SECTION I

Competencies

CHAPTER 1

Clinical Competencies

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OBJECTIVES

At the conclusion of this chapter, the student will be able to

1. Discuss the evolution of the competency-based medical education movement in the United States
2. Define *competent* and relate it to the continuum of learning as described by Dreyfus and Dreyfus
3. Discuss the competency-based medical education movement in countries outside of the United States and in professions outside of medicine
4. Define each of the major competencies used in medical education in the United States and list behaviors expected of competent providers for each competency
5. Describe some of the issues that will face medical educators as the competency-based medical education movement continues to evolve

KEY TERMS

Competency-based education
Competencies
Medical knowledge
Patient care
Professionalism
Interpersonal and communication skills
Systems-based practice
Practice-based learning and improvement
Evidence-based medicine
Medical quality

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The History of the Competency-Based Education Movement in Medical Education

In 1910, Abraham Flexner produced his famous "Flexner Report," which called for major reforms in medical education.[1] While praising a number of schools in the United States and Canada, Flexner singled out Johns Hopkins as the model for all of medical education. Almost half the medical schools in the United States closed and those that remained open adopted a standardized approach to medical education that remains in effect to this day. Among the changes were:

Competency-based education: a method of education based on instruction and assessment centered around specified behavioral outcomes

- Standardized admissions requirements
- Four years of medical education
- Medical school integration into larger universities

Major consequences of the Flexner report were the close adherence to the scientific method in the educational process, the grounding of education in biochemistry and physiology, and the development of rigorous scientific research. While the overall impact on quality care increased substantially, as early as 1926 there were concerns that this new breed of scientifically trained providers may be lacking some essential ingredients of what we today refer to as competence.

In his address to Harvard Medical School students, later published in the *Journal of the American Medical Association* as "The Care of the Patient," Francis Weld Peabody lamented, "The most common criticism made at present by older practitioners is that young graduates have been taught a great deal about the mechanism of disease, but very little about the practice of medicine—or, to put it more bluntly, they

are too 'scientific' and do not know how to take care of patients."[2] He concluded with one of the most famous and oft-quoted passages in the medical literature: "The good provider knows his patients through and through, and his knowledge is bought dearly. Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for patients."

This general concern for the production of the complete provider surfaced again in the 1980s and 1990s. Merenstein and Schulte, in their task force report "Residency Curriculum for the Future," for the Society of Teachers of Family Medicine, called for the creation of a competency-based curriculum to address the myriad factors involved in the training of a family provider.[3] In 1997, Bell, Kozakowski, and Winter published "Competency-based Education in Family Practice," which called for education and evaluation around 26 core competencies for family providers, organized into five domains:[4]

- Clinical Acumen (how you "do" medicine)
- Interpersonal Skills (how you do medicine "with others")
- Organizational Skills (how you do medicine so that you "get it done")
- Business Practices (how you do medicine so that you can "keep doing it")
- Personal and Professional Growth and Development (how you do medicine so that you keep "doing it better")

The authors acknowledged, as Peabody did seven decades previously, that a great deal of medical knowledge is taught in family medicine residency education; however, there exists a cohort of providers who cannot or will not apply that knowledge in the most effective way to enable the highest-quality outcomes because of lack of attention to these concerns in the day-to-day process of learning.

In 1999, a watershed moment occurred in medicine in the United States with the publication of the Institute of Medicine's report "To Err Is Human: Building a Safer Health System."[5] The report estimated that between 44,000 and 98,000 people die each year as a result of medical errors, and called for a comprehensive effort by healthcare providers, government, consumers, and others. In 2001, the Institute of Medicine released "Crossing the Quality Chasm: A New Health System for the 21st Century."[6] This report called for six areas of improvement in the healthcare system:

- Safety
- Effectiveness
- Patient-centeredness
- Timeliness
- Efficiency
- Fairness

At approximately the same time, Leach and colleagues at the Accreditation Council for Graduate Medical Education (ACGME) decided to adopt changes to the required general requirements for residency education in the United States to address the concerns raised by the Institute of Medicine.[7] The Outcomes Project, a 10-year comprehensive effort designed to improve patient outcomes through education, was undertaken. Representatives from the 27 recognized specialty boards worked together to craft six core competencies that were to be studied by, and evaluated in, all resident and fellowship providers. The six **competencies** are:

- **Medical Knowledge**
- **Patient Care**
- **Professionalism**
- **Interpersonal and Communication Skills**
- **Systems-based Practice**
- **Practice-based Learning and Improvement**

A short while thereafter, the American Osteopathic Association (AOA) adopted these same

Competencies: a set of behaviors expected of all providers to be minimally prepared for the practice of medicine

Medical knowledge: as a competency, the application of medical sciences to the care of the individual patient

Patient care: as a competency, applying compassionate, necessary, and expert care to the patient, his/her family, and the community in which they live

Professionalism: as a competency, applying the values and ethics of the professional oath to each and every patient care situation

Interpersonal and communication skills: as a competency, applying the ingredients of effective communication (oral, written, and other) and teamwork to the care of the patient

Systems-based practice: as a competency, acknowledging the larger system of care in which the physician cares for the individual patient

Practice-based learning and improvement: as a competency, collecting and analyzing data from practice experience in order to continuously improve the quality of care

six competencies and added "the first competency," osteopathic philosophy and osteopathic manipulative medicine.[8]

What the ACGME and AOA efforts had in common was a desire to improve quality health care by lessening unnecessary and unexplained variation in the process of care used by clinicians. While the art of medicine is essential to the effective practice of medicine, there exists a need to ensure that every clinician demonstrates a core set of behaviors as a minimum standard. There should be little variation in the demonstration of the core behaviors described for each of the competencies regardless of a provider's specialty, scope of practice, or geographic location.

Today these competencies are part of the general education of all providers in the United States and beyond, and have become a driving force in medical school education and continuing medical education. While the full effects of the effort on patient care are not yet known, there is general agreement in the community of medical educators that value has been added to the educational process.

THE ACGME AND THE AOA COMPETENCIES

In 2001 the ACGME began its 10-year Outcomes Project to introduce learning and refine education around six core competencies in graduate medical education. The project included four phases:

- Forming the initial response (July 2001–June 2002)
- Sharpening the focus and definition of the competencies (July 2002–June 2006)
- Fully integrating the competencies with learning and clinical care (July 2006–June 2011)
- Developing models of excellence (July 2011 and beyond)

Leach and Swing from the ACGME partnered with Dreyfus and Dreyfus (learning experts) and Batalden (quality expert) to develop a model for competency-based education within graduate education that would drive the Outcomes Project. In their paper "General Competencies and Accreditation in Graduate Medical Education," they outlined the Dreyfus Model of Knowledge Development, in which medical learners progress through five distinct stages of development:[9]

- Novice (e.g., the freshman medical student learns the process of the history and physical examination using memorization)
- Advanced beginner (e.g., the junior medical student begins to see aspects of common situations, and maxims emerge)
- Competent (e.g., the resident provider learns to plan the approach to each patient's situation. Because the resident has planned the care, the consequences of the plan are knowable to the resident and offer the resident an opportunity to learn)
- Proficient (e.g., the specialist provider early in practice struggles with developing routines that can streamline the approach to the patient)
- Expert (e.g., the midcareer provider has learned to recognize patterns of discrete clues and to use intuition)

One implication of this model is that undergraduate medical education must prepare the learner to reach the advanced beginner stage so that the task of graduate medical education can be the assurance of competence by completion. Competence is therefore a *minimum standard* necessary for independent practice.

Another implication of this model is that competence is not necessarily something to be measured across each distinct competency. Rather, competence is a set of knowledge, skills, and attitudes that are habitually applied across many and varied situations. Because residents and fellows are in a position to experience the consequences of their decision and actions, a measure of competence can be the degree to which the graduate medical education student acts fully in accord with patient-centeredness—that is, the alignment of one's words, actions, thoughts, decisions, and plans in accord with the belief that *everything* is done on behalf of the patient, his/her family, and the community in which the patient lives. Said another way, graduate medical students can be deemed competent when they are consistently acting in accord with the idea that they *know* that patients' lives are on the line with every action and decision they make.

Epstein and Hundert captured this notion of competence in their article "Defining and Assessing Professional Competence."[10] They proposed that professional competence is "the habitual and judicious use

of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and community being served."

In 2003, the AOA published the Report of the Core Competency Task Force. Gallagher and colleagues acknowledged the impact of the Institute of Medicine and the work undertaken by the ACGME. The Task Force was asked to define, using measurable criteria, each of the seven competencies adopted by the AOA Board of Trustees. The Board of Trustees chose to adopt the six ACGME competencies and added Osteopathic Philosophy and Osteopathic Manipulative Medicine. The ACGME and AOA competencies are discussed in detail in this chapter.

COMPETENCIES FOR THE PHYSICIAN ASSISTANT PROFESSION

The physician assistant profession similarly embraced the challenge to define clinical competencies to meet the need for public accountability. In 2004, the National Commission on Certification of Physician Assistants (NCCPA) was joined by the Accreditation Review Commission for Education of the Physician Assistant (ARC-PA), the Association of Physician Assistant Programs (APAP), and the American Academy of Physician Assistants (AAPA) to create a consensus document: "Competencies for the Physician Assistant Profession."[11]

The defined competencies included the same six areas proposed by the ACGME and adopted by the AOA. In addition, the document cites "an unwavering commitment to continual learning, professional growth and the physician-PA team, for the benefit of patients and the larger community being served."

NURSE PRACTITIONER CORE COMPETENCIES

Core competencies for the nurse practitioner profession were defined by the National Organization of Nurse Practitioner Faculties and National Panel in 2006 to be consistent with the recommendations of the Institute of Medicine's report "The Future of Nursing."[5] Content within the competency headings aligns with that of other medical professional competencies. The following nine core competencies are identified:[12]

- Scientific Foundation Competencies
- Leadership Competencies
- Quality Competencies
- Practice Inquiry Competencies
- Technology and Information Literacy Competencies
- Policy Competencies
- Health Delivery System Competencies
- Ethics Competencies
- Independent Practice Competencies

Competency Statements from Other Countries

Efforts at defining provider competence for use in medical education have been described outside the United States.

In Canada, the CanMEDS (Canadian Medical Education Directions for Specialists) framework (see **FIGURE 1-1**) was created to address the question posed by the Royal College of Providers and Surgeons of Canada: "How can we best prepare providers to be effective in this environment and truly meet the needs of their patients?"[13] In the CanMEDS framework (depicted in the diagram below), there is acknowledgment of the provider as medical expert. The diagram then demonstrates the interconnectedness of the other "roles":

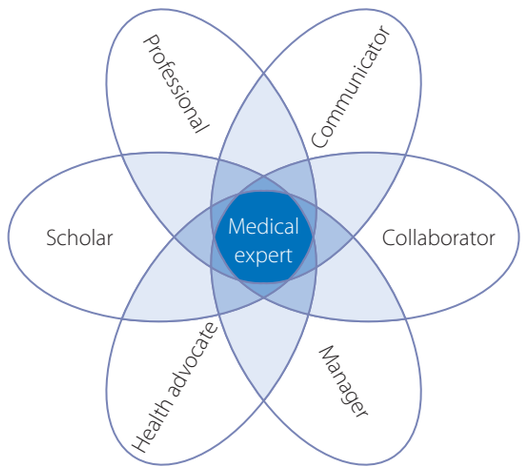

FIGURE 1-1 Medical experts.
Courtesy of: Canadian Medical Education Directions for Specialists

Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional.

Each of the roles has a list of Key Competencies. (Enabling competencies that are stated for each key competency is beyond the scope of this chapter. They can be found in the CanMEDS framework document.)

ROLES

Medical Expert

1. Function effectively as a consultant, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care
2. Establish and maintain clinical knowledge, skills, and attitudes appropriate to their practice
3. Perform a complete and appropriate assessment of their practice
4. Use preventive and therapeutic interventions effectively
5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic
6. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise

Communicator

1. Develop rapport, trust, and ethical therapeutic relationships with patients and families
2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals
3. Accurately convey relevant information and explanations to patients and families, colleagues, and other professionals
4. Develop a common understanding on issues, problems, and plans with patients and families, colleagues, and other professionals to develop a shared plan of care
5. Convey effective oral and written information about a medical encounter

Collaborator

1. Participate effectively and appropriately in an interprofessional healthcare team
2. Effectively work with other health professionals to prevent, negotiate, and resolve interprofessional conflict

Manager

1. Participate in activities that contribute to the effectiveness of their healthcare organizations and systems
2. Manage their practice and career effectively
3. Allocate finite healthcare resources appropriately

Health Advocate

1. Respond to individual patient health needs and issues as part of patient care
2. Respond to the health needs of the communities that they serve
3. Identify the determinants of health of the populations that they serve
4. Promote the health of individual patients, communities, and populations

Scholar

1. Maintain and enhance professional activities through ongoing learning
2. Critically evaluate information and its sources, and apply this appropriately to practice decisions
3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others, as appropriate
4. Contribute to the creation, dissemination, application, and translation of new medical knowledge and practices

Professional

1. Demonstrate a commitment to their patients, profession, and society through ethical practice
2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation
3. Demonstrate a commitment to provider health and sustainable practice

Good Medical Practice

In addition to these educational documents, two noteworthy papers exist to guide the development of physician competency. Good Medical Practice for General Practitioners published by the Royal College of General

Practice in the UK sets out the standards for the revalidation of general practitioners.[14] The report outlines seven broad categories for Good Medical Practice:

- Good medical care
- Maintaining good medical practice
- Relationship with patients
- Working with colleagues
- Teaching and training, appraising and assessing
- Probity
- Health and the performance of other doctors

In the United States, Good Medical Practice–USA (GMP-USA) "is a tool that has been developed to describe desirable characteristics of competent providers licensed to practice medicine in the United States."[15] GMP-USA follows the same six competencies defined by the ACGME, which are translated into six key principles. Good providers:

- Care for patients
- Maintain knowledge and skills
- Actively learn from their practices
- Exhibit excellent interpersonal and communication skills
- Exhibit commitment to the ethical and professional standards of the medical profession
- Practice effectively in systems of health care

Competencies

MEDICAL KNOWLEDGE

The medical knowledge competency requires *a demonstration of knowledge about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) sciences and the application of this knowledge to patient care*. Behaviors expected include:

- Demonstrating an investigatory and analytical-thinking approach to clinical situations
- Knowing and applying the basic and clinically supportive sciences that are appropriate to the provider's discipline

The competency of medical knowledge includes knowing basic medical science and social and behavioral sciences, and then correctly applying this knowledge.

ACQUIRES BASIC MEDICAL KNOWLEDGE

The foundation of medical knowledge is a deep, thorough understanding of the structure and function of the body, including the genetic, molecular, cellular, and biochemical mechanisms underlying the healthy development, structure, and function of its major organ systems. Equally important to this competency is knowledge of the various possible causes (genetic, metabolic, microbiologic, toxic, autoimmune, neoplastic, and traumatic) of adverse health outcomes.

Although medical knowledge is specialty-specific, there are a number of overarching principles of competence and the acquisition of skills that apply to all specialties. Many of these principles are embodied within the **evidence-based medicine** paradigm, which represents a shift in how providers learn and practice medicine.[16] These principles include:

Evidence-based medicine: the science of applying the best available literature to the care of the individual patient and his/her specific circumstance

- Using information derived from systematic, empirical research to determine the usefulness of diagnostic tests and the efficacy of therapy
- A thorough understanding of the rules of evidence required to evaluate and effectively apply the medical literature
- An understanding of and commitment to using decision analysis as a tool for solving difficult problems in clinical medicine

Acquires Social-Behavioral Knowledge

While medicine is considered a biological science, patients are social-behavioral beings who contract diseases. It is highly likely that a disease will affect the patient personally, and that the personality of the patient will affect the disease itself. Thus, the more social-behavioral knowledge clinicians have about patients, the greater their ability to apply scientific medical knowledge to improving the patient's health and welfare. Effective communications—questioning, observing, interacting, and interpreting—are the bedrock skills for acquiring social-behavioral knowledge about patients.

Perhaps the most effective strategy for incorporating social-behavioral knowledge into patient care involves adopting the biopsychosocial (BPS) model for medical diagnosis and treatment. This model, founded on the work of Dr. George Engel, is both a philosophy of clinical care and a practical clinical guide.[17] The BPS model represents a complex combination of the biological condition of the patient (i.e., the disease or pathological state); the psychological condition of the individual (i.e., native personality and reactions to the disease or primary psychopathology as a cause of somatic disease); and the social condition or cultural origins, which often define the patient's economic, religious, and attitudinal reactions to disease and prevention. These three dimensions are integrated in the patient as a whole greater than the sum of its parts: biological, psychological, and social.

The provider-patient interview is essential to acquiring necessary psychological and social knowledge. During the interview, the provider and patient exchange information in a fact-finding and analytic process to arrive at a diagnosis and treatment plan. Accordingly, the more the provider knows about the social and behavioral dimensions of the patient, the greater his/her ability to specify a treatment plan tailored to the patient's needs.

Providers must be skilled in social-behavioral knowledge to properly diagnose and treat any patient with a disease, whether medically or psychologically derived.

Applies Medical Knowledge

Medical and social-behavioral knowledge must be applied effectively to the clinical situation at hand. The process of evidence-based medicine is an important guide to the application of this knowledge. It is also a way of ensuring that clinical practice is based on the best evidence available. Key clinical questions must be formed that ultimately direct the patient care process. A five-step process forwarded by leading proponents of EBM includes:[16]

- Crafting a clinical question
- Searching the literature and selecting the best studies
- Critically appraising and interpreting the studies
- Applying the studies to the individual patient scenario
- Evaluating the performance with this patient

Key points pertaining to the medical knowledge competency are:

- Skilled providers have made a commitment to a lifelong process of advancing their medical knowledge through the systematic identification, evaluation, and application of the best available information.
- Providers must be skilled in social-behavioral knowledge to properly diagnose and treat any patient with a disease, whether medically or psychologically derived.
- The practice of medicine is not just about how much a clinician knows. To effectively manage medical cases and provide optimal care for patients, clinicians must also be able to apply systematic research and critical thinking processes to what they already have learned.

Providers who exemplify the medical knowledge competency demonstrate these behaviors:

- Have practical skills in acquiring, integrating, and implementing foundational knowledge in the biomedical sciences.
- Understand the pathophysiology of common conditions and diagnoses
- Understand the indications, contraindications, and complications of various tests and procedures
- Routinely demonstrate an investigatory and analytical-thinking approach to clinical situations
- Can consistently critique medical literature and locate the "best data" most applicable to the patient
- Understand the concepts of evidence-based medicine and are able routinely to apply these principles to patient care
- Understand that the medical knowledge base has layers of technical proficiency, practical (common) sense, and wisdom, and that it deepens with experience
- Demonstrate a nonjudgmental attitude toward gathering information about psychosocial factors and biological diseases

- Establish rapport, becoming a partner with the patient
- Understand the impact of the illness on the patient
- Develop mutual plans for diagnosis, treatment, and follow-up

PATIENT CARE

The patient care competency requires *the provision of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health*.

Behaviors expected include:

- Communicating effectively and demonstrating caring and respectful behaviors when interacting with patients and their families
- Gathering essential and accurate information about the patients
- Making informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- Counseling and educating patients and their families
- Using information technology to support patient care decisions and patient education
- Competently performing all medical and invasive procedures
- Providing healthcare services aimed at preventing health problems or maintaining health
- Working with healthcare professionals, including those from other disciplines, to provide patient-focused care

The patient care competency involves gathering information effectively, developing and implementing effective patient care plans, and providing effective patient education and counseling in a compassionate and empathic manner.

Effectively Gathers Information

The ability to gather relevant information and organize it into a patient care plan is at the heart of quality care. This information will be documented in patient records and shared with the healthcare team and the patient. Errors can often be traced to incomplete or disorganized information-gathering or failing to communicate findings in a clear and prioritized fashion—regardless of whether the information is oral or written.

According to Donabedian, patient care has two components: technical and interpersonal.[18] The technical component is always interwoven with the interpersonal and is effectively completed only if there is a trusting and informed relationship between provider and patient. Eliciting information is essential not only for diagnosis but also for clinical management, which considers patient preferences and participation in the process.

Like and Steinert, in their article "Medical Anthropology and the Family Provider," discuss the need to elicit four components of the patient's experience in order to effectively gather information about the patient's desire to seek care:[19]

- Explanatory models (the patient's meaning [understanding] of illness)
- Prototypical experiences (the patient's experience of the illness in him-/herself and others)
- Hidden agendas (special concerns the patient has that are difficult to voice)
- Requests (specific hopes and desires the patient has of his/her clinician and the health system)

Develops and Implements Effective Patient Care Plans

High-quality patient care requires gathering complete and relevant information and using this information in a reciprocal exchange that will assist in selecting diagnostic studies and treatment options. Billings and Stoeckle created a comprehensive model that organizes the clinical encounter into seven tasks:[20]

- Opening the interview
- Establishing a professional and supportive relationship
- Obtaining essential information for diagnosis and management
- Formulating a diagnosis
- Formulating an initial patient care plan
- Implementing the patient care plan
- Documenting information for the patient record

Gathering information leads to the development of the patient care plan, which includes three key

dimensions: differential diagnosis, diagnostic evaluation, and therapeutic interventions. Each of these is described elsewhere in this text.

Provides Effective Patient Education and Counsel

Finally, once the care plan is in place, the provider must provide effective patient education and counsel to allow the plan to be enacted. Clinical care has been evolving toward a more patient-centered model in which patients are actively involved in their own care and providers design care plans suited to the patient's individual needs and preferences. From the patient's point of view, the provider who provides skilled clinical care:

- Treats him/her with dignity and respect
- Listens carefully to the questions
- Is easy to talk to
- Takes his/her concerns seriously
- Spends enough time with him/her

Studies such as the Kaiser Health Tracking Poll reveal that patients express frustrations.[21] They want information, they want to be heard, and they want to participate in systems of care that respond to their needs. This view was reaffirmed by the Institute of Medicine in the landmark report "Crossing the Quality Chasm," which included patient-centered care as one of the six primary aims for twenty-first-century health care, alongside improving patient safety, reducing healthcare disparities, and working from an evidence base.[6]

The patient-centered provider strives to understand the impact of the patient's family and work environments, his/her coping behaviors, and lifestyle and social support in ameliorating or aggravating the illness. The goal of patient-centered care is finding common ground in three key areas: the nature of the problem and priorities, the goals of treatment, and the roles of the provider and the patient.

A final component of patient-centered care involves conscious attention to the patient-provider relationship. At every visit patient-centered clinicians strive to build an effective long-term relationship with each patient as a foundation for their work together—recognizing that the relationship itself has healing potential.

The National Healthcare Quality Report, published by the Agency for Healthcare Research and Quality, uses four indicators to measure patient-centeredness:[22]

- Did the healthcare provider listen carefully?
- Did the healthcare provider explain things clearly?
- Did the healthcare provider show respect for what the patient had to say?
- Did the healthcare providers spend enough time with the patient?

Only slightly more than half of all patients reported that their healthcare provider always listened carefully, always explained things clearly, and always showed respect for what they had to say. Those who reported their health as fair or poor were more likely to report that they were not shown respect. Slightly less than half of patients felt that their providers spent enough time with them.

Various studies have shown that attending to these behaviors through a greater focus on patient-centeredness may lead to greater patient satisfaction and increase the likelihood that patients have access to essential medical and preventive health information, which in turn improves the chances of medical conditions' being properly diagnosed.

Key points pertaining to the patient care competency are:

- All of patient care is dependent on the initial collection of data that will inform each subsequent step in diagnosis and management. The method used should always be systematic, accurate, and relevant to the requirements of the clinical encounter.
- Once information is gathered, the provider must begin to define the potential active disease processes. The resulting "list" is the differential diagnosis. The diagnostic evaluation helps to sort the likelihood of the various possible conditions. Finally, the provider designs therapeutic interventions to address the better-defined condition or diagnosis.
- The once-prevalent idea of the detached clinician who keeps a safe emotional distance is being replaced with the patient-centered model.

Providers who exemplify the patient care competency demonstrate these behaviors:

- Utilize a standardized approach to data gathering, which leads to a problem list, identification of chief complaint, a history of present illness, the patient's medical history, medications, allergies, social and family history, review of relevant systems that will impact care, performance of an appropriate physical examination, and review of imaging and laboratory data if available
- Develop broad differential diagnoses that consider likely conditions as well as life-threatening conditions
- Rapidly narrow a broad differential diagnosis to a limited differential diagnosis
- Effectively diagnose and treat life-threatening conditions, emergent conditions, and chronic disease
- Synthesize all clinical and laboratory data into a treatment strategy that improves the patient's condition
- Create diagnostic and monitoring plans
- Understand the limitations of diagnostic studies as well as the risks and complications of any medication ordered or procedure performed
- Keep clear and accurate documentation
- Effectively and precisely communicate medical orders
- Provide effective strategies and education for disease and injury prevention and control
- Seek to understand patients' ideas about what is wrong with them
- Are sensitive to patients' feelings, especially fears about being ill
- Are responsive to patients' expectations about what should be done
- Counsel patients and their families regarding medical conditions and treatment plans

INTERPERSONAL AND COMMUNICATION SKILLS

The interpersonal and communication skills competency requires *a demonstration of interpersonal communication skills that result in effective information exchange and teaming with patients, the patients' families, and professional associates.* Expected behaviors include:

- Creating and sustaining a therapeutic and ethically sound relationship with patients
- Using effective listening skills and eliciting and providing information using effective nonverbal, explanatory, questioning, and writing skills
- Working effectively with others as a member or leader of a healthcare team or other professional group

The interpersonal communication skills competency includes the dimensions of providing precise, effective instruction to staff and patients, effectively seeking feedback, and demonstrating attentiveness when communicating.

Provides Precise, Effective Instruction to Staff and Patients

Providers who are effective in giving precise instructions take great care in explaining their diagnoses, informing patients and staff members about the medical situation, and justifying their decisions. They assess what information people need, when they need it, and the level of detail required for a carefully crafted message that individuals are likely to find instructive. The goal is not just to give information but also to connect with the patient and then instruct and explain clearly and precisely.

A review article in the *Annals of Internal Medicine* written by Weiner indicated that optimal communication skills involve relationship building, asking open-ended questions, using verbal encouragement, avoiding interruptions, providing patient education, expressing personal warmth, and eliciting patient concerns.[23] More importantly, when providers use these skills, patient outcomes improve. Patients report greater satisfaction, lower stress, stricter medication adherence, better blood-pressure control, and success in smoking cessation.

Travaline and his colleagues outlined an effective strategy for giving instructions to either patients or staff.[24] Their nine strategies are:

- Assess what the patient already knows
- Assess what the patient wants to know
- Be empathic

- Slow down
- Keep it simple
- Tell the truth
- Be hopeful
- Watch the patient's body and face
- Be prepared for a reaction

Cultural issues may cause problems in cross-cultural encounters. Some patients and staff members may have trouble with authority, physical contact, communication styles, gender, sexuality, and/or family. Misra-Hebert recommends that providers try three things to manage these differences:[25]

- Build the relationship to establish trust by speaking slowly and avoiding jargon. Give information in a structured way, step-by-step so as to enhance learning.
- Assess the patient's understanding of health problems to determine how he/she is experiencing or making sense of the condition.
- Manage the patient's problems by acknowledging and respecting the role of the family, inquiring about the use of alternative treatments, and providing patient education materials in the language the patient can understand.

Effectively Seeks Feedback

Providers who are open to feedback are generally more effective than those who resist listening to others' views. Feedback creates collaboration, and seeking feedback signals a willingness to work collaboratively as part of the team to share information, opinions, and strategies. The Institute of Medicine emphasized the need for effective teamwork in reducing many medical errors.[6] Fewer errors occur when members know their responsibilities, trust one another, and share information. Soliciting and accepting feedback from other team members, patients, and their families creates a communication safety net that protects the patients.

Seeking feedback gives patients a chance to participate in their own care and lessens patient anxiety and the likelihood of medical malpractice claims. Nodding, reflective facial expressions, and continued eye contact constitute the most essential nonverbal signals that the provider is open to feedback and genuinely wants the patient to be a partner in his/her treatment.

Students of medicine should be able to incorporate feedback from the beginning of their training. Papadakis and colleagues found that medical students who did not listen to and incorporate feedback had a threefold-higher risk of having medical licensure issues as compared with their peers.[26]

Demonstrates Attentiveness When Communicating

Listening and attentiveness are essential to collecting detailed medical information and to interacting with healthcare professionals in busy, noisy, and often stressful clinical settings. Not only is listening a patient safety issue, but being attentive to patients and staff members is perhaps the single most important communication feature in building productive, trusting relationships. Remaining attentive both verbally and nonverbally sends a message that the provider cares about the patient's needs and goals.

In a document titled "The Kalamazoo Consensus Statement," a group of 21 experts in the field of medicine identified seven essential components of communication.[27] The seven elements are:

- Establishes rapport
- Opens discussion
- Gathers information
- Understands the patient's perspective of illness
- Shares information
- Reaches agreement on problems and plans
- Provides closure

There are three main components to effective listening:

- The first element is paying attention by demonstrating appropriate nonverbal cues that you value the other person's contribution. These include eye contact, body posture, allowing the person to complete their thoughts without interruption, providing occasional verbal acknowledgment that you are listening, and using open-ended questions.
- The second element of effective listening is summarizing or paraphrasing the other's comments or key phrases. This communicates both empathy and understanding.
- The third skill is asking questions or providing comments that are clearly focused on the other's

topic. Giving the "topic control" to the other demonstrates empathy and shows support for his/her perspective. It honors the other's point of view, which is pivotal in building a lasting relationship. Perhaps more importantly, it stimulates even more self-disclosure.

Key points pertaining to the interpersonal and communication skills competency are:

- Delivering precise, step-by-step instructions enhances learning and increases patient safety.
- Actively soliciting feedback builds a collaborative team culture, creates effective relationships with patients and staff, and reduces medical errors.
- Providers who avoid chronic interruptions and focus on the speaker are significantly more likely to be judged as competent communicators.

Providers who exemplify the interpersonal and communication skills competency demonstrate these behaviors:

- Provide information in a detailed, friendly manner
- Adjust the message to the listener's needs, level of emotion, and medical literacy
- Work to establish credibility through the demonstration of knowledge and trustworthiness, and seek to understand patient and staff perspectives on issues
- Demonstrate a concern for patient safety
- Contribute to the creation of a team atmosphere
- Are perceived as being friendly and accessible
- See issues from the other's perspective
- Empathize with the other's condition and circumstance
- Maintain eye contact and an open body posture
- Paraphrase key elements of the other's contributions

PROFESSIONALISM

The professionalism competency requires *a demonstration of a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population*. Expected behaviors include:

- Demonstrating respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and ongoing professional development
- Demonstrating commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
- Demonstrating sensitivity and responsiveness to patient's culture, age, gender, and disabilities

The professionalism competency includes the domains of demonstrating ethical behavior, showing sensitivity and compassion, and taking responsibility.

Demonstrates Ethical Behavior

Providers who act professionally consistently put the needs of patients and their families, societies, and the medical profession itself ahead of their own needs. They weigh every action they take, both while engaged in active practice and while participating in all other aspects of their lives. Attention to ethical behavior is a key component of the demonstration of professionalism. Lack of attention to professionalism and ethical behavior is not only the number one cause that state medical boards cite for taking action against providers; it is also a key factor in medical error and patient safety concerns. Providers who fail to act ethically create barriers to communication, teamwork, and quality patient care.

"Project Professionalism," a major report from the American Board of Internal Medicine, cites altruism, accountability, excellence, duty, service, honor and integrity, and respect for others as the aspirations of professionalism.[28] The authors state that professionalism is compromised by the abuse of power, arrogance, greed, misrepresentation, impairment, lack of conscientiousness, and conflicts of interest.

The Tavistock Principles move the conversation of ethical conduct beyond the individual provider-patient relationship and into the realm of global ethics.[29] The principles include:

- Attention to the basic human right to health care
- The importance of the health of populations

- Medicine's obligations to end suffering, minimize disability, and prevent disease and promote health
- A need for cooperation
- To do no harm
- To be open, honest, and trustworthy as healthcare providers

Chervenak and McCullough draw attention to the relationship between ethics and leadership in medicine by introducing the concept of the provider-leader as the "moral fiduciary of the patient."[30] The virtues that follow from this stance include self-effacement, self-sacrifice, compassion, and integrity. Vices that undermine the moral culture of professionalism include unwarranted bias, primacy of self-interest, hard-heartedness, and corruption.

Shows Sensitivity and Compassion

The professionalism competency encourages providers to increase their sensitivity to the specific needs of patients and staff no matter who they are.[31] Diversity covers issues such as religion, sexual orientation, gender, race, disability, social class, education, income, and age. When working with patients, it is important to think of them not only as biological systems, but as people with diverse backgrounds that strongly shape their beliefs regarding health, illness, and medicine. Approximately 1 million immigrants per year come to the United States, mostly from Latin America and Asia. Roughly one in every three people in this country belongs to an ethnic minority group.

People of European ancestry remain the largest ethnic group in the United States. In 2002, the Hispanic, or Latino, population became the largest minority group, composing 13% of the population. The African American population composes about 12% of the total population. About 2% of the population identifies themselves as belonging to more than one ethnic group.

Cultural beliefs associated with ethnicity shape patients' responses to symptoms, health, and health care. Cultural factors influence a person's tendency to seek treatment.

Age and gender also influence the quality of health care a person receives. Older Americans and females, the latter even after accounting for visits for maternal care, report more symptoms and seek more care than their younger male counterparts. Older Americans and females also experience unique barriers to health care, such as financial factors and the perception of the role of emotional issues.

Responsibility

To serve implies that the needs of the person being served have primacy over the needs of the person providing that service. In medicine this means that the provider must possess the ability to correctly identify the needs of the patient and then choose actions that are generated on behalf of the patient. The litmus test for professionalism is the determination of the root of the behavior. If the behavior is rooted in conversations generated on behalf of the patient, that behavior is deemed professional. If the behavior is rooted in conversations generated on behalf of the provider, then that behavior is deemed unprofessional.

Placing the patient's needs first means that when you are acting within your professional role, you make decisions and choose actions solely on behalf of your patient's well-being. It also means that you represent your profession well by your personal decisions and actions.

Among the considerations for providers operating from the primacy of patient needs are their personal appearance, the appearance of their practice site, the behavior of their staff, the manner in which they schedule patients, the systems they use for collecting and tracking medical information and providing follow-up to patients, the telephone and other communications systems that are used, the telephone or email message for assuring access to care after hours, and the manner in which they bill for services. The literature supports the idea that attention to professional appearance increases the effectiveness of the care delivered.

Key points pertaining to the professionalism competency are:

- You will be known as an ethical provider based on your actions, rather than on your words. The actions that are most important are those that demonstrate your willingness to serve your patient, your patient's families, and society in general.
- Professionalism means tailoring interventions to patients' diverse backgrounds. These backgrounds

influence their perception of illness, interactions with their provider, trust and satisfaction, adherence, and ultimately outcomes.
- The "litmus test" for professionalism requires asking the question, "On whose behalf am I considering this action?" If the answer suggests that anyone other than the patient, their family, or society is being served, the professionalism of the choice must be questioned.

Providers who exemplify the professionalism competency demonstrate these behaviors:

- Put the best interests of their patients ahead of self-interest
- Honor their commitments, duties, and responsibilities to their patients
- Commit to excellence by exceeding ordinary expectations and partaking in lifelong learning
- Demonstrate their humanism via respect for others
- Are honest and trustworthy
- Demonstrate their integrity by the consistency of their behavior
- Respect the rights of patients by being fully involved in decision making
- Recognize the limits of their professional competence
- Do not abuse their position or status as providers
- Avoid using condescending language and behaviors that are biased in terms of race, ethnicity, culture, age, gender and sexual orientation, or social class
- Treat patients as individuals
- Seek greater understanding of their patients' and coworkers' diverse backgrounds, beliefs, and behavior
- Dress and groom in accord with patient expectations
- Arrive on time or early for scheduled activities
- Create a safe, professional appearance and healing environment of care
- Ensure that all necessary tasks surrounding patient care are accomplished in a timely, organized, and professional manner
- Follow through on promises and commitments to patients and their families
- Arrange for coverage, or alternate avenues of care, when they will not be personally available to their patients
- Bill patients fairly and appropriately for services rendered, referring those who need help to those properly assessed
- Give back to the profession by honoring the oath to teach students and residents who are learning the profession

SYSTEMS-BASED PRACTICE

The systems-based practice competency requires *a demonstration of an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.* Expected behaviors include:

- Understanding how patient care and other professional practices affect other healthcare professionals, the healthcare organization, and the larger society, and how these elements of the system affect the provider's practice
- Knowing how types of medical practice and delivery systems differ from one another, including methods of controlling healthcare costs and allocating resources
- Practicing cost-effective health care and resource allocation that does not compromise quality of care
- Advocating for quality patient care and assisting patients in dealing with system complexities
- Knowing how to partner with healthcare managers and healthcare providers to assess, coordinate, and improve health care, and knowing how these activities can affect system performance

The systems-based practice competency encompasses the realms of understanding system complexities, working with other healthcare professionals, and practicing cost-effectiveness.

Understands System Complexities

Systems-based practice is an awareness of and responsiveness to the larger context and system of health care. It is the ability to effectively call on the system's resources in order to provide care of optimal value.

The Institute of Medicine focused national attention on the performance of health systems through

two major publications: "To Err Is Human: Building a Safer Health System" and "Crossing the Quality Chasm: A New Health System for the 21st Century."[5,6] The Institute concluded that fundamental changes are needed in the organization and delivery of health care. The purpose of these changes should be to "reduce the burden of illness, injury, and disability to improve the health and functioning of the people of the United States." Six specific improvement aims were proposed:

- Safety
- Effectiveness
- Timeliness
- Efficiency
- Patient-centered care
- Care that is equitable

The Institute proposed that healthcare organizations must redesign their care processes, develop effective teams, manage clinical knowledge and skills, and make effective use of information technologies.

Systems-based practice is immediately grounded by our primary responsibility for the individual patient. However, it simultaneously recognizes the critical need for direct attention to navigating the complex healthcare system in order for providers to provide successful and effective patient care. Systems-based practice requires a thinking approach that recognizes that organizational structure drives interdependencies and behavior, that cause and effect are separated by time and space, and that one individual's actions within a system can have unintended consequences. Specific aspects of the system that are critical to understand include:

- The environmental context in which we practice. It is forever changing and its key drivers are federal and state government legislation, environmental regulations, reimbursement and insurance agencies, advancing technologies, and alternate treatment options, as well as the aging demographics of the U.S. population
- The specific macro-organization ("the system"). Organizational governance, strategic planning and decision making, and overall mission, vision, goals, and strategies all have an impact on health care. The strengths and style of the organization's leadership can create proactive or reactive decisions that can impact the quality of care in the community.
- The micro-system ("the practice"). This involves the referral network for a particular practice, policies and procedures, available technologies, and which members of the team are involved in direct care.
- The patient and the community. The healthcare decisions made by a provider should account for the patient's ability to understand and carry through instructions, his/her ability to withstand the treatment, what type of additional support is available within his/her community, and the cost-benefit considerations for the patient.

Working with Other Healthcare Professionals

The nature of health care is changing as patients experience chronic conditions that require coordinated care by a variety of healthcare professionals.

Wagner defines a patient care team as "a group of diverse clinicians who communicate with each other regularly about the care of a defined group of patients and participate in that care."[32] The organization and interaction of patient care teams can be conceptualized along the continuum from multidisciplinary (practitioners contribute individually to the care of a patient) to interdisciplinary (practitioners work together closely and communicate regularly about the course of care, usually to solve a series of problems, which draws upon the individual knowledge of the team members) to transdisciplinary (where team member roles are blurred to the point that duties overlap).

Teams need to function in a way that encourages collaborative action and purpose among individuals on the team. There are five key elements that effective clinical teams incorporate:

- Establishing clear goals
- Utilizing and/or designing clinical systems to facilitate workflow
- Designing and assigning specific tasks and roles
- Training individuals to perform roles
- Developing clear processes for communication

Other important factors include a focus on teamwork principles including establishing the team's

mission, values, and goals; understanding the nature of the group process; developing communication, role-negotiation, conflict-management, problem-solving, and decision-making skills; and recognizing other factors involved with patient care.

Practices Cost-effectiveness

Healthcare costs have climbed steadily and yet the nation's health care has not improved. Cost-effectiveness analysis has not demonstrated benefit for many conditions. The greatest contributors to escalating healthcare costs are drugs, medical devices, and other medical advances. Rising provider expenses account for approximately one-fifth of the overall increase. Government mandates and regulations account for approximately 15% of the overall increase in healthcare costs. Increased consumer demand adds approximately 2% annually to healthcare costs, accounting for 15% of the increased cost. The aging population, as well as the consumerism movement, have also contributed to the cost escalation. Litigation risk management contributes approximately 7% of the increase in healthcare costs.

Key points pertaining to the systems-based practice competency are:

- A provider practicing within the larger healthcare system knows his/her role and acts accordingly in the treatment of his/her patients and with other members of the healthcare team.
- Working in patient care situations requires teamwork and partnering with other healthcare professionals to provide patient care that is both effective and efficient. As such, it will be imperative that you are aware of key teamwork components and how your role or expertise integrates with other team members.
- Providers will be called upon to measure the performance of clinical and administrative processes, improve systems of care to reduce costs, and streamline operations.

Providers who exemplify the systems-based practice competency demonstrate these behaviors:

- Recognize and appropriately utilize available healthcare delivery systems that include multidisciplinary and managed care models to provide optimal patient care
- Demonstrate respect for and appreciation of other healthcare professionals within the system and appropriately call upon their skill and training
- Empathize with patients and how they must navigate the system, and willingly assist patients in dealing with system complexities
- Anticipate barriers to patient care that can include insurance approvals, costs, and test turnaround times
- Apply excellent time-management skills, including in scheduling patient appointments
- Maintain a positive, professional attitude while working within the system and do not become frustrated by issues one provider cannot change
- Seek opportunities to contribute to the improvement of the overall system
- Use a patient-centered approach to patient care
- Provide clear and precise communications with other team members, both verbal and nonverbal
- Use appropriate conflict management skills
- Are willing to assess self and team performance
- Realize the importance of calling on system resources to provide optimal-value care
- Formulate treatment plans that include both short- and long-term goals involving the patient, support systems, and interdisciplinary collaboration
- Are meticulous in the accuracy and timeliness of documentation and coding
- Identify and coordinate services and resources necessary to implement the plan
- Carry out ongoing evaluation of the effectiveness and appropriateness of the services throughout the spectrum of care
- Advocate for appropriate, cost-effective services to ensure quality care and goal attainment

PRACTICE-BASED LEARNING AND IMPROVEMENT

The practice-based learning and improvement competency requires *an ability to investigate and evaluate patient care practices, appraise and assimilate scientific evidence, and improve patient care practices*. Expected behaviors include:

- Analyzing practice experience and performing practice-based improvement activities using a systematic methodology

- Locating, appraising, and assimilating evidence from scientific studies related to the patient's health problems
- Obtaining and using information about the provider's own population of patients and a larger population from which his/her patients are drawn
- Applying knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- Using information technology to manage information, access online information, and support the provider's own education
- Facilitating the learning of students and other healthcare professionals

The practice-based learning and improvement competency encompasses the realms of performing an effective analysis of the patient care process, facilitating professional learning, and using information technology effectively.

Conducts an Effective Analysis of the Patient Care Process

Keeping up to date on new treatments, new medications, new reimbursement guidelines, etc., is one of the greatest challenges in modern medicine. Analyzing the patient care process requires the use of information technology, a focus on continuous practice improvement, and an ability to critically appraise the literature and assimilate this information into patient care. This is all aided by fostering an environment of teaching and learning.

The speed of progress in medicine is astounding and can be overwhelming for many providers. The constant stream of new information has been accelerated by the movement to practice evidence-based medicine. Research has demonstrated the difficulty of teaching and practicing evidence-based medicine in a busy practice. The process can be made more effective by:

- Receiving training in critical appraisal of the literature
- Consulting scientific evidence to get answers to questions, as a part of the daily routine
- Making "real time and real world" searches for information
- Having the ability to search literature available at the point of care

In addition to the use of evidence-based medicine, there must be a culture of continuous quality improvement, also known as total quality management. Improvements to patient care require the effective use of evidence-based medicine and a commitment to continuous quality improvement.

Facilitates Professional Learning

Facilitating the professional learning of others (students, residents, and other staff), as well as a commitment to lifelong learning, is critical to success in facilitating one's own professional learning. Facilitating professional learning of others requires skills in a number of areas, including knowledge of the subject matter, working knowledge of effective teaching practices, the ability to stay current with recent clinical studies, and a commitment to lifelong learning. Wipf, Pinsky, and Burke concluded, "As clinical experience increases, clinical knowledge becomes more tightly compiled and interconnected."[33] Good teachers are able to break down all of these connections to facilitate learning in others.

Studies have identified the following to be important factors in teaching:

- Medical knowledge/keeping up to date
- Assessing learner knowledge and learning needs
- Providing constructive feedback
- Knowledge of practical teaching skills such as micro skills and case-based teaching.

Uses Information Technology Effectively

A provider's ability to use information technology can have a profound effect on the cost and quality of health care. It can help make diagnosis and treatment more effective, make the work of the cross-functional care team more productive, and potentially save time and other resources for all involved. Information technology also helps a clinician tap into a vast array of resources and provides a means for continual learning.

When the Department of Health and Human Services introduced its plan to build a national electronic health information infrastructure in the United States, the intent of the plan was to "achieve always current, always available electronic health records for Americans."

Advantages from using modern information technology in medical practice include:

- Availability of current medical information whenever and wherever the patient and health professionals need it
- Improved quality of care through minimization of errors
- Decision-support
- Cost savings
- Access to the best quality care for the medically underserved

The five electronic health record features found most beneficial to users' practices are:

- Quick access to patient records
- Managing medication lists
- Managing clinical documents and notes
- Searching for data
- E-prescribing

It is also vitally important for providers to have access to current information because patients now have unlimited access to health information via the Internet. Providers can help guide patients to the most accurate and most helpful information while steering them away from misleading and inaccurate information.

Key points pertaining to the practice-based learning and improvement competency are:

- To best serve your patient's needs, you must keep up with all scientific evidence and make wise changes to the patient care process. Your challenge is to find ways to do this efficiently and routinely, using all the resources available.
- One cannot underestimate the potential impact of a skilled practitioner on other healthcare professionals' learning. Providers who practice alone find it more difficult to maintain their professional competence.
- Now and in the future, information technology will be an integral part of the healthcare environment. Effective use of information technology is no longer optional for providers. It is expected.

Providers who exemplify the practice-based learning and improvement competency demonstrate these behaviors:

- Routinely locate clinical studies relevant to their patients and use information from the studies to inform patient care decisions
- Critically evaluate research design and results of clinical studies
- Continually analyze the practice experience
- Possess a desire to teach and to improve teaching skills
- Use knowledge of new information and discussions with others to help keep them up-to-date
- Demonstrate a commitment to lifelong self-directed learning
- Understand and fully utilize information technology resources
- Communicate with colleagues and patients via electronic means
- Carry and routinely use a handheld device
- Efficiently get answers to clinical questions at point of care
- Use information technology resources to manage patient and practice information

COMPETENCY ISSUES SPECIFIC TO OSTEOPATHIC MEDICINE

In distinction to the six competencies developed by the Accreditation Council for Graduate Medical Education (ACGME), the American Osteopathic Association (AOA) has added the "first competency" of osteopathic philosophy and principles and manipulative treatment and has asked its trainers *not* to evaluate this competency separately; rather, they should evaluate its appearance through the other six competencies.[34] The underlying message is that osteopathic medicine is not simply allopathic medicine plus osteopathic philosophy and principles and manipulative treatment. Osteopathic medicine requires incorporation of osteopathic philosophy and principles and

TABLE 1-1 Competencies and Required Elements

Competency	Required Elements	Examples of Associated OPP Competencies*
Medical Knowledge and Its Application to Osteopathic Medical Practice	1. The understanding and application of clinical medicine 2. Knowledge and application of the foundations of clinical and behavioral medicine	• Participating in CME offered by osteopathic organizations • Demonstrating understanding of somato-visceral relationships and the role of the musculoskeletal system in disease • Participating in OMT/OPP training • Demonstrating the treatment of people rather than symptoms
Osteopathic Patient Care	1. Gathering accurate and essential information 2. Competently performing diagnostic, osteopathic, and other treatment and procedures 3. Provision of healthcare services consistent with osteopathic philosophy, including preventive medicine and health promotion	• Performing OMT • Using listening skills, caring, compassionate behavior, and touch with patients
Interpersonal and Communication Skills and Osteopathic Medicine	1. Developing appropriate provider-patient relationships 2. Effective listening, written, and oral communication skills	• Demonstrating knowledge of behavior in accordance with the Osteopathic Oath and the AOA code of ethics
Professionalism in Osteopathic Medicine	1. Respect for patients and families and advocates for the primacy of patient's welfare and the economy 2. Adherence to ethical principles 3. Awareness and proper attention to issues of culture, religion, age, gender, sexual orientation, and mental and physical disabilities 4. Awareness of one's own mental and physical health	• Completing OMT computer educational modules • Self-adherence to preventive care • Establishing a routine form of physical activity
Osteopathic Medical Practice-based Learning and Improvement	1. Using the most up-to-date information 2. Self-evaluation of clinical practice patterns and practice-based improvement activities using a systematic methodology 3. Understanding research methods, medical informatics, and the application of technology	• Participating in AOA Clinical Assessment Program • Critically appraising OMT/OPP literature
System-based Osteopathic Medical Practice	1. Understanding national and local healthcare delivery systems and medical societies and how they affect patient care and professional practice and relate to advocacy 2. Advocate for quality health care	• Assuming increased responsibility for the incorporation of osteopathic concepts in patient management

*Many of the associated OPP competencies appear in more than one competency and more than one element. For more information, please visit the website of the American Osteopathic Association.

Adapted from: American Osteopathic Association.

manipulative treatment, where appropriate, into all that the osteopathic provider does.

The first competency of osteopathic philosophy and principles and manipulative treatment states:

> *. . . an expectation to demonstrate and apply knowledge of accepted standards in OPP/OMT* ***appropriate to the specialty****.* [Emphasis in the original.] *The educational goal is to train a skilled and competent osteopathic practitioner who remains dedicated to lifelong learning and to practice habits in osteopathic philosophy and manipulative medicine.*

The remaining six competencies (2 to 7) are:

2. Medical knowledge and its application to osteopathic medical practice
3. Osteopathic patient care
4. Interpersonal and communication skills and osteopathic medicine
5. Professionalism in osteopathic medicine
6. Osteopathic medical practice–based learning and improvement
7. System-based osteopathic medical practice

Each competency (2 to 7) is broken down into several required elements, and within each element are listed the essential ingredients for success for all providers as well as the essential ingredients for success specific to osteopathic medicine. Examples of the latter are presented in **TABLE 1-1**.

Future Directions

When the competency movement began in the late 1990s and early 2000s, its ultimate aim was to improve the quality of health care in the United States by lessening unnecessary and unexplained variation in the process of care. The Institute of Medicine shed light on where individual practitioners, hospitals, healthcare systems, and medical and allied health professions education must focus in order to eliminate this needless variation that accounts for our inability to achieve the highest levels of quality. In both medical practice and medical education, the unwanted variation that existed was in the area of the demonstration of clinical competencies discussed in this chapter. With time, it is fully expected that the evidence will emerge that demonstrates that when providers, healthcare systems, and all allied healthcare professionals adhere to behaviors consistent with what the competencies call for, the quality of care will indeed improve. In fact, while the competency movement is only a decade old, already evidence is emerging to demonstrate the impact of competency-based behaviors on quality healthcare outcomes.

With respect to medical education, Aron and Headrick utilized Reason's model of medical error to demonstrate where unnecessary and unexplained variation are creating quality issues.[35] The model suggests that in order to produce a provider who cannot effectively offer high-quality medical care, the educational system must fail at many levels. Reason's model depicts layers of Swiss cheese—the analogy is that each slice of Swiss cheese acts as a barrier against educational system failure. However, if the student is able to pass through the holes in all of the pieces of Swiss cheese, the system will fail and will produce a provider who cannot improve care and safety.

Fortunately, efforts are underway in each of the five key areas described in the model, which have the potential to continue to move the U.S. healthcare system toward the highest-achievable-quality outcomes.

These efforts are:

- Entrance requirements. The MR5 is the fifth comprehensive review of the Medical College Admission Test (MCAT).[36] The preliminary recommendations include:
  - Reporting on four distinct sections: molecular, cellular, and organismal properties of living systems; physical, chemical, and biochemical properties of living systems; behavioral and social science principles; and critical analysis and reasoning skills.
  - Testing on research methods and statistics that are most important for success in medical education
  - Testing on the foundations of the behavioral and sociocultural determinants of health
  - Testing on the ability to analyze and reason through passages in ethics and philosophy, cross-cultural studies, population health, and a wide range of social sciences and humanities disciplines to ensure that students possess the

necessary critical thinking skills to be successful in medicine

- Curriculum. Although the competency-based education movement began in residency education, competencies for medical schools and for continuing education are now available to ensure that attention to mastering behaviors critical to producing high-quality outcomes are available across the continuum of medical education. More recently, several health professions including medical, pharmacy, dental, public health, and nursing have described competencies for interprofessional education and practice.[37] Recognizing the key importance of interprofessional education practice was a major focus of the Institute of Medicine.
- Organizational Culture and Professionalism. Research by Hafferty, Hafler, and Haidet has drawn attention to the importance of the hidden curriculum—the context in which health professions education occurs—in affecting the behaviors of medical school graduates.[38,39,40] More attention is being given to the educational environment and the behaviors of professors and preceptors in accord with the understanding of how these behaviors can shape the actions and thoughts of developing professionals. As well, attention to professionalism in schools has been heightened primarily due to landmark research produced by Papadakis and her colleagues, which demonstrated that unprofessional behaviors left unchecked in medical school can have consequences for **medical quality** as well as career-threatening implications down the road.[26]

Medical quality: the science of lessening unexpected and unnecessary clinical variation that could negatively impact the outcomes of care

- Student assessment. While stating competencies expected of medical school graduates is a start, Bell and colleagues argue that in order to be certain that we are graduating providers who can actually demonstrate the necessary behaviors incumbent in the competencies, a shift from summative toward formative evaluation is necessary.[4] Traditionally medical schools and residencies rely on periodic overall assessments that rate performance on a continuum from excellent to poor. Competency-based education, as originally described by Carroll, Bloom, and others, relies on formative evaluation that provides real-time information to students with an intention to correct behaviors that are not working and to reinforce behaviors that are working. Bell has described the "FED Model of Formative Evaluation," which includes:[41]
  - F (Feedback): providing information to learners intended to highlight areas of needed improvement that may be known or unknown to the learner.
  - E (Encouragement): providing feedback in a way that "heartens" the learner toward competency and mastery as opposed to providing feedback that humiliates, discourages, and "disheartens" learners. (The root of the word "encouragement" is the French word for heart, "coeur.")
  - D (Direction): the competencies, and the associated patient-centered behaviors as described in this chapter, provide a roadmap for success. All feedback should be linked to the outcomes expected of learners.
- Program accreditation. Accreditors have acknowledged that their prior emphasis on measuring what a school, program, hospital, or health system was doing was not a good method for assuring quality. In the last decade, there has been a powerful shift toward outcomes assessment. By measuring the outcomes of the educational and practice processes, the public can have more faith that accreditors are looking more carefully at the issues that truly affect quality care and patient safety. It is no surprise that many accreditors, including the Joint Commission, have also stated specific competencies that they expect for practitioners, hospitals, and health systems.

Summary

The *outcome that matters* in health professions education and practice is the assurance of high-quality patient care that represents the best practices available today and protects the public's safety. The development of competencies for providers in the late 1990s

and early 2000s was a watershed event in the history of medical education. The competency-based educational movement has the potential of improving the health of all Americans in a profound and lasting way by lessening unnecessary and unexplained variation in the process of clinical care.

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