational activities to promote self-directed learning and development of the skills and habits of lifelong learning.**

COMMITMENT TO LIFELONG LEARNING

In the “Curriculum for the 21st Century” document, the faculty of Creighton University School of Medicine defined two pertinent goals relevant to the acquisition of lifelong learning skills: “develop self-directed learners who will continuously develop as caring physicians during graduate training and practice” and “foster in students the development of the skills necessary for the competent practice of medicine throughout their professional career.” In the Creighton University School of Medicine curriculum, students are specifically trained in independent study and self-directed life-long learning. Training in the following areas provides the tools for independent study and lifelong learning: medical informatics, evidence based medicine, clinical problem solving, and self-awareness. Students are required to make use of these tools during their preclinical and clinical training. The modalities used in developing and fostering lifelong learning skills include: didactic instruction, small group presentation, experiential training, large group presentation by students such as in multidisciplinary conferences and grand rounds, clerkship patient presentations (morning report, rounds), computer training, writing assignments, and web page development.

MEDICAL INFORMATICS

In order to become a self-directed learner, students must be able to use tools for information gathering. Thus, each student receives orientation and training in medical informatics at the beginning of the M1 year to learn to find and use medical information independently. Students are then required to use these medical informatics skills throughout the curriculum. In the M1 and M2 years, the students participate in over 130 case discussions in which they develop cases for presentation to faculty preceptors and peers in small groups. The students are also responsible for developing one large-group presentation of a case in a grand rounds format attended by the entire class and faculty moderators. To prepare for these presentations, students use the facilities of the Bioinformation Center and other computer resources. Several courses (e.g., Molecular and Cellular Biology II, Pharmacology, Psychological and Social Dimensions of Medical Practice) have required library research exercises (graded papers). The students also work through a series of web exercises in the organ system sequence of courses in the M1 and M2 years. In the M3 years, students participate in clinical presentations and rounds preparations that require medical literature research. In the M4 year, there is a Medical Informatics elective, as well as several courses that require extensive technological training and application (e.g., Complementary and Integrative Medicine requires that students author a website on a specific alternative medicine modality).

EVIDENCE-BASED MEDICINE

It is essential that students learn to critically evaluate the medical literature, appraise the validity of medical research studies, and use this information in the clinical decision-making process. Students complete a series of evidence based medicine experiences. During the spring semester of the M1 year, students participate in a course entitled Evidence Based Medicine (lectures, practice exercises, and small group critical appraisal of a medical journal article). In the first half of this Evidence Based Medicine course, students learn the research designs used by medical researchers, research methods employed in clinical research, threats to internal and external validity, basic statistical concepts and principles, and the fundamentals of clinical epidemiology. In the second half of the course, students learn the four steps of the evidence based medicine process for critically appraising the medical literature, the validity questions for therapy and diagnosis, and the quantitative methods needed for each of the four areas of critical appraisal (therapy, diagnosis, prognosis, causation).

In August after their first M3 clerkship, the M3 students all complete an eight-hour workshop in which they apply and develop their critical appraisal skills. Work groups of six students per team write and compare their evidence based medicine questions for patient cases dealing with therapy and diagnosis. Students read and critically appraise the evidence (medical journal articles) related to their patient questions and then apply the evidence to their patient cases. During both the M3 Inpatient Medicine Clerkship and Ambulatory Primary Care Clerkship, students receive 1.5 hours of instruction in the formulation of evidence based medicine patient-related questions and in information retrieval via electronic and other sources. In addition, each student makes a presentation requiring the construction of an evidence based medicine question based on one of his/her patients, an electronic literature search, critical appraisal of selected medical literature, and application to the patient.

During the M3 year Inpatient Medicine Clerkship students complete four hour-long conferences in which they write an evidence based medicine question for both a therapeutic patient case and a diagnostic patient case, read and critically appraise the evidence (medical journal articles), and then apply the evidence to their patient cases. During the M4 year, students are eligible to enroll in a two-week elective with a general internist experienced in evidence based medicine. Students apply the four steps of evidence based medicine to their past patients, complete advanced reading assignments, work with a medical librarian to improve literature searching skills, and make a variety of critical appraisal presentations. During the M4 year, students can also enroll in a month-long independent study elective with an educational psychologist/medical statistician experienced in evidence based medicine. Students read intermediate-level research methodology/biostatistics texts and critique clinical research studies from the medical literature. Students examine how medical researchers design, conduct, and critique their clinical investigations.

MEDICAL PROBLEM-SOLVING

Medical problem solving is an essential skill that is developed throughout the four years of the curriculum. In the M1 year, students participate in the Physical Diagnosis Course, which gives them the fundamental examination skills. As early as the first semester of the M1 year, case-based learning is introduced to the medical students. Most M1 and M2 courses contain cases that are presented by the students in a small group format. The cases are authored by faculty members to accomplish course learning objectives and to develop reasoning skills in the medical students. These small group sessions are facilitated by basic science and clinical faculty members. There are 58 structured cases in the M1 year and 73 cases in the M2 year. In the M2 year, students attend a year-long longitudinal clinic in an ambulatory primary care setting in which they interact with a faculty preceptor and observe and participate in clinical reasoning. As students interact with patients in the M3 year, faculty members emphasize clinical reasoning skills and evaluate student abilities to solve clinical problems. For example, students write a ten-page case formulation paper in the Psychiatry Clerkship in which differential diagnosis and clinical reasoning are evaluated. The attainment of clinical reasoning skills from M3 clerkships is assessed in an Objective Structured Clinical Examination (OSCE) given at the start of the M4 year. Refinement of clinical reasoning continues in M4 year electives. Examples of clinical reasoning and problem solving skills include:

- M1 small group case presentations. Students are given cases that feature relevant basic science concepts. Students work independently on questions pertaining to the cases and present them in the small group. Based on that presentation and responses to preceptor questions, student performance is evaluated for each course by the preceptor. In some courses (e.g., Principles of Pharmacology), a graded take-home examination is given to the students to reinforce important concepts and to provide a summative evaluation. In all courses, problem solving and clinical reasoning are features of the written examinations.
- M2 small group case presentations. One preceptor is assigned for each group and stays with that group for the entire year. These preceptors are responsible for the longitudinal evaluation of knowledge, critical thinking and problem solving skills, and affective skills. Summative evaluation occurs at the end of the year. As in the M1 year, students are given cases that feature basic science concepts relevant to a given course. Students work independently on questions pertaining to the cases and present them in the small group. In some of the courses (e.g., Renal-Urinary System), students are given a take-home examination on the concepts of the case (usually another case with questions) that is graded. In all courses, problem solving and clinical reasoning are features of the written examinations.

- Clinical reasoning skills are taught during the M3 clerkships. These skills are evaluated by direct observation, Objective Structured Clinical Examinations (OSCEs), written in-house exams, and NBME Subject Tests in Internal Medicine, Family Medicine, Psychiatry, Pediatrics, Surgery, and Obstetrics and Gynecology. At the beginning of the M4 year, each student must take and pass a clinical skills OSCE to ensure that their clinical reasoning ability meets a minimum standard. Failure on this OSCE prompts enrollment in a remedial M4 course in clinical skills that must be passed in order to graduate.

SELF-AWARENESS

In order to promote lifelong learning and long-term personal development, self-awareness exercises dealing with personal values, motives, and intentions are included in the curriculum. These exercises include an account of a personal behavior change, a personal account of cultural and family response to an illness event, and learning journals as part of the clinical experience. Other short writing assignments in the Patient and Society Course enable students to develop a greater knowledge of, and empathy for, the illness experience of patients. An important aspect of these exercises is the emphasis on personal choice and self-direction. Students develop a greater awareness of their personal needs and interests that can be satisfied by self-directed and autonomous learning. Students benefit from being able to direct their projects based on personal interests and strengths. The use of a learning journal during the second-year Longitudinal Clinic helps students be more perceptive and thoughtful in their observations. Readings in the medical humanities in M1 and M2 Patient and Society Courses deepen student awareness of the emotional aspects of patient care. Students read about the illness experiences of two contemporary authors and prepare critical essays about their readings. An optional reading circle for M1 and M2 students meets often to discuss health-related works of fiction and non-fiction.

5. Evaluate the adequacy of the system for ensuring consistency of educational quality and of student evaluation when students learn at alternative sites within a course or clerkship.

No M1 or M2 courses are taught at alternative sites. For clerkships taught at alternative sites, consistency in educational quality is ensured and maintained. Alternative sites for clerkships all use the same course materials (including logbooks and checklists) and evaluation processes. Each faculty member is oriented to the clerkship goals and objectives and evaluation processes and meets with the Clerkship Director regarding the educational program at the site. Faculty members also receive clerkship information through mail and phone communications or through the clerkship website. The full time Curriculum Coordinators act as a resource by helping faculty and other instructors at all learning sites. Each site for a clerkship uses the same standardized grading and evaluation forms to assure uniformity in assessment of the students and of the teachers. Policies developed by departmental undergraduate

education committees are transmitted to all clerkship sites by the Clerkship Director and/or the Curriculum Coordinator. Students at all sites have the opportunity to express any concerns about faculty, residents, clinical experiences, or didactic teaching during the mid-term evaluation and at the formal course evaluation at the conclusion of the clerkship. Student feedback is reviewed by department chair, Clerkship Director, faculty, and residents to ensure quality educational experiences.

For example, the Ambulatory Primary Care Clerkship utilizes 23 rural family practice sites in Nebraska, Iowa, and Wyoming. When rural training sites were being established, annual visits were made to each of the sites at which time the preceptors were able to request resources needed for teaching, provide input on the evaluation process, review updates of the clerkship objectives, and receive copies of current clerkship syllabi. During these site visits, information was gained regarding the performance of students, scheduling, and access to housing, community resources, and other services. A demographic and photo profile of each community and the clinic was developed and put on the clerkship website to assist students in learning about the rural sites. The Clerkship Director and/or the Curriculum Coordinator maintain continuing oversight of the various locations and currently contact each site thirty days prior to the student's rotation. The frequency of site visits has decreased as rural preceptors have become more comfortable with their teaching role, the evaluation of students, use of website resources, and communication by e-mail. These rural training sites remain an active and popular rotation for students, and the evaluations from the students have been very positive.

The Inpatient Medicine Clerkship utilizes St. Mary's Medical Center in San Francisco as a clerkship site. The St. Mary's Medical Center Clerkship Coordinator and faculty members are all familiar with the clerkship goals and objectives through close communication with the Curriculum Coordinator and Clerkship Director and through the clerkship website. The Clerkship Director makes annual site visits to assess the clinical experience of the students and review student feedback with the St. Mary's Medical Center faculty members. The Clerkship Director will increase the frequency of sites visits in academic year 2003-2004. Furthermore, faculty development courses for the St. Mary's Medical Center faculty members are being prepared to enhance clinical teaching and assessment skills.

The Educational Policy Committee mandates that the departmental clerkship committee and the Component III Committee evaluate the clinical experiences for quality and consistency among sites. The Evaluation Committee also evaluates the adequacy of the clerkship activities and sites in meeting the course objectives.

6. Are all content areas required for accreditation adequately addressed in the curriculum? How do you know?

The implementation of curriculum content is directed by the Educational Policy Committee, and overseen by the Office of Medical Education guided by the “Curriculum for the 21st Century” document. The Educational Policy Committee is also guided by curriculum content questions in the LCME Part II Annual Medical School Questionnaire and the directives from the LCME Accreditation Standards. The Creighton University School of Medicine curriculum includes all fourteen subject areas required by LCME Accreditation Standards.

Contemporary up-to-date content of the traditional basic science disciplines is presented in the M1 and M2 years of the curriculum. Some disciplines are covered as stand-alone courses (e.g., gross anatomy), while the content of other disciplines (e.g., physiology) is distributed among multidisciplinary courses (e.g., M1 neuroscience and the M2 organ system courses). Laboratory and other practical exercises are included in M1 courses and the more clinically oriented M2 organ systems courses. Students must demonstrate clinical skills and procedures in M3 clerkships and selected M4 elective courses.

Clinical instruction relates to all organ systems and includes aspects of preventive, acute and chronic, continuing, rehabilitative, and end-of-life care. Clinical experiences in primary care begin with the physical diagnosis courses of M1 and M2 years and continue with the clerkships and sub-internship electives of M3 and M4 years. Specific clinical experiences are provided in family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. A required neurology clerkship will be introduced in the 2003-2004 academic year. Clerkships utilize both outpatient and inpatient settings. Educational experiences are provided in the multidisciplinary areas of emergency medicine and geriatrics, but are distributed among several formal courses and clerkship rotations and supplemented in senior electives. The same is true of diagnostic imaging/radiology and clinical pathology. The curriculum mandates nine months of elective training in the M4 year and allows up to three months of this elective time at other institutions. Medical students have ample time to pursue subject areas of personal interest.

Instruction in communication and interviewing skills is presented in formal lectures, cases, and standardized patient encounters in the M1 and M2 years. The M2 Capstone Abuse Module includes communication with abused patients. The M3 clerkships include both demonstrations and faculty feedback following observed patient interactions. Communication with colleagues (e.g., as part of a medical team) is taught as part of history-taking and physical examination write-ups and journaling in the M2 Longitudinal Clinic Course, as well as in the morning reports and rounds presentations during clerkships. Communication with other health professionals takes place in the M2 Capstone Social Marginalization Module, the M2 Capstone Abuse Module, and

the Psychiatry Clerkship. A new Office of Interprofessional Education presented a half-day symposium to M3 medical students and students from six other professional programs in March 2003 and similar interprofessional communication activities will be implemented over the next several years.

Instruction is provided in content areas related to behavior and socioeconomics as they apply to medical practice. Human development and the life cycle are taught primarily in the M1 year, and human sexuality, family violence and abuse, substance abuse, and end-of-life care are taught primarily in the M2 year. These topics are also emphasized in the M3 Dimensions in Clinical Medicine Program on Professionalism.

The medical consequences of common societal problems are addressed in pre-clinical years and in clerkships. The M2 Psychological and Social Dimensions of Medical Practice Course provides lectures on global burden of disease, addictions, poverty and its effect on health and illness, and health disparities. The M2 year also features two modules that focus on physician interaction with community health agencies. The M2 Capstone Social Marginalization Module covers community healthcare among underserved populations and includes visits to community agencies. The M2 Capstone Abuse Module deals with the issue of domestic violence and abuse and includes experiences with real and standardized patients related to the diagnosis and treatment of abuse. In the M3 Psychiatry Clerkship addictions and substance abuse are also covered.

Cultural competence is examined in the interviewing unit of the M1 Physical Diagnosis Course and in the M2 Psychological Dimensions Course. In academic year 2002-2003, the M3 Dimensions in Clinical Medicine series included cultural competence as one of the programs. Cultural and gender biases and their influence on medical practice are examined in the M1 Patient and Society Course, M2 Psychological Dimensions Course, and M2 Capstone Social Marginalization Module. In the M3 Psychiatry Clerkship, writing assignments, reports of attending physicians, and student tests assess the student cultural competence.

Medical ethics and human values are part of the M1, M2, and M3 curriculum. The M2 Capstone Social Marginalization Module includes visits to community social agencies. Tests, short papers, and faculty evaluations are used to assess the student's acquisition of ethical principles. Minor breaches of ethical behavior are addressed by faculty feedback to the individual students, and serious instances are remanded to the Advancement Committee, which follows the due process policies detailed in the Student Handbook.

- 7. Evaluate the workload and balance between education and service in the clinical years. Do students receive sufficient formal teaching during their clinical clerkships? Assess the balance between inpatient and ambulatory**

teaching and the appropriateness of the teaching sites used for required clinical experiences.

Students in the M3 year complete six clerkships (Ambulatory Primary Care, Inpatient Medicine, Obstetrics/Gynecology, Pediatrics, Psychiatry, and Surgery) that provide a broad exposure to the essential elements of clinical medicine and a solid foundation of skills to practice in any setting. A department designates a Clerkship Director, who is approved by the Educational Policy Committee. The Clerkship Director and department faculty members determine the balance between inpatient and ambulatory experiences for the medical students. Each department regularly reviews the clerkship objectives, teaching, and student evaluations. For example, the Department of Internal Medicine has a monthly meeting of its Task Force for Internal Medicine Education in the Clinical Years to review the Inpatient Medicine clerkship.

Formal teaching during the clerkships consists of didactic lectures, case-based discussions, student-led presentations, writing assignments, online materials (lectures, clinical cases, etc), and assigned textbooks and journal readings. There is a well-defined balance between education and service in the clerkships. The students spend the majority of the time on the clerkships interacting with patients in the clinical setting. During the clerkship, the medical students are an integral part of the clinical teams that include resident physicians, attending physicians, nurses, etc. Students are expected to be directly involved with the evaluation and management of the patients. Often the medical student is the first individual to see the patient during morning rounds on a hospital service or at an ambulatory clinic. Students are expected to obtain a history from the patient, perform a physical examination, retrieve any pertinent laboratory or radiographic data, and develop an appropriate assessment and treatment plan. Clerkships are designed to maximize the educational aspects of the student's time on the wards and in the clinics. While procedures such as phlebotomy, intravenous catheter placement, arterial blood collection, nasogastric tube placement, and sputum Gram staining are now frequently performed by staff, efforts are underway by clerkship directors to provide more opportunities for medical students to become competent performing these procedures.

There is an appropriate balance between teaching in the inpatient and ambulatory settings. The Ambulatory Primary Care Clerkship is exclusively an outpatient (ambulatory) clinical experience. Pediatrics, Surgery, Psychiatry, and Obstetrics/Gynecology have combined inpatient and ambulatory clinical settings. The Obstetrics/Gynecology Clerkship is approximately 80% inpatient and 20% outpatient, with the outpatient experience occurring at Creighton University Medical Center where the students are involved in the ambulatory management of normal pregnancy follow-up visits, the monitoring of high-risk pregnancies, performance of annual gynecologic examinations, and diagnosing and treating common office gynecology problems. The Pediatrics Clerkship involves four weeks of inpatient pediatrics at the Children's Hospital, two weeks of newborn pediatrics training, and two weeks of

ambulatory pediatrics at Creighton University Medical Center Pediatrics Clinic and at community pediatrics sites. In the Psychiatry Clerkship, 20% of students are assigned to one-half inpatient/one-half ambulatory psychiatry, 20% are assigned to three-quarters inpatient/one-quarter ambulatory psychiatry, and the remaining 60% are assigned to a minimum of three afternoons of ambulatory psychiatry. During the Surgery Clerkship students have various hospital assignments, but at least part of their time is spent at the Creighton University Medical Center Surgery Clinic where each student has an average of 32 encounters with ambulatory patients. The Inpatient Medicine Clerkship is exclusively an inpatient experience. During the past several years, consistent with the national changes in healthcare delivery venues, increasing efforts have been devoted to providing the medical students with optimal ambulatory opportunities for learning, shifting time away from the various inpatient hospital services.

The Obstetrics/Gynecology, Surgery, and Inpatient Medicine clerkships incorporate an evening and weekend call experience for students. Call is structured to allow opportunities for students to work up new patient admissions, participate in cross coverage of patients currently hospitalized, and respond to trauma patients and codes that occur. The Component III Committee has been recently tasked to evaluate the goals for student call for the purpose of improving the experience and enhancing the learning objectives.

All clerkships require the students to complete patient logbooks that are evaluated periodically by the Clerkship Director and other faculty members involved in the medical education program. These logbooks assure adequate student exposure to an appropriate spectrum of clinical diagnoses, disease processes, surgical interventions, and procedures. The logbooks also are used to evaluate the different teaching sites to assure students have adequate exposure to patients. For example, in the Obstetrics/Gynecology Clerkship the number and type of recorded diagnoses, procedures, and surgeries are tracked to provide a well-rounded two-month experience. All clerkships encourage students to review their logbooks (both on their own and with their preceptor or resident) and take an active role in their learning by seeking additional clinical experiences and by studying about patients and diagnoses previously encountered.

C. Teaching and Evaluation

- 8. How adequate is the supervision of medical students during required clinical experiences? Discuss the effectiveness of efforts to ensure that all individuals who participate in teaching, including resident physicians and volunteer faculty members, are prepared for their teaching responsibilities.**

The medical students are well supervised during each clerkship. As a part of their daily interactions with faculty preceptors and resident physicians, students are carefully supervised and given feedback on their clinical performance in oral presentations of patients, written patient notes, care of patients, and contributions to the clinical team. Student concerns related to timely midterm evaluations have been addressed by increased attention to this responsibility by faculty preceptors. For example, the Department of Family Practice has introduced a protocol for ensuring timely return of midterm evaluations from the preceptors. Each department has a formal process in place for communication among the faculty and residents regarding the evaluation of the students. For example, the Department of Pediatrics faculty members and residents meet to assess each student's performance and provide a formative midterm evaluation and a summative final evaluation. Recent emphasis has been placed on direct faculty observation of student history-taking and physical examination skills. The Surgery, Pediatrics, and Inpatient Medicine clerkships have all now included such direct observations as an important evaluative tool to assess student clinical skills. The Ambulatory Primary Care Clerkship uses an end of rotation practice examination to observe the student history-taking, physical examination, and interpersonal skills using three standardized patients.

Clerkship syllabi, including objectives and evaluation materials, are provided to the faculty and residents in written form and are available on the Creighton University School of Medicine website. The clerkship directors meet with residents periodically to review the goals and objectives of the clerkship and their teaching responsibilities. Clerkship directors use student evaluations of faculty and resident teaching to counsel them on their teaching and assessment skills. Community-based volunteer faculty preceptors receive regular communications about clerkship objectives, preceptor and student expectations, and the process for evaluating student performance.

Opportunities to enhance the teaching roles and responsibilities of faculty and residents are provided by the Center for Medical Education and individual departments. For example, the Department of Surgery recently implemented a faculty and resident development program that focuses on teaching skills. The Department of Internal Medicine provides a teaching skills course to faculty and residents based on the Stanford Medical School program. The Center for Medical Education conducts workshops for faculty members on a variety of educational topics. Planning is underway by the Center for Medical Education for a Summer 2003 education

conference for clerkship directors to address the core essentials of a successful clerkship.

9. Evaluate the adequacy of methods used to evaluate student attainment of the objectives of the educational program. How appropriate is the mix of testing and evaluation methods? Do students receive sufficient formative assessment in addition to summative evaluation? Discuss the timeliness of performance feedback to students in the pre-clinical and clinical years.

Courses throughout the four years of the medical curriculum use a variety of methods to evaluate student mastery of objectives in the areas of knowledge achievement, skill development, and attainment of humane and professional attitudes. The various evaluation methods allow faculty members to identify student strengths and the weaknesses that require remediation. Objective examinations are a primary means for testing knowledge acquisition. Summative evaluation is achieved in M1 and M2 courses by the use of multiple-choice or matching/extended matching examinations that include problem-solving and clinical reasoning. In the M1 and M2 years, the NBME Subject Tests for Pathology, Neuroscience, and Basic Sciences are used to evaluate student knowledge. All six M3 clerkships use NBME Subject Tests for summative evaluation of student knowledge acquisition for comparison to national norms.

Other evaluation methods are used as more targeted means of testing student knowledge. In the M1 and M2 years, clinical problem-solving is evaluated through written assignments, take-home examinations, and oral presentations. Clerkship students participate in a variety of activities that permit the evaluation of their knowledge: quizzes, reports on clinical topics, online case exercises, and student grand rounds presentations.

Communication and interviewing skills are thoroughly assessed throughout the four years of the medical curriculum using practical exams and the Objective Structured Clinical Examinations (OSCEs). The M1 students are each assigned a preceptor who supervises the history-taking and physical examinations of three patients. The clinical skills of M2 students are evaluated during their participation in a year-long longitudinal clinic and by a taped second year OSCE that emphasizes effective interviewing and communication skills. In the M3 year, clerkship preceptors monitor and guide the development of student clinical competencies by direct observation. The M4 OSCE provides a comprehensive assessment of the student's ability to interview, evaluate, and diagnose patients with common medical problems.

Small groups provide a setting in which the faculty members evaluate student cognitive abilities, group problem-solving, and professionalism. Small group exercises include case analyses, written reports, oral presentations, and various focused writing assignments. Besides the knowledge acquisition in these group sessions, students also

have the opportunity to demonstrate attitudes and professionalism. For example, in the Ethics course and the Behavioral Science course, faculty members use patient cases to observe student ethical decision-making and humane attitudes. Faculty members provide constructive comment and criticism of written exercises to assist the student development of self-awareness and cultural competence. For example, students are asked to write about a personal or family health event uniquely influenced by their own cultural or family values. During the M2 year, faculty members also assess behavior and attitude change as students submit essays describing their experiences in patient management and community health. Faculty members critique the student learning journals to promote student self-awareness, caring attitudes, and professionalism in the M2 Longitudinal Clinic and Psychiatry Clerkship.

During M3 clerkships and M4 electives, students must demonstrate clinical applications of knowledge acquired during the M1 and M2 years. In the clinical years, the cumulative basic medical knowledge of the pre-clinical years and clinical skills acquired on clerkships are evaluated through the direct observation by faculty members and resident physicians, written examinations and assignments, oral presentations, and clerkship-related OSCEs and the comprehensive M4 OSCE.

The mix of testing and evaluation methods used in the curriculum provides faculty members with insight into the student medical knowledge, clinical skills, and attitudes. In addition, the variety of evaluation methods promotes excellence in student written and oral communication. The variety of assessment methods allows faculty to be confident that students have acquired the medical, scientific, professional, and ethical competence required for medical practice.

There are numerous opportunities for formative assessment of students in all four years of the medical curriculum. During the M1 and M2 years, biweekly Multidisciplinary Quizzes provide an opportunity for students to demonstrate comprehension of basic science and behavioral science concepts and principles. Small group activities, reports, writing exercises, and OSCEs also provide opportunities for formative assessment of student problem-solving and clinical reasoning. Course/Clerkship Directors, Component Directors, the Associate Dean for Medical Education, the Associate Dean for Students Affairs, and the Advancement Committee are actively involved in remediation and intervention to assure that academically at-risk students are identified and assisted.

The M3 students are provided mid-clerkship formative assessment by preceptors who directly observe their acquisition of clinical skills. Opportunities for formative assessment during the M3 year are also provided to students through quizzes and oral and written presentations of cases and medical topics.

In pre-clinical years, students receive prompt information about their performance on various quizzes and examinations and written and practical exercises. In the clinical

years, NBME Subject Test results and results from other examinations are provided to the students in a timely fashion. In recent years, departments sponsoring clerkships have initiated oversight procedures to assure that faculty preceptors and residents submit their evaluations of students by established deadlines to permit timely feedback to students.

10. How do you ensure that students have acquired the core clinical skills specified in the school's educational program objectives? Describe your system and evaluate its adequacy.

Students begin learning core clinical skills in first semester of the M1 year. Students are evaluated on core clinical skills in each of their clinical clerkships. The comprehensive evaluation of clinical skills in clerkships includes midterm formative assessments and end of rotation summative examinations and selected clerkship and M4 comprehensive OSCEs. The major part of the evaluation process involves direct observation by faculty preceptors and residents but also includes assessment of student oral presentations, demonstration of abilities to perform medical procedures, and evaluation of student written chart notes including assessment and treatment plans.

Each of the third year clerkships has a detailed evaluation system. For example, the Psychiatry Clerkship uses attending staff evaluations, written examinations, oral presentations, and written assignments. The attending faculty and residents evaluate the student's fund of knowledge, data gathering ability, clinical judgment (diagnostic and therapeutic skills), relationships with patients, communication skills, and collaboration with colleagues and professionalism. The Surgery Clerkship uses for the evaluation process the attending faculty and resident evaluations, written examinations, oral presentations, and skills assessment. The attending staff and residents evaluate fund of knowledge (general medical and basic science), critical reasoning and judgment, clinical and procedural skills, data collection and assessment, interpersonal skills (both with patients and colleagues), and professionalism. The Surgery Clerkship has a list of procedural skills that must be mastered by all students (e.g., bladder catheterization of male and female, wet to dry dressing change, nasogastric tube insertion, scrubbing, sterile gowning and gloving, wound closure with sutures, hemodynamic monitoring, and ventilator management). The Surgery Clerkship also uses a five station OSCE as part of the student evaluation.

The Obstetrics/Gynecology Clerkship uses attending staff evaluation, written examination, oral presentations, and clinical skills assessment. The attending faculty and residents evaluate fund of knowledge (general and basic science), clinical and procedural skills, clinical reasoning and judgment, interpersonal skills (both patient and health care team), and professionalism. A procedure list tracks student performance and mastery of the required obstetrical and gynecological procedures. At the midterm evaluation, faculty members verify student progress in achieving mastery

of procedural skills to assure that all requirements will be met by the end of the clerkship.

The Inpatient Medicine Clerkship uses attending staff and resident evaluations, written examinations, and oral presentations to assure student achievement. The attending staff and residents evaluate the quality of history-taking and physical examination skills, the ability to analyze data, oral presentation skills, clinical reasoning, professional behavior, and work ethic.

The Pediatrics Clerkship uses attending staff and resident evaluations, written examinations, and oral presentations. The attending staff and residents evaluate data gathering, oral presentation skills, clinical reasoning and judgment, and professional attitudes (reliability/dependability, patient/family rapport, and relationship with health care team).

The Ambulatory Primary Care Clerkship use attending staff and resident evaluations, written examinations, oral presentations, and a clinical practice examination to assess student achievement. The attending staff and residents evaluate medical knowledge, data management skills, problem-solving skills, communication skills, patient rapport, and professionalism. The direct observation of a practice examination includes assessment of interpersonal skills by the standardized patient and feedback on clinical skills (history-taking and physical examination) based upon information from a checklist filled out by a professional staff member observing the examination. The student's assessment and treatment plan completed using the SOAP format is also graded.

The Creighton University School of Medicine also requires passing of a nine station OSCE prior to graduation as a final validation of clinical competence. This OSCE is conducted early in the M4 year and assures attainment of critical clinical skills (history-taking, physical examination, differential diagnosis formulation, treatment planning, and interpersonal skills). Students who do not pass the M4 OSCE must remediate deficiencies in the month of November by completing a month-long course of concentrated tutorials in clinical skills directed by assigned faculty from a variety of specialties.

D. Curriculum Management

- 11. Assess the adequacy of mechanisms for managing the curriculum and ensuring a coherent and coordinated curriculum. Do the curriculum as a whole and its component parts undergo regular, systematic review? Are there sufficient resources (for the associate dean and the curriculum committee) to support the management of the curriculum?**

The fundamental document that guides curriculum design, implementation, and evaluation is “Curriculum for the 21st Century,” which was last revised in March 2003. This document contains the mission and vision statement of the School of Medicine, the curriculum goals and objectives, a description of the four components (i.e., years) of the curriculum, evaluation of students, and evaluation of the curriculum. The School of Medicine has an effective management system for assuring a coherent and coordinated curriculum. Curriculum management has both a policy arm and a program arm.

CURRICULUM MANAGEMENT – POLICY

The Educational Policy Committee (EPC) establishes all policies of significance related to the curriculum. The EPC has the following voting members: Associate Dean for Medical Education (chair), six appointed faculty (three basic science, three clinical), four students (one from each class chosen by their peers), and the four component directors. Non-voting, ex officio members of the EPC are the Dean, the Assistant Dean for Medical Education, the Associate Dean for Student Affairs, the Director of the Bioinformation Center, and the Director of the Center for Medical Education.

The Medical Education Management Team manages both policy and program issues. The Medical Education Management Team meets twice per month to prioritize EPC agenda items, monitor overall compliance with educational goals and objectives, and provide guidance to the Administration regarding policies and procedures. The Medical Education Management Team is chaired by the Associate Dean for Medical Education and also includes the Assistant Dean for Medical Education, the Associate Dean for Student Affairs, the four component directors, and the Director of the Center for Medical Education.

CURRICULUM MANAGEMENT – PROGRAM

The Associate Dean for Medical Education is the chief education officer for the medical student program. The Assistant Dean for Medical Education has responsibility for the educational program in the M3 and M4 years (Components III and IV). Each of the four component directors is responsible for the day-to-day management of the educational program for his/her year of the curriculum. Each course or clerkship director works with his/her faculty to deliver the basic units of the curriculum (i.e., courses and clerkships).

Each of the four components has a committee that addresses content, teaching, and assessment issues related to its year in the curriculum. Components I, II, and III committees are chaired by the Component Director and include the course/clerkship directors for that component plus two medical students. The Component IV committee is chaired by the Component Director and is composed of one faculty member from each of five departments (Pediatrics, Obstetrics/Gynecology, Surgery, Internal Medicine, and Neurology), one faculty each from two other clinical departments (these serve one-year terms), and two medical students.

Each component committee regularly reviews course/clerkship content and grading practices, develops component-wide evaluation and grading policies, and monitors content omissions and redundancies. On occasion a component committee will request action from the EPC on curriculum matters. Since the component director is a voting member of the EPC, he/she brings issues to the EPC and transmits EPC decisions and information to the component committee.

Each course or clerkship has a committee that is responsible for policy consistency and curriculum planning. Course and clerkship faculty are made aware of school-wide policies on curriculum through the course/clerkship director, who sits on the component committee. The course/clerkship committee designs and implements the course/clerkship, evaluates students, and prepares the course/clerkship Annual Report (i.e., strengths, areas of needed improvement, and plans for change). The Annual Report is submitted to the Evaluation Committee within three months of the completion of a course or the completion of the clerkship year.

The Evaluation Committee (four faculty and two medical students) is responsible for evaluating all required courses and clerkships. The Evaluation Committee, which is chaired by the Director of the Center for Medical Education, reports to the Educational Policy Committee (EPC), which has overall responsibility for management of the curriculum. The Evaluation Committee alternates each year between assessment of preclinical courses (Component I and II) and clerkships (Component III). For example, in academic year 2001-2002 thirteen (13) preclinical courses were evaluated, and in academic year 2002-2003 four clerkships were evaluated. The Evaluation Committee meets monthly and determines which courses or clerkships to evaluate. Data used in the assessment of a course or clerkship include:

- syllabus and teaching materials
- student evaluations
- evaluation and grading methods
- student performance
- interviews with faculty and staff
- Annual Report by the course/clerkship director

Discussion of a course or clerkship is scheduled for two successive monthly meetings. During the first month, data are discussed and an outline for the report is developed. Between the first and second meeting, members review a preliminary draft of the report. During the second month the committee agrees on the details of the report. The Evaluation Committee then forwards to the course/clerkship director all data and the preliminary draft of the report to receive feedback. Two weeks later after incorporating responses from committee members and course/clerkship leaders, the final report is completed.

The final report is distributed to the Educational Policy Committee at its regular monthly meeting. At the following monthly meeting, EPC members comment on the report and ask questions of the chair of the Evaluation Committee, who as Director of the Center for Medical Education is an ex-officio member of the EPC. The Educational Policy Committee decides whether to ask for a written and/or in-person response from the course/clerkship director.

MANAGEMENT AND EVALUATION OF THE CURRICULUM COMPONENTS

The individual component committees are responsible for the four years of the curriculum. In their monitoring of courses/clerkships, the Component I, II, and III committees have access to student evaluations completed as each course/clerkship ends and to the end-of-year student assessment in which students reflect on the year just completed. A recent example of curriculum continuous improvement resulting from regular, systematic review is the major changes in course offerings in response to concerns that students were not being well served in Component II. A task force involving key Component II faculty and other education leaders proposed the following: adding curriculum time (but not content) to the Cardiovascular System and the Hematology/Oncology System; reassigning the content in the Pediatrics Course and the Special Senses Course to the appropriate clerkships; reconfiguring the Behavioral Science Unit of the Patient and Society Course and the Psychiatry Course to form a new course entitled Psychological and Social Dimensions of Medical Practice; and introducing two new courses, Multisystems Processes and Component I and II Review. The EPC approved these changes for implementation in academic year 2002-2003.

MANAGEMENT AND EVALUATION OF ENTIRE CURRICULUM

The Educational Policy Committee monitors and changes the curriculum in response to data, proposals, and recommendations from a variety of sources:

- course and clerkship reports submitted by the Evaluation Committee
- recommendations from the Medical Education Management Team
- recommendations from ad hoc committees appointed by the EPC (e.g., the M4 Task Force)
- action plans developed by special groups formed to implement the Education Strategic Plan

- student-initiated proposals (e.g., the EPC responded to an M2 request for an option that allowed two months of family medicine in the Ambulatory Primary Care Clerkship in time for implementation for the requesting class – i.e., academic year 2002-2003; similarly the EPC acted in prompt fashion to a student endorsed plan from the Department of Neurology to introduce a Neurology Clerkship starting in July 2003).

The Associate Dean for Medical Education and the Educational Policy Committee have sufficient resources to support the management of the curriculum. The Office of Medical Education, directed by the Associate Dean for Medical Education, is responsible for the central management of the curriculum. The budget of the Office of Medical Education is adequate for the support of necessary personnel, purchase of equipment, provision of student materials (e.g., course syllabi, tests, lecture handouts), and other expenses. The Office of Medical Education includes two curriculum coordinators (one each for Component I and II), two technology specialists, and an office manager. In addition, each clinical department has a curriculum coordinator who manages medical student education. Another unit of the Office of Medical Education is the Clinical Assessment Center located in the Creighton University Medical Center hospital. The Clinical Assessment Center is the venue for course and clerkship clinical competence tests and for standardized patient/OSCE assessments.

The School of Medicine also funds and maintains a Testing Center where most Creighton University School of Medicine students complete USMLE Step 1 and Step 2. One technology specialist of the Office of Medical Education is the Director of the Testing Center and various staff members from the Office of Medical Education and the Office of Student Affairs serve as test proctors.

The Center for Medical Education is located in the same suite as the Office of Medical Education and collaborates extensively with the Office of Medical Education. The Center for Medical Education has a Director and Administrative Assistant and is budgeted separately from the Office of Medical Education. The Center for Medical Education supports the management of the curriculum by providing the following consultation services:

- curriculum development
- evaluation of medical student performance
- program evaluation
- medical education research
- proposals for medical education grants
- teaching of evidence based medicine
- faculty instructional development.

12. Judge the effectiveness of curriculum planning at your institution. Describe efforts to ensure that there is appropriate participation in planning and that resources needed to carry out the plans will be available. How effective are the procedures to rectify any problems identified in the curriculum, and in individual courses and clerkships? Describe and evaluate.

In recent years curriculum planning has taken a variety of forms and involved a broad representation of faculty members and medical students. During 2001, the faculty of the Creighton University School of Medicine developed the Medical Student Education Strategic Plan. At a special October 2001 faculty meeting, the Strategic Plan recommendations for improving the medical student curriculum were prioritized. Subsequently, work groups formulated action plans for the prioritized recommendations, and these action plans were subsequently approved by the Educational Policy Committee.

There are numerous examples of how the School of Medicine has responded to the need for change and improvement in the medical student program. An initiative can arise from any number of sources, but all curriculum planning involves representatives from those faculty and student constituencies affected. All changes or additions to the curriculum are discussed and approved by the EPC. Examples of curriculum planning include:

- The Medical Education Management Team proposed revisions to spring semester of Component II after reviewing data and holding discussions with faculty and students. The changes to the spring semester of Component II were approved by the EPC for implementation in Spring 2003.
- A Component IV Task Force was appointed to assure the smooth introduction of a two-week neurology clerkship starting in July 2003, to identify companion two-week electives to the neurology clerkship, to examine the elective and selective requirements in the M4 year, and to refocus the Senior Colloquium.
- School of Medicine faculty participate in a Creighton University health sciences initiative to incorporate interprofessional education into the curricula of medical and other health professions students. Medical school faculty members serve along side faculty members from dentistry, nursing, occupational therapy, pharmacy, physical therapy, and social work on the Interprofessional Education Advisory Committee and its various subcommittees in planning curriculum for future implementation.

The component committees are an additional structure through which curriculum change or planning can be managed. The Office of Medical Education provides operational support for curriculum planning, and the Center for Medical Education provides consultation on curriculum design, student assessment, and program evaluation. Curriculum changes only proceed when faculty and staff resources needed for the change are identified and assured.

Creighton University School of Medicine has a multi-level approach to identifying course, clerkship, and curriculum problems. Each course or clerkship has a faculty director and a staff coordinator. Students are encouraged to bring their concerns to faculty or staff. Students complete evaluations on all courses and clerkships. In addition, course/clerkship directors, coordinators, and faculty are vigilant in monitoring courses/clerkships and identifying problems. Course committees review successes and concerns after each iteration of a course, and clerkship faculty meet periodically to review their clerkships. Each course/clerkship director submits an Annual Report to the Evaluation Committee. Each course/clerkship director is a member of a component committee, which meets regularly to discuss component-wide matters. Faculty and staff in the Office of Medical Education and the Center for Medical Education and the component directors identify curriculum issues and bring these to the Medical Education Management Team for consideration and action. The EPC acts on curriculum changes and educational policy matters.

Much of this multi-level approach has been instituted over the last two years. Evidence for its effectiveness is the timely manner (i.e., typically within a three to six month period) in which curriculum problems have been addressed (e.g., revision of the spring semester of Component II; change in NBME Subject Tests administered in Component I and II; greater opportunity for family practice clerkship experience; introduction of a neurology clerkship in Component IV).

The Evaluation Committee assures that courses and clerkships are assessed in a thorough and detailed manner. The Evaluation Committee alternates each year between assessment of pre-clinical courses (Component I and II) and clerkships (Component III). For example, in academic year 2001-2002 thirteen preclinical courses were evaluated, and in academic year 2002-2003 four clerkships were evaluated. Course and clerkship reports from the Evaluation Committee are submitted to the Educational Policy Committee. The Educational Policy Committee decides whether to ask for a written and/or in-person response from the course/clerkship director.

- 13. For schools that operate geographically separate campuses, evaluate the effectiveness of mechanisms to assure that educational quality and student services are consistent across sites.**

Not applicable

E. Evaluation of Program Effectiveness

14. Assess the quality of your graduates. Describe the evidence indicating that institutional objectives are being achieved by your students.

Evidence indicating that Creighton University School of Medicine graduates are achieving the school's objectives for physician education and training includes:

- In the four years since the M4 OSCE was instituted, 96%-98% of the students have achieved passing scores on their first attempt. For the Class of 2003, five students failed on their first attempt at the M4 OSCE; all five subsequently passed the remedial course designed to assure clinical competence
- An increasing number of seniors completing the AAMC Medical School Graduation Questionnaire have "agreed" or "strongly agreed" with the statement "Overall I am satisfied with the quality of my medical education." This percentage has risen steadily over the last five years from 86.8% (Class of 1998), 90.8% (Class of 1999), 93.4% (Class of 2000), 96.4% (Class of 2001), to 97.0% (Class of 2002). In comparison, the "All Schools" average reported by AAMC for the Class of 2002 was 87.2%.
- USMLE Step 2 results in recent years show high rates of passing scores for Creighton School of Medicine first-time test takers. Over the past six years, the pass rate has been 97% (Class of 1997), 94% (Class of 1998), 97% (Class of 1999), 95% (Class of 2000), 93% (Class of 2001), and 99% (Class of 2002).
- A survey of Residency Program Directors is conducted for Creighton University School of Medicine graduates at the end of their first year of training. These program directors indicated that they would again select the Creighton graduate for their residency programs 89% of the time (Class of 1999), 92% of the time (Class of 2000), and 90% of the time (Class of 2001).

In addition to the core curriculum, recent innovations to the medical student education program have increased our confidence that graduates of the School of Medicine are meeting institutional objectives:

- The M1 and M2 interviewing sequence features practice interviewing standardized patients, making explicit the importance of interpersonal skills and professional attitudes from the first semester of medical school.

- Between clerkships in the M3 year, students participate in six different day-long programs as part of Dimensions in Clinical Medicine. The six topics covered are professionalism, medical ethics, cultural competence, evidence based medicine, alternative medicine, and human sexuality.
- Students who do not pass the M4 OSCE must complete the one-month Advanced Physical Diagnosis Course to remediate deficiencies in clinical skills.

15. Discuss how information about your students and graduates is used to evaluate and improve the educational program.

Medical students evaluate their courses and clerkships, and these data are distributed to the appropriate course/clerkship directors, faculty, and administrators with the goal of continuous improvement of the curriculum. Through these assessments and through meetings with students, faculty and administrators address both curriculum concerns and practical issues (e.g., physical accommodations, learning differences, travel schedules). The School of Medicine meets the needs of students to learn about different specialties by offering informal clubs in numerous medical and surgical specialties. The Office of Interprofessional Education, a unit created by the Vice President for Health Sciences, has made steady progress in offering medical students the opportunity to participate in service learning programs with students from dentistry, nursing, occupational therapy, physical therapy, and pharmacy.

Creighton University School of Medicine attracts and admits students from diverse backgrounds who have numerous and varied interests. While the education program is the center of the student's experience, the School of Medicine recognizes the importance of opportunities for students to participate in activities supplemental to the curriculum. Most medical students choose to become involved in activities to develop personal qualities (e.g., self-awareness, professionalism, compassion, respect for all populations, and service to the community) that will serve them well as physicians. Some of these activities are construction of housing for the needy, helping the medically underserved, publishing wellness newsletters, participating in intramural sports, completing local service learning projects, and assisting in international health care delivery. For example, Project CURE (Creighton University Medical Students United in Relief Efforts) provides health education/primary prevention to the underserved and minority populations of Omaha/eastern Nebraska and sends medical students to Third World countries (e.g., India and Peru) for service learning opportunities. Medical students participate with other Creighton University health professions students in the Institute for Latin American Concern (ILAC), a Christian, Ignatius-inspired, collaborative health-care/educational organization providing medical and other health care service learning experiences in the Dominican Republic.

Each year residency program directors assess Creighton University School of Medicine graduates at the end of their first year of postgraduate training on 18 items under four categories (medical knowledge, clinical skills, interpersonal skills, and professional skills). School of Medicine faculty and administrators examine these data for any concerns about the graduates. While there is an occasional graduate who is seen as problematic by a program director, Creighton University School of Medicine graduates have consistently been rated above average by their residency program directors after one year of residency training.