

[Society Information](#)[Publications](#)[Links/Listserve](#)[Gifts/Merchandise](#)[Meeting Information](#)[Legislative Affairs](#)[Preceptor Education](#)[Contracts](#)[HOME](#)

## Collaborative Curriculum Resources Project (Preclerkship)

[SEARCH](#)[Introduction](#)[Collaborative Curriculum  
Project \(Preclerkship\)](#)[Family Medicine Clerkship](#)[Post Clerkship](#)[Special Topics](#)

### Collaborative Curriculum Project Resources (Preclerkship)

The Collaborative Curriculum Project (CCP) focuses on clinical competencies necessary for beginning the traditional M3 clerkship year. The competencies were identified through the consensus of experienced educators from the primary care disciplines. The CCP has two components: an overall compendium of suggested competencies and a delineation of six priority areas that merit greater emphasis in the preclerkship years in order ultimately to improve the outcomes of medical education. These priority areas were empirically validated through an independent randomized survey of clerkship directors in six core third-year disciplines, forming a nationally based blueprint for suggested curriculum enhancement. Note that the intent of these documents is NOT to prescribe curricula for any school, but rather to provide suggestions for greater emphasis, to describe the range of clinical competencies appropriate to the preclerkship years cast in behaviorally measurable terms, and to cite current best practices with regard to teaching methods, student assessment, resources required, faculty development, and budgetary considerations.

The CCP intentionally does not address competencies for learning the traditional basic sciences, but rather includes those that address interaction with the organism above the level of cells, tissues, and organs: the whole person, and higher levels of social complexity (dyads, families and other groups, the community, and the larger environment). We invite colleagues who teach sciences basic to the practice of medicine and other educators at the preclerkship level to review these suggested competencies and consider additional ways that teaching of the competencies can be integrated within their courses. Because most medical school curricula are already packed with essential materials, these suggested competencies clearly will challenge educators to address important choices regarding what is really essential "core curricula" for the preclerkship years. Given this challenge, we have included suggestions for integration of learning

experiences for accomplishing these objectives within existing courses. Different schools may choose to address them in varying ways appropriate to their resources and settings. We hope that the document will be particularly helpful to those charged with developing a new clinical patient-centered course for preclerkship students, and for stimulating conversations among year 1-2 and year 3 faculty about appropriate competencies with which students should enter the clerkships.

Learning in medicine occurs across a continuum, from the life experience gained prior to beginning medical school, through the traditional four years of medical student education, through professional residency /fellowship training, and continually through one's professional career. Thus, when the CCP began the project early in 2002, we decided to use the ACGME's six-domain rubric for professional competencies as a structure within which to develop our work. The progressive adoption of this rubric by others, as well as feedback from colleagues at preliminary multiple national presentations on our product, has validated the usefulness of this decision. Because the ACGME domains are directed primarily at the level of residency training and actual care of patients, we were challenged to adapt the format to the preclerkship level, at which only recently have most medical students had some clinical experience. The competencies described may at first appear precocious for first- and second-year medical students; but we have attempted to titrate the level of competence described to the foundational, rather than practice level. Some competencies not traditionally included at the preclerkship level are included, with the rationale that fundamental attitudes are formed from the beginning of medical education, and that failure to include, for instance, multidisciplinary approaches in year 1 would convey a message in itself. This has been the medical educator's dream challenge: to describe systematically the sequence of competencies in knowledge, skills, and attitudes that must be achieved at the basic level, in order to reach the highest possible level of competencies in all domains, including attitudes and values, prior to entering residencies.

Readers will appreciate that multiple areas in a medical student curriculum will overlap the ACGME domain areas. We chose to describe some competencies under multiple domains, as an indication of their importance (e.g., communication skills, life cycle issues, and team-based care are found in several sites, and active/lifelong learning objectives are seen in nearly all domains).

We hope that the reader will perceive those themes that are interwoven through this document: that the patient's concerns, values, and outcomes must be the center of care; that partnering with an activated patient is essential; that self-awareness is essential to being an effective physician; that improving the process of care and health outcomes is the physician's responsibility and requires a systems-based approach; and that the first two years are only the foundation of an active learning process for which the student of medicine will be responsible throughout life.

Currently the following CCP resources are available from this site:

[Competency-based Curriculum Resource for Pre-Clerkship Education \(using ACGME structure\)](#)

[Areas for Greater M1-2 Curricular Emphasis: Recommendations of the Collaborative Curriculum Project](#)

Six priority areas referred to in this document have been validated through an independent survey. The survey findings have just been published in Academic Medicine : (Windish D, Paulman P, Goroll A and Bass E: Do clerkship directors think medical students are prepared for the clerkship years? Acad Med. 79(1): 56-61; January 2004).

[\(return to top\)](#)

<a href="#">Society Information</a>	<a href="#">Publications</a>	<a href="#">Links/Listserve</a>	<a href="#">Gifts/Merchandise</a>
<a href="#">Meeting Information</a>	<a href="#">Legislative Affairs</a>	<a href="#">Preceptor Education</a>	<a href="#">Contracts</a>

# Collaborative Curriculum Project (Preclerkship) Workgroup

- [Areas for Greater M1-2 Curricular Emphasis](#)  
[Recommendations of the Collaborative Curriculum Project \(CCP\) Group](#)
- Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure)
  - [Patient Care](#)
  - [Medical Knowledge](#)
  - [Practice-Based Learning and Improvement](#)
  - [Interpersonal and Communication Skills](#)
  - [Professionalism](#)
  - [Systems-Based Practice](#)
- [Budget](#)

## Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

# Areas for Greater M1-2 Curricular Emphasis

## Recommendations of the Collaborative Curriculum Project

HRSA Contract # 240-00-0107

FMCR Preclerkship Collaborative Project (Family Medicine, Internal Medicine, and Pediatrics) Workgroup

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Background

The increasingly complex and pressured patient care environment that characterizes modern health care delivery requires that students entering clinical clerkships be better prepared than ever before if they are going to survive and learn effectively in the clinical setting. Not only are the wards and office practices busier than ever before, but also society is more multicultural, and it is aging. Moreover, financial pressures limit faculty time, and time constraints compromise the environment for learning. Previous preclerkship reforms pertinent to preparation for the clinical years included earlier and enhanced teaching of interviewing and introduction to principles of clinical epidemiology. In view of the increasingly problematic environment for clinical learning, it appears to be time to reexamine preclerkship preparation. The reason for looking at the preclerkship educational program is that the learning of the core competencies of doctoring must begin on day one of medical school and continue throughout one's professional lifetime.

## Overview

As part of the Family Medicine Curriculum Resource Project, a faculty consortium representing internal medicine, pediatrics, and family medicine has undertaken a reconsideration of the preclerkship curriculum from the perspective of the necessary preparation for the core clinical clerkships, particularly in the primary care specialties, but not exclusively so. What follows is a set of consensus recommendations from this consortium for consideration by curriculum planners. The recommendations focus on the core competencies of doctoring. The recommendations are expressed in terms of (1) what students should be able to do by the time of initial entry into their core clinical clerkships, (2) what types of actions curriculum leaders and course directors ought to take to ensure this capability, and (3) the rationale and supporting evidence. The spirit of the recommendations is to stimulate debate and engage curriculum planners in a dialogue that can lead to meaningful educational reform pertinent to ensuring and enhancing the learning of our students.

## Interviewing and Physical Examination Skills

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to:

- Adapt basic history and physical examination skills to a variety of settings and populations (e.g., inpatient, outpatient, different ages, gender, and sociocultural background). Time limitations and patient concerns are factors that require adaptation, necessitating algorithms for choosing focused vs. comprehensive approaches to the history and physical examination.
- Incorporate patient-centered skills into data gathering, including noting patient's perspective on illness (ideas, concerns, and expectations) in the understanding, description, and communication of the history. (It is, after all, the patient's story, not a history to be "taken" from him.)

2. Schools should examine the barriers to evolving from a traditional approach to teaching the "complete history and physical" toward a more adaptable methodology recognizing time and contextual aspects. This will likely include expansion of ambulatory experiences, incorporating a diverse spectrum of patients, and limits on clinical encounters, methods of assessment, and faculty resources.

3. Course directors should regularly update and improve clinical skills teaching by reference to:

- Validating evidence in the scientific literature
- Medical students' performance on standardized, clinical, high-stakes performance assessments
- Participation in educational scholarship at the local and national level.

4. The medical school administration must develop and institute specific faculty development methods for the physicians responsible for teaching this set of attitudes, knowledge, and skills.

### Importance/Rationale

Eliciting a history, performing a physical examination, and communicating the results and assessment are fundamental to the practice of all fields of clinical medicine.

Despite the explosion of new diagnostic modalities, these basic competencies remain the fundamental tools of the clinician. Because of the large volume of clinical information that must be imparted during the clinical clerkships, little time is typically left to enhance the learning of interviewing and physical examination. The scarcity of teaching time and the challenges of the busy ward and office settings put considerable stress on the student's nascent skills. To function effectively during the clerkships, medical students entering the clerkship phase of undergraduate medical education must be better prepared in these core clinical competencies if they are to function effectively under time pressure and across the spectrum of age, gender, cultural, and socioeconomic backgrounds encountered in clinical settings.

Most students entering the clinical phase of undergraduate medical education have been prepared to perform only a comprehensive history and physical examination on a hospitalized adult patient under minimal, if any, time constraints. When students enter the clerkships they are confronted with a diversity of patients and stressful clinical situations that they are ill prepared to cope with. Often they resort to an interrogatory style of interviewing and a mechanistic performance of the physical exam, with little reference to the patient as a whole. Superficially, such behavior may appear efficient and may even be encouraged by their residents, who are eager for a few screening facts, but dysfunctional habits often develop and errors in diagnosis result from incomplete and inaccurate data collection. Many of the critical elements of history and physical examination taught in the first two years become supplanted by bad habits developed under duress. Deterioration of learned physical examination skills from the preclinical to the clinical years has been documented, (1) but curricular enhancement of clinical skills teaching can improve students' basic abilities to effectively perform the history and physical examination. (2)

Approaches used successfully prior to the clerkships include use of senior medical students, (3) nurse practitioners, (4) standardized patients, (5) trained community volunteers, (6) gynecologic teaching associates, (7) elderly disabled patients, (8) and trained mothers. (9) Successful sites of teaching interview and examination skills have included day care centers, (10) nursing homes, (11) and ambulatory clinics. Teaching in the ambulatory setting is at least as effective as inpatient-oriented courses (12) and may provide valuable additional skills. (13)

1. Dunnington G et al. Teaching and evaluation of physical examination skills on the surgery clerkship. *Teach Learn Med.* 1992; 4:110-114.
2. Pfeiffer CA et al. The impact of a curriculum renewal project on students' performances on a fourth-year clinical skills assessment. *Acad Med.* 2001; 76:173-175.
3. Haist SA et al. Are fourth-year medical student effective teachers of the physical examination to first-year medical students. *J Gen Intern Med.* 1997; 12:177-181.
4. Johnson H et al. The effectiveness of pediatric nurse associates as clinical instructors of medical students. *Am J Dis Child.* 1979; 133:178-180.
5. Davidson R et al. Using standardized patients as teachers: a concurrent controlled trial. *Acad Med.* 2001; 76:840-843.
6. Antonelli MA. Practicing physical evaluation skills on community volunteers. *Acad Med.* 1994; 69:214-215.
7. Plauche WC et al. Students' and physicians' evaluations of gynecologic teaching associate program. *J Med Educ.* 1985; 60:870-875.
8. Coletta EM et al. Using elderly disabled patients to teach history taking and physical examination. *Acad Med.* 1993; 68:901-902.
9. Still PL et al. Use of trained mothers to teach interviewing skills to first-year medical students: a follow-up study. *Pediatrics.* 1977; 60:165-169.
10. Davis BE et al. Day care centers as resources for teaching physical diagnosis. *Acad Med.* 1994; 69:416.
11. Wiener M. The nursing home as a site for teaching medical students. *Acad Med.* 1990; 65:412-414.
12. Barclay DM et al. Effect of training location on students' clinical skills. *Acad Med.* 2001; 76:384.
13. Kurth RJ et al. A model to structure student learning in ambulatory care settings. *Acad Med.* 1997; 72:601-606.

## Communication Skills

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to:
  - Elicit basic patient requests, expectations, and concerns, recognizing the effects of contexts like setting and patient diversity.
  - Present verbally and in writing the basic elements of the history and physical examination to colleagues, including the patient's perspective.
  - Transform this information into a basic problem list that can be used to develop a multifaceted plan with the patient.
2. For students to achieve these competencies prior to the core clinical clerkships, curricular leaders must:

- Recognize that communication is the basic building block to forming the doctor-patient relationship. This means developing high profile, high stakes curricula to teach these skills, based on explicit, well articulated, and validated models of effective communication.
- Examine current barriers to more explicit and effective teaching of communication skills and develop plans to address these challenges.

3. Accomplishment of these communication skills competencies will require faculty champions and a critical mass of master teachers who model, teach, and value these skills.

## Importance/Rationale

Outstanding communication is not a luxury of medical care. Specific patient outcomes, such as diagnostic accuracy, adherence to therapy, postoperative complication rates, patient satisfaction, and malpractice incidence are affected by the quality of communication. Health disparities among different races and ethnic groups have been related to the quality of physician-patient communication as well. Effective and compassionate communication has always been a core value of the medical profession, dating back to the very beginning of medicine, as well.

Communication between physicians and patients is directly influenced by sociocultural factors. If a physician fails to understand or elicit sociocultural issues, there is likely to be a greater chance for patient dissatisfaction, poorer outcomes, and racial differences in access to care. (1-5) Clinical decision-making and management are also influenced by sociocultural differences between physician and patient. (6) Failure to take these differences into account has led to instances of discriminatory treatment based on race, culture, language proficiency, or social status. (7-9)

In response to reports (Institute of Medicine's Report on Primary Care, Pew Health Professions Commission) emphasizing the importance of cultural sensitivity training in medical school, accreditation bodies for medical training (Liaison Council on Medical Education, Accreditation Council on Graduate Medical Education) now have standards that require cross-cultural curricula as part of undergraduate and graduate medical education. (10,11) Currently these standards are fairly nonspecific, but they are being expanded in detail and remain enforceable.

It is clear that teaching communication cannot be relegated to the belief that good communication is an inherent skill and quality of all doctors, by virtue of their character and will be easily attained by apprenticeship training. This approach, although practiced at many institutions, has proven to be inadequate.

The fairly recent acceptance of the principle that outstanding communication is a high stakes competency, with a direct impact on health outcomes, has led to more explicit and visible curricula and more objective and high stakes assessment strategies. However, there is a general sense that medical schools, residency training programs, certification bodies, and continuing training programs need to be even more explicit and visible in this area. International consensus statements, medical school (AAMC) and residency training requirements (ACGME), and professional standards testing requirements have demanded more refined and validated curricula and more proof through objective assessment that students and doctors are effective communicators.

All medical schools must continue to make communication one of the highest profile and highest stakes competencies, in medicine and in medical training. This means that there must be a core faculty with refined expertise in the principles of effective communication, to act as curricular leaders and faculty development sponsors. It also means that all clinical faculties, including residents, must be trained to teach explicit communication skills.

All medical school curricula should include explicit references to well-established models of effective communication, such as the Kalamazoo Consensus Essential Elements, the Patient Centered Clinical Model, the Three Function Model (Brown Interview Checklist), the Calgary-Cambridge Observation Guide, the SEGUE model of Effective Communication, and the Bayer Institute E4 Model, to name a few. Students should reach competency in facilitating a medical interview, following the principles of one of these models. Since the medical history is the most performed procedure in the career of any physician,

students and curricula must demonstrate an explicit and reproducible approach to performing this procedure.

All medical schools should have explicit assessment of student competencies in these areas. Licensing examinations will all include standardized assessment of communication skills within the next few years.

1. Flores G et al. The teaching of cultural issues in the US and Canadian medical schools. *Acad Med.* 2000; 75: 451-455.
2. Betancourt JR et al. Hypertension in multicultural and minority populations: linking communication to compliance. *Current Hypertension Reports* . 1999; 1:482-488.
3. Stewart M, Brown JB, Boon H, et al. Evidence on patient-doctor communication. *Cancer Prev Control.* 1999; 3:25-30.
4. Langer N. Culturally competent professionals in therapeutic alliances enhance patient compliance. *J Health Care Poor Underserved* . 1999 Feb; 10(1): 19-26.
5. Morales LS, Cunningham WE, Brown JA, et al. Are Latinos less satisfied with health communication by health care providers? *J Gen Intern Med.* 1999; 14:409-417.
6. Eisenberg JM. Sociologic influences on medical decision making by clinicians. *Ann Intern Med* . 1979; 90:957-964.
7. Schulman KA, Berlin JA, Harless W, et al. 1999. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med.* 1999; 340:618-26.
8. Van Ryn M, Burke J. 2000. The effect of patient race and socio-economic status on physicians' perceptions of patients. *Soc Science & Med.* 2000; 50:813-828.
9. Donini-Lenhoff FG, Hedrick HL. Increasing awareness and implementation of cultural competence principles in health professions education. *J Allied Health.* 2000; 29:241-245.
10. Pew Health Professions Commission. 1995. Critical challenges: Revitalizing the health professions for the twenty-first century. San Francisco. UCSF Center for the Health Professions.
11. Liaison Committee on Medical Education. Accreditation Standards. <http://www.lcme.org/standard.htm#culturaldiversity>.

## PROFESSIONALISM

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to demonstrate basic behaviors of professionalism and humanism and be observed at least once during peer and patient encounters for confirmation of these behaviors and specific feedback.
2. Curricular leaders must communicate that professionalism is a central tenet of medical care. High profile, high stakes curricula must be developed, including validated methods of instruction and assessment, and integrated into the preclerkship years.
3. Barriers to the evolution in teaching professionalism from informal (i.e., "hidden" or tacit curricula) to explicit, visible curricular and assessment strategies must be examined, and strategies to address these challenges must be developed.
4. Faculty development regarding professionalism is critical for all faculty, with identification of "master teachers."

### Importance/Rationale

Professionalism is a central tenet of medical care, and numerous consensus statements, curricular guidelines, and organizational statements reinforce its primacy. It is a philosophical set of core values and principles (ABIM Project Professionalism, ABP Professionalism Statement, Physician Charter) and it is a set of actions and behaviors that is linked to concrete patient outcomes. It is also a set of behaviors that is linked to concrete societal outcomes, such as an equitable distribution of services. Therefore, medical schools have an imperative to create explicit, high stakes, and highly visible curricula and assessment strategies.

Many medical schools include professionalism in their official curricula. However, many of the approaches are challenged as nebulous curricula, which review aphorisms (Ginsburg et al.) or are difficult to apply in specific contexts. Students are allowed to marginalize these principles as being abstract and irrelevant to patient care. There is a perception that this is reinforced during the major clinical years of medical school, during which resident role models demonstrate survival based medical practice, rather than optimal medical care. Furthermore, explicit and well-validated evaluation of professionalism is rare. There are a number of validated methods of instruction, which are context- and behavior-based, and a number of evaluation methods, which have been well validated (Arnold).

All schools must judge their curricula and evaluation methods by how context- and behavior-based they are, by how well integrated they are into the general curriculum and evaluation methods, and by how high stakes they are.

Humanism, with its quality of compassion and connection to patients and families, must be singled out for its primacy in professional medical behavior. Humanism's emphasis on explicitly identifying and conveying respect and compassion for the patient's perspective is the core competency of professional behavior (Miller and Schmidt). Curricula and evaluation methods must address this core competency in an integrated manner as well.

## LIFECYCLE AND SELF-AWARENESS

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to:

- Recognize that every interaction with patients and their families is only a snapshot in an ongoing cycle of growth and development.
- Recognize interactions between environmental stressors and well-being in their personal lives and those of their patients.
- Identify a menu of behavioral strategies for enhancing well-being and preventing adverse effects of stress.
- Demonstrate awareness of patients' lifecycle issues through oral and written communication.

2. Curricular leaders should:

- Provide students with opportunities to examine issues from their own family of origin, to consider the common clinical problems at each developmental stage and stresses associated with transition between stages, and to develop insight into the impact of developmental stage on the patient-physician relationship.
- Offer experiences to foster students' increasing self-awareness and commitment to the values of the profession through personal and professional development, including reflective experiences, opportunity to process experiences in small groups, and values clarification exercises; and to reflect on changes in self-understanding over time.

4. The medical school administration and curriculum leaders should:

- Provide early clinical experiences that match beginning students with mentors who provide continuing care to patients, who can demonstrate commitment to personal and professional development and the effect of patient/physician developmental issues in continuous healing relationships with patients over time.
- Identify barriers to providing these opportunities and develop strategies to address them.

### Importance/Rationale

The term "lifecycle" describes a dynamic progression of human growth and development in physical, psychoemotional, and spiritual domains. (1,2) Students currently learn about the biological stages of fetuses, newborns, children, adolescents, and adults, and the psychoemotional development of the infant, child, and adolescent. Some curricula cover the developmental tasks of the lifecycle stages of adults, but few address the stages through which families move, from the couple, to children, to empty

nest, to the end of life, and the many variations thereof. It is uncommon for curricula to include how the interaction of individual and family lifecycle stages affects risk factors for illness, prevention needs, or the medical conditions with which adult patients present for care. (3) Students need to learn about health effects of these expected and unexpected lifecycle transitions, and how to consciously appreciate the effect of their personal adjustment in their own individual or family lifecycle stage on their interactions with patients in the same or different stages. (4,5)

Most medical students meet patients who must deal with anxiety-provoking issues such as loss of health or bodily integrity, diagnosis of a terminal illness, and death, while the students themselves may be at a relatively early stage in their own lifecycle development. They may also be entering early stages in the establishment of their nuclear family or other intimate relationship, the developmental tasks of which may be incompatible with the demands of educational experiences like clerkships. Students are encouraged to be compassionate and empathetic, but their schedules and educational demands may be more conducive to cynicism than compassion. (6,7) Students should be encouraged to reflect on how their medical education shapes their personal values and attitudes, including the possibility of conscious choices; and be mindful of how these experiences and choices influence their effectiveness as physician healers. (8,9,10,11,12)

Clinicians who are unaware of how dynamic issues within their own families affect interactions with patients will be less effective and may encounter repeated interactive patterns that are frustrating both for the clinician and the patient. (4,13) Physicians must learn to deal with stressful issues at each stage of the life cycle for maximal health and well-being. (12,14) Each physician and physician-in-training has the responsibility to intentionally focus on developing self-awareness throughout his or her professional lives through seeking feedback from colleagues, mentors, and patients and personal reflection.

A systemic understanding of interactional patterns allows the clinician to both conceptualize and intervene with patients' presenting problems within a broader context. Some problems such as non-adherence due to family interference in therapy and resistant hypertension due to transitional stress in the family life cycle (1) can only be satisfactorily addressed with a contextual understanding.

Students require the attitudes and skills to consider and elicit relevant history, negotiate treatment goals, and develop biological, psychoemotional, and sociospiritual interventions, using a patient- (versus disease) focused approach and maintaining sensitivity to the influence of patient gender, class, ethnicity, and culture. Medical education tends to extinguish patient-centeredness in medical students. (6,15) Thus role-modeling and explicit experiences are required to demonstrate the critical importance of appreciating each patient's unique experience, and to foster understanding of the relationship between personal development and patient care. Approaches that have been successfully employed to foster learners' self-awareness, personal growth, and well-being, emphasizing qualitative, process-oriented, and individually tailored methods (5) include mentorships, (16) small-group discussions, support groups, Balint groups, reflective experiences, and values clarification exercises.

1. Korin EC, McGoldrick M, Watson MF. "The Individual and Family Life Cycle." Mengel, Holleman and Fields, 2 nd ed., 7.
2. Novak D. Calibrating the physician. JAMA.
3. Carter B, McGoldrick M. The Expanded Family Life Cycle: Individual, Family, and Social Perspectives, ed. 3. Boston: Allyn & Bacon, 1999.
4. Rolland JS: Families, Illness and Disability: An Integrative Treatment Model. New York: Basic Books, Inc. 1994.
5. Pfeiffer RJ. Early-adult development in the medical student. May Clin Proc. 1983 58(2): 127-34.
6. Niemi PM. Medical students' professional identify: self-reflection during the preclinical years. Med Educ. 1997 33(6): 408-15.
7. Coulehan J, Williams PC. Vanquishing virtue: the impact of medical education. Acad Med. 2001; 76:598-6058.
8. Kaufman DM, Laidlaw TA, Langille D, Sargeant J, MacLeod H. Differences in medical students' attitudes and self-efficacy regarding patient-doctor communication. Acad Med. 2001 76(2): 188.
9. Novack DM, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician: Personal awareness and effective patient care. Working Group on Promoting Physician Personal Awareness, American Academy on Physician and Patient. JAMA. 1997 26:278(20).
10. Westberg J and Jason H. Fostering Reflection and Providing Feedback: Helping Others Learn From Experience. Springer, 2001.

11. Epstein RM. Mindful practice. *JAMA*. 1999; 282:833-9.
12. Cruess RL, Cruess SR. Teaching medicine as a profession in the service of healing. *Acad Med*. 1997; 72:941.
13. Novack D H, Epstein RM, Paulsen RH. Toward creating physician-healers: fostering medical students' self-awareness, personal growth, and well-being. *Acad Med*. 1999 74(5) 516-20.
14. Balint M. The patient, his story and the illness.
15. Physician health and well-being. *CMAJ* 1998 158(9): 1191-200.
16. Haidet P, Dains JE, Paterniti DA, Hechtel L, Chang T, Tseng E, Rogers JC. Medical students' attitudes toward the doctor-patient relationship. *Med Educ*. 2002 36(6): 568-74.
17. Ogrinc G, Mutha S, Irby DM. Evidence for longitudinal ambulatory care rotations: a review of the literature. *Acad Med*. 2002 77(7): 688-93.

## PROBABILISTIC THINKING

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to:
  - Discuss the concept of decision-making for patients and populations using a probabilistic approach.
  - Apply an understanding of disease risk, prevalence, and likelihood in the development of differential diagnosis, test ordering, and interpretation.
  - Appreciate the skills of interpreting test results and medical information in a probabilistic manner in negotiating diagnosis and treatment plans with patients, including assessing patients' understanding.
2. Curricula must be developed or reinforced that impart basic, current concepts of evidence-based medicine and clinical epidemiology.

### Importance/Rationale

Physicians are responsible for the diagnostic evaluation of a broad range of patients, including acutely and chronically ill patients. To direct the diagnostic evaluation of patients in a safe and cost-effective manner, physicians must have a firm grasp of the principles of modern clinical epidemiology and probabilistic thinking. They must be able to elicit appropriate clinical information, keeping in mind the value of a careful history and physical examination. They must be able to order tests wisely. They also must be able to interpret the results of tests properly to determine how the results should influence patient management. This requires mastery of probabilistic thinking. Indeed, many treatment decisions will tip one way or another depending on how patients view the probability of a desired outcome compared to the costs or the probability of potential complications or adverse effects. Physicians clearly need well-developed skills in these fundamental aspects of therapeutic decision-making so that they can apply evidence from studies to individual patients.

Students must be able to access and use the growing body of evidence that defines the accuracy and limitations of the history, physical examination, and tests in quantitative terms. They also must apply the evidence in a manner that reflects understanding of the probability of disease in the communities or populations in which they practice. This is particularly challenging in a time of rapidly proliferating tests. Students therefore need well-developed skills in these fundamental aspects of diagnostic decision-making that influence test ordering and test interpretation.

Students also must be facile in applying the principles of modern clinical epidemiology and probabilistic thinking to the therapeutic management of a wide variety of acute and chronic medical problems. They must identify and apply up-to-date evidence that quantifies the benefits, risks and costs of different management options. They also must be able to translate the evidence into terms that patients can understand.

1. Weiss ST, Samet JM. An assessment of physician knowledge of epidemiology and biostatistics. *J Med Educ*. 1980; 55: 692-7.

2. Parkes J, Hyde C, Deeks J, Milne R. Teaching critical appraisal skills in health care settings. *Cochrane Database Syst Rev.* 2001; (3): CD001270.
3. Green ML. Graduate medical education training in clinical epidemiology, critical appraisal, and evidence-based medicine: a critical review of curricula. *Acad Med.* 1999; 74: 686-94.
4. Norman GR, Shannon SI. Effectiveness of instruction in critical appraisal (evidence-based medicine) skills: a critical appraisal. *CMAJ* 1998; 158: 177-81.
5. Bradley P, Humphris G. Assessing the ability of medical students to apply evidence in practice: the potential of the OSCE. *Med Educ.* 1999; 33: 815-7.
6. Astin J, Jenkins T, Moore L. Medical students' perspective on the teaching of medical statistics in the undergraduate medical curriculum. *Stat Med.* 2002; 21: 1003-6.

## SYSTEMS OF CARE

### Recommendations

1. Before beginning the core clinical clerkships, students should be able to:
  - Discuss the basic elements of local and federal health care systems that provide care to patients they are likely to see, including how costs are borne by patients and the system.
  - Discuss impact of systems on delivery and outcomes of care.
  - Describe indicators of health care quality, including patient-centered outcomes (mortality, morbidity, quality of life, satisfaction, and cost). Recognize physicians' responsibility to monitor and provide effective interventions to improve health care outcomes.
  - Discuss the barriers to access to health care for patients.
2. Course directors should develop experiential approaches to teaching about systems of care, especially regarding the effect of various forms of health insurance on access to care and utilization of services (including pharmaceuticals).
3. Curriculum leaders should insure that the basic principles of a team approach to health care within the health care system be part of the preclerkship curriculum, with attention to the application of these principles to improving the safety and care of populations and individuals.

### Importance/Rationale

Over the last 10-20 years, the practice of medicine has become increasingly more complex and, therefore, the preparation for that practice has become increasingly complex. (1,2) Some of these increasing complexities include the evolution of managed health care, the increasing bureaucracy of medical practice, constant changes in Medicaid and Medicare, increasing changes in federal and state health care policies and regulations, competition from other health care providers, rise of complementary medicine, rising cost of medications and biomedical technologies, and increasing accountability of physicians to third parties. (3,4) Most physicians and students are not trained to think about practices as complex systems, and approximately half of all medical schools have no formal managed care curricula. (4,5) Clinical algorithms, guidelines for preventive screening, and ambulatory care standards come from multiple, varied sources and contain conflicting recommendations that, many times, are not evidence-based but based on opinion or political agenda. Formulas for cost-containment, utilization, and algorithms ignore the diversity in practices and in individuals. (1,2)

The practice of medicine is more than a commodity delivery business. It is a complex, adaptive system. (2) This can be extremely confusing for medical students, especially if they do not understand or have never received any training in the history and evolution of these systems. Students may not understand the variation between practices and between practitioners. They may not understand the different insurance plans and health care systems. They may not understand complexity theory that guides all these systems. Variations include how practices are organized, relations with staff and other providers, involvement with third party payers, physician profiling and utilization review, different uses of technology, plus individual work style and

personality. (6) Students need a firm foundation on these macro level issues including health economics, delivery systems, community health, and medical sociology so that they can avoid being overwhelmed when placed in physicians' offices or on rotations in the hospital. They will be the future medical experts helping to shape future health care systems and without firm background and understanding of these systems could be overwhelmed by external factors and interests.

Understanding the micro level issues of working as a member of a team and professionalism has an obvious bearing on the macro issues. A gulf now exists between the medical profession and society, with professionalism being the bridge for this gulf. All countries currently have threats to professionalism in medicine. Physicians must participate in shaping the future and must understand the principles of professionalism, since the social contract between society and medicine hinges on professionalism. (7,8)

1. Miller WL, Crabtree BR, McDaniel R, Stange KC. Understanding change in primary care practice using complexity theory. *J Fam Pract.* 1998; 46(5): 369-376.
2. Miller WL, McDaniel RR, Crabtree BF, Stange KC. Practice jazz: understanding variation in family practices using complexity science. *J Fam Pract.* 2001; 50(10): 872-878.
3. Mechanic D. Managed care and the imperative for a new professional ethic. *Health Affairs.* 2000; 19:100-111.
4. DiBartola L, Moore B, Pawlson G. The managed care education clearinghouse. *Acad Med.* 2000; 75:302.
5. LaRosa J, Whelton P, Litwin M. Academic medicine and managed care: seeking common ground. *Acad Med.* 1999; 74:488-492.
6. Pasko T, Seidman B, Birkhead S. *Physician Characteristics and Distribution in the United States, 2001-2002 Ed.*
7. Daniet B, Cyran E, Anderson RJ. Common issues in medical professionalism: room to grow. *Am J Med* 2000; 108(2): 136-142.
8. Hensel WA, Dickey NW. Teaching professionalism: passing the torch. *Acad Med.* 1998; 73(8): 865-870.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Patient Care

**Lead Authors: Scott Fields, MD and Allan Goroll, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Rationale

When entering core clerkships, students must be prepared to participate in the comprehensive care of patients' problems in the context of an ongoing continuity relationship. Students must first identify the health needs of patients, across the spectrum of age, gender, and socioeconomic background. This will require patient-centered interviewing techniques for determining patients' needs, including their preferences for diagnostic and therapeutic decisions, and end-of-life decisions in particular. Providing or coordinating care will require a working knowledge of the diverse elements of the health care delivery system, including community resources for care and strategies for coordination. Students also will need to be able to apply basic principles of therapeutic decision making, such as outlining treatment options, listing distinguishing features of the options, describing potential outcomes, and predicting likelihood of those outcomes. Students should understand the evidence that validates key elements of the history and physical and demonstrate a commitment to improving history taking and physical examination skills by regularly seeking feedback on performance. To help patients make therapeutic decisions, students will need to understand the role of pathophysiology and

evidence-based medicine in the selection of treatment modalities. For the continuity relationship, students will need to be able to describe the tension between physicians' commitment to individual patients and their responsibility to society to control health care costs.

## Competency

Students must work to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

## Goals

A. Communicate effectively with patients and their families.

Learn the essentials of establishing the patient-physician relationship.

- Describe the importance of the patient-physician relationship as the cornerstone of medical care.
- Describe strategies for establishing a positive doctor-patient relationship across the life span.
- Describe personal and general barriers to taking a nonjudgmental stance on behavioral issues.
- Describe the importance of, and demonstrate a patient-centered interview.
- Describe elements of the patient-physician relationship that encourage patient trust.
- Demonstrate the characteristics of positive regard for patients (respect, genuineness, and empathy).
- Describe and demonstrate how the "art" of medicine establishes the doctor-patient relationship, maximizes quantity/quality of information obtained from the patient, and fosters patient commitment to treatment.
- Demonstrate each of the three basic functions of the interview: a) gathering data, b) building rapport and responding to patient's emotions, c) education, negotiation, and motivation.
- Demonstrate cultural assessment techniques of developing rapport and building a mutual agenda with patients through active listening skills.
- Describe how attending to and utilizing nonverbal cues can improve doctor-patient communication.
- Describe the importance of sensitively interviewing patients in violent, abusive, or neglectful situations.
- Demonstrate appropriate interviewing techniques for detecting and confronting potential violence/abuse across the spectrum of age, gender, sexual orientation, and family beliefs.
- Describe how a physician's own feelings and attitudes (e.g. discomfort, frustration, fear of offending, powerlessness, fatalism, or lack of time) can impede effectiveness in identifying or assisting patients who are vulnerable to violence/abuse and neglect, and discuss how clinicians might deal with these factors.

Learn how to obtain essential information about patients accurately and effectively.

- Demonstrate interviewing techniques to facilitate rapport and understanding the patient's story.
- Demonstrate the components of the medical interview with patients and written history across the life span, including the chief complaint or presenting problem(s), history of present illness; past medical history; family, social, sexual, and spiritual histories; and review of systems.
- Describe the importance of and conduct a sexual history in a nonjudgmental manner, with empathy, and without shame or embarrassment.
- Recognize physician barriers to obtaining a sexual history and the consequences that might result from such an omission.
- Describe and elicit components of a spiritual history and relate to life cycle issues.
- Demonstrate the mental status examination and describe its role in interpreting the patient's history.
- Describe how to assess landmarks of physical and psychosocial growth and development across the life span.
- Describe challenges associated with techniques of obtaining a history from special populations, such as patients with a poor understanding of the English language.
- Demonstrate a systematic method for focusing the history and physical examination.
- Demonstrate the correct use of medical terminology for the history and physical examination.
- Describe common challenges presented by physician/patient interactions during the medical interview.
- Demonstrate competence in performing focused and comprehensive physical examination, including the following systems

or areas: a) HEENT b) neck c) breast d) cardiovascular; e) pulmonary; f) abdominal; g) pelvic; h) scrotal; i) rectal; j) musculoskeletal; k) neurological; and l) skin.

- Describe normal versus abnormal historical and examination findings, and correlate with pathophysiology, in each of the following systems or areas: a) HEENT b) neck c) breast d) cardiovascular; e) pulmonary; f) abdominal; g) pelvic; h) scrotal; i) rectal; j) musculoskeletal; k) neurological; and l) skin.
- Describe how to maintain patient comfort, modesty, and privacy for pelvic, breast, scrotal, and rectal exams, outlining methods of doctor-patient interactions and appropriate means of maintaining patient privacy.
- Describe and demonstrate a structured approach to performing a comprehensive physical examination.
- Describe the rationale for the "screening examination" and list reasons why specific maneuvers are included.
- Describe circumstances in which a comprehensive examination is indicated, and circumstances in which a focused examination is indicated.
- Describe how problem-solving strategies in the history may parallel the process used to focus the physical examination.
- Describe methods to protect patient confidentiality, including legal requirements.

Learn the essential elements of counseling and educating patients and their families.

- Describe the importance of an accurate and comprehensive history, including definition of risk factors and coping skills, patient's perspective and stage of readiness for change, and available resources.
- Describe principles of injury prevention (e.g., passive versus active prevention) and specific examples such as child restraints, anticipatory guidance, and legislation.
- Describe the epidemiology of abuse, violence, and neglect across the lifespan.
- Describe the health professionals' role in detection, interviewing, assessment, and response in regard to domestic violence, abuse, and neglect.
- Describe the importance of eliciting a substance abuse history.
- Demonstrate obtaining a substance-abuse history.
- Describe concepts and perspectives underlying clinical understanding of substance use disorders.
- Identify counseling areas pertinent to selected patients, including:
  - Genetics
  - Oral health (including factors that affect oral health, resulting in ultimate tooth loss, periodontal disease, and oropharyngeal malignancies, and recognition of current barriers that negatively affect oral health care and proposed solutions to circumvent these.)
  - Geriatrics and end of life care
  - Mental health
  - Substance abuse
  - Sexual practices
  - Injury prevention
  - Diet and exercise
  - Other primary preventive measures, including immunizations and chemoprophylaxis
- Describe the genetic contribution to common diseases.
- Describe the components of genetic counseling.
- Demonstrate the ability to effectively elicit and record family information.
- Describe barriers to identification and management of the medical and behavior issues affecting the entire family.
- Describe how community and cultural norms relate to health and beliefs of individual patients.
- Describe how a patient's presentation may be influenced by biological, sociological, and psychological factors.
- Discuss the impact of the physician's family background on the concepts of a) the normal family, b) family dysfunction, c) the physician's communication with families.

Learn the essentials of communicating and working with members of the health care team, including those from other disciplines, to provide patient-focused care.

- Describe advantages of an interdisciplinary approach to care, including realizing the benefits of the biopsychosocial model in comprehensive care.
- Describe the contributions of various health professionals to complex care situations.
- Describe basic communication skills that promote effective teamwork and conflict resolution.

- Describe ways in which physicians might effectively utilize the interdisciplinary approach in various practice settings, such as HMOs versus private practice or specialty versus primary care.
- Describe the roles of various professionals involved in the comprehensive treatment of patients with severe mental illness and other specific disease states.
- Describe ways physicians and health care providers of integrative approaches and therapies (CAM) could best work together to discover an integrated approach to patient care.

B. Make informed decisions about preventive, diagnostic, and treatment interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.

Learn the essentials of formulating a problem list and differential diagnosis.

- Develop a thorough but concise problem list based on the history and physical.
- Demonstrate a systematic approach to differential diagnosis.
- Generate and pursue multiple hypotheses in the interview and physical examination, linking the development of clinical reasoning with pathophysiology.
- Describe what is meant by an undifferentiated patient complaint.
- Describe why the process of "diagnosis" may, in fact, not address patient's primary concerns.
- Describe how attention to the process of the psychiatric interview can improve the accuracy of differential diagnosis and case formulation.
- Describe biopsychosocial approaches to diagnosis and treatment of patients and recognize limitations of a strictly biomedical approach to patients.
- Understand how one's own preconceptions can influence the course of an interview and one's diagnostic reasoning.

Learn the essentials of formulating and implementing a management plan.

- Describe patient, physician, and systemic barriers to successfully negotiating treatment plans and patient adherence, including the physician contribution, and what strategies may be used to overcome these barriers.
- Define the following terms: compliance, adherence, fidelity, maintenance, self-efficacy, empowerment, therapeutic alliance, patient cooperation, partnership, and patient nondisclosure.
- Describe patient nonadherence to health care regimens in different cultural groups, different patient populations, acute and chronic illnesses, and with different treatment regimens.
- Describe methods of measuring patient nonadherence: clinician perception, patient self-report, medication measurements, clinical outcomes, direct chemical analysis, medication monitors.
- Describe how the following variables influence patient adherence to treatment plans: demographic characteristics, patient/physician congruence in problem definition, patient concerns, cost, complexity of treatment, duration of treatment, and side effects.
- Describe the influence of psychosocial variables (e.g., patient-provider interaction, physician frustration, patient interest in alternative health care, effects of information and education, behavioral/environmental factors, and health belief models) on patient adherence to treatment plans.
- Demonstrate methods of achieving consensus: confirming common understanding by summarizing and checking, educating patients, tailoring regimens, cueing, patient self-monitoring, contingency contracting, patient empowerment, and patient self-efficacy.
- Describe how the symptoms of chronic and severe mental illness can impair activities of daily living such as obtaining adequate food and housing, money management, employment, family and social functioning, and adherence to treatment plan.
- Describe how the symptoms of even mild mental illness can impair activities such as self-care, adherence to treatment plan, and quality of life.
- Describe specific treatment interventions that can enhance psychiatric rehabilitation and improve community adjustment for patients with schizophrenia and bipolar disorder.
- Describe the range of community and clinical resources available for treatment of substance abuse for individuals with and without health insurance coverage.
- Identify resources available to help physicians and families regarding child abuse including those in rural and/or underserved areas.

Learn how to access and use best evidence to inform and support decision making and patient education.

- Demonstrate the use of the medical literature to:
  - Answer clinically relevant questions.
  - Formulate a differential diagnosis regarding a chief complaint.
  - Develop a diagnostic strategy.
  - Determine potential treatment strategies.
- Demonstrate principles of clinical decision-making by showing how to:
  - Articulate the logic behind the process of development and prioritization within the differential diagnosis.
  - Communicate and defend a diagnostic approach based on likelihood of diagnosis, sensitivity and specificity of medical testing, relative costs of medical tests, and patient preferences/values.
- Describe and demonstrate how the "science" of medicine leads to applying reliable diagnostic standards and predicts the necessary care to be provided.
- Describe how there are many ways to work-up medical complaints (testing) and that choice of medical test is critical both in regards to patient care and to medical economics.
- Describe how the use of drugs should be based on logical assessment of potential etiologies for the illness and cost of the medication.

Learn the details of preventive measures, including criteria for screening, best approaches, and cost-effectiveness.

- Compare and contrast the concepts of health promotion in individuals and populations.
- Describe the physician's role in health promotion and preventive medicine activities.
- Describe the principles and components of prevention, screening, and health maintenance in health care across the lifespan and in different populations.
- Describe the importance of the periodic health examination and utilization of the preventive services.
- Identify screening strategies recommended for selected patients, using history, physical exam, and lab/diagnostic procedures.
- Describe methods that can assist physicians in evaluating the effectiveness of clinical preventive services.
- Describe the role of behavioral change as a cornerstone of health promotion, including primary prevention.
- List the risk factors for the leading causes of death and how patients can alter modifiable risk factors.
- Describe the principles of promoting behavior change for health related behaviors, such as diet, exercise, smoking, sexual activity, stress management, and violent behaviors.
- Describe the principles and components of injury prevention (e.g., passive versus active prevention) and specific examples such as child restraints, anticipatory guidance, legislation, and engineering.
- Describe the epidemiology of abuse, violence, and neglect across the lifespan, genders, and populations.
- Describe the health professional's role in detection, interviewing, assessment, and response in regard to violence, abuse and neglect toward intimate partners, elders, children, the disabled, or other vulnerable individuals.
- Describe the following:
  - Principles of active and passive immunity
  - Vaccine-preventable diseases
  - Principles of disease prevention through universal and targeted vaccination
  - Diseases with emerging antimicrobial resistance
  - Guidelines for the judicious use of antibiotics in an era of increasing antibiotic resistance

Learn the roles of some major diagnostic and procedures and interventions, including rationale, indications, complications, and necessary basic skills of performance and interpretation.

- Demonstrate a basic strategy to systematically evaluate electrocardiogram tracings.
- Define the 12 leads on a standard EKG.
- Demonstrate how to calculate heart rate, determine an electrocardiograph axis, measure the PR, QRS, and QT intervals, and a strategy to identify heart rhythm on an EKG.
- Describe the EKG findings of myocardial ischemia.
- Describe the anatomy of the thorax seen on chest X-ray.
- Demonstrate a standardized approach to chest X-ray reading.

- Identify common pathological findings seen on chest X-ray and describe them accurately.
- Describe the pulmonary function test findings compatible with obstructive and restrictive mechanics of breathing.

## Educational Methods

The area of Patient Care requires an experiential environment for the knowledge, skills, and attitudes to be learned and practiced. For this reason, a clinical preceptorship should serve as the cornerstone to best facilitate student learning. Patient Care may be reinforced by a mentorship relationship with a practicing physician. Knowledge areas may be transmitted in structured environments such as lectures, videos, readings and computer-assisted self-study modules. Small group experiences will enable participants to articulate perspectives, not only as a health care provider, but also to discuss the effects on patients. Understanding the meaning of this content requires an environment providing the opportunity for application to clinical situations and reflection on personal values. This experience must be extensive enough to allow students to see a breadth of behaviors, to create a relationship with enough depth that allows for discussion of these personal issues, and to anticipate personal contexts in which the student's patient care knowledge, skills, and attitudes would be most challenged.

## Resources

### Books

- Bickley LS, Hoekelman RA. Bates' Guide to Physical Examination & History Taking. Lippincott Williams & Wilkins Publishers, 8th ed.(August 15, 2002)

### Web Sites

- Physical Examination and History Taking
  - <http://medicine.ucsd.edu/clinicalmed>
  - <http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/pd/contents.htm>
  - <http://www.vnh.org/Shipwreck/Shipwreck.html>
- Evidence-Based Medicine
  - <http://www.cochrane.org/reviews/clibintro.htm>
  - <http://www.york.ac.uk/inst/crd/crddatabases.htm>
  - <http://www.nelh.nhs.uk/eboc.asp>
- Medical Informatics
  - [http://www.mieur.nl/mihandbook/r\\_3\\_2/handbook/homepage\\_self.htm](http://www.mieur.nl/mihandbook/r_3_2/handbook/homepage_self.htm)
- Prevention
  - <http://www.phppo.cdc.gov/cdcRecommends/AdvSearchV.asp>
  - <http://www.vnh.org/PreventionPractice/TableOfContents.html>
- CAM
  - <http://nccam.nih.gov/health>
- EKGs
  - <http://www.ecglibrary.com/ecghome.html>
- Chest radiology
  - [http://rad.usuhs.mil/rad/chest\\_review/index.html](http://rad.usuhs.mil/rad/chest_review/index.html)
  - <http://www.vh.org/adult/provider/radiology/icmrad/chest/chest.html>
  - [http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/cxr/atlas/cxratlas\\_f.htm](http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/cxr/atlas/cxratlas_f.htm)

## Assessment Strategies

Evaluation of Patient Care requires utilization of multiple techniques to address knowledge, skills, and attitudes of future physicians. Direct observation is the key to evaluation of many of the skills outlined above. This is an area where faculty have decreased their

involvement as pressures in other aspects of their roles have increased. Faculty must return to this foundational method of monitoring the growth and development of patient care skills.

Videotaping of patient encounters and standardized patient evaluation are methods that enable assessment of patient care skills.

Structures within the curriculum must be developed that encourage systematic feedback to students about patient care knowledge, skills, and attitudes. All sources of input are viable, but the key is formative and summative evaluations by clinical preceptors.

## **Faculty Development**

Faculty development should be focused in the following areas: role of a mentor and setting appropriate expectations regarding student involvement in patient care including documentation in the medical record, strategies for evaluation, and methods for providing formative feedback to learners regarding professional behavior.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Medical Knowledge

**Lead Authors: Larrie Greenberg, MD and Rick E. Ricer, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Rationale

When entering core clerkships, students must be prepared to apply knowledge of pathology and pathophysiology to patients' clinical problems. Typically, basic science faculty members teach these concepts in disciplinary courses or in courses organized by organ systems. However, many concepts do not fit well into an organ system or discipline-specific teaching, but instead require a knowledge base that crosses several disciplines, areas, and systems. Students should understand the effect of diseases on the entire person, family units, communities, and the environment, as well as how the entire person, the family unit, communities, and environment affect the identified patient. Students ought to be able to differentiate among disease, illness, and health. They should understand processes that affect patients that are not usually considered "disease" (e.g., aging, pregnancy, violence, sexual dysfunction, and chronic pain.) Students must understand how lifestyle issues affect an individual's and a community's health, and may be the most important factor affecting health and disease other than genetics (e.g., substance abuse, obesity, nutrition, or exercise.) Students should understand how gender, race, culture, social economic status, and health beliefs affect the presentation and understanding of disease processes and, therefore, adherence issues. Many topics that are germane to this section are covered well in other competency sections and therefore are not repeated in this section.

# Competency

Students must demonstrate understanding of established and evolving biomedical, clinical, and cognate (epidemiological and social-behavioral) sciences, and the application of this knowledge to patient care.

## Goals

Before beginning clinical clerkships, students will be able to demonstrate:

An investigatory and analytical thinking approach to clinical situations.

- Recognize that the chief complaint is the starting point for the focused history and physical examination.
- Contrast the interview process of focusing on the chief complaint versus eliciting all of the patient's reasons for the visit at the beginning of the interview.
- Describe possible effects on quality of information elicited by using a doctor-centered versus a patient-centered approach to the interview.
- Seek and locate many resources useful for obtaining information, such as patients, their families and significant others, old records, attending physicians, the medical literature, electronic sources, group discussions, and conferences.
- Proceed in an iterative fashion in the evaluation and management of the patient by performing the history and physical examination, prioritizing the differential diagnosis and workup, determining a diagnostic and management plan based on all of the findings, and explaining the plan in terms the patient can understand.
- Describe the biopsychosocial approach to diagnosis and treatment of patients.

An understanding of the biomedical basis of disease and disease processes.

- Describe the normal structure and function of the body and its organ systems.
- Describe the molecular, biochemical, and cellular mechanisms for homeostasis.
- List the various causes (genetics, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, traumatic, and functional) of diseases and the ways in which they operate on the body (pathogenesis).
- Describe the pathology and pathophysiology of the body and its major organ systems that are seen in various diseases and conditions.
- Describe and understand the scientific method in establishing the causation of disease and efficacy of traditional and nontraditional therapies.

Knowledge and application of strategies for effective learning and improvement.

- Identify learning objectives for each course.
- Demonstrate required knowledge base in each course.
- Attend and participate in all required conferences.
- Seek appropriate venues for the expansion of knowledge base.
- Seek feedback on areas of knowledge base weakness.
- Demonstrate acceptance of constructive feedback and efforts to improve.
- Proactively identify and correct cognitive and behavioral weaknesses.
- Develop a plan for lifelong learning.

Knowledge of development and changes across the lifespan.

- Describe functional changes from newborn through the lifespan to the elderly.
- List normal growth and development changes throughout the lifespan.
- Explain why different age groups are vulnerable to different disease processes.
- Differentiate normal aging from disease and dysfunction.
- Describe a typical, healthy, active, productive elderly person.

- Demonstrate how to obtain a basic prenatal history.
- Demonstrate systemic examination of obstetric patients.
- Demonstrate systemic examination of newborns.
- Demonstrate systemic examination of infants and children.
- Describe developmental and health issues in the clinical care of adolescents.
- Demonstrate how to assess functional status.
- List alternatives for the care of dysfunctional elderly.
- Describe the stages of normal emotional and cognitive development.

#### An understanding of nutrition in health and disease.

- Define the role of nutrition in disease prevention and health.
- List the nutritional needs for growth and development from neonates to elderly.
- Describe the optimal nutrition for people in different stages of the lifecycle.
- Describe the function of vitamins, minerals, and supplements.
- List the pros and cons of using supplements to prevent or treat disease.
- List specific dietary changes needed to counter deviation from normal (e.g., high cholesterol, iron deficiency, or low potassium.)
- Describe the nutritional requirements needed in acute and chronic conditions.
- Define the prevalence and health risk of obesity across the lifecycle.
- List the diseases associated with nutritional deficits.
- Define the epidemiology, pathophysiology, symptoms, and physical findings of disease caused by nutritional deficits (e.g., rickets or scurvy.)
- Define eating disorders, presentation of these problems, and treatment options.
- Describe the benefits and risks of special diets.
- Demonstrate how to obtain a nutritional history.
- Demonstrate basic skills for giving patient education on nutritional topics and counseling for lifestyle changes.

#### An understanding of the science and management of pain.

- Describe domains of pain: severity, location, referral, exacerbation, and remission.
- Define pain by level of severity.
- Describe how pain affects functional status and psychological well-being.
- Describe how therapies help patients with acute and chronic pain.
- Describe the dangers of under treating pain.
- Describe the dangers of over treating pain.
- List medications for adequate pain control.
- Define the concept of dependence, tolerance, and adequate treatment.
- List the problems associated with pain medications used on a long-term basis.
- Demonstrate how to assess pain severity.

#### An understanding of the concept of chronic illness.

- Define the concept of illness and disease.
- Differentiate between acute and chronic illness.
- List common chronic illnesses.
- List the work up for common chronic illnesses.
- Describe the physical changes and examination findings as diseases progress.
- Describe the long-term outcomes of common chronic illnesses.
- Describe treatments that prevent long-term complications of chronic illnesses.
- Give examples of the patient's primary role in managing chronic diseases.

#### An understanding of the principles of environmental medicine.

- Describe the influence of environmental agents on human health.
- Describe concepts of exposure, dose, and susceptibility to environmental diseases.
- Describe which occupations are at highest risk for specific injuries and illnesses.
- List preventive strategies for occupational injuries and diseases.
- Describe the presentations, clinical findings, and treatments of occupational injuries and diseases.
- Describe the major information, clinical, and other resources available to help address individual, work place, and community health problems and concerns.
- Demonstrate the ability to elicit an occupational and environmental history.

#### Comprehension of normal human sexual function and sexual dysfunction.

- Describe normal sexual function and sexual dysfunction.
- Describe sexual changes across the lifecycle.
- List and describe presentations of sexual dysfunctions.
- List the diseases associated with sexual dysfunction.
- List the medications associated with sexual dysfunctions.
- Describe the workup of sexual dysfunctions.
- List the treatment modalities for specific sexual dysfunctions.
- Describe the diversity of human sexual values, attitudes, beliefs, and behaviors.
- Describe health issues related to sexual orientation.
- Describe the impact of the sexual orientation of physicians on their relationships with their patients and colleagues.
- Demonstrate nonjudgmental behavior toward patients with different values.
- Demonstrate skill in taking a sexual, behavioral history in a sensitive manner, and define unique healthcare needs for gay and lesbian patients.
- Demonstrate the ability to give patient education in a sensitive fashion and at the level of patient's understanding.

#### An understanding of the concept of prevention and preventive medicine.

- Differentiate primary, secondary, and tertiary prevention.
- List the most common causes of death for age groups across the lifecycle.
- Outline preventive strategies across stages in the lifecycle.
- List the US Preventive Services Task Force Guidelines for lifecycle age groups.
- Differentiate preventive recommendations based on expert opinions from recommendations based on evidence-based studies.
- Describe the principles of immunization.
- List the recommended immunizations by age across the lifecycle.
- Describe the concept of a risk factor.
- Describe and list risk factors for preventable diseases.
- Describe the concept of "at risk" populations.
- Describe how preventive recommendations are altered by risk stratification.
- Describe how the behavioral aspects of health habits may be modified.
- Describe the physician's role in health promotion, patient education, community advocacy, and preventive medicine activities.
- Describe the role of periodic preventive health assessment and routine preventive services.
- Demonstrate how to conduct a periodic health exam and assessment of children and adults, including physical examination pertinent to screening.

#### Knowledge of substance use disorders and other addictions.

- Define substance use, substance abuse, and addiction.
- List the substance abuse disorders and other addictions.
- List the risk factors for addictive disorders.
- List the treatment options for addictive disorders.
- Describe behavioral changes required for the treatment of addictive disorders.
- Define an impaired physician.

- Describe issues about substance abuse and addictions in health professionals.
- Explain the legal responsibilities for reporting impaired physicians.
- Demonstrate the elements of screening for addictive disorders.

An understanding of the concept of violence and neglect across the lifespan.

- Differentiate abuse and neglect.
- Describe the epidemiology of abuse, violence, and neglect across the lifespan.
- Describe the cycle of escalating violence and violence across generations.
- Describe the differing societal and cultural norms for attitudes regarding violence, acceptance of parental violence, and definition of family boundaries.
- Describe the spectrum of child abuse and neglect, including legal aspects.
- Describe the spectrum of domestic violence and neglect, including legal aspects.
- Describe the spectrum of elder abuse and neglect, including legal aspects.
- Describe the signs and symptoms of abuse and neglect.
- Describe the health professional's role in detecting, assessing, and intervening in domestic violence, child abuse/neglect, and elder abuse.
- Understand physicians' responsibilities in issues of abuse and neglect.

An understanding of the concept of community health.

- Understand the concept of caring for populations of patients.
- Describe principles of population-based medicine.
- Compare and contrast care of populations with care of individual patients.
- Describe how financial, cultural, and community dimensions affect access to care and priorities of healthcare delivery.
- Describe the role and function of public health departments.
- Describe the rules regarding reporting of diseases to public health officials.
- Describe the concept of food and safety food borne illnesses and the role of public health officials in ensuring the safety of food products.

Knowledge of the importance of exercise.

- Define the role of exercise in disease prevention and health.
- List the diseases associated with lack of exercise.
- List the exercises needed for growth and development across the lifecycle, from neonate through elderly.
- Describe the changes in exercise needed for acute and chronic conditions.
- Describe the optimal exercise prescription for people with common disabilities at different stages of the lifecycle.
- Describe the acute and chronic results of improper or overuse of exercise.
- Describe the concept of physical therapy and occupational therapy.
- Demonstrate how to obtain an exercise history.
- Demonstrate basic skills to counsel patients about changes in exercise.

Recognition of the clinically relevant differences between the genders.

- Describe the nutritional needs that are different in women versus men.
- Compare and contrast the psychological needs of the genders.
- Differentiate the epidemiology, presentations, physical findings, and societal acceptance of diseases in men versus women.
- Differentiate the testing needed to diagnose diseases in women versus men.
- Describe how dosing intervals, amount of medications, effects on the organ systems, and side effects of medications differ between men and women.

An understanding of the role of race and culture in the practice of medicine.

- Describe the nutritional needs that are different in different races and cultures.
- Compare and contrast the psychological needs of different races and cultures.
- Differentiate the epidemiology, presentations, physical findings, and societal acceptance of diseases in different races and cultures.
- Describe how dosing intervals, amount of medications, effects on the organ systems, and side effects of medications differ among races.

## Educational Methods

The area of medical knowledge requires an interactive environment for knowledge skills and attitudes to be learned and practiced. A variety of strategies may be required to best facilitate student learning. Knowledge areas may be transmitted in a structured environment such as lectures, videos, or reading. Understanding the meaning of this content requires interactive sessions as well, with opportunities to practice in the clinical situations and reflect on personal values. This could include small- group experiences, allowing articulation of perspectives and effect on patients. Students need to understand their own beliefs, cultural backgrounds, and stereotypes. They need to be exposed to other perspectives. They will need direct patient contact to practice many of these skills and a mentorship relationship with a practicing physician. Experience must be extensive enough to allow students to see a spectrum of disease processes, acute and chronic, early and late stages. They must have exposure to a representative example of different sites and populations, including each group's lifestyle, genders, health risks, and diseases. Concepts that go beyond organ systems need to be taught across all courses, and with a faculty representing different specialties, demonstrating interdisciplinary approaches to patient care addressing all areas that influence health outcomes. Adult learning techniques and practice with evidence-based medicine techniques could be utilized for maximum effectiveness.

## Resources

Medical schools have faculty members who have taught the above topics, and frequently these individuals already have identified several useful resources. Some Internet sites are listed below to encourage further exploration of that source of rapidly evolving resources.

A. An investigatory and analytical thinking approach to clinical situations.

- <http://edaff.siumed.edu/Year4/forms/Y4ElecEvalForm.pdf>
- <http://www.fed.cuhk.edu.hk/~johnson/tas/investigation/investigation.htm>
- <http://www.palgrave.com/skills4study/html/studyskills/critical.htm#thinking>

B. An understanding of the biomedical basis of disease and disease processes.

- <http://www.hms.harvard.edu/dms/bbs/>
- <http://www.mcw.edu/gradschool/>
- <http://www.umassmed.edu/gsbs/>
- <http://www.gsbs.utmb.edu/>
- <http://www.smbs.buffalo.edu/>

C. Knowledge and application of strategies for effective learning and improvement.

- [http://www.ursuline.edu/stu\\_serv/asc/strategies.htm](http://www.ursuline.edu/stu_serv/asc/strategies.htm)
- <http://www.crlt.umich.edu/tstrategies/tscelc.html>

D. Knowledge of development and changes across the lifespan.

- <http://www.nichd.nih.gov/>

E. An understanding of nutrition in health and disease.

- <http://www.fshn.uiuc.edu/>
- <http://www2.swmed.edu/humannutrition/>
- <http://www.fcs.iastate.edu/fshn/>

F. An understanding of the science and management of pain.

- <http://www.aapainmanage.org/>
- <http://www.painmed.org/>
- <http://www.aspmn.org/>
- <http://www.ampainsoc.org/>

G. An understanding of the concept of chronic illness.

- <http://nursing.unc.edu/crci/>
- <http://www.pbs.org/fredfriendly/whocares/>
- <http://www.healingwell.com/pages/>
- [http://www.dartmouth.edu/dms/koop/resources/chronic\\_illness/chronic.shtml](http://www.dartmouth.edu/dms/koop/resources/chronic_illness/chronic.shtml)

H. An understanding of the principles of environmental medicine.

- <http://www.acoem.org/>
- <http://oem.bmjournals.com/>
- <http://dmi-www.mc.duke.edu/oem/>
- <http://www.joem.org/>

I. Comprehension of normal human sexual function and sexual dysfunction.

- [http://jama.ama-assn.org/cgi/collection/womens\\_sexual\\_function](http://jama.ama-assn.org/cgi/collection/womens_sexual_function) (requires password)
- [http://pubs.ama-assn.org/cgi/collection/mens\\_sexual\\_function](http://pubs.ama-assn.org/cgi/collection/mens_sexual_function) (requires password)
- [http://en.wikipedia.org/wiki/William\\_Masters\\_and\\_Virginia\\_Johnson](http://en.wikipedia.org/wiki/William_Masters_and_Virginia_Johnson)

J. An understanding of the concept of prevention and preventive medicine.

- <http://www.ahcpr.gov/clinic/uspstfix.htm>
- <http://www.acpm.org/>
- <http://www.elsevier.com/locate/issn/0091-7435>
- <http://www.atpm.org/>

K. Knowledge of substance use disorders and other addictions.

- <http://www.samhsa.gov/>
- <http://www.casacolumbia.org/>
- <http://www.cesar.umd.edu/>

L. Understanding of the concept of violence and neglect across the lifespan.

- <http://www.mincava.umn.edu/>

- <http://nccanch.acf.hhs.gov/>
- <http://www.ncadv.org/>
- <http://www.elderabusecenter.org/>

M. Understanding of the concept of community health.

- <http://jech.bmjournals.com/>
- <http://www.nachc.com/>
- <http://www.sph.umich.edu/chsp/index.shtml>

N. Knowledge of the importance of exercise.

- <http://www.acefitness.org/>
- <http://www.ms-se.com/>
- <http://www.nlm.nih.gov/medlineplus/exercisephysicalfitness.html>
- <http://www.acsm.org/index.asp>

O. Recognition of the clinically relevant differences between the genders.

- <http://www.pbs.org/ttc/health/genderdiffs.html>
- <http://www.nap.edu/books/0309064236/html/R1.html>
- <http://www.niaid.nih.gov/newsroom/releases/hivgender.htm>
- [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Abstract&list\\_uids=8839685](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Abstract&list_uids=8839685)
- [http://www.cwhn.ca/resources/gender\\_diff/](http://www.cwhn.ca/resources/gender_diff/)

P. An understanding of the role of race and culture in the practice of medicine.

- <http://www.amsa.org/programs/gpit/cultural.cfm>
- <http://www.diversityrx.org/HTML/MOCPT1.htm>
- <http://www.amsa.org/programs/diversityres.cfm>

Q. Slide set on ACGME Medical Knowledge:

- <http://www.apds.org/3-Medical%20Knowledge.ppt> (Download PowerPoint file)

## Assessment Strategies

Medical knowledge is of ultimate importance, and assessment should be highly visible and very high-stakes, based on explicit expectations of students. Evaluation will require utilization of multiple techniques to address knowledge, skills and attitudes. Videotaping of patient encounters and standardized patient evaluations, participation in small group discussions, oral and written examinations, tests for specific examination skills, observations during patient care, Socratic questioning of individual students, and structured opportunities for individual and group reflection are all methods that can be used.

## Faculty Development

Traditional educational practice in medical schools emphasize the organ systems and discipline-based approaches, but faculty development is necessary to ensure effective team teaching approaches, interdisciplinary collaboration, integration of material across disciplines and courses, and focus on patient health outcomes. The integration of these concepts needs to be across the curriculum and in every course rather than adding additional curricular time. Faculty development in adult education techniques may be necessary. Faculty development for role modeling and mentoring techniques should be considered.



# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Practice-Based Learning and Improvement

**Lead Authors: John C. Rogers, MD, MPH and Eric Bass, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Rationale

When entering core clerkships, students must be prepared to manage their learning about their patients' problems with minimal direction from the attending physician, residents, or other students on the rotation. This self-directed learning will require a commitment to assessing one's own needs for learning, an ability to identify the types of information pertinent to the care of their patients (e.g., physical examination findings, diagnostic testing, treatment options, medication side-effects, and diagnostic and therapeutic procedures), a listing of perceived gaps in knowledge in those areas, and a strategy for finding and assessing the necessary information. To search for information, the student will need to be able to identify up-to-date information through on-line resources. Assessing information will depend on an ability to assess the validity of evidence in clinical guidelines, reviews, and studies about diagnosis or treatment of disease.

## Competency

Students must be committed and able to appraise and assimilate scientific evidence for improvement of patient care practices.

## Goals

Demonstrate commitment to personal role in providing health care outcomes.

- Describe the concept of a paradigm shift in physician responsibility (from apprenticeship model to continuous improvement).
- Give examples of clinical problems for which outcomes can be changed through process improvement.
- Contrast the benefits of team-based process improvement vs. physician sanctions for error in improving health outcomes.

Effectively employ recursive strategy for lifelong learning.

Learn to direct own learning about patient's problems.

- Assess own learning needs.
- Identify information pertinent to the care of patients.
- List perceived personal gaps in knowledge.
- Demonstrate skills in self-directed learning by developing clinical questions about their patients and using on-line, or just-in-time, medical information systems to find relevant information sources.
- Describe strategies for finding and assessing necessary information.

Learn to locate, appraise, and assimilate evidence from clinical guidelines, systematic reviews, and articles related to patients' problems.

- Demonstrate the use of Web sites, on-line search engines, PDA-based programs, information services, and journals to locate information related to patients' health needs.
- Demonstrate clinical problem-solving skills using information resources.
- Demonstrate skills in hypothesis-building and deductive problem solving.
- Demonstrate the ability to appraise suitability of the information for clinical questions.
- Demonstrate the ability to assimilate the new information into care for health problems.

Learn to apply knowledge of study designs and statistical methods to appraise information about diagnostic tests and therapeutic interventions.

- Explain the principle of clinical uncertainty in clinical judgments.
- Define basic epidemiological terms and concepts.
- Describe frequently used study designs.
- Define basic biostatistical terms and applications.
- Describe the relationship among incidence, duration, and prevalence of a disease in a population.
- Describe "risk factor" and identify how risk factor information is determined.
- Define sensitivity, specificity, and predictive values of a test.
- Understand the trade-off between sensitivity and specificity of a test upon changing the cut-off values for normal/abnormal test results.
- Understand how predictive values are affected by disease prevalence.
- Demonstrate the use of essential concepts of epidemiology, including pre- and post-test probabilities.
- Know what is meant by the term "gold standard."
- Describe the difference between efficacy and effectiveness.
- Demonstrate principles associated with critical appraisal of a clinical trial.
- Know when /when not to perform population screening for a disease.
- Describe sources of systematic error that can affect study conclusions.
- Describe principles that lead to prudent ordering of diagnostic and screening tests.
- Describe limits that every physician/medical student has in knowledge, skills, and attitudes and present strategies for recognizing and coping with these limitations.

## Educational Methods

The knowledge, skills, and attitudes of Practice-Based Learning and Improvement are best learned in an interactive environment where a variety of teaching strategies are used to facilitate student learning. Basic knowledge can be transmitted through lectures, computer-assisted instruction (such as Web-based curricula), or readings, but understanding and applying the material to actual patient care problems is best accomplished through problem-based methods using small-group experiences and active participation and problem solving. Learning activities need to involve a collaborative, interdisciplinary approach to learning and improvement that demonstrates the synergism of incorporating multiple perspectives. Some involvement with actual practice-based improvement activity during early clinical experience or interaction with local EBM experts would be ideal but probably not attainable for all students. Mentoring relationships with practicing physicians who practice the concepts of process improvement can reinforce these principles of Practice-Based Learning and Improvement. Additionally, Practice-Based Learning and Improvement principles and practices need reinforcement during clinical experiences when students develop clinical questions and search for helpful information.

## Resources

### Current Approaches

- PowerPoint slide sets describing approaches:
  - <http://www.acgme.org/outcome/implement/rsvp.asp>
  - <http://www.aacom.org/education/conferences/ome13/hersheybell2.ppt> (download PowerPoint file)

### Additional resources:

- From the American Academy of Family Physicians Web site  
<http://www.aafp.org/x16578.xml>
- "Quality of Health Care" (6 part series) New England Journal of Medicine Sep.-Oct. 96
- "Users' Guides to the Medical Literature" (Multipart Series) Journal of American Medical Association 1993-2000  
<http://www.cche.net/principles/main.asp>
- Berwick DM. On Quality. Jossey-Bass, 1995
- Berwick DM, Roessner JA, Godfrey B. Curing Health Care: New Strategies for Quality Improvement. Jossey-Bass, 1991.
- Eddy DM. Clinical Decision Making: From Theory to Practice: A Collection of Essays from JAMA. Jones & Bartlett, 1996.
- IOM Committee on Quality of Health Care in America, Crossing the Quality Chasm: A New Health System for the 21st Century, Institute of Medicine 2000.
- Kohn L. To Err Is Human: Building a Safer Health System, Institute of Medicine 1999.
- Medical Informatics and Computer Applications, Recommended Core Educational Guidelines for Family Practice Residents, AAFP Reprint No. 288 <http://www.aafp.org/eduguide.xml>
- Research and Scholarly Activity, Recommended Core Educational Guidelines for Family Practice Residents, AAFP Reprint No. 280 <http://www.aafp.org/eduguide.xml>
- Sackett D. Evidence-Based Medicine: How to Practice and Teach EBM. Churchill Livingstone, 2000.
- Silverman WA and Sackett DL. Where's the Evidence?: Debates in Modern Medicine. Oxford Univ. Press, 1999.

### Other books

- Evidence-Based Medicine Working Group, Rennie D, Guyatt GH (Eds). Users' Guides to the Medical Literature: Essentials of Evidence-Based Clinical Practice. American Medical Association, 2002.
- Guyatt G, Gilbert DN, Rennie D, Moellering RC, Sande MA (Eds). Users' Guide to the Medical Literature: A Manual for Evidence-Based Clinical Practice. Antimicrobial Therapy, Inc.; Book and CD-ROM edition, 2002.

## Web Resources

- AAFP Medical Quality Clearinghouse: <http://www.aafp.org/quality>
- Agency for Healthcare Research and Quality: <http://www.ahrq.gov>
- Clinical Practice Guidelines: <http://www.guidelines.gov>
- Cochrane Library: <http://www.cochrane.org>
- EBM Online, Evidence-Based Medicine, BMJ Publishing Group: <http://ebm.bmjournals.com/>
- Evidence-based Medicine Resource Center (New York Academy of Medicine & Evidence-based Medicine Committee of the American College of Physicians, New York Chapter with funding from the National Institutes of Health): <http://www.ebmny.org>
- Institute for Healthcare Improvement: <http://www.ihl.org>
- Institute of Medicine "Crossing the Quality Chasm: A New Health System for the 21 st Century", <http://www.nap.edu/catalog/10027.html>
- MEDLINE Pubmed: <http://www.ncbi.nlm.nih.gov/PubMed>
- National Association for Healthcare Quality: <http://www.nahq.org>
- NHS Centre for Evidenced Based Medicine: <http://www.cebm.net/>
- SCHARR Netting the Evidence: <http://www.shef.ac.uk/~scharr/ir/netting>
- The Leapfrog Group: <http://www.leapfroggroup.org>
- University of Alberta, Introduction to Evidence Based Medicine: <http://www.med.ualberta.ca/ebm/ebmintro.htm>
- InfoPOEMs©: The Clinical Awareness System TM keeps you current AND answers your clinical medicine questions at the point of care with the right information. Includes online Information Mastery Course: <http://www.infopoems.com/>
- ACP Journal Club published by The American College of Physicians (ACP). This Web site comprises the cumulative electronic contents of ACP Journal Club's bimonthly print edition since its inception in 1991, with recurrent weeding of out-of-date articles. The content is carefully selected from over 100 clinical journals through reliable application of explicit criteria for scientific merit, followed by assessment of relevance to medical practice by clinical specialists. <http://www.acpjc.org/>

## Assessment Strategies

The full application of Practice-Based Learning and Improvement requires an ongoing clinical practice with information systems that allow retrieval of practice information and data from patient records. Preclerkship students need to learn the attitudinal and intellectual foundations that can be applied later to their residency practices. Assessment of students' knowledge and skill should be case-based and could include multiple-choice questions, short answers, calculations, and written critical reviews of guidelines, clinical reviews, or original research articles. Since being able to quickly access information is an important skill, one potential strategy is testing of students' ability to retrieve information from a PDA, such as a clinical guideline, to answer questions.

## Faculty Development

Faculty development should be focused on increasing knowledge about evidence-based medicine, clinical epidemiology, and print and electronic sources for reviews and guidelines. Modeling of practice-based learning and improvement by medical school and community-based faculty may be the most powerful way to positively influence student attitudes toward their role in this area. However, often there is faculty resistance to application of the concepts of evidence-based medicine, clinical epidemiology, and quantitative approaches to decision making, because they are sometimes viewed as counter-intuitive, impractical, and undermining the "art of medicine" as well as physician discretion to individualize patient care. Faculty skill development is critical in this area, especially skills in problem-based or case-based teaching strategies, small-group instruction, and methods of quick access to information through the World Wide Web or hand-held devices. Students and residents, having grown up in an age with widespread Web and hand-held technology, are increasingly adept with these methods of information management. Faculty must become adept as well if they are to maintain credibility with this generation of learners. Helping faculty model timely applications of information

mastery is essential.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Interpersonal and Communication Skills

**Lead Authors: Steve Miller, MD, Mary Ann Kuzma, MD, and Christine Matson, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Competency

Students must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and professional colleagues.

## Goals

Create and sustain a therapeutic and ethically sound relationship with patients and families.

- Understand the importance of the patient-physician relationship as the cornerstone of medical care.
- Greet the patient appropriately.
- Establish rapport with patients and families.
- Demonstrate caring and respectful behaviors when interacting with patients and their families.
- Maintain a respectful tone.

- Describe strategies for establishing positive patient-doctor relationships.
- Understand that physicians and patients bring attitudes, emotions, beliefs, and culture to encounters that may have significant impact upon patient-doctor interactions and outcomes.
- Describe patient, physician, and system barriers to effective communication.
- Appreciate and begin to develop cultural awareness and cross-cultural communication skills to improve patient-physician relationships.
- Demonstrate a patient centered interview that includes:
  - Eliciting the patient's entire agenda.
  - Eliciting the patient's story without bias from the interviewer, including the symptoms, the setting, and the patient's emotional response and perspective on the illness.
  - Identifying and responding to emotional cues.
  - Summarizing and checking for accuracy of content and interpretation.
  - Negotiating a common understanding of the patient's issues.
  - Agreeing on a plan that includes patient and physician/student involvement.
  - Demonstrate sensitivity to gender, racial and cultural diversity.
  - Describe patient, physician, and system barriers to successfully negotiated treatment plans, and patient adherence.
  - Describe strategies that may be used to overcome these barriers.
  - Maintain confidentiality.
  - Close patient encounter appropriately.

Demonstrate effective listening skills.

- Maintain eye contact at comfortable intervals throughout interview.
- Maintain open body posture.
- Encourage the patient to continue speaking, using appropriate facilitation skills.
- Use silence and nonverbal facilitation to encourage the patient's expression of thought and feelings.

Elicit and provide validation and information using effective nonverbal, facilitative, questioning, reflective, and explanatory skills.

- Elicit patient requests, concerns, and expectation from a range of patients diverse in age, gender, and sociocultural background.
- Elicit the patient's view of health problem(s).
- Discuss how the health problem(s) affect the patient's life.
- Respond in elementary fashion to patient concerns and expectations.
- Express willingness to be helpful to the patient in addressing his/her concerns.
- Respond to empathic opportunities by naming the emotions or feelings expressed.
- Demonstrate validation of the patient's feelings.
- Avoid use of medical jargon.
- Support the patient's self-efficacy, such as acknowledging and complimenting the patient on a positive behavior.
- Reach a common understanding with the patient on an elementary description of diagnosis, prognosis, and treatment plan.

Work effectively with others as a member of a health care team or other professional group.

Present in chronological and organized fashion both verbally and in writing the basic elements of the history and physical examination accurately and objectively.

- Present a prioritized problem list that demonstrates a biopsychosocial understanding of disease, health care systems and barriers to health care.
- Report the basic elements of an assessment and plan that addresses the patient's issues as well as biomedical considerations.
- Demonstrate the ability to make clear and concise presentations about assigned research topics.
- Outline the roles of health care team members.
- Demonstrate the belief that each member of the health care team is valuable, regardless of degree or occupation.
- Demonstrate the ability to work in team settings by identifying and accepting the responsibilities of a team member.
- Outline strategies for conflict management and resolution.

## Educational Methods

The competency domain of interpersonal and communication skills requires a well-designed and multifaceted approach in order to convey the knowledge, skills, and attitudes required for effective, efficient, professional, and compassionate communication in the health care setting. The traditional apprenticeship model is insufficient to completely accomplish this goal. Modeling may be useful in changing attitudes but students often cannot identify the specific communication skills that make an exemplary physician communicator exemplary. The essential components of communication skills learning are delineation of critical skills, observation, feedback, video or audio recording and review, rehearsal and practice of skills, and active small-group or one-on-one learning 1 . The content of communication curricula, in particular the specific skills to be learned, must be clearly defined and made explicit to both learners and teachers (e.g. the Calgary-Cambridge Observational Guide 2 , the SEGUE Framework 3 , the 5 Kalamazoo Consensus statement 4 ). Knowledge content may be transmitted in conventional didactic ways such as lectures and readings; however, transmission of knowledge alone is not sufficient to result in behavior change.5 The most effective means of teaching communication skills requires experiential, interactive, and one-on-one teaching methods. Multiple methods have been used in this regard including directed, active small-group discussions, structured skills seminars (e.g., the program developed by the Bayer Institute for Health Care Communication 6 ), role-play activities, video or audio taped sessions, direct observation by faculty members, and modeling of exemplary clinicians. Students must be given ample opportunity to hone their communication skills, first in low-stakes training sessions, with simulated patients, and ultimately in real patient encounters. These encounters should be directly observed or taped. Specific, formative feedback is critical for these experiences to result in behavior change. Appropriate communication skills should be taught in multiple clinical environments including inpatient and outpatient settings, and with patients of varied sociocultural backgrounds and interactive styles. Problem-oriented skills such as "difficult" physician-patient interactions, dealing with sensitive topics, end-of-life issues, and breaking bad news should also be incorporated. Students must be formally instructed regarding the oral case presentation and how the general presentation must be modified to fit different clinical situations.

Teaching communication skills depends on methods that include direct observation and feedback. Methods must also incorporate an accepted framework that defines the explicit behaviors of effective communication. General skills of setting a therapeutic environment, gathering information and providing information and closure must be included. (See Kurtz S. et al.) Specific methods should include: 1) Modeling an explicit framework. 2) Providing opportunities for observed practice. 3) Providing feedback to learners from explicitly trained faculty. 4) Providing opportunities for further observed practice - which incorporates the feedback. Methods used to improve interpersonal communication may include

- videotape analysis and small-group observation.
- observed practice done using standardized patients, role plays, and real patients -- with bedside observation.
- faculty leaders trained to provide explicit feedback with the proposed framework, providing a consistent and common language for working on communication skills.

Parallel methods for communication and evaluation with patient's family members, colleagues, staff, and faculty must also be in place.

## Resources

- Kurtz S, Silverman J, Draper J. Teaching and Learning Communication Skills in Medicine. Radcliffe Medical Press Ltd, Oxford, 1998.  
This text provides a complete framework for developing a curriculum in communication skills. It uses the Calgary-Cambridge Model for effective communication, a well-respected and validated model.
- Kurtz SM, Silverman JD. The Calgary-Cambridge Referenced Guides; an aid to defining the curriculum and organizing the teaching in communication training programmes. Medical Education. 1996; 30:83-9.
- Makoul G. The SEGUE Framework for teaching and assessing communication skills. Patient Education and Counseling. 2001; 45:23-34.  
This article describes another well-respected framework for teaching and practicing effective communication.
- Makoul G. Essential element of communication in medical encounters: the Kalamazoo consensus statement. Acad Med. 2001; 76:390-3.

This article describes a model that was agreed upon at a consensus conference on communication. It incorporates SEGUE, Calgary-Cambridge, Patient Centered, Bayer, and Brown models of effective communication and distills them into one framework with wide acceptance.

- Makoul G. Communication skills education in medical school and beyond. JAMA. 2003; 289:93.
- Clinician-Patient Communication To Enhance Health Outcomes. The Bayer Institute for Health Care communication, Inc., West Haven, Connecticut, 1998.

This includes the attached annotated bibliography on the link between outcomes and effective patient communication and an annotated bibliography of difficult patient physician encounters. The Web site <http://www.bayerinstitute.org>, also includes materials for faculty development.

- Platt FW and Gordon GH. Field Guide to the Difficult Patient Interview. Inside this superb guide, you'll discover the communication techniques and practical strategies you need to handle even the most difficult physician-patient encounters. From delivering bad news to dealing with the angry patient to somatization -each chapter defines a commonly encountered problem and examines the cardinal principles and procedures to follow in the interaction.
- Rollnick S, Mason P, and Butler C. Health Behavior Change: A Guide For Practitioners. Stephen Rollnick, Pip Mason and Chris Butler take the concepts developed by Miller and Rollnick, Motivational Interviewing, and apply it to the work of the medical practitioner working with health behaviors: overeating, physical inactivity, smoking, and adherence to therapeutic regimens. Recognizing that clinicians must work quickly to influence health behavior, the authors address the issues of resistance to change and lack of motivation. The book is filled with examples and dilemmas that will ring true for all clinicians.
- Stewart M, Brown JB, Weston WW, McWhinney IR, McWilliam CL, and Freeman TR. Patient-Centered Medicine: Transforming The Clinical Method. The authors present a six-component model to assist health practitioners in expanding and strengthening their relationships with patients. Thoughtful discussions and case studies present topics as diverse as conceptualizations of ill health, consideration of the patient as an individual, the establishment of goals and cooperative strategy between physician and patient, and the realistic allocation of time, energy, and other resources of the health care provider. Emphasizing a holistic philosophy, the work encourages physicians to surpass treatment based strictly on a one-dimensional, biomedical assessment of their patients -- and achieve greater results.
- Silverman J, Kurtz S, and Draper J. Skills For Communicating With Patients. This book and its companion, Teaching and Learning Communication Skills in Medicine, present a comprehensive approach to improving communication in medicine. They are an invaluable resource for practitioners, course organizers, facilitators, and learners at all levels from undergraduate to continuing medical education, and apply equally to specialist and primary care physician. The core communication skills are addressed as well as ways to develop the skills. The two volumes are based upon a careful reading and understanding of the literature on physician-patient communication.
- Kurtz S, Silverman J, and Draper J. Teaching and Learning Communication Skills in Medicine. This book and its companion, Skills for Communicating With Patients, present a comprehensive approach to improving communication in medicine. They are an invaluable resource for practitioners, course organizers, facilitators, and learners at all levels from undergraduate to continuing medical education, and apply equally to specialist and primary care physician. The core communication skills are addressed as well as ways to develop the skills. The two volumes are based upon a careful reading and understanding of the literature on physician-patient communication
- AAMC MSOP Special Report on Communication Skills, October 1999 Communication in Medicine: <http://www.aamc.org> Effective communication is the lynchpin in the relationship between physician and patient, and is critical in exchanging information with families, colleagues, and related professionals administering care. In order to communicate effectively with patients, physicians will also need to understand how patients' spirituality and culture affect how they perceive health and illness, and particularly their desires regarding end-of-life care. Contemporary Issues in Medicine: Communication in Medicine (PDF - 176KB, 32 pages), October 1999.
- [http:// www.sunyit.edu/library/html/culturedmed/bib/medical/](http://www.sunyit.edu/library/html/culturedmed/bib/medical/)  
This site has a bibliography for interpreter use in medicine.

## Assessment Strategies

Assessment of communication skills learning must be both formative and summative. The knowledge, skills, and attitudes to be assessed must be made explicit to both learners and teachers alike. Potential evaluators include local experts, course faculty, simulated and real patients, peers, and the learners themselves. Formative assessment should occur throughout the communication skills curriculum and is intended to shape and improve future behaviors. This requires direct observation (in person or videotaped)

of the skills during role-play activities, with standardized patients, and with real patients. The feedback provided should be balanced and nonjudgmental. Self-assessment during the learning process should be encouraged. Summative assessment is necessary to demonstrate competency in the domain of interpersonal and communication skills. The summative assessment must be more than low-stakes in order to validate to students the essential nature of this competency domain. Although written examinations may be used successfully to test knowledge, they do not test skills. Therefore, written examinations cannot be the only means of summative assessment. The tools and standards for summative assessment should parallel those used for formative assessment and the teaching methods employed. Again, learners and teachers must be fully aware of these tools and standards. The objective structured clinical examination is common method used to assess multiple clinical skills. Communication skills can be evaluated by this method as well. When possible the student-standardized patient interaction should be videotaped. Careful review by evaluators and learners will then be possible and provides factual record of what happened during the encounter. It is also possible either to directly observe or videotape real patient encounters as part of the summative assessment. The standards for assessment should include items such as detailed checklists, numerical or visual analogue rating scales that may also include guiding descriptors, and descriptive commentary.

Assessment of communication skills must include direct observation of performance. Evaluation of setting a therapeutic environment, gathering data and providing information, and closure must be included. Evaluation of advanced skills, including use of interpreters, providing bad news and promoting behavior change should be done as well. Criteria should match the novice level of the end-of-second-year student, who should be able to identify the critical issues for effective communication and perform the skills under straightforward circumstances.

Specific tools can be chosen from among the following:

1) Standardized patients 2) OSCEs 3) Observed performance with patients and others 4) Written reflections describing how a learner would approach a certain situation 5) MCQs.

At least one method that assesses actual performance of the skills should be included.

## Faculty Development

The principles of faculty development for this core skill include the following:

- A faculty leader should be identified who has the time and resources to develop, organize, and oversee this aspect of the curriculum. This leader should have administrative support to coordinate a large and diverse program, which will by necessity involve more than 20 faculty and as many locations (for a school of approximately 100 students). Support for this faculty member should include resources to network with national leaders and organizations.
- A core group of faculty champions should be identified, representing a diverse group of departments. They should be supported in some fashion and recognized for their contribution to the school. These faculty members should be the core faculty developers for the general faculty and house staff.
- All preceptors should have yearly training in making the skills explicit, providing opportunities for observed practice and for giving effective and explicit feedback, and for evaluating the explicit behaviors and the global effectiveness of the learners.
- Faculty development should include partnership with national experts from other institutions to validate the approaches that are being taken.
- Each school should consider ways to influence the messages that the approach to learning communication skills is a critical skill of excellent doctoring and is a core concept of professionalism and humanism, and not a luxury or "touchy feely" add-on. This means that it should have a high-stakes quality in the curriculum, and opportunities to link effective communication to specific health outcomes should be reinforced.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Professionalism

**Lead Authors: John C. Rogers, MD, MPH and Christine Matson, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Rationale

When entering core clerkships, students must be prepared to describe the ethical principles of autonomy, beneficence, non-maleficence, and justice that are involved with considerations in daily practice (e.g., patient confidentiality, informed consent, genetic counseling, living wills and advance directives, admission of medical errors, power and sexual boundaries, and physician impairment). Students should be able to explain the need to balance interests of individual patients, their families, and the community or society at large. Students should be able to provide and obtain informed consent, with special attention to patients' perspective on their care.

## Competency

Students must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to contextual issues in a diverse patient population.

## Goals

Demonstrate commitment to professional virtues and responsibilities.

- Explain what it means to act in a professional way and why a physician must bring characteristics like honesty, integrity, and respect for the patient in all ways into their interactions with patients and other health care professionals.
- Identify challenges to physician responsibilities (e.g., abuse of power, greed, or conflicts of interest), and describe how the welfare of the patient or society should supersede physician's self-interest.
- Demonstrate the ability to take responsibility for one's own actions, including errors.
- Describe examples of systems to improve patient safety.
- Describe the physician's responsibility to choose effective diagnostic and therapeutic modalities based on the best evidence and the patient's priorities.
- Recognize and admit limits of knowledge and skills.
- Demonstrate commitment to lifelong learning.
- Demonstrate self-awareness regarding interactions with others.
- Demonstrate how to cope with difference in people in a constructive way.
- Describe the physiological and psychological consequences of stress.
- Describe personal responses to stress and appropriate stress reduction interventions.
- Describe issues associated with substance abuse and addictive disorders among health professionals.
- Describe students' own risk and resiliency factors for substance abuse and co-dependence.
- Identify useful prevention strategies, treatment resources, and unique recovery issues for substance abuse by health professionals.
- Explain the ethical responsibility for reporting impaired physicians.
- Demonstrate the ability to discuss substance abuse with other health professionals.

Show adherence to ethical principles.

Principles: Autonomy, beneficence, non-maleficence, and justice

- Explain the concepts of autonomy, beneficence, non-maleficence, justice, and virtue.
- Explain the concept of respect for personal autonomy as a foundational principle for ethical conduct in the patient-physician relationship.
- Explain the legal concepts of the common good, informed consent, and battery in the context of the patient-physician relationship.
- Describe the ethical and legal foundations of the right of patients to refuse medical care even when self-harm is the likely result.
- Describe the guidelines for assessing and responding to refusal of treatment by patients.

Provision or withholding of clinical care

- Explain the legal requirements and reasoning behind advance directives.
- Describe the process of assessing a patient's advance directives, including identifying patient's perspective.
- Discuss professional and ethical concept of "duty to treat" in context of physician health risks.
- Describe one's own fears, biases, and attitudes about treating patients or performing procedures presenting real or perceived risks to physicians (e.g., dealing w/ physical violence, AIDS, tuberculosis, hepatitis, or X-ray/chemical/viral exposure).

Confidentiality of patient information

- Describe key concepts that define the essence of privacy as an ethical requirement of the patient-physician relationship.
- Describe the importance of protecting patient privacy through confidentiality.
- Identify personal health information and avoid its inappropriate use.

Informed consent

- Identify the elements of informed consent and recognize clinical situations when obtaining it is required.

### Business practices

- Identify the ethical hazard and respond appropriately in situation such as being asked to practice beyond legal limits or personal comfort (e.g., when asked to provide medical care to friends or relatives; use of "doctor" title).

### Conflicts of interest

- Identify the ethical hazard and respond appropriately in situations such as
  - when educational benefit to student increases risk to patient
  - performing procedures upon the newly dead
  - acceptance of gifts
  - collaboration with industry
  - when courted by industry to prescribe their products

### Display sensitivity to contextual issues (culture, age, gender, sexual orientation, and disabilities) in a diverse patient population

- Demonstrate the ability to investigate impact of patient's culture, age, gender, sexual orientation, and any disability on clinical care and medical decisions.
- Describe the major issues surrounding the interaction of spirituality and medicine.

\*or equivalent intensive clinical year

## Educational Methods

The area of Professionalism requires an interactive environment for the knowledge, skills, and attitudes to be learned and practiced. For this reason, a variety of different strategies may be required to best facilitate student learning. Knowledge areas may be transmitted in structured environments such as lectures, videos, or readings. But understanding the meaning of this content requires interactive sessions as well, with opportunity for application to clinical situations and reflection on personal values. This would include small-group experiences that require participants to articulate perspectives, not only as a health care provider, but also to discuss the effects on patients. Additionally, Professionalism may be demonstrated in a mentorship relationship with a practicing physician. This experience must be extensive enough to allow students to see a breadth of behaviors, to create a relationship with enough depth that allows for discussion of these personal issues, and to anticipate personal contexts in which the student's professionalism would be most challenged.

### Resources adapted from

- ABIM Foundation ACP-ASIM Foundation European Federation of Internal Medicine Medical Professionalism Project - MPP2002

### Professionalism: Current Approaches

- American Board of Internal Medicine. Project Professionalism. American Board of Internal Medicine. Philadelphia. 1995. In the last few decades, advances in medical knowledge and technology have placed greater pressures on physicians to absorb and communicate information to patients and other health professionals. In the wake of these changes, unprofessional behavior and attitudes have eroded medicine's respected position. This document emphasizes the signs and symptoms that erode professionalism, describes aids to professionalism, and presents vignettes that illustrate the unique nature of these quandaries.
- American College of Physicians. Ethics manual, 4 th ed. Ann Intern Med. 1998; 128:576-594. Some aspects of medicine are fundamental and timeless, but medical practice does not stand still. Clinicians must be prepared to deal with changes and reaffirm what is fundamental. This manual examines emerging issues in medical ethics

and revisits older issues that are still very pertinent. The publication is intended to facilitate the process of making ethical decisions in clinical practice and medical research and to describe and explain underlying principles of decision making.

- Arnold EL, Blank LL, Race KEH, Cipparrone N. Can professionalism be measured? The development of a scale for use in the medical environment. *Acad Med.* 1998; 73:1119-21.  
This article assesses a scale that measures professional attitudes and behaviors associated with the medical education and the residency training environment. Drawing on a survey of more than five hundred medical students and residents, the authors find encouragement toward the development of a reliable measurement scale.
- Barry D, Cyran E, Anderson RJ. Common issues in medical professionalism: room to grow. *Am J Med.* 2000; 108:136-42.  
This study assesses responses to common challenges to medical professionalism and to ascertain physician satisfaction with training in professionalism. The authors used a series of vignettes that highlight important challenges to medical professionalism. They found that physicians were more likely than house officers to provide the most acceptable response, and house officers in turn were more likely than medical students. The most difficult scenario involved physician impairment, where only 12% of respondents gave the best answer. Other important findings involve the scope of formal training in professionalism provided to physicians, and the extent of satisfaction with such training.
- Berwick D, Davidoff F, Hiatt H, Smith R. Refining and implementing the Tavistock principles for everybody in health care. *British Med J.* 2001; 323:616-20.

The Tavistock Group has worked to develop ethical principles that might be useful to everybody involved in health care. They were intended for those who are responsible for the healthcare system, those who work in it, and those who use it. This article describes the origins of the principles, discusses the thinking behind them, considers how they might be used, provides case studies, and reflects on where the venture might go now.

- Brownell AKW, Cote L. Senior residents' views on the meaning of professionalism and how they learn about it. *Acad Med.* 2001; 76:734-7.  
This study demonstrates that residents' knowledge about professionalism reflects their early stage of development as physicians and their daily activities, where such aspects of professionalism as the social contract, codes of ethics, participation in professional societies, and altruism are not highlighted.
- Chervenak FA, McCullough LB. Professionalism and justice: ethical management guidelines for leaders of academic medical centers. *Acad Med.* 2002; 77:45-7.  
The ethical concepts of professionalism and justice can be used to create a vital, practical, alternative vision for the leadership of AHCs, in which their missions once again become central to their organizational culture. Creating a morally sustainable organizational culture of professionalism and justice should rely not on forced cooperation, but on voluntary cooperation of all stakeholders in the pursuit of a common goal - professional excellence in patient care, teaching, and research - with survival understood to be a means to this goal.
- Cohen JJ. Measuring professionalism: listening to our students. *Acad Med.* 1999; 74:1010.  
This concise statement by the President of the Association of American Medical Colleges calls on medical educators to pay as much attention to the evaluation of professionalism in medical students as they do to the evaluation of clinical expertise. The author proposes the introduction of peer review as a useful method for promoting the measurement of professionalism in academic medical environments.
- Epstein RM, Hundert EM. Defining and assessing professional competence. *JAMA.* 2002; 287:226-35.  
Current assessment formats for physicians and trainees reliably test core knowledge and basic skills. However, they may underemphasize some important domains of professional medical practice, including interpersonal skills, lifelong learning, professionalism, and integration of core knowledge into clinical practice. This article proposes a definition of professional competence, reviews current means for assessing it, and suggests new approaches to assessment.
- Ginsburg S et al. Context, conflict, and resolution: a new conceptual framework for evaluating professionalism. *Acad Med.* 2000; 75:S6-11.  
While the need to evaluate professionalism effectively has been recognized for some time, the authors argue that traditional methods of addressing the problem have not been successful. These standard methods rely on abstract and idealized definitions that place the focus on people, rather than their behaviors, and imply that professionalism is simply a stable set of traits. The authors posit that, contrary to this prevailing conception, evaluation of professionalism is incomplete. They identify several important components that are missing from the current framework, including consideration of the context of unprofessional behavior, the conflicts which lead to lapses, and the reasons behind students' decisions.
- Irvine D. The performance of doctors: the new professionalism. *Lancet.* 1999; 353:1174-7.  
Concerted efforts are being made to find a modern expression of professionalism that should bring the public and the medical

profession closer together. While the public appreciates what medical technology can achieve, the profession is seen as limited in its willingness and ability to communicate effectively, to act promptly to protect patients from poor practice, to be open about risks, and to admit to errors. The author examines the public's expectations and compares current trends in regulatory behavior to demonstrate the need for a new concept of professionalism in medicine.

- Ludmerer KM. Instilling professionalism in medical education. *JAMA*. 1999; 282:881-2.  
In recent years market forces have posed an unprecedented threat to medical professionalism - particularly the physician's obligation to serve the needs of patients. One significant method for redressing this is the incorporation of instruction about professionalism into the medical school curriculum. The author of this concise editorial addresses the debate over the efficacy of formal courses as a means to instill professionalism.
- Ludmerer KM. *Time to heal: American medical education from the turn of the century to the era of managed care*. 1999. New York: Oxford University Press.  
This widely acclaimed book provides a landmark account of American medical education throughout the twentieth century, and concludes with a call to reform a system handicapped by managed care and the loss of genuine professionalism.
- Papadakis MA, Loeser H, Healy K. Early detection and evaluation of professionalism deficiencies in medical students: one school's approach. *Acad Med*. 2001; 76:1100-6.  
The authors discuss an innovative system established at the University of California, San Francisco, School of Medicine which monitors and strives to provide remediation for students demonstrating unprofessional behavior
- Pellegrino ED, Relman AS. Professional medical associations: ethical and practical guidelines. *JAMA*. 1999. 282:984-6.  
Physicians must choose more definitively than ever whether their professional associations will assert the primacy of ethical commitment or shed any pretense of being moral enterprises and, instead, allow economic considerations to dominate their policies. The authors assert that medical associations must be committed, first of all, to the welfare of the sick, even at some risk to the profession's collective pride and profit. They also suggest that a multitude of physicians would endorse membership in professional associations that demonstrate significant moral leadership.
- Prislin MD, Lie D, Shapiro J, Boker J, Radecki S. Using standardized patients to assess medical students' professionalism. *Acad Med*. 2001;76:S90-2.  
Much energy has been directed toward defining competencies that reflect professionalism and in creating corresponding curricula that will foster learning in this domain. However, having instruments that can accurately measure the attainment of professionalism remains an elusive goal. This study examines the utility of patient-based assessments of professional characteristics.
- Swick HM, Szenas P, Danoff D, Whitcomb ME. Teaching professionalism in undergraduate medical education. *JAMA*. 1999; 282:830-2.  
There is a growing consensus among medical educators that to promote the professional development of medical students, schools of medicine should provide explicit learning experiences in professionalism. The authors aim to determine whether and how schools of medicine were teaching professionalism during the 1998-99 academic year. They find that the teaching of professionalism varies widely, and although most programs address this topic in some manner, the strategies used may not always be adequate.
- Wear D, Castellani B. The development of professionalism: curriculum matters *Acad Med*. 2000; 75:602-11.  
The authors propose that professionalism, rather than being left to the chance that students will model themselves on ideal physicians or somehow be permeable to other elements of professionalism, is fostered by students' engagement with significant, integrated experiences with certain kinds of content. To educate broadly educated physicians who develop professionalism throughout their education and their careers requires a full-spectrum curriculum and the processes to support it. The authors sketch the ways in which admission, curriculum, assessment and licensure could function to maximize that end.
- World Medical Association. World Medical Association declaration of Helsinki: ethical principles for medical research involving human subjects. *JAMA*. 2000; 284:3034-5.  
The World Medical Association has developed the Declaration of Helsinki as a statement of ethical principles to provide guidance to physicians and other participants in medical research involving human subjects. First adopted in 1964, these principles were amended for the fifth time in October 2000.
- Wynia MK et al. Medical professionalism in society. *N Engl J Med*. 1999; 341:1612-16.  
The authors undertake to clarify the concept of medical professionalism with a focus on the role of physicians in society. They present a model of professionalism that incorporates three elements: devotion to service, profession of values, and negotiation within society.

## Web Sites

- <http://www.abim.org/pubs/profess.pdf>

## Assessment Strategies

The critical importance of physician's professionalism should be reflected in the emphasis on teaching, nurturing, and assessing the professionalism of our students. The assessments should be "high stakes," based on explicit expectations of students, and highly visible. Because self-assessment is an essential element of lifelong learning and self-regulation, students should participate in creating professionalism assessments, including self- and peer- assessments.

Evaluation of Professionalism requires utilization of multiple techniques to address knowledge, skills, and attitudes of future physicians. Videotaping of patient encounters and standardized patient evaluation are methods that enable assessment of behavioral skills (Prislin). Structures within the curriculum must be developed that encourage systematic feedback to students about professional behavior (Papadakis). Careful analyses of students' unprofessional behavior including context, conflict leading to behavior, and reasons may lead to systemic changes that reduce the problem or at least make the behavior more understandable or preventable (Ginsberg). All sources of input are viable, including basic and clinical science faculty, administrative and nursing staff, patients, peers, and self-reflection.

## Faculty Development

Faculty development should be focused in the following areas: role of a mentor, discussion of sensitive topics in a non-judgmental fashion, strategies for identifying professional behavior, and methods for providing formative feedback to learners regarding professional behavior.

A key to effecting curricular change regarding professionalism is integrating the concepts across the curriculum rather than adding additional curricular time. Medical educators should make special efforts to identify the counter-professional aspects of the "hidden curriculum" and take steps to achieve congruence between the explicit curriculum and tacit influences, in a positive direction.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Systems-Based Practice

**Lead Authors: Rick E. Ricer, MD and William Raszka, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

## Rationale

When entering core clerkships, students must be prepared to consider how health system organization, financing, and cost control dimensions affect access to care and priorities of health care delivery. Students should be able to describe how populations of patients are just as important recipients of their care and attention as are individual patients. Students need to be able to contrast the care of individuals with the care of populations, such as how health problems of those cared for in the hospital setting differ from the types of health problems experienced by the community in general. Understanding health system and population-based issues should help students understand barriers to care.

## Competency

Students must demonstrate an awareness of the larger context and system of health care.

## Goals

Develop awareness of impact of health system context on clinical care.

Understand health care organization.

- Describe basic organizational structures and financing streams of the U.S. health care system.
- Describe the US Public Health System and role of government in improving access to health care and assessing quality of care, and disease surveillance.
- Explain the physician's role in disease surveillance.
- Describe principles of population-based medicine.
- Describe the rules regarding reporting of diseases to public health officials.
- Identify common problems that are sociologically based and are rectifiable only by systematic approaches to care.
- Describe ways physicians in practice define ethical responsibilities to solve access problems for individual patients and populations of patients.

Describe how delivery systems differ on methods of controlling health care costs and allocating resources.

- Describe economic and treatment limitations imposed by systems.
- Identify how payment methods may conflict with ethical standards.
- Describe how different methods of cost control affect physicians' relationships with their colleagues, their patients, and society.
- Describe the strengths and shortcomings of the U.S. system for financing and delivering medical care, particularly to those from underserved/minority groups.

Describe how to assist patients in dealing with system complexities.

- Describe barriers to accessible and appropriate care, especially those experienced by poor people.
- Describe the influence of the pharmaceutical industry in the practice of medicine and the need for adherence to associated ethical guidelines.
- Demonstrate practical strategies for making reasonable judgments in the face of ethical uncertainties.

## Educational Methods

The knowledge and attitudes for Systems-Based Practice are best learned in an interactive environment. For this reason, a variety of strategies may be used to facilitate student learning. Basic knowledge can be transmitted through lectures, computer-assisted instruction (such as Web-based curricula), or readings, but understanding and applying the material to actual patient care problems is best accomplished in small-group experiences with active problem solving. Additionally, Systems-Based Practice attitudes and concepts need reinforcement during clinical experiences, where students reflect on the systems issues related to patients they are seeing. Mentoring relationships with practicing physicians can reinforce the principles of Systems-Based Practice. Service learning in public and private agencies that deal with health system access, financing, and quality provide opportunities for experiential learning. Reflection on those experiences, through reflective journals or reflection groups, draws out the lessons learned.

## Resources

### Learning Opportunities

- Ambulatory community family medicine rotation with exposure to business or front office staff - PBL experiences - Community health center or COPC experience - Health policy research experience - Health sciences research experience
- Resources System-Based Practice: Current Approaches

PowerPoint slide sets describing approaches:

- Oregon Health Science University:  
[http://www.acgme.org/outcome/PowerPoint/Dickey\\_Girard.ppt](http://www.acgme.org/outcome/PowerPoint/Dickey_Girard.ppt) (download PowerPoint file)
- [http://www.acgme.org/outcome/PowerPoint/Englander\\_Carraccio.ppt](http://www.acgme.org/outcome/PowerPoint/Englander_Carraccio.ppt) (download PowerPoint file)

## Additional Resources

## Annotated Bibliographies

- Tufts Health Care Institute:  
[http://www.thci.org/other\\_resources/TrainingReferences.html](http://www.thci.org/other_resources/TrainingReferences.html)

## Conference Abstracts

- ACGME/IHI Conference Abstracts
  - The Mirror and The Village: A Method for Teaching Practice-Based Learning and Improvement and Systems-Based Practice
  - Attaining Resident Competency In Systems-Based Practice: An Interdisciplinary Program of Home Visits to Vulnerable Adults
  - The Magic of Problem-Based Curriculum for System-Based Practice - The "Coat-Of-Arms Exercise"
  - <http://www.acgme.org/outcome/conferences/abstract.asp>

## Articles

- White J. Targets and systems of health care cost control. *Journal of Health Politics Policy and Law*. 1999; 24:653-96.
- Geyman J. Myths as barriers to health care reform in the United States. *International Journal of Health Services*. 2003; 33:315-29.
- Ball RM. What Medicare's architects had in mind. *Health Affairs*. 1995; 14:62-72.
- McManus SM. Health care reform: past experiences and current status. *Journal of Health and Human Services Administration*. 1998; 21:140-61.
- Birn AE, Brown TM, Fee E, Lear WJ. Struggles for national health reform in the United States. *American Journal of Public Health*. 2003; 93:86-91.

## Assessment Strategies

The full application of the attitudes, knowledge, and skills for effective Systems-Based Practice requires an ongoing clinical practice where there is variability in health care delivery system structure, financing, and organization. Preclerkship students need to learn the attitudinal and intellectual foundations that can be applied later to their clinical rotations. Assessment of students' knowledge should be case-based and could include multiple-choice questions, short answers, essays, reflective journals, self-assessment, and portfolios. ACGME assessment: <http://www.acgme.org/outcome/assess/assHome.asp> <http://www.abim.org/pubs/Residents%20Competency.pdf>

## Faculty Development

Faculty development should be focused on increasing knowledge about Systems-Based Practice, problem-based or case-based teaching strategies, small- group instruction, reflection activities, and print or electronic sources for population information. Faculty members often have strong opinions about health care system organization and funding based on negative personal experiences. These views need to be tempered with balanced presentations of the issues, so that students can take a reasoned approach to these contemporary problems. The hidden curriculum has a powerful impact on the attitudes students develop about Systems-Based Practice, so this aspect of faculty development needs thoughtful attention.

# Competency-Based Curriculum Resource for Preclerkship Education (using ACGME Structure):

## Budget

**Lead Author: Eric Bass, MD**

### Workgroup Members

Christine Matson, MD, Chair	Eastern Virginia Medical School
Scott A. Fields, MD	Oregon Health and Science University
Jeffrey Stearns, MD, Executive Committee Liaison	University of Wisconsin Milwaukee Clinical Campus
Eric Bass, MD	Johns Hopkins University
Thomas Defer, MD	Washington University
Allan Goroll, MD	Harvard University
Larrie Greenberg, MD	George Washington University
Mary Ann Kuzma, MD	Drexel University
Steve Miller, MD	Columbia University
William Raszka, MD	University of Vermont
Rick E. Ricer, MD	University of Cincinnati
John C. Rogers, MD, MPH	Baylor Medical College
William Wilson, MD	University of Virginia

It is unrealistic to undertake a mission of teaching these competencies without the appropriate resources to deliver the content in an effective manner. This includes not only the faculty who actually teach the curriculum, but also those who administer the curriculum. Additionally success will be dependent on a commitment of time and resources to faculty development and assessment of the learners.

Developing an extensive fund of medical knowledge has been the traditional challenge for medical students in their first two years of medical school. Yet these competencies require attention be paid to interpersonal skills and systems issues. Much of this content is most effectively taught in small-group environments, requiring an increased investment of faculty time. Experiential learning in these areas requires moving students from the classroom to clinical sites, including the clinical skills laboratory with simulated patients, and a range of clinical care sites, including in the community. Even when community faculty serve as volunteers, which is not always the case, community-based education requires an appropriate budget to implement and sustain the program.

In addition to recommending the traditional support for basic science and clinical faculty who teach in the classroom, small-group environment, and laboratory, we make the following recommendations for support of the training of medical students before they enter the clinical clerkships:

- Salary support is needed for faculty leadership and administrative coordination of programs for training medical students in the fundamental competencies presented in this document.
- To determine appropriate levels of salary support for faculty leaders and administrative coordinators, schools should measure the time that faculty spend developing, administering, and running these programs for medical students.
- Schools should explore methods for teaching and administering programs more efficiently, taking into consideration the increasing time pressures placed on faculty.
- Schools should provide support for national collaborations (e.g., conferences or visiting professorships) for faculty leaders and coordinators, as this may help to foster more efficient and effective use of faculty time by helping faculty to learn from experiences at other institutions and avoid reinventing programs;
- Schools should invest in faculty development programs, including workshops, faculty retreats, and mentorship programs, that focus on the training of medical students in fundamental competencies;
- In some areas, schools may need to provide funding for stipends to community faculty involved in teaching medical students.
- Schools should commit funds for running a standardized patient program, objective structured clinical evaluation program (OSCEs), and/or standardized and structured bedside evaluation of communication skills.
- Schools will need to invest resources in developing Web-based programs and other electronic communication technology that may enhance training in the fundamental competencies, such as accessing and assessing published evidence or practice guidelines on relevant clinical questions.
- Promotion and tenure committees should affirm that they value success in teaching medical students about fundamental competencies, including practice-based learning and improvement.