



Physician Assessment: Measuring Competence and Performance

BACKGROUND
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OVERVIEW — *There was a time when anyone could call himself a doctor, without being called on his credentials by any public or professional authority. State authority to regulate the practice of medicine was defined in the late 19th century. In the 20th century, specialty boards began to define the training, knowledge, and skills required to call oneself a pediatrician or a cardiologist or an ophthalmologist, and to offer physicians the opportunity to “certify” that they were qualified. These two mechanisms, mandatory licensure and voluntary certification, are still the means by which physician qualifications are assessed. This paper reviews how these processes operate and the ways in which they have evolved—and are still changing—to meet today’s ideas of accountability.*

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Numerous surveys over the years have shown that people like their doctors. People trust doctors as a group: nearly three-quarters of Americans in a 2009 Gallup poll said they were confident in doctors to recommend the right thing for reforming the U.S. health care system.¹ Perhaps there is a basic human need to trust the person who may be called upon to save one's life. But on what basis does one choose a doctor to begin with? Very often, it is a recommendation from his neighbor or brother-in-law. Objective information on which to base a choice is limited. At best, a consumer can determine that Dr. Smith has a license in one or more states, went to such-and-such a medical school, and (maybe) has been certified by a specialty board at some point in his career.

The conventional processes for validating physician competence are licensing and certification. Licensing is mandatory under state laws; it is focused on general requirements and basic competence. Certification is voluntary, overseen by specialty boards rather than government, and is focused on assessing specialty knowledge and skill. Both say that a certain standard has been achieved; neither is intended to distinguish among those who have achieved it. This paper will look at these processes, how they are evolving, and whether more is needed. It will consider the roles that various stakeholders do or could play in making meaningful information more accessible.

LICENSING

Licensing is the indispensable prerequisite to the legal practice of medicine. At the completion of a year of residency, or later, a candidate may sit for the examination that will allow her to treat patients with her state's full blessing.

State Medical Boards

States hold the power to determine whether a physician is competent to practice medicine. Each state charges its medical board with

protecting the public from “the unprofessional, improper, and incompetent practice of medicine.”² The basis of state authority is the Tenth Amendment to the U.S. Constitution, which reserves to the states the power to provide police protection; regulate commerce; and safeguard citizens’ public health, welfare, and safety.

Application of this authority to medical licensure was made explicit in the Supreme Court case *Dent v. West Virginia* in 1889. The Court ruled that the state, in the exercise of its power to provide for the general welfare of its people, “may exact from parties before they can practice medicine a degree of skill and learning in that profession upon which the community employing their services may confidently rely, and, to ascertain whether they have such qualifications, require them to obtain a certificate or license from a board or other authority competent to judge in that respect.”³ From the vantage point of a later century, it is interesting that West Virginia challenged Frank Dent’s right to practice on the basis of his graduating from a Cincinnati medical school not deemed reputable; it was operated by the Eclectic sect, which advocated for herbal remedies and against the over-use of purging and bleeding.

The immediate legal framework for licensure is each state’s medical practice act, which is intended to provide minimum requirements for full licensure for the independent practice of medicine “that bear a reasonable relationship to the qualifications and fitness necessary for such practice.”⁴ The state medical board makes sure that practice is carried out in accordance with the statutory requirements.

A state medical board comprises physicians and representatives of the public, usually appointed by the governor and paid a nominal stipend. Rules for board composition vary. In Ohio, for example, there must be nine physicians and three non-physician public members. Arkansas specifies that one of two non-physician board members must represent consumers whereas the other, 60 years of age or older, must represent the elderly. States that do not have separate boards for osteopathic medicine may require that one or more board seats be filled by doctors of osteopathy. Most boards employ full-time administrative staff. Funding, determined by each state’s legislature, comes for the most part directly from licensing and registration fees. There are 70 state boards—allopathic, osteopathic, and combined—in operation. (Allopathic schools confer a doctor of medicine degree, or MD; osteopathic schools a doctor of osteopathy degree, or DO. Osteopathy is an approach to healing that originated in the physi-

cal manipulation of muscles and joints; however, most osteopathic practice today looks much like allopathic practice to a patient.) Board responsibilities include granting licenses to physicians deemed to have appropriate education and training, subsequently ensuring that they abide by recognized standards of professional conduct and meet ongoing requirements such as continuing medical education, and taking disciplinary action where necessary.

Initial Licensure

Candidates for initial licensure are required to provide evidence that they have graduated from an accredited medical school and completed at least one year of post-graduate training and to demonstrate their capability by successfully completing the three-step United States Medical Licensing Examination (USMLE).⁵ The USMLE is a standardized test, jointly sponsored by the Federation of State Medical Boards (FSMB) and the National Board of Medical Examiners and administered to physician aspirants across all state jurisdictions. Physicians who graduated from medical schools outside the United States and Canada must be certified by the Educational Commission for Foreign Medical Graduates in order to take the USMLE. Osteopathic candidates take a similar three-level examination, the Comprehensive Osteopathic Medical Licensing Examination (COMLEX). Test results are furnished to state medical boards.

The USMLE is designed to assess a physician's ability to apply knowledge, concepts, and principles, and to demonstrate the fundamental patient-centered skills that constitute the basis of safe and effective patient care.⁶ It is not specialty-specific, nor is the license it leads to. Theoretically at least, anyone with a medical license can legally perform surgery, diagnose and treat any disease, or engage in any specialty. (In practice, hospitals are unlikely to grant privileges to generalists to perform specialty-specific procedures, though they may be more elastic in areas of physician shortage.)

In addition to transcripts and test scores, states may ask candidates for information about employment history, any malpractice claims or disciplinary actions, and other licenses held. Unless something in the application raises a red flag prompting further inquiry by the medical board, a license is generally granted if all the requisite boxes can be checked.

Notwithstanding the powers reserved to individual states, there is not much substantive difference among their licensure requirements. Candidates may be required to show proof of one to three years of post-graduate training (often more years for International Medical Graduates than graduates of U.S. medical schools). The number of permitted attempts to pass the USMLE or COMLEX ranges from two per test step (Alaska) to unlimited (several states). The time permitted to complete the test series similarly ranges from five years to as long as it takes.

License Portability

Given the similarity of state licensure requirements, some may ask why a medical license does not resemble a driving license, that is, earned by passing a test and (not insignificantly) paying a fee in one state, but valid for operating a motor vehicle in any state. Granted that treating cancer is more complicated than driving a car, so is the USMLE more rigorous than a driver's test. No one is on record suggesting that appropriate medical treatment—and the skill to administer it—should differ from state to state. As it stands, however, a physician wishing to practice in more than one jurisdiction (Maryland and the District of Columbia, for example) must apply separately to each, have his credentials verified by each, and pay whatever fees each requires. Though some have called for it, full reciprocity between states still appears to be a distant prospect, in part, presumably, because of inertia and possibly also because state medical boards are not eager to weaken their own state-specific power.

Some efforts in the direction of more limited mutual recognition are under way. For example, the FSMB has developed a Uniform Application for Physician State Licensure, designed to make the licensing process more portable among states, more convenient, and less redundant. To date only 8 states accept the uniform application,⁷ but the FSMB reports that 17 more are in the process of preparing to do so. FSMB is working with 19 states under a grant from the U.S. Health Resources and Services Administration to advance portability initiatives, including expanded implementation of the uniform application, centralized verification of credentials, and expedited licensure processing. The State Alliance for e-Health (housed in the National Governors Association's Center for Best Practices) is also working to establish a consensus-based approach to streamline the licensure process.⁸

Supporters point out that license portability is important in disaster response. In the aftermath of Katrina, for example, then-Gov. Kathleen Blanco issued an executive order suspending state licensure requirements for out-of-state medical professionals offering their services in Louisiana who had valid licenses in other states. The U.S. Secretary of Health and Human Services followed suit in the form of a waiver under Section 1135 of the Social Security Act,⁹ ensuring that providers who furnished services in good faith could be reimbursed and exempted from sanctions for noncompliance with licensure requirements (absent any determination of fraud and abuse).

Telemedicine is another arena in which locus of license is a critical question. Under law, when care is provided by a physician in one state to a patient in another state, where is that care deemed to occur? According to the American Medical Association (AMA), “a physician is considered to be practicing medicine in the state where the patient is located and is subject to that state’s laws regarding medical practice.”¹⁰ The AMA accordingly has taken the position that states and their medical boards should require a full and unrestricted license in that state for the practice of telemedicine.¹¹

Proponents look to telemedicine to increase access and reduce both disparities and costs. Some advocate reciprocity between states in recognizing limited licensure, presumably because this is easier to accomplish than reciprocity with respect to full licensure. This approach would not allow physicians to practice in person in another state, but would offer a simplified application process and reduced fees to practice interstate telemedicine. Eleven states have chosen this route.¹²

License Renewal and Maintenance

Licensed physicians must periodically re-register with their state(s) to preserve active status. They may be required to attest to good conduct (lack of disciplinary action or revocation of privileges, perhaps) and good health (absence of physical conditions that would impair the ability to practice). Most states also require physicians to attest to completing continuing medical education (CME) of some specified duration. For example, Virginia requires 60 hours of CME in a two-year period; at least 30 must be documented by an accredited sponsor,

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while the remainder may be self-study. No state requires that CME be expressly related to a physician's specialty or daily practice. In the absence of evidence of serious wrongdoing or debility, renewal of a license is almost automatic with the payment of a fee, and can now be completed online in most jurisdictions.

Recognizing that license renewal has been an essentially administrative process, the FSMB in 2003 commissioned a special committee to study the role of state medical boards in assuring the continued competence of licensed physicians. The committee issued a draft report in February 2008, recommending that state medical boards require physicians seeking license renewal to periodically demonstrate competence within the scope of their professional practice and proposing a framework for further consideration of the topic. A task force was convened to study the impact of implementing maintenance of licensure (MOL) requirements.

In April 2010, the FSMB approved a report incorporating a revised framework and recommendations. FSMB policy may now be summarized as follows:

- MOL should not compromise patient care or create barriers to physician practice.
- As a condition of license renewal, physicians should provide evidence of participating in a program of professional development and lifelong learning based on the Accreditation Council on Graduate Medical Education (ACGME) general competencies. This will entail reflective self-assessment (what improvements can I make?), assessment of knowledge and skills (what do I need to know and be able to do?), and performance in practice (how am I doing?).¹³

The questions asked bring to mind those already addressed in maintenance of certification programs (discussed below) offered by the American Board of Medical Specialties (ABMS) and the American Osteopathic Association's Bureau of Osteopathic Specialists.

The FSMB will continue with its MOL implementation work group to develop a template for state boards' use and to identify potential implementation challenges. One or more MOL pilots is envisioned, and reportedly there are states interested in participating in a pilot. It should be noted that FSMB can make recommendations and offer assistance to its member boards, but has no authority to prescribe action in their states. Legislative action may be required in some states. Some level of physician resistance clearly is still anticipated.

CERTIFICATION

Certification is a process designed to assure the public that a specialist has appropriate training, knowledge, and skills to carry out the patient care activities associated with the specialty.

Specialty Boards

Specialty boards were formed during the 20th century by physician leaders in response to “a perceived need to demonstrate quality and differentiate among specialties.”¹⁴ The United States is unique in having physician-led standard-setting organizations that are independent of physician membership organizations, or specialty societies.¹⁵ The primary function of each of board is to evaluate candidates in its primary specialty and subspecialty areas who voluntarily appear for review and to certify those qualified as “diplomates” or “subspecialists” of that board. A board’s authority to do this is rooted in medical professionalism; it should not be confused with the statutory authority conferred on state medical boards.

What is now the ABMS was founded in 1933. Each of its 24 member boards has required certain levels of training, completion of a residency, and the passing of a rigorous written examination in order for its specialty physicians to be certified. Since 2000, all 24 have required that certification be maintained according to a four-part model (discussed below) by physicians who wish to retain the “board-certified” designation.

Initial Certification

A physician is eligible to sit for a board examination for specialty certification after having completed a residency program certified by the ACGME and obtained a license to practice medicine. Subspecialty certification requires additional training and examination; for example, following a general surgical residency and certification as a surgeon, a physician may go on to a post-residency fellowship in surgical critical care or transplant surgery, and subsequently seek certification in the subspecialty as well.

Certification is intended to demonstrate that physicians have met exacting standards. A residency program director must attest that a candidate meets six general competencies established by ACGME in

1999; these same competencies are required by ACGME to accredit a residency program:

- **Patient care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health
- **Medical knowledge** about established and evolving biomedical, clinical, and cognate (that is, epidemiological and social-behavioral) sciences and the application of this knowledge to patient care
- **Practice-based learning and improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care
- **Interpersonal and communication skills** that result in effective information exchange and teaming with patients, their families, and other health professionals
- **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population
- **Systems-based practice**, as manifested by actions that demonstrate 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 value¹⁶

Certification has always been a voluntary proposition. Nevertheless, most physicians who are eligible choose to pursue it. As Consumers' Checkbook cautions, "Be aware that board certification is not a very discriminating measure. About 87 percent of physicians in the U.S. are certified."¹⁷ Estimates of the percentage of physicians who are board-certified range from 80 to 90; it is difficult to pin down the denominator (physicians actually in practice) needed to arrive at an exact figure. The high motivation to seek certification hinges partly on health plans, hospitals, or group practices that set certification as a criterion for network or staff inclusion, but also on a wish to be seen as a distinguished professional by peers and patients.

In most specialties, initial certification was for many years a lifetime proposition. "Board-certified" was a respected credential, but years or decades after it was conferred the credential had more of the aura of club membership than cutting-edge skill. Specialty boards gradually began to issue time-limited certificates; the American Board of Family Medicine did so from its inception. The expiration of certification requires physicians to sit for another test in order to renew their certified status, most commonly at six- to ten-year intervals.

There are some exceptions; for example, the American Board of Internal Medicine (ABIM) exempts from required recertification any internal medicine diplomate whose initial certification was earned before time-limited certification was introduced.¹⁸

Maintenance of Certification

Re-certification required testing at specified intervals. But testing alone, physician leaders came to believe, still fell short of an incontestable demonstration of competence. All of the specialty boards agreed in 2000 to move beyond re-certification based primarily on a written test to the next iteration: maintenance of certification (MOC). This still includes a periodic exam, but much more is asked of the physician in terms of practice assessment and quality improvement.

Each board implements MOC in its own way, but all are pledged to a program that requires a physician to show evidence of satisfying four criteria:

Part I	Professional Standing	Medical specialists must hold a valid, unrestricted medical license in at least one state or jurisdiction in the United States, its territories, or Canada.
Part II	Lifelong Learning and Self-Assessment	Physicians participate in educational and self-assessment programs that meet specialty-specific standards set by their member board.
Part III	Cognitive Expertise	Specialists demonstrate, through formalized examination, that they have the fundamental, practice-related and practice environment-related knowledge to provide quality care in their specialty.
Part IV	Practice Performance Assessment	Specialists are evaluated in their clinical practice according to specialty-specific standards for patient care. They are asked to demonstrate that they can assess the quality of care they provide in comparison to peers and national benchmarks and then apply the best evidence or consensus recommendations to improve that care using follow-up assessments.

Source: American Board of Medical Specialties (ABMS), "MOC Competencies and Criteria"; available at www.abms.org/Maintenance_of_Certification/MOC_competencies.aspx.

ABMS member boards determine the contents of the examination in their specialty and subspecialties. In addition to testing whether a physician has remained current with research on devices, drug therapies, and other interventions, examinations seek to measure

physicians' diagnostic acumen and clinical judgment, for example, in managing multiple chronic conditions.

The boards employ a variety of models for practice assessment and are considering additional approaches to assessing and improving practice. For example, primary care specialties, with office visits day in and day out, lend themselves to practice audit and feedback mechanisms. Specialties engaged in procedures, such as surgery, may offer a registry-based approach to quality assessment. Specialties with little in the way of patient encounters and outcomes data, such as radiology and pathology, may have to rely on peer review. An interesting development is the concept of organization recognition for Part IV quality improvement activities. Now being pilot-tested with the Mayo Clinic, this would allow an organization deemed to set suitably rigorous standards for its physicians to play a key role in their certification. This approach offers an opportunity to consider system-based factors, though certification would still be conferred at the individual level.

Specialty boards may make tools available to help physicians assemble evidence required for certification. For example, the ABIM offers Web-based Performance Improvement Modules (PIMs) that guide physicians through the collection of clinical and patient experience data to identify gaps in care and ultimately to implement a quality improvement plan for their practices. The ABIM has also worked to ensure that these same data may be used for reporting to health plans, the National Committee for Quality Assurance (NCQA), hospitals, Bridges to Excellence programs, and the Centers for Medicare & Medicaid Services.

As noted, by far the majority of physicians seek certification. There has been some resistance to the move to MOC, on the ground that it requires a much more substantial commitment of time and resources over the course of one's career than was the case in the past. There are quibbles, for example, that the examination as currently administered tests memory rather than a physician's ability to access the best information available. ABIM board members have noted in *The New England Journal of Medicine* that very few internists with "grandfather" status (time-unlimited certification) have heeded the board's advice to opt for MOC.¹⁹ Increasingly, however, there is acceptance that MOC is here to stay. The ABMS touts MOC as the "gold standard" credential for physicians.²⁰

An interesting policy question, though not one that specialty boards seem eager to discuss, is how long MOC should remain voluntary. If MOC is associated with higher quality, should it be a condition of all ongoing medical practice? If MOC were to be mandated, particularly by government, is there risk that its rigor might be diluted in response to political pressures? Some specialty boards have suggested that MOC might serve as a pathway, one among various options a physician could select to fulfill federal quality requirements. Some observers suggest that physicians who were never eligible for the one-time-only brand of certification will come to regard MOC as a norm. Others suggest that MOC may put a greater burden on physicians practicing in underserved, resource-poor areas, potentially raising an access question.

An issue that needs further work is harmonization of CME expectations across licensure and certification. Traditional CME, as required by the states for re-licensure, leaves it to the individual physician to determine in what areas he needs or wants additional training. As the utility of this approach has repeatedly been called into question, MOC is more prescriptive, requiring a physician to go through an assessment to identify and pursue opportunities for improvement. The AOA specifies that at least one-third of CME credits be in a DO's specialty. ABIM will not accept CME that does not include a component whereby the physician is evaluated on the basis of what she actually has learned and whether it can be applied to her practice.

A FEDERAL ROLE?

All legally practicing physicians must have a state license, and almost all choose to become certified. Is the combined oversight of the state and the profession sufficient to protect patients, ensure quality, and promote efficiency?

The medical license issued by states is an entry-level credential, widely regarded as a low bar. With it, a physician can undertake any medical service, regardless of whether he has received specialized training beyond that provided in medical school. Once a license is granted, state medical board oversight of the physician's subsequent career is minimal. A consumer complaint may generate a formal hearing before the board, which then decides whether to take action. An annual record of disciplinary actions compiled by the FSMB sums to a 2009 national total of 5,721 actions, of which 4,831 were

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“prejudicial,” that is, involving revocation, suspension, or restriction of a license.

Oversight by professional peers, especially since the advent of MOC, is a more dynamic process and is intended to represent a higher threshold of competence. Physicians in the United States traditionally have looked to their own ranks for standard-setting. As Kirstyn Shaw and colleagues wrote in a 2009 *Journal of the American Medical Association* article, “It is important and, we believe, better for physicians and for patients that the medical profession continues to lead in setting standards of good practice. The profession itself is best able to determine appropriate standards based on its unique knowledge, and physicians are more receptive to standards created by experts in their field than by those outside of clinical practice.”²¹ Nevertheless, recurrent accounts in both the research literature and the popular press about overtreatment, disagreements among different specialties as to what proper treatment should be, and conflicts of interest raise questions as to whether the specialty board structure constitutes the optimal watchdog.

Some would argue that the federal government needs to take a hand. To date, there has been limited involvement on the part of Medicare in physician quality improvement and quality reporting initiatives, although there is an expanded role under the 2010 health reform legislation. The Joint Commission, a non-federal organization with authority to deem hospitals in compliance with Medicare’s Conditions of Participation, requires hospitals to attest to the competence of physicians to whom privileges are granted.

The Office of the National Coordinator for Health Information Technology (ONC) in the U.S. Department of Health and Human Services (HHS) may offer a model for a more direct application of federal authority. ONC’s mission includes “the development, recognition, and implementation of [health IT] standards.”²² The National Committee on Vital and Health Statistics (NCVHS) recommended to Secretary Sebelius that HHS “develop a national quality and performance measurement strategy and designate an oversight structure to coordinate and align existing initiatives.”²³ The Patient Protection and Affordable Care Act indeed charges the Secretary with doing so.

Some analysts call for yet a bolder assertion of federal power. If hospitals are required to meet defined Conditions of Participation in order to bill Medicare for their services, why not physicians? Medi-

care might, for example, require physicians to earn and maintain certification status. However, the idea that clinical standards should be set by the federal government is unlikely to generate support in any quarter, particularly in the contentious post-reform climate.

LOOKING FORWARD

Licensure and certification are two gates along a path. The first is an assurance that a physician has been trained and tested and thus meets the basic test of competence. Certification, especially as it has evolved, is more demanding in terms of the physician's clinical knowledge and skills. The ABMS has signaled an intent to keep going on the quality path, for example, by beginning to incorporate assessment of communications skills in MOC. But "board-certified," like "licensed," is still a yes-or-no measure that does not communicate further gradations of quality.

Information available to consumers wondering how good their doctor really is is still quite limited. Quality leader Donald Berwick, MD, observed in a 2009 editorial in the *Journal of the American Medical Association*: "As illogical as it is to act as if all physicians were 'above average,' there is almost no choice but to do so if there is no way to discern differences among them."²⁴ Certification is designed to demonstrate that a physician meets a high standard; it cannot be used to show that diplomate Dr. Y provides better care than diplomate Dr. Z.

Dr. Berwick calls for measures that are not restricted to a single disease or patient subpopulation, aggregation of data from all payers, more direct solicitation of patients' views and experiences, and increasing the ability to track patients' health and function longitudinally. Other leaders would agree that both the science and practice of quality measurement need to continue to evolve. NCVHS's recommendations to the Secretary were noted above. Consumers' Checkbook has suggested that specialty boards might consider working toward a process that combines self-assessment with public assessment.

The pace of change in physician assessment can feel frustratingly slow, and its nature remains incremental. Nevertheless its thrust is clear. The challenge facing quality professionals, physicians, and policymakers is developing, refining, and making available quality information that is useful to consumers, acceptable to the profession, and conducive to real quality improvement.

"As illogical as it is to act as if all physicians were 'above average,' there is almost no choice but to do so if there is no way to discern differences among them."

—Donald Berwick, MD

ENDNOTES

1. Gallup Poll, "On Healthcare, Americans Trust Physicians Over Politicians," June 17, 2009; available at www.gallup.com/poll/120890/healthcare-americans-trust-physicians-politicians.aspx.
2. Federation of State Medical Boards (FSMB), "Protecting the Public: How State Medical Boards Regulate and Discipline Physicians," available at www.fsmb.org/smb_protecting_public.html.
3. U.S. Supreme Court Cases & Opinions, Vol. 129, *Dent v. West Virginia*, 129 U.S. 114 (1889); available at <http://supreme.justia.com/us/129/114/>.
4. FSMB, "A Guide to the Essentials of a Modern Medical Practice Act," tenth edition, April 2003; available at www.fsmb.org/pdf/2003_grpol_Modern_Medical_Practice_Act.pdf.
5. American Council on Graduate Medical Education (ACGME), "Understanding the Difference Between Accreditation, Licensure, and Certification," available at www.acgme.org/acWebsite/RRC_140/140_20UnderstandingtheDifference.PDF.
6. United States Medical Licensing Examination, "2009 Bulletin: Overview," available at www.usmle.org/General_Information/bulletin/2009/overview.html.
7. FSMB, "Uniform Application for Physician State Licensure," available at <https://s1.fsmb.org/CSLA/SelectBoard.aspx>. The eight states that accept the uniform application are Idaho, Indiana, Kansas, Kentucky, New Hampshire, Ohio, Rhode Island, and South Dakota.
8. National Governors Association, "State Alliance for e-Health License Portability Summit: Summary Document," September 22, 2009, p. 3, available at www.nga.org/Files/pdf/0909EHEALTHLICENSEREPORT.PDF.
9. U.S. Department of Health and Human Services, "HHS Declares Public Health Emergency for Hurricane Katrina," September 4, 2005; available at www.hhs.gov/katrina/ssawaiver.html.
10. American Medical Association (AMA), "Physician Licensure: An Update of Trends," available at www.ama-assn.org/ama/pub/about-ama/our-people/member-groups-sections/young-physicians-section/advocacy-resources/physician-licensure-an-update-trends.shtml.
11. AMA, "Reports of the Council on Medical Education," 2009 Annual Meeting; available at www.ama-assn.org/ama1/pub/upload/mm/38/a-09-cme-reports.pdf.
12. For more information, see U.S. Health Resources and Services Administration, "Telemedicine Licensure Report," June 2003; available at <ftp://ftp.hrsa.gov/telehealth/licensure.pdf>.
13. To access the full report, go to www.fsmb.org/pdf/mol-board-report-1003.pdf.
14. Troyen A. Brennan *et al.*, "The Role of Physician Specialty Board Certification in the Quality Movement," *Journal of the American Medical Association*, 292, no. 9 (September 1, 2004): p. 1040; available with subscription at <http://jama.ama-assn.org/cgi/content/full/292/9/1038>.

15. Kirstyn Shaw *et al.*, "Shared Medical Regulation in a Time of Increasing Calls for Accountability and Transparency," *Journal of the American Medical Association*, 302, no. 18 (November 11, 2009), p. 2010; available with subscription at <http://jama.ama-assn.org/cgi/content/full/302/18/2008>.
16. ACGME, "General Competencies"; available at www.acgme.org/outcome/comp/compMin.asp.
17. Consumers' Checkbook, "Is Your Doctor Board Certified? Does It Matter?" available at www.checkbook.org/boardcert/.
18. 1987 for critical care medicine, 1988 for geriatric medicine, 1990 for others; see American Board of Internal Medicine, "Policies and Procedures for Certification," August 2009, p. 1, available at www.abim.org/pdf/publications/Policies-and-Procedures-cert-August2009.pdf.
19. Wendy Levinson and Talmadge E. King, Jr., "Enroll in the MOC Program as Currently Configured," *New England Journal of Medicine*, 362, no. 10 (March 11, 2010): Clinical Decisions, Recommendation 1, p. 949.
20. American Board of Medical Specialties, "What is ABMS MOC"; available at www.abms.org/Who_We_Help/Member_Boards/MOC_Communications_Zone/powerpoint.htm.
21. Shaw *et al.*, "Shared Medical Regulation in a Time of Increasing Calls for Accountability and Transparency," p. 2012.
22. Office of the National Coordinator for Health Information Technology, mission statement; available at http://healthit.hhs.gov/portal/server.pt?open=512&objID=1200&parentname=CommunityPage&parentid=10&mode=2&in_hi_userid=10741&cached=true.
23. National Committee on Vital and Health Statistics, letter to Secretary Kathleen Sibelius on Meaningful Measurement of Quality Health Care Using Electronic Health Records, December 1, 2009; available at www.ncvhs.hhs.gov/091201lt.pdf.
24. Donald M. Berwick, "Measuring Physicians' Quality and Performance: Adrift on Lake Wobegon." *Journal of the American Medical Association*, 302, no. 22 (December 10, 2009), p. 2486; available at <http://jama.ama-assn.org/cgi/content/full/302/22/2485>.