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Curriculum Resources Project Post Clerkship

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POST CLERKSHIP TRAINING RESOURCE (PCTR)

The final component of the Family Medicine Curricular Resource project (FMCR) includes a detailed analysis of elective education and training in family medicine that may follow the clerkship component. The contract mandated that: "The contractor shall propose 'new competencies for consideration by the family medicine and broader educational community.' The product of this contract shall be a three part faculty resource document that can be used by family medicine medical school faculty and their medical school and community colleagues who are engaged in the process of improving medical education." Further, "the contractor shall propose 'consultants from the broad community of medical education' to assist in providing the (project) with new information and evidence to guide the articulation of new competencies needed to better prepare students to enter residency training in any chosen specialty." The purpose of the Post-Clerkship Training Resource (PCTR) is to help educators design curricula for the senior year of medical school.

The process of developing the PCTR included numerous interactive sessions with family medicine educators engaged in student education and those involved in family medicine residency education. Additionally, this component was informed by the work of the contract workgroup of experienced educators in the primary care disciplines that addressed clinical competencies necessary for medical students prior to beginning the traditional third-year clerkships. These groups, as well as the Advisory Committee of the contract, reviewed the competencies in an iterative fashion. The work is very consistent with a recent article by Hueston, Coopman, and Chessman addressing curricula for fourth-year students planning on entering family medicine, which also references suggested fourth-year electives across several other specialties. Given that medical education is a continuum through four years of medical school, into residency, and beyond, and in light of the spiral theory of education, it was deemed appropriate to revisit

those competencies suggested for entering third-year students, in terms of possible exit competencies from medical school. As with the preclerkship and clerkship components, the PCTR is structured utilizing the ACGME six-domain rubric. Also, as with the previous components, there has been an attempt to address the appropriate level of proficiency for graduating medical students. Reinforcement throughout the four years of medical school is critical to achievement of these important competencies before entering residency training. The intent of this document is NOT to prescribe specific curricula for any school, but to describe a range of clinical competencies to be achieved by medical students upon graduation. As with the preclerkship component, the PCTR does not address competencies for the basic sciences or the content of specific specialties during the required clerkships of the third-year or fourth-year electives. Also congruent with the preclerkship component, the competencies address the whole person, and higher levels of social complexity (dyads, families and other groups, the community, and the larger environment).

While the contract instructs the project product specifically to address competencies for family medicine educators to define during post-clerkship training for students entering family medicine residencies, it also proposes articulation of competencies needed to prepare students better to enter residency training in any chosen specialty. The resource is constructed to accomplish both goals.

It is possible that advisors for the fourth-year experience of students headed for a career in family medicine will find this set of competencies useful, as will advisors for students choosing other specialties. The literature from several disciplines suggests that a broad range of experiences is important in preparation for residency. Therefore it seems reasonable in this product to link the six ACGME competencies for residency clearly to exit competencies for medical school. It is also possible that family medicine residency directors (and directors of other residencies) may use this product to assess incoming residents' proficiencies in order to design curricular experiences to facilitate optimal learning.

To repeat from the introduction to the preclerkship component: "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 in

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 the four years of medical school are only the foundation of an active learning process for which the student of medicine will be responsible throughout life."

[Post Clerkship documents](#)

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Patient Care (Post-Clerkship)

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With contributions from the FMCR Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

Rationale

After finishing core clerkships and in anticipation of residency training, students must be prepared to participate in the comprehensive care of patients' problems in the context of an on-going 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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

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.
- Demonstrate 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.
- Conduct 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, 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.
- Demonstrate the ability to interview a patient who is in a violent, abusive, or neglectful situation.
- 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 and record 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.
- Demonstrate 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.
- Perform a "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.
- Function efficiently in the clinical environment.
 - Write up findings of the complete and focused history and physical and present these findings orally.
 - Develop an appropriate differential diagnosis.
 - Perform common clinical procedures.
 - Write procedure notes for common clinical procedures.
 - Develop a management plan for the most commonly seen clinical problems.
 - Dictate appropriate medical reports.
 - Write appropriate orders for a hospital or other healthcare facility admission, ongoing care, or discharge.
 - Complete a health care facility discharge summary.
 - Record information in the health care record appropriately.
 - Achieve certification in basic life support.

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

- Describe the importance of 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 life span.
- Describe the health professional's 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 and demonstrate counseling in 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 propose 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 effectively to 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 patients' 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, and c) physician 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 and demonstrate basic communication skills that promote effective teamwork and conflict resolution.
- Describe and demonstrate ways in which physicians might effectively utilize the interdisciplinary approach in various practice settings, e.g., HMOs versus private practice, 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 and demonstrate 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 and demonstrate a systematic approach to evaluating the undifferentiated patient.
- Describe why the process of "diagnosis" may not, in fact, 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 and demonstrate 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 system barriers to successfully negotiating treatment plans and patient adherence, including the physician contribution, and demonstrate strategies that 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.
- Use 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 in regard to both patient care and 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.
- Demonstrate 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 evaluate electrocardiogram tracings systematically.
- 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.
- Attain certification in BLS (?ACLS)

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.

Possible Learning Opportunities

- Longitudinal/immersion rotations
- Student-run clinics
- Ambulatory community-based rotations, with exposure to business and front office staff
- Consider rotations in areas where extra training may be helpful: dermatology, emergency medicine, community medicine, orthopedics, and radiology.
- Consider rotations in underserved or international areas.
- Consider risks and benefits of "audition" rotations.

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

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://www.vh.org/adult/provider/radiology/icmrad/chest/chest.html>
- 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.

Medical Knowledge (Post-Clerkship)

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With contributions from the FMCR Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

Rationale

Prior to entering residency training, 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 should 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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

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 entering residency training, students will be able to demonstrate:

A. 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.
- Demonstrate a systematic approach to the patient with undifferentiated medical problems.
- Describe the biopsychosocial approach to diagnosis and treatment of patients.

B. An understanding of the biomedical and psychosocial 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 non-traditional therapies.
- Demonstrate a working knowledge of the most commonly seen disease processes in family medicine.
 - Describe the etiology, pathogenesis, treatment and prevention of the most commonly seen diseases and conditions in family medicine.
 - Describe the role of the environment, community, and family in the prevention and treatment of the most commonly seen illnesses and conditions in family medicine.
 - Describe the indications and complications of the most commonly performed clinical procedures in family medicine.
 - Describe the principles involved in dealing with patients with undifferentiated medical problems.
 - Describe the role of the family physician in the care of the patient in the clinic, institutions, and home.
 - Describe the role of the caregiver.
 - Define family medicine, family physician, and family practice.

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

- 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.

D. 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 the dysfunctional elderly.
- Describe the stages of normal emotional and cognitive development.

E. 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.

F. 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.

G. 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.

H. 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.

I. 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 work-up 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 health care 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.

J. 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.

K. 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.

L. 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.

M. 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 health care 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.

N. 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.

O. Recognition of 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.

P. 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, in 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, and 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.smbuffalo.edu/>

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

- 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

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 (requires password)
- http://pubs.ama-assn.org/cgi/collection/mens_sexual_function (requires password)
- 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. An 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. An 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 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.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.

Practice-Based Learning and Improvement (Post-Clerkship)

Lead Authors: Paul Paulman, MD and Jeffrey Stearns, MD
With contributions from the FMCRC Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

Rationale

When entering residency training, 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, 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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

Competency

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

Goals

- A. Demonstrate commitment to personal role in improving 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 versus physician sanctions for error in improving health outcomes.

B. Effectively employ recursive strategy for lifelong learning.

Learn to direct own learning about patients' problems.

- Assess one's 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.
- Describe the principles of probabilistic thinking and demonstrate its use.
- Demonstrate a systematic approach to dealing with ambiguity.

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.
- Predict the trade-off between sensitivity and specificity of a test upon changing the cut-off values for normal/abnormal test results.
- Explain how predictive values are affected by disease prevalence.
- Demonstrate the use of essential concepts of epidemiology, including pre- and post-test probabilities.
- Explain the term "gold standard."
- Describe the difference between efficacy and effectiveness.
- Demonstrate principles associated with critical appraisal of a clinical trial.

- Recommend when and 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

Practice-Based Learning and Improvement: 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 and 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.ihp.org>
- Institute of Medicine, Crossing the Quality Chasm: A New Health System for the 21st 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. Post-clerkship 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. Because 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 influence student attitudes positively 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 counterintuitive, 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 at 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.

Interpersonal and Communication Skills (Post-Clerkship)

Lead Authors: Paul Paulman, MD and Jeffrey Stearns, MD

With contributions from the FMCR Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

Goals

- A. 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.
 - Demonstrate 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.
- Describe the principles involved in dealing with challenging interview situations (e.g., angry patient.)
- Describe the basic principles of negotiation.
- Describe the principles involved in delivering bad news to patients and family members.
- Describe the principles of patient counseling for behavior change .
- Describe the principles involved in planning and completing a family conference

B. 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 non-verbal facilitation to encourage the patient's expression of thought and feelings.

C. 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 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.

D. 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 accomplish this goal completely. Modeling may be useful in changing attitudes, but students often cannot identify the specific communication skills that make a physician communicator an exemplary one. 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 Kalamazoo Consensus statement 4). 5 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. 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 - by 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.

While many of these learning opportunities are utilized in the first and second years, it is critical that they be continually expanded, refined, and reinforced during years 3 and 4.

Resources

1. Kurtz S, Silverman J, Draper J. Teaching and Learning Communication Skills in Medicine. Oxford: Radcliffe Medical Press Ltd, 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.
2. Kurtz SM, Silverman JD. The Calgary-Cambridge Referenced Guides; an aid to defining the curriculum and organizing the teaching in communication training programmes. Med Ed. 1996; 30:83-9.
3. 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.
4. 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.

5. Makoul G. Communication skills education in medical school and beyond. JAMA . 2003; 289:93.
6. 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 www.bayerinstitute.org also includes materials for faculty development.
7. 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.
8. 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 medical practitioner working with health behaviors: over-eating, physical inactivity, smoking, 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.
9. 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.
10. 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.
11. Silverman J, Kurtz S, 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.

12. 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.
13. <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 a 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:

- Standardized patients
- OSCEs
- Observed performance with patients and others
- Written reflections describing how a learner would approach a certain situation
- 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.

Professionalism (Post-Clerkship)

Lead Authors: Paul Paulman, MD and Jeffrey Stearns, MD
With contributions from the FMCR Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

Rationale

When entering residency training, students must be prepared to describe and demonstrate 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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

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

A. 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 the physician's self-interest.
- Demonstrate ability to take responsibility for one's own actions, including errors.
- Describe examples of systems to improve patient safety.
- Describe 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.

B. 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 physicians' 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

- Obtain informed consent for an examination or procedure.

Business practices

- Identify the ethical hazard and respond appropriately in situations such as being asked to practice beyond legal limits or personal comfort (e.g., when asked to provide medical care to friends or relatives or 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

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

- Demonstrate 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.
- Describe the principles involved in service learning and care of the underserved.

D) **Make the transition from student to resident**

- Understand the process of transitioning from student to resident and have a systematic approach to accomplishing this process.
- Demonstrate an understanding of the principles of lifelong learning.
- Describe the principles of career planning.
- Describe the principles of self-assessment of core knowledge and skill competency.

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.

Learning Opportunities

- Ethics elective
- Cultural competency elective
- International elective
- Foreign language immersion experience
- Balint group
- Underserved elective
- Hospice elective

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 AHC, 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 physicians' 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 nonjudgmental 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.

Systems-Based Practice (Post-Clerkship)

Lead Authors: Paul Paulman, MD and Jeffrey Stearns, MD

With contributions from the FMCR Project Executive Committee, Workgroup Chairs, Advisory Committee and Curriculum Consultant

Rationale

When entering residency training, 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.

[Sentences in bold represent information obtained from educators in family medicine residencies and have particular significance for those students seeking residency training in family medicine.]

Competency

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

Goals

A. 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.

B. Function in the practice environment.

- Describe the principles of practice management, health care financing, and quality improvement.
- Describe the basic principles of coding and billing.
- Describe the process of consultation and referral.
- Describe the process of informed consent.
- Describe "medical cost-containment" strategies.
- Describe the roles of other health professionals in the care of the patient in the office, health care facility, and the home.

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 may 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.

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 (download PowerPoint file)
- 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

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

1. White J. Targets and systems of health care cost control. J Health Politics Policy and Law. 1999; 24:653-96.
2. Geyman J. Myths as barriers to health care reform in the United States. Int J Health Services.

2003; 33:315-29.

3. Ball RM. What Medicare's architects had in mind. *Health Affairs*. 1995; 14:62-72.
4. McManus SM. Health care reform: past experiences and current status. *J Health and Human Services Administration*. 1998;21:140-61.
5. Birn AE, Brown TM, Fee E, Lear WJ. Struggles for national health reform in the United States. *Am J Pub 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> (download pdf file)

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.