Maintenance of Certification: The Role of the American Board of Pediatrics in Improving Children's Health Care

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KEYWORDS

• Quality • Quality improvement • Maintenance of certification
• Professional development

Board certification in American health care began in 1911 and grew out of the *Flexner Report*, which addressed major concerns about the quality of medical education. The American Board of Pediatrics (ABP) was one of the first boards formed. The ABP was created in 1933 by the American Academy of Pediatrics, the American Pediatric Society, and the pediatric section of the American Medical Association to address the issue of who should be called a "pediatrician."[1] At the time, some physicians with little or no training in children's care were calling themselves pediatricians. The ABP was created to answer the question: "What education and training should be required of physicians to provide the best care for children and warrant the title of pediatrician?" The concern about physician quality continued to spread to other clinical areas and eventually led to the establishment of the American Board of Medical Specialties (ABMS), which now has 24 members across all specialties. No other country has a similar voluntary process for defining and assessing physician expertise in specialty care. Pediatric certification initially addressed only general pediatric care. Subspecialty certification began with pediatric cardiology in 1961 and there are now 14 certified pediatric subspecialties, the newest being child abuse pediatrics, which was created in 2007. Over the years, the ABP has certified over 90,000 pediatric generalists and subspecialists. Today, the almost 250 pediatric leaders from around the country who make up the ABP set standards and develop tools to help pediatricians assess their level of knowledge and skills to deliver quality care.

The model for assessing physician quality for the first 7 decades was based on demonstrating medical knowledge: "The more you know, the better the care you

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deliver.'' In the beginning, certification involved passing an oral examination. This was eventually augmented with a written examination. Oral examinations at initial certification were given until 1988, but were eliminated when it was determined that performance on the written examination accurately predicted who would pass the oral examination. Initially, pediatric certification was a one-time examination of knowledge at the end of training and certification was a lifetime designation. There are still almost 20,000 ''permanent'' certificate holders who have lifelong certification, but this is no longer considered the gold standard. In 1952, the first randomized clinical trial was conducted and, as both basic and clinical research grew, the knowledge base for pediatrics increased exponentially. It became apparent that the standard of a one-time assessment of medical knowledge at the end of training was not sufficient to assure the public of the ongoing quality of certified pediatricians. As a consequence, in 1988, recertification was introduced and diplomates were required to pass a comprehensive examination of medical knowledge every 7 years to be recertified. Certification has been a continuously evolving process.

American health care is now engaged in a second quality revolution even more profound than the Flexner revolution. The current revolution is focused on the quality and safety of clinical care and is international in scope. As early as the mid-1970s, studies began to appear documenting significant gaps in quality and safety of care at every level of care. In the mid-1970s, John Wennberg[2] published his first study showing significant unexplained variation in health care. This work eventually led to the *Dartmouth Atlas of Healthcare*. Wennberg[3] has shown that even among well-trained, well-intentioned board-certified physicians, variations in quality, cost, and use of care are significant. Using the Medicare national database, Fisher and colleagues[4] showed that increased spending and increased use of specialists do not necessarily translate into better outcomes. In fact, the opposite appears to be true.

By the late 1980s and early 1990s, the tools and methods of quality improvement that had been developed for manufacturing and production in industry were introduced into health care[5] and it became possible to define quality of care. The commonly used definition of ''the gap between the care that could be delivered using evidence-based medicine and best practices and the care that is actually delivered'' became widely accepted. Two seminal Institute of Medicine (IOM) reports were published in 1999 and 2000. *To Err is Human*[6] documented significant gaps in patient safety and *Crossing the Quality Chasm*[7] documented the broader problems with quality in health care and called for the systematic redesign of health care and the use of quality improvement. In the *Chasm* report, the IOM noted that quality care should have six characteristics. It should be (1) safe, (2) timely, (3) effective, (4) efficient, (5) equitable, and (6) patient centered. The IOM reports have focused primarily on system failures as the source of most of the quality problems in American health care. However, there has been increasing interest in the role that physicians play in the delivery of quality care. It became apparent to some health leaders that the model of a medical knowledge as the only physician competency for delivering quality care was not adequate. As a result, Leach, Batalden, and colleagues[8] proposed an expanded set of core physician competencies that they felt were necessary to deliver quality care. The six core competencies of (1) patient care, (2) medical knowledge, (3) communication, (4) professionalism, (5) practice-based learning and improvement, and (6) system-based practice were endorsed by the Accreditation Council for Graduate Medical Education (ACGME) in 1999 and became the standard for resident and fellowship training in medicine.

In 2000, this profound shift in addressing physician quality spread when the ABMS endorsed the same core competencies for board certification and moved from

a periodic assessment of medical knowledge as the standard for assessing physician quality to a more continuous ongoing assessment of the six competencies. This ongoing assessment is called Maintenance of Certification (MOC),[9] which consists of four parts:

Part 1. Maintaining a valid license to practice
Part 2. Demonstrating a lifelong commitment to learning through ongoing knowledge self assessment
Part 3. Passing a periodic secure examination of medical knowledge
Part 4. Demonstrating the ability to assess and improve the quality of practice performance

To be called a board-certified pediatrician under the MOC framework requires a level of training, competence, and knowledge that can only be achieved by completing a rigorous, defined, closely monitored, ACGME-approved training program and then demonstrating a level of knowledge comparable to established standards by passing the initial certifying examination. Once this landmark baseline threshold is reached, the emphasis shifts to demonstrating lifelong professional development and the ability to deliver quality care and to continually improving that care through MOC.

Part 1 of MOC requires a diplomate to maintain a valid unrestricted license to practice. Previously, restrictions on licenses were difficult to track across 70 different state and territorial medical licensing boards. The electronic notification system recently developed by the Federation of State Medical Boards provides real-time national sharing of any restriction placed on a medical license by any licensing boards. This has led to an increase in the number of revocations of board certification related to restricted or revoked licenses. MOC Part 2 requires diplomates to demonstrate a career-long commitment to learning by completing a series of open-book knowledge self-assessment activities every 5 years. The American Academy of Pediatrics' Pedialink system is an example of an ABP-approved Part 2 program. For Part 3, diplomates will be required to demonstrate current knowledge to practice by passing a secure examination of medical knowledge in each area of certification every 10 years.

Quality improvement is at the heart of Part 4 of the ABP's new MOC program. In a real sense, all of MOC, but especially Part 4, applies the principles of quality improvement to career-long professional development in a series of assessments and self assessments and in improvement activities around the six core physician competencies adopted by the ACGME and the ABMS. Beginning in 2010 and then for 6 years, more than 60,000 pediatricians will be required to demonstrate competence in quality improvement as they progress through the new version of MOC.

The focus on quality improvement is appropriate as gaps in quality are present in pediatrics. Mangione-Smith and colleagues[10] have demonstrated that children receive only 46% of recommended care in the United States. With the ability to define quality and to systematically improve care using the science of quality improvement, physicians have the professional obligation to actually measure whether the care they deliver is safe, timely, evidence-based, efficient, equitable, and meets patients' needs. If there is a gap in quality, physicians have the professional obligation to improve care.

There are two options for Part 4 of MOC by which pediatricians can meet the ABP requirement that they assess and improve practice performance. The first option is to use Web-based improvement modules, such as the Electronic Quality Improvement in Pediatric Practice (EQIPP) modules developed by the American Academy of Pediatrics, the Patient Safety Improvement Program developed by the ABMS, or Performance Improvement Modules (PIMs) developed by the ABP. These modules guide pediatricians through the basic process of measuring and improving quality of care

for a small sample of patients from their clinical practice using evidence-based guidelines. Participating pediatricians can compare their performance to peers and to national standards. The format is straightforward. The diplomate measures the quality of care his or her care team delivers for a small sample of patients (usually 10 consecutive patients). The measures are developed from evidence-based or consensus-based guidelines and the process allows a physician or group of physicians to assess and compare their results against those of peers both locally and nationally and against benchmark best practices. If process measures are used, there has to be strong evidence that the processes are tightly linked to outcomes. Once baseline data are completed, the physician or team reflect on their gaps in quality and decide how they could improve care. They are provided with a short list of changes that have worked for other practices. They can choose from among these for implementation or they can develop their own unique strategy. They are encouraged to form a team within their practice to implement change and to include patients wherever possible. After the change has been implemented, they are required to remeasure their care to determine if improvement has occurred. If improvement has occurred, they are encouraged to incorporate the changes into their ongoing delivery of care. They are required to complete at least one cycle of remeasurement and are strongly encouraged to continue testing additional changes. Some of the Web-based modules require more than one improvement cycle to receive credit for MOC Part 4. Many physicians are stimulated by this experiential learning to become more knowledgeable about quality improvement science and practice redesign and go on to spread this knowledge to the rest of their practice. To address the competencies of communication and professionalism, activities are being developed that enable diplomates to assess their ability to communicate with patients and peers and to assess the impact of their own professional behavior on care.

The other option for MOC Part 4 involves diplomates receiving credit for participating in an ABP-approved established quality-improvement project. Over 20% of physicians are currently involved in a local, regional, or national improvement effort that involves the patients in their practice.[11] The ABP has established standards for what it considers are valid quality improvement projects that it will approve for Part 4 credit. The standards have been adapted from published formal recommendations, such as SQUIRE (Standards for Quality Improvement Reporting Excellence), and address such methodological issues as having a well-defined aim; clearly identifying the domains of quality being addressed; having appropriate measures; identifying appropriate benchmarks of performance; proposing tests of change that are evidence based or have strong evidence to support their being tested; defining the sampling method being used; addressing issues of sample size and data quality; addressing privacy and patient protection; and identifying appropriate methods for analysis, display, and reporting of results. (Standards are available at https://www.abp.org/abpwebsite/moc/performanceinpractice/approvedq1projects/approved/qi_project_standards). The ABP has also developed standards for meaningful participation by a diplomate in an approved quality improvement project to receive MOC Part 4 credit. So far, the ABP has approved over 20 projects and continues to receive additional applications at an increasing rate. The ABP has focused on approving projects from larger, established organizations that have a greater chance of sustainability over time and has discouraged applications from individuals or small practices. However, small practices are not excluded from this option, as many of the projects that have been approved are hospital, regional, state, and national quality improvement initiatives that involve solo and small practices. Most of these projects are designed to help individual physicians and practices collect measurement data. Most provide coaching or education on improvement science and practice redesign. The

approved projects showing the most rapid and dramatic improvements involve collaborative open sharing of performance data across practices so that practices can learn rapidly from each other about what works. The physicians and practices in these collaboratives all test the same change ideas simultaneously. This allows larger sample sizes and creates the ability to determine what actually works at a much faster pace than can be achieved by individual practices. This approach resembles the pediatric cancer oncology networks of the past 30 years, one of the most successful long-term examples of systematically improving outcomes for children.[12] The Cystic Fibrosis Foundation quality improvement collaborative is particularly notable for its willingness to share center-specific quality-performance data on its public Web site as a way for cystic fibrosis centers to identify and learn from centers that are demonstrating benchmark improvements in care.[13] Participation in the cystic fibrosis collaborative has been approved by the ABP for Part 4 credit. Another ABP-approved project is the national collaborative sponsored by the National Association of Children's Hospitals and Related Institutions to eliminate catheter-associated infections in pediatric intensive care units. Within 18 months, 29 units have demonstrated a greater than 50% reduction in line infections with greater than 600 infections prevented, over 60 deaths prevented, and an estimated $20 million reduction in costs. The collaborative was successful in recruiting a second wave of 32 units and is beginning to recruit for the third wave. The goal is to spread this effort to all 300-plus pediatric intensive care units nationally in the next several years. This would result in an estimated 500 prevented deaths and between $70 and $100 million in cost reductions. A unique feature of this collaborative is the use of factorial design that allows various units to test more than one set of changes at a time in a quasi-experimental design that begins to blend quality improvement with outcomes research.[14] The ABP has helped promote similar multicenter improvement efforts for Part 4 and has approved for MOC credit projects in neonatal care, access to care, prevention of blood stream infections in pediatric intensive care units, asthma, and immunizations. Additional applications are pending. These projects represent a model for improving outcomes while reducing costs and waste by reducing unwanted variation in care, especially in pediatric subspecialty care. The numbers of children affected each year across the United States by most complex problems are relatively small, making it difficult if not impossible for any one practice or center to have a large enough number of patients to be able to determine on its own what constitutes quality care, especially care related to clinical effectiveness. There is a significant opportunity to integrate data collection in these projects with emerging electronic health records so that the data can be used not only for daily delivery of care and quality improvement but also for longitudinal studies and clinical trials. The ultimate goal is one-time data entry during the delivery of quality care that can be used to improve care, guide professional development, and generate new knowledge so that "we learn from every child we treat."

The ABP is working with the National Association of Children's Hospitals and Related Institutions, the American Academy of Pediatrics, the Child Health Corporation of America, and with specialty societies and other organizations through the Alliance for Pediatric Quality (www.kidsquality.org) to spread successful existing quality improvement projects and to promote or help create new national projects to improve children's health care through shared data, collaborative practice, and application of quality improvement science. All of these efforts are intended to integrate the ABP's MOC process into daily practice.

The requirement that all diplomates measure and improve quality of care calls for a different approach to assessment and standard setting than the assessment of medical knowledge. Several health services researchers[15,16] have pointed out the inherent difficulties in trying to distinguish whether one individual physician's clinical

performance differs from another in a valid, statistically significant manner. Issues of small sample size, how much of a patient's care can be attributed to any one individual physician, and how to adjust for confounding factors, such as severity of illness, makes measuring individual physician clinical quality a difficult task. In addition, the problem of clinical quality in American health care is not that a few physicians or hospitals provide low-quality care, but rather that there is a significant gap between the mean performance of the majority of providers and optimum care. The ABP and other boards are creating maintenance of certification programs that help physicians close the quality gap. The ABP standard for MOC Part 4 requires diplomates to demonstrate with data the quality of the care they deliver, to compare their quality to peers and to benchmarks, and, where gaps exist, to systematically improve care over time. This approach represents a shift from searching for a small number of low-performing "bad apples" to a focus on improving the performance of the majority of physicians, the "good apples." The challenge is to help all physicians and their care teams deliver better care no matter where they are rather than trying to change only a few low-performing physicians (**Fig. 1**). In doing this, the ABP and the other ABMS boards have become drivers for changing physician practice behavior to improve quality of care.

For physicians, the practice of medicine is rapidly changing and there are both internal and external forces driving the need to assess and improve quality of care.

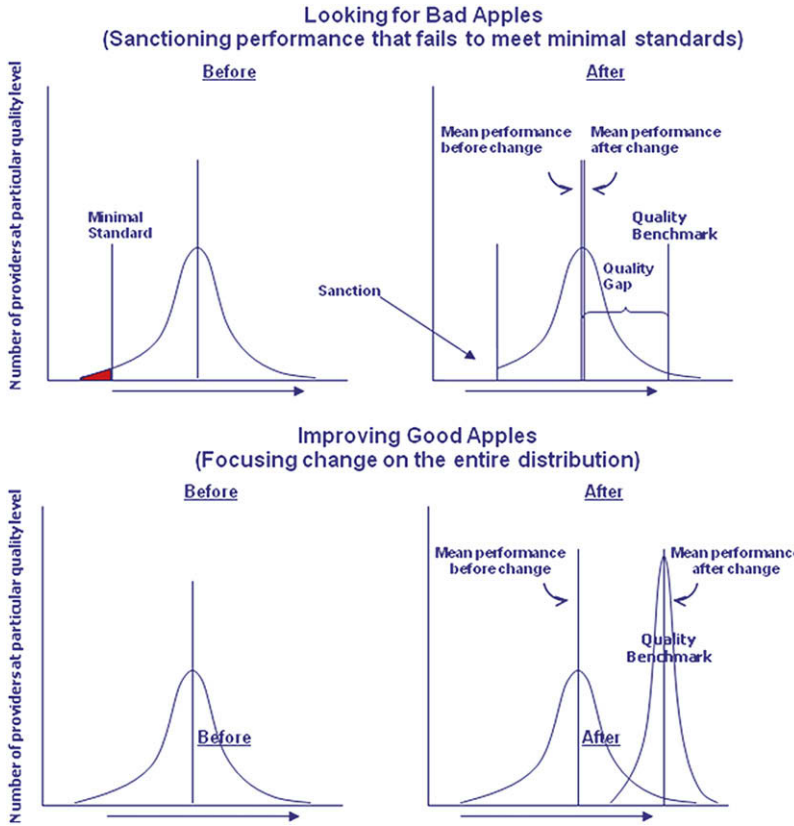

Fig. 1. Sanctioning performance that fails to meet minimal standards versus focusing change on entire distribution.

For almost 75 years, the ABP has been committed to assuring the public that certified pediatricians possess the knowledge, skills, and experience needed to provide high-quality care in pediatrics. In 1933, the year the ABP was formed, Sir William Osler, referring to the Flexner revolution, wrote:

> *I am sorry for you, young men of this generation. You will do great things. You will have great victories, and standing on our shoulders, you will see far, but you can never have our sensations. To have lived through a revolution, to have seen a new birth of science, a new dispensation of health, reorganized medical schools, remodeled hospitals, a new outlook for humanity, is not given to every generation.*[17]

We are now engaged in another quality revolution. The ABP has added the assessment and improvement of practice performance to the critical assessment of medical knowledge in the new MOC program and in doing so has become a major force in helping pediatricians close the quality gap in children's health care.

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