General Competencies And Accreditation In Graduate Medical Education

An antidote to overspecification in the education of medical specialists.

by Paul Batalden, David Leach, Susan Swing, Hubert Dreyfus, and Stuart Dreyfus

PROLOGUE: Medical educators these days are bombarded with teaching requirements—genetics, ethics, communication skills, molecular medicine, geriatrics, sexual health, and computer literacy, to mention a few. These demands reflect the continued growth in scientific knowledge coupled with society's expectation that physicians minister to social and psychological as well as physical infirmities. Timely and cohesive curriculum reform under these circumstances is a difficult proposition at the nation's 145 medical and osteopathic schools and even greater at the more than 7,000 residency programs at some 1,500 hospitals throughout the country. Paul Batalden and colleagues describe the process undertaken by the accrediting authority for residency programs (the Accreditation Council for Graduate Medical Education, or ACGME) and the organization of certifying boards (the American Board of Medical Specialties). These two groups have agreed on six areas in which all physicians should be competent. The specification of these competencies is a milestone in itself in the complex world of graduate medical education. Embedding these concepts in training programs, however, will take a number of years, a process the authors map out for us.

Batalden is the director of Health Care Improvement Leadership at the Center for the Evaluative Clinical Sciences, a professor of pediatrics and community and family medicine at Dartmouth Medical School, and the founding chair of the board of the Institute for Healthcare Improvement. Since 1997 David Leach has served as executive director of the ACGME, leading the organization in its effort to engage a series of difficult issues including competency evaluation and residents' work hours. Susan Swing, an educational psychologist, is director of research at the ACGME. Hubert Dreyfus is a professor of philosophy at the University of California, Berkeley, Graduate School; Stuart Dreyfus is a professor emeritus in that university's Department of Industrial Engineering and Operations Research. Hubert and Stuart Dreyfus's 1986 book *Mind over Machine* contributed a developmental perspective to these core competencies.

ABSTRACT: Many have recommended changing the professional development of physicians. Concluding that further educational process specification was inadequate, the Accreditation Council for Graduate Medical Education (ACGME) decided to specify six general competencies of graduate medical education (GME): patient care; medical knowledge; practice-based learning and improvement; professionalism; interpersonal skills and communication; and systems-based practice. Coupling them with a developmental view of professional knowledge and skill acquisition, the ACGME invited further specification and development of desired learning from the extended medical specialty community, including the specialty boards. This collaborative process offers a model of the role accrediting agencies can play in fostering workforce developmental change.

SOMETHING WASN'T RIGHT. In the past fifteen years, the Council on Graduate Medical Education (COGME), the Pew Health Professions Commission, the Association of American Medical Colleges (AAMC), the Federated Council of Internal Medicine, Sherralyn Cox and colleagues for the Association of Program Directors of Surgery, and the Royal College of Physicians and Surgeons of Canada had all pointed to the need for change in the knowledge and skill of specialist physicians.[1] They disagreed on the specifics, but they all seemed to agree that the current methods for preparing specialists needed to be rethought.

Most recognized that the system of health care was changing and that those changes did not make it any easier to provide good graduate medical learning for good patient care.[2] Variations in medical care seemed to be greater than was fully explainable using good science.[3] What was good care? How much care was the right amount? Disturbing reviews of poor-quality and unsafe care were published and drew the attention of the mainstream media.[4]

For several years it had been noted that more of the graduate medical education (GME) process needed to occur in ambulatory settings.[5] New concerns about productivity and attention to management of "clinic" time had led to the development of new information systems, which often operated as if professional education did not occur in the same place and with the same people who were being scheduled by new systems designed to increase "clinical productivity." Consultants brought in to deal with fiscal pressures on academic health centers (AHCs) routinely suggested reducing education as part of the strategy to be considered.[6]

Teachers were frustrated; medical education seemed to be mired in legions of new requirements. One-third of the program directors in residency programs left each year.[7] GME seemed irrelevant, like a footnote remaining from a time gone by.

Believing that these disparate communities might be able to work cooperatively under the rubric of accreditation, the Accreditation Council for Graduate Medical Education (ACGME) in 1994 undertook its own review of the GME situation and concluded that it needed to encourage attention to the outcomes of education more than it needed additional precision in process requirements, and attention to building community across specialties more than further fragmentation. It

launched an ambitious effort to uncover the competencies needed for the future and to introduce methods of outcome appraisal into GME.[8]

General Competencies: Their Development And Deployment

The ACGME began its initiative by identifying general competencies for physicians in training. The intent was eventually to use evidence of residents' attainment of these competencies as indicators of a residency program's educational effectiveness and quality.

■ **Initial set of competencies.** An initial set of thirteen competencies was derived from a review of published documents by the six aforementioned bodies recommending change.[9] Documents were included in the initial review if they represented perspectives of major stakeholder groups (as opposed to individuals) and addressed one or more of the following: existing shortcomings in GME and the performance of new physicians; proposed roles, attributes, and competencies for physicians; and current GME content. Two main criteria were used to select the initial competencies: multiple references to the competency across the documents—that is, across specialties (and other stakeholder groups); and reference to it by a GME stakeholder organization as one needed for practice in the emerging health care system.

This initial set of competencies was refined further through a multistep process that involved more extensive review of published documents; input from medical educators who were also experts in each of the competency areas; feedback from approximately 200 physicians and residents across the full array of core medical specialties; and interviews with a convenience sample of eighteen persons representing health system administrators/executives, nursing, allied health, and physician assistants; patient advocacy; and employers.

Input from physicians and residents was obtained using a written survey that asked respondents to indicate the importance of each of the competencies for practice and for inclusion in GME. The interviewees from the external stakeholder groups were asked to critique the competencies (that is, modify, add, or delete) and to present their vision of health care delivery in the future.

■ **Narrowing the list.** The draft set of competencies and the reactions to them were presented to the ACGME Outcome Project Advisory Committee, sponsored by the Robert Wood Johnson Foundation. This group consisted of eleven persons with expertise in accreditation, GME, or educational outcome assessment. This group identified six general competencies to serve as the organizing framework: patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and systems-based practice. The ACGME board approved them in February 1999.

The first stage of deployment involved programs' identifying specific skills, knowledge, and behavior related to each competency and incorporating learning opportunities for them. Residency programs would be expected to show progressive improvement in how they assessed residents' attainment of the competencies.

The use of improved assessment techniques was seen as a prerequisite for the collection of data on residents' performance and outcomes that would be sufficiently accurate for assessing educational effectiveness.

Concurrently with the ACGME process, the American Board of Medical Specialties (ABMS) began its own process of identifying competencies for practicing physicians. After exploring the two groups' related parallel work, their leaders decided to work together. The ACGME and the ABMS agreed upon the same six competencies, thus setting the stage for consideration of a continuum of medical education and physician development.

With the support of the ABMS, individual specialty boards have now begun to develop examination questions and other appropriate evaluation methods that can reflect these competencies in the initial examination and certification process and in mid-career maintenance of certification. Also, along with increased attention to the GME process and outcomes has come increased scrutiny about the assumptions underlying the development of physicians and nurses.[10]

Dreyfus Model Of Knowledge Development

Commissioned by the U.S. Air Force to describe the development of the knowledge and skill of a pilot, Stuart Dreyfus and Hubert Dreyfus developed a model consisting of five stages: novice, advanced beginner, competent, proficient, and expert. They later identified a similar process of development in the chess player, the adult learning a second language, the adult learning to drive an automobile, and many others.[11] The stages are described in greater detail elsewhere; here we apply them directly to medicine. (1) In the novice stage, the freshman medical student begins to learn the process of taking a history and memorizes the elements, chief complaint, history of the present illness, review of systems, and family and social history. (2) In the advanced beginner stage, the junior medical student begins to see aspects of common situations, such as those facing hospitalized patients (admission, rounds, discharge) that cannot be defined objectively apart from concrete situations and can only be learned through experience. Maxims emerge from that experience to guide the learner. (3) In the competent stage, the resident physician learns to plan the approach to each patient's situation. Risks are involved, but supervisory practices are put in place to protect the patient. 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. (4) In the proficient stage, the specialist physician early in practice struggles with developing routines that can streamline the approach to the patient. Managing the multiple distracting stimuli in a thoughtful way is intellectually and emotionally absorbing. (5) In the expert stage, the mid-career physician has learned to recognize patterns of discrete clues and to move quickly, using what he or she might call "intuition" to do the work. The physician is attuned to distortions in patterns or to slow down when things "don't fit" the expected pattern.

GME is particularly focused on the progression of physicians through the Dreyfus competent stage, moving from well-prepared and functioning advanced beginners (medical school graduates) to fully competent physicians. By exposure to graduated specialist physicians, residency learning offers models of knowledge and skill that preview further progression to proficient and expert. Medical schools offer novice and advanced-beginner professionals many procedural rules and limited experiences with maxims for applying these rules in selected, common clinical contexts. To survive, residents must learn to distinguish the relevant from the less relevant. They must pick a "point of view" from which to see and attempt to understand a given case.

The Dreyfus model identifies two possible paths for those residents who have chosen a mistaken point of view. They can detach from the clinical situation and go back to the rulebook, adding a new rule so that they will never make that mistake again. This path results in an ever-heavier rulebook and does not encourage progression from competency to proficiency. The alternative is for the resident to simply feel bad when a mistake is made and good when the right thing is done. This approach maintains involvement in the situation. With sufficient experience like this, competence evolves into proficiency and later into expertise. It is this involved response that should be encouraged by instructors teaching competence, not simply the discovery of rules for choosing the right point of view.

Role Of Accreditation

Accreditation is a process for discerning and publicly recognizing good education. Those who accredit are constantly seeking to understand the essentials of the service or activity at hand. It is against that core that accreditors try to write their rules and standards. Although it may seem like an exercise focused only on the past and what experts previously could agree about, it is in fact always about the past, the present, and the future. From the past, accreditors get the essential knowledge and skill content. From the present, accreditors discover and recognize exemplars and a few charlatans. It is in the present that accreditors help maintain the boundaries of the commons. For the future, accreditors work to make sense of the "core" in ways that encourage faithful innovation.[12]

When accreditors encourage innovation, not everyone loves it. After all, accreditors have a responsibility to make standards clear and methods of review and enforcement, predictable. When accreditors explicitly encourage change, they must show that those changes can be linked to what contributes to good learning for good patient care.

■ **Spanning order and chaos.** To be relevant, accreditors must recognize and acknowledge emerging realities in the field—even though these realities often are accompanied by uncertainty, disagreement, and widely different interpretations that may make premature the development of "standards." Ralph Stacey refers to this situation as "complexity."[13] Dee Hock, referring to the same situation, describes

the need for organizations that span chaos and order—so called chaordic organizations.[14] Accrediting organizations are asked to span order and chaos. Living in these situations of complexity, organizations need to adopt a limited number of simple rules. These rules help to create patterns of ordered relationships between processes of daily work and the structures of the setting in which the work is conducted. The few simple rules or principles must not be overly prescriptive but must be sufficient to allow accurate and meaningful conversations about the work. For this ACGME initiative, they should be described in the following way: (1) Develop general competencies that apply to all specialties and encourage conversation across specialties; (2) use measurement; (3) recognize the continuum of medical education; and (4) adopt an improvement rather than a simple minimal threshold model of accreditation.

When the ACGME adopted the general competencies, it was mindful that each specialty had to engage the definitional task. Each specialty made clear what the general outcomes meant for its specialty, and they had to define what competent-level learning about patient care and medical knowledge meant. The ACGME made the general rules and invited the individual specialty communities to make the outcomes relevant for learners at the competent level.

■ **Cross-specialty cooperation.** As specialty leaders have engaged four of the competencies—interpersonal and communication skills, professionalism, practice-based learning and improvement, and system-based practice—cross-specialty conversations have begun. Sometimes those conversations have occurred across various residency programs within a given institutional training setting. This has encouraged an institutional rather than only a departmental approach to the design of graduate medical learning. This cross-specialty cooperation has also allowed for efficiencies in the development of evaluation and measurement methods.

■ **New challenge for program directors.** Encouraging the use of evidence and measurement in the redesign of GME offered program directors a new academic challenge. Heretofore their work was viewed as administrative rather than academic, and they were often unsuccessful when they appeared before promotion and tenure committees. However, this initiative, calling for both the definition and the measurement of these competencies, offered a legitimate knowledge-building academic agenda. The serious questions about how resident physicians learn and how good learning is related to good patient care attracted external interest and grant resources—ultimately resulting in peer-reviewed publications.

By explicitly encouraging the exchange of information about how residents learn and how improvement might occur, accreditors can stimulate efforts across sites and specialties that can minimize the costs and maximize the effectiveness associated with the design and evaluation of education programs.

Some Early Observations About The Change

Although it is too early to gauge this initiative's effect on medical education, physician preparedness, and patient care, there is reason to believe that its impact

on residency programs will be widespread. Most core medical and surgical specialties already are responding to the competencies in the form of informational, educational, or development sessions at national meetings and production of tools to assess the competencies. Virtually all participants in these sessions see the value of using the competencies as an accreditation tool. Most participants raise a similar set of questions, including, What evidence is there that we are producing incompetent graduates or that a competency approach will be better than the one we have now? Aren't we being asked to analyze outcomes without evidence that this will work? And where is the money going to come from to do this? Isn't this just one more "unfunded mandate"? After these questions have been raised, a host of implementation questions inevitably follow.

A few medical schools have already endorsed the competencies, and a few medical subspecialties are preparing for implementation, even though ACGME requirements do not yet apply to them. At a spring 2002 meeting of medical educators, one prominent educator announced that in her twenty-plus years in medical education, she has not seen anything take hold like the competencies have.

■ **Implementation challenges.** The major challenge relates to the implementation of these changes in the resource-stressed GME environment. The ACGME is emphasizing phase-in and progressive improvement, and a reasonable timeline has been adopted. Phase 1 of this timeline, from July 2001 to June 2002, consisted of residency programs' forming an initial response to changes in requirements, as they begin to integrate the competencies into their curricula and as residency review committees begin to develop definitions of compliance based on them. In Phase 2, from July 2002 through June 2006, the focus and definition of the competencies and assessment tools will be sharpened. Residency programs will improve their methods for evaluating residents' learning of the competencies, and review committees will begin to review the status of programs' implementation. In Phase 3, from July 2006 through June 2011, residency programs will provide outcome data to the review committees and link those data to patient outcome data. In Phase 4, July 2011 and beyond, the competencies will expand, as will their use in developing models of excellence. Substantive expectations will be set for the teaching and assessment of the competencies based on current and emerging practices. Further, the ACGME is inviting community involvement and the open sharing of expertise, instructional materials, and assessment tools across programs, specialties, and institutions.

The alignment of accrediting and certifying bodies in support of the competencies and outcome assessment provided a major implementation thrust for this initiative and will continue to be a critical factor. Residency programs must be ACGME-accredited to receive government funding in support of GME and to enable their graduates to qualify for specialty certification. Increasingly, certification is a required qualification for employment as a physician. When both accreditors and certifiers require evidence of competency attainment, residency programs will be doubly motivated to increase their emphasis on these areas.

An Improvement Model Of Accreditation

An improvement model for accreditation invites attention to threshold levels of acceptable performance plus the intentional design of efforts that go beyond minimum levels toward a desired social aim. Using such a model means that the accreditor sets a clear aim and invites creative responses to a challenge rather than prescribing a narrow set of particular responses. This creates new challenges. First, overworked programs seek clarity about what they must do and are frustrated by the lack of a clear answer. Second, variability in the field above threshold performance is increased. Third, requests for judgments about compliance rooted in professional experiences of peers are increased.

Hock has observed that historically it has been difficult for accreditors to resist overspecification: If the ideal principle is to "honor your father and mother," within a couple of years any self-respecting accrediting body will have a standard stating that "you must call your mother every Sunday."[15]

An improvement model represents an even greater change in the accreditation framework. Under a minimal-threshold-only approach, it is in the program's interest to hide deficiencies; an improvement approach rewards exposure of problems that have been addressed. It requires a new level of interaction and trust.

Limits Of The Model

All models are limited, but some are useful nonetheless. Models are used to help us simplify and foster understanding of what is not really condensable. Creating these six general competencies had resulted in the creation of a model of the GME core content. This model invites attention to the center of the GME experience.

Several important questions remain, among them: (1) Will these six general competencies be sufficient for the provision of good care? How will we know? (2) How might we think better about the development of professionals in a dynamic information environment like today and tomorrow? (3) What will be "good" learning for "good" patient care? What counts as evidence? (4) What approach should society take to assess these efforts? What needs to be done to assure that the voices of all the relevant stakeholders are heard?

In the past we have responded to perceived deficiencies in knowledge or skill by adding required specifications and processes to the professional preparation process. These well-meaning additional process specifications have resulted in a geometric increase in the number of "musts" and "shoulds" facing the director of a GME studies program. Further, they have inadvertently contributed to a preoccupation on matters away from the "core" of physician specialist preparation. Departing program directors with short terms of duty have shared their frustrations of trying to link these well-meaning process prescriptions to daily work in today's health care as a major contributor to their short tenure.

A general competency model for accreditation and certification processes, however, encourages alignment with those forces interested in empirically meet-

ing the current and near-future needs of "good learning for good patient care," while simultaneously and explicitly remaining connected to those interested in preserving what has been previously understood as necessary. This evolving process offers an important invitation to focus GME and adapt the processes of professional formation for the present and immediate future needs of our society.

NOTES

1. Council on Graduate Medical Education, "Preparing Learners for Practice in a Managed Care Environment" (Washington: Health Resources and Services Administration, 1997); Pew Health Professions Commission, *Critical Challenges: Revitalizing the Health Professions for the Twenty-first Century,* Third Report (San Francisco: Pew Commission, December 1995); Association of American Medical Colleges Medical School Objective, *Report I: Learning Objectives for Medical Student Education* (Washington: AAMC, 1998); Federated Council for Internal Medicine Task Force on the Internal Medicine Residency Curriculum, *Report on Graduate Education in Internal Medicine: A Resource Guide to Curriculum Development* (United States: Versa Press, 1997); S.S. Cox et al., eds., *Surgical Resident Curriculum,* 2d ed. (Arlington, Va.: Association of Program Directors in Surgery, 1995); and Royal College of Physicians and Surgeons of Canada, *Skills for the New Millennium: Report of the Societal Needs Working Group,* CanMEDS 2000 Project (Ottawa: RCPSC, 1996).

2. K.M. Ludmerer, *Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York: Oxford, 1999).

3. J.H. Wennberg et al., *The Dartmouth Atlas of Health Care 1998* (Hanover, N.H.: Center for the Evaluative Clinical Sciences, Dartmouth University, 1998).

4. L.T. Kohn, J.M. Corrigan, and M.S. Donaldson, eds., *To Err Is Human: Building a Safer Health System* (Washington: National Academy Press, 1999); and Institute of Medicine, *Crossing the Quality Chasm: A New Health System for the Twenty-first Century* (Washington: National Academy Press, 2001).

5. M.S. Donaldson et al., eds., *Primary Care: American's Health in a New Era* (Washington: National Academy Press, 1996).

6. L. Kowalczyk, "Prescriptions on Residency Clash; Beth Israel Deaconess Resists Call to Reduce Training Program," *Boston Globe,* 5 February 2002.

7 Accreditation Council for Graduate Medical Education, "Annual Program Director Statistics" (Unpublished data, ACGME, 2001).

8. Minutes of ACGME meeting, Chicago, September 1997.

9. See Note 1.

10. P. Benner, *From Novice to Expert: Excellence and Power in Clinical Nursing Practice* (Menlo Park, Calif.: Addison-Wesley, 1984).

11. H. Dreyfus and S. Dreyfus, *Mind over Machine* (New York: Free Press, 1986); and H. Dreyfus, *On the Internet* (New York: Routledge, 2001).

12. K. Weick, *Sensemaking in Organizations* (Thousand Oaks, Calif.: Sage, 1995).

13. R.D. Stacey, *Strategic Management and Organizational Dynamics* (London: Pitman Publishing, 1996).

14. D. Hock, *Birth of the Chaordic Age* (San Francisco: Berrett-Koehler, 1999).

15. Dee Hock, founder, Chaordic Commons of Terra Civitas, personal communication to David Leach, March 2000.