



Research supporting Maintenance of Licensure (MOL)



There is growing evidence in the medical literature about variables in medical practice – including the practice of physicians over time and the volume of procedures completed by physicians, and how these variables impact outcomes – as well as about the value of enhanced CME and continued professional skills development over the course of a physician's career. Both of these categories are addressed by the Federation of State Medical Boards' Maintenance of Licensure (MOL) framework.

The evidence clearly suggests better outcomes can be expected from physicians who keep their skills and knowledge sharp by maintaining them through a proactive, practice-specific, ongoing development process over time.

Bibliography of Evidence in Support of MOL

Following is a bibliography of research, articles, reports and commentary related to Maintenance of Licensure. Please note that many of the links in these resources provide access to copies of the articles in full; however, some are abstracts and are only available by purchase from the original source.

Clinical Experience and Relationship to Quality of Care

The articles in this section demonstrate that declines can occur in physician performance and patient outcomes the further away physicians are from medical school graduation, underlining the importance of physician performance enhancement programs.

Caulford PG, Lamb SB, Kaigas TB, Hanna E, Norman GR, Davis DA. Physician Incompetence: Specific Problems and Predictors. *Academic Medicine*. 1994;69(10):S16-S18.

Choudry NK, Fletcher R. Systematic Review: The Relationship between Clinical Experience and Quality of Health Care. *Ann Intern Med*. 2005;142(4):260-273. www.annals.org/cgi/content/full/142/4/260

Eva KW. The Aging Physician: Changes in Cognitive Processes and Their Impact on Medical Practice. *Acad Med*. 2002;77(10)(suppl):S1-S6.
www.academicmedicine.org/pt/re/acmed/fulltext.00001888-200210001-00002.htm;jsessionid=L3LDq7bQx73QfX75fTk2QG1JsG574sZznPJ1npMc5yLQ7GbbqJGh!536197444!181195628!8091!-1

Norcini JJ, Kimball HR, Lipner RS. Certification and Specialization: Do They Matter in the Outcome of Acute Myocardial Infarction? *Acad Med*. 2000;75:1193-1198.
www.academicmedicine.org/pt/re/acmed/pdfhandler.00001888-200012000-00016.pdf;jsessionid=LX2HjphyWvLOJ1p5qvJLMKF1PwJG2LMZLyhyhGdhHL4CWQ0hGG7!1455807198!181195628!8091!-1

Continuing Medical Education (CME)

The articles in this section show that CME is an effective tool for improving physician knowledge, skills, behaviors, and attitudes, as well as patient outcomes. This is especially the case when CME is delivered in an interactive manner and is relevant to the participating physician's practice.

Marinopoulos SS, Dorman T, Ratanawongsa N, Wilson LM, Ashar BH, Magaziner JL, Miller RG, Thomas PA, Prokopowicz GP, Qayyum R, Bass EB. Effectiveness of Continuing Medical Education. Evidence Report/Technology Assessment No. 149 (Prepared by the Johns Hopkins Evidence-based Practice Center, under Contract No. 290-02-0018.) AHRQ Publication No. 07-E006. Rockville, MD: Agency for Healthcare Research and Quality. January 2007.
http://ahrqpubs.ahrq.gov/OA_HTML/ibeCCtpltmDspRte.jsp?a=b&item=31949

Robertson MK, Umble KE, Cervero RM. Impact Studies in Continuing Education for Health Professions: Update. *The Journal of Continuing Education in the Health Professions*. 2003;23:146-156.

<http://jcehp.com/>

Davis D, O'Brien M, Freemantle N, Wolf F, Mazmanian P, Taylor-Vaisey A. Impact of Formal Continuing Medical Education. Do Conferences, Workshops, Rounds, and Other Traditional Continuing Education Activities Change Physician Behavior or Health Care Outcomes? *JAMA*. 1999;282:867-874.

jama.ama-assn.org/cgi/content/full/282/9/867

Cantillon P, Jones, R. Does continuing medical education in general practice make a difference? *BMJ*. 1999;318:1276-1279.

www.bmj.com/cgi/content/short/318/7193/1276

The Josiah Macy Jr Foundation. *Continuing Education in the Health Professions: Improving Healthcare through Lifelong Learning*. New York, New York: The Josiah Macy Jr. Foundation, 2008.

macyfoundation.org/docs/macy_pubs/pub_ContEd_inHealthProf.pdf

The Josiah Macy Jr Foundation. *Chairman's Summary of the Conference on Continuing Education in the Health Professions: Improving Healthcare through Lifelong Learning*. New York, New York: The Josiah Macy Jr. Foundation, 2008.

macyfoundation.org/docs/macy_pubs/Macy_ContEd_1_7_08.pdf

Miller SH, Thompson JN, Mazmanina PE, Aparicio A, Davis DA, Spivey BE, Kahn NB. Continuing medical education, professional development, and requirements for medical licensure: A white paper of the Conjoint Committee on Continuing Medical Education. *J Contin Educ Health Prof*. 2007; 28(2):95.

www.ncbi.nlm.nih.gov/pubmed/18521873

Continuous Professional Development/Lifelong Learning

The following articles support the need for a program of continued professional development that fosters a commitment to lifelong learning among physicians. The articles illustrate the importance and effectiveness of educational activities that emphasize continuous improvement and foster evidence-based clinical knowledge through problem based learning, objective assessment, and continuous feedback.

Davis D, Evans M, Jadad A, Perrier L, Rath D, Ryan D, Sibbald G, Straus S, Rappolt S, Wowk M, Zwarenstein M. The case for knowledge translation: shortening the journey from evidence to effect. *BMJ* 2003;327;33-35. Available at:

www.bmj.com/cgi/content/full/327/7405/33

Wasserman SI, Kimball HR, Duffy FD. Recertification in Internal Medicine: A Program of Continuous Professional Development. *Ann Intern Med*. 2000;133:202-208. www.annals.org/cgi/content/abstract/133/3/202

The Josiah Macy Jr Foundation. *Continuing Education in the Health Professions: Improving Healthcare through Lifelong Learning*. New York, New York: The Josiah Macy Jr. Foundation, 2008.

macyfoundation.org/docs/macy_pubs/pub_ContEd_inHealthProf.pdf

Public Perceptions and Expectations of Physicians

This report summarizes a survey conducted among Virginia residents over the age 50 about their expectations with respect to health professional qualifications and training. The vast majority of respondents felt that health professionals should be evaluated on their qualifications, be rated by patients and peers, and pass periodic written tests of medical knowledge.

AARP. *Strategies to Improve Health Care Quality in Virginia: Survey of Residents Age 50+*. Washington, DC: AARP, 2007.

www.aarp.org/health/doctors-hospitals/info-2007/va_care_07.html

Physician Surveys

This survey demonstrates strong support among practicing physicians for professional self-regulation and periodic recertification.

Campbell EG, Regan S, Gruen RL, Ferris TG, Rao SR, Cleary PD, Blumenthal D. Professionalism in Medicine: Results of a National Survey of Physicians. *Ann Intern Med.* Dec 4, 2007;147(11): 795-802.

<http://www.annals.org/cgi/content/abstract/147/11/795>

Professionalism

This Physician Charter describes the responsibilities that physicians have to themselves, their profession, and their patients. These responsibilities include being committed to professional competence, scientific knowledge and improving the quality of health care.

ABIM Foundation, ACP-ASIM Foundation, European Federation of Internal Medicine. Medical Professionalism in the New Millennium: A Physician Charter. *Ann Intern Med.* 2002; 136:243-246.

www.annals.org/cgi/content/full/136/3/243

Quality of Care

The following resources point to quality gaps in health care provided and offer recommendations for addressing them and assessing quality of care. These recommendations focus mainly on ensuring that care provided is in line with current scientific evidence.

Asch SM, Kerr EA, Keeseey J, Adams JL, Setodji CM, Malik S, McGlynn EA. Who Is at Greatest Risk for Receiving Poor-Quality Health Care? *New England Journal of Medicine.* 2006;354:1147-1156.

www.nejm.org/doi/full/10.1056/NEJMsa044464

Holmboe ES, Lipner RS, Greiner A. Assessing Quality of Care: Knowledge Matters. *JAMA.* 2008; 299(3):338-340.

<http://jama.ama-assn.org/cgi/reprint/299/3/338.pdf?ijkey=HGjUvlzrRQbUJH8&keytype=finite>

McGlynn EA, Asch SM, Adams J, Keeseey J, Hicks J, DeCristofaro A, Kerr EA. The Quality of Health Care Delivered to Adults in the United States. *New England Journal of Medicine.* 2003; 348(26): 2635-45.

<http://content.nejm.org/cgi/content/full/348/26/2635>

The Measurement of Health Care Performance: A Primer from the CMSS. Council of Medical Specialties. 2008.

<http://www.entnet.org/qualityimprovement/upload/MaintHlthCarePerf.pdf>

Self-Assessment

This edition of the Journal of Continuing Education in the Health Professions contains numerous articles regarding self-assessment, its meaning and the effectiveness of self-assessment activities. A link to the Table of Contents, which contains links to the individual articles, is provided below.

The Journal of Continuing Education in the Health Professions. Volume 28, Issue 1, Winter 2008.

onlinelibrary.wiley.com/doi/10.1002/chp.v28:1/issuetoc

Specialty Board Certification

This section contains articles on the role of board certification in improving the quality of medical care. Also in this section is a bibliography containing resources on the link between board certification and patient outcomes.

Brennan TA, Horwitz RI, Duffy D, Cassel CK, Goode LD, Lipner RS. The Role of Physician Specialty Board Certification Status in the Quality Movement. *JAMA.* 2004;292:1038-1043. [jama.ama-](http://jama.ama-assn.org/cgi/content/abstract/292/9/1038)

[assn.org/cgi/content/abstract/292/9/1038](http://jama.ama-assn.org/cgi/content/abstract/292/9/1038)

Wasserman SI, Kimball HR, Duffy FD. Recertification in Internal Medicine: A Program of Continuous Professional Development. *Ann Intern Med.* 2000;133:202-208. www.annals.org/cgi/content/abstract/133/3/202

A detailed bibliography of the literature looking at the relationship between board certification and patient outcomes is available at:

www.certificationmatters.org/research-supports-benefits-of-board-certification.aspx

National Dialogue Calling for Greater Physician Accountability to the Public

These articles and reports provide recommendations for increasing accountability among medical professionals to the public. They also highlight the importance of establishing collaborative relationships among physicians, regulators, governments and the public in working towards improving the quality of health care.

Cohen JJ, Cruess S, Davidson C. Alliance Between Society and Medicine The Public's Stake in Medical Professionalism. *JAMA*. 2007;298:670-673.

jama.jamanetwork.com/article.aspx?articleid=208284

Institute of Medicine. *To Err is Human: building a safer health system*. Washington, DC: National Academy Press; 1999.

www.nap.edu/openbook.php?isbn=0309068371

Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press, 2001. www.nap.edu/openbook.php?isbn=0309072808

Institute of Medicine. *Health Professions Education: A Bridge to Quality*. Washington, DC: National Academy Press, 2003.

www.nap.edu/catalog.php?record_id=10681

Finocchio L J, Dower C M, McMahon T, Gragnola C M and the Taskforce on Health Care Workforce Regulation. *Reforming Health Care Workforce Regulation: Policy Considerations for the 21st Century*. San Francisco, CA: Pew Health Professions Commission, 1995. www.futurehealth.ucsf.edu/Public/Publications-and-Resources/Content.aspx?topic=Reforming Health Care Workforce Regulation Policy Considerations for the 21st Century