

**HOD ACTION: Council on Medical Education Report 4 adopted as amended in lieu of Resolutions 308, 309, 311, 315, and 319 and the remainder of the report filed.**

REPORT 4 OF THE REPORT OF THE COUNCIL ON MEDICAL EDUCATION (A-13)  
An Update on Maintenance of Certification, Osteopathic Continuous Certification, and  
Maintenance of Licensure (Resolution 917-I-12)  
(Reference Committee C)

EXECUTIVE SUMMARY

The American Medical Association (AMA) has provided strong input and developed extensive policy on Maintenance of Certification (MOC), Osteopathic Continuous Certification (OCC), and the principles of Maintenance of Licensure (MOL). In order to address referred Resolution 917-I-12 and AMA policy D-275.960, this report builds on information provided in three previous Council reports to the House of Delegates on this topic and provides a progress report on MOC, OCC, and the MOL initiative.

MOC, OCC, and MOL are distinctly different processes, designed by independent organizations with different purposes and mandates. The American Board of Medical Specialties (ABMS) and its member boards are developing MOC requirements that are supported by evidence-based guidelines, national clinical and quality standards, and specialty best practices. Similarly, each of the 18 specialty certifying member boards of the American Osteopathic Association's Bureau of Osteopathic Specialists has implemented OCC. The value of specialty board certification has been demonstrated by the ongoing public interest in seeking out board-certified physicians and by the number of hospitals and other health care organizations that make board certification a key qualification for medical staff privileges.

Currently the guiding principles for MOL, adopted by the Federation of State Medical Boards (FSMB), recognize the value of active engagement in meeting MOC and OCC requirements. MOC and OCC are not intended to become mandatory requirements for medical licensure but should be recognized as meeting some or all of a state's requirements for MOL to avoid unnecessary duplication of work. The FSMB is currently engaged in a series of pilot projects, in collaboration with the ABMS and National Board of Medical Examiners, to advance understanding of the process, structure, and resources necessary to develop an effective and comprehensive MOL system. Nine state medical boards are participating in pilot projects. The pilots will determine and identify multiple options and pathways by which physicians, including those who are not specialty-certified or not engaged in MOC or OCC, may fulfill a state board's MOL requirements.

The AMA is not responsible for regulating the certification and licensure processes but is committed to monitoring the development and research being conducted in these areas on a regular basis. AMA policy encourages the ABMS and its member boards to continue to improve the validity and reliability of procedures for the evaluation of candidates for certification. In addition to traditional assessment methods that have relied significantly on multiple-choice examinations or continuing medical education activities, the certification boards are beginning to incorporate simulation-based educational and assessment formats into MOC that more closely represent how practicing physicians diagnose and treat patients.

The MOC, OCC, and MOL processes will be unfolding over the next decade. AMA policy states that any changes in the MOC process should not result in significantly increased cost or burden to physician participants or reduce the capacity of the overall physician workforce.

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REPORT OF THE COUNCIL ON MEDICAL EDUCATION

CME Report 4-A-13

Subject: An Update on Maintenance of Certification, Osteopathic Continuous Certification, and Maintenance of Licensure  
(Resolution 917-I-12)

Presented by: Mahendr S. Kochar, MD, Chair

Referred to: Reference Committee C  
(A. Patrice Burgess, MD, Chair)

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1 Resolution 917-I-12, Accreditation/Certification Cost and Convenience, introduced by the Indiana  
2 Delegation and referred by the House of Delegates, asked that our American Medical Association  
3 (AMA) adopt the following principles related to certifying and accrediting entities:  
4

- 5 1. There should be full transparency related to the costs of preparing, administering, scoring,  
6 and reporting the results of board certifying exams.
- 7 2. There should be full transparency on the costs of facility documentation, review, facility  
8 inspection, scoring, and reporting of accreditation results.
- 9 3. There is the expectation that timely and multiple board exam sites will be available so as to  
10 minimize the need for physicians to travel long distances or wait long times for exam  
11 dates.
- 12 4. The accreditation process should be timely and efficient.
- 13 5. There is the expectation that certification and accreditation services should not be a source  
14 of substantial profit for these entities.  
15

16 Resolution 917-I-12 was referred for further study because many of these issues are being  
17 addressed by the Council on Medical Education, which issued three reports on Maintenance of  
18 Certification (MOC), Osteopathic Continuous Certification (OCC), and Maintenance of Licensure  
19 (MOL) and is continuing to monitor these activities.  
20

21 Policy D-275.960, "An Update on Maintenance of Certification, Osteopathic Continuous  
22 Certification, and Maintenance of Licensure," calls on our AMA to continue to monitor the  
23 evolution of MOC, OCC, and MOL, continue its active engagement in the discussions regarding  
24 their implementation, and report back to the House of Delegates on these issues at the 2013 Annual  
25 Meeting.  
26

## 27 INTRODUCTION

28  
29 The AMA has extensive policy on MOC and OCC as well as policy to support the principles of  
30 MOL. The AMA advocates for balancing these requirements with a sensitivity to physicians'  
31 valuable time and resources, ensuring physician input into the ongoing development of MOC,  
32 OCC, and MOL, and making these processes as efficient, effective, and evidence-based as  
33 possible.

1 This report builds on information provided in three previous Council reports to the House of  
2 Delegates on this topic (Council on Medical Education Reports 10-A-12, 3-A-10, and 16-A-09)  
3 and addresses the resolution and policies above by providing updates on:

- 4
- 5 1. Progress that has been made in developing MOC, OCC, and the policies and framework  
6 for MOL, which is intended to provide guidance to the state medical and osteopathic  
7 boards as they consider the results of the MOL pilot projects.
- 8 2. Expanded models that boards are using for secured examinations.
- 9 3. References that point to evidence of the benefits of specialty board certification.
- 10 4. How knowledgeable the public may be about MOC.
- 11 5. The impact of MOC, OCC, and MOL on the physician workforce.
- 12

### 13 PROGRESS REPORT ON MOC, OCC, AND THE MOL INITIATIVE

14  
15 The Council on Medical Education is committed to monitoring the development of MOC, OCC,  
16 and the MOL initiative on a regular basis. Since June 2012, Board of Trustees, Council members,  
17 and AMA staff have participated in meetings that include the Special Committee on Maintenance  
18 of Licensure, Maintenance of Licensure Implementation Group, MOL Workgroup on Non-Clinical  
19 Physicians, Joint Working Group on MOC-CME, and CEO Advisory Council conference calls.

#### 20 21 *Future Direction for the ABMS MOC*

22  
23 The MOC Committee of the ABMS and its member boards has continued to develop the  
24 conceptual framework for MOC 2015 program standards with the goal of aligning with other  
25 professional accountability requirements by professional and regulatory organizations that share  
26 the same goal of promoting patient-care safety and quality. Alignment would facilitate the use of  
27 MOC for meeting the requirements of pay-for-quality, institutional privileging, MOL, and other  
28 professional obligations. A summary of the individual member boards' requirements for MOC Part  
29 II *Lifelong Learning and Self Assessment* and MOC Part IV *Practice Performance Assessment*, are  
30 shown in Attachments A and B.

#### 31 32 Update on MOC Continuing Medical Education (CME)

33  
34 The MOC Committee established a Joint Working Group on MOC-CME. This was not a call for,  
35 or intent to form, a new credit, certifying, or accreditation system for CME, but was intended to  
36 identify CME that best fits into the continuing professional development framework for MOC  
37 2015. The goal is to standardize the CME requirements of individual ABMS member boards and  
38 streamline the process for physicians who hold multiple board certifications and to facilitate  
39 understanding of MOC requirements by external stakeholders.

40  
41 The Joint Working Group presented its final report to the MOC Committee that recommended  
42 guidelines for evaluating the quality and the quantity of MOC-CME. Some of the questions raised  
43 by the Group with regard to quality included how often is clinical content as well as the educational  
44 format evidence based, how often is learning/improvement demonstrated, and are the six  
45 competencies (professionalism, patient care and procedural skills, medical knowledge, practice-  
46 based learning and improvement, interpersonal and communication skills, and systems-based  
47 practice) adequately covered in current CME programming. Questions raised with regard to  
48 quantity included how much CME is appropriate for MOC, is the "credit" the right metric or would  
49 a point system be better, and where do learning/improvement outcomes fit. The Group  
50 recommended that the characteristics of MOC-CME include evidence-based clinical content,  
51 evidence-based learning formats (i.e., interactive, multimedia), span the six competencies, and

1 support diplomates' needs in demonstrating and documenting practice-based learning and  
2 improvement.

3  
4 The ABMS has also developed a tool kit to advance the state medical boards' adoption of the  
5 FSMB's policy encouraging the state medical boards to accept MOC participation as meeting a  
6 state's CME requirements for license renewal. The MOC4CME Tool Kit includes information  
7 about state requirements on CME, frequently asked questions, and key messages. As of December  
8 2012, four states (Idaho, Minnesota, North Carolina, and Oregon) have adopted this policy, and  
9 four states (California, Missouri, Washington, and West Virginia) are in varying stages of  
10 discussion about the policy change.

#### 11 Additional ABMS Member Boards Drop End Dates

12  
13  
14 Three additional ABMS member boards—the American Board of Family Medicine (ABFM),  
15 American Board of Psychiatry and Neurology (ABPN), and American Board of Radiology  
16 (ABR)—are now emphasizing continuous involvement in their respective MOC programs.  
17 Ongoing certification with each board is contingent upon meeting the MOC requirements for the  
18 specific board. Three boards have eliminated specific “end dates” for the physicians they certify,  
19 and have joined the American Board of Pediatrics, which piloted this approach in 2010, in  
20 emphasizing the continuous nature of the ABMS MOC program.

21  
22 For family physicians who are board certified by the ABFM and who enter MOC in 2012 or later,  
23 and for physicians who were initially board certified by ABPN or ABR in 2012 or later,  
24 maintaining certification is contingent upon their meeting the requirements for the specific board's  
25 MOC program, and therefore no specific end date to certification will be provided. To maintain  
26 certification by ABFM, ABPN, or ABR, their respective board certified physicians must  
27 successfully complete specialty-specific requirements throughout their ongoing MOC cycles.  
28 Implementation details will be determined by each board for physicians who are board certified  
29 earlier than 2012. More information on MOC no- “end dates” is available at [www.abms.org](http://www.abms.org).

#### 30 Time Limits for Becoming Board Certified

31  
32  
33 The ABMS and its member boards have also set time limits to the number of years that can elapse  
34 between a physician's completion of residency training and achievement of board certification.  
35 Board eligibility and transition dates, the ABMS Board Eligibility Policy, and an updated Board  
36 Eligibility Fact Sheet are available at [www.abms.org](http://www.abms.org).

#### 37 ABMS Educational Programs

38  
39  
40 In 2012, the ABMS sponsored educational activities for its associate members and all  
41 representatives from the ABMS member boards. The ABMS Board Congress, titled  
42 “Professionalism: What are the Implications for the ABMS Board Community?” outlined the role  
43 and charge of the new ABMS Ethics and Professionalism Committee, and the “ABMS Workshop  
44 on Professionalism and Certification Examinations” focused on best practices and communication  
45 with examinees and other parties before, during, and after an examination.

#### 46 ABMS Participation Costs

47  
48  
49 ABMS acknowledges that participation in MOC programs places expectations on physicians.  
50 Physicians participating in MOC commit to, and complete, a substantive program of learning,  
51 assessment, and quality improvement in order to remain current in their specialty and provide up-

1 to-date care for patients. The investment of time and effort in MOC activities is expected to yield  
2 tangible dividends for patients—better health care, fewer medical errors, and improved patient  
3 safety. For physicians, it is expected to yield improvement in all the competency domains targeted  
4 and developed throughout a physician’s training: professionalism, patient care, procedural skill,  
5 medical knowledge, practice-based learning and improvement, interpersonal communication skill,  
6 and system-based practice. The average cost of participation in an MOC program across the 24  
7 ABMS member boards is \$500 per year. These fees are determined at the discretion of each of the  
8 24 boards, based on the needs of their physician specialists.<sup>1</sup>

9  
10 AMA Policy H-275.923 (3), “Maintenance of Certification/Maintenance of Licensure,” states that  
11 our AMA will encourage rigorous evaluation of the impact on physicians of future proposed  
12 changes to the MOC and MOL processes including cost, staffing, and time. AMA Policy  
13 H-275.924 (4), “Maintenance of Certification,” states that any changes in the MOC process should  
14 not result in significantly increased cost or burden to physician participants (such as systems that  
15 mandate continuous documentation or require annual milestones).

16  
17 *American Osteopathic Association’s Bureau of Osteopathic Specialists Board Certification*

18  
19 Each of the 18 specialty certifying member boards of the American Osteopathic Association’s  
20 Bureau of Osteopathic Specialists (AOA-BOS) has implemented OCC, effective January 1, 2013.  
21 All osteopathic physicians who hold a time-limited certificate are required to participate in the  
22 following five components of the OCC process in order to maintain osteopathic board certification:

- 23  
24 • Component 1 - Unrestricted Licensure: requires that physicians who are board certified by the  
25 AOA hold a valid, unrestricted license to practice medicine in one of the 50 states, and adhere  
26 to the AOA’s Code of Ethics.
- 27 • Component 2 - Life Long Learning/CME: requires that all recertifying diplomates fulfill a  
28 minimum of 120 hours of CME credit during each three-year CME cycle (some certifying  
29 boards have higher requirements). Of these 120 plus CME credit hours, a minimum of 50  
30 credit hours must be in the specialty area of certification. Self-assessment activities will be  
31 designated by each of the 18 specialty certification boards. If an osteopathic physician holds a  
32 Certificate of Added Qualifications (CAQ), a percentage of their specialty credit hours must be  
33 in their CAQ area.
- 34 • Component 3 - Cognitive Assessment: requires provision of one (or more) psychometrically  
35 valid and proctored examinations that assess a physician’s specialty medical knowledge as well  
36 as core competencies in the provision of healthcare.
- 37 • Component 4 - Practice Performance Assessment and Improvement: requires that physicians  
38 engage in continuous quality improvement through comparison of personal practice  
39 performance measured against national standards for his or her medical specialty. The  
40 Standards Review Committee of the AOA-BOS has specific criteria for each component 4  
41 activity.
- 42 • Component 5 - Continuous AOA Membership.

43  
44 Osteopathic physicians who hold non-time-limited certificates (non-expiring) are not required to  
45 participate in OCC. However, in order to maintain their certification, they must continue to meet  
46 licensure, CME (120-150 credits every three-year CME cycle, 30 of which are in AOA CME  
47 category 1A) and membership requirements.

48  
49 The AOA has developed policies for clinically inactive diplomates, and, for dually-boarded  
50 (AOA/ABMS) diplomates, each board is developing mechanisms to partially accept ABMS MOC

1 Part IV activities for the AOA Component 4 requirements; an osteopathic activity will still be  
2 required.

3  
4 The AOA is encouraging all physicians to participate in OCC, because the FSMB has agreed to  
5 recommend the acceptance of OCC for MOL requirements. Physicians who do not participate may  
6 have additional requirements for MOL as prescribed by the state(s) where physicians are licensed.  
7 In addition, the AOA has applied for its OCC process to be approved for the CMS Maintenance of  
8 Certification incentive program on behalf of all specialty certifying boards; four boards (Radiology,  
9 Pediatrics, Internal Medicine, and Obstetrics/Gynecology) were approved in 2012.

10  
11 *Federation of State Medical Boards – MOL Initiative*

12  
13 Pilot Projects

14  
15 The FSMB is currently engaged in a series of pilot projects, in collaboration with the ABMS and  
16 NBME, to advance understanding of the process, structure and resources necessary to develop an  
17 effective and comprehensive MOL system. Nine state medical boards are participating in pilot  
18 projects: Osteopathic Medical Board of California, Colorado Medical Board, Delaware Board of  
19 Medical Practice, Iowa Board of Medicine, Massachusetts Board of Registration in Medicine,  
20 Mississippi State Board of Medical Licensure, Oregon Medical Board, Virginia Board of Medicine,  
21 and Wisconsin Medical Examining Board.

22  
23 The first pilot project, a State Readiness Inventory survey, was distributed to participating pilot  
24 state medical boards in October 2012. The pilot consisted of an electronic survey designed to  
25 facilitate discussion of implementation of MOL and to identify issues state boards need to consider  
26 and possibly resolve to ensure successful implementation of MOL. The survey results are currently  
27 being collated and analyzed. The second pilot to be implemented will be a Physician Acceptability  
28 Survey to collect opinions from licensed physicians about the potential features of a comprehensive  
29 MOL system. Additional pilots will be undertaken throughout 2013.

30  
31 MOL Workgroup on Clinically Inactive Physicians

32  
33 In 2011, then-FSMB chair, Janelle Rhyne, MD, established an MOL Workgroup on Clinically  
34 Inactive Physicians to define the non-clinical physician and develop pathway(s) that non-clinical  
35 physicians may follow to successfully participate in a state medical board's MOL program. Given  
36 the complexity of the issue, the Workgroup delayed issuing a report to the FSMB House of  
37 Delegates in 2012 in order to take additional time to identify, review, and discuss all relevant  
38 components of clinically inactive physicians' participation in MOL. A draft of the committee's  
39 report was distributed to the state medical boards and other stakeholders, including the AMA.

40  
41 In December 2012, the AMA provided a constructive critique of the FSMB draft report of the  
42 MOL Workgroup on Clinically Inactive Physicians. In general, the AMA agrees with the FSMB  
43 that the options and processes for MOL should be similar for clinically active and clinically  
44 inactive physicians. The AMA also agrees with the responsibilities and guidelines outlined in the  
45 report that would require clinically inactive physicians to understand and engage in a process of  
46 practice-relevant lifelong learning, participate in activities that reflect their day-to-day professional  
47 activities and maintain appropriate documentation of participation in such activities, and provide an  
48 accurate reflection of clinical status to the licensing authority for licensure purposes and to the  
49 specialty certification board for eligibility for MOC/OCC.

1 The FSMB's MOL Workgroup on Non-Clinical Physicians is developing policy intended to ensure  
2 an MOL framework that is effective and efficient for all physicians. A final report was presented to  
3 the FSMB House of Delegates in April 2013 for adoption as formal FSMB policy.

#### 4 5 Communications

6  
7 The FSMB is continuing to provide updates on the development of MOL to the state medical  
8 boards and key stakeholders, including the AMA, and has established an information center with  
9 up-to-date information on the development of MOL ([www.fsmb.org/mol.html](http://www.fsmb.org/mol.html)). In addition, recent  
10 articles about MOL have been published in *Annals of Internal Medicine*, the *New England Journal*  
11 *of Medicine*, and the FSMB's *Journal of Medical Regulation*.<sup>2,3</sup>

#### 12 13 EXPANDED MODELS USED FOR SECURED EXAMINATIONS

14  
15 Traditional assessment methods have relied significantly on multiple-choice examinations or  
16 continuing medical education activities. However, the certification boards are beginning to  
17 incorporate simulation-based educational and assessment formats into MOC that more closely  
18 represent how practicing physicians diagnose and treat patients.

19  
20 Approximately one-third of the ABMS member boards who responded to an ABMS survey  
21 conducted in October 2011 said that they use a modular examination approach to accommodate for  
22 relevancy to practice. These boards administer an MOC Part III examination that represents the  
23 practice content of that particular specialty and includes a combination of core content of their  
24 specialty and modules that focus on specific practice area(s). The number of modules incorporated  
25 into the MOC Part III examination varies among the member boards that utilize the modular  
26 approach. In some cases, the number of modules incorporated into one MOC examination may be  
27 dependent on the subspecialty characteristics of a diplomate's practice. Modules may vary in  
28 length dependent upon the number of questions needed to satisfy reliability and validity  
29 requirements. Some of the boards offering modular examination choices allow diplomates to  
30 choose which modules to take along with the core exam.

#### 31 32 BENEFITS OF SPECIALTY BOARD CERTIFICATION

33  
34 The value of specialty board certification has been demonstrated by the ongoing public interest in  
35 seeking out board-certified physicians and by the number of hospitals and other health care  
36 organizations that make board certification a key qualification for medical staff privileges. Few  
37 practices will hire physicians who are not board certified.<sup>4</sup>

38  
39 A summary of the evidence and theory about the role of a physician's board certification status,  
40 compiled by Brennan et al., noted that "the value of specialty board certification and MOC takes  
41 three forms: the internal validity of the testing process, the correlation of examination scores with  
42 other measures of physician quality, and the correlation of certification status with practice  
43 outcomes."<sup>5</sup> All ABMS member boards develop cognitive examinations that are composed of  
44 questions developed by experts in the discipline and selected to fulfill a blueprint for the overall  
45 examination based on the importance and frequency with which problems are faced in clinical  
46 practice. The Boards also set standards for passing the secure examinations using widely accepted,  
47 credible standard-setting methods.<sup>5</sup>

48  
49 The Boards are developing MOC requirements that are supported by evidence-based guidelines,  
50 national clinical and quality standards, and specialty best practices. Because the MOC program has  
51 been introduced gradually during the last decade, the evidence that results from longitudinal data

1 collection is not available. However, data are beginning to emerge. The ABMS has compiled an  
2 annotated bibliography that highlights research studies and articles supporting the value of board  
3 certification and MOC (Attachment C).

4  
5 The ABMS studies reinforce prior research that has shown a positive link between initial ABMS  
6 board certification and the quality of care. Early studies show a link between MOC and improved  
7 clinical performance and outcomes by participating physicians. Physician engagement in MOC  
8 activities has been associated with enhancement in clinical competence, improvement in care  
9 processes, and the gathering of valuable patient feedback. Many of the learning and assessment  
10 methods used in MOC programs have a firm grounding in research and a demonstrated ability to  
11 address physician competencies. The Boards are incorporating the latest principles in adult learning  
12 into MOC activities, such as self-directed practice improvement modules (PIMs) and interactive  
13 workshops. Many of the Boards use PIMs or incorporate similar approaches in their performance  
14 improvement activities. The latter studies range from lower mortality rates for patients with acute  
15 myocardial infarction and colorectal surgery to improved preventive care services for Medicare  
16 patients when such care is delivered by a board certified specialist.

#### 17 18 PUBLIC AWARENESS OF MOC AND OCC

19  
20 Studies have shown that the public values physician participation in a board certification program.  
21 A 2004 Gallup poll showed that physician certification and MOC are highly valued by the public.<sup>5</sup>  
22 More recently, a 2010 consumer survey commissioned by ABMS showed that most patients (95%)  
23 said it's important to them that their physicians participate in a program to maintain their board  
24 certification, with two-thirds (66 percent) saying it is "very important." The ABMS survey also  
25 showed that 84 percent of respondents would take some form of action if they found out their  
26 physician did not participate in an MOC program, out of which 45 percent would look for a new  
27 physician and 41 percent would stop referring their family and friends to that physician.<sup>6</sup>  
28

29 In August 2011, the ABMS began to display the MOC status of member board certified physicians  
30 online ([www.CertificationMatters.org](http://www.CertificationMatters.org)). The information displayed includes the physician's name,  
31 certifying boards and "yes" or "no" as to whether the physician is meeting MOC standards. As of  
32 August 2012, 11 additional ABMS Member Boards joined seven other Boards in reporting publicly  
33 whether the physicians they certify are meeting their MOC requirements. The American Board of  
34 Anesthesiology, American Board of Radiology, and American Board of Orthopaedic Surgery plan  
35 to make their information available in 2013, and the American Board of Pathology anticipates  
36 providing its information in early 2014. The American Board of Internal Medicine and American  
37 Board of Pediatrics are expected to announce the date their information will be available in the near  
38 future.

39  
40 The AOA also provides information about the OCC status of member board certified physicians  
41 upon request through its online DO Directory ([www.doprofiles.org/](http://www.doprofiles.org/)).

#### 42 43 IMPACT OF MOC, OCC, AND MOL ON THE PHYSICIAN WORKFORCE

44  
45 The MOC, OCC, and MOL processes will be unfolding over the next decade, and their impact on  
46 the physician workforce is still unknown. Depending on the physician's professional activities,  
47 some physicians may have chosen not to proceed with specialty board certification even though  
48 they may have fulfilled all requirements to do so.<sup>7</sup> Lack of certification might reflect a delay or  
49 break in training or the fact that some boards require documentation of actual practice before board  
50 certification. For some physicians, participation in MOC and OCC will likely fulfill requirements



1 for MOL and avoid unnecessary duplication of work.<sup>8</sup> Published studies on the impact of MOC on  
2 an older physician's decision to retire are limited.

3  
4 AMA Policy H-275.924, Maintenance of Certification, states that MOC requirements should not  
5 reduce the capacity of the overall physician workforce. It further states that it is important to retain  
6 a structure of MOC programs that permits physicians to complete modules with temporal  
7 flexibility, compatible with the practice responsibilities. AMA Policy H-275.920 (2), Impact of  
8 Maintenance of Certification, Osteopathic Continuous Certification, Maintenance of Licensure on  
9 the Physician Workforce, states that our AMA encourages the ABMS to use data from maintenance  
10 of certification to track whether physicians are maintaining certification and share this data with the  
11 AMA.

## 12 13 DISCUSSION

14  
15 The AMA has extensive policy on MOC, OCC, and the principles of MOL and supports the intent  
16 of these programs. AMA policy states that any changes in the MOC process should not result in  
17 significantly increased cost or burden to physician participants or reduce the capacity of the overall  
18 physician workforce. The Council on Medical Education is committed to monitoring the  
19 development of MOC, OCC, and the MOL initiative on a regular basis.

20  
21 MOC, OCC, and MOL are distinctly different processes, designed by independent organizations  
22 with different purposes and mandates. Currently the guiding principles for MOL, adopted by the  
23 FSMB, recognize the value of active engagement in meeting MOC and OCC requirements. MOC  
24 and OCC are not intended to become mandatory requirements for medical licensure but should be  
25 recognized as meeting some or all of a state's requirements for MOL to avoid unnecessary  
26 duplication of work.<sup>9</sup> Pilot testing of the FSMB's guiding principles and framework developed for  
27 MOL is currently underway. The pilots will determine and identify multiple options and pathways  
28 by which physicians, including those who are not specialty-certified or not engaged in MOC or  
29 OCC, may fulfill a state board's MOL requirements.<sup>9</sup>

30  
31 In the United States, there is a shared responsibility for physician performance through a  
32 combination of state regulation and professional self-regulation. Although the state medical boards  
33 provide an overall safety net for medical care to provide greater assurance of the quality of  
34 physician practice, the medical profession launched the specialty board movement to assist the  
35 public in the identification of highly qualified health professionals in specialty-based practice.<sup>4</sup>  
36 Board certification assures the public that an independent third party has evaluated a physician's  
37 skills and abilities, and that a physician conducts his or her practice according to a professional  
38 code of ethics and remains current with medical practices and procedures. Studies show that the  
39 public values physicians' participation in a board certification program.<sup>5</sup>

40  
41 Specialty board certification is also becoming a frequent requirement for credentialing by hospitals,  
42 health systems, and health insurance plans. Physicians without specialty board certification have  
43 difficulty obtaining hospital privileges and are usually precluded from serving on medical school  
44 faculties.<sup>7, 10</sup> As MOC gains acceptance among health care agencies, state medical boards, medical  
45 associations, private health care organizations and health plans, there will be a need to create  
46 synergy in health care improvement efforts and minimize overlap of requirements providers must  
47 meet.

1 RECOMMENDATIONS

2  
3 The Council on Medical Education recommends that the following recommendations be adopted in  
4 lieu of Resolution 917-I-12, and that the remainder of the report be filed.

- 5  
6 1. That our American Medical Association (AMA) Reaffirm Policy H-275.923, Maintenance of  
7 Certification/Maintenance of Licensure, to reinforce that our AMA encourages rigorous  
8 evaluation of the impact on physicians of future proposed changes to the MOC and MOL  
9 processes including cost, staffing, and time. (Reaffirm HOD Policy)  
10  
11 2. That our AMA Reaffirm Policy H-275.924, Maintenance of Certification, to reinforce that any  
12 changes in the MOC process should not result in significantly increased cost or burden to  
13 physician participants (such as systems that mandate continuous documentation or require  
14 annual milestones). (Reaffirm HOD Policy)  
15  
16 3. That our AMA Rescind Policy D-275.960 (2), An Update on Maintenance of Certification,  
17 Osteopathic Continuous Certification, and Maintenance of Licensure, since that has been  
18 accomplished through this report. (Rescind HOD Policy)  
19  
20 4. That our AMA will continue to monitor the evolution of Maintenance of Certification (MOC),  
21 Osteopathic Continuous Certification (OCC), and Maintenance of Licensure (MOL), continue  
22 its active engagement in the discussions regarding their implementation, and report back to the  
23 House of Delegates on these issues. (Directive to Take Action)  
24  
25 5. That our AMA will 1) work with the American Board of Medical Specialties (ABMS) and  
26 ABMS specialty boards to continue to examine the evidence supporting the value of specialty  
27 board certification and MOC and to determine the continued need for the mandatory high-  
28 stakes examination; and 2) work with the ABMS to explore alternatives to the mandatory high-  
29 stakes examination. (Directive to Take Action)  
30  
31 6. That our AMA encourage the ABMS to ensure that all ABMS specialty boards provide full  
32 transparency related to the costs of preparing, administering, scoring, and reporting MOC and  
33 certifying/recertifying examinations and ensure that MOC and certifying/recertifying  
34 examinations do not result in significant financial gain to the ABMS specialty boards.  
35 (Directive to Take Action)  
36  
37 7. That our AMA work with the ABMS to lessen the burden of MOC on physicians with multiple  
38 board certifications, in particular to ensure that MOC is specifically relevant to the physician's  
39 current practice. (Directive to Take Action)  
40  
41 8. That our AMA solicit an independent entity to commission and pay for a study to evaluate the  
42 impact that MOL and MOC requirements have on physicians' practices, including but not  
43 limited to: physician workforce, physicians' practice costs, patient outcomes, patient safety and  
44 patient access. Such study will look at the examination processes of the ABMS, the American  
45 Osteopathic Association, and the Federation of State Medical Boards. Such study is to be  
46 presented to the AMA HOD, for deliberation and consideration before any entity, agency,  
47 board or governmental body requires physicians to sit for MOL licensure examinations.  
48 Progress report is to be presented at Annual 2014; complete report by Annual 2015. (Directive  
49 to Take Action)  
50

- 1 9. That our AMA 1) support ongoing ABMS specialty board efforts to allow other physician  
2 educational and quality improvement activities to count for MOC; 2) support specialty board  
3 activities in facilitating the use of MOC quality improvement activities to count for other  
4 accountability requirements or programs such as pay for quality/performance or PQRS  
5 reimbursement; 3) encourage the ABMS specialty boards to enhance the consistency of such  
6 programs across all boards; and 4) work with specialty societies and specialty boards to  
7 develop tools and services that facilitate the physician's ability to meet MOC requirements.  
8 (Directive to Take Action)

Fiscal Note: No significant fiscal note

## References

1. About ABMS Maintenance of Certification. American Board of Medical Specialties. Available at: [www.abms.org/Maintenance\\_of\\_Certification/](http://www.abms.org/Maintenance_of_Certification/) (accessed 2-7-13).
2. Chaudhry HJ, Talmage LA, Alguire PC, Cain FE, et al. Maintenance of Licensure: Supporting a Physician's Commitment to Lifelong Learning. *Annals of Internal Medicine*. August 21, 2011;157(4):287-290.
3. Iglehard JK and Baron RB. Ensuring Physicians' Competence—Is Maintenance of Certification the Answer? *N Engl J Med*. December 27, 2012;367(26):2543-2549.
4. Weiss KB. Future of Board Certification in a New Era of Public Accountability. *JABFM*. March-April 2010;23 supplement:S32-S39.
5. Brennan TA, Horwitz RI, Duffy FD, Cassell CK, et al. The Role of Physician Specialty Board Certification Status in the Quality Movement. *JAMA*. September 1, 2004;292(9):1038-1043.
6. Frequently Asked Questions – Public Display of MOC Information. American Board of Medical Specialties. Available at: [www.abms.org/Contact\\_Us/faq.aspx](http://www.abms.org/Contact_Us/faq.aspx) (accessed 2-5-13).
7. Jeffee DB, Andriole DA. Factors Associated With American Board of Medical Specialties Member Board Certification Among US Medical School Graduates. *JAMA*. 2011;306(9):961-970.
8. Young A, Chaudhry HJ, Rhyne, J, et al. A census of Actively Licensed Physicians in the United States, 2010. *Journal of Medical Regulation*. 2011;96(4):10-20.
9. Maintenance of Licensure (MOL) Information Center. Federation of State Medical Boards. Available at: [www.fsmb.org/mol.html](http://www.fsmb.org/mol.html) (accessed 1-16-13).
10. Xierali IM, Rinaldo JC, Green LA, et al. Family Physician Participating in Maintenance of Certification. *Annals of Family Med*. May/June 2011;9(3):203-210.

Appendix A



ABMS Member Board	Maintenance of Certification Part II Lifelong Learning & Self Assessment*	Contact
American Board of Allergy and Immunology	<ul style="list-style-type: none"> <li>• Complete an average of 25 CME credits each year</li> <li>• Complete a patient safety module once every 10 years</li> <li>• Complete a recent advances module once every five years</li> </ul>	<a href="http://www.abai.org">www.abai.org</a> Ph: (215) 592-9466 TF: (866) 264-5568
American Board of Anesthesiology	<ul style="list-style-type: none"> <li>• 350 Total CME credits: Maximum of 70 per year</li> <li>• Minimum 250 Category I CME which must include: 90 CME credits in Self-Assessment (offered by ASA's SEE or ACE program)</li> <li>• 20 Category I credits in Patient Safety (offered by ASA and ABMS)</li> </ul>	<a href="http://www.theaba.org">www.theaba.org</a> ph: (919) 745-2200 TF: (866) 999-7501
American Board of Colon and Rectal Surgery	<ul style="list-style-type: none"> <li>• Completion of 90 hours of Category I CME over a three-year cycle</li> <li>• Over a three-year cycle, 50 of the 90 Category I CME must include a self-assessment activity. CARSEP or SESAP are suggested, however, any approved CME credit that provides self-assessment greater than 75% or passing score (including CME components for MOL) will be accepted for Part II MOC</li> </ul>	<a href="http://www.abcrs.org">www.abcrs.org</a> ph: (734) 282-9400
American Board of Dermatology	<ul style="list-style-type: none"> <li>• Diplomates are required to complete a minimum of 25 Category I CME credits per year</li> <li>• Patient Safety Module must be completed once per 10-year cycle (within the first two years of the initial 10-year cycle and once per cycle afterward)</li> <li>• Minimum of three self-assessment modules at approximately three-year intervals</li> </ul>	<a href="http://www.abderm.org">www.abderm.org</a> ph: (313) 874-1088
American Board of Emergency Medicine	<ul style="list-style-type: none"> <li>• Complete four ABEM self-assessment tests every five years</li> <li>• 25 hours of CME per year, eight of which must be self-assessment, averaged over five years</li> </ul>	<a href="http://www.abem.org">www.abem.org</a> ph: (517) 332-4800
American Board of Family Medicine	<ul style="list-style-type: none"> <li>• Must complete a minimum of one Self-Assessment Module (SAM) comprised of a 60-question Knowledge Assessment and a clinical simulation in a specific health care topic per each three-year stage</li> <li>• An average of 50 CME credits per year or 150 CME credits per stage</li> </ul>	<a href="http://www.theabfm.org">www.theabfm.org</a> ph: (859) 269-5626 TF: (888) 995-5700
American Board of Internal Medicine	<ul style="list-style-type: none"> <li>• Earn a total of 100 self-evaluation points                             <ul style="list-style-type: none"> <li>▪ 20 points in Self-Evaluation of Medical Knowledge</li> <li>▪ 20 points in Self-Evaluation of Practice Performance</li> <li>▪ 60 points from either Self-Evaluation of Medical Knowledge, Self-Evaluation of Practice Performance or a combination of both</li> </ul> </li> </ul>	<a href="http://www.abim.org">www.abim.org</a> ph: (215) 446-3500 TF: (800) 441-2246
American Board of Medical Genetics	<ul style="list-style-type: none"> <li>• Must participate in educational and self-assessment activities by completing a specified number of online literature review modules and earning a defined number of continuing education credits</li> <li>• 250 CME credit hours, at least 125 must be in medical genetics</li> <li>• Average 25 CME credits per year over a cycle (10 year cycle: 1-3, 4-7, 8-10)</li> </ul>	<a href="http://www.abmg.org">www.abmg.org</a> ph: (301) 634-7315

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<p>American Board of Neurological Surgery</p>	<ul style="list-style-type: none"> <li>• In each mini-cycle, the diplomate must earn at least 150 CME credits. A minimum of 60 credits must be Category I Neurosurgery. The remaining 90 hours may be Category I or II, and 30 of those may be non-Neurosurgery</li> <li>• In each mini-cycle, the diplomate must participate in the Self-Assessment in Neurological Surgery (SANS) examination</li> </ul>	<p><a href="http://www.abns.org">www.abns.org</a> ph: (203) 397-2267</p>
<p>American Board of Nuclear Medicine</p>	<ul style="list-style-type: none"> <li>• Each diplomate is required to maintain a minimum cumulative average of 25 CME credits per year, which include a minimum cumulative average of 17.5 credits related to Nuclear Medicine</li> <li>• Eight Self-Assessment credits must be part of the 17.5 CME credits related to Nuclear Medicine</li> </ul>	<p><a href="http://www.abnm.org">www.abnm.org</a> ph: (314) 367-2225</p>
<p>American Board of Obstetrics and Gynecology</p>	<ul style="list-style-type: none"> <li>• ABOG delivers three reading assignments to the diplomate's personal ABOG Web page, usually during the first week of January, April and July</li> <li>• Diplomate must pick 30 practice related articles and answer all four questions pertaining to each of those articles</li> <li>• 80% of a minimum of 120 questions must be answered correctly and submitted by the due date</li> <li>• Diplomate will receive 25 Category I CME credits from the ACOG</li> <li>• In MOC Year 3, Part II is handled differently (must refer to handbook)</li> </ul>	<p><a href="http://www.abog.org">www.abog.org</a> ph: (214) 871-1619</p>
<p>American Board of Ophthalmology</p>	<ul style="list-style-type: none"> <li>• Diplomates are asked to acquire an average of 25 Category I CME credits per year</li> <li>• Of the total 250 CME, 80% of all credits must be in Ophthalmology</li> <li>• All diplomates must complete two PORTs (Periodic Ophthalmic Review Tests) during their 10-year MOC cycle (PORTs must be completed prior to the exam and reflect the exam content)</li> </ul>	<p><a href="http://www.abop.org">www.abop.org</a> ph: (610) 664-1175</p>
<p>American Board of Orthopaedic Surgery</p>	<ul style="list-style-type: none"> <li>• On-going three-year cycles of 120 credits of Category I Orthopaedic or relevant CME that includes a minimum of 20 CME credits of Self-Assessment Examinations (SAE)</li> </ul>	<p><a href="http://www.abos.org">www.abos.org</a> ph: (919) 929-7103</p>
<p>American Board of Otolaryngology</p>	<ul style="list-style-type: none"> <li>• The ABOto requires all MOC participants to obtain a minimum of 25 hours of Category I CME credits annually                         <ul style="list-style-type: none"> <li>▪ Primary Certification: 25 hours of Category I CME credits annually, 60% of the physicians' CME must be related to Otolaryngology</li> <li>▪ Neurotology Certification: 25 hours of Category I CME credits annually, 60% of the physicians' CME must be related to either Otology or Neurotology subspecialty-related</li> <li>▪ Sleep Medicine Certification: 25 hours of Category I CME credits annually, 60% of the physicians' CME must be related to Sleep Medicine subspecialty-related</li> </ul> </li> <li>• Diplomate is required to complete one ABOto self-assessment module in a specialty area of his/her choice once a year (score of 80% or higher)</li> </ul>	<p><a href="http://www.aboto.org">www.aboto.org</a> ph: (713) 850-0399</p>
<p>American Board of Pathology</p>	<ul style="list-style-type: none"> <li>• 70 Category I CME credits per two-year cycle</li> <li>• 20 CME credits per two-year cycle must be SAMs</li> <li>• 80% CME related to individual's practice</li> <li>• A fellowship fulfills Part II requirements for two-year period</li> </ul>	<p><a href="http://www.abpath.org">www.abpath.org</a> ph: (813) 286-2444</p>
<p>American Board of Pediatrics</p>	<ul style="list-style-type: none"> <li>• Physicians are responsible for completing their requirements as stated in their online physician portfolio. Diplomates holding a certificate with an end date through 2016 must complete a fixed number of activities. Diplomates who have transitioned into the continuous, five-year, points based program are required to earn a specific number of self-assessment points during their cycle</li> <li>• Physicians must complete activities provided by either the ABP or approved outside providers</li> </ul>	<p><a href="http://www.abp.org">www.abp.org</a> ph: (919) 929-0461</p>

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<p>American Board of Physical Medicine and Rehabilitation</p>	<ul style="list-style-type: none"> <li>•Diplomates with time-limited certificates issued before 2012 are required to complete and report a minimum of 300 Category I CME credits during their 10-year MOC cycle</li> <li>•Diplomates with time-limited certificates issued in 2012 and beyond are required to complete and report 150 Category I CME credits in years 1-5, and 150 Category I CME credits in years 6-10 (total of 300 Category I CME credits) during their 10-year MOC cycle</li> <li>•50% of CME must be related to the physician's specialty area of practice</li> <li>•Diplomates with time-limited certificates issued before 2012 are required to complete four ABPMR-approved self-assessment activities during the 10-year cycle</li> <li>•Diplomates with time-limited certificates issued 2012 and beyond are required to complete an average of eight CME credits per year (for a total of 40 CME credits in years 1-5 and 40 CME credits in years 6-10) involving ABPMR-approved self-assessments</li> </ul>	<p><a href="http://www.abpmr.org">www.abpmr.org</a> ph: (507) 282-1776</p>
<p>American Board of Plastic Surgery</p>	<ul style="list-style-type: none"> <li>•150 CME credits every three years and completion of Web-based Practice Assessment in Plastic Surgery educational module</li> <li>• Require 20 patient safety CME credits within the 150 CME credit requirement</li> </ul>	<p><a href="http://www.abplsurg.org">www.abplsurg.org</a> ph: (215) 587-9322</p>
<p>American Board of Preventive Medicine</p>	<ul style="list-style-type: none"> <li>•30 hours of ABPM-approved LLSA/MOC activities every three years</li> <li>•45 hours of other Category I ACCME approved CME every three years</li> </ul>	<p><a href="http://www.theabpm.org">www.theabpm.org</a> ph: (312) 939-2276</p>
<p>American Board of Psychiatry and Neurology</p>	<ul style="list-style-type: none"> <li>•Must participate in broad-based self-assessment activities. Feedback must include comparative performance to peers</li> <li>•Complete 30 specialty or subspecialty Category I CME credits per year, including eight self-assessment activity Category I CME credits per year</li> </ul>	<p><a href="http://www.abpn.com">www.abpn.com</a> ph: (847) 229-6500</p>
<p>American Board of Radiology</p>	<ul style="list-style-type: none"> <li>•75 Category I CME credits in every rolling three-year period</li> <li>•25 of the 75 credits must be "self-assessment"</li> <li>•Subspecialty guidelines are: 30% of self-assessment credit in subspecialty area</li> </ul>	<p><a href="http://www.theabr.org">www.theabr.org</a> ph: (520) 790-2900</p>
<p>American Board of Surgery</p>	<ul style="list-style-type: none"> <li>•Completion of 90 hours of Category I CME over a three-year cycle</li> <li>•Over a three-year cycle, one-third of the Category I CME (i.e., 30 hours) must include a self-assessment activity</li> <li>•As of July 1, 2012, 60 of the 90 Category I CME will need to be self-assessment (score of 75% or more). For diplomates who will be in the middle of an MOC cycle, the 60 hours will be prorated:             <ul style="list-style-type: none"> <li>▪ Diplomates who will complete their current cycle as of July 1, 2013, will have to do an additional 10 hours, for 40 total hours of self-assessment</li> <li>▪ Diplomates who will complete their cycle as of July 1, 2014, will have to do an additional 20 hours, for 50 total hours of self-assessment</li> </ul> </li> <li>•The ABS will credit diplomates with 60 hours of Category I CME and self-assessment for passing an ABS certifying or recertification examination</li> <li>•Diplomates who pass a certifying or recertification exam from another ABMS board may also waive 60 hours of Category I CME and self-assessment, but they must obtain the AMA PRA Category I CME credits for it as documentation</li> </ul>	<p><a href="http://www.absurgery.org">www.absurgery.org</a> ph: (215) 568-4000</p>
<p>American Board of Thoracic Surgery</p>	<ul style="list-style-type: none"> <li>•Must complete 150 hours of AMA Category I CME over each five-year period</li> <li>•Must complete the SESATS exercise during the fifth year</li> </ul>	<p><a href="http://www.abts.org">www.abts.org</a> ph: (312) 202-5900</p>

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American Board of Urology	<ul style="list-style-type: none"> <li>•Evidence of Self-Assessment is demonstrated by the online completion of a Practice Assessment Protocol (PAP) four times during the 10-year MOC cycle</li> <li>•Evidence of Lifelong Learning is shown by completion of 90 hours of urology-focused CME, 30 hours of which must be Category I as defined by the American Urological Association, twice during the 10-year MOC cycle</li> </ul>	<p><a href="http://www.abu.org">www.abu.org</a> ph: (434) 979-0059</p>
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### About ABMS

For more than 75 years, the American Board of Medical Specialties (ABMS) has been the medical organization overseeing physician certification in the United States. It assists its 24 Member Boards in their efforts to develop and implement educational and professional standards for the evaluation and certification of physician specialists. ABMS Member Boards provide physician certification information to ABMS for its certification verification service programs. ABMS is recognized by the key health care credentialing accreditation entities as a primary equivalent source of Board Certification data for medical specialists. Patients can visit [www.CertificationMatters.org](http://www.CertificationMatters.org) or call toll-free (866) ASK-ABMS to see if their physician is Board Certified by an ABMS Member Board. For more information about ABMS, visit [www.abms.org](http://www.abms.org) or call (312) 436-2600.

The 24 Member Boards that comprise the ABMS Board Enterprise and certify nearly 800,000 physicians include the American Board of Allergy and Immunology, American Board of Anesthesiology, American Board of Colon and Rectal Surgery, American Board of Dermatology, American Board of Emergency Medicine, American Board of Family Medicine, American Board of Internal Medicine, American Board of Medical Genetics, American Board of Neurological Surgery, American Board of Nuclear Medicine, American Board of Obstetrics and Gynecology, American Board of Ophthalmology, American Board of Orthopaedic Surgery, American Board of Otolaryngology, American Board of Pathology, American Board of Pediatrics, American Board of Physical Medicine and Rehabilitation, American Board of Plastic Surgery, American Board of Preventive Medicine, American Board of Psychiatry and Neurology, American Board of Radiology, American Board of Surgery, American Board of Thoracic Surgery and American Board of Urology.

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## Appendix B



ABMS Member Board	Maintenance of Certification Part IV Practice Performance Assessment*	Contact
American Board of Allergy and Immunology	<ul style="list-style-type: none"> <li>Diplomates must complete a communication module once every 10 years.</li> <li>Diplomates must complete a practice assessment and quality improvement module once every 5 years.</li> </ul>	<a href="http://www.abai.org">www.abai.org</a> Ph: (215) 592-9466 TF: (866) 264-5568
American Board of Anesthesiology	<ul style="list-style-type: none"> <li>Diplomates must complete both a case evaluation and a simulation education course during their 10-year MOC cycle. One activity must be completed between years 1 through 5, and the second between years 6 through 10.</li> <li>Diplomates must provide an attestation in the 9<sup>th</sup> year of their MOC cycle.</li> </ul>	<a href="http://www.theaba.org">www.theaba.org</a> ph: (919) 745-2200 TF: (866) 999-7501
American Board of Colon and Rectal Surgery	<ul style="list-style-type: none"> <li>Diplomates must document ongoing submission of clinical practice data in a national, regional or local outcomes database or quality assessment program.</li> </ul>	<a href="http://www.abcrs.org">www.abcrs.org</a> ph: (734) 282-9400
American Board of Dermatology	<ul style="list-style-type: none"> <li>Diplomates must complete an evaluation of practice performance twice during the 10-year cycle, including completion of a practice assessment/quality improvement program, as well as peer and patient survey requirements.</li> </ul>	<a href="http://www.abderm.org">www.abderm.org</a> ph: (313) 874-1088
American Board of Emergency Medicine	<ul style="list-style-type: none"> <li>Diplomates must complete 1 Practice Improvement (PI) activity in years 1 through 5 and 1 PI activity in years 6 through 10 of their MOC cycle.</li> <li>Physicians must complete one Communication/Professionalism (CP) activity in years 1 through 5 of their certification and one CP activity in years 6 through 10 of their certification. (This applies to certificates that expire 2015 and after.)</li> </ul>	<a href="http://www.abem.org">www.abem.org</a> ph: (517) 332-4800
American Board of Family Medicine	<ul style="list-style-type: none"> <li>Diplomates must complete either a Performance in Practice Module (PPM) or an approved alternative module in each 3-year stage.</li> </ul>	<a href="http://www.theabfm.org">www.theabfm.org</a> ph: (859) 269-5626 TF: (888) 995-5700
American Board of Internal Medicine	<ul style="list-style-type: none"> <li>Currently, Diplomates must earn a minimum of 20 practice performance points through online modules every ten years.</li> </ul>	<a href="http://www.abim.org">www.abim.org</a> ph: (215) 446-3500 TF: (800) 441-2246
American Board of Medical Genetics	<ul style="list-style-type: none"> <li>Diplomates must complete a minimum of three practice performance modules in medical genetics or ABMG-approved alternatives</li> <li>Diplomates must complete 1 Part IV module for each phase (3 phases in 10-year cycle) for clinical genetics or 1 specified requirement for laboratory genetics.</li> </ul>	<a href="http://www.abmg.org">www.abmg.org</a> ph: (301) 634-7315
American Board of Neurological Surgery	<ul style="list-style-type: none"> <li>In each mini-cycle, diplomates must complete a "key case" and modules on 10 consecutive recent patients from their practice with a specific neurosurgical problem.</li> <li>Diplomates must complete a Communication Assessment Tool (other modules are currently in development).</li> </ul>	<a href="http://www.abns.org">www.abns.org</a> ph: (203) 397-2267
American Board of Nuclear Medicine	<ul style="list-style-type: none"> <li>Diplomates must complete 1 activity each year where a complete practice performance project consists of 3 activities.</li> </ul>	<a href="http://www.abnm.org">www.abnm.org</a> ph: (314) 367-2225

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<p>American Board of Obstetrics and Gynecology</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete 5 Practice Performance and Self-Assessment/Continuous Quality Improvement modules in each 6-year cycle                         <ul style="list-style-type: none"> <li>▪ Phase 1 involves reading an evidence-based paper, reviewing of up to 10 recent patients' charts and answering some pertinent questions.</li> <li>▪ Phase 2 involves a 6-month assessment by email from ACOG about the impact on the Diplomate's practice.</li> </ul> </li> <li>• Three Category I CME credits will be awarded by ACOG for each module after Phase 2 is complete.</li> </ul>	<p><a href="http://www.abog.org">www.abog.org</a> ph: (214) 871-1619</p>
<p>American Board of Ophthalmology</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete a Practice Improvement Module (PIM) relating practice patterns to diagnosis during their current MOC cycle.</li> <li>• PIMs require a completion of 30 patient charts related to the diplomates Practice Emphasis Area (PEA).</li> <li>• Diplomates may complete PIMs in any of the following combinations:                         <ul style="list-style-type: none"> <li>▪ 1 PIM 30 patient charts</li> <li>▪ 2 PIMs 15 patient charts each</li> <li>▪ 3 PIMs 10 patient charts each</li> </ul> </li> </ul>	<p><a href="http://www.abop.org">www.abop.org</a> ph: (610) 664-1175</p>
<p>American Board of Orthopaedic Surgery</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete a stringent peer-review process with a few performance indicators.</li> <li>• Diplomates must submit a case list with performance indicators.</li> </ul>	<p><a href="http://www.abos.org">www.abos.org</a> ph: (919) 929-7103</p>
<p>American Board of Otolaryngology</p>	<ul style="list-style-type: none"> <li>• Part IV requirements will begin in early 2013                         <ul style="list-style-type: none"> <li>▪ Diplomates must complete a patient communications survey.</li> <li>▪ Diplomates must complete a professional survey.</li> <li>▪ Diplomates must complete performance improvement modules.</li> </ul> </li> </ul>	<p><a href="http://www.aboto.org">www.aboto.org</a> ph: (713) 850-0399</p>
<p>American Board of Pathology</p>	<ul style="list-style-type: none"> <li>• Diplomates must submit 4 personal attestations (in the 4<sup>th</sup> and 8<sup>th</sup> year).</li> <li>• Diplomates must submit laboratory accreditation documentation (in the 4<sup>th</sup> and 8<sup>th</sup> year) with the exception of forensic labs.</li> <li>• Diplomates must have laboratory participation in inter-laboratory performance improvement programs (every 2 years).</li> <li>• Diplomates must have individual participation in at least 1 laboratory PI-QA program per year (every 2 years).</li> </ul>	<p><a href="http://www.abpath.org">www.abpath.org</a> ph: (813) 286-2444</p>
<p>American Board of Pediatrics</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete their requirements as stated in their online physician portfolio. The MOC Part IV requirements for Performance in Practice can be met by:                         <ul style="list-style-type: none"> <li>▪ Option 1: Diplomate can complete web-based Quality Improvement activities; or</li> <li>▪ Option 2: Diplomate can participate in an ongoing ABP-approved collaborative Quality Improvement project.</li> </ul> </li> </ul>	<p><a href="http://www.abp.org">www.abp.org</a> ph: (919) 929-0461</p>
<p>American Board of Physical Medicine and Rehabilitation</p>	<ul style="list-style-type: none"> <li>• Diplomates with time-limited certificates issued before 2012 must complete a minimum of 1 ABPMR-approved Practice Performance project during the 10-year MOC cycle.</li> <li>• Diplomates with time-limited certificates issued in 2012 and beyond must complete 2 ABPMR-approved Practice Performance projects (one in years 1-5 and one in years 6-10).</li> <li>• 50% of CME should be related to the physician's specialty or subspecialty certification</li> </ul>	<p><a href="http://www.abpmr.org">www.abpmr.org</a> ph: (507) 282-1776</p>

\*Disclaimer – This table is for general informational purposes only. The applicable MOC requirements are determined by each ABMS Member Board and may change from time to time. While every effort has been made to ensure that the information in this table is correct as of the date of publication, it is ultimately the responsibility of the user to confirm the applicable MOC requirements with the relevant ABMS Member Board(s). Date of Publication: 01/21/2013.

<p>American Board of Plastic Surgery</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete a web-based practice assessment in plastic surgery module (completed 3 times throughout the 10-year MOC cycle in years 3, 6 and 9).</li> <li>• Completion of Action Plan for Improvement</li> <li>• Diplomates must complete a patient satisfaction survey (Currently under review. Not yet implemented.)</li> <li>• Diplomates must complete a six-month clinical case log (required once during the 10-year cycle – submitted with examination application).</li> </ul>	<p><a href="http://www.abpsurg.org">www.abpsurg.org</a> ph: (215) 587-9322</p>
<p>American Board of Preventive Medicine</p>	<ul style="list-style-type: none"> <li>• Diplomates are required to complete two practice performance assessments through any of the three Preventive Medicine specialty societies (ACPM, ACOEM, AsMA) during their 10-year certification cycle. One assessment is to be completed in the first 5 years of the certification cycle and the other in the last 5 years of the certification cycle.</li> </ul>	<p><a href="http://www.theabpm.org">www.theabpm.org</a> ph: (312) 939-2276</p>
<p>American Board of Psychiatry and Neurology</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete one PIP unit every 3 years. There are 2 components of each PIP unit: 1. Clinical module (chart review) Diplomates must participate in a chart review of at least 5 patient cases in a specific category and compare them with data from published best practices, practice guidelines, or peer-based standards of care. Diplomates then develop an improvement plan. Within 2 years after initial chart review, diplomates must complete a second chart review (re-measurement) of 5 patients in the same category to see if improvement has taken place. 2. Feedback Module (patient and peer second party external review) The feedback module requires collection of feedback surveys from at least 5 peers and 5 patients. Surveys are reviewed by the diplomate to identify any deficiencies. If deficiencies are identified, a plan of improvement is developed by the diplomate, and in no more than 2 years, feedback is collected again by 5 peers and 5 patients to see if improvement has taken place.</li> </ul>	<p><a href="http://www.abpn.com">www.abpn.com</a> ph: (847) 229-6500</p>
<p>American Board of Radiology</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete IPQI project every three years.</li> <li>• Diplomates must attest to activity on personal database (PDB).</li> <li>• Diplomates may participate in self-designed projects.</li> <li>• Diplomates may participate in group projects prioritized by institution.</li> <li>• Diplomates may participate in sponsored (pre-qualified by ABR) projects, including registries.</li> </ul>	<p><a href="http://www.theabr.org">www.theabr.org</a> ph: (520) 790-2900</p>
<p>American Board of Surgery</p>	<ul style="list-style-type: none"> <li>• Diplomates must participate in a national, regional or local surgical outcomes database or quality assessment program.</li> </ul>	<p><a href="http://www.absurgery.org">www.absurgery.org</a> ph: (215) 568-4000</p>
<p>American Board of Thoracic Surgery</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete a case summary of their last year of major cases and provide the name of the clinical outcomes database that they use to improve their practice.</li> <li>• The Board reserves the right to randomly audit diplomates and request additional letters of references from referring physicians, colleagues, staff and patients.</li> </ul>	<p><a href="http://www.abts.org">www.abts.org</a> ph: (312) 202-5900</p>
<p>American Board of Urology</p>	<ul style="list-style-type: none"> <li>• Diplomates must complete a 6-month electronic practice log during year 8 or 9 of their 10-year cycle for review by the MOC Committee.</li> <li>• Diplomates must provide the Board with peer review questionnaires for their review.</li> </ul>	<p><a href="http://www.abu.org">www.abu.org</a> ph: (434) 979-0059</p>

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Appendix C



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Certification and ABMS Maintenance of Certification® (ABMS MOC®)

Annotated Bibliography

One of the key goals of the ABMS MOC Support Program has been to provide the Member Boards with resources relevant to the implementation of MOC. As such, this annotated bibliography reflects an effort to systematically present the empirical evidence existing in the current peer-reviewed literature, in order to provide validation for the certification or MOC process and its components.

Depending on the study characteristics and their relevance to specific aspects of certification or MOC, articles have been placed into one or more of the following categories: 1) Those that point to the value of Board Certification, 2) Those that support the conceptual framework and initial structure of MOC (i.e., Parts I – IV), and 3) Those that validate current MOC programs.

For instance, studies that point to the provision of inadequate healthcare (i.e. poor patient outcomes), to the decline of physician competence and performance over time, and/or to the role of one or more of the six competencies in improving health care support the conceptual framework for current MOC standards. Articles associated with specific Member Board MOC program components and outcomes provide evidence on the effectiveness of the structure underlying the MOC.

The bibliography is not finite, and it is not meant to represent a comprehensive list of literature, relevant to certification/MOC. It is an ongoing project, where references and annotations are added overtime and as new literature emerges, and it is meant to be a resource for all Member Boards.\*

Value of Board Certification

Chen J., Rathore, S. S., Wang, Y., Radford, M. J., & Krumholz, H. M. (2006). Physician board certification and the care and outcomes of elderly patients with acute myocardial infarction. *Journal of General Internal Medicine*, 21, 238-44. doi:10.1111/j.1525-1497.2006.00326.x

The study examined the relationship between board certification, quality of care and outcomes in elderly patients hospitalized with acute myocardial infarction (AMI). Study findings revealed that physicians board certified in Internal Medicine, Family Medicine and Cardiology provided a slightly higher quality of care, as assessed by guideline recommended treatments for AMI. Despite higher uses of ASA and B-blockers in managing AMIs, there was no difference in mortality between board certified and non-certified physicians. Study limitations included the inability to determine that decisions regarding patient care were made solely by the attending physicians examined in this study, and the accuracy of board certification status as listed in the AMA Physician

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Masterfile. Although the study demonstrates a modest correlation between board certification and quality of the treatment of a life threatening disease the authors pointed out that even board-certified physicians had considerable room to improve the quality of care provided.

*Original key words: board certification; acute myocardial infarction; quality of care; mortality. Unique: internal medicine; outcomes*

Haas, J. S., Orav, J., & Goldman, L. (1995). The relationship between physicians' qualifications and experience and the adequacy of prenatal care and low birthweight. *American Journal of Public Health, 85*(8.1), 1087-1091. doi:10.2105/AJPH.85.8\_Pt\_1.1087

This study explored the relationship between physicians' qualifications and experience, and the recommended number of prenatal visits and low birthweight for women in Massachusetts in 1990. Prior research demonstrates a relationship between the process of prenatal care and neonatal mortality and low birth weight; low birth weight is associated with increased neonatal morbidity and mortality. Board certification was used as a measure of physicians' qualification. Study findings, based on 80,537 deliveries show that non-board-certified physicians are significantly less likely to provide the recommended number of prenatal visits and are more likely to deliver low birthweight infants. The results also suggest a positive association between physicians' time in practice and practice volume, and the quality of prenatal care and birth outcomes. Study limitations include the possibility that more motivated patients may select "better" physicians, which may have contributed to the outcome. Also, there were no specific data available on detailed clinical information about the actual prenatal services. In addition, physicians recorded on the birth certificates of infants might have not necessarily been the ones to provide the most of the prenatal care.

*Original article does not indicate key words. Unique: physician qualifications; physician experience; prenatal care; board certification; birth outcomes; obstetrics; pediatrics.*

Hanson, K. L., Butts, G. C., Friedman, S., & Fairbrother, G. (2001). Physician credentials and practices associated with childhood immunization rates: private practice pediatricians serving poor children in New York City. *Journal of Urban Health, 78*, 112-24. doi:10.1093/urban/78.1.112

The article describes a study that compares children's immunization rates at 60 private physician practices in poor neighborhoods of New York. Half of the physicians participating in the study are board certified, and half are a part of the Medicaid Preferred Physicians and Children (PPAC) program. Study results demonstrate higher immunization rates among PPAC physicians and better rates among those that are board certified. Study limitations include a small study sample, self reporting of credentials, affiliations and practices, and a focus on a subset of foreign-trained physicians serving a large number of high-risk children, therefore study results may not be generalized to all pediatricians/primary care providers. Nevertheless, board

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certification, one of the conditions for enrolling in PPAC, is associated with immunization performance, according to the findings.

*Original article key words: board certification; immunizations; Medicaid; Preferred Providers; quality of care. Unique: foreign trained physicians; high-risk children; pediatrics.*

Kelly, J. V., & Hellinger, F. J. (1986). Physician and hospital factors associated with mortality of surgical patients. *Medical Care*, 24, 785-800.

The aim of this study was to examine the deviation of hospital mortality relevant to the volume of specific surgical procedures performed in a hospital, the volume of these procedures performed by patient's primary surgeon, physician board certification, and other factors, such as severity of illness, patient age, hospital teaching status, size and location. Researchers obtained data from discharge abstract records, as well as American Hospital Association's Annual Survey of Hospitals for 1977 and American Medical Association's Masterfile of U.S. Physicians. Study findings revealed that surgical patient mortality was lower in hospitals with a larger volume of specific surgical procedures and in those with a medical school affiliation. Mortality was not associated with the volume of procedures performed by surgeons, but was lower for doctors who were board certified. For patients operated on for peptic ulcer disease, the mortality rate was 2% lower if their surgeon was board certified. Similar associations were seen for stomach cancer and abdominal aneurysm surgery, but the reported coefficients were not statistically significant.

*Original article does not indicate key words: Unique: physician factors; hospital factors; mortality of surgical patients; volume of surgical procedures; board certification; surgical patient mortality; hospital medical school affiliation.*

Kelly, J. V., & Hellinger, F. J. (1987). Heart disease and hospital deaths: an empirical study. *Health Services Research*, 22, 369-95.

The study examines mortality rates of heart patients that survive their first day in the hospital. Three groups of patients diagnosed with atherosclerosis are examined: 1) those that undergo a CABG operation, 2) those that undergo a cardiac catheterization, but not CABG, and 3) those that experience the AMI, but don't receive any treatment. Treating physician characteristics are board certification status and the volume of similar patients. Hospital characteristics include the presence of coronary care unit, teaching status, size, and volume of similar patients. Other factors taken into consideration are severity of illness, patient age, sex, and comorbidities. The findings reveal that AMI patients are more likely to survive if their attending physicians treat high volumes of AMI patients, and when they are board certified in family or internal medicine. CABG/cardiac catheterization patients are more likely to survive in hospitals that handle high volumes of such procedures. Further, AMI patients in teaching facilities are less likely to die, just as in facilities that have a cardiac care unit. Finally, age and comorbidity variables performed as expected.

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*Original article does not indicate key words: Unique: heart disease; hospital deaths; empirical study; mortality rates; atherosclerosis; CABG; AMI; board certification; volumes of patients; physician characteristics; hospital characteristics; family medicine; internal medicine.*

Khaliq, A. A., Dimassi, H., Huang, C-Y., Narine, L., & Smego, R. A. (2005). Disciplinary action against physicians: who is likely to get discipline? *American Journal of Medicine*, 118, 773-7. doi:10.1016/j.amjmed.2005.01.051

Researchers attempted to identify the characteristics of physicians disciplined by State Medical Boards, and to assess the risk of disciplinary action over time. For that purpose, publicly available data for physicians licensed in Oklahoma was obtained and analyzed for disciplinary action in 2001. Study findings showed that the rate of disciplinary action increased over time, with each successive 10 year period since licensure. Increased risk of disciplinary action was associated with being a man, non-white, and non-board-certified, and practicing family medicine, general practice, psychiatry, obstetrics-gynecology, and emergency medicine. The hazard ratio for adverse licensure action for non-board certified compared to board certified physicians was 3.3 ( $p < 0.001$ ) by univariate analysis and 2.2 ( $p < 0.001$ ) by multivariate analysis. The most common disciplinary action involved quality of care issues, medication/prescription violations, incompetence, and negligence/malpractice. More than half of the complaints were brought forward by general public; significantly less came from the Federation of State Medical Boards, Medicare, insurance companies and law enforcement agencies; and least, from other physicians, office staff, national practitioner data bank, pharmacies and pharmacists, and hospital personnel. Study findings are subject to database accuracy.

*Original article key words: physician; discipline; disciplinary action; medical board; medical specialty. Unique: family medicine; general practice; psychiatry; obstetrics-gynecology; emergency medicine; quality of care; medication violations; incompetence; negligence; general public; Federation of State Medical Boards; Medicare; insurance; law enforcement; office staff; national practitioner data bank; pharmacists; hospital personnel.*

Kohatsu, N. D., Gould, D., Ross, L. K., & Fox, P. J. (2004). Characteristics associated with physician discipline: a case-control study. *Archives of Internal Medicine*, 164, 653-658. doi:10.1001/archinte.164.6.653

The aim of this study was to see if there was an association between certain physician characteristics and the likelihood of medical board imposed discipline. The study was conducted in California and involved physicians disciplined by the state medical board between 1998 and 2001. Physicians in the specialties of obstetrics and gynecology, general practice, psychiatry, and family practice were more likely to be disciplined than those in internal medicine, while those practicing pediatrics and radiology were less likely to be disciplined than internists. Increasing age, male sex, and international medical education were associated with a higher risk of discipline. Since the study was restricted to one specific state, the results may have been biased due to the prevalent

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practice styles, patient populations and legal framework. Similarly, social and cultural factors relating to physician-patient interactions were not taken into consideration. Nevertheless, board certification was associated with a significantly lower risk of discipline (53% of disciplined physicians were board certified, compared to 73% of control group physicians).

*Original article does not indicate key words. Unique: physician discipline; case-control study; internal medicine; physician characteristics; obstetrics and gynecology; general practice; psychiatry; family practice; pediatrics; radiology; risk of discipline; board certification.*

Morrison, J., & Wickersham, P. (1998). Physicians disciplined by a state medical board. *Journal of the American Medical Association*, 279, 1889-1893. doi:10.1001/jama.279.23.1889

This study examined physician disciplinary action in California between October 1995 and April 1997. A total of 375 physicians were disciplined for 465 offenses by the California State Medical Board during the 18-month period. Findings revealed that one third of all cases were relevant to negligence or incompetence. Disciplined physicians were more likely to be male, in practice for over 20 years and not have board certification. This article cited previous studies that showed that board certified physicians were less likely to be disciplined by the state medical board.

*Original article does not indicate key words. Unique: physician discipline; disciplinary action; negligence; incompetence; board certified physicians.*

Norcini, J. J., Lipner, R. S., & Kimball, H. R. (2002). Certifying examination performance and patient outcomes following acute myocardial infarction. *Medical Education*, 36, 853-859. doi:10.1046/j.1365-2923.2002.01293.x

The study explores whether successful completion of certifying examination is associated with patient mortality and length of stay following acute myocardial infarction. Results suggest that mortality is decreased for patients receiving care from board certified cardiologists. Doctor characteristics, e.g. patient volume, year of attempted certification, are not related to mortality, according to study results. Further, findings demonstrate that patients treated by certified doctors do not spend significantly less time in hospital. Nevertheless, results suggest that examination performance is related to patient outcomes.

*Original article key words: myocardial infarction/diagnosis/mortality; cardiology/education; physicians, family/education; licensure/standards; length of stay; educational measurement; Pennsylvania. Unique: certifying examination performance; patient outcomes; board certified cardiologists; doctor characteristics.*

Pearce, W. H., Parker, M. A., Feinglass, J., Ujiki, M., & Manheim, M. (1999). The importance of surgeon volume and training in outcomes for vascular surgical procedures. *Journal of Vascular Surgery*, 29(5), 768-778. doi:10.1016/S0741-5214(99)70202-8

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This study attempted to assess the impact of surgeon volume on outcome after carotid endarterectomy, lower extremity bypass grafting, and abdominal aortic aneurysm repair. The study was based on hospital discharge data for all non federal hospitals of Florida from 1992-1996. The data was obtained from Florida agency for Health Care Administration and contained attending physician and surgeon identifiers. Deaths were determined from discharge status coding and vascular surgeon certification status obtained from the American Board of Medical Specialties. In order to predict outcomes for each procedure, the year of discharge, length of stay, patient age, sex and emergency admission status were considered; similarly, hospital bed size, Teaching status, and ownership characteristics. Study findings revealed that longer hospital stay was associated with worse outcomes, and complications determined longer hospital stays. In case of carotid endarterectomy, hospital size, the volume of the procedures performed in that hospital, surgeon caseload and certification in vascular surgery were all responsible for successful outcomes. Similar findings were revealed relevant to abdominal aortic aneurysm repairs. However, the records did not provide adequate basis to determine the quality of care relevant to lower extremity bypass grafting, except that surgeon volume was associated with the rates of MI, CVA, and death. It is important to note that study findings are subject to database limitation. There is a chance that associated clinical variables not evident from the records might have affected the outcomes. In summary, vascular surgery is most likely to generate good outcomes, if it is performed in a hospital that has high volumes, and by surgeons that operate frequently and have qualification in general vascular surgery.

*Original article does not indicate keywords. Unique: surgery; volume; training; outcomes; vascular procedures; carotid endarterectomy; lower extremity bypass grafting; abdominal aortic aneurysm; certification in vascular surgery; mortality; hospital discharge.*

#### **In support of the conceptual framework and initial structure of MOC**

Asch, S. M., McGlynn, E. A., Hogan, M. M., Hayward, R. A., Shekelle, P., Rubenstein, ... Kerr, E. A. (2004). Comparison of quality of care in the Veterans Health Administration and patients in a national sample. *Annals of Internal Medicine*, 141, 938-945.

Previous research demonstrated that a sample of patients from 12 communities in the United States received just over half (55%) of the recommended healthcare in preventive, acute and chronic care contexts (McGlynn, 2003). This study compared the quality of outpatient and inpatient care among a national sample of patients drawn from 12 communities, and VHA patients from 12 healthcare systems of southwestern and midwestern United States. Specifically, 348 quality indicators targeting 26 conditions were measured. While the study did not account for all medical care, and just for its specific aspects, it found that adherence to recommended processes of care in 2 VHA regions exceeded that in the national sample in several categories (overall quality, 67% vs. 51%; chronic disease care, 72% vs. 59%, and preventive care, 64% vs. 44%). Differences in performance were largest in areas that were targeted by VHA

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performance measurement (66% vs. 43%). Although other variables may have contributed to the outcome, study results suggest that the implementation of performance measurement and monitoring are strongly related to the quality of healthcare provided.

*Original article does not indicate key words. Unique: quality of care; performance measurement; veterans; internal medicine.*

Campbell, E. G., Regan, S., Gruen, R. L., Ferris, T. G., Rao, S. R., Cleary, P. D., & Blumenthal, D. (2007). Professionalism in medicine: results of a national survey of physicians. *Annals of Internal Medicine*, 147(11), 795-802.

A national survey assessing physician professionalism queried physicians specializing in internal medicine, family practice, pediatrics, surgery, anesthesiology, and cardiology. Physician respondents generally agreed with published norms regarding professionalism principles and behaviors (although approximately ¼ disagreed with the need for recertification). However, self-reported behaviors were not consistent with their expressed beliefs, particularly in the areas related to professional self-regulation, conflict of interest and resource use. As examples, reported behaviors were consistent with beliefs regarding honesty with patients and protecting patient confidentiality, but not necessarily with reporting of an incompetent/impaired colleagues to the authorities and management of financial conflict of interest. A number of respondents indicated they would accommodate a patient that badly wanted a test, even knowing it was unnecessary. Also, a gap was found between physician attitudes toward quality improvement and participation in related activities. It is important to note that conformance to norms varied across participating physician subgroups (specialties). While the authors did not identify a specific means or method for doing so, they suggested exploration of ways of improve physician professionalism that should reflect physician specialty and practice context.

*Original article does not indicate key words. Unique: professionalism; multi specialty; behavior; attitude; internal medicine; national survey.*

Chen J., Rathore, S. S., Wang, Y., Radford, M. J., & Krumholz, H. M. (2006). Physician board certification and the care and outcomes of elderly patients with acute myocardial infarction. *Journal of General Internal Medicine*, 21, 238-44. doi:10.1111/j.1525-1497.2006.00326.x

The study examined the relationship between board certification, quality of care and outcomes in elderly patients hospitalized with acute myocardial infarction (AMI). Study findings revealed that physicians board certified in Internal Medicine, Family Medicine and Cardiology provided a slightly higher quality of care, as assessed by guideline recommended treatments for AMI. Despite higher uses of ASA and B-blockers in managing AMIs, there was no difference in mortality between board certified and non-certified physicians. Study limitations included the inability to determine that decisions regarding patient care were made solely by the attending physicians examined in this study, and the accuracy of board certification status as listed in the AMA Physician Masterfile. Although the study demonstrates a modest correlation between board

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certification and quality of the treatment of a life threatening disease the authors pointed out that even board-certified physicians had considerable room to improve the quality of care provided.

*Original key words: board certification; acute myocardial infarction; quality of care; mortality. Unique: internal medicine; outcomes*

Freed, G. L., Dunham, K. M., & Althouse, L.A. (2008). Characteristics of general and subspecialty pediatricians who choose not to recertify. *Pediatrics, 121(4)*, 711-17.

This study attempted to discover why general and subspecialty pediatricians, whose certificates expired, did not plan to participate in maintenance of certification. A complete list of U. S. pediatricians with lapsed certification as specialists and/or subspecialists that did not recertify in 2004-2005 was obtained from the ABP database. (In 2004, 86% of general pediatricians and 88% of subspecialist pediatricians participated in MOC). Separate questionnaires were developed for generalists and subspecialists, and they focused on the reasons for participation/nonparticipation. Specifically, questionnaires explored certification/MOC requirements by employers and pediatrician attitudes towards MOC. Study findings demonstrated that more than half of the participating generalists and almost all subspecialists intended to recertify. More than half of the participants indicated that the main reason for future participation in MOC was the chance to update the knowledge. A significant portion of participants indicated hospital privileging requirements as another reason. For those that did not intend on participating in MOC, the main reasons cited were the expense and the time associated with the process. Other reasons for generalists were perceived lack of relevance to their current practice, and for subspecialists, a change in career path that did not necessitate participation in MOC. About a third of participants that did not intend to recertify shared that they didn't want to take a secure examination; less than 20% thought it was important in assessment of whether a pediatrician kept up to date in clinical pediatrics. In general, participants believed that specialists providing patient care should maintain certification, and that patients and peers felt that there was professional value in participation in MOC. It is important to note that in this study, there was a lack of physician representation in some subspecialties, and that international medical graduates were least likely to respond.

*Original key words: professional attitudes; certification; participation; credentials; physician practice patterns; Unique: characteristics of pediatricians; maintenance of certification (MOC); pediatrics; survey.*

Fremont, A. M., Cleary, P. D., Hargraves, J. L., Rowe, R. M., Jacobson, N. B., & Ayanian, J. Z. (2001). Patient-centered processes of care and long-term outcomes of myocardial infarction. *Journal of General Internal Medicine, 16*, 800-808. doi:10.1046/j.1525-1497.2001.10102.x

The aim of this study was to determine whether patient experiences with nontechnical aspects of care, i.e., patient education and discharge planning, were associated with long term outcomes. Acute myocardial infarction patients hospitalized in 23 New Hampshire

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hospitals received a survey at 1, 3, and 12 months post discharge, which aimed to assess the experience of care; other clinical measures were obtained from discharge abstracts. There was no data available on non-respondents, or patients that died during 12 months after their hospitalization, and the study sample was concentrated in a few hospitals of a single state. Yet, study findings revealed that negative hospital experiences were associated with worse long term outcomes, specifically, worse health status and more symptoms. The authors conclude that patient experiences of care and patient reported measures provide important information about clinical quality of care, and serve as more than just an indicator of patient satisfaction.

*Original key words: myocardial infarction; quality of care; patient centered care; patient satisfaction; outcomes; health status; longitudinal study. Unique: survey; internal medicine; experience of care.*

Haas, J. S., Orav, J., & Goldman, L. (1995). The relationship between physicians' qualifications and experience and the adequacy of prenatal care and low birthweight. *American Journal of Public Health, 85*(8.1), 1087-1091. doi:10.2105/AJPH.85.8\_Pt\_1.1087

This study explored the relationship between physicians' qualifications and experience, and the recommended number of prenatal visits and low birthweight for women in Massachusetts in 1990. Prior research demonstrates a relationship between the process of prenatal care and neonatal mortality and low birth weight; low birth weight is associated with increased neonatal morbidity and mortality. Board certification was used as a measure of physicians' qualification. Study findings, based on 80,537 deliveries show that non-board-certified physicians are significantly less likely to provide the recommended number of prenatal visits and are more likely to deliver low birthweight infants. The results also suggest a positive association between physicians' time in practice and practice volume, and the quality of prenatal care and birth outcomes. Study limitations include the possibility that more motivated patients may select "better" physicians, which may have contributed to the outcome. Also, there were no specific data available on detailed clinical information about the actual prenatal services. In addition, physicians recorded on the birth certificates of infants might have not necessarily been the ones to provide the most of the prenatal care.

*Original article does not indicate key words. Unique: physician qualifications; physician experience; prenatal care; board certification; birth outcomes; obstetrics; pediatrics.*

Holmboe, E. S., Meehan, T. P., Lynn, L., Doyle, P., Sherwin, T., & Duffy, F. D. (2006). Promoting physicians' self-assessment and quality improvement: the ABIM diabetes practice improvement module. *Journal of Continuing Education in the Health Professions, 26*(2), 109-119. doi:10.1002/chp.59

This is a review of a beta test of the ABIM diabetes practice improvement module, used in recertification program of general internists and endocrinologists. Participant feedback reveals that physicians found self-assessment using the PIM to be a valuable experience. There was wide variability in the performance of some target clinical goals. They were

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able to identify areas for improvement through medical record audit and responded that the information was useful in implementing change in their practices. There was also wide variability in ratings on the patient surveys; specifically, the helped identify areas for improvement relevant to patient- education. It is important to note that the pilot sample size was small (16 completed PIM data entry/14 completed all PIM steps), and that physicians were self selected. There was no set sampling strategy for medical record audit, and participants chose different interventions for quality improvement in their respective practices.

*Original article key words: self-assessment; quality improvement; maintenance of certification. Unique: MOC; practice improvement; recertification; participant feedback; self assessment; medical record audit; internal medicine.*

Holmboe, E. S., Lipner, R., & Greiner, A. (2008). Assessing quality of care: knowledge matters. *Journal of the American Medical Association, 299*(3), 388-340.  
doi:10.1001/jama.299.3.338

This article discusses the relationship between medical knowledge and quality, specifically, how secure examination component of specialty board certification is an important complement to performance measures. Over the last couple decades there has been a significant development in understanding of how physicians integrate medical knowledge and clinical skills in the clinical judgment process. In order to properly manage a condition, conduct testing, or assign therapy, physicians have to adequately process information, and therefore, exercise sound clinical judgment. Researchers suggest that among other things, medical errors happen due to problems with clinical judgment. Knowledge ages over time, and when a new body of knowledge emerges, ideally, physicians should incorporate it into clinical reasoning. Rigorous testing, specifically via secure examination, provides an opportunity for assessing, whether physicians are successful in incorporating new information over time. Relying on quality measurement alone will not address many aspects of care and, in particular diagnostic reasoning, errors in which are associated with adverse outcomes. While examination raises anxiety, requires preparation and generates costs, knowledge is one of the foundational clinical practice competencies, and therefore requires proper attention.

*Original article does not indicate key words. Unique: quality of care; medical knowledge; secure examination; board certification; performance measures; clinical judgment; medical errors; clinical reasoning.*

Holmboe, E. S., Wang, Y., Mehan, T. P., Tate, J. P., Ho, S., Starkey, K. S., & Lipner, R. S. (2008). Association between maintenance of certification examination scores and quality of care for Medicare beneficiaries. *Archives of Internal Medicine, 168*(13), 1396-1403.  
doi:10.1001/archinte.168.13.1396

The study examines the association between physician cognitive skills, measured by the ABIM MOC examination, and physician practice performance, defined by a set of CMS quality measures for patients with diabetes, patients requiring mammography

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screening, and patients with cardiovascular disease. Study findings for 3602 general internists suggest that top scoring (top quartile on the MOC examination) physicians are more likely to perform processes of care for diabetes patients (HbA1C and lipid screening and retinal examinations) and patients requiring mammography screening. However, the results indicate no significant association between lipid screening and examination scores for patients with cardiovascular disease (potentially explained by concomitant care by a cardiologist). Physician cohort is restricted to those certified between 1990 and 1995.

*Original article does not indicate key words. Unique: maintenance of certification (MOC); examination scores; quality of care; cognitive skills; internal medicine; physician performance; CMS quality measures; mammography; diabetes; cardiovascular disease; knowledge.*

Jamtvedt, G., Young, J. M., Kristoffersen, D. T., O'Brien, M.A., & Oxman, A. D. Audit and feedback: effects on professional practice and health care outcomes. [Cochrane review]. In *Cochrane Database of Systematic Reviews*, 2008 (4).

This study aimed to assess the effect of audit and feedback on physician practice and patient outcomes. A total of 118 randomized trials of audit and feedback reporting objectively measured practice or outcomes (Cochrane Effective Practice and Organization of Care Group's register and pending file) were reviewed. Only 24 of those studies were judged as having high methodological quality. Analysis findings showed that providing physicians with data about their performance might help improve their practice; effects, however, are variable. Audit and feedback lead to more significant improvement when baseline performance is lower and when the intensity of audit and feedback are higher.

*Original article does not indicate key words: Unique: audit; feedback; professional practice; patient outcomes; systematic review.*

Jha, A., Orav, E. J., Zheng, J., & Epstein, A. M. (2008). Patients' perception of hospital care in the United States. *New England Journal of Medicine*, 359, 1921-31.  
doi:10.1056/NEJMs0804116

This article reviews patient perceptions of hospital care in the United States, based on HCAHPS data, provided by 60% of U.S. hospitals. The study examines whether key characteristics of hospitals thought to enhance patient experiences are indeed associated with better experiences for patients, and whether performance on HCAHPS is related to quality of care. The findings reveal that most patients are generally satisfied with the care they receive; however, there is room for improvement. Areas for improvement include those of nursing care, communication about medications, pain control and provision of clear discharge instructions. Hospitals with higher nurses to patient-days show better patient experiences. Similarly, hospitals performing better on HCAHPS are more likely to provide better quality of care across measures of clinical quality (for example management of acute myocardial infarction and pneumonia).

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*Original article does not indicate key words: Unique: patient perception; patient experience; hospital care; HCAHPS; quality of care;*

Kelly, J. V., & Hellinger, F. J. (1986). Physician and hospital factors associated with mortality of surgical patients. *Medical Care*, 24, 785-800.

The aim of this study was to examine the deviation of hospital mortality relevant to the volume of specific surgical procedures performed in a hospital, the volume of these procedures performed by patient's primary surgeon, physician board certification, and other factors, such as severity of illness, patient age, hospital teaching status, size and location. Researchers obtained data from discharge abstract records, as well as American Hospital Association's Annual Survey of Hospitals for 1977 and American Medical Association's Masterfile of U.S. Physicians. Study findings revealed that surgical patient mortality was lower in hospitals with a larger volume of specific surgical procedures and in those with a medical school affiliation. Mortality was not associated with the volume of procedures performed by surgeons, but was lower for doctors who were board certified. For patients operated on for peptic ulcer disease, the mortality rate was 2% lower if their surgeon was board certified. Similar associations were seen for stomach cancer and abdominal aneurysm surgery, but the reported coefficients were not statistically significant.

*Original article does not indicate key words: Unique: physician factors; hospital factors; mortality of surgical patients; volume of surgical procedures; board certification; surgical patient mortality; hospital medical school affiliation.*

Kelly, J. V., & Hellinger, F. J. (1987). Heart disease and hospital deaths: an empirical study. *Health Services Research*, 22, 369-95.

The study examines mortality rates of heart patients that survive their first day in the hospital. Three groups of patients diagnosed with atherosclerosis are examined: 1) those that undergo a CABG operation, 2) those that undergo a cardiac catheterization, but not CABG, and 3) those that experience the AMI, but don't receive any treatment. Treating physician characteristics are board certification status and the volume of similar patients. Hospital characteristics include the presence of coronary care unit, teaching status, size, and volume of similar patients. Other factors taken into consideration are severity of illness, patient age, sex, and comorbidities. The findings reveal that AMI patients are more likely to survive if their attending physicians treat high volumes of AMI patients, and when they are board certified in family or internal medicine. CABG/cardiac catheterization patients are more likely to survive in hospitals that handle high volumes of such procedures. Further, AMI patients in teaching facilities are less likely to die, just as in facilities that have a cardiac care unit. Finally, age and comorbidity variables performed as expected.

*Original article does not indicate key words: Unique: heart disease; hospital deaths; empirical study; mortality rates; atherosclerosis; CABG; AMI; board certification;*

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*volumes of patients; physician characteristics; hospital characteristics; family medicine; internal medicine.*

Khaliq, A. A., Dimassi, H., Huang, C-Y., Narine, L., & Smego, R. A. (2005). Disciplinary action against physicians: who is likely to get discipline? *American Journal of Medicine*, 118, 773-7. doi:10.1016/j.amjmed.2005.01.051

Researchers attempted to identify the characteristics of physicians disciplined by State Medical Boards, and to assess the risk of disciplinary action over time. For that purpose, publicly available data for physicians licensed in Oklahoma was obtained and analyzed for disciplinary action in 2001. Study findings showed that the rate of disciplinary action increased over time, with each successive 10 year period since licensure. Increased risk of disciplinary action was associated with being a man, non-white, and non-board-certified, and practicing family medicine, general practice, psychiatry, obstetrics-gynecology, and emergency medicine. The hazard ratio for adverse licensure action for non-board certified compared to board certified physicians was 3.3 ( $p < 0.001$ ) by univariate analysis and 2.2 ( $p < 0.001$ ) by multivariate analysis. The most common disciplinary action involved quality of care issues, medication/prescription violations, incompetence, and negligence/malpractice. More than half of the complaints were brought forward by general public; significantly less came from the Federation of State Medical Boards, Medicare, insurance companies and law enforcement agencies; and least, from other physicians, office staff, national practitioner data bank, pharmacies and pharmacists, and hospital personnel. Study findings are subject to database accuracy.

*Original article key words: physician; discipline; disciplinary action; medical board; medical specialty. Unique: family medicine; general practice; psychiatry; obstetrics-gynecology; emergency medicine; quality of care; medication violations; incompetence; negligence; general public; Federation of State Medical Boards; Medicare; insurance; law enforcement; office staff; national practitioner data bank; pharmacists; hospital personnel.*

Mansouri, M., & Lockyer, J. (2007). A meta-analysis of continuing medical education effectiveness. *Journal of Continuing Education in the Health Professions*, 27(1), 6-15. doi:10.1002/chp.88

The article describes a meta-analysis of randomized controlled trials and experimental design studies of CME outcomes published between 1990 and 2004, identified through Medline and Eric databases. The authors examined a total of 31 studies, including 61 total interventions, to determine the effect of CME characteristics on physician knowledge, performance and patient outcomes. The meta-analysis combines data from different studies and considers only relevantly direct evidence on a given topic. It is also limited to major journals, which publish studies with significant results. Neither study participant demographic information, nor information relevant to measurement intervals is considered in the analysis. Yet, study findings suggest that CME is likely to have a moderate effect on physician knowledge, but a smaller effect on physician performance and patient outcomes. Study results show that CME is more effective when educational

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interventions are active or interactive (rather than passive), use multiple methods, are provided for longer periods of time (either continuously or episodically) and are designed for smaller groups of participants within a single discipline.

*Original article key words: continuing medical education (CME); physician knowledge; physician performance; patient health; meta-analysis. Unique: CME outcomes; effectiveness; CME characteristics; physician knowledge; performance; patient outcomes; educational intervention.*

Mazmanian, P. E., & Davis, D. A. (2002). Continuing medical education and the physician as learner: guide to the evidence. *Journal of the American Medical Association*, 288, 1057-60. doi:10.1001/jama.288.9.1057

The study examines evidence of CME effect on physicians and planners per Cochrane search, accounting for 1992-2002. Search results reveal that CME definition has expanded beyond the traditional concept. Authors outline three key aspects that relate to effective CME: 1) educational interventions that are based on a needs assessment of physician knowledge, skills or patient outcomes, 2) interactive learning formats, including opportunities to practice, and 3) sequenced and multifaceted activities. Identifying gaps relevant to knowledge base, behavior or skills and employing tools to close those gaps are essential to change. Interactive educational activities are more effective in changing physician behaviors and patient outcomes. Similarly, educational activities that clearly address a specific aim, that come in series, or that target the same topic through multiple activities of different formats are more effective. In order to be effective, CME should truly be continuous and self directed; it should include learning needs assessment, assessment of practice, reflection on the progress, and active role in selecting future educational path by learners.

*Original article does not indicate key words. Unique: continuing medical education (CME); physician learner; CME definition; effective CME; gaps; interactive learning; physician behavior; patient outcomes; needs assessment.*

Oyler, J., Vinci, L., Arora, V., & Johnson, J. (2008). Teaching internal medicine residents quality improvement techniques using the ABIM's practice improvement modules. *Journal of General Internal Medicine*, 23, 927-30. doi:10.1007/s11606-008-0549-5

The article describes the use of ABIM Clinical Preventative Services Practice Improvement Module (CPS PIM) for teaching Internal Medicine residents quality assessment and improvement techniques, and the effect it has on resident confidence in QI skills. The quality assessment and improvement curriculum, based on ABIM CPS PIM is incorporated in 2 required 1-month ambulatory rotations during the postgraduate year 2. Residents complete chart reviews in order to assess practice, and design group interventions that would help correct the deficiencies. To evaluate the effect of the curriculum, a self-assessment tool evaluating QI skills is administered. The ABIM's CPS PIM provides a standardized, web based, evidence based, affordable and efficient tool to teach residents the QI basics. Group projects empower learners to reflect on the quality

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data, and to produce changes in their continuity clinic experience. The results of the intervention suggest that resident confidence in QI skills improves, as a result of this curriculum. Not only are residents able to make significant changes in practice, but also, disseminate the findings in scholarly work, e.g. an internal resident research day, or a hospital quality fair. Challenges to implementing the PIM include time, funding, and faculty with QI experience.

*Original article key words: internal medicine residents; quality improvement; practice-based learning and improvement; systems-based practice; practice improvement module. Unique: quality assessment.*

#### Validation of current MOC programs

Davis, D. A., Thompson, M. A., Freemantle, N., Wolf, F. M., Mazmanian, P., & Taylor-Vaisey, A. (1999). Impact of formal continuing medical education. Do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? *Journal of the American Medical Association*, 282(9), 867-874. doi:10.1001/jama.282.9.867

This study reviews 14 randomized, controlled trials that include educational interventions, which: 1) employ educational activities meant to be persuasive, rather than coerce or incentivize physicians, 2) study physician performance and patient outcomes, and 3) involve more than 50% physician participants. The aim of the study is to assess the effect of formal CME. Study findings show that didactic education (focusing solely on knowledge acquisition) does not change physician performance, but interactive activities (i.e., case discussions, role-plays, hands on practice sessions) are more effective in changing performance/outcomes; sequenced or longitudinal sessions are similarly effective. It is important to note that the interactive educational techniques match adult learning principles, where education is learner centered, active, relevant to learner needs, engaging, and reinforcing. The study points to the need for collaboration between CME providers and the practice sector and their data sources, so that clinical changes can be sustained over time. This study is subject to publication, as well as reviewer bias, and it looks at a small sample of trials that involve predominantly primary practice physicians, disallowing for broad generalizability. Nevertheless, it offers valuable insight on the potential for CME to impact more than knowledge acquisition.

*Original key words: medical practice; medical education; review. Unique: continuing medical education (CME); physician behavior; physician performance; healthcare outcomes*

Duffy, F. D., Lynn, L. A., Didura, H., Hess, B., Caverzagie, K., Grosso, L., Lipner, R. A., & Holmboe, E. S. (2008). Self-assessment of practice performance: development of the ABIM practice improvement module (PIM). *Journal of Continuing Education in the Health Professions*, 28, 39-46. doi:10.1002/chp.154

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The article describes how the American Board of Internal Medicine (ABIM) develops Practice Improvement Modules (PIMs) and reviews the experiences of the first time users of the Preventative Cardiology PIM (PC-PIM). In this study, the PC-PIM serves as a self-administered tool to assess the quality of practice using performance measures; also, to obtain feedback from patients. Study findings suggest opportunities to enhance PIM-like activities deployed in MOC programs. Meaningful gaps in physician clinical performance were identified, including difficulty in the application of quality improvement methods to impact system change and improve performance. The authors suggest that future efforts should focus on identification of factors that could help physicians apply QI method in their practices and of educational interventions that might be beneficial. Patient surveys were useful in identifying improvement needs in practice communication and in physicians' ability to self-assess their patients' healthcare needs. Of note, the performance of physicians enrolled in ABIMS MOC and participating in this study was better than that reported in recent research; several reasons are offered for the noted difference.

*Original key words: quality of care; health care quality assessment; total quality management; continuing medical education; certification; specialty boards; self-evaluation programs. Unique: internal medicine; practice improvement modules (PIMs); performance measures; maintenance of certification (MOC); practice based learning and improvement; systems-based practice; cardiology.*

Hagen, M. D., Ivins, D. J., Puffer, J. C., Rinaldo, J., Roussel, G. H., Summer, W., & Xu, J. (2006). Maintenance of Certification for family physicians (MC-FP) self assessment modules (SAMs): the first year. *Journal of the American Board of Family Medicine*, 19(4), 398-403. doi:10.3122/jabfm.19.4.398

The article summarizes the feedback of a family physician cohort (over 7000 physicians) that went through the first year of activities (Part II self assessment modules (SAMs)) for the ABFMOC program, newly implemented in 2004. Free text comments from activity evaluations were analyzed and revealed generally favorable responses relevant to diabetes and hypertension SAMs. The SAMs were rated highly with regard to the relevance and usefulness of information provided, the knowledge assessment, and the overall module value. More than half of respondents shared that the experience would lead to changes in practice. Study limitations: the SAMs were modified over the course of the year, and participants engaged in the activity at different times throughout that year, which wasn't taken in consideration, when analyzing study results; reports of change in practice are self reported and represent the intent, rather than actual change.

*Original article does not indicate key words. Unique: maintenance of certification (MOC); family physicians; self assessment; family medicine; diabetes; hypertension; practice change; activity evaluation.*

Holmboe, E. S., Meehan, T. P., Lynn, L., Doyle, P., Sherwin, T., & Duffy, F. D. (2006). Promoting physicians' self-assessment and quality improvement: the ABIM diabetes practice improvement module. *Journal of Continuing Education in the Health*

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*Professions, 26(2), 109-119. doi:10.1002/chp.59*

This is a review of a beta test of the ABIM diabetes practice improvement module, used in recertification program of general internists and endocrinologists. Participant feedback reveals that physicians found self-assessment using the PIM to be a valuable experience. There was wide variability in the performance of some target clinical goals. They were able to identify areas for improvement through medical record audit and responded that the information was useful in implementing change in their practices. There was also wide variability in ratings on the patient surveys; specifically, the helped identify areas for improvement relevant to patient- education. It is important to note that the pilot sample size was small (16 completed PIM data entry/14 completed all PIM steps), and that physicians were self selected. There was no set sampling strategy for medical record audit, and participants chose different interventions for quality improvement in their respective practices.

*Original article key words: self-assessment; quality improvement; maintenance of certification. Unique: MOC; practice improvement; recertification; participant feedback; self assessment; medical record audit; internal medicine.*

Holmboe, E. S., Wang, Y., Meehan, T. P., Tate, J. P., Ho, S., Starkey, K. S., & Lipner, R. S. (2008). Association between maintenance of certification examination scores and quality of care for Medicare beneficiaries. *Archives of Internal Medicine, 168(13)*, 1396-1403. doi:10.1001/archinte.168.13.1396

The study examines the association between physician cognitive skills, measured by the ABIM MOC examination, and physician practice performance, defined by a set of CMS quality measures for patients with diabetes, patients requiring mammography screening, and patients with cardiovascular disease. Study findings for 3602 general internists suggest that top scoring (top quartile on the MOC examination) physicians are more likely to perform processes of care for diabetes patients (HbA1C and lipid screening and retinal examinations) and patients requiring mammography screening. However, the results indicate no significant association between lipid screening and examination scores for patients with cardiovascular disease (potentially explained by concomitant care by a cardiologist). Physician cohort is restricted to those certified between 1990 and 1995.

*Original article does not indicate key words. Unique: maintenance of certification (MOC); examination scores; quality of care; cognitive skills; internal medicine; physician performance; CMS quality measures; mammography; diabetes; cardiovascular disease; knowledge.*

Jamtvedt, G., Young, J. M., Kristoffersen, D. T., O'Brien, M.A., & Oxman, A. D. Audit and feedback: effects on professional practice and health care outcomes. [Cochrane review]. In *Cochrane Database of Systematic Reviews, 2008 (4)*.

This study aimed to assess the effect of audit and feedback on physician practice and patient outcomes. A total of 118 randomized trials of audit and feedback reporting

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*Original article does not indicate key words: Unique: audit; feedback; professional practice; patient outcomes; systematic review.*

Lipner, R. S., Bylsma, W. H., Arnold, G. K., Fortna, G. S., Tooker, J., & Cassel, C. K. (2006). Who is maintaining certification in internal medicine – and why? A national survey 10 years after initial certification. *Annals of Internal Medicine*, 144(1), 29-36.

A mail survey, consisting of 20 questions, was distributed to physicians, certified in internal medicine in 1990, 1991, and 1992, in order to determine the reasons for maintaining certification. The response rate was slightly over 50% and results revealed that for more than a half of respondents, certification was required by at least one of their employers. However, only a third of the respondents that were engaged in/have completed the MOC process indicated it as a reason for recertification; for this cohort, it was part of the professional development. The most common reasons diplomates provided for participating in MOC were to maintain or enhance their professional image, update their knowledge base, or maintain or improve patient care quality. Those that did not participate most frequently indicated that the process took too much time. Other reasons offered for not participating were the expense of MOC, unreasonable requirements, not relevant to practice (primarily for specialists not participating in general internal medicine MOC, and not required by their employer). Most respondents indicated that patients and peers value certification, and that physicians working in direct healthcare should be certified. The survey was completed by volunteers, therefore, those with less favorable attitude towards MOC might have responded at a higher rate. Further, since it involved self reporting, the results might lack accuracy. Lastly, misconceptions about program requirements might also have led to inaccurate responses.

*Original article does not indicate key words. Unique: maintenance of certification (MOC); internal medicine; national survey; certification; reason for recertification; professional development; self reporting.*

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