

THE ROLE OF CONTINUING MEDICAL EDUCATION
IN HEALTH CARE QUALITY IMPROVEMENT

A dissertation submitted to the Caspersen School of Graduate Studies

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ABSTRACT

The Role of Continuing Medical Education in Health Care Quality Improvement

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The Caspersen School of Graduate Studies
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The rapid changes in research and technology occurring every day in the medical field make it difficult for physicians to stay current with the latest medical information. If health care systems want to offer patients the best quality health care, they must support an educational process that enables physicians to become lifelong learners. This dissertation explored how the Continuing Medical Education (CME) program at Meridian Health, a five-hospital system consisting of a large teaching hospital and four community-based hospitals, evolved to establish a link between the hospitals' quality improvement and safety issues and the Meridian Health CME program. The project studied how incorporation of the 2006 Accrediting Council for Continuing Medical Education (ACCME) criteria helped to provide a foundation for improved educational interventions that better related to the needs of the physicians and the Meridian Health system. It demonstrated how collaboration with involved stakeholders resulted in changing physicians' clinical practice to impact the delivery of health care. Research projects conducted at Meridian Health provided evidence to demonstrate that CME educational activities based on quality improvement and safety issues resulted in more meaningful educational experiences for physicians. The narrative provided evidence that Meridian Health is using CME as a strategic resource to strengthen its educational

program and improve collaboration with internal and external groups working on similar initiatives to support the organizational framework of Meridian Health. It created many opportunities for future research projects at Meridian Health that can assist in providing educational interventions that will effectively change physician behaviors, improve organizational framework, and offer health care that will positively impact patient outcomes.

To my sister, Kathryn B. Collins

In memory of my parents, Ann and Joseph A. Burns

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INTRODUCTION

The rapid changes in research and technology occurring every day in the medical field make it difficult for physicians to stay current with the latest medical information. If health care systems want to offer patients the best quality health care, they must support an educational process that enables physicians to become lifelong learners. According to the American Medical Association (AMA), “CME constitutes educational activities that serve to maintain, develop, or increase the knowledge, skills, performance and the relationships a physician uses to provide services for patients, the public, or the profession.”¹ Continuing medical education (CME) plays a significant role in doctors’ professional growth.

Researchers have demonstrated a need to provide CME programs that address clinical problems related to safety and quality issues to better meet the needs of a health care environment that is constantly changing.² There is a correlation between the physician/patient encounter and lifelong learning, and I will argue that CME linked to quality improvement and patient safety in health care can impact physicians’ attitudes toward their professional development. CME offers physicians opportunities to maintain, develop, and improve their knowledge and skills and plays a significant role in doctors’ license renewal, credentialing, maintenance of certification and professional

¹ American Medical Association, *The Physician’s Recognition Award and Credit System: Information for Accredited Providers and Physicians*; 2010 Revision, <http://www.ama-assn.org/resources/doc/cme/pr-a-booklet.pdf> (accessed March 4, 2012).

² *Health Professions Education: A Bridge to Quality*, Institute of Medicine, 2003, http://www.med.und.edu/continuing-medical-education/_files/docs/iom-competencies.pdf (accessed July 1, 2015).

growth.³ The quality of health care is greatly impacted when physicians commit to lifelong learning after completing formal medical education training.⁴ Opportunities to seek and improve knowledge continuously emerge during each patient/physician encounter. Are physicians aware of these educational opportunities? Is the current CME system effective in improving physicians' clinical competence and performance?

This dissertation will explore how the CME program at Meridian Health (MH), a five-hospital system consisting of a large teaching hospital and four community-based hospitals, evolved to establish a link between the hospitals' quality improvement and safety issues and the MH CME program. The project will describe how incorporation of the 2006 Accrediting Council for Continuing Medical Education (ACCME) criteria helped to provide a foundation for improved educational interventions that better relate to the needs of the physicians and the MH system. It will demonstrate how collaboration with involved stakeholders can result in changing physicians' clinical practice to impact the delivery of health care. Research projects conducted at MH will provide evidence to demonstrate that CME educational activities based on quality improvement and safety issues resulted in more meaningful educational experiences for physicians.

In order to offer effective educational programs based on the latest evidence-based research presented by highly-skilled faculty, accredited CME providers must establish affiliations with involved stakeholders to include health care organizations, medical educators, physicians, allied health care professionals, hospital administration,

³ American Medical Association, *The Physician's Recognition Award and Credit System: Information for Accredited Providers and Physicians*; 2010 Revision.

⁴ Council of Medical Specialty Societies, "Repositioning for the future of Continuing Medical Education" 2002, 1, <http://www.jcehp.com/vol1125/2503CMEReport.pdf> (accessed April 8, 2012).

nursing, legal affairs, pastoral care, medical management, outcome department, risk management and the office of cultural diversity.⁵ These groups play an important role in planning and development of educational activities, and the level of member participation may vary in each hospital's CME program. Through collaboration, these groups can identify problem areas where knowledge gaps exist and provide follow-up information needed to measure the outcomes of the educational programs. Working together on CME programs enhances the relationships between the stakeholders, promotes open communication and helps build bridges, allowing for continual interaction and exchange of information.⁶

Health care systems and doctors working autonomously may no longer be offering patients the best treatment options because the paradigm of health care is shifting. A multidisciplinary team approach that supports collaboration between health care providers, health care systems, pharmaceutical companies, third party payers, and the government, may provide a continuum of health care that has potential to improve patient outcomes. This team approach may prove advantageous when physicians let go of practices dating back to their experiences in medical school and residency programs and engage in educational activities directly related to continuous quality improvement. Health care systems must explore new methods to support the focus on quality improvement within their organizations.

⁵ J. R. Combs and E Arespacochaga, *Continuing Medical Education as a Strategic Resource*, American Hospital Association's Physician Leadership Forum, Chicago, IL, September 2014, 3, <http://www.ahaphysicianforum.org/resources/leadership-development/CME/index.shtml> (accessed November 2, 2015).

⁶ *Health Professions Education: A Bridge to Quality*, Institute of Medicine, 2003.

Most CME programs at MH followed a didactic structure to include lectures, reading, and testing knowledge. Implementations of the ACCME 2006 criteria helped program planners at MH utilize new strategies to influence the organizational framework of the health care system. Incorporation of the process remains a challenge because it represents a new way of teaching and learning. Learners may need to adjust to the new CME because it involves identification of a problem or issue, adapting learning styles, developing problem solving skills, assessing practice behaviors, providing feedback, and reflecting and summarizing outcomes.

Chapter One presents an overview of CME from its inception in the 1920s to the current day. It explores the history and evolution of CME and discusses the importance of promoting lifelong learning for physicians. Early fundamentals of CME will be presented to demonstrate how key figures in the late nineteenth and early twentieth century helped to influence CME as it is defined today. The narrative will discuss political and societal influences, identify major stakeholders, and explore innovative educational methods that have occurred in CME in the last one hundred years. A literature review of the development of multidisciplinary cancer conferences will establish a foundation for a need to explore the usefulness of this type of conference at MH. Discussion of utilizing educational interventions that do not follow a traditional didactic teaching format will provide insight to incorporating alternative educational designs into CME programs.

Chapter Two presents the incorporation of the 2006 ACCME criteria into the existing MH CME program. It demonstrates how the criteria provide a framework for a compliant CME program at MH. Questions focusing on how MH will incorporate the

requirements into a newly centralized CME program are included. Challenges including physicians' reactions to the new CME processes, changes to the CME policies and procedures, revision of the MH CME application, and implementation of the new CME application are presented. Several examples of CME programs developed to improve quality of care and patient safety are discussed.

In Chapter Three, I describe the restructured CME program at MH and explore which CME programs may provide opportunities for research projects to support a connection between CME and quality improvement. A new format in the multidisciplinary cancer conferences and an alternatively designed CME program offered in the Pediatric Department at JSUMC were two programs that related to quality improvement and were appropriate for research studies.

In Chapter Four I describe two research projects in detail, including the methodology and results of the studies. Aspects of the research included observation, completion of a questionnaire, and an interview process. Survey results completed by participants of the educational activities provided physicians' attitudes toward the educational experience, and interview responses from physicians who planned and facilitated the MH CME programs provided information on their effectiveness.

Research questions for the survey on multidisciplinary cancer conferences were based on observations made by the CME administrator while attending the conferences. The major change from a retrospective to a prospective review of patient cases impacted conferences significantly as evidenced by the increase in physician attendance and active participation. Conferences made up a large portion of MH's CME program and a study

of attendees' attitudes towards the conferences provided feedback for the MH CME committee and the medical director for Meridian Cancer Care.

The second research project was included to explore the effectiveness of an alternatively-designed CME program. JSUMC's chair of the Department of Pediatrics identified a need to provide quality improvement training related to projects physicians were currently working on. According to the AMA, this type of education provides the foundation for Performance Improvement CME (PI-CME), an educational activity where a physician or group of physicians research a quality or safety issue related to their practice. They assess their performance, implement interventions, and reassess performance to measure effectiveness.⁷ PI-CME is gradually being introduced in health care systems that recognize this new trend in learning. These interventions can lead to improvement in physician knowledge, competence and performance.⁸ The quality improvement PI-CME projects are often identified based on outcome measures from health care organizations that support baseline data. From this data, measurable objectives can be developed to determine whether patient quality and safety issue outcomes are being impacted through the educational interventions.⁹ PI-CME differs from the traditional CME, where physicians sat in a lecture hall and gained knowledge but were never formally challenged to apply that knowledge to their experiences. Physicians have been slow to accept this this type of educational activity for many

⁷ American Medical Association, *The Physician's Recognition Award and Credit System*, 6.

⁸ James C. Leist, "Alliance for Continuing Medical Education Center for Learning and Change – Fostering Innovations in CME Practice," CPPD Report, 13, (Winter 2004): 3, <http://www.ama-assn.org/resources/doc/cme/cppd13.pdf> (accessed April 13, 2013).

⁹ Norman Kahn, Bruce Bagley and Susan Tyler, "Performance Improvement CME: Core of the New CME," *CPPD Report* 22 (Spring 2007): 1-3.

reasons. Programs must be self-driven, physicians have limited time and a lack of familiarity with what is expected, and finally accredited CME providers' inexperience in offering this type of CME makes it difficult for both the CME provider and the participant. Exploration of MH's first attempt at providing PI-CME would increase knowledge for the MH CME office and afford physicians new skills to expand their experience with quality improvement projects.

According to CME researchers, "Further research is required to identify the qualities essential for measuring casual linkages thought to exist among CME, physician behavior and clinical outcomes."¹⁰ This project is significant because it is important to analyze and reflect on changes made to any educational process. CME research demonstrates that traditional CME programs are not providing educational activities that demonstrate their effectiveness.¹¹ Clearly, the analysis of the process will provide feedback to determine best strategies for improving MH's educational approach in CME. Promotion of a change to any process usually presents barriers. Physicians' time limitations, working with reimbursement models, physician buy in, inadequately educated CME program planners, working with an inexperienced CME support staff, physicians' individual learning styles, and a general resistance to change were obstacles identified by the CME office. Addressing these issues, although challenging, has the

¹⁰Paul E. Mazmanian, David A. Davis, and Robert Galbraith, "Continuing medical education effect on clinical outcomes: effectiveness of continuing medical education: American College of Chest Physicians Evidence-Based Educational Guidelines," *Chest Journal* 135, no. 3_suppl (2009): 49S, (accessed November 14, 2014).

¹¹ Kaveh Shojania, Ivan Silver, and Wendy Levinson, "Continuing Medical Education and Quality Improvement: A Match Made in Heaven?" *Annals of Internal Medicine* 2012, 156: 305-308.

potential to offer an opportunity for growth to the MH CME program and can benefit all stakeholders involved.

This project provides an opportunity to investigate whether CME programs based on quality issues and safety factors provide more meaningful educational experiences to physicians. It will determine if physicians intend to change their clinical behaviors based on the information they acquired from the educational activity. Finally, it will ask physicians if the changes made to their clinical behavior had any impact on how they treated their patients. It will align with the goals and objectives of the CME office at MH to “overhaul how (they) deliver healthcare services, educate and train clinicians, and assess and improve quality.”¹²

This dissertation provides an overview of CME from its early beginnings and discusses how it has evolved to stay current with medical research and innovations in the medical field. CME’s early history reveals how its foundation was built to provide a resource for physicians and health care organizations to promote lifelong learning for health care professionals. Research conducted serves as a starting point for future studies related to CME.

¹² Chassin, Mark, Robert Galvin and the National Roundtable on Health Care Quality, “The Urgent Need to Improve Health Care Quality,” *Journal American Medical Association*, 280, no. 11 (September 1998): 1000.

CHAPTER ONE

ORIGIN OF CONTINUING MEDICAL EDUCATION

Academic historians of the history of medicine credit the origin of CME in the United States to Charles and William Mayo of the Mayo Clinic in Rochester, Minnesota. Historians believed the doctors' demonstration of "novel surgical techniques" to visiting surgeons in 1927 fostered the creation of a Surgeons Club whose members participated in weekly clinical reviews at the Mayo Clinic.¹³ This program provided a model for grand rounds lectures and conferences which was adopted by medical schools and specialty societies and fostered a need to create guidelines related to CME. Early development of CME was based on teachings of William Osler, Abraham Flexner and John Youman. Research on CME demonstrates that what was once called postgraduate medical education has undergone significant changes since its beginnings in the 1920s.¹⁴ Osler and Flexner are credited with changing "the face of medical education in the twentieth century."¹⁵ The 2005 essay published in the *Journal of the Royal Society of Medicine* by Tim Dornan, from the University of Manchester School of Medicine in the United Kingdom, suggested that "the wheel has come full circle—Apprenticeship, central to Osler and Flexner's educational visions, needs to be revitalized."¹⁶ Indeed the teachings

¹³ Clyde Partin, Howard I. Kushner, and Mary E. Kollmer Horton, "A Tale of Congress, Continuing Medical Education, and the History of Medicine," *Proceedings (Baylor University. Medical Center)* 27, no. 2 (2014): 156, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3954679/> (accessed April 13, 2014).

¹⁴ Phil Manning, "Continuing Medical Education 1906-1975: How the Past Influences the Present," *Almanac Alliance for CME* 27, no. 12 (December 2005) 3-5. Robert Richards, "The Growth of Continuing Medical Education," *The Yale Journal of Biology and Medicine* 51 (1978): 221.

¹⁵ Tim Dornan, "Osler, Flexner, Apprenticeship and the New Medical Education," *Journal of the Royal Society of Medicine* 98, no. 3 (2005): 91-95.

¹⁶ Dornan, "Osler, Flexner, Apprenticeship and the New Medical Education," 91

of these two individuals have endured over the last one hundred years, and medical educators continue to rely on their recommendations and methods as they experiment with new curricula related to the reform of medical education today.¹⁷

On July 4, 1900, Sir William Osler delivered an important address on postgraduate medical education for physicians at the opening of the Museum of Medical Graduates College and Polyclinic in London, England.¹⁸ His address included a discussion of the importance of physicians becoming lifelong learners. In his presentation, Osler referred to two kinds of physicians he labeled as the “routinists,” those who believe that learning occurs in medical school and basically ends there, and the “rationalists,” those who treat the needs of their patients as problems that require solving.¹⁹ The latter, says Osler, are the physicians who will benefit most from postgraduate study.²⁰ Osler’s work in medical education at Johns Hopkins University in the late 1800s focused on the physician’s ability to learn from experience. Innovative teaching methods he promoted centered on the completion of postgraduate education through a year-long internship to gain supervised training which occurred on the job. This experiential training, he believed, enabled physicians to apply what they learned from reading textbooks and attending lectures in medical school to their clinical practice. Osler recognized that if this type of learning occurred throughout the physician’s lifetime

¹⁷ Molly Cooke, David Irby, and Elizabeth O’Brien, *Educating Physicians: A Call for Reform of Medical School and Residency* (San Francisco, CA: Jossey-Bass, 2010), 13.

¹⁸ William Osler, “An Address on the Importance of Post-Graduate Study: Delivered at the Opening of the Museums of the Medical Graduates College and Polyclinic, July 4th, 1900,” *British Medical Journal* 2, no. 2063 (1900): 73-75.

¹⁹ Osler, “An Address on the Importance of Post-Graduate Study,” 73.

²⁰ Osler, “An Address on the Importance of Post-Graduate Study,” 73-74.

of professional practice it would result in a continual learning process. He understood the science of medicine was constantly changing and in order to remain current a physician must continue to update his education.²¹ Osler practiced what he preached. One of his most noted texts, *The Principles and Practices of Medicine*,²² published for the first time in 1892, was revised regularly and re-published every three years throughout his lifetime.²³ He was an exceptional role model for physician educators, but his greatest asset was his ability to interact with his students as a clinical teacher.²⁴ Osler's humanistic approach to his patients, students, and colleagues made him a unique teacher and mentor who influenced both the educators of the time and of today.

Abraham Flexner, a non-medical educator in the 1900s and another key figure whose influence has endured in medical education in America for over one hundred years, contributed greatly to the foundations of CME. In a biography on Flexner, Thomas Bonner writes about Flexner's educational vision which was strongly influenced by his own learning experiences as a child and as a student at Johns Hopkins University. Flexner expressed challenging opinions on the deficiencies in college curricula in the early 1900s. He gained a reputation for speaking his mind when offering solutions to improving American colleges and was not liked by several university presidents and deans. Many of his suggestions revolved around the fact that the colleges and

²¹ Marvin Stone, "The Wisdom of Sir William Osler," *The American Journal of Cardiology* 75, no. 4 (1995): 269-276.

²² William Osler, *The Principles and Practice of Medicine* (D. Appleton and Company, 1893).

²³ Michael Bliss, *William Osler: A Life in Medicine* (Oxford University Press, 1999), ix.

²⁴ Bliss, *William Osler: A Life in Medicine*, 223-28.

universities were “destroying contact between student and teacher.”²⁵ In 1910 the Carnegie Foundation commissioned a report on training physicians that would significantly impact the future of medical education in the United States and Canada. Flexner was selected to champion the project which resulted in *The Flexner Report*.²⁶ Its findings revealed that training the medical schools in the United States and Canada provided was both inadequate and in great need of reformation. The report discussed the need to improve medical education and create a formal process to ensure that physicians receive continual training throughout their professional career. Recommendations regarding standardization of medical school curricula and establishment of an accreditation process were included in the report.²⁷ There were 160 medical schools in the United States in the earliest decades of the 1900s; by 1940, eighty-four medical schools had closed or merged with larger universities. Flexner’s findings on the hygienic conditions of some of the schools revealed that cadaver labs and dissecting rooms were unacceptable and many of the schools slated for closure could not meet the intensified requirements for admission status or rigorous curricula standards required by state licensing boards.²⁸

The Flexner Report promoted integration of what is learned in the lab and bedside care and stressed that most learning should take place in a hospital setting instead of

²⁵ Thomas Bonner, *Iconoclast: Abraham Flexner and a Life in Learning* (JHU Press, 2002).

²⁶ Abraham Flexner, *Medical Education in the United States and Canada A Report to the Carnegie Foundation for the Advancement of Teaching* (New York: The Carnegie Foundation for the Advancement of Teaching, 1910), <http://ia700308.us.archive.org/22/items/medicaleducation00flexiala/medicaleducation00flexiala.pdf> (accessed March 30, 2012).

²⁷ Bonner, *Iconoclast: Abraham Flexner and a Life in Learning*, 77-83.

²⁸ Flexner, *Medical Education in the United States and Canada*, 12.

university classrooms.²⁹ Flexner recommended that students acquire habits of inquiry and improvement and believed they should think like scientists and learn from instructors who were scientifically trained. He connected scientific learning to treatment at the bedside and believed that if a doctor was actively investigating the best treatment option for his patient, it would require research and dependence on learning from others who were competent researchers. Flexner's belief in the importance of establishing an academic culture where students and mentors were in close contact and directly interacting supported his educational vision. The influential report was opportune because it was based on similar views of many medical educators of the time. Flexner's ability to generate essential funds to carry out the recommendations of the report added to its widespread acceptance. The report was written in a fashion that gave the public a better understanding of the condition of medical education in the early part of the twentieth century, and it was presented during a time when many political, economic and educational reforms were being implemented.³⁰ Recommendations from the report helped to organize and standardize medicine by laying the groundwork to address safety and quality issues that were related to improvement of patient outcomes.³¹ Flexner lived until 1959 and was fortunate to witness changes he promoted as they were introduced into medical school curricula.³²

²⁹ Bonner, *Iconoclast: Abraham Flexner and a Life in Learning*, 83-84.

³⁰Edward Halpern, Jay Perman, and Emery Wilson, "Abraham Flexner of Kentucky, His Report, Medical Education in the United States and Canada, and the Historical Questions Raised by the Report," *Academic Medicine* 85, no. 2 (February 2010): 203-210.

³¹ Bonner, *Iconoclast: Abraham Flexner and a Life in Learning*, 67-90.

³² William J. Clinton, and Albert Gore Jr., "Science in the National Interest," Based on the forum on "Science in the National Interest" (Washington, DC, January 31-February 1, 1994), <http://files.eric.ed.gov/fulltext/ED373994.pdf> (accessed March 9, 2014).

Modifications to medical education curricula and CME based on the teachings of Osler and Flexner became apparent in the 1930s. John Youmans, a medical educator at Vanderbilt University School of Medicine in Nashville, is credited with developing a fellowship program offered to enhance practicing physicians' clinical skills.³³ This innovative program paid participants to further their education in a specialized program, giving them practical tools to implement in their day-to-day professional practices. It was a unique CME program because it was interactive, while most CME activities offered at the time were didactic lectures where the participant's role was passive. Unlike many CME programs which did not conduct follow-up surveys to determine if participants' newly acquired knowledge was incorporated into their practice, the Vanderbilt faculty realized that they would need to measure the degree of participants' improvement to justify the cost and demonstrate educational effectiveness of their program.³⁴ Obstacles that could influence the results of the program were identified, such as the need for on-site observation of each participant and the particular characteristics related to the motivation of each individual.³⁵ These variables would make it difficult to provide information needed to support their theory. Youmans' team, however, was not discouraged and continued to promote programs that included multi-modality types of teaching and learning. CME programs offered at Vanderbilt included

³³ John B. Youmans, "Experience with a postgraduate course for practitioners: Evaluation of results," *Academic Medicine* 10, no. 3 (1935): 154, http://journals.lww.com/academicmedicine/Citation/1935/05000/Experience_with_a_Postgraduate_Course_for.5.aspx (accessed March 2, 2014).

³⁴ Youmans, "Experience with a postgraduate course for practitioners: Evaluation of results," 155.

³⁵ Youmans, "Experience with a postgraduate course for practitioners: Evaluation of results," 155-156.

patient work-ups and rounding in the hospital combined with lectures and case conferences.³⁶ Physicians interviewed upon completion of the program revealed that the training they received in the fellowship was more valuable than any didactic course they had ever experienced.³⁷ It is interesting to note that Youmans and his team in the 1930s and 1940s understood the concept of measuring the effect of their efforts. Youmans concluded that although formal lectures were important, practical experience rather than formal classroom instruction was more effective in developing improved skills in the participants.³⁸ The faculty at Vanderbilt understood the importance of connecting physicians' ability to learn from their everyday experiences and apply the newly gained knowledge to their clinical practice to deliver better care to their patients.

Growth and Development of CME

Growth of CME was slow throughout the 1930s and 1940s because the medical educators were concentrating on the difficult task of incorporating recommendations of *The Flexner Report* into medical education curricula. While completing his research, Flexner compared curricula of medical schools to the Johns Hopkins model and noticed that many schools were not able to meet the high standards, which resulted in merger or closure. Schools that remained open found it difficult to implement Flexner's

³⁶ Youmans, "Experience with a Postgraduate Course for Practitioners: Evaluation of Results," 155.

³⁷ Adrienne B. Rosof and William Campbell Felch, eds., *Continuing Medical Education: A Primer*, 2nd ed. (New York: Praeger, 1992), 10.

³⁸ Youmans, "Experience with a Postgraduate Course for Practitioners: Evaluation of Results," 161-62.

recommendations because they did not operate under a standard set of criteria.³⁹ No formal accreditation procedure for medical schools existed, and licensing procedures for physicians needed to be put in place.⁴⁰ Public awareness of *The Flexner Report* was growing because journalists were reporting on schools that did not meet Flexner's standards and rarely mentioned those that did. This created public concern and resulted in increased interest in making sure that safe medical care was available to all. As a result the Federation of State Medical Boards (FSMB) was established in 1912; its goal was to support "accreditation, certification and licensing procedures to protect the public and monitor schools of medicine."⁴¹ Educators could not focus on postgraduate education until this important process was implemented.⁴² Most CME programs were offered to practicing physicians at the medical schools housed in the large universities which made access difficult for physicians located in rural areas.⁴³

Medical educators, however, did not totally ignore the importance of physicians becoming lifelong learners. In 1932, The Association of American Medical Colleges (AAMC) supported a partnership among medical schools, medical associations and hospitals to aid in providing postgraduate programs for physicians.⁴⁴ Dr. Willard C.

³⁹ Flexner, *Medical Education: A Comparative Study* (The Macmillan Company, 1925).

⁴⁰ Cooke, Irby, and O'Brien, *Educating Physicians: A Call for Reform of Medical School and Residency*, 11.

⁴¹ Cooke, Irby, and O'Brien, *Educating Physicians: A Call for Reform of Medical School and Residency*, 13.

⁴² Richards, "The Growth of Continuing Medical Education," 221.

⁴³ R.C. Buerki, *Report of the Commission on Graduate Medical Education* (Chicago: University of Chicago Press, 1940).

⁴⁴ Phil Manning, "Continuing Medical Education 1906-1975: How the Past Influences the Present," 3-5.

Rappleye, a hospital administrator at Yale, led the Commission on Graduate Medical Education in 1940. The Commission's report, written by R.C. Buerki, stated the following:

The time is now ripe for the development of broad standards of educational content of postgraduate work, standards that will emphasize objectives and stimulate higher achievement without inhibiting widespread experimentation with means and methods. To make this postgraduate work most effective and of good educational content, it should be considered as a continuation of undergraduate and graduate medical education.⁴⁵

This document revealed that there were very few physicians engaged in postgraduate study and that there was little incentive for physicians to continue their learning. The types of CME courses being offered were mostly didactic and did not offer the more effective methods of teaching like demonstrations, conferences and firsthand experience which according to the report were "most successful forms of teaching."⁴⁶ The American Medical Association (AMA) was just beginning to conduct research in CME in the early 1940s but the advent of World War II (WW II) resulted in an interruption of that research.⁴⁷

In order to understand the growth of CME in the second half of the twentieth century it is important to recognize what happened in medical research post WW II. Prior to the war, research was conducted in university-sponsored laboratories and most of the funding came from philanthropists, special interest disease foundations and the government.⁴⁸ In fact in 1937 the National Cancer Institute was the single research

⁴⁵ Buerki, *Report of the Commission on Graduate Medical Education*, 196.

⁴⁶ Buerki, *Report of the Commission on Graduate Medical Education*, 196.

⁴⁷ Richards, "The Growth of Continuing Medical Education," 220.

⁴⁸ Edward O'Neil, "The Transformation of Academic Health in the United States," *Western Journal of Medicine* 168 (1998): 355.

institute in existence sponsored by the Public Health Service.⁴⁹ That all changed in 1945 when Vannevar Bush, director of the wartime Office of Scientific Research, published the report “Science: The Endless Frontier.”⁵⁰ This important document originated from a letter written by President Franklin D. Roosevelt asking Bush to address four major issues facing the nation at that time. In the letter Roosevelt asked Bush to address the following areas of concern:

informing the public about the contributions made to scientific knowledge during the war, continuing the research in medicine and related sciences linked to preventing disease, the role of the Government in supporting public and private research organizations and the discovery and development of scientific talent in American youth.⁵¹

Bush collaborated with many renowned scientists and scholars to outline a specific role for the government with recommendations on development and sustainability of the project. A brief review demonstrated the importance placed on the education of Americans from early elementary settings through the college and postgraduate environment. The importance of establishing a “National Research Foundation to serve as a focal point of support and encouragement of basic research and education in the sciences” was stressed.⁵² Establishment of The National Science Foundation (NSF) in 1950 was a major result of the report.⁵³ In the report’s summary,

⁴⁹ O’Neil, “The Transformation of Academic Health in the United States,” 356.

⁵⁰ Vannevar Bush, (1945) *Science, the Endless Frontier: A Report to the President*, (Washington, D.C.: National Science Foundation, 1960), 5-6.

⁵¹ Bush, *Science, the Endless Frontier*, 5-6.

⁵² Bush, *Science, the Endless Frontier*, 5-6.

⁵³ Stephen Cole, Leonard Rubin, and Jonathan R. Cole, *Peer Review in the National Science Foundation: Phase One of a Study: Prepared for the Committee on Science and Public Policy of the National Academy of Sciences*. Vol. 2788 (National Academies, 1978), 1.

Bush states “the government should accept responsibility for promoting the flow of new scientific knowledge and the development of scientific talent in our youth.”⁵⁴

Government’s acknowledgment of “Science: The Endless Frontier” led to the addition of three research institutes per year from “1945 until 1980.”⁵⁵ Funding for these organizations was provided by the government in the form of operational expenses and grant support. Financial support increased from “approximately five hundred thousand dollars in 1938 to eleven billion dollars in 1995.”⁵⁶

Efforts of Bush and the scientists who contributed to this historic document continue to serve as a strong foundation of support for education and research in the United States today. In 1960 “Science: The Endless Frontier” was reprinted by the NSF.⁵⁷ A short foreword written by Vannevar Bush commended the NSF for reinforcing its importance.⁵⁸ In the introduction, Alan T. Waterman, director of the NSF, reviewed the accomplishments made in the ten years since the report was introduced.⁵⁹ In 1993 the report was again referenced by President Bill Clinton and Vice President Al Gore during the January 31 and February 1 forum on “Science in the National Interest” in Washington, D.C. The Clinton administration noted the advances made in “engineering,

⁵⁴ Bush, *Science, the Endless Frontier*, 8.

⁵⁵ Bush, *Science, the Endless Frontier*, 8; O’Neil, “The Transformation of Academic Health in the United States,” 355.

⁵⁶ Jennifer Ruzek, Renee Williard, Edward H. O’Neil, and Rebecca Webster Rimel, *Trends in US Funding for Biomedical Research* (San Francisco, University of California Center for the Health Professions, 1996), 25-27.

⁵⁷ Bush, *Science, the Endless Frontier*.

⁵⁸ Bush, *Science, the Endless Frontier*, vii.

⁵⁹ Bush, *Science, the Endless Frontier*, vii.

technology and medicine” to support their agenda focused on “Goals 2000: Educate America.”⁶⁰ They stressed:

Our commitment cannot end with high school. The school to work transition and life-long learning opportunities are increasingly important in the work place because of rapidly evolving technology... The lifelong responsibilities of citizenship increasingly rely on scientific and technological literacy for informed choices. Our scientific community must contribute more strongly to broad public understanding and appreciation of science. Our education system must provide the necessary intellectual tools at twenty first century standards.⁶¹

The influence of this important chronicle is evident in the numerous references to the report in past and current literature exploring the advances of research and medicine.⁶²

CME Post World War II

Interest in CME resurfaced when returning veterans were offered opportunities through the “Servicemen’s Readjustment Act of 1944.”⁶³ Government funding offered veterans higher education, which resulted in an increase in the number of health professionals. The AMA recognized the need to ensure that practicing physicians were updated with the most current medical knowledge and informed about new drugs and medical devices. This effort would help to ensure that the health care being delivered to the public was not only safe but met the standards of quality health care.⁶⁴ Beginning in 1947 several studies funded through grants from the Kellogg Foundation were sponsored

⁶⁰ Clinton and Gore, “Science in the National Interest.”

⁶¹ Clinton and Gore, “Science in the National Interest.”

⁶² Clinton and Gore, “Science in the National Interest.”

⁶³ O’Neil, “The Transformation of Academic Health in the United States,” 356.

⁶⁴ Manning, “Continuing Medical Education 1906-1975,” 3-5.

by the AMA and AAMC. In general, goals outlined for these studies included determining the best venues for CME, recommending the types of programs that should be offered, and defining the role of medical schools in providing the education for practicing physicians.⁶⁵ In a study of eighteen medical schools conducted in 1952 by Dr. William Norwood, researchers concluded that CME programs were considered a burden because the administration and faculty's focus was on medical student education and research rather than on CME.⁶⁶ In the 1955 Vollan Report, researchers conducted a national study on postgraduate medical education and surveyed approximately five thousand practicing physicians regarding their exposure to CME.⁶⁷ The researchers were shocked to learn that "almost one-third of the physicians in the survey reported no formal postgraduate education within the previous five years."⁶⁸

The AMA studies led to creative thinking on the part of the hospitals and medical schools interested in providing CME. Television, two-way radio networks and audio recording of abstracts of medical literature were examples of the technology available in the early 1950s.⁶⁹ Jerome Harris, Ph.D., director of Medical Communications, Medical Department for Schering Laboratories, provided a brief history of the use of television in

⁶⁵ Richards, "The Growth of Continuing Medical Education," 220-22.

⁶⁶ Richards, "The Growth of Continuing Medical Education" 220.

⁶⁷ Council on Medical Education and Hospitals (American Medical Association), and Douglas Dee Vollan, *Postgraduate Medical Education in the United States: A Report of the Survey of Postgraduate Medical Education Carried Out by the Council on Medical Education and Hospitals... 1952-1955* (American Medical Association, 1955).

⁶⁸ Dennis K. Wentz, "Forty Years for the AMA PRA: 1968 – 2008: Origins and Early Years," *CPPD Report 25* (Spring 2008b): 1-3, <http://www.amaassn.org/resources/doc/cme/cppd25.pdf> (accessed March 30, 2012).

⁶⁹ Glen R. Shepherd, "History of Continuation Medical Education in the United States Since 1930," *Academic Medicine* 35, no. 8 (1960): 750.

the 1950s and 1960s and concluded that the “use of television with definitive plans for post graduate programs of a comprehensive nature may be the only hope of the physician who wants to keep up with the advances in his profession.”⁷⁰ Dr. Frank Woolsey, associate dean and director of postgraduate medical education at Albany Medical College, developed a radio network that reached “twenty-one hospitals throughout eastern New York and western Massachusetts.”⁷¹ Physicians remotely attending the conferences were able to communicate directly with the program directors to submit questions related to the “subject for presentation.”⁷² The facilitators addressed the problem of lack of visual aids by sending “charts, graphs, and outlines mimeographed in advance to the local moderators.”⁷³ This program was made possible by “the voluntary assistance of more than seventy amateur radio operators who donated their time and skills and operated transmitters.”⁷⁴ According to Dr. Woolsey this method was affordable because participating hospitals could share in the cost of the equipment and setup. Over “twelve hundred physicians” joined the conferences in the two-year study, and in the summary of the conference evaluations Dr. Woolsey noted: “The combined Good and Excellent percentage is ninety-five percent in the first year and ninety-six percent in the

⁷⁰ Jerome Harris, “Television as an Educational Medium in Medicine: An Historical Purview,” *Academic Medicine* 41, no. 1 (1966): 17, http://journals.lww.com/academicmedicine/Abstract/1966/01000/Television_as_an_educational_medium_in_medicine_.1.aspx (accessed February 24, 2014).

⁷¹ Frank M Woolsey Jr., “Two Years of Experience with Two-Way Radio Conferences for Postgraduate Medical Education,” *Academic Medicine* 33, no. 6 (1958): 474, http://journals.lww.com/academicmedicine/Citation/1958/06000/Two_Years_of_Experience_with_Two_Way_Radio.2.aspx (accessed February 25, 2014).

⁷² Woolsey, “Two Years of Experience with Two-Way Radio,” 475.

⁷³ Woolsey, “Two Years of Experience with Two-Way Radio,” 477.

⁷⁴ Woolsey, “Two Years of Experience with Two-Way Radio,” 474.

second year.”⁷⁵ Use of the innovative techniques prompted further studies as evidenced in the proposal for a National Academy of Continuing Medical Education submitted to the AAMC by Dr. Ward Darley and Dr. Arthur Caine. In their proposal Darley and Cain recognized that creation of wide-ranging educational programs that address the fact that medical knowledge is continually being updated was essential to closing the “gap between accumulating knowledge and the practitioner’s ability to use it.”⁷⁶ They added that the programs must be offered in an “effective, convenient transmission or delivery to accommodate physicians’ busy schedules and should be presented in a fair and unbiased manner.”⁷⁷

In his extensive study of CME history from the 1930s through the 1960s Glen Shepherd, from the AMA in Chicago, summarized the findings of medical schools, medical societies and the Council on Medical Education and Hospitals. These groups were involved in conducting studies to learn more about how to improve physicians’ clinical practice, identify the health care needs of the public and develop the educational design and funding of the CME programs.⁷⁸ According to Shepherd “the goal of education beyond medical school (in the early 1930s) was to correct deficiencies of graduates, thus making them safer medical practitioners.”⁷⁹ The participants in the

⁷⁵ Woolsey, “Two Years of Experience with Two-Way Radio,” 478.

⁷⁶ Ward Darley and Arthur S. Cain, “A Proposal for a National Academy of Continuing Medical Education,” *Academic Medicine* 36, no. 1 (1961): 33-37, http://journals.lww.com/academicmedicine/Citation/1961/01000/A_Proposal_for_a_National_Academy_of_Continuing.3.aspx.

⁷⁷ Darley and Cain, “A Proposal for a National Academy of Continuing Medical Education,” 35.

⁷⁸ Shepherd, “History of Continuation Medical Education in the United States Since 1930,” 740-55.

⁷⁹ Shepherd, “History of Continuation Medical Education in the United States Since 1930,” 740.

studies during this time were strong proponents of lifelong learning for physicians and believed that the advancement of medical education depended on a unified effort of the organizations and members of the medical profession to support this ongoing effort. Shepherd stated in the epilog of his report: “the focus in the future will be on truly high-quality continuing education in which basically well-educated physicians will be attracted to participate as regularly and as matter-of-factly as they now trade in their automobiles.”⁸⁰

“The 1955 Vollan Report led to the formation of a national advisory council that included the AMA, the AAMC, the American Association for Geriatric Psychiatry (AAGP), the Federation of State Medical Boards (FSMB), the American Cancer Society (ACS) and the American College of Physicians (ACP).”⁸¹ These organizations recognized key factors to include “finances, methodology, evaluation, accreditation and licensure” that would impact the success of implementing a process to ensure that practicing physicians were able to continue their postgraduate medical education.⁸² They recommended that states establish systems with adequate staffing to control and regulate the process of postgraduate medical education, and in 1957 the AMA introduced guidelines to assist states in achieving that goal.⁸³ The guidelines included recommendations on “teaching methods, content material, evaluation processes, funding resources and accreditation processes.”⁸⁴ Many states adopted the guidelines and

⁸⁰ Shepherd, “History of Continuation Medical Education in the United States Since 1930,” 757.

⁸¹ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

⁸² Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

⁸³ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

⁸⁴ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

mandated the completion of postgraduate medical education credits for licensure and re-licensure. “In 1959 the AMA-HOD changed the term postgraduate medical education to continuing medical education.”⁸⁵ The first medical academy to make CME a requirement for membership was the American Academy of General Practice, which is currently known as the American Academy of Family Physicians.⁸⁶ This requirement was significant because it promoted recognition of the importance of ensuring that physicians were keeping current with the latest medical information.

In the early 1960s, standing committees within the AMA began to work on a proposal to create a formal structure to accredit the providers of CME programs and by 1967, the United States had a national program that outlined the process of providing an accredited CME program.⁸⁷ In 1968 the AMA established the Physician’s Recognition Award (AMA PRA) and credit system.⁸⁸ This system provided a process so that physicians could receive continuing education credit for educational programs that met the definition of CME.⁸⁹ A definition of CME provided by the award system states:

CME consists of educational activities which serve to maintain, develop, or increase the knowledge, skills and professional performance and relationships that a physician uses to provide services for patients, the public or the profession. The content of CME is the body of knowledge and skills generally recognized and accepted by the profession as within the basic medical sciences, the discipline of

⁸⁵ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

⁸⁶ Richards, “The Growth of Continuing Medical Education,” 220.

⁸⁷ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2-3.

⁸⁸ American Medical Association, *The Physician’s Recognition Award and Credit System: Information for Accredited Providers and Physicians*.

⁸⁹ Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 2.

clinical medicine and the provision of health care to the public. (HOD policy # 300.988)⁹⁰

Information on appropriate educational content for CME activities was included in the system booklet, and those activities that did not meet the requirements for CME were identified.⁹¹ Categories for CME were characterized, and specific requirements for each category were defined. In 1970 criteria that provided the essential elements of a CME program were adopted and an accreditation process for CME programs was on its way to becoming a reality. The system became more defined in 1977 when the AMA discontinued its primary role in the accreditation program.⁹² In 1981, five organizations with interest in CME to include “the American Medical Association (AMA), American Board of Medical Specialties (ABMS), Council of Medical Specialty Societies (CMSS), American Hospital Association (AHA) and the Federation of State Medical Boards (FSMB)”⁹³ established the Accreditation Council for Continuing Medical Education (ACCME), which is the accrediting body for CME providers in the United States today.

An overview of CME in the 1960s through the 1980s provided by Patrick O’Reilly, et al., describes circumstances that led to major changes in CME. A total of “twenty-four new medical schools were opened between 1950 and 1970,” resulting in an increase of physicians in the workforce.⁹⁴ This increase created a need for more CME

⁹⁰ American Medical Association, *The Physician’s Recognition Award and Credit System: Information for Accredited Providers and Physicians*.

⁹¹ American Medical Association, *The Physician’s Recognition Award and Credit System: Information for Accredited Providers and Physicians*.

⁹² Wentz, “Forty Years for the AMA PRA: 1968–2008: Origins and Early Years,” 3.

⁹³ American Medical Association, *The Physician’s Recognition Award and Credit System: Information for Accredited Providers and Physicians*.

⁹⁴ Patrick O’Reilly, Charles P. Tifft, and Charlene DeLena, “Continuing medical education: 1960s to the present,” *Academic Medicine* 57, no. 11 (1982): 820, <http://journals.lww.com/academicmedicine/>

programs, and in 1962 the number of “CME programs approved by the AMA totaled 1,146; the number grew to 4,862 by 1975.”⁹⁵ According to O’Reilly, CME proponents developed an interest in assessing the effectiveness of CME at this time and three major proposals including the “establishment of a national plan for CME, utilization of medical audits to develop a process-oriented program model, and CME re-licensure/recertification were introduced.”⁹⁶ Studies conducted by the AMA in the mid-1960s focused on identifying the educational needs of physicians through analysis of real situations. Process-oriented models related to auditing were examined for their use in the development of CME programs.⁹⁷ Paul J. Sanazaro, from the University of California, San Francisco, helped to define the role of medical audits and CME in relationship to quality assurance. Sanzaro states: “The single most important step (in an audit) is the selection of essential or scientific criteria that relate process to outcomes.”⁹⁸ According to Sanzaro, quality assurance could provide greater assurance that every patient received the best possible treatment with reduced the risks of complications. Sanzaro believed that if medical staffs and boards committed to a systematic program of quality assurance that utilization of the “medical audit and CME could effectively improve care by improving physician performance.”⁹⁹

Abstract/1982/11000/Continuing_medical_education__1960s_to_the_present.1.aspx (accessed March 16, 2014).

⁹⁵ O’Reilly, Tiff, and DeLena, “Continuing Medical Education: 1960s to the Present,” 820.

⁹⁶ O’Reilly, Tiff, and DeLena, “Continuing Medical Education: 1960s to the Present,” 820.

⁹⁷ O’Reilly, Tiff, and DeLena, “Continuing Medical Education: 1960s to the Present,” 819-22.

⁹⁸ Paul J. Sanazaro, “Medical Audit, Continuing Medical Education and Quality Assurance,” *Western Journal of Medicine* 125, no. 3 (1976): 241. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1237295/> (accessed March 2, 2014).

⁹⁹ Sanazaro, “Medical Audit, Continuing Medical Education and Quality Assurance,” 241.

Charles Lewis, a physician from the UCLA School of Medicine in California, provided a review of the past, present, and future of CME to span 1960 to 1998 through a literature review. According to Lewis, the study revealed that early articles from the 1960s focused on four categories including “content, design, recertification and effectiveness of CME.”¹⁰⁰ CME stakeholders were realizing the importance of moving away from the traditional venues of didactic offerings and moving toward educational experiences that could impact physicians’ clinical behaviors. This was also a time when researchers were beginning to question whether CME programs had the potential to improve patient outcomes.¹⁰¹ CME proponents were asking if the participants’ time attending CME programs was well spent.¹⁰² It became evident that proof of a link between CME and the impact on patient outcomes and a physician’s investment of time was needed; this hypothesis would “require a great deal of energy and resources.”¹⁰³ On a positive note, Lewis pointed out CME researchers were beginning to realize that a strong needs assessment and well-planned educational design customized to different types of individual adult learning styles were important variables in the development of CME programs.¹⁰⁴ Lewis believed that in order for CME to be effective, it must include

¹⁰⁰ Charles Lewis, “Continuing Medical Education: Past, Present, Future,” *Western Journal of Medicine* 168, no. 5 (1998): 334.

¹⁰¹ David A Davis, Mary Ann Thomson, Andrew D. Oxman, and R. Brian Haynes, “Evidence for the Effectiveness of CME: A Review of 50 Randomized Controlled Trials,” *JAMA* 268, no. 9 (1992): 1111-17.

¹⁰² C. Everett Koop, “Why CME?,” *Journal of Continuing Education in the Health Professions* 10, no. 2 (1990): 103-109.

¹⁰³ Lewis, “Continuing Medical Education: Past, Present, Future,” 336.

¹⁰⁴ Lewis, “Continuing Medical Education: Past, Present, Future,” 336.

“a motivated learner... a competent teacher and/or intervention... and the elimination of structural barriers.”¹⁰⁵ In the discussion of the future for CME, Lewis described a study he conducted at UCLA¹⁰⁶ that focused on comparing three types of educational designs: “a control group whose participants received no training, a second group who received only written materials and the third group who experienced formal lectures and participated in small group discussion.”¹⁰⁷ The results indicated improved performance by the third experimental group. This study was repeated eleven times and produced the same results in each study.¹⁰⁸ One of the important lessons learned from the study was that in order for CME to be effective there must be “acceptance by senior management physicians” and a focus on utilizing all methods of teaching.¹⁰⁹ In summary, Lewis stated that CME is “a lifetime of learning.”¹¹⁰ Based on the research he completed at UCLA, Lewis believed that a learning environment, whether it is in medical school or in a postgraduate setting, should be non-threatening and should address the participants’ styles of learning. He recognized that traditional CME will continue to exist in the twenty-first century but believed that it should be supplemented with a more modern approach that includes the principles of total quality management (TQM) or continuous improvement (CI).¹¹¹ Lewis believed implementation of TQM and CI in CME could be

¹⁰⁵ Lewis, “Continuing Medical Education: Past, Present, Future,” 336.

¹⁰⁶ Charles Lewis, *The UCLA AIDS Education and Training Center Trigger Tapes*, Center for Health Promotion and Disease Detection: videotapes, 1989.

¹⁰⁷ Lewis, *The UCLA AIDS Education and Training Center Trigger Tapes*.

¹⁰⁸ Lewis, “Continuing Medical Education: Past, Present, Future,” 337.

¹⁰⁹ Lewis, “Continuing Medical Education: Past, Present, Future”, 337.

¹¹⁰ Lewis, “Continuing Medical Education: Past, Present, Future,” 340.

¹¹¹ Lewis, “Continuing Medical Education: Past, Present, Future,” 339.

accomplished by utilizing the methods of a Plan-Do-Check-Act (PDCA), and incorporation of TQM/CI “may represent the new CME.”¹¹²

In 1995 T. M. Hayes, professor at the University of Wales College of Medicine in Great Britain, discussed in his personal commentary on the effectiveness of CME that the CME requirements had become too structured and stringent.¹¹³ Hayes maintained that the research on CME had yet to provide strong evidence of its effectiveness. He strongly supported the use of audits and peer review to enable physicians to identify their own individual learning needs and determine the best educational methods to accommodate their learning styles. Once learning needs were identified, the physician could choose from a “menu of educational opportunities that would allow the individual or the team to take up the options that fit their learning styles.”¹¹⁴ Hayes supported the idea that a connection between the audit and peer review would help establish CME programs that address the needs of the physicians and could lead to the type of research that could produce evidence of a more effective learning outcome.¹¹⁵

CME researchers in the early 2000s recognized the need for major changes in CME development, and a major shift to linking quality improvement to CME emerged. They began to study the lessons learned from industry to determine how the method could be utilized in CME. Walter Shewhart, Ph.D., is credited with the formulation of

¹¹² Lewis, “Continuing Medical Education: Past, Present, Future,” 339.

¹¹³ T. M. Hayes, “Continuing Medical Education: A Personal View,” *BMJ: British Medical Journal* 310, no. 6985 (1995): 994.

¹¹⁴ Hayes, “Continuing Medical Education: A Personal View,” 995.

¹¹⁵ Hayes, “Continuing Medical Education: A Personal View,” 994-96.

the PDCA method but two of his colleagues, W. Edward Deming and Joseph Juran, championed his method.¹¹⁶ These forward-thinking scholars are “considered to be the three founders of the quality improvement model.”¹¹⁷ Larry Staker, the Chief Medical Officer of Deseret Mutual Benefits Administration, a private non-profit trust of the Church of Jesus Christ of Latter-day Saints, discussed how the PDCA method could be used to improve CME programs.¹¹⁸ Staker proposed introduction of the basic tools of a PDCA method to include “effective data collection, checking for errors or defects, analyzing baseline data, proposing hypothesis, repeating trials and presenting outcomes.”¹¹⁹ He believed that if an introduction of one or two of these tools was included “in every CME program, the world of outcomes measurement and accountability would begin to change and Performance Improvement would become a way of life.”¹²⁰ A review of the literature indicates that PDCA and related Sixth Sigma training has been used in health care in the past, and further studies of its effectiveness are needed.¹²¹ According to Taylor, who studied application of the PDCA method in

¹¹⁶ M. Best, and D. Neuhauser. “Walter A Shewhart, 1924, and the Hawthorne Factory,” *Quality and Safety in Health Care* 15, no. 2 (2006): 142-43, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464836/> (accessed April 6, 2014).

¹¹⁷ Best and Neuhauser, “Walter A Shewhart, 1924, and the Hawthorne Factory.”

¹¹⁸ Larry V Staker, “Teaching Performance Improvement: An Opportunity for Continuing Medical Education,” *Journal of Continuing Education in the Health Professions* 23, no. S1 (2003): S34. <http://www.physiciansinstitute.org/wp-content/uploads/2012/10/teachingpistaker.pdf> (accessed April 6, 2014).

¹¹⁹ Staker, “Teaching Performance Improvement: An Opportunity for Continuing Medical Education,” S36.

¹²⁰ Staker, “Teaching Performance Improvement: An Opportunity for Continuing Medical Education,” S37.

¹²¹ Edward D. Craven, John Clark, Mary Cramer, M. D. Corwin, J. Steven, M. D. Cooper, and Mary Reich, “New York-Presbyterian Hospital Uses Six Sigma to Build a Culture of Quality and Innovation,” *Journal of Organizational Excellence* 25, no. 4 (2006): 11-19, http://sixsigma.nl/pdf/six_sigma_nyph.pdf (accessed June 28, 2015); Michael J. Taylor, Chris McNicholas,

health care, the terms Plan-Do-Study-Act (PDSA) and PDCA can be used interchangeably.¹²² Taylor compared use of the PDCA method with the scientific experimental method in that the PDCA cycle is used to “assess the impact of an intervention on the process or outcome” being studied.¹²³ He stated that learning occurs as participants test their hypothesis and emphasized that even when methods reveal early on that an intervention may be ineffective or not useful, it can result in the development of an entirely different approach to the project.¹²⁴ The act of experimentation holds value for the learner even when results show suggested solutions are not always the best choice.

Varkey, from the College of Medicine at the Mayo Clinic, offers a very basic portrayal of the PDCA cycle and Six Sigma method.¹²⁵ PDCA is described as a cycle where four repetitive steps are utilized: the plan to present possible solutions to improve a process, the implementation of the process, the check or study of the process and the action where a decision on the effectiveness of the process is made.¹²⁶ Mikel J. Harry,

Chris Nicolay, Ara Darzi, Derek Bell, and Julie E. Reed, "Systematic Review of the Application of the Plan–Do–Study–Act Method to Improve Quality in Healthcare," *BMJ Quality & Safety* (2013): bmjqs-2013, http://qualitysafety.bmj.com/content/early/2013/09/11/bmjqs-2013-001862.long?utm_campaign=tw&utm_source=hs_email&utm_medium=email&utm_content=10586856&_hsenc=p2ANqtz--SSfSR0nZJThoHLL19yKxsReAfnO9jgdF-KrIZJptp3px1O2ThovJFgaZBLJv2waqgMuHTuGS0iteBCXD2yKbwJzzwPQ&_hsmi=10586856 (accessed June 28, 2015).

¹²² Taylor et al., “Systematic Review of the Application of the Plan–Do–Study–Act Method to Improve Quality in Healthcare,” 291.

¹²³ Taylor et al., “Systematic Review of the Application of the Plan–Do–Study–Act Method to Improve Quality in Healthcare,” 291.

¹²⁴ Taylor et al., “Systematic Review of the Application of the Plan–Do–Study–Act Method to Improve Quality in Healthcare,” 296.

¹²⁵ Prathibha Varkey, M. Katherine Reller, and Roger K. Resar, “Basics of Quality Improvement in Health Care,” In *Mayo Clinic Proceedings*, vol. 82, no. 6 (Elsevier, 2007), 735-739, [http://www.mayoclinicproceedings.org/article/S0025-6196\(11\)61194-4/pdf](http://www.mayoclinicproceedings.org/article/S0025-6196(11)61194-4/pdf) (accessed June 28, 2015).

¹²⁶ Varkey, “Basics of Quality Improvement in Health Care,” 736.

the innovator of Six Sigma, states “Six Sigma Statistic measures the capability of the process to perform defect-free work.”¹²⁷ Its steps include defining the project charter, measuring for possible defects in the project, analyzing to look for deviations from the norm, improving to suggest solutions and finally controlling by creating policies and procedures that guide improvement to the project.¹²⁸

ACCME based the 2006 Accreditation Criteria on Shewhart and Deming’s “PDCA model for continuing improvement.”¹²⁹ Criterion number one requires that CME providers develop a CME mission to describe the plan for the organization’s overall CME program. It states: “The provider has a CME mission statement, approved by the governing body that includes expected results articulated in terms of changes in competence, performance or patient outcomes that will be the result of the program.”¹³⁰ The mission serves as a guide for all educational programs and aids the CME committee in reviewing CME applications. ACCME recommends that accredited providers continually refer back to their mission when completing their re-accreditation self-study and annual reports to track the effectiveness of their programs. Criterion number eleven requires the provider to study the changes that have come about based on information presented in the educational activities. It states: “The provider analyzes changes in

¹²⁷ Mikel J. Harry, “Six Sigma: A Breakthrough Strategy for Profitability,” *Quality Progress* 31, no. 5 (1998): 60, <http://crawl.prod.proquest.com.s3.amazonaws.com/fpcache/12b866a8d582c8ab5faff897bd7c414d.pdf?AWSAccessKeyId=AKIAJF7V7KNV2KKY2NUQ&Expires=1435525538&Signature=rtyGfz2ebejP54bBHijLTjlniKo%3D> (accessed June 28, 2015).

¹²⁸ Varkey, “Basics of Quality Improvement in Health Care,” 737.

¹²⁹ ACCME.org, Under CME Providers, <http://www.accme.org/ask-accme/can-you-explain-accme-2006-accreditation-criteria-they-relate-providers-process-continuous> (accessed July 12, 2015).

¹³⁰ ACCME.org, Under Accreditation Requirements, <http://accme.org/requirements/accreditation-requirements-cme-providers/accreditation-criteria> (accessed October 31, 2014).

learners (competence, performance or patient outcomes) achieved as a result of the overall program's activities/educational interventions."¹³¹ Criterion number twelve evaluates whether the overall educational program complies with the mission. It states: "The provider gathers data or information and conducts a program-based analysis on the degree to which the CME mission of the provider has been met through the conduct of CME activities/educational interventions."¹³² Study of the program allows for identification of the strengths and weakness, and in criterion number thirteen the provider determines how to improve areas of concern. It states: "The provider identifies, plans and implements the needed or desired changes in the overall program(e.g., planners, teachers, infrastructure, methods, resources, facilities, interventions) that are required to improve on ability to meet the CME mission."¹³³ The committee acts by incorporating new methods or changes to improve the overall program and reports the findings to ACCME in the re-accreditation self-study document.

In the late 1980s the Robert Wood Johnson Foundation sponsored studies that resulted in the Dartmouth Atlas of Health Care.¹³⁴ This led to the formation of several organizations focused on quality improvement in health care, including "The Agency for Healthcare Research and Quality, sponsored by the government, a private nonprofit organization, the Institute for Healthcare Improvement, and two private regulatory

¹³¹ ACCME.org, Under Accreditation Requirements.

¹³² ACCME.org, Under Accreditation Requirements.

¹³³ ACCME.org, Under Accreditation Requirements.

¹³⁴John E Wennberg, Elliott S. Fisher, David C. Goodman, and Jonathan S. Skinner, "Tracking the Care of Patients with Severe Chronic Illness-The Dartmouth Atlas of Health Care 2008," (2008): 1-174, http://health-equity.pitt.edu/981/1/2008_Chronic_Care_Atlas.pdf (accessed April 9, 2014).

agencies the Joint Commission on the Accreditation of Healthcare Organizations and the National Committee for Quality Assurance.”¹³⁵ Two major publications by the Institute of Medicine: *To Err is Human* and *Crossing the Quality Chasm*, revealed that the reason for the decline in health care quality was due to numerous errors in the administration of medications.¹³⁶ These two articles raised public awareness of the need to promote quality and safety in the administration of health care.

Tracking Physician Requirements for CME

In the 1980s CME underwent a refining process when physicians complained about the excessively complicated process to maintain records for their CME credit through the AMA PRA credit system. In an attempt to simplify the process the AMA Council of Medical Education reduced the number of CME reporting categories from eleven to two. The two categories were broadly defined as Category 1 and Category 2.¹³⁷ Category 1 CME activities included formal lectures and conferences held at the hospitals and medical schools. Examples of category 2 activities are: reading “medical journals, teaching residents, unstructured online searching and learning, consultation with peers and medical experts, small group discussions, self-assessment activities, medical writing, research and peer review.”¹³⁸ These two categories differed in that Category 1 credit

¹³⁵ Staker, “Teaching Performance Improvement: An Opportunity for Continuing Medical Education,” S35.

¹³⁶ Staker, “Teaching Performance Improvement: An Opportunity for Continuing Medical Education,” S35.

¹³⁷ Dennis Wentz, “Forty Years for the AMA PRA,” 1-3.

¹³⁸ American Medical Association, *The Physician’s Recognition Award and Credit System*, 10.

required approval through a formal process of committee review. The committee's role was to determine if the educational content met the definition of CME and ensure that the speakers and faculty planning the CME program adhered to the essential criteria established by the ACCME. CME-accredited providers were responsible for maintaining documentation of physician attendance for Category 1 credit. Category 2 CME credit was similar to category 1 CME credit in that it must meet the definition of CME. It was different from Category 1 credit because it included different types of self-driven learning activities. Category 2 credit did not require formal verification and was self-documented by the physician.¹³⁹

When these two categories were introduced, the tendency of most physicians was to complete only Category 1 credit, as Category 2 credit was considered to be somewhat inferior. Many physicians were not willing to assume the responsibility of self-documentation. There was an effort by the AMA Council on Medical Education to elucidate the value of Category 2 credit because they supported the independent types of learning and the value of reading "authoritative medical literature."¹⁴⁰ Most physicians, however, reported only Category 1 credit when documenting their completion of CME requirements for licensure.¹⁴¹

¹³⁹American Medical Association, *The Physician's Recognition Award and Credit System*.

¹⁴⁰Wentz, "Forty Years for the AMA PRA," 1.

¹⁴¹Wentz, "Forty Years for the AMA PRA," 3.

Medical Research and Funding of CME

A discussion of the relationship of medical research and the funding of CME in the past and present will provide insight as to how a large percentage of CME is financed. The rapid growth in medical research and technology that occurred post WW II made it very difficult if not impossible for physicians to keep up with the latest information related to health care.¹⁴² The need to ensure that physicians were up to date regarding new medical information was recognized by two major medical research stakeholders: the growing pharmaceutical industry and the government. From the 1950s through the 1980s, the government funded research projects that supported medical developments in the pharmaceutical and technology industries.¹⁴³ Educational programs to teach physicians how to implement the programs were needed.

Many of the pharmaceutical companies started to provide funding for CME through what was loosely defined as educational grants in the 1960s and 1970s. During this time there was little oversight regarding how the funding given to the CME-accredited provider sponsoring the event was spent.¹⁴⁴ In some instances the program's venue seemed to take precedence over the educational activity. Industry's financial support of CME continued to grow; when it became apparent that the amount of funding was becoming significant, the government and the CME community recognized a need to

¹⁴² Richards, "The Growth of Continuing Medical Education," 220-22.

¹⁴³ Richards, "The Growth of Continuing Medical Education," 220-22.

¹⁴⁴ Michael Steinman and S. Landefeld, R. Baron, "Industry Support of CME- Are We at the Tipping Point?" *The New England Journal of Medicine* 366:12 (March 2012) 1069.; R. Van Harrison, "The Uncertain Future of Continuing Medical Education: Commercialism and Shifts in Funding," *Journal of Continuing Education in the Health Professions* 23, no. 4 (2003): 198-209, <http://deepblue.lib.umich.edu/bitstream/handle/2027.42/35025/1340230503 ftp.pdf?sequence=1> (accessed August 28, 2014).

address any possible conflicts of interest.¹⁴⁵ This resulted in the AMA exploring the relationship of CME to the pharmaceutical and medical device companies regarding what could be considered gifts to physicians from industry.¹⁴⁶ The government and CME community, including stakeholders and accredited providers, needed to determine possible implications of the physicians' role in promoting industry's products. To ensure that physicians were providing appropriate medical care based on the needs of the patient rather than the recommendations of the industry representatives, the ACCME began to impose more restrictions on industry support. These restrictions required "identifying, disclosing and resolving conflicts of interest."¹⁴⁷

Regulation of the financial relationship between the pharmaceutical industry and CME in the latter half of the twentieth century was not easy because accredited CME providers had become financially dependent on the support from pharmacy.¹⁴⁸ From the 1960s through the 1980s program planners of the CME activities seemed to have a free rein regarding their budgets, for the educational activities and physicians thought nothing of participating in an industry-sponsored junket to complete their CME requirements.¹⁴⁹ An interesting study conducted by Dr. Ashley Wazana from McGill University in Canada

¹⁴⁵ Van Harrison, "The Uncertain Future of Continuing Medical Education," 198-199.

¹⁴⁶T. M. Hayes, L. A. Allery, K. G. Harding, and P. A. Owen, "Continuing Education for General Practice and the Role of the Pharmaceutical Industry," *British Journal of General Practice* 40, no. 341 (1990): 510-512, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1371450/pdf/brjgenprac00073-0030.pdf> (accessed March 30, 2014).

¹⁴⁷ Steinman, "Industry Support of CME-Are we at the Tipping Point?"

¹⁴⁸ R. Van Harrison, N. Bennet, S. Duncan, D.W. Holmes, J.R. Kues, and P.E. Mazmanian, *SAMCE Survey for 2002-Descriptive Results* (Birmingham, AL: Society for Academic Medical Education, 2002).

¹⁴⁹ Steinman, "Industry Support of CME-Are we at the Tipping Point?," 1069.

researched how physicians view relationships between doctors and the pharmaceutical industry related to these relationships’ “impact on the knowledge, attitudes and behavior of physicians.”¹⁵⁰ The study included a review of articles from 1994 through 2000 and involved surveying medical students, residents and physicians regarding pharmaceutical interaction in CME, industry-sponsored meals, samples, gifts, conference travel and research funding. The summary of this survey revealed more negative than positive outcomes. The researchers stated that participants’ knowledge was impacted because they were not able to “identify wrong claims about medication”;¹⁵¹ their attitudes were influenced in the “preference and rapid prescription of new drugs”¹⁵² and their behaviors were affected in their decision making of “formulary requests for medications that rarely held important advantages over existing drugs... and prescribing fewer generic but more expensive, newer medications at no demonstrated advantage.”¹⁵³ Their conclusions stressed the need for “systematic interventions and a need for policy and education.”¹⁵⁴ In 2001, Marcia Angell revealed in her book *The Truth about Drug Companies* that “approximately sixty percent of the cost of CME programs was provided by the pharmaceutical industry.”¹⁵⁵ This trend continued until 2007 when “industry support

¹⁵⁰ Ashley Wazana, “Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?,” *JAMA* 283, no. 3 (2000): 373-380, <http://actoolkit.unprme.org/wpcontent/resourcepdf/Physicians%20and%20the%20pharmaceutical%20industry-%20is%20a%20gift%20ever%20just%20a%20gift.pdf> (accessed April 5, 2014).

¹⁵¹ Wazana, “Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?,” 378.

¹⁵² Wazana, “Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?,” 378.

¹⁵³ Wazana, “Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?,” 378.

¹⁵⁴ Wazana, “Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?,” 378.

¹⁵⁵ Marcia Angell, *The Truth About Drug Companies: How They Deceive Us and What to do About it* (New York: Random House, 2005), 138-140; Van Harrison, “The Uncertain Future of Continuing Medical Education,” 198-209.

topped out at 1.2 billion dollars per year.”¹⁵⁶ The research conducted by the Macy Foundation and the Institute of Medicine demonstrated that by “2010 funding of CME through commercial support decreased to approximately 850 million dollars.”¹⁵⁷

There are several reasons for the decline in industry’s financial support of CME. One major influence was the need to promote transparency regarding industry’s relationship to the medical profession. This need was so significant that it led to legislation reform. The government’s concern was that the medical profession was providing a venue to promote a pharmaceutical company’s product. The educational programs, supported through industry, had a potential to be biased rather than providing a fair and balanced presentation.¹⁵⁸ Many times a pharmaceutical representative would give the lecture, or a physician hired by the company spoke about the product. The physicians were receiving CME credit, usually at no charge, and in a setting that sometimes took precedence over the educational activity. It is not surprising that the public’s perception was that the medical profession and the pharmaceutical companies were benefiting from this relationship at the expense of the public. As a result, some organizations providing CME decided to break all ties with industry related to financing the accredited programs.¹⁵⁹ Other organizations set more stringent requirements related

¹⁵⁶ Accreditation Council for Continuing Medical Education, Annual Report Data 2006, http://www.accme.org/index.cfm/fa/home.popular/popular_id/127a1c6f-462d-476b-a33a-6b67e131ef1a.cfm.

¹⁵⁷ Accreditation Council for Continuing Medical Education, Annual Report Data 2006.

¹⁵⁸ Van Harrison, “The Uncertain Future of Continuing Medical Education,” 198-199.

¹⁵⁹ Steinman, “Industry Support of CME-Are We at the Tipping Point?,” 1070.

to conflict of interest and therefore are no longer accepting the same amount of funding.

In 2004, the Standards for Commercial Support were implemented by the ACCME:

Standards to ensure independence in CME activities are designed to make certain that CME activities are independent and free of commercial bias. The Standards impose stringent restrictions on CME providers' interactions with drug/device companies and other companies the ACCME defines as a commercial interest. The ACCME allows providers to accept company funding for CME activities, but prohibits any commercial influence, direct or indirect, over CME content.¹⁶⁰

CME-accredited providers must follow these standards if they choose to accept funding for educational activities from any drug or device company.

The ties established between CME and industries from the 1960s through 2000 were strong, which may explain why it took so long to implement a change in the way industry supported CME. Steinman et al. stated in a perspective in the *New England Journal of Medicine* published in 2012 that the trend in CME funding has shifted toward less of a reliance on industry support. There is a movement toward “de-emphasizing traditional lecture-hall-based teaching in favor of more interactive, inter-professional, and competency-based learning strategies.”¹⁶¹ If the trend to fund CME continues to move away from industry support, accredited CME providers will need to seek other methods of funding or collaborate with their own organization's stakeholders to financially support their CME programs.

¹⁶⁰ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support,” <http://www.accme.org/about-us/accountability-to-the-public/standards-commercial-support> (accessed April 22, 2012).

¹⁶¹ Steinman, “Industry Support of CME-Are We at the Tipping Point?,” 1070.

ACCME Introduced the New 2006 Essential Elements and Standards

The ACCME was founded in 1981 in an effort to provide a national accreditation system for CME.¹⁶² Its purpose is to “oversee a voluntary, self-regulatory process for the accreditation of institutions that provide CME.”¹⁶³ ACCME is charged with ensuring that CME programs are “independent, free from commercial bias, based on valid content and effective in meeting physicians’ learning and practice needs.”¹⁶⁴ The criteria and standards that regulate CME today have developed over the last thirty years. In 2006 a new set of criteria was introduced, emphasizing a need to “reposition CME as a strategic asset to the quality improvement and patient safety imperatives of the United States health care system.”¹⁶⁵

A brief overview of how the new 2006 essential elements and standards for CME were developed by the ACCME in conjunction with the Conjoint Committee can provide an understanding of where CME is today. In 1988, Dennis Wentz was asked to assume the leadership of AMA’S CME effort.¹⁶⁶ He resigned his position as Associate Dean of Vanderbilt University School of Medicine in Nashville, Tennessee, to become the Director of the Division of Continuing Physician Professional Development for the AMA. He remained in that position for fifteen years and his farewell editorial written in 2004 helps to explain the progress of CME into the twenty-first century. Initially, Wentz

¹⁶² ACCME, *Our History*, <http://www.accme.org/about-us/our-history> (accessed April 13, 2014).

¹⁶³ ACCME, *Our History*.

¹⁶⁴ ACCME, *Our History*.

¹⁶⁵ ACCME, *Our History*.

¹⁶⁶ Dennis K. Wentz, “Leaving the AMA—A Farewell,” *CPPD Report*, No 13, (2004): 1-2, <http://www.amaassn.org/resources/doc/cme/cppd26.pdf> (accessed March 30, 2012).

had mixed feelings about his new position because he knew that CME had been “rebuffed in many circles of higher education.”¹⁶⁷ But he was not discouraged because he understood the role of the AMA in all three phases of medical education (undergraduate medical education [UME] graduate medical education [GME] and CME) and believed that the “fifteen years of debates, challenges, opportunities, mistakes, new directions, false starts ... and also the lasting outcomes” would result in a CME credit system that would “meet the needs of a new generation of physicians.”¹⁶⁸

Developed in 2000, the Conjoint Committee on Continuing Medical Education (Conjoint Committee) maintained the purpose of redefining the future of CME.

Conjoint Committee, established in 2000 to address big-picture issues in CME, is a collaborative group of national organizations: the Alliance for CME, Accreditation Council for CME, Accreditation Council for Graduate Medical Education, American Academy of Family Physicians, American Board of Medical Specialties, American Hospital Association, American Medical Association, American Osteopathic Association, Association for Hospital Medical Education, Association of American Medical Colleges, CMSS, Federation of State Medical Boards, The Joint Commission, National Board of Medical Examiners, Society of Academic CME, and Journal of Continuing Education in the Health Professions.

Several others stakeholders include Pharmaceutical Research and Manufacturers of America; AdvaMed (Advanced Medical Technology Association); North American Association of Medical Education and Communications Companies; Coalition for Healthcare Communication; AMA Council of Ethical and Judicial Affairs; AMA Council on Medical Education; American Nurses Credentialing Center; Accreditation Council for Pharmacy Education; and a member of, but not representing, the IOM Committee on Conflict of Interest in Medical Research, Education, and Practice.¹⁶⁹

¹⁶⁷ Wentz, “Leaving the AMA—A Farewell.”

¹⁶⁸ Wentz, “Leaving the AMA—A Farewell.”

¹⁶⁹ David Kovaleski, “CME Stakeholders Look at New CME Funding Model,” *Medical Meetings*, http://meetingsnet.com/medicalmeetings/cme_rules_regs/0907_CMSS_new_funding_model/#ixzz1rN6TG Pc2 (accessed April 7, 2012).

In 2005, Dr. Bruce Spivey published an article on the need for reformation of CME in the United States.¹⁷⁰ As the past president of the Council of Medical Specialty Societies (CMSS) and a participant on the Conjoint Committee, he reviewed the actions of the committee and described how these stakeholders proposed to change the present system of CME. The committee used a report completed by the CMSS in 2002 as their starting point. In the Rationale for Reform this report states that the current CME system is not adequately meeting the needs of the “ever-changing healthcare environment.”¹⁷¹ It concluded:

One key to rectifying this lapse in consistency of quality care is a restructuring and strengthening of the existing CME system. Today’s physician must stay current by learning smarter, not working harder. Continuing to educate physicians beyond medical school and medical specialty training requires a coordinated lifelong learning process of timely and effective CME, with measurable outcomes. Because it is imperative that every physician practice at the highest level possible, the CME system must be ever vigilant and responsive to a physician’s educational needs.¹⁷²

The report discussed the importance of a shared responsibility between the physicians and CME to provide self-directed learning experiences related to the needs of the clinical patient that can be evaluated and measured to provide evidence of effectiveness.¹⁷³ Dr. Spivey included a table outlining the seven recommendations that resulted in the work completed by the Conjoint Committee. These recommendations were supported by

¹⁷⁰ Bruce Spivey, “Continuing Medical Education in the United States: Why It Needs Reform and How We Propose to Accomplish It,” *Journal of Continuing Education in the Health Professions* 25, no. 3, (2005): 137-41.

¹⁷¹ Council of Medical Specialty Societies, “Repositioning for the Future of Continuing Medical Education.”

¹⁷² Council of Medical Specialty Societies, “Repositioning for the Future of Continuing Medical Education,” 1.

¹⁷³ Council of Medical Specialty Societies, “Repositioning for the Future of Continuing Medical Education,” 2.

evidence from CME literature and qualitative studies as well as from the actual experiences of the committee members.¹⁷⁴ Next steps were identified and the responsible organizations agreed upon reasonable time frames. Recommendations included promotion of:

- 1) Facilitating communication and coordination to build relationships and ensure transparency;
- 2) Linking the patient outcome to the practice of physicians;
- 3) Utilizing standard competencies in development of CME activities;
- 4) Relying upon evidence based medicine to support CME content;
- 5) Measuring the effectiveness of CME;
- 6) Adopting CME requirements that are reasonable, relevant and effective;
- 7) Integrating CME into a strategic, lifelong process of professional development and education.¹⁷⁵

Dr. Spivey believed that a reformation of CME would happen because the leaders of organized medicine recognized the need and were committed to making the change; they demonstrated a willingness to collaborate with interested parties and continued to rely on research supported by evidence.¹⁷⁶

The American Hospital Association (AHA) held a Physician Leadership Forum to “examine the value of CME to hospitals as a strategic resource for physician-hospital alignment” in 2014.¹⁷⁷ This resulted in a report titled *Continuing Medical Education as a Strategic Resource* which contained recommendations for CME stakeholders. The

¹⁷⁴ Dave Davis, Mary Ann Thomson O'Brien, Nick Freemantle, Fredric M. Wolf, Paul Mazmanian, and Anne Taylor-Vaisey, “Impact of Formal Continuing Medical Education: Do Conferences, Workshops, Rounds, and Other Traditional Continuing Education Activities Change Physician Behavior or Health Care Outcomes?,” *JAMA* 282, no. 9 (1999): 867-874; Van Harrison, “The Uncertain Future of Continuing Medical Education.”

¹⁷⁵ Spivey, “Continuing Medical Education in the United States,” 137-141.

¹⁷⁶ Spivey, “Continuing Medical Education in the United States,” 134-143.

¹⁷⁷ Combs and Arespachaga, *Continuing Medical Education as a Strategic Resource*, 3.

publication offered a guide for accredited providers to assist them in understanding how to better align their CME programs with their organization's health care system. The report encouraged CME professionals to establish relationships among "physician leadership and organizational leadership to improve CME offerings."¹⁷⁸ Research conducted in the Netherlands in 2009-2010 explored this topic, and results of the study "showed that learning in medical practice was very much embedded in clinical work."¹⁷⁹ Authors stated that relating patient care to a CME activity was more relevant to learning in comparison to "competence improvement goals."¹⁸⁰ They noted that engaging in patient encounters and meeting with peers to discuss management and treatment were "most valuable for professional development."¹⁸¹ The study summary concluded, "When professionals interact in diagnosing and treating patients to achieve high-quality care, their experiences contribute to expertise development."¹⁸² This research explored two educational activities directly related to physicians' clinical work and to quality improvement. It served to support the belief that CME occurring in workplace situations can impact physicians' lifelong learning.

Workplace Learning was one of the four key areas identified in a conference report published in 2010 that was supported through the Macy Foundation titled *Lifelong*

¹⁷⁸ Combs and Arespachoga, *Continuing Medical Education as a Strategic Resource*, 3.

¹⁷⁹ Margie Van De Wiel, WJ, Piet Van den Bossche, Sandra Janssen, and Helen Jossberger, "Exploring Deliberate Practice in Medicine: How Do Physicians Learn in the Workplace?," *Advances in Health Sciences Education* 16, no. 1 (2011): 81, <http://link.springer.com/article/10.1007/s10459-010-9246-3/fulltext.html> (accessed November 7, 2015).

¹⁸⁰ Van De Wiel et al., "Exploring Deliberate Practice in Medicine," 81.

¹⁸¹ Van De Wiel et al., "Exploring Deliberate Practice in Medicine," 81.

¹⁸² Van De Wiel et al., "Exploring Deliberate Practice in Medicine," 81.

Learning in Medicine and Nursing.¹⁸³ Other areas of focus in the report included *Continuing Education Methods, Inter-professional Education* and *Lifelong Learning*. This report reinforced utilization of alternative education design for CME programs to promote inter-professional educational programs, better development of lifelong learning skills through clinical learning and an effort to “encompass continuing education methods, inter-professional and lifelong learning occurring in the workplace.”¹⁸⁴

Literature Review of History of Multidisciplinary Cancer Conferences

This dissertation will include original research conducted at Meridian Health (MH) on two active CME programs. One of the studies will involve examination of multidisciplinary cancer conferences which represented a major portion of the CME program provided at MH. Research on the evolution of tumor boards from fifty years ago to the present day will provide information on the role of these conferences as well as physicians’ attitudes regarding their value. An exploration of how tumor boards have developed into multidisciplinary cancer conferences will demonstrate how these conferences have changed along with medical advancements.

According to researchers from the 1970s, tumor boards, as they were called then, have been in existence for over fifty years in the United States.¹⁸⁵ It appears that

¹⁸³ Association of American Medical Colleges, American Association of Colleges of Nursing, *Lifelong Learning in Medicine and Nursing: Final Conference Report*, (Josiah Macy Jr. Foundation 2010), <http://www.aacn.nche.edu/education-resources/MacyReport.pdf> (accessed November 8, 2015).

¹⁸⁴ Association of American Medical Colleges. American Association of Colleges of Nursing, *Lifelong Learning in Medicine and Nursing: Final Conference Report*.

¹⁸⁵ Harry Berman, ‘The Tumor Board: Is It Worth Saving?,’ *Military Medicine* 140, no. 8 (1975): 530, <http://europepmc.org/abstract/med/806846> (accessed May 21, 2015); J. G Katterhagen, and D. L. Wishart, ‘The Tumor Board—How It Works in a Community Hospital,’ *CA: A Cancer Journal for*

physicians' attitudes toward tumor boards in the 1970s varied. Some physicians did not find value in the conferences, as reported by B. H. Smith and H. L. Berman.¹⁸⁶ Other physicians believed tumor boards could serve a function in a cancer program and provide a “productive educational opportunity.”¹⁸⁷

J. G. Katterhagen, a medical oncologist, and D. L. Wishart, a radiologist affiliated with the Association of Community Cancer Centers in Rockville, Maryland, chronicled the process of weekly tumor boards held at their community hospital in 1977. Authors compared tumor boards in community hospitals to those in larger teaching hospitals. They believed the larger hospitals utilize the tumor board as a teaching opportunity where a focus is on “specific cancer cases that represent difficult management problems or involve unusual ... manifestations of cancer.”¹⁸⁸ This format lends itself to review only complicated cases and does not represent many of the “routine” cases associated with the majority of the physicians on the medical staff.¹⁸⁹ Perhaps this is why attendance at tumor boards was poor or even lacking in some instances at the larger hospitals. Katterhagen and Wishart believed in small hospitals, where the number of cancer patients was limited, tumor boards had the potential to “become a forum for exchange of ideas about patient management ... to review important features ... and discuss alternative

Clinicians 27, no. 4 (1977): 201, <http://onlinelibrary.wiley.com/doi/10.3322/canjclin.27.4.201/abstract> (accessed May 21, 2015).

¹⁸⁶ Berman, “The Tumor Board: Is It Worth Saving?,” 530; Bruce H. Smith, “Is the Tumor Board Doomed?,” *JAMA* 233, no. 10 (1975): 1048, <http://jama.jamanetwork.com/article.aspx?articleid=340622> (accessed May 21, 2015).

¹⁸⁷ Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 202.

¹⁸⁸ Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 201

¹⁸⁹ Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 202.

methods of management.”¹⁹⁰ Community hospital tumor boards were able to review almost every case treated in the hospital, including follow-up cases. Physicians presented cases based on their own point of view in non-threatening environments and could learn from their peers. Decisions were made based on the information discussed, and the treating physician was able to make the final determination for the treatment of his/her own patient. Katterhagen and Wishart summarized the educational experience of tumor board and believed that “basic cancer management principles” were vital in helping to avoid errors and keep physicians aware of new findings.¹⁹¹ Authors noted that tumor boards could sometimes stimulate research opportunities to determine best practices. Allied health care professionals participated in these tumor boards and their input was considered a valuable asset in determining the best care for the patient. Involving the community in outreach projects to promote awareness and provide educational opportunities could help in early detection and result in the promotion of quality care for cancer patients.¹⁹² Clearly tumor boards played a significant role in patient care at this community hospital.

Additional studies were conducted in 1979 by the Fred Hutchinson Cancer Research Center in Seattle, Washington.¹⁹³ This study included cancer research involving hospitals located in a rural area to determine the effectiveness of a community

¹⁹⁰ Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 202.

¹⁹¹ Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 202.

¹⁹² Katterhagen and Wishart, “The Tumor Board—How It Works in a Community Hospital,” 201-04.

¹⁹³ David E. Smith, Scott Davis, Lincoln Polissar, “The Hospital Cancer Program: Its Impact on Care of the Rural Cancer Patient” *Am Surg* 45 (November 1979): 730.

cancer program. One interesting aspect of the study was a questionnaire sent to the physicians related to their attitudes toward the cancer program. Questions on rate of attendance, opportunities to gain new knowledge, acceptance of treatment recommendations and the overall benefit of the conferences to the cancer program were included. Authors noted that an overwhelming percentage of the physicians routinely followed the recommendations presented at tumor board and most agreed that the program was “beneficial and worth the effort.”¹⁹⁴ An open-ended question section contained comments regarding the positive and negative aspects of the conference, including reference to “educational benefits and increased communication and cooperation among physicians.”¹⁹⁵ Physicians also believed their diagnosis and treatment management improved and the conferences helped to give patients access to treatment in a more convenient location, close to home. Negative aspects of the conference were related to constraints on coordination and format of the conferences. These variables have always been difficult to manage and continue to be a problem for conferences occurring today.

Much of the literature on tumor boards focused on the experience at the community hospitals. In 1986, Gary Gross, Cancer Committee Chair and medical director of East Texas Community Oncology Program in Tyler, Texas, published an article on the tumor board’s role at a Community hospital. He states: “The primary goal of a tumor board is to improve the care of the community’s cancer patients through the

¹⁹⁴ Smith, Davis, and Polissar, “The Hospital Cancer Program,” 736.

¹⁹⁵ Smith, Davis, and Polissar, “The Hospital Cancer Program,” 737.

exchange of information among participating physicians.”¹⁹⁶ Gross believes that the tumor board gives the primary care physicians access to peers with expertise in cancer care and provides “communication lines” between physicians, resulting in improved care for patients.¹⁹⁷ In a comparison of hospitals related to their size Gross considers the tumor board at the smaller hospitals, moderate-sized nonacademic community hospitals and large university teaching hospitals. He stated that the “American College of Surgeons and the Association of Community Cancer Centers stress that the tumor board should be prospective in nature.”¹⁹⁸ Gross notes that the smaller hospitals and large university hospitals benefit from a prospective review of patients. In smaller hospitals primary care physicians caring directly for cancer patients welcome the “input of cancer specialists” to aid in determining optimal treatment plans.¹⁹⁹ In larger hospitals, where those in attendance included physicians, residents, medical students, nurses and other allied health care professionals treating patients with cancer, formal discussion offers opportunities to enhance education and review the quality of care being delivered. According to Gross, moderate-sized hospitals may not realize the value of prospective review of cancer patients because all specialty physicians are housed in these settings and many times patients are referred to those specialists for care. Tumor boards in this setting

¹⁹⁶ Gary Edward Gross, “The Role of the Tumor Board in a Community Hospital,” *CA: A Cancer Journal for Clinicians* 37, no. 2 (1987): 88-92, <http://onlinelibrary.wiley.com/doi/10.3322/canjclin.37.2.88/abstract> (accessed May 21, 2015).

¹⁹⁷ Gross, “The Role of the Tumor Board in a Community Hospital,” 88.

¹⁹⁸ *Cancer Program Manual*, Commission on Cancer, American College of Surgeons (1981), <http://link.springer.com/article/10.1245/s10434-010-0985-4#page-1> (accessed May 21, 2015); Gross, “The Role of the Tumor Board in a Community Hospital,” 89.

¹⁹⁹ Gross, “The Role of the Tumor Board in a Community Hospital,” 89.

served more as an educational tool to review the care provided. Gross depicts the tumor board as it existed in the 1980s and emphasizes the importance of the prospective review with a relation to quality improvement in treating cancer patients. His insight on the value of tumor boards supports the multidisciplinary approach to treating cancer patients.²⁰⁰

In the early 2000s many hospitals providing tumor boards renamed the conferences to multidisciplinary cancer conferences or multidisciplinary care teams.²⁰¹ In 2007, research on standardization of the format of multidisciplinary cancer conferences was conducted by F. C. Wright in Canada. Results of the study revealed that multidisciplinary clinics in conjunction with the multidisciplinary cancer conferences had shown an “improvement in patient outcomes.”²⁰² The role of the multidisciplinary cancer conferences was to provide a forum for the health care team to discuss treatment options in an environment that included all specialties caring for the patients. Multidisciplinary cancer conferences also promoted a specific standard of care to help improve the quality

²⁰⁰ Gross, “The Role of the Tumor Board in a Community Hospital,” 88-92.

²⁰¹ F. C Wright, C. De Vito, B. Langer, and A. Hunter, “Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards,” *European Journal of Cancer* 43, no. 6 (2007): 1002-1010, <http://www.sciencedirect.com/science/article/pii/S0959804907000706> (accessed May 21, 2015); Vivek Patkar, Dionisio Acosta, Tim Davidson, Alison Jones, John Fox, and Mohammad Keshtgar, “Cancer Multidisciplinary Team Meetings: Evidence, Challenges, and the Role of Clinical Decision Support Technology,” *International Journal of Breast Cancer* 2011 <http://www.hindawi.com/journals/ijbc/2011/831605/abs/> (accessed May 21, 2015); Mary L. Fennell, Irene Prabhu Das, Steven Clauser, Nicholas Petrelli, and Andrew Salner, “The Organization of Multidisciplinary Care Teams: Modeling Internal and External Influences on Cancer Care Quality,” *JNCI Monographs* 2010, no. 40 (2010): 72-80, http://www.researchgate.net/profile/Andrew_Salner/publication/43131230_The_organization_of_multidisciplinary_care_teams_modeling_internal_and_external_influences_on_cancer_care_quality/links/00b495229f9c2d6792000000.pdf (accessed May 21, 2015).

²⁰² Wright et al., “Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards,” 1002.

of care being provided.²⁰³ The study included questions to the participants regarding the concerns about negative aspects of the conference. Those included limited time constraints, lack of participating specialists, inadequate information technology formats (video-conferencing), unique needs of different size hospitals and whether non-physicians participation would influence the discussion of patient cases. Based on the responses from participants these concerns seemed manageable; in fact, the majority agreed that non-physicians' participation played a vital role in the "decision making process."²⁰⁴ Authors concluded that additional research on the value of multidisciplinary cancer conferences was needed in light of the fact that these conferences were becoming routine in caring for cancer patients.²⁰⁵

CME underwent many changes in the late 1900s and early 2000s. Focus on CME research shifted from defining CME as it related to changing physicians' clinical behaviors to determining how CME impacted patient outcomes.²⁰⁶ Researchers began to look at specific types of CME activities that were not the typical didactic courses that were considered traditional CME.²⁰⁷ A study conducted in 2008 at the Oregon Health

²⁰³ Wright et al., "Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards," 1007-1008.

²⁰⁴ Wright et al., "Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards," 1007.

²⁰⁵ Wright et al., "Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards," 1007.

²⁰⁶ Mazmanian, Davis, and Galbraith, "Continuing Medical Education and the Physician as a Learner," 1057-1060.

²⁰⁷ David A. Davis, Mary Ann Thomson, Andrew D. Oxman, and R. Brian Haynes, "Evidence for the Effectiveness of CME: A Review of 50 Randomized Controlled Trials," *Journal American Medical Association* 268, no. 9 (1992): 1111-1117, <http://jama.jamanetwork.com/article.aspx?articleid=399544> (accessed June 13, 2015).

and Science University examined the tumor board as a CME activity and asked the question: “Is it Useful?”²⁰⁸ Research focused on asking physicians if they were satisfied with the structure and coordination of the conferences. The main focus of this study was to determine if attendees were interested in receiving CME credit for their attendance at the conference. Results indicated that based on the poor response in completion of CME evaluation forms that “CME credit is not a major factor in tumor board attendance.”²⁰⁹ However, the article also contained information on research conducted in this hospital as to whether recommendations made at tumor boards were followed.²¹⁰ Results of this study indicated that “at least 84% of the recommendations made at our tumor boards were followed,” supporting the premise that tumor boards “do have a very real impact on cancer patient care.”²¹¹

In 2010 a study conducted at the University of North Carolina Hospitals related to head and neck cancer revealed that prospective review of patients in a multidisciplinary

²⁰⁸ Maryclare Sarff, Wendy Rogers, Charles Blanke, and John T. Vetto, “Evaluation of the Tumor Board as a Continuing Medical Education (CME) Activity: Is it Useful?,” *Journal of Cancer Education* 23, no. 1 (2008): 51-56, http://www.tandfonline.com/doi/abs/10.1080/08858190701818226#.Uzb5u_1OX5o (accessed March 29, 2014).

²⁰⁹ Sarff et al., “Evaluation of the Tumor Board as a Continuing Medical Education (CME) Activity: Is it Useful?,” 53.

²¹⁰ John K. Petty and John T. Vetto, “Beyond Doughnuts: Tumor Board Recommendations Influence Patient Care,” *Journal of Cancer Education* 17, no. 2 (2002): 97-100, <http://www.tandfonline.com/doi/abs/10.1080/08858190209528807#.Va0v3NQ5K1s> (accessed June 13, 2015); Sarff, “Evaluation of the Tumor Board as a Continuing Medical Education (CME) Activity: Is it Useful?,” 53.

²¹¹ Petty, “Beyond Doughnuts: Tumor Board Recommendations Influence Patient Care,” 97-100; Sarff, “Evaluation of the Tumor Board as a Continuing Medical Education (CME) Activity: Is it Useful?,” 53.

conference setting impacted treatment planning.²¹² Researchers tracked diagnosis, staging and treatment planning before and after the conference to determine if changes to patient management were made. Their focus was to determine the impact of a multidisciplinary treatment approach and demonstrate the value of the team effort. The study revealed treatment for one out of four patients was impacted based on the discussion that took place during the conference. Authors pointed out that this study was not meant to evaluate patient outcomes but rather to provide documentation on the “diagnostic and treatment decisions.”²¹³ They proposed that cancers presenting at a higher grade and stage require multimodality therapy and may benefit from a coordinated effort by the multidisciplinary team that included experts from all disciplines involved.²¹⁴

According to the Commission on Cancer (CoC) Standards revised in 2012 there is a significant role for tumor boards/multidisciplinary cancer conferences in a CME program.²¹⁵ Hospitals accredited by the CoC must provide multidisciplinary cancer conferences that include specific documentation related to conference process and format. All conferences are monitored for frequency; multidisciplinary attendance; total number of prospective case presentations; discussion of stage, including prognostic and

²¹² Stephen A. Wheless, Kibwei A. McKinney, and Adam M. Zanation, “A Prospective Study of the Clinical Impact of a Multidisciplinary Head and Neck Tumor Board,” *Otolaryngology-Head and Neck Surgery* 143, no. 5 (2010): 650-654, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2994101/pdf/nihms-248576.pdf> (accessed July 9, 2015).

²¹³ Wheless et al., “A Prospective Study of the Clinical Impact of a Multidisciplinary Head and Neck Tumor Board.”

²¹⁴ Wheless et al., “A Prospective Study of the Clinical Impact of a Multidisciplinary Head and Neck Tumor Board,” 6.

²¹⁵ American College of Surgeons, Commission on Cancer, *Cancer Standards Programs 2012: Ensuring Patient-Centered Care* (Chicago: American College of Surgeons, 2012), <https://www.facs.org/~media/files/quality%20programs/cancer/coc/programstandards2012.ashx> (accessed June 18, 2015).

treatment planning using evidence-based treatment guidelines; options for clinical trials and adherence to conference policy.²¹⁶ Support from the American College of Surgeons has helped in the development of multidisciplinary conferences and CoC accreditation guidelines help maintain standardization for conferences conducted at all hospitals. Prospective case review is an example of a CME program that is based on quality improvement and patient safety.

Research conducted at Mercy Health System in Pennsylvania in 2012 explored integration of quality improvement and CME.²¹⁷ Authors collected narrative reports on several types of conferences including tumor boards and summarized that tumor boards enhanced treatment planning for cancer patients because physicians utilized the interdisciplinary approach and access to the most current research developments to determine best treatment options.²¹⁸ They believed collaboration between Quality Improvement and CME can lead to “improvements in the quality of care at the point of care and lead to process and policy improvements.”²¹⁹

A study completed in 2008 at the University of Texas Southwestern Medical Center in Dallas helped to define the purpose and process of multidisciplinary cancer conferences. Researchers presented two important perceptions related to the

²¹⁶ American College of Surgeons, Commission on Cancer, *Cancer Standards Programs 2012: Ensuring Patient-Centered Care*.

²¹⁷ Arnold R. Eiser, William B. McNamee, and Jean Yodis Miller, “Integrating Quality Improvement into Continuing Medical Education Activities within a Community Hospital System,” *American Journal of Medical Quality* 28, no. 3 (2013): 238-242, <http://ajm.sagepub.com/content/28/3/238.short> (accessed June 18, 2015).

²¹⁸ Eiser, McNamee, and Miller, “Integrating Quality Improvement into Continuing Medical Education Activities Within a Community Hospital System,” 2.

²¹⁹ Eiser, McNamee, and Miller, “Integrating Quality Improvement into Continuing Medical Education Activities Within a Community Hospital System,” 5.

multidisciplinary cancer conference activity. First they stated that conferences “allowed the interdisciplinary team to receive information together and synthesize a treatment in a collaborative process with consensus.”²²⁰ They compared this process to the patient seeking a second opinion and summarized that the conference was the “ultimate second opinion, assuring the patient that their case had been decided through a consensus of a multidisciplinary panel.”²²¹ Secondly, the authors felt that the educational value of tumor boards was “underscored” for the all members of the interdisciplinary team, including residents and trainees. In fact, in over one quarter of the conferences’ time was devoted to discussing information on “diagnostics, immune-biology, unusual histology and radiobiology,” offering opportunities for all present to gain knowledge and expand expertise.²²²

An overview of the literature on multidisciplinary cancer conferences published in 2012 explored how physicians’ “clinical decision–making and treatment recommendations” were impacted through participation in a multidisciplinary cancer conference.²²³ The research was conducted by two physicians in the radiology division of the Ottawa Hospital Cancer Center. The article provided evidence that there was a “perceived and well-supported growing impact of multidisciplinary cancer conferences in

²²⁰ Troy A Gatliffe, and Robert L. Coleman, “Tumor Board: More Than Treatment Planning—A 1-Year Prospective Survey,” *Journal of Cancer Education* 23, no. 4 (2008): 237.

²²¹ Gatliffe and Coleman, “Tumor Board: More Than Treatment Planning,” 237.

²²² Gatliffe and Coleman, “Tumor Board: More Than Treatment Planning,” 237.

²²³ J. M. Croke and S. El-Sayed, “Multidisciplinary Management of Cancer Patients: Chasing a Shadow or Real Value? An Overview of the Literature,” *Current Oncology* 19, no. 4 (2012): e232, (accessed September 30, 2015).

the clinical decision-making process.”²²⁴ The survey used in this research project included questions related to physicians’ attitudes toward their lifelong learning to raise awareness that the CME programs were effective and having a positive influence on physicians’ continuing professional development.

CME in the Twenty-First Century: The Transformation Continues

This overview presents the evolution of CME in the twentieth century. CME in the twenty-first century continues to evolve and will require constant shifting to address the ever-changing needs of the medical profession. The need to adjust to new methods and requirements, combined with the effort to convince involved participants that the change is needed, presents many challenges. Management and leaders given the task to implement the change often encounter resistance from the individuals who are affected by the change. Medicine, research and information technology will continue to expand and change, and medical educators must strive to provide learning experiences that will meet the lifelong educational needs of practicing physicians.

Have health care systems providing CME to physicians been able to implement necessary changes to make CME programs more effective? Can evidence be found to demonstrate how CME promotes lifelong learning for physicians and other health care professionals? Examination of active CME programs gives insight into the types of educational programs that succeed in making changes to health care professionals’ clinical practice and organizational frameworks of health care systems. This research has potential to provide evidence of changes in patient outcomes.

²²⁴ Croke and El-Sayed, “Multidisciplinary Management of Cancer Patients,” 236-237.

The ACCME provides new processes and guidelines based on research conducted throughout the world as CME moves into the twenty-first century. Accredited CME providers adapt and revise educational interventions to trial processes to meet the needs of physicians and health care organizations. Chapter Two discusses the importance of the new 2006 ACCME criteria and provides insight as to how and why these criteria promote success in CME.

CHAPTER TWO

TRANSFORMATION TO THE NEW 2006 ACCME CRITERIA

The revised 2006 ACCME criteria offered a framework to guide accredited CME providers to promote an environment of learning and growth in academic medical centers. Through CME physicians have the opportunity to maintain, develop and improve their knowledge and skills and fulfill license renewal requirements, credentialing, maintenance of certification and professional growth.²²⁵ Health care's quality improvement is greatly impacted when physicians commit to lifelong learning after completing formal medical educational training.²²⁶ Opportunities to seek and improve knowledge continuously emerge during each patient/physician encounter. Are physicians aware of these educational opportunities? Is the current CME system effective in improving physicians' clinical competence and performance?

In 2000 the Conjoint Committee convened to redefine the future of CME for the twenty-first century. The committee consisted of national organizations involved in medical education, medical specialties, pharmaceutical research and manufacturing, nursing credentialing, and pharmacy education.²²⁷ This committee proposed the reformation of CME based on a 2002 report issued by the Council of Medical Specialty Societies (CMSS). According to the report the current CME system did not adequately meet the needs of health care as it existed in the early 2000s. The Council stated: "One

²²⁵ American Medical Association, *The Physician's Recognition Award and Credit System: Information for Accredited Providers and Physicians*.

²²⁶ Council of Medical Specialty Societies, "Repositioning for the future of Continuing Medical Education," 1.

²²⁷ Kovaleski, "CME Stakeholders Look at New CME Funding Model."

key to rectifying this lapse in consistency of quality care is a restructuring and strengthening of the existing CME system.”²²⁸ In 1998 the Institute of Medicine (IOM) sponsored the *National Roundtable on Health Care Quality—The Urgent Need to Improve Health Care Quality* to “identify issues related to the quality of health care in the United States, including its measurement, assessment, and improvement.”²²⁹ Participants from health care, business, and the government concluded “Current efforts to improve (health care) will not succeed unless we undertake a major, systematic effort to overhaul how we deliver health care services, educate and train clinicians, and assess and improve quality.”²³⁰ Combined efforts of these organizations were instrumental in the creation of the new ACCME criteria to accredit CME programs in the United States and Canada introduced in 2006.²³¹ These criteria dramatically changed the standards accredited CME providers were required to meet and as a result changed the way CME programs were developed and implemented.²³²

The proponents of the 2006 ACCME criteria described its implementation as the new CME.²³³ In 2004, James C. Leist, Interim Director of the Alliance Center for

²²⁸ Council of Medical Specialty Societies, “Repositioning for the future of Continuing Medical Education,” 1.

²²⁹ IOM, *Statement on Quality of Care: National Roundtable on Health Care Quality—The Urgent Need to Improve Health Care Quality*, 1998, <http://www.iom.edu/Reports/1998/Statement-on-Quality-of-Care-National-Roundtable-on-Health-Care-Quality--The-Urgent-Need-to-Improve-Health-Care-Quality.aspx> (accessed November 17, 2014); Chassin and Galvin, “The Urgent Need to Improve Health Care Quality,” *Journal of American Medical Association* 280, no. 11 (1998): 1000.

²³⁰ Chassin and Galvin, “The Urgent Need to Improve Health Care Quality,” 1000.

²³¹ IOM, *Statement on Quality of Care: National Roundtable on Health Care Quality—The Urgent Need to Improve Health Care Quality*.

²³² ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance* (Chicago: ACCME, 2011), 3, 639_20130131_ACCME_at_Work.pdf (accessed September 5, 2013).

²³³ Kahn, Bagley, and Tyler, “Performance Improvement CME: Core of the New CME,” 1-3.

Learning and Change, published an article in *Continuing Physician Professional Development (CPPD) Report*, a newsletter published by the American Medical Association (AMA). Leist stated: “CME providers will need to apply evidence-based educational research to improve traditional CME and implement new CME more closely linked to physicians’ needs and health care problems encountered in everyday practice.”²³⁴ According to Leist, the goal of the Alliance for CME was to encourage CME planners to provide interactive educational programs that addressed challenging or puzzling health care issues identified by physicians. The new ACCME criteria promoted use of a variety of alternative educational designs that included self-assessment, problem solving and critical thinking in the planning and development of CME programs.²³⁵ These newly-designed programs would include methods to assess physicians’ performance to determine their educational effectiveness, and the intent was to eventually relate the educational experiences to patient outcomes.

ACCME Accreditation Requirements

Founded in 1981, the ACCME was established “to create a national accreditation system.”²³⁶ Its mission and purpose are interrelated: to “identify, develop, and promote standards for quality continuing medical education and to ensure that CME is independent, based on valid content, and contributing to health care improvement for

²³⁴ Leist, “Alliance for Continuing Medical Education Center for Learning and Change – Fostering Innovations in CME Practice,” 3.

²³⁵ Council of Medical Specialty Societies, “Repositioning for the future of Continuing Medical Education,” 1.

²³⁶ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 5.

patients and their communities.”²³⁷ The 2006 criteria grew out of two former sets of criteria. First, the “Seven Essentials,”²³⁸ created in 1982, promoted the use of a “needs assessment process to plan educational activities, develop educational objectives for each activity, and evaluate the effectiveness of their overall CME programs.”²³⁹ Second, the “Essential Areas and Their Elements, or System98, encouraged accredited providers to focus on CME that linked educational needs with desired results, and to evaluate the effectiveness of their CME activities in meeting those educational needs.”²⁴⁰ Accredited CME providers utilized the criteria to ensure that CME activities were compliant with the standards and conformed to the definition of CME as identified by the AMA. The accredited CME providers that failed to meet the standards were not granted the privilege of providing CME credit to physicians.²⁴¹

Implementation of the new ACCME criteria presented a challenge for many CME-accredited providers because it required a shift in the way programs were planned and implemented.²⁴² In the early 2000s, Jersey Shore University Medical Center (JSUMC) a large teaching hospital; Brick Community Hospital (BCH) and Riverview Medical Center (RMC) merged to form a health care system called Meridian Health (MH). Prior to 2008 the MH hospitals were operating their CME programs

²³⁷ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 7.

²³⁸ ACCME, *Our History*.

²³⁹ ACCME, *Our History*.

²⁴⁰ ACCME, *Our History*.

²⁴¹ ACCME.org, *Under Accreditation Requirements*.

²⁴² Accreditation Council for Continuing Medical Education, *ACCME 2004 Annual Report Data*, Table 10, <http://www.accme.org>. (accessed October 31, 2014).

independently, and the introduction of the new criteria provided the ideal setting to accomplish two major goals for the MH CME office. First was to centralize all hospital CME programs to accomplish a standardization of the CME process. Second was to make the CME program compliant with the new 2006 ACCME criteria. The new criteria offered the opportunity to change the focus of program content from primarily knowledge-based to clinical topics and initiatives based on quality improvement and safety issues related directly to the MH system. In fact, incorporation of the 2006 ACCME criterion and standards provided an environment for improved educational interventions that would better relate to needs of the physicians and the organization.²⁴³ New standards had potential to foster collaboration among CME stakeholders and cultivated a move toward an interdisciplinary approach, providing educational experiences that could alter physicians' clinical practice and impact the organizational framework of MH.²⁴⁴

A review of MH's CME program beginning in 2008 demonstrated the advantages and challenges of implementing a centralized CME program while incorporating required revisions into three distinctly separate CME programs. MH's CME program lacked direct oversight of CME activities from 2007 through 2008 due to personnel vacancy. In late 2007, CME program staff submitted a self-study survey for re-accreditation required by the accrediting body, the Medical Society of New Jersey (MSNJ).²⁴⁵ Results of the

²⁴³ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 5.

²⁴⁴ Nancy L Bennett, Dave A. Davis, William E. Easterling Jr., Paul Friedmann, Joseph S. Green, Bruce M. Koeppen, Paul E. Mazmanian, and Herbert S. Waxman, "Continuing Medical Education: A New Vision of the Professional Development of Physicians," *Academic Medicine* 75, no. 12 (2000): 1167-1172.

²⁴⁵ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 14-30.

self-study indicated that MH's CME program did not meet most of the criteria, and the program was placed on probation.²⁴⁶ In addition, recommendations provided by MSNJ in the self-study indicated that although MH was calling its program a centralized unit, many of the key indicators of centralization did not exist. Each hospital maintained its own CME committee and operated as an individual unit. Prior to 2008 the CME programs at MH hospitals were developed by individual departments in each hospital with little collaboration between probable stakeholders. Most programs followed the format of traditional CME, where physicians sat in a lecture hall and gained knowledge but were never formally challenged to directly apply that knowledge to their own experiences.²⁴⁷ CME programs were developed based on topics physicians were interested in or occasionally by industry support (pharmaceutical and manufacturing companies) who provided speakers to discuss their products. In the Oncology department, tumor boards were held to discuss patient cases in a retrospective review to learn about treatments that worked and those that did not. These types of educational activities did not allow for interaction between instructors/facilitators and participants but rather supported a more passive role for the learners.²⁴⁸ Introduction of change in the planning processes of educational activities would alter MH's CME program that had been in place for many years. Many individuals were impacted when the transition was

²⁴⁶ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 20.

²⁴⁷ Dave Davis, "Does CME work? An Analysis of the Effect of Educational Activities on Physician Performance or Health Care Outcomes," *The International Journal of Psychiatry in Medicine* 28, no. 1 (1998): 22.

²⁴⁸ Davis et al., "Changing Physician Performance: A Systematic Review of the Effect of Continuing Medical Education Strategies," 700-705.

initiated. Support from leadership was vital in promoting acceptance of a new process. Because previous CME programs were not usually planned in collaboration with other stakeholders, new relationships needed to be established. CME support staff in each department in all MH hospitals needed to gain an understanding and appreciation of the new requirements. Program planners, who are essential to the success of the CME activities, had to be convinced that unless these new requirements were met their programs could no longer offer CME credit. CME committee members were convinced that these changes, although challenging, would need to be implemented. Their conviction about a transformed program was supported by research conducted in the early 2000s related to the effectiveness of CME that focused heavily on quality improvement,²⁴⁹ so they made a commitment to providing more meaningful CME programs to better meet the lifelong learning needs of MH physicians. Committee members agreed that centralization of the CME program could improve the educational activities offered at MH and help to facilitate connections between the MH hospitals to foster cohesiveness in the organization.

CME committee members who had served for a number of years realized that a major shift in the way CME programs were viewed at MH was necessary. Veteran members assisted the newer members and the CME administrator in identifying changes that would improve the overall program. CME activities offered at MH included weekly grand rounds, oncology case presentations and full-day and half-day symposiums. Each type of activity required different levels of planning and development, but it was

²⁴⁹ Chassin and Galvin, "The Urgent Need to Improve Health Care Quality," 1000.

determined that a strong needs assessment was a variable that should be common to all CME programs.

Traditional weekly grand rounds held at all MH hospitals in the early 2000s included didactic lectures provided in the hospital setting, lecture hall or outside venue that addressed a wide range of medical topics. At the time there was little emphasis on needs assessment in the development of programs. In fact at the community hospitals the CME support coordinators often identified topics based on library search requests from physicians. These topics were important but were often narrow in scope. Committee members affiliated with each community hospital helped identify speakers and topics but often the subject matter was not relevant to many members of the medical staffs and attendance at the grand rounds lectures was dwindling. JSUMC was more aligned with the 2006 CME criteria because it was a teaching hospital. The five major departments, Medicine, Pediatrics, OBGYN, Psychiatry and Surgery, held weekly grand rounds and topics were based on updates on the latest medical advances and research. The development of a more structured process to select relevant issues related to the needs of the physicians and hospitals was needed for grand rounds lectures, especially at the community hospitals.

Oncology case presentations, also called tumor boards, focused on retrospective studies of oncology patients for various disease states. Physicians could learn from these case presentations; however, the opportunity to impact the patients' outcomes was very limited because treatment had been completed. JSUMC and OMC scheduled breast oncology conferences on a monthly basis, but they were poorly attended and only provided retrospective review of cases. General oncology conferences focusing on

various disease states were held at MH campuses on a monthly or weekly basis, and attendance varied based on the cases presented. An exception to this format was Breast Cancer Conference, an established conference to review a specific disease site held at RMC, where both retrospective and prospective cases were presented weekly. This was the most successful of all the oncology conferences throughout the system.

Half- and full-day symposiums that centered on a specific disease state were held at JSUMC. These programs were attended by physicians and health care professionals from all MH hospitals. Themes were identified for the symposiums and included cardiology, ethics and humanism, emergency medicine and oncology. Prior to 2008, the topics for grand rounds and symposiums were not based primarily on a specific need related to quality and safety issues, patient outcomes or the specific needs of physicians but rather on an established theme and availability of speakers. Clearly, this format needed transformation. The effort to determine the effectiveness of the educational activities was limited because follow-up on the programs was inadequate or non-existent.

It became evident that MH's CME committee members needed to review the original "Seven Essentials" to gain a better understanding of the newer ACCME standards.²⁵⁰ MH's CME application process required a major revision to educate program planners in developing educational activities that met the ACCME standards. CME committee members needed to gain a better understanding of the new 2004 ACCME Standards for Commercial Support. Policies and Procedures guiding the CME process needed to be reviewed and revised to comply with the new 2006 ACCME criteria. A subcommittee was formed to explore how the transition would be

²⁵⁰ ACCME, *Our History*.

implemented, and the committee's plan for a framework for the newly centralized CME program would be based on the questions:

1. Did the MH CME committee members have a full understanding of the new 2006 ACCME criteria?

Committee members reviewed the ACCME 2006 criteria based on the information from the MSNJ self-study for reaccreditation completed in 2007. Areas of weakness in the MH CME program were identified, and improvement strategies were incorporated into the Plan of Action required by MSNJ. The committee's assessment of the 2006 ACCME criteria revealed that there were three different levels of accreditation.

To achieve Provisional Accreditation, a two-year term, providers must comply with all Level 1 Criteria (1, 2, 3, and 7-12). Providers seeking full Accreditation or reaccreditation for a four-year term must comply with Level 2 Criteria (1-15). To achieve Accreditation with Commendation, Level 3, a six-year term, providers must comply with all 22 criteria.²⁵¹

The committee concluded that focusing on achieving Accreditation with Commendation (criterion 16-22), a higher level of engagement, would result in meeting all criteria and provide a much improved CME program for the system. A review of the ACCME 2006 criteria is included in Appendix 1.²⁵²

²⁵¹ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 7.

²⁵² ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 11.

2. What are the key components of an effective CME application?

The CME committee reviewed the results of the 2007 self-study for reaccreditation and identified the following key components for the MH CME application to help provide a guide for MH educational program planners. Each of these key components relates to specific criteria as mandated by the ACCME.

- Identification of target audience (ACCME Criterion 4)
- Strong Needs Assessment (ACCME Criteria 1, 2 and 16)²⁵³
- Improvement in knowledge, competence or performance (ACCME Criteria 2 and 3)
- Identification of barriers influencing expected results of the educational activity and methods to overcome barriers (ACCME Criteria 18 and 19)
- Educational objectives (ACCME Criteria 4 and 5)
- Measurement of expected results of educational activities (ACCME Criteria 15 and 16)
- Competencies related to the Institute of Medicine (IOM)²⁵⁴, Accreditation Council for Graduate Medical Education (ACGME)²⁵⁵ and the American Board of Medical Specialties (ABMS)²⁵⁶ frameworks (ACCME Criterion 6)
- Identification of potential shareholders (ACCME Criteria 20 and 21)
- Expected results of educational activity (ACCME Criterion 5)
- Incorporation of adult learning principles²⁵⁷ (ACCME Criteria 2, 4 and 5)
- Educational methods and designs (ACCME Criterion 5)

MSNJ strongly recommends that all accredited CME providers utilize an application format to present CME programs at each hospital's CME committee meeting.

²⁵³ Donald E. Moore, "Needs Assessment in the New Health Care Environment: Combining Discrepancy Analysis and Outcomes to Create More Effective CME," *Journal of Continuing Education in the Health Professions* 18, no. 3 (1998): 133-141.

²⁵⁴ Institute of Medicine, *Health Professions Education: A Bridge to Quality* (Washington, D. C.: National Academy Press, 2003).

²⁵⁵ Accreditation Council for Graduate Medical Education, "Institutional Review Committee: Institutional Requirements," February 2003, <http://www.acgme.org> (accessed November 17, 2014).

²⁵⁶ American Board of Medical Specialties, "What is Maintenance of Certification?," <http://www.abms.org> (accessed November 17, 2014).

²⁵⁷ David M. Kaufman, "Applying Educational Theory in Practice," *BMJ* 326, no. 7382 (2003): 213-216.

MSNJ does not provide an application template for accredited providers but instead encourages them to explore their own organization to develop a unique application that meets the needs of their individual physicians and organization. The list of components above was formulated by the CME administrator and committee members to aid program planners in development of their programs.

3. Will there be adequate staffing and funding resources in place to implement the change, and would Meridian Health administration accept and adequately support the change?

Funding for CME programs at MH was included in the budgets of the individual departments at JSUMC and was supported through the medical staff office at the community hospitals. Leadership at MH supported a centralized CME program and recognized the value of promoting educational programs to assist members of the medical staff in achieving lifelong learning. Administration provided staffing support for the program through a full-time administrator with an advanced degree in education who was charged with oversight for the system-wide program. MH's administrator reported to the Senior Vice President of Medical Staff and Academic Affairs and to the MH CME committee members. Each department at JSUMC and both community hospitals had administrative staffing support in place. Committee members agreed that funding and staffing resources for a centralized CME program were in place and acknowledged strong support from administration.

During the transition to the new 2006 criterion and centralization, MH acquired two additional hospitals, Southern Ocean Medical Center in 2010 and Bayshore Community Hospital in 2011. Integration of these two programs into a centralized

program was established because neither of these programs had ever been accredited CME providers. CME staffing support was provided through administration in both hospitals.

4. What timeframe supports successful implementation of the change? Would a gradual transition be more effective than a complete refit of the programs?

MSNJ required programs at Level 1, probationary status, to formulate a plan of action with a proposed outline for remediation of the program. A gradual implementation of the action plan would allow for time to train CME support staff and also familiarize CME program planners with the new criteria. The new processes were introduced to departments of JSUMC and MH hospitals that were most in need of restructuring.

5. How will knowledge gaps be identified?

An essential component of more effective CME programs includes incorporation of the basic elements of a “needs assessment process” into educational activities.²⁵⁸ Identification of knowledge gaps is vital in providing effective CME programs,²⁵⁹ and the MH CME committee recognized that CME program planners would need guidance in formal CME planning. A correlation relating knowledge gaps to clinical areas of concern identified by the Quality Initiatives and Outcomes (QI&O) committees in each MH hospital was noted. Many of the CME committee members served on the QI&O

²⁵⁸ ACCME, *Our History*; Geoffrey R. Norman, Susan I. Shannon, and Michael L. Marrin, “The Need for Needs Assessment in Continuing Medical Education,” *BMJ* 328, no. 7446 (2004): 999-1001.

²⁵⁹ Norman, Shannon, and Marrin, “The Need for Needs Assessment in Continuing Medical Education,” 999-1001.

committees so it became a regular practice to include discussion of possible topics for CME programs at the monthly CME committee meetings. An assessment of how MH CME programs were planned prior to introduction of the 2006 criteria revealed that the programs lacked a thoughtful process in identification of topics and speakers. Donald Moore best described this process in his article on needs assessment published in 1998.²⁶⁰ He stated that “Most CME is episodic, based on data describing ‘topics’ that potential learners identify in hastily completed surveys or post course evaluation forms.”²⁶¹ Indeed this is how planners were developing programs at MH, or programs were scheduled because a physician colleague was in town and had a prepared lecture ready. A connection as to whether or not the program was appropriate to the needs of the MH medical staff was not always considered. Committee members recognized that needs assessments and knowledge gaps varied; some were related to individual departments or hospitals and some related to the entire MH system. The MH CME committee agreed that CME programs based on specific needs of the organization had the potential to produce educational programs that could impact physicians’ clinical practice and provide measurable outcomes. A focus on programs promoting lifelong learning opportunities for physicians related to quality and safety improvement would help to meet the requirements of the 2006 ACCME criteria and strengthen the need to centralize the MH CME program.

²⁶⁰ Donald E. Moore, “Needs Assessment in the New Health Care Environment: Combining Discrepancy Analysis and Outcomes to Create More Effective CME,” *Journal of Continuing Education in the Health Professions*, 134.

²⁶¹ Moore, “Needs Assessment in the New Health Care Environment: Combining Discrepancy Analysis and Outcomes to Create More Effective CME,” 134.

6. The ACCME is a proponent of incorporation of Core Competencies into CME programs as defined by the Institute of Medicine (IOM). How will Meridian Health incorporate these competencies in its CME program?

CME committee members agreed that incorporation of the core competencies identified by the IOM was vital to the MH CME program. In fact, because the IOM competencies are aligned with the Accreditation Council for Graduate Medical Education (ACGME) and the ABMS, it was determined that this should be a component of the revised CME application. A model to compare the competencies was created by members of the ACCME. See abbreviated Appendix 2. These competencies were helpful because they related to lifelong learning strategies to promote changing physicians' clinical practices. A focus on incorporating the skills outlined by the IOM and ACGME into the CME programs offered at MH provided guidance for CME program planners.

7. Would the internal stakeholders be willing to collaborate on CME programs rather than to work separately within their disciplines?

MH's leadership determined that centralization of the CME program would strengthen the program and promote a more unified organization. In addition the ACCME Criterion 20 states: "The provider builds bridges with other stakeholders through collaboration and cooperation."²⁶² Members of the subcommittee agreed that a gradual introduction to collaboration among hospital departments and MH campuses could be accomplished through CME pilot programs. The types of CME programs that would support partnerships within the organization would most likely relate to quality

²⁶² ACCME, Under Accreditation Requirements.

improvement or safety issues because implementation of changes usually includes multiple stakeholders. An example of this type of program occurred in the 1990s in Finland.²⁶³ The government and medical profession took joint responsibility to educate physicians on “rational drug therapy” related to prescribing practices.²⁶⁴ This pilot program provided the “opportunity for a large number of stakeholders to work together.”²⁶⁵ The authors of the study concluded: “Collaboration between the stakeholders gave access to some powerful tools.”²⁶⁶ The MH committee appreciated the fact that getting physicians to accept a change in the format of CME that had been in existence since their residency training was a difficult task; however, they were committed to supporting and implementing the change.

8. Will the educational programs offered adapt to individual physician learning styles?

Subcommittee members agreed that revision of the CME application should include questions related to how adults learn.²⁶⁷ ACCME Criterion 16 states: “The provider operates in a manner that integrates CME into the process for improving professional practice.”²⁶⁸ The ACCME leadership supports a “learner-centered model of

²⁶³ Arja Helin-Salmivaara, Risto Huupponen, Timo Klaukka, and Kalle Hoppu, “Focusing on Changing Clinical Practice to Enhance Rational Prescribing—Collaboration and Networking Enable Comprehensive Approaches,” *Health Policy* 66, no. 1 (2003): 1-10.

²⁶⁴ Helin-Salmivaara et al., “Focusing on Changing Clinical Practice to Enhance Rational Prescribing,” 1.

²⁶⁵ Helin-Salmivaara et al., “Focusing on Changing Clinical Practice to Enhance Rational Prescribing,” 4.

²⁶⁶ Helin-Salmivaara et al., “Focusing on Changing Clinical Practice to Enhance Rational Prescribing,” 8.

²⁶⁷ Kaufman, “Applying educational theory in practice,” 213-216.

²⁶⁸ ACCME.org, Under Accreditation Requirements.

CME”²⁶⁹ which promotes “professional development of individual physicians who confront questions derived from practice.”²⁷⁰ Members of the CME subcommittee recognized their own knowledge gap relating to adult learning principles and examined articles that supported incorporation of educational theory into CME. Karen V. Mann, medical educator from Nova Scotia, explored how educational theory has influenced CME and posed the question “Has it helped us?”²⁷¹ She summarizes:

It (educational theory) has helped us view the learner as an active contributor; it has highlighted the importance of learning of the entire learning context rather than a single variable; it has facilitated thinking about learning and relating solutions that are developed to real-life problems that practitioners face; and it has illuminated the importance of learners’ past experience, the importance of their beliefs and attitudes, and their potential for self-regulation and self-direction. Lastly theory has helped clarify that reflection on one’s own performance is critical to ongoing learning from experience.²⁷²

Planning this type of CME program will be a challenge for many of the MH CME program planners. Course directors will need to be mindful that they are teaching adult learners whose needs were specific to their individual clinical behaviors and specialties.

9. How will health care reform impact the acceptance of the new CME?

According to Michael Porter and Elizabeth Teisberg, two leading authorities on innovative strategies in health care reform, a change in how health care systems view this

²⁶⁹ Kate Regnier, Murray Kopelow, Dorothy Lane, and Errol Alden, “Accreditation for Learning and Change: Quality and Improvement as the Outcome,” *Journal of Continuing Education in the Health Professions* 25, no. 3 (2005): 174-182.

²⁷⁰ Regnier et al. “Accreditation for Learning and Change,” 175.

²⁷¹ Karen V Mann, “The Role of Educational Theory in Continuing Medical Education: Has It Helped Us?,” *Journal of Continuing Education in the Health Professions* 24, no. S1 (2004): S22-S30.

²⁷² Mann, “The Role of Educational Theory in Continuing Medical Education: Has It Helped Us?,” S29.

reformation is needed.²⁷³ The authors stress the importance of focusing on quality improvement related to “achieving excellence in patient value.”²⁷⁴ They propose a change in the way medical educators train both new and longtime practicing physicians to focus on an interdisciplinary team approach while caring for patients across the continuum with continual consideration of “outcome and process measurement.”²⁷⁵ Additionally, the Alliance for Continuing Education in the Health Professions (ACHEP) stated: “health care reform will require a further shift that emphasizes practice-based, quality improvement” and a need to transform traditional CME programs from the traditional didactic programs to those that are more likely to have measurable outcomes.²⁷⁶ At MH, CME subcommittee members acknowledged that health care reform could impact future CME programs which resulted in a move toward encouraging CME planners to develop educational activities with the end result in mind. Prior to 2008, follow up to determine the effectiveness of the CME programs at MH was nonexistent. Programs were planned, implemented and forgotten. The overall CME program at MH was too fragmented and departmentalized. These factors supported the need for not only a centralized, standardized CME program but one that received continuous oversight to ensure follow up on educational activities. CME subcommittee

²⁷³ Michael E. Porter and Elizabeth Olmsted Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results* (Harvard Business Press, 2006).

²⁷⁴ Porter and Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results*, 221.

²⁷⁵ Porter and Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results*, 223.

²⁷⁶ Alliance for Continuing Education in the Health Professions, “The Alliance ‘Focus On’ Series,” 2014, http://www.acehp.org/imis15/aCME/PDFs/Advocacy/focus_on/Focus_on_Healthcare_Reform.pdf (accessed November 1, 2014).

members realized that measurement of effectiveness could not be conducted on every program but agreed that looking at the MH CME program through a different lens could lend to finding common themes that ran through all the programs. Identifying these similarities could provide information on tracking changes in physician behaviors.

10. Will compliance with the new 2004 ACCME Standards for Commercial Support impact the MH CME program?

In reviewing the CME program prior to 2008, it was noted that dependence on outside funding through commercial support at MH was very limited. The CME programs at the community hospitals did not receive any commercial support. Very few departments within JSUMC completed educational grant applications because staff had limited knowledge in the grant application process. Program planners at MH were, however, expressing interest in seeking additional funding for CME programs and because there was now a dedicated administrator for the program, CME committee members recommended an effort be made to become more familiar with the ACCME 2004 Standards for Commercial Support.²⁷⁷ ACCME based the new guidelines on commercial support on six standards:

2004 ACCME Standards for Commercial Support comprise six Standards: Independence, Resolution of Personal Conflicts of Interest, Appropriate Use of Commercial Support, Appropriate Management of Associated Commercial Promotion, Content and Format without Commercial Bias, and Disclosures Relevant to Potential Commercial Bias.²⁷⁸

²⁷⁷ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁷⁸ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

The first standard focused on independence from any commercial supporter in identification of the need for a CME program as well as the entire planning process for the activity to include educational objectives, content, type of presentation, and evaluation of the program.²⁷⁹ Resolution of Conflict of Interest, the second standard, centered on making sure that any CME program planner disclosed “relevant financial relationships” with commercial interest that was supporting the program.²⁸⁰ This standard helped to ensure independence from the commercial interest in the development of the program and ensured that information presented was purely educational and free of commercial bias. The third standard, “Appropriate Use of Commercial Support” required the CME-accredited provider to control disbursement of the funding for the activity.²⁸¹ A written agreement signed by both the provider and the commercial supporter included specific direction on payment of honoraria to speakers or any other facilitator of the program. The agreement ensured that the focus of the CME program remains on the educational content rather than the social event or meal associated with the activity which should not “take precedence over the educational event.”²⁸² This standard also required that the accredited provider develop and comply with policies and procedures related to “governing honoraria or reimbursement of out-of-pocket expenses for planners, teachers

²⁷⁹ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*.

²⁸⁰ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸¹ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸² Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

and authors.”²⁸³ Standard four regulates “Management of Associated Commercial Promotion” which includes commercial exhibits or advertisements.²⁸⁴ MH’s CME program included use of funding from commercial exhibits. This standard required the accredited provider to comply with keeping promotional activity from a pharmaceutical or device company separate from the venue for the educational program.²⁸⁵ Standard five stated that the “content and format of the program be free from commercial bias.”²⁸⁶ It requires: “presentations must give a balanced view of therapeutic options” and bans the use of specific product names.²⁸⁷ The final standard states that the learners must be informed of “any relevant financial relationship(s)” prior to the start of the educational event.²⁸⁸ This disclosure must include the “name of the individual, the commercial interest and the nature of the relationship.”²⁸⁹ Committee members agreed that compliance with these standards would greatly impact CME activities at MH because of the anticipated growth of the centralized program and the need to move the re-accreditation level from probationary to full accreditation.

²⁸³ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁴ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁵ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁶ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁷ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁸ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

²⁸⁹ Accreditation Council for Continuing Medical Education, “Standards for Commercial Support.”

11. How will the effectiveness of the MH CME programs be measured?

Based on the results of the MH 2007 accreditation self-study, CME committee members acknowledged that follow-up on determining the effectiveness of CME programs at MH was lacking. Committee members and the CME Administrator were determined to increase awareness of effective methods to measure outcomes of MH CME programs and make it a priority. Porter and Teisberg outlined an approach to measurement of outcomes and described the proposed role of medical societies in setting guidelines to provide a process so that outcomes could reflect “patient value in medical conditions over the care cycle.”²⁹⁰ Authors recommended focusing on improving the clinical benefit for the patient rather than focusing on cost reduction for care.²⁹¹ They promoted collaboration among medical societies, key stakeholders and physicians to provide standards that are based on evidence-based research and focused on improving quality.²⁹² Their article in the *Journal of American Medical Association (JAMA)* identifies three principles related to reforming health care.²⁹³ They propose the following: “(1) the goal is value for patients, (2) care delivery is organized around medical conditions and care cycles, and (3) results are measured.”²⁹⁴ The approach described by Porter and Teisberg aligned with the goals and objectives of MH leadership

²⁹⁰ Michael E. Porter and Elizabeth Olmsted Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results* (Harvard Business Press, 2006), 346-51.

²⁹¹ Porter and Teisberg, *Redefining Health Care: Creating Value-Based Competition on Results*, 347.

²⁹² Alliance for Continuing Education in the Health Professions, “The Alliance ‘Focus On’ Series,” 2014.

²⁹³ Porter and Teisberg, “How Physicians Can Change the Future of Health Care,” 1103-1111.

²⁹⁴ Porter and Teisberg, “How Physicians Can Change the Future of Health Care,” 1104.

related to tracking outcomes. CME committee members agreed that following a similar approach to evaluate and measure outcomes for CME programs was prudent.

A model for measuring outcomes related directly to CME was proposed by Moore, Green and Gallis in 2009.²⁹⁵ Their objective was to give CME planners a framework to help develop educational activities that followed specific levels of outcome measurement to “address issues of physician competence, physician performance and patient health status.”²⁹⁶ The outline included seven levels of engagement that clarified how to achieve the expected results for CME activities, and based on this information CME committee members realized that the majority of the existing CME activities were at a lower level of learning.²⁹⁷ This resulted in an effort to become more familiar with the “conceptual framework” to improve CME programs and bring them to a higher level of outcome measurement.²⁹⁸

12. How will MH ensure that all CME programs are developed based on best practice and evidence-based research?

In reviewing the recommendations from MSNJ related to the 2007 MH self-study and based on the new 2006 ACCME criteria a decision was made to encourage program

²⁹⁵ Donald E Moore, Joseph S. Green, and Harry A. Gallis, “Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment Throughout Learning Activities,” *Journal of Continuing Education in the Health Professions* 29, no. 1 (2009): 1-15, http://scholar.google.com/scholar?q=donald+moore%2C+CME+outcomes&btnG=&hl=en&as_sdt=0%2C31 (accessed October 15, 2014).

²⁹⁶ Moore, Green, and Gallis, “Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment Throughout Learning Activities,” 1.

²⁹⁷ Moore, Green, and Gallis, “Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment Throughout Learning Activities,” 3.

²⁹⁸ Moore, Green, and Gallis, “Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment Throughout Learning Activities,” 1.

planners to develop activities that included evidence-based medicine and research. Not only would these types of programs comply with the new criteria but they could also address the quality and safety issues identified by the QI&O committees at all MH campuses. A recommendation was made to include a statement related to utilization of evidence-based information in the letter of confirmation sent to all invited speakers for CME programs.

13. Will the new centralized CME program at MH require revision of all CME policies and procedures?

A review of the policies from JSUMC, OMC and RMC revealed discrepancies among the hospitals' procedures, and a decision was made to standardize all policies to comply with the new 2006 ACCME criteria. Policies written prior to 2008 were outdated and not adequate to achieve the goals and objectives of a centralized CME program or one that complied with the new 2006 ACCME criteria. It was noted that the MH CME policies had not been reviewed by the MH legal department, and a request was made to have a representative from that department participate in the CME committee meetings that occurred each month. In reviewing the requirements for a centralized CME program the legal representative was helpful in ensuring that proposed methods to meet the criteria were also in compliance with MH's overall mission. In 2010 and 2011 the policies required revision to include the addition of SOMC and BCH to the centralized MH program.

Discussion of these questions and the actions taken by the committee provided the needed structure for the MH CME program to grow and develop. The committee understood that this plan needed to be dynamic in the sense that alterations to the process

would be ongoing based on the needs of the MH organization. The changes that occurred during this transition to the new criteria strengthened the educational programs and the skills of many CME program planners. It narrowed the knowledge gap for CME committee members and provided a new model for CME at MH.

A New Paradigm for CME at MH

In reviewing all of the previous questions, three major areas of concern emerged. The first was that complete revision of existing CME policies and development of new CME policies would be needed. Secondly, MH's CME application, including its process for completion and evaluation, required renovation. Finally, utilization of commercial support to augment funding for MH CME programs needed exploration. These concerns provided a framework for the transition of the MH CME program. Modifications that were needed would have to be introduced gradually while continuing to maintain ongoing CME programs at all hospitals. Many variables including staffing changes, physician buy in, budget restraints and a general resistance to new ideas and methods all played a part in shifting to a new paradigm for CME at MH.

MH CME Policies and Procedures

Improved policies and procedures would enable the MH CME committee to direct and guide CME program planners through development of their programs. Throughout 2008 and 2009, the following policies were revised or developed:

- CME Statement Policy
- Organizational Framework Policy
- Educational Activity Planning and Evaluation Processes Policy
- CME Financial Support and Honoraria Policy

- CME Commercial Support Policy
- Policy on Joint Sponsorship
- Identification and Resolution of Conflicts of Interest Policy
- CME Policy on Federal Stark Law Compliance

These policies served to educate the program planners and provided guidelines for CME committee members when questions regarding planning processes for CME programs arose. Most of the policies were based on the MSNJ requirements for a centralized CME program, and each policy had a defined purpose to assist the MH CME program in achieving its mission. The CME Statement Policy outlined responsibilities for the CME committee members to clarify its role in oversight of the CME program. An organizational framework policy described the chain of command overseeing CME within the organization. The structure of all MH CME programs was based on the educational planning and evaluation policy which helped ensure compliance with 2006 ACCME requirements. The Commercial Support Policy assured that commercial entities did not influence the CME mission. A policy on joint sponsorship outlined procedures for presenting MH CME activities with a non-accredited provider. Identification and Resolution of Conflicts of Interests policy provided guidelines to follow if a speaker or program planner disclosed a financial relationship with a commercial entity. These policies were typical of all CME programs, and their inclusion was recommended by ACCME. The only CME policy that did not relate directly to the ACCME 2006 criterion was the MH CME policy on the federal Stark Law compliance.²⁹⁹ This policy was unique to MH and had a major impact on the CME program.

²⁹⁹ Stark Law: Information on Penalties, Legal Practice Latest News and Advice, 2008-2013, <http://starklaw.org/> (accessed January 1, 2015).

The Stark Law became a concern to the MH CME committee when the corporate senior vice president of medical affairs, a physician and an attorney, reviewed a CME flyer that may not have been compliant with the CME exceptions listed in the Stark Law and recommended withdrawing CME credit for the program.³⁰⁰ CME committee members were not familiar with the Stark Law as it related to CME and reached out to MH's legal department for guidance. MH attorneys needed further clarification on the CME requirements of the law and contacted outside counsel for direction. Stark III's final version released in 2007 included information on the relationship of CME to the law. It stated that "the provision of CME to physicians could constitute a benefit of significant monetary value to physicians."³⁰¹ Based on advice from MH legal counsel the committee began to critically review planned CME programs to insure compliance with the Stark Law.

ACCME began to notify CME providers in late 2009 regarding communications from the AMA to the Centers for Medicare and Medicaid Services (CMS) expressing concern and asking for clarification on the law pertaining to CME.³⁰² CME committee members learned that the Stark Law was named after Pete Stark, a congressman from California who introduced the law in 1989. According to *Stark Law.org*, an online published resource for health care professionals, the Stark Law regulations and

³⁰⁰ Federal Register / Vol. 69, No. 59 / Friday, March 26, 2004 / Rules and Regulations <http://www.gpo.gov/fdsys/pkg/FR-2004-03-26/pdf/04-6668.pdf> 16114, 16115 (accessed January 2, 2015).

³⁰¹ Federal Register / Vol. 69, No. 59 / Friday, March 26, 2004 / Rules and Regulations 16415.

³⁰² David Glendinning, "New Stark rules add Third Layer to Physician Self-Referral Restrictions," *AMA American Medical News*, 2007 <http://www.amednews.com/article/20070924/government/309249985/1/> (accessed January 2, 2015).

information on policies and penalties are included in §1877 of the Social Security Act.³⁰³

The Stark Law contains “three separate provisions and governs physician self-referral for Medicare and Medicaid patients.”³⁰⁴

Three major revisions to the Stark Law which included the initial version Stark Law I stated that the law prohibits:³⁰⁵ “(1) a physician from referring Medicare patients to entities for the provision of designated health services (DHS) if the physician (or an immediate family member) has a direct or indirect financial relationship with that entity.”³⁰⁶ In 2004 Stark Law II included the following statement to read that the law prohibits: “(2) an entity that furnishes DHS pursuant to a prohibited referral from billing the Medicare program or any individual, third party payer, or other entity for the DHS.”³⁰⁷ In 2007 there was further refinement of the definitions in the law and the preamble to Stark III³⁰⁸ contains discussion regarding CME being considered a possible remuneration to physicians.³⁰⁹

The inclusion of CME in the preamble of Stark II³¹⁰ prompted Murray Kopelow, CEO of ACCME, to forward a letter in 2004 to the Administrator for CMS, Mark

³⁰³ Stark Law: Information on Penalties, Legal Practice Latest News and Advice.

³⁰⁴ Federal Register / Vol. 69, No. 59 / Friday, March 26, 2004 / Rules and Regulations 16415.

³⁰⁵ Federal Register / Vol. 69, No. 59 / Friday, March 26, 2004 / Rules and Regulations.

³⁰⁶ 42 USC § 1395nn(a)(1)(A); 42 CFR § 411.350(a), 42 CFR § 411.353(a)
<http://www.law.cornell.edu/uscode/text/42/1395nn> (accessed January 1, 2015).

³⁰⁷ 42 USC § 1395nn(a)(1)(B); 42 CFR § 411.353(b) http://www.cms.gov/Medicare/Fraud-and-Abuse/PhysicianSelfReferral/downloads/section_1877.pdf (accessed January 1, 2015).

³⁰⁸ Federal Register Rules and Regulations, 16114, 16115.

³⁰⁹ Glendinning, “New Stark Rules Add Third Layer to Physician Self-Referral Restrictions.”

³¹⁰ Federal Register Rules and Regulations, 16114, 16115.

McClellan. The letter served to “respectfully request that CME not be considered free, subsidized or remuneration nor to consider it the basis for a financial relationship.”³¹¹ Dr. Kopelow provided documentation based on data collected for the ACCME 2003 Annual Report³¹² to substantiate that “hospital/medical center based CME were effective in changing practice and that the quality and content of the activities are closely regulated by the ACCME.”³¹³ Additionally, in 2006, a letter was sent to ACCME in response to a request from the executive vice president of the AMA, Michael Maves, asking for clarification on the Stark Law concerning CME and to consider an “exception for CME programs.”³¹⁴ In 2008, ACCME informed CME providers that CMS had responded and clarified Stark II regulations related to CME.³¹⁵ The letter stated:

traditional, on-site hospital grand rounds and other similar in-house education programs provided by hospitals and academic medical centers are important and convenient ways for physicians to earn CME credit and for hospitals to ensure high quality patient care. We do not believe that such programs which historically have been provided onsite at no-charge necessarily constitute remuneration to the physicians who attend them. To clarify further, for purposes of our physician self-referral rules, we do not consider on-site CME to be remuneration if it is primarily for the benefit of the hospital’s patients.³¹⁶

³¹¹ 2004 letter from the ACCME to the Centers for Medicare and Medicaid Services, <http://www.accme.org/news-publications/news/accme-receives-clarification-cms-regarding-stark-ii-regulations> (accessed January 4, 2015).

³¹² ACCME Annual Report data, <http://www.accme.org/sites/default/files/null/Annual%20Report%20Data%20-%202003.pdf> (accessed January 4, 2015).

³¹³ 2004 letter from the ACCME to CMS.

³¹⁴ 2006 letter from Herb B. Kuhn, Director, CMS Center for Medicare Management, http://accme.org/sites/default/files/null/31b0007c-0a6c-4e0e-86f7-55d835ef6d5b_uploaddocument.pdf (accessed January 4, 2015).

³¹⁵ “ACCME Receives Clarification from CMS Regarding Stark II Regulations,” <http://www.accme.org/news-publications/news/accme-receives-clarification-cms-regarding-stark-ii-regulations> (accessed January 4, 2015).

³¹⁶ 2006 letter from Herb B. Kuhn, Director, CMS Center for Medicare Management.

This information was very encouraging to ACCME because approximately sixty percent of CME activities provided in the United States consist of this type of traditional CME.³¹⁷

Further clarification on the types of programs that could be considered remuneration to physicians related to certain exceptions:

[U]tilizing non-monetary compensation³¹⁸ for medical staff incidental benefits of less than \$25 (updated for inflation), and such examples can cover grand rounds and other on-site CME. The exceptions allows hospitals and other entities to provide physicians with compliance training, including programs that offer CME credit, provided that compliance training is the primary purpose of the program.³¹⁹

MH's legal department developed a CME policy based on communications from the ACCME and AMA to provide the MH CME committee with guidelines for accredited educational activities. The policy included a compliance section to be completed by the CME planners to include questions about whether the program would address hospital issues or concerns pertaining to hospitalized patients, compliance training issues, requirements of federal, state or local laws governing physicians' behavior or if the CME program would be conducted at a MH facility. If programs met the requirements of the compliance section, the application process was completed and the program was presented to the MH CME committee for approval. If the programs did not comply with all requirements the CME administrator worked with the planners to examine to objectives and goals of the program to focus on hospital aspects of continuum of care or utilize hospital case studies related to the identified needs assessment. If this process was

³¹⁷ 2004 letter from the ACCME to CMS.

³¹⁸ Federal Register Rules and Regulations, 16114, 16115.

³¹⁹ 2006 letter from Herb B. Kuhn, Director, CMS Center for Medicare Management.

not applicable to the program a suggestion was made to have physicians self-document the activity as a Category II CME credit.

The benefit of the revised and new policies and especially the CME Policy on Federal Stark Law Compliance was realized by the MH CME committee. Programs based on the needs of the hospital and the hospitalized patient, compliance issues and federal, state and local law requirements were directly connected the MH organization and educational programs related to these areas aligned with the 2006 ACCME criteria. The Stark Law policy and revision of the existing CME policies to govern CME activities strengthened centralization and standardization of the MH CME program and promoted development of CME activities based on quality and safety improvement for the organization.

Revision of the MH CME Application

Committee members agreed that transitioning to a more interactive application process would improve the final submission of the application as well as offer opportunities to educate program planners regarding the new ACCME criteria. MH's CME administrator and members of the MH CME committee gained an understanding of the new 2006 criteria by completing an extensive literature review, attending CME workshops and conferences and participating in online ACCME tutorials, webinars and videos.³²⁰ This information provided guidelines for the application revision. All CME applications must be approved by the MH CME Committee which consists of

³²⁰ ACCME, "For Physicians and Health Care Professionals," <http://accme.org/physicians-and-health-care-professionals> (accessed November 1, 2014).

representatives from all of the major departments at JSUMC and representatives from each community hospital. MH's CME application process includes completion of program detail to include date, time and location. Program planners were asked to identify a target audience along with specific knowledge gaps or operational processes or procedures that need improvement. Planners were asked to list barriers that may be preventing physicians from meeting the need. Educational objectives related to key points of the program were included and planners were asked to identify potential groups within and outside of MH to serve as possible partners. Non-educational strategies that could help to reinforce the educational goals needed to be identified. Planners were required to predict expected results of the program and questioned about methods to help measure possible outcomes. They were asked to align the goals of the program with the vision statement of the Institute of Medicine (IOM) which outlines "five competencies that all health professions must incorporate into their curricula, to bridge the quality chasm that currently exists in the health care delivery system."³²¹ The process for completion of the application was also changed. In the past, planners worked independently on the application; however, in reviewing this process it was determined that this was not the most efficient method because returned applications often required major revisions. The CME administrator suggested that conducting a short meeting or phone conversation with program planners could result in a more effective and time-saving process. This effort at the beginning of the process provided an opportunity to train new planners and work with seasoned planners to educate them on the new criteria.

³²¹ Institute of Medicine, *Health Professions Education: A Bridge to Quality*; Regnier et al. "Accreditation for Learning and Change," 176.

Each planner was asked the following questions: Why do you want to provide this program? What are the key points that you want learners to take away? What are the clinical issues that are being addressed? Are doctors unaware of a new organizational procedure or policy? How will you measure the effectiveness of this educational activity? Can you identify barriers that are preventing physicians from addressing this educational need? Can you identify possible groups, both internal and external, to partner with on this educational activity? If other stakeholders are named, what are their roles in the program? Will your program address adult learning styles? What type of educational design will you utilize? These questions helped planners to better organize and develop the activity and provided the committee and CME administrator with potential data and feedback to measure the effectiveness of the program.

Evaluation of CME Programs

All CME programs at MH require participants to complete an evaluation of the CME activity. Attendees were asked to rate the speaker and the value of the content presented. The evaluation provided the opportunity to suggest additional topics for future presentations and included space to provide comments. Evaluations used prior to 2008 were not aligned with the new 2006 criteria and a revision of the CME evaluation was completed. The new evaluation included a question that asked the participants if they intended to change their clinical practice based on the information presented. The possible choices were:

- Yes, I intend to change my practice;
- Yes, I am considering changing my practice;
- No, I already include this in my practice;
- No, this does not pertain to my practice.

Participants were then asked to identify two clinical practices they intended to change. The evaluation also asked if the speaker was able to achieve the learning objectives for the lecture or conference. The committee recommended that program planners analyze feedback from the evaluations of the live activity and conduct a follow-up survey three to six months after the program asking those same participants if they had incorporated any of the intended changes into their practice. ACCME requires feedback from attendees, that CME programs be suitable for the participants' scope of practice and that all programs be free of commercial bias. Committee members agreed that the changes to the evaluation supported compliance with the 2006 ACCME criteria and information tracked through the follow-up surveys would serve to provide evidence for the effectiveness of the MH CME program.

Implementation of the New Application Process

Initiation of the interactive application process was enlightening for the CME administrator, as well as for the program planners. Many times the planners could identify instances where clinical behaviors needed to be altered and were specific about the changes that were required. Several planners were becoming more aware of the value of a strong needs assessment and started to consider ways to measure the effectiveness of the CME programs. Transition to the new application process was gradual, and the overall MH CME program was beginning to show evidence of acceptance of new methods. CME committee members were able to identify departments and system-wide initiatives that provided examples of compliance with ACCME criteria. The direct interaction with program planners and the CME Administrator proved to be a very

worthwhile endeavor. Planning committees connected to the educational activities began to develop and expand to include stakeholders with an investment in the program objective. This resulted in identifying several programs that could be used as examples of programs that met the 2006 ACCME criteria.

RMC became a Primary Stroke Center in the early 2000s and was committed to providing improved stroke care. In 2009 RMC held its first annual Stroke Symposium and applied for CME accreditation. The needs assessment submitted was identified based on RMC's discharge data which demonstrated length of stay and medications delivered for stroke admissions. It also stated that physicians lacked awareness of appropriate use of diagnostic testing and other important aspects of care including cardiac monitoring, blood pressure optimization, antithrombotic and lipid testing. In addition to the Stroke Symposium, RMC offered Stroke Grand Rounds to change the culture of stroke care at RMC through physician education. CME committee members recognized this program as a good example of compliance with the 2006 ACCME criteria and used this as a model in development and planning for other CME programs at MH.

A Blood Management program was initiated at MH in early 2010 because the president of JSUMC learned about a program to reduce the amount of blood transfusions for surgical procedures. He worked with the Pathology Department to introduce a new protocol to decrease the number of blood transfusions for cardiac and orthopedic surgeries. MH contracted with Strategic Health Care Group, an organization that conducted extensive research in the field of blood management and patient safety, to provide a series of formal CME lectures and interactive workshops with individual

departments where use of blood products was common practice.³²² Planners were asked to provide a method to measure the outcome of the educational intervention. They proposed utilizing a “Method for Optimizing Blood Utilization,” invented and patented by Timothy Hanlon.³²³ The method is defined as

A method of measuring and assessing blood product utilization. The method comprises calculating a transfusion exposure score (TES), the transfusion exposure score being an average amount of a blood product used for patient population during a time period for a health care facilities; calculating a mean transfusion exposure score being a geometric mean of a plurality of transfusion scores within a database for the blood product and for the patient population over the period of time for a plurality of health care facilities.³²⁴

A decision was made to implement the new policies and procedures on Blood Management throughout the entire MH system. Physicians were skeptical and concerned about changing a clinical practice that had been followed in the past, but because of strong support from administration and a commitment from the pathologists controlling orders for transfusions, policies were successfully implemented. Educational interventions and face-to-face workshops convinced physicians to initiate the protocol. Measurement of expected results would require tracking TES scores for approximately one to two years. Committee members were encouraged by this undertaking because it was a system-wide initiative that involved all the hospitals. The CME office played a significant role in the planning, development and implementation of the project and

³²² Bradley A Boucher, and Timothy J. Hannon, “Blood Management: A Primer for Clinicians,” *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy* 27, no. 10 (2007): 1394-1411.

³²³ Timothy Hanlon, Patent filed October 23, 2008, US 20100106516A1.pdf (accessed November 15, 2014).

³²⁴ Timothy Hanlon, Patent filed October 23, 2008, US 20100106516A1.pdf.

recognized the potential to include the Blood Management program in the 2012 self-study related to many of the criteria at the level for accreditation with commendation.

In late 2009 and early 2010 planners from the Department of Pediatrics identified a need to educate physicians on how standard hospital practices may adversely affect mothers' breastfeeding practices. The program facilitator for this CME activity, a proponent of breastfeeding, recommended completing requirements for JSUMC to become a Baby-Friendly facility. Hospitals are accredited by Baby-Friendly USA, Inc., to provide maternity care utilizing evidence-based research to "achieve optimal infant feeding outcomes and mother/baby bonding."³²⁵ JSUMC's policies and procedures on breastfeeding were reviewed and updated to align with the "Ten Steps to Successful Breastfeeding."³²⁶ These steps must be followed along with the "International Code of Marketing Breast Milk Substitutes" in order for a hospital to qualify as a Baby-Friendly hospital.³²⁷ Additional training was provided for all staff members including physicians, nurses and health care providers involved in maternity care in the Departments of Pediatrics and OBGYN. Breastfeeding rates were tracked in 2010 to be compared to rates in 2011, and planners of the activity proposed introducing the initiative to the Pediatric and OBGYN Departments at other MH hospitals in 2012. This was another

³²⁵ Baby-Friendly USA, Inc., <https://www.babyfriendlyusa.org/about-us/baby-friendly-hospital-initiative> (accessed December 29, 2014).

³²⁶ World Health Organization, "Evidence for the Ten Steps to Successful Breastfeeding" (1998) http://apps.who.int/iris/bitstream/10665/64877/1/WHO_CHD_98.9.pdf?ua=1 (accessed December 29, 2014).

³²⁷ World Health Organization, "International Code of Marketing of Breast-Milk Substitutes" (1981) http://www.who.int/nutrition/publications/code_english.pdf (accessed December 29, 2014).

example of a program that complied with many of the 2006 ACCME criteria and also promoted centralization of the MH CME program.

A new Center for Advanced Disease Management to include end-of-life care was in the early stages of development at MH in 2009. The physician in charge expressed a desire to introduce the program through a series of CME activities. At JSUMC a lecture on Palliative Care was provided to increase physicians' awareness of appropriate level of treatment for patients experiencing end-of-life issues, with a major focus on oncology patients. Baseline data indicated that referrals to palliative care were not generally made, and very few patients had existing advance directives. This need to educate physicians on resources available at MH related to palliative care was universal to all MH hospitals and initiated many educational opportunities throughout the system. Because this initiative was heavily concentrated on patients in need of oncology care it tied in with Meridian Cancer Care's goals and objectives to promote the expanding roles of the multidisciplinary team at MH. This was significant to the CME committee because approximately twenty-five percent of the entire MH CME program was made up of Multidisciplinary Cancer Conferences (MCC).

In 2010 MH hired a new Corporate Medical Director for Oncology Care to provide oversight for all Cancer Care Centers in the MH system. His expertise and experience in the field of oncology fostered the growth of weekly and monthly MCCs accredited for CME. Prior to 2008 oncology conferences, or tumor boards (as they were called then), were scheduled sporadically and poorly attended by physicians. The new medical director identified the goal of presenting prospective oncology cases in a multidisciplinary setting to provide an opportunity for MH physicians and health care

professionals “to discuss diagnosis and treatment options to optimize patient management.”³²⁸ There would be an increase in the number of conferences because instead of holding one weekly conference where the disease sites varied, physicians were asked to submit their individual cases that pertained to their specialty at a dedicated conference to that disease state. The Breast MCC at RMC served as the model for conferences at the other hospitals because most of the cases were discussed in a prospective review. For example a thoracic surgeon would present his patient during the treatment planning phase to get feedback on treatment options from the oncologist, radiologists and pathologists who attended the conference. Frequently, there was more than one thoracic surgeon present and the opportunity to provide opinions regarding treatment based on previous cases was presented. In another scenario the oncologist would question the optimum time for surgical intervention or if the intervention was appropriate. Conferences were set up to address cases from Breast, Thoracic, Urology, Hepato-pancreato-biliary, Gastro Intestinal, GYN, Melanoma, Neuro-Oncology and Endocrine Departments at JSUMC. The community hospitals held conferences based on the disease state and on the number of patients treated at the hospitals, but there were two conferences that were universal to all MH hospitals: breast and thoracic. The conferences served an additional purpose in the centralization of the CME program because they offered an opportunity to establish standardized procedures to provide CME credit and promote the adherence to the 2006 criteria. MH CME committee members recognized

³²⁸ Nicole Hong, J. Look, Anna R. Gagliardi, Susan E. Bronskill, Lawrence F. Paszat, and Frances C. Wright, “Multidisciplinary Cancer Conferences: Exploring Obstacles and Facilitators to Their Implementation,” *Journal of Oncology Practice* 6, no. 2 (2010): 61-68, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2835483/> (accessed January 11, 2015).

the potential to utilize the conferences as a research project to measure physicians' engagement in the CME process and provide valuable feedback regarding the effectiveness of the educational activities provided at MH.

The Value of CME at MH

Changes to the framework of the MH CME program that occurred from 2008 through 2010 helped to introduce a new concept for the role of CME at MH. CME committee members, program planners, CME support staff and administration recognized that providing CME programs on quality improvements and safety initiatives could promote collaboration among the MH hospitals and strengthen the overall CME program. The next step was to find ways to better measure the effectiveness of the new CME program and relate it to the lifelong learning experiences for the physicians. Utilizing the knowledge gained from research on outcomes measurement, health care reform, adult learning styles, collaboration among interested shareholders, and improved needs assessment, the committee members committed to promoting educational activities that would better meet the needs of MH physicians and the MH organization.

CHAPTER THREE

THE RESTRUCTURED CME PROGRAM AT MERIDIAN HEALTH:

EXPLORING RESEARCH OPPORTUNITIES

MH's CME program continued to evolve in 2011 and 2012 as the program's strengths and weaknesses became more apparent. One significant asset of the program was standardization of CME policies and procedures to guide program planners and CME support staff in coordination and implementation of programs at each individual hospital. Additionally, a universal CME application form and process to address development of educational activities, including identification of the need for the program, learning objectives, possible educational partners and expected outcomes, would help planners measure the effectiveness of their programs. MH's adherence to ACCME Standards for Commercial Support was easily accomplished because the number of programs that received funding through educational grants was limited. Areas including centralization of the CME program, meeting the needs of adult learners, identifying strong needs assessments, collaboration with other stakeholders and evaluating outcomes had improved in selected programs. However, the overall MH CME program required additional enhancement to meet the educational needs of the physicians and achieve the goals of the MH organization.

Committee members prioritized objectives and agreed that a strong centralized CME program instead of individual units at each hospital would serve to establish a framework to improve the overall CME program. MSNJ provided "Guidelines for Hospital System/Multi-Facility Accreditation" to aid health care systems interested in

combining individual hospital CME programs into one integrated unit.³²⁹ Providers seeking this type of accreditation needed to comply with all “MSNJ Accreditation Requirements and Policies” which were adopted by MSNJ in 2007 and were based on the 2006 ACCME criteria.³³⁰ Additionally, the provider must meet three supplementary criteria that define a centralized program.³³¹ Supplemental criterion number one describes the need for a “common CME mission with system-wide goals to be accomplished through implementation of a centrally coordinated overall CME program.”³³² The second criterion emphasizes the use of standardized methods that serve to connect the CME program at each hospital site. It states “patient care and quality improvement data from component facilities should feed into the central system for use in overall program planning as well as the use in developing activities within individual facilities.”³³³ Criterion number three states CME programs that are centralized must establish a CME committee that includes representation from all hospitals in the organization, provides guidance and structure for programs that are offered system-wide and locally at each hospital and develops and implements policies and procedures to ensure compliance with ACCME standards and criteria.³³⁴ Committee members agreed that centralization of the CME program would promote educational programs to improve

³²⁹ *Medical Society of New Jersey Procedure and Instructional Manual*, 28-29, <http://www.msnj.org/p/cm/ld/fid=482> (accessed January 27, 2015).

³³⁰ *Medical Society of New Jersey Procedure and Instructional Manual*, 13.

³³¹ *Medical Society of New Jersey Procedure and Instructional Manual*, 28-29.

³³² *Medical Society of New Jersey Procedure and Instructional Manual*, 28.

³³³ *Medical Society of New Jersey Procedure and Instructional Manual*, 28.

³³⁴ *Medical Society of New Jersey Procedure and Instructional Manual*, 28-29.

quality and safety issues within MH and aid physicians in achieving lifelong learning goals.

MH submitted their self-study report for re-accreditation to MSNJ in December of 2011. Committee members learned in April of 2012 that MH had successfully met the criteria for a centralized CME system and were granted full accreditation for four years. Efforts were made to reinforce the commitment to working with program planners to submit applications with needs assessments that related directly to improving the quality of health care as it correlated to patients' needs. This included encouraging an interdisciplinary approach in educating all health care professionals, not just physicians, through the MH CME program. Establishing connections among different specialties including nursing, social work, pharmacy, psychology, rehabilitation, palliative care, clergy and others could improve the continuum of care for patients. The MH CME program may serve as an example to promote cohesiveness within the organization. CME was common to all the MH hospitals, and even though it was a small part of the organization it provided evidence that unification to a system-wide program could be achieved. Additionally, offering activities targeting the interdisciplinary team caring for patients was more in line with ACCME/MSNJ goals for accredited CME providers.

The foundation of the MH CME program had been reinforced, and opportunities to explore bringing the program to a higher level of accreditation became possible. In reviewing the self-study for re-accreditation it was noted that several areas would lend themselves to possible research projects, especially if these areas were related to patient safety and quality improvement. Implementation of research at MH depended on a commitment from chairmen of prospective departments and the ability of the CME

Administrator to develop and carry out the original research study. Exploration of activities that did not follow the traditional style of didactic lectures would provide information on alternative educational designs that were effective in CME. Program planners were encouraged to utilize alternative educational designs for CME programs in development stages. Opportunities to provide programs that did not follow traditional format of didactic lectures were strongly supported by the MH CME committee. Chapter Two provided a discussion of how MH CME program planners changed their approach to activity development by basing their programs on expected outcomes. Did these changes impact the educational activities enough to demonstrate improved effectiveness in CME? Research on physicians' perspectives regarding the value of the education and whether or not it impacted their lifelong learning would support the transition to the new ACCME criteria and the efforts of CME at MH.

Review of all CME programs offered at MH revealed that MCCs were provided on a weekly, bi-weekly or monthly basis. Program facilitators noted that prior to the end of 2010 most cancer conferences held at MH were a retrospective review of patient cases. Participation from the physician interdisciplinary team was limited or non-existent at many of the conferences. There were, however, two exceptions throughout the system.³³⁵ These two conferences represented an improved format that could offer forums to discuss

³³⁵ Breast cancer conference held at RMC was unique to the MH system because it included representation from pathology, radiology, oncology, surgery and occasionally primary care. Patients were presented in a prospective review and treatment options were discussed. Attendees were primarily physicians and it was noted that no other allied health professionals involved in treating cancer patients were active participants in the conference. The other distinctive MH conference initiated at OMC in 2010 focused on thoracic cancer. Its format was very similar to RMC's breast cancer conference in that patient cases were discussed in prospective review. One difference in this conference was that patients were offered the opportunity to meet with the physicians that had just reviewed their case immediately following the conference. Patient involvement required a tremendous amount of coordination, and staffing resources were not in place to make this portion of the conference very successful.

treatment options for patients who were currently receiving treatment. Committee members recognized that prospective review of patient cases was a more effective use of physicians' time and provided valuable information to improve patient care. Based on this information, cases related to other disease sites in oncology care, including gastrointestinal, thoracic, neurology, urology, gynecology and head and neck, would now be converted to prospective individual conferences exclusively focused on each disease site.

MH's newly recruited medical director for Meridian Cancer Care provided leadership for a new service line in oncology. One of his goals was to have all cases in multidisciplinary care conferences presented in a prospective review format. The medical director had previous experience in setting up a system where each disease site had a dedicated MCC forum to present cases in a prospective review. The participants collectively worked on a treatment plan that considered all options for delivery of the best care for each individual patient. Conducting conferences in a similar manner at MH would help to achieve a major objective of the oncology service line to unite all MH hospitals to provide cancer care across the continuum for patients residing in Monmouth and Ocean counties. MH wanted to offer oncology patients access to comprehensive care in a local setting making it easier for the patients, their families and caregivers. Clearly, research focused on this service line presented an opportunity for CME to explore the effectiveness of these conferences and collect data from physicians on the value of this type of conference as it related to their lifelong learning.

MCCs Integrated into CME

Meridian Health committed to improving its MCC process in 2008 and 2009. In 2010 MCCs at MH changed dramatically in their format and purpose. The new medical director provided structure and objectives for the MCCs and put policies in place which resulted in improved attendance. Educational objectives provided guidance for the participants and included identification of the stage of the disease to be correlated with National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology.³³⁶ Attendees were encouraged to facilitate and develop active treatment plans for prospective patients while interacting with the interdisciplinary team to reach prospective consensus on patient care. Each conference required a radiologist, pathologist, and the presenting physician, often a surgeon, medical oncologist, urologist, neurologist, or pulmonologist in attendance. All departments involved in oncology care cooperated, which resulted in an increase in the number of cases presented. Prospective conferences dedicated to additional disease sites were initiated, and monthly meetings became bi-monthly and in some cases weekly. In 2010 the total number of MCCs held annually at MH was 170; by 2012 that number increased to 302.

Needs assessment for multidisciplinary conferences was based on participating physicians' desire to present patients in a prospective forum to learn about staging and treatment planning consistent with the American College of Surgeons, the NCCN guidelines and recommendations and the latest scientific literature. Cases were selected based upon findings from quality assurance activities, recent developments in literature

³³⁶ National Comprehensive Cancer Network, http://www.nccn.org/professionals/physician_gls/f_guidelines.asp (accessed May 31, 2015).

and recommendations from the target audience as expressed on CME evaluation forms. Barriers to addressing this need included the challenge that many variables and limitations can influence the continuity and quality of cancer care, as well as the challenge that coordination and often communication is difficult throughout the multidisciplinary management process for cancer patients. Objectives outlined for the activity included identification of staging based on the American Joint Commission on Cancer (AJCC) key objectives.³³⁷ Their mission states: “The AJCC provides worldwide leadership in the development, promotion and maintenance of evidence-based systems for the classification and management of cancer in collaboration with multidisciplinary organizations dedicated to cancer surveillance and to improving care.”³³⁸ Participants are expected to correlate the information presented to the NCCN practice guidelines. They are asked to comment on the implications for development of MH practice guidelines. Discussion of treatment options leads to recommendations for possible clinical trials and follow up management. Finally, attendees are asked to interact with the multidisciplinary team to reach prospective consensus on patient care for each case presented.

Institute of Medicine competencies addressed during the activity focused on patient centered care, working in interdisciplinary teams, employment of evidence-based practice, and application of quality improvement.³³⁹ ABMS competencies included an

³³⁷ American Joint Commission on Cancer.org, <http://cancerstaging.org/About/what-is-the-ajcc/Pages/whatisajcc.aspx> (accessed July 18, 2015).

³³⁸ American Joint Commission on Cancer.org.

³³⁹ Institute of Medicine, *Health Professions Education: A Bridge to Quality*.

emphasis on patient care and medical knowledge.³⁴⁰ Groups within and outside of MH working on this educational activity included all campuses of MH and the Cancer Institute of New Jersey (CINJ). The internal groups collaborated through a newly-purchased video-conferencing system which enabled participants to communicate during the conference while remaining at their respective hospitals. This process promoted open communication between participants and allowed for continuum of care for patients, especially when access to specialty physicians or specialized equipment was needed. Conference attendees relied on CINJ to share strategies that enhance the coordination of cancer care. Activity planners expected to see changes in health outcomes, changes in physician behaviors, reduced complications for patients and changes in prescribing habits. Measurement of outcomes was accomplished through post-activity evaluations and review of quality improvement data collected through the cancer registry at each hospital. In relation to adult learning principles, participants were asked to solve genuine problems by reviewing their own issues and daily encounters with patients. They were also reflecting using analogy/comparison by comparing their own experiences or patient cases to other participants' experiences and cases. Educational design of the activity was exclusively clinical case presentations.

The CME administrator attended conferences on a regular basis and noted a change in the number of physicians as well as an increase in active participation by all participating physicians. Overall, the number of CME credits provided by the MH CME program in 2011 increased by forty percent. Growth of this segment of the program

³⁴⁰ ACCME.org, ABMS Core Competencies, <http://www.msm.edu/Education/ExtendedProfessionalEducation/EPEDDocuments/corecompetenciessflbEpe.pdf> (accessed July 1, 2015).

significantly impacted the MH CME program because it translated to an expansion of staff to coordinate CME documentation. Results of a research study can support the need for additional staffing resources for both the CME Department and Meridian Cancer Care.

Data collected on the increase in attendance and number of tumor boards generated an interest in exploring how physicians' attitudes toward the new process for MCCs had changed. At MH it appeared this format was building a stronger network among health care professionals treating cancer patients. Physicians presented patients at the conferences to utilize expertise from colleagues to determine best treatment plans for their patients. There were times physicians began the presentation by telling the group the reason for presenting the case was because they were questioning best options for their patients. As the physician described their course of treatment they were either given reassurance it was appropriate treatment or given suggestions or recommendations based on other physicians' previous experiences. Conference participants relied on guidelines created by the NCCN to determine treatments but had an opportunity to discuss alternative methods of care with peers to consider ways to personalize treatments for individual patients. MCCs played a vital role in treating oncology patients at MH. They represented a large percentage of the MH CME program, and further research on these programs proved to be a worthwhile project.

PDCA Integrated into CME

In 2012 the Department of Pediatrics at JSUMC developed a program that provided training in process improvement. This program was unique to MH in its

educational design and offered an opportunity to explore areas directly related to safety and quality improvement. The goal of the process improvement training was to assist participants in becoming agents of change in a health care organization through utilization of a PDCA format based on the works of W. Edwards Deming.³⁴¹ Physicians were selected by the Chair of the Pediatric Department as participants in the CME activity. The purpose of the program was to familiarize the audience with the process improvement format, tools and terminology of PDCA format. This program served to support MH's improvement methodology to achieve operational goals and to support JSUMC's annual performance improvement plan. Completion of objectives led to PDCA deliverables through a project report out and charter. Three quality improvement projects were identified by the Office of Clinical Effectiveness at JSUMC related to the Department of Pediatrics. The first was limiting unnecessary bronchodilator use in bronchiolitis, the second was promotion of exclusive breastfeeding in the newborn nursery and the third was reducing delayed admission to the pediatric intensive care unit.

The six-month training included classroom instruction, team/individual coaching and independent study. The program was facilitated by the Medical Management division of the Office Clinical Effectiveness at MH and the coordinator/ trainer, a newly-hired employee whose credentials included training in Sixth Sigma, worked with the CME administrator on completion of the CME application. Use of the PDCA was indicated for this CME program because it focused on quality improvement issues identified by the program planners in collaboration with the JSUMC QI&O committee. The coordinator/trainer's Sixth Sigma certification enhanced introduction of the PDCA

³⁴¹ Best and Neuhauser, "Walter A Shewhart, 1924, and the Hawthorne factory," 142-43.

method to physicians. Needs assessment was based on feedback from department chairs that a knowledge deficit existed among physicians regarding use of specific tools, terminology and formatting related to process improvement. Learning objectives included identification of the PDCA format as MH's preferred methodology, identification and summarization of the four steps of the PDCA method, description of basic process improvement tools and completion of a PDCA deliverable as identified in the project charter. Institute of Medicine core competencies addressed by this activity included delivery of patient-centered care, working in interdisciplinary teams, employment of evidence-based practice and application of quality improvement.³⁴² ABMS competencies integrated patient care, interpersonal and communication skills as well as system-based practice into the program.³⁴³ Planners were asked to identify other groups within or outside of MH to act as potential partners to guide the training. Internally, Departments of Academic Affairs and Organizational Effectiveness provided speakers for workshops and lectures. External groups from health quality improvement organizations such as the Institute for Healthcare Improvement and the National Association of Healthcare Quality provided best practice guidance and references. Prediction of expected results of the training included possible changes in physician behaviors, creation of new procedures, policies or guidelines and changes in process outcomes. Program planners developed a post-activity evaluation to measure participants' intent to change their practice and planned to examine quality improvement data to measure the effectiveness of the training. When asked how this educational

³⁴² Institute of Medicine, *Health Professions Education: A Bridge to Quality*.

³⁴³ ACCME.org, ABMS Core Competencies.

activity would address how adults learn, planners responded that they wanted learners to solve genuine problems, develop a framework for application to create plans to implement change and practice a new skill. Educational methods used to implement this training included informal didactic lectures, interactive workshop sessions, round-table discussion, independent problem solving and coaching sessions.

Physicians were introduced to the process improvement training project and asked to formulate a charter to identify the scope of the project. Charter development led to a project concept utilizing process mapping and charting. Once the pilot design was determined participants implemented interventions. At the conclusion of the program participants presented the project to leadership to document processes and determine the success of their project. Research on physicians' attitudes toward this type of CME program would provide information on using this format for other programs at MH.

Mazmanian and Davis state that CME that is "self-directed by the physician" can be more beneficial in affecting physicians' lifelong learning.³⁴⁴ Design of this CME activity was unique to the MH CME program; therefore, the research study would focus on exploration of physicians' attitudes toward this type of learning experience rather than the PDCA or Sixth Sigma training itself. CME committee members agreed that components of this educational activity provided a unique opportunity to explore alternative teaching methods to determine if physicians' attitudes toward this type of learning contributed to their lifelong learning.

³⁴⁴ Mazmanian, Davis, and Galbraith, "Continuing Medical Education and the Physician as a Learner," 1060.

CME Opportunities at MH

Questions related to how these particular types of educational activities impact patient safety and quality improvement and fit into a CME program arose. Do these programs offer physicians an opportunity to expand their knowledge and improve their learning skills? Will physicians' attitudes toward their lifelong learning be impacted? Do physicians believe that these learning experiences can improve the comprehensive care for their patients? Is attendance at CME programs a valuable use of physicians' time? Specific questions related to the MCCs included the following. Does attendance at a MCC promote networking among different specialties to provide for better patient care? Will the information gained in the conference impact physicians' decision making related to treatment options for patients? Does this conference format lead to opportunities to teach and/or learn from each other? Specific questions related to the process improvement training included the following. Did this training enable physicians to incorporate basic process improvement tools in their clinical practice? Does the educational design of the program complement a physician's individual learning style? After completing the program are physicians better able to manage implementing change in the clinical environment? Has this program influenced the way physicians approach their clinical practice? Was participation in this educational activity a positive or negative experience? Would physicians participate in another educational program with a similar format?

A research study utilizing a questionnaire to collect data on physicians' attitudes related to their learning experience would provide a simple format and achievable method to obtain information on the effectiveness of the educational activities. The review of the

literature on MCCs presented in Chapter One helped define their structure, purpose and function to determine if this interactive CME program is a viable method to enhance physicians' lifelong learning. Exploring use of the PDCA format in CME will shed light on the value of these types of programs and provide information on the how they influence physicians' lifelong learning experiences at MH.

Proposed CME Research Project at MH

In 2008 and 2009, the primary goal of the new MH CME program was to alter program planners' approach to how the CME programs were being developed. Planners were encouraged to interact with QI&O committees at each hospital to identify specific health-related issues that needed to be addressed. The two CME activities selected for MH's research project studied the attitudes of physicians involved in CME activities based on quality improvement that are both interactive and self-directed and do not follow the traditional format of a didactic lecture.

The study aim of this research project was to determine if CME programs focused on patient safety and quality improvement influenced physicians' attitudes toward lifelong learning. Objectives included determining if these types of CME programs were more meaningful to physicians and if their design promoted a positive learning experience. The research proposal for this project included observation by the principal investigator, a questionnaire and interview process to conduct an in-depth study of two MH CME programs that demonstrate how the new ACCME 2006 criteria changed the MH CME program.

MH's CME committee was committed to improving the overall program by focusing on providing programs that related to not only the needs of the physicians but to the needs of the MH health care system. Offering educational activities related to quality improvement and patient safety would provide opportunities to impact patient care. The committee believed that these types of programs provided evidence of the value of the CME program at MH and supported the process of adherence to the 2006 ACCME criteria. CME activities selected for this research project were chosen because they related to quality improvement, involved many aspects of multi-specialty care and had potential to demonstrate the value of CME at MH.

One of the major roles of CME Administrator for the MH system included oversight and submission of a self-study for re-accreditation to maintain MH's accreditation status. Regular attendance at CME programs allowed the CME administrator to monitor and observe educational interventions and helped to identify which programs would best demonstrate how the MH CME program is meeting the required ACCME criteria. MCCs had undergone major renovation in format, and the change to reviewing patient cases in a prospective instead of retrospective review seemed to transform the conferences to a more interactive process. The process improvement training for pediatricians represented an alternate educational design that was unique in comparison to the didactic programs that were routinely offered at MH. Were these programs impacting the physician attendees' attitudes toward their individual learning, and were these types of education interventions benefiting MH? It appeared that participants were attending the programs for reasons other than improving their lifelong learning. In fact, because both programs were directly related to patient care it seemed

participation was part of physicians' everyday job responsibilities rather than attendance at a CME activity. Were physicians conscious of the fact that these encounters provided educational opportunities?

The goal of this research project was to demonstrate the value of linking quality improvement and patient safety to educational interventions that better relate to the needs of both the MH physicians and the MH organization. Next steps included an in-depth study of the data collected through observation, a research survey and interview process to provide evidence related to physicians' attitudes toward their lifelong learning and professional development. The research results presented in Chapter Four will be used to assist the MH CME committee in determining the effectiveness of the overall CME program and provide preliminary data for future CME research at MH. Information will guide the MH CME committee in advancing and improving the CME program to benefit the MH organization and its physicians.

CHAPTER FOUR

RESULTS OF RESEARCH STUDY:

CME PROGRAM AT MERIDIAN HEALTH

Original research conducted at MH in 2012 and 2014 served to establish a correlation between CME, quality improvement, patient safety issues and the physician/patient encounter as they related to physician lifelong learning. A study of MH MCCs represented clinical learning linked to a team of health care professionals interacting to achieve a consensus on the best treatment option for oncology patients. An additional study on a process improvement training explored team-based learning involving physicians working on a plan, implementation, study and evaluation of various quality improvement projects to determine a better process for treatment of patients. These CME programs were unique to the MH program and warranted further study because the educational design of each activity allowed for interaction among participants and the course director/facilitator. Programs did not follow the traditional format of a formal didactic lecture where a speaker utilized a slide presentation with the audience in a more passive role. The MCCs were case presentation based, and the process improvement training included informal didactic and interactive sessions that allowed for audience participation. Program planner/facilitators customized the design of CME programs to address quality improvement issues at MH.

Institutional Review Board Requirement

Institutional Review Board (IRB) approval from both Drew University and Meridian Health was required because the research involved working with human

subjects.³⁴⁵ MH's IRB required principal and sub investigators to complete Collaborative Institutional Training Initiative (CITI) before submitting research applications.³⁴⁶ Drew University's IRB also required completion of online training offered by the National Institutes of Health (NIH) Office of Extramural Research.³⁴⁷ An application to the MH IRB included a research protocol outlining the purpose and objectives of the study.³⁴⁸

Research Methodology

The CME administrator acted as the principal investigator for the research. Sub-investigators included the medical director of MH cancer care and the chair of the Pediatric Department at JSUMC. This research study process consisted of three phases. An observational phase was conducted by the principal investigator who attended all MCCs during the two month-study period in 2014, as well as the informal didactic sessions of the process improvement training held March through December of 2012. The second phase included implementation and collection of questionnaires from study participants, and the third phase involved an interview process to include the medical

³⁴⁵ MH IRB committee member reviewed the completed application. The application was considered to be exempt status. Drew IRB committee concurred with the decision of MH IRB.

³⁴⁶ Collaborative Institutional Training Initiative Official, <https://www.citiprogram.org/> (accessed July 19, 2015). Completion of this intensive on line training offered by the University of Miami is mandatory when conducting research at MH.

³⁴⁷ National Institutes of Health, Office of Extramural Research. <https://phrp.nihtraining.com/users/login.php> (accessed July 19, 2015). Drew University IRB submission included a completed copy of the Human Participants Research Review form, copy of consent and debriefing forms and all surveys, interview protocols, instructions, stimuli and tests. Because this research was being conducted at another institution, Drew's IRB required a letter of institutional approval from that organization.

³⁴⁸ See Appendix 3.

director of MH cancer care, the chair of JSUMC Pediatrics and the process improvement coordinator/trainer.

Approximately 200 adult health care professionals were surveyed or interviewed in the project. Study participants in the MCCs included physicians and allied health care professionals involved in caring for oncology patients in the MH system.³⁴⁹ Pediatricians who completed the process improvement training were exclusively from JSUMC. The data collected served as anecdotal evidence to support the research theory related to participants' attitudes toward their lifelong learning.

Survey format for process improvement training included seven questions and instructed participants to utilize a Likert scale and rank their agreement or disagreement with the statements provided.³⁵⁰ The questionnaire for the MCC study included twelve questions and utilized a similar scale.³⁵¹ One information sheet was created for both studies to serve as an informed consent for the research project.³⁵²

Participants at MCCs typically completed a CME evaluation at the conclusion of each conference. Attendees were asked to complete a twelve-question research survey instead of the CME evaluations for the research. Surveys were collected at the conclusion of each conference and sent to the principal investigator. Physicians participating in the MCCs were from various interdisciplinary specialties including

³⁴⁹ BCH physicians did not participate; at the time of the research project MCCs were temporarily suspended until physicians were hired to take on the responsibility of course directors/facilitators.

³⁵⁰ See Appendix 4.

³⁵¹ See Appendix 5.

³⁵² See Appendix 6. Participants were instructed not to include their names on the returned surveys to maintain anonymity. All completed surveys were kept in locked storage in the CME office.

surgery, radiology, pathology, medical oncology, pulmonology and endocrinology.

Other health care professionals participating in the study were oncology nurse navigators, genetic counselors, research coordinators, cancer registrars and other allied health care professionals involved in cancer care.

The process improvement training included seven physicians in the Pediatric Department at JSUMC from various specialties including pulmonology, emergency medicine and primary care. The seven-question survey was mailed to the physicians approximately eight months after the training was completed. This allowed participants time to reflect on the process and determine the value and effectiveness of the training. Participants were instructed to mail the completed survey to the principal investigator upon completion.³⁵³ There were no non-physicians included in this research project.

Research Study Limitations

Study results apply only to the CME program at MH and may or may not be projectable to other CME programs. This research represented an initial effort by the MH CME office to collect data in support of their efforts to demonstrate effectiveness in providing educational interventions for their medical staff. The study was limited to exploring physicians' attitudes toward their lifelong learning through their attendance at CME programs. CME activities were selected based on their involvement with quality improvement, patient safety and feasibility of coordination and completion.

³⁵³ Only six questionnaires were returned. The seventh pediatrician was no longer employed by JSUMC at the time of the survey.

One major limitation in the process improvement training was an inadequate sample size of survey participants. The Likert scale ratings chosen demonstrated very little disagreement by physicians; however, the goal of this CME program was to get information on physicians' reactions to the value of the program in order to establish the usefulness of its design. The abundance of positive responses to the questions may indicate that they could have been perceived as leading the participants.³⁵⁴ A direct link to patient outcomes could not be established based on the results of either study; however, baseline information gathered was helpful because it gave the researchers experience in conducting research exclusively related to CME.

Research Results of the MCCs

The goal of MCCs was to provide a forum for physicians to discuss treatment options for patients currently under treatment. Physicians relied on guidelines from the American College of Surgeons and the National Comprehensive Cancer Network to ensure that adherence to clinical standards was achieved. This interactive CME program was an opportunity for the interdisciplinary team to share expertise and achieve a consensus on best practices in treating patients with cancer.

A total of 477 responses were collected during this research project from forty-eight conferences held throughout the MH system.³⁵⁵

³⁵⁴ Questions were formulated to obtain data on physicians' attitudes toward the educational experience and were not related to measuring clinical data pertaining to patient care.

³⁵⁵ Because there was a large amount of data, responses were entered into an Excel spreadsheet. Each response was assigned a subject number and categorized according to type of conference, date, specialty, hospital, and individual response to each of the twelve questions. This allowed for data to be filtered by column, row or value.

Table 1. Number of Conferences and Respondents at Each MH Hospital

Hospital	Number of responses	Number of Conferences
JSUMC	248	24
OMC	122	13
RMC	96	9
SOMC	11	2
BCH	0	0
Total	477	48

Table 2. Number of Responses Through Each Type of Conference

Conference	Number of responses	Number of conferences
Breast	216	17
Endocrine	10	1
General	27	4
Gastrointestinal	55	5
Gynecology	4	1
Hepato-pancreato-biliary	19	2
Melanoma	9	1
Neurology	28	4
Thoracic	84	9
Urology	25	4
Total	477	48

Results of the twelve-question survey are as follows:

1. The format of the Multidisciplinary Cancer Conferences (MCC) aids in the promotion of comprehensive care for my patient.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
392	60	25	0	0
82%	13%	5%	0	0

Discussion

This question's purpose was to obtain information on the team-building process that takes place in the multidisciplinary conferences. MCCs promote an improved continuum of care, and this approach to caring for cancer patients can result in more

effective and efficient treatment. The conference format provided a forum for health care professionals to present cases and to review radiology and pathology to get immediate feedback from colleagues. One of the goals of the conferences was to come to consensus on the best treatment options for the patient.

2. The coordination of care provided by the Nurse Navigators is vital in treating my patients.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
336	57	84	0	0
70%	12%	18%	0	0

Discussion

The purpose of this statement was to get feedback on the value of nurse navigation in treatment of cancer patients. The role of nurse navigator was initiated at MH soon after the medical director of Meridian Cancer Care was hired; it was a new role for oncology nurses. Protocols and policies on cancer care were beginning to undergo revision, and nurse navigators had a primary role in implementation of new policies. MH's medical director requested this information to further define responsibilities for nurse navigators to enable them to assist in the promotion of continuum of care for cancer patients.

3. I am satisfied with the nurse navigators' follow-up care.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
345	68	64	0	0
73%	15%	14%	0	0

Discussion

The statement provided respondents' feedback on their satisfaction with the nurse navigator's ability to follow up on proposed treatment for patients. Treatment options were discussed in conference, and nurse navigators recorded and sent recommendations to the physicians treating cancer patients. If the treating physician participated in the conference, recommendations were implemented and nurse navigators assisted patients with coordination of care. Recommendations for treatment options were sent to all treating physicians. If that physician was not present and did not respond to the nurse navigator's report, it was difficult to ensure completion of treatment.

4. I am satisfied with nurse navigators' coordination of the conference.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
381	45	51	0	0
80%	9%	11%	0	0

Discussion

The new format for MCCs was gradually initiated from 2011 through 2013. Conferences dedicated to specific disease states were added, and nurse navigators took on additional responsibility for the new conferences. This statement provided information on the organization and coordination of the conferences. The information enabled the medical director to assess the workload for the navigators and determine if more staffing support was needed.

5. The format of the MCC provides useful feedback and recommendations that facilitate and develop an active treatment plan for prospective patients.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
368	49	60	0	0
77%	10%	13%	0	0

Discussion

The change from retrospective review to prospective review of patients represented a major format change for the conferences at MH. This statement assessed physicians' attitudes toward participating in an interactive program to discuss patients that were currently under treatment. It helped determine if time spent in the conference was worthwhile and provided useful information that could impact patient care.

6. The format of the MCC helps me to consider treatment options that I may not have previously thought of.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
357	61	59	0	0
75%	13%	12%	0	0

Discussion

This statement was included because it relates to how adult learning principles are incorporated into CME activities. The MH CME application asks all program planners if the program relates to how adults learn. Program planners of MCCs wanted their participants to solve genuine problems by reviewing their own issues and daily encounters with patients. In addition, physicians were asked to reflect using analogies or comparisons to their own experiences or patient cases to those of other participants. This statement also provides information for CME research. Program planners design CME

activities to promote changes to physicians' clinical practice based on the information presented.

7. The format offers an opportunity to learn from my colleagues.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
391	59	27	0	0
82%	12%	6%	0	0

Discussion

This statement was included to assess physicians' attitudes towards the MCCs as a learning opportunity. The exchange of information in conferences varied; at times it appeared to be routine, related to radiographic or pathologic findings; however, there were often times when the pathologist elaborated on unusual or rare specimens and provided new information to participants. Radiologists would also comment on image findings that were not common and presented the most current information related to the tumor in question. The conferences also provided opportunities to discuss research projects related to oncology currently being conducted at MH.

8. The format offers an opportunity to teach my colleagues.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
377	57	43	0	0
79%	12%	9%	0	0

Discussion

This statement was included in the survey to shed light on the role of physicians as mentors to colleagues and other participants. Conferences served to offer

opportunities to both teach and learn from one another. As an observer the principal investigator noted occurrences where physicians asked for clarification on information presented. Participants were always willing to provide explanations to clear up issues or concerns related to patients' treatment.

9. The format of the MCC promotes networking among health care professionals that are caring for oncology patients.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
420	52	5	0	0
88%	11%	1%	0	0

Discussion

Completion of a CME evaluation at all MH CME activities is a requirement. A section included in the universal CME evaluation asks participants about the strengths of the program. One of the choices listed on the evaluation asks participants if the program provided an opportunity to network with colleagues. The statement was also included in the research survey to determine physicians' reaction to the conference setting.

The principal investigator observed a non-threatening environment and willingness to present ideas in the conference.

10. The format of the MCC promotes quality and safety improvement in caring for my patients.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
399	53	25	0	0
84%	11%	5%	0	0

Discussion

This question was included to measure physicians' awareness that MCCs were directly related to quality improvement and patient safety.

11. The information shared in the MCC has improved my clinical knowledge.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
413	53	11	0	0
87%	11%	2%	0	0

Discussion

The purpose of including this statement in the survey was to demonstrate that physicians perceive MCCs as a learning opportunity where sharing knowledge with colleagues resulted in improving clinical expertise. MCCs allow for active participation in a non-threatening environment where physicians can question and discuss solutions to clinical challenges that present in their everyday practice.

12. The format of the MCC furthers my commitment to lifelong learning because I am discussing the patient's case in a prospective review.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
401	48	28	0	0
84%	10%	6%	0	0

Discussion

This statement was included to determine the value of changing the MCC format from a retrospective review to a prospective review. The success of the conferences depended on the required participation of radiologists, pathologists, oncologists and

surgeons. This interactive conference served as an important aspect of the continuum of care for MH's cancer patients.

Interview Process for MCCs

Feedback on the MCC research was obtained from MH's medical director of Meridian Cancer Care.³⁵⁶ The medical director reviewed the results of the twelve-question survey completed in 2014. He provided his reaction to the ranking of statements in order of highest to lowest agreement. The following indicates the result of the ranking:

1. The format of the MCC promotes networking among health care professionals that are caring for oncology patients.
2. The information shared in the MCC has improved my clinical knowledge.
3. The format of the MCC aids in the promotion of comprehensive care for my patient.
4. The format of the MCC promotes quality and safety improvement in caring for my patients.
5. The format of the MCC furthers my commitment to lifelong learning because I am discussing the patient's case in a prospective review.
6. The format offers an opportunity to learn from my colleagues.
7. The format offers an opportunity to teach my colleagues.
8. I am satisfied with nurse navigators' coordination of the conference.
9. The format of the MCC helps me to consider treatment options that I may not have previously thought of.
10. I am satisfied with the nurse navigators' follow-up care.
11. The format of the MCC provides useful feedback and recommendations that facilitate and develop an active treatment plan for prospective patients.
12. The coordination of care provided by the Nurse Navigators is vital in treating my patients.

The medical director commented that the statements reflected the priorities of Meridian Cancer Care, especially the first five statements. He plans to expand this research to work with individual facilitators of each conference to examine how MCCs can relate to

³⁵⁶ M. Krasna, Interview by principal investigator, December 3, 2015, Jersey Shore University Medical Center, Neptune, NJ, Tape Recording.

demonstrating outcomes related to cancer care at MH. The second part of the interview included questions to demonstrate the effectiveness and outcomes of the CME program.

Interview responses from the medical director are indicated below:

1. Did you encounter resistance to changing the conference format from retrospective review to prospective review?

The medical director stated that initially he encountered a lot of resistance to the change in format for the conferences. Participants did not want to leave their comfort zone, in addition to having very busy clinical practices. He indicated a change over the last five years and stated that currently attendance is robust. Physicians are realizing the benefit conferences can bring to their patients.

2. Did physicians “buy in” to changing the format?

Acceptance of the conferences has improved tremendously, the medical director explained. They are perceived as an opportunity to get feedback from all specialties involved in caring for cancer patients. Physicians can also access information from health care professionals who attend the conferences, especially the nurse navigators who are responsible for coordinating follow up care for patients.

3. Do you think physicians changed clinical practice based on discussion taking place in conferences?

The medical director declared that conferences have absolutely increased participants’ clinical knowledge. In fact, during conferences, opportunities to obtain multiple second opinions continually arise. This information can be relayed back to

patients. There are times when physicians are presented with options they may not have thought of—consensus of the team promotes rethinking of original thoughts or options for patient treatment.

4. Did format of conference result in changes to protocols or policies related to cancer care?

Yes, conferences have played a big part in transforming patient care, the medical director disclosed.

5. Was there resistance to policy or protocol change?

The medical director explained that one of the major changes that occurred in format was to have 85% of prospective cases presented in conference. Initially, many treating physicians were not attending conference. In these cases the patient was presented by another physician involved in that patient's care. Eventually those treating physicians began attending conferences because direct engagement in conference resulted in better coordination of care. Additionally, those physicians had access to specialists and other ancillary health care professionals to ensure a continuum of care.

6. Have conferences benefited MH?

The quality of cancer care has improved, according to the medical director, because it has become standardized. This results in a decrease in errors and an increase in efficiency and safety, resulting in better care for our patients.

7. Were multidisciplinary cancer clinics a result of the MCCs?

The medical director stated that his philosophy and strategic plan were to bring the teams along to buy in to the MCCs which have led to multidisciplinary cancer clinics at MH. Because the conferences are well coordinated and efficient, we are able to offer coordinated care to our patients through the multidisciplinary cancer clinics.

8. Do you believe physicians have changed treatment plans based on what happens in the MCCs?

Yes, approximately 50% of treatment plans have changed as a result of the MCCs. The medical director observed physicians revising clinical staging and determining correct and optimum sequencing of treatment because of information presented in the conferences. He believes that adherence to guidelines promotes better treatment planning.

9. Please comment on roles of nurse navigators, genetic counselors, social workers, palliative care nurses, speech therapist and dietitians related to the conference.

Nurse navigators are the “glue” of the conference, the medical director believes. They ensure adherence to treatment plans. Ancillary staff that attend conferences, including genetic counselors, social workers, dietitians and palliative care nurses, play a major role in ensuring that continuum of care is achieved. His ultimate goal is to improve “turn around” time for patients so that the time from diagnosis to treatment is consistently within fourteen days.

Discussion

This interview process reinforced the purpose of the research project. The medical director has contributed greatly to Meridian Cancer Care through his leadership skills which were vital to accomplishing a major transformation in oncology patient care at MH. His belief that MCCs are truly an educational intervention that can enhance physicians' lifelong learning experiences led to a successful format change in the conferences. This preliminary research can be used as the foundation for research in future CME programs and studies related to the value of MCCs.

Process Improvement Training and Survey Results

The results of the survey are as follows:

1. One of the goals of this training was to help you become an agent of change in your organization through a Plan, Do, Check, Act (PDCA) format. This training has improved my ability to manage change.

Strongly Agree	Agree	Disagree	Strongly Disagree
3	3	0	0

Discussion

Physicians chosen to be participants in this educational activity were perceived as leaders in their department and were involved with performance improvement projects that aligned with JSUMC's Annual Performance Improvement Plan. The purpose of this question was to sensitize the respondent to an awareness of making changes to their clinical practice and to determine if it helped them become more effective when they were in a leadership role. Responses indicated that participants recognized the value of

the PDCA format related to their leadership positions in implementing new protocols and procedures in a clinical setting.

2. I utilize the PDCA format when problem solving.

Strongly Agree	Agree	Disagree	Strongly Disagree
3	3	0	0

Discussion

This statement was included to determine if physicians were incorporating the PDCA format into other areas of their clinical practice. The participants were not asked to identify those areas; however, responses demonstrated evidence that physicians were taking the strategies learned in this process back to the workplace.

3. The training enabled me to incorporate basic process improvement tools in my clinical practice.

Strongly Agree	Agree	Disagree	Strongly Disagree
3	3	0	0

Discussion

Six hours of the training sessions included instruction and interactive discussions on an overview of the program, charter development, process mapping, charting, pilot design and reporting outcomes. The purpose of this statement was to determine if tools learned in these sessions were helpful in physicians' everyday practice. Responses reinforced that participants were practicing the new skill learned in the CME activity and incorporating it into their clinical practice.

4. The pilot project completed during the training influenced the way I approach my clinical practice.

Strongly Agree	Agree	Disagree	Strongly Disagree
3	2	1	0

Discussion

This statement was included to determine if the educational experience of the process improvement training changed the physician's approach to their clinical practice. Its purpose was to establish a direct relation to measuring the effectiveness of the CME activity. A major goal of CME was to determine if the educational activities provided are influencing physicians' clinical practices. Only one physician felt that the CME program did not influence his clinical practice.

5. The educational design to include classroom instruction, individual/team coaching and independent activity complemented my learning style.

Strongly Agree	Agree	Disagree	Strongly Disagree
4	2	0	0

Discussion

The purpose of this statement was to determine if the format of the instruction addressed how adults learn. Planners of this program wanted learners to solve genuine problems, develop a framework for application to create plans to implement change and practice a new skill. Responses supported the notion that the educational design was aligned with the learning styles of the participants.

6. I would participate in another CME activity with this same educational design.

Strongly Agree	Agree	Disagree	Strongly Disagree
4	2	0	0

Discussion

Inclusion of this statement served to assist the principal investigator and the MH CME committee in determining if physicians accepted this type of educational design and found it useful. Responses gave committee members feedback on this type of educational intervention, which was unique to the MH CME program.

7. This educational activity positively influenced my commitment to lifelong learning.

Strongly Agree	Agree	Disagree	Strongly Disagree
3	2	1	0

Discussion

This statement helped to determine if CME programs based on quality improvement and patient safety had a positive or negative influence on physicians' attitudes toward their lifelong learning and continuing professional development. Only one physician disagreed with the statement.

Survey Comments

Survey participants were given the opportunity to include comments at the bottom of the document. Four of the six physicians provided the following comments:

- “Generally a good program and worth the time.”
- “Very well organized training!”

- “Great course. Wish we could have chosen our project instead of being assigned a project. Pace of informal didactic sessions was a bit fast at times. Learned a lot about the PI process and have incorporated tools into other projects.”
- “Useful course. Provided tools for process improvement unknown previously. Would take a follow-up or refresher course if offered.”

Discussion

Comments indicate that the educational design was useful to most participants in this project. One physician expressed disappointment that they could not work on a project that they chose themselves. This was the first educational intervention provided by the Office of Clinical Effectiveness at MH, and it served as a pilot project for future process improvement training sessions. Program planners needed to assign projects to maintain control over the project and ensure that the project would be completed in a six-month period. This was discussed with participants at the beginning of the project. Planners did consider altering certain aspects of individual projects but chose clinical areas based on data from outcomes on the areas chosen.

Interview Process for Process Improvement Training

An important part of this study was to get feedback from the program facilitator/director and coordinator/trainer after the project was completed. Results of the process improvement training were presented to the JSUMC department chair of pediatrics and coordinator/trainer of the PDCA activity. Both interviews were conducted by the principal investigator of the study.³⁵⁷

³⁵⁷ S. Kairys, Interview by principal investigator November 24, 2015, Jersey Shore University Medical Center, Neptune, NJ, Tape Recording. C. Russell, Interview by principal investigator, November 30, 2015, Jersey Shore University Medical Center, Neptune, NJ, Tape Recording.

The pediatric chair stated he was pleased with the responses to the survey because a high percentage of physicians strongly agreed or agreed with the statements presented. One participant disagreed with two of the statements related to the project influencing his clinical practice and his commitment to lifelong learning. The chair commented this particular project may not have influenced the physician's practice or lifelong learning because he may have already been happy with his level of commitment.

Statements were ranked in order of strongest to weakest agreement to determine physicians' attitudes toward the most important aspect of the survey. The order of statements was as follows:

1. The educational design to include classroom instruction, individual/team coaching and independent activity complemented my learning style.
2. I would participate in another CME activity with this same educational design.
3. One of the goals of this training was to help you become an agent of change in your organization through a Plan, Do, Check, Act (PDCA) format. This training has improved my ability to manage change.
4. I utilize the PDCA format when problem solving.
5. The training enabled me to incorporate basic process improvement tools in my clinical practice.
6. The pilot project completed during the training influenced the way I approach my clinical practice.
7. This educational activity positively influenced my commitment to lifelong learning.

When asked to reflect on the ranking of the statements the chair stated he was pleased with physicians' positive reaction to the educational design of the program as indicated by the first two statements. The third statement supported the success of the three quality improvement initiatives that utilized the PDCA format because changes to protocols and policies came about as a result of the project. Reinforcement that participants valued the time spent in the program was indicated by the last four statements.

The coordinator/trainer was pleased that participants felt comfortable with the educational design of the program. The goal of assisting physicians to become agents of change was somewhat achieved; however, as stated previously, this was the first attempt to provide this type of program and the questionnaire provided feedback on interest in learning this skill.

The second part of the interview included questions to demonstrate the effectiveness of the design of the CME program. The first question was included to determine if the quality improvement projects completed by participants altered clinical practices within the Department of Pediatrics at JSUMC in bronchodilator use, exclusive breastfeeding in the newborn nursery and improving admission time to the pediatric intensive care unit.

1. Have there been changes to protocols or policies within the Department of Pediatrics at JSUMC as a result of the Process Improvement Training?

The chair stated that outcomes for use of bronchodilators have been measured and results show a decrease in use. There is an ongoing QI initiative to limit the use of ineffective therapies in treating bronchiolitis and the project has expanded to include treatment of patients with asthma. Breastfeeding rates at JSUMC have improved at JSUMC since this project was started. This project was an initial step in determining challenges in promoting exclusive breastfeeding at JSUMC. The chair provided a chart comparing the rates in 2014 to 2015 and rates have improved by approximately eleven percent. Admission times from the emergency department to the PICU have decreased significantly. Since this project was completed the long term goal of establishing a

standard of one hour transfer to the PICU has for the most part been accomplished. This project was instrumental in achieving that goal.

The coordinator/trainer of the PDCA program stated she could not speak to changes within the Pediatric Department but provided feedback on how participants engaged in the training. Participants that worked on the bronchiolitis project redesigned the education and documentation around treating bronchiolitis. A PDCA format gave them the tools to change their leadership approach enabling them to implement a protocol that was already in place. Outcomes of the project demonstrated improvement, and the physicians working on this project took it to another level. Participants contacted the coordinator on a regular basis and continue to utilize skills learned on their new projects. The team working on reducing admission delays to the PICU was not as engaged as other project teams. Their project outcomes did, however, show improvement in reducing admission delays. Initially the breastfeeding initiative team did not seem overly motivated but once they collected their data and applied the PDCA tools their attitude toward the project improved. The results of their project resulted in changing the approach to identifying the true problem.

2. Was there resistance to participating in this project?

The chair felt there was no resistance to participation in the study. Participants were motivated to participate in the project and felt it was a great opportunity to work on quality improvement projects related to their specialty re-certification and completion of Maintenance of Certification related to those requirements.

The coordinator/trainer commented that some participants were PI-minded and embraced the project. Others who were not as familiar with PI had a learning curve but became more accepting throughout the project. Participants who were not as motivated cooperated and completed the project.

3. Did you achieve projected goals for this project?

The chair felt that the outcomes from the project went beyond his expectations. The coordinator/trainer stated that the project was an early launch and felt it was extremely successful. The only area that was not as successful was engaging other members of the medical staff in this type of training. This type of program was not intuitive for physicians and it was hard for them to find time to devote to it.

4. How do you feel this project contributed to participants' lifelong learning?

The chair related lifelong learning to a mindset. He stated that his ultimate goal is to help physicians be more reflective and believes the PDCA format promotes reflection. A critical attitude is essential for physicians—for some it may be ingrained, while others find it more difficult. He noted, especially among primary care physicians, a tendency to memorize and strictly follow guidelines instead of taking a step back to review and reflect.

The coordinator/trainer stated that physicians must continually learn—it is the nature of their profession. She believes this program made physicians more comfortable with how they approach problem solving.

5. Would you change format of the program and would you repeat this program?

The chair stated he would not change the format of the program because the format aligned with the goals and objectives of the activity. He would like to repeat this program with participants that may not be as motivated. Similar programs provided in the last two to three years have proven to be successful in changing physicians' attitudes toward the reason for participating in the courses. This is based on comments from those participants. Before the program they were asked how many were there just to get the CME credit—about 80% raised their hands. After the course they were asked how many would take the course if there were no credits attached—about 50% responded they would because they learned something they could take back to their daily practice.

The coordinator/trainer was pleased with the overall program and stated there was a strong interest in repeating this program. She commented that they are currently providing it for the residents in OBGYN and Pediatrics at JSUMC. The format has undergone slight changes but most of the format remains intact. It still includes informal classroom settings with coaching/mentoring opportunities for both teams and individuals, as well as independent study for participants.

Discussion

The interview process provided different perspectives on the process improvement training. Overall the project was well received by the physicians and both interviewees felt a value to repeating the training. Goals and objectives of the training were achieved. Interviewees stated that the activity was beneficial to physicians' lifelong learning.

The final chapter will provide a conclusion of the results of this research project and a discussion as to whether questions presented throughout this dissertation have been answered. It will discuss the evolution of the MH CME program to help determine if incorporation of the 2006 ACCME criteria has improved the educational interventions provided to physicians to impact their lifelong learning.

CONCLUSION

The ultimate goal of CME is to assist physicians in providing better care for their patients. Postgraduate medical education or CME changed dramatically since its inception in the early 1920s. Review of the literature supported the premise that addressing quality improvement and patient safety issues in health care through CME programs has been and can be an important aspect of furthering physicians' lifelong learning. Early CME proponents recognized the need to provide foundations to create and develop the necessary framework to offer meaningful and useful educational interventions that address knowledge gaps for health care professionals. Their recognition of the importance of a connection between physicians' ability to learn from their everyday experiences and their application of that knowledge to their clinical practice is evident in their teachings. One of the most significant contributions made by these proponents was to maintain their foresight of the evolution of medicine rather than limiting their thinking to the immediate needs of medical education. They did not envision an end to learning, experimenting, or questioning and remained open to revisiting and revising their fundamental beliefs throughout their lifetimes. The common threads that run through their teachings include learning through experience, creating habits of inquiry, thinking like a scientist and focusing on the quality of health care. They served as role models for major stakeholders of CME today. The CME communities including the AMA, AAMC, ABMS, medical societies, and medical specialty organizations have embraced the lessons of these individuals and continue to integrate them into CME today.

How are these teachings incorporated into modern day CME? Are physicians getting access to quality education to enable them to maintain competency and perform to the best of their ability? Do CME-accredited providers offer educational activities that promote workplace learning and engage participants in interactive, self-reflective and interdisciplinary learning? Inclusion of these aspects of lifelong learning can be the deciding factors as to whether CME programs are valuable and effective.

I examined an active, centralized CME program to demonstrate how adherence to an established set of standards and guidelines can promote development of educational programs that relate directly to the needs of a health care organization. Transitioning to the new ACCME criteria was an ongoing process which provided opportunities to try new types of activities. Compliance with the criteria furnished the MH CME program with a toolkit that enabled coordinators to educate program planners in developing CME programs with an end result in mind.³⁵⁸ A universal CME application promoted centralization and cohesiveness within the CME program system wide. Revised and updated CME policies and procedures enabled the MH CME committee to promote and support educational activities that demonstrated the quality improvement efforts of the MH organization.³⁵⁹ This transformed program better served the needs of the physicians who were participating in the educational activities because they were being developed based on adult learning principles.³⁶⁰ Recognition of the impact of health care reform on

³⁵⁸ Planners were required to explain why the program was needed, define expected results and outcomes, outline objectives and suggest methods for measurement of programs' effectiveness. Interestingly, completion of several CME applications resulted in a decision to not provide the program because the CME application process helped to eliminate programs that did not address the needs of the MH physicians and organization.

³⁵⁹ Examples of these types of programs are included in Chapter Two.

CME was important because it related so closely to quality improvement and reporting health care outcomes. Centralization of the MH CME program allowed for easier and better management of tracking quality improvement outcomes that involved all MH hospitals.³⁶¹ This also led to collaborations between CME and other departments within MH. It promoted cohesiveness in the CME programs at all MH hospitals. Involving other stakeholders was vital to the success of system-wide CME programs because each played an important role in identifying the need for CME and measuring outcomes.³⁶² ACCME's criteria promote an interdisciplinary approach to developing and implementing postgraduate education, and building relationships with internal and external groups was essential in the transition process.

The most significant advantage to centralization and compliance with the 2006 ACCME criteria was that it promoted a different way of viewing the CME program at MH.³⁶³ The reaccreditation self-study completed in 2011-2012 provided evidence that the program met all but one required criteria for full accreditation and all criteria related

³⁶⁰ Customization of the programs to address adult learners resulted in CME evaluations that included comments from physicians related to a more valuable use of their time. They also indicated that lessons learned would be taken back to the office or hospital settings.

³⁶¹ CME programs were offered system wide because the quality issues identified were applicable to all MH hospitals. These programs were not only directly related to addressing knowledge gaps but were very efficient because development and implementation was streamlined. One speaker created the presentation and it was delivered multiple times. This allowed for sameness of information and consistency in the message to achieve standardization in clinical process and procedures.

³⁶² CME committee members' attendance at QI&O committee meetings at each hospital improved the transition to a centralized CME program. A major change in how knowledge gaps and needs assessments were identified was noted at the CME committee meetings. Committee members were committed to addressing this agenda item at all QI&O meetings, and this improved viability and acceptance of CME at MH.

³⁶³ Transition to the criteria changed the MH CME program from one that that lacked strong leadership, was compartmentalized, had no direct oversight and was non-compliant to one that met the requirements for full accreditation within one and a half years.

to accreditation with commendation.³⁶⁴ MH was achieving a higher level of effectiveness with many of their programs. Based on this the CME committee realized that changes made to the program represented a bigger picture in evaluating the program. More importantly, they recognized the value of establishing relationships with departments within the MH system. This collaboration provided programs that were stronger and more valuable to physicians, nurses, other allied health professionals, and the multidisciplinary team.

I have shown how CME programs based on quality improvement and patient safety can provide a more meaningful learning experience for physicians. The study conducted at MH provided data on physicians' attitudes related to how participation in CME programs, specifically a MCC and a process improvement training, impacted their lifelong learning. These programs offered participants an opportunity to expand their knowledge and enhance their learning skills. Responses to the questionnaire indicated that most physicians felt it was a valuable use of their time. Both CME programs related directly to prospective treatment of patients. These types of CME programs may have more value for participants because practitioners can apply knowledge gained directly to clinical practice.³⁶⁵

Caring for patients with cancer has become a team effort at MH, and physicians can no longer work autonomously. Non-threatening forums with opportunities to

³⁶⁴ Minor omissions in the program required that MH submit a progress report to demonstrate remediation of non-compliance.

³⁶⁵ MCCs provided an environment for physicians to prepare treatment options for patients currently under care. Projects for the process improvement training were studied and improvements made to protocols were implemented upon completion of the training. These represent examples of direct application of knowledge gained in the CME programs to clinical practice.

network among colleagues have been established at MH; they represent an improvement in the cancer care process. Observation of MCCs revealed numerous incidences where physicians altered treatment based on consensus of the team. It also demonstrated the value of including allied health professionals like nurse navigators, genetic counselors, social workers, palliative care nurses, survivorship nurses, and social workers as active participants in the conference. Respondents to the questionnaire indicated that the conferences offered opportunities to teach and learn from colleagues.³⁶⁶ Issues involving quality improvement and patient safety are embedded in MCCs, and physicians are addressing these issues each time a patient is presented in the conference. This reinforces the theory that CME related to quality improvement and patient safety can translate into effective and productive learning experiences.³⁶⁷

The process improvement training gave physicians new skills and enabled them to implement change in the clinical environment. Outcomes for projects resulted in improvement in procedures in the clinical setting. Most participants indicated that the training was a positive learning experience and they would participate in a program with a similar format. The majority of the physicians agreed that the educational design of the

³⁶⁶ As an observer I noted many instances where conferences became a teaching environment. Often, questions related to radiology, pathology and anatomy were posed. Specialists were able to enhance the learning environment and review and update on medical knowledge.

³⁶⁷The multidisciplinary cancer programs make up approximately 40% of MH's CME program. Coordination and implementation of this portion of the CME program involves many individuals, and the success of the conferences truly depends on the team effort. These conferences would not be possible without the environmental service team that sets up the conference room, the CME coordinators who prepare all the documentation including collection of patient case information, the nurse navigators who prepare cases and follow up on recommendations, and the radiologists and pathologists who review each case prior to the conference.

program complemented their leaning style.³⁶⁸ This information was important to the MH CME committee because it reinforced the promotion of guiding program planners in providing programs that utilized alternative educational designs.

This initial research on CME programs at MH revealed shortcomings. Responses to the questionnaire related to the MCCs showed no disagreement with statements posed. This result indicated that revision of wording for future studies may help to provide more concrete information on physicians' attitudes toward their educational experience. The neutral response may have altered the data and will not be included if the study is repeated. One limitation to the study on the process improvement training was the sample size; however, conducting the research offered alternative advantages. It served to measure the effectiveness of the educational activity; it provided experience in CME research and created a foundation for future research projects.

Ranking of the questions in order of strongest to weakest agreement offered an alternative way of looking at data. The value of this information was interpreted by the interviewees who demonstrated their appreciation of how physicians perceived the educational experience. These rankings were especially important to me because their development stemmed from my observations at the conferences and training. Each question evolved from actions of participants. The goal of the research was to create awareness among physicians that time spent in the CME programs was worthwhile and played an important role in treatment of their patients.

³⁶⁸ The approach to this learning process was not typical for physicians. Comments from the coordinator/trainer indicated that physicians needed to adjust to a different style of learning. Many were uncomfortable with the process initially.

The highest ranked question in the MCCs related to the value of networking with colleagues.³⁶⁹ An important aspect of CME involves promotion of team building to improve the continuum of care and physicians utilized this time to understand the roles of each health care professional in attendance. Improvement in clinical knowledge is one of the major goals of CME, and physicians perceived this as one of the top-ranked statements in the survey.³⁷⁰ Physicians' responses indicated the format of the MCC promoted comprehensive care for patients, and this supported the educational objective of the conference to work within the medical team to support continuum of care.³⁷¹ Physicians demonstrated an understanding of the importance of addressing quality issues and patient safety through active discussion in conferences.³⁷² Prospective review promotes a more efficient and effective use of physicians' time and expertise because it allows for immediate feedback. Active participation among physicians and allied health professionals was observed in all conferences. Each attendee took ownership for his or her role in the conference. The statement related to whether participants were learning or teaching each other speaks to many observations that occurred during conferences. These statements were included in the survey to increase physicians' awareness that

³⁶⁹ In addition to discussing cases being presented, opportunities for discussion of other patients undergoing care occurred. The role of networking is explored in all MH CME programs. A review of CME evaluations from past MCCs revealed a high percentage of responses included networking as a strength of the conference.

³⁷⁰ Acknowledgement of gained knowledge and application of that knowledge to clinical practice supports the theories of CME.

³⁷¹ Conferences served to expedite care for patients. Interaction among health care professionals helped to avoid delays in appointment times.

³⁷² My observation of retrospective conferences occurring in 2008 allowed for comparison to the conferences held in 2014. The difference in numbers of physicians in attendance was remarkable.

conferences were an important part of their lifelong learning. It appeared that physicians may not have recognized the opportunity to expand their knowledge through conference attendance but just considered it part of their regular work day routine. A goal of this research was to make physicians realize that CME is more than completing the required number of credits for re-licensure: it is part of a process that enhances continuing professional development and is a valuable asset that enables them to provide the best medical care for their patients. Physicians' ranking of the role of the nurse navigator supports the importance of the role of ancillary staff in conferences. The statement asking participants if they learned something new related to other treatment options promoted reflection on original thoughts or treatment options they may not have previously considered. This concept is important to CME stakeholders because it supports adult educational principles that promote critical thinking. CME programs that promote reflection achieve a higher level of engagement for both participants and faculty.

The ranking of statement for the process improvement training indicated that one of the major strengths of the training was it was easily integrated into physicians' individual learning styles. This program was examined because it was an atypical CME activity for MH.³⁷³ Physicians agreed that the training helped them implement change to protocols and procedures in clinical settings and resulted in improved care for patients. Responses indicated that the skills learned in the training could be applied to other areas of respondents' clinical practices. Although the majority of responses indicated a positive influence on physicians' commitment to lifelong learning, this statement was

³⁷³ Physicians agreed to a six-month commitment. This was the first time a program of this length was offered at MH.

ranked the lowest in the survey. It appeared that physicians were not relating this experience to their continuous professional development.³⁷⁴

This project represented MH's first attempt to explore the value of its CME program. Research provided insight to many aspects of the purpose of CME at MH. As the principal investigator, I found it rewarding to delve into physicians' thoughts and ideas about CME. Studies were conducted at a time of transition in the MH CME program, and research results indicated improvements in program planning, development and implementation. Information gathered provided evidence of adherence to 2006 ACCME criteria which helped to support MH's re-accreditation process. Data collected supported the need to change the format of the MCCs and promoted an interactive approach to improving the quality of care for cancer patients at MH. Use of an alternative educational design in the Pediatrics Department led to additional programs that were based on the fundamentals of the training. Interviews with the course directors/facilitators provided feedback on the programs and a foundation to support new programs.

The project offered an opportunity to analyze and reflect on changes made to the MH CME program and provided feedback on determining successful strategies to improve educational approaches to CME programs at MH. The process improvement training gave physicians new skills to apply to other quality improvement initiatives. Physicians who participated in the MCCs became aware of the benefits of the prospective review in cancer conferences and realized the advantages to working within a

³⁷⁴ The order of ranking for this survey provided information on physicians' acceptance of an alternative educational design. The sample size was too small to draw conclusions; however, this research provided valuable experience to me as the principal investigator.

multidisciplinary team. Program facilitators/directors gained insight from survey results to help them determine best methods for improving clinical challenges that present in their respective departments. This narrative provided evidence that MH is using CME as a strategic resource to strengthen its educational program and improve collaboration with internal and external groups working on similar initiatives to support the organizational framework of MH. It creates many opportunities for future research projects at MH that can assist in providing educational interventions that will effectively change physician behaviors, improve organizational framework and offer health care that will positively impact patient outcomes.

APPENDIX 1³⁷⁵

ACCME Accreditation Criteria 1-22

1. The provider has a CME mission statement that includes all of the basic components (CME purpose, content areas, target audience, type of activities, expected results) with expected results articulated in terms of changes in competence, performance, or patient outcomes that will be the result of the program.
2. The provider incorporates into CME activities the educational needs (knowledge, competence, or performance) that underlie the professional practice gaps of their own learners.
3. The provider generates activities/educational interventions that are designed to change competence, performance, or patient outcomes as described in its mission statement.
4. The provider generates activities/educational interventions around content that matches the learners' current or potential scope of professional activities.
5. The provider chooses educational formats for activities/interventions that are appropriate for the setting, objectives and desired results of the activity.
6. The provider develops activities/educational interventions in the context of desirable physician attributes (e.g., IOM competencies, ACGME Competencies).
7. The provider develops activities/educational interventions independent of commercial interests (Standards for Commercial Support 1, 2 and 6).
8. The provider appropriately manages commercial support (if applicable, Standard for Commercial Support 3).
9. The provider maintains a separation of promotion from education (Standard for Commercial Support 4).
10. The provider actively promotes improvements in health care and NOT proprietary interests of a commercial interest (Standard for Commercial Support 5).
11. The provider analyzes changes in learners (competence, performance, or patient outcomes) achieved as a result of the overall program's activities/educational interventions.

³⁷⁵ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 11.

12. The provider gathers data or information and conducts a program-based analysis on the degree to which the CME mission of the provider has been met through the conduct of CME activities/educational interventions.
13. The provider identifies, plans and implements the needed or desired changes in the overall program (e.g., planners, teachers, infrastructure, methods, resources, facilities, interventions) that are required to improve on ability to meet the CME mission.
14. The provider demonstrates that identified program changes or improvements, that are required to improve on the provider's ability to meet the CME mission, are underway or completed.
15. The provider demonstrates that the impacts of program improvements, that are required to improve on the provider's ability to meet the CME mission, are measured.
16. The provider operates in a manner that integrates CME into the process for improving professional practice.
17. The provider utilizes non-education strategies to enhance change as an adjunct to its activities/educational interventions (e.g., reminders, patient feedback).
18. The provider identifies factors outside the provider's control that impact on patient outcomes.
19. The provider implements educational strategies to remove, overcome or address barriers to physician change.
20. The provider builds bridges with other stakeholders through collaboration and cooperation.
21. The provider participates within an institutional or system framework for quality improvement.
22. The provider is positioned to influence the scope and content of activities/ educational interventions.

APPENDIX 2³⁷⁶

Table 3. IOM Competencies and ACGME-ABMS Competencies

IOM Competencies	ACGME-ABMS
Provide patient-centered care	Patient care
Work in interdisciplinary teams	Medical knowledge
Employ evidence-based practice	Practice-based learning and improvement
Apply quality improvement	Interpersonal and communication skills
Utilize informatics/technology	Professionalism
	Systems-based practice

³⁷⁶ Regnier et al. “Accreditation for Learning and Change: Quality and Improvement as the Outcome,” 177.

APPENDIX 3

MERIDIAN HEALTH RESEARCH PROTOCOL

Title: Continuing Medical Education and Quality and Safety Improvement
Principal Investigator: Patricia Jean Primavera
Department: Academic Affairs
Location of Research: Meridian Health Hospitals

STUDY AIM, BACKGROUND AND/OR HYPOTHESES

Clinical question:

Do Continuing Medical Education (CME) activities focused on patient safety and quality improvement influence physicians' attitudes toward their lifelong learning?

STUDY AIMS

1. Determine if CME programs based on quality and safety improvement are more meaningful to health care professionals;
2. Examine health care professionals' attitudes toward their lifelong learning;
3. Evaluate the effectiveness of educational designs for CME activities.

BACKGROUND

The quality of health care is greatly impacted when physicians commit to lifelong learning after completing formal medical education training.³⁷⁷ Opportunities to seek and improve knowledge continuously emerge during each patient/physician encounter. Are physicians aware of these educational opportunities? Is the current CME system effective in improving physicians' clinical competence and performance?

In 2000 the Conjoint Committee on Continuing Medical Education (Conjoint Committee) was developed to redefine the future of CME for the twenty-first century. The committee consists of national organizations involved in medical education, medical specialties, pharmaceutical research and manufacturing, nursing credentialing and pharmacy education.³⁷⁸ This committee proposed the reformation of CME based on a 2002 report issued by the Council of Medical Specialty Societies (CMSS). The report concluded that the current CME system is not adequately meeting the needs of the "ever-changing healthcare environment."³⁷⁹ The Council stated: "One key to rectifying this lapse in consistency of quality care is a restructuring and strengthening of the existing CME

³⁷⁷ Council of Medical Specialty Societies, "Repositioning for the Future of Continuing Medical Education."

³⁷⁸ Kovalski. "CME Stakeholders Look at New CME Funding Model."

³⁷⁹ Council of Medical Specialty Societies, "Repositioning for the Future of Continuing Medical Education," 1.

system.”³⁸⁰ In 2006 the Accreditation Council for Continuing Medical Education (ACCME) introduced revised accreditation criteria for accredited CME providers based on the recommendations of the Conjoint Committee. These criteria dramatically changed the standards accredited CME providers were required to meet and therefore changed the way CME programs were developed and implemented.³⁸¹

The proponents of the 2006 ACCME criteria described its implementation as the new CME.³⁸² In 2004, James C. Leist, Interim Director of the Alliance Center for Learning and Change, published an article in the Continuing Physician Professional Development (CPPD) Report, a newsletter published by the American Medical Association (AMA). Leist stated “CME providers will need to apply evidence-based educational research to improve traditional CME and implement new CME more closely linked to physicians’ needs and healthcare problems encountered in everyday practice.”³⁸³ The goal of the Alliance for CME was to provide interactive programs that addressed “clinical health problems with multi-interventions” so that physicians could apply that learning to their clinical practice.³⁸⁴ They envisioned that the new CME would help physicians identify their own needs to provide “appropriate interventions” and “monitor performance changes” as they relate to “the health status of the patient.”³⁸⁵

RESEARCH DESIGN

The research for this project will utilize a survey and interview process to conduct an in-depth study of two MH CME programs that demonstrate how the new ACCME 2006 criteria changed the Meridian Health (MH) CME program. In 2008 and 2009, the primary goal of the new MH CME program was to alter program planners approach to how the CME programs were being developed. Planners were encouraged to interact with Quality Improvement and Outcomes committees at each hospital to identify the specific health related areas that needed to be addressed. This often resulted in making changes to hospital protocol or policies related to the areas that needed improvement. CME Grand Rounds lecture series and Multidisciplinary Cancer Conferences (MCC - formerly called Tumor Boards) were the ideal venues to educate the physicians and promote the recommended changes. It has been five years since the new criteria were implemented and a need to evaluate the effectiveness of the efforts of the CME staff and CME program planners has been identified by the MH CME Committee.

³⁸⁰ Council of Medical Specialty Societies, “Repositioning for the Future of Continuing Medical Education,” 1.

³⁸¹ ACCME, *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*, 3.

³⁸² Kahn, Bagley, and Tyler, “Performance Improvement CME: Core of the New CME,” 1-3.

³⁸³ Leist, “Alliance for Continuing Medical Education Center for Learning and Change,” 3.

³⁸⁴ Leist, “Alliance for Continuing Medical Education Center for Learning and Change,” 3.

³⁸⁵ Leist, “Alliance for Continuing Medical Education Center for Learning and Change,” 3.

The first activity, a process improvement training course conducted at Jersey Shore University Medical Center department of Pediatrics in 2012, was coordinated and facilitated by the department of Medical Management. Pediatric physicians participated in the six-month-long program that included classroom instruction, team/individual coaching and independent activity. The course objective was to help physicians and other health care providers become agents of change in a health care organization through utilization of a Plan, Do, Check, Act (PDCA) format based on the works of W. Edwards Deming. In this research project the participating pediatric physicians will be surveyed to collect data on physicians' experience with the educational activity related to their lifelong learning. Questionnaires will provide information on physicians' acceptance and resistance to the project, comfort level of the participants, teaching and learning methods that work, and those that do not.

The second activity will involve researching CME programs focusing on MH's multidisciplinary cancer conferences (MCCs). Prior to 2008-2009, MCCs at MH focused mainly on retrospective patient cases. At the end of 2011 under the direction of the Medical Director of Oncology, the revised Meridian Health Multidisciplinary Cancer Conference Policy and Procedure went into effect. The MCCs' format was changed to achieve a goal of reviewing only prospective cases. The conferences included physicians and other health care professionals from all specialties caring for oncology patients. The change has been in effect for close to two years and a difference in physician participation, interdisciplinary interaction, and treatment processes has become apparent. This survey will examine attitudes of conference attendees regarding the new MCC format and will ask if the design of the educational activity has impacted their lifelong learning, their clinical practice and their patients.

NUMBER and DESCRIPTION OF PARTICIPANTS:

Approximately 200 adult health care professionals will be surveyed or interviewed in this project. Participants will include pediatricians that completed the Process Improvement Training and physicians, nurses, genetic counselors and any other health care professionals involved in caring for oncology patients. An interview process will be conducted with the Pediatric Physician facilitator and Medical Management coordinator of the Process Improvement Training and the Medical Director for Meridian Health Oncology Services.

DATA COLLECTION METHODS:

Data will be collected through printed surveys and/or personal interviews.

DATA ANALYSIS METHODS:

This data will serve as anecdotal evidence to support the research theory. The data will provide information on participants' attitudes toward their lifelong learning.

SIGNIFICANCE:

This project is significant because it is important to analyze and reflect on changes made to any educational process. CME research demonstrates that traditional CME programs

are not providing educational activities that demonstrate their effectiveness.³⁸⁶ Clearly, the analysis of the process will provide feedback to determine best strategies for improving the educational approach to CME activities at Meridian Health.

Stakeholders to include: patients, physicians, health care systems and government agencies can realize many benefits if the new CME programs are successful. Patients may experience improved clinical outcomes. Physicians will gain skills in self-evaluation and problem solving. Health care systems will improve organizational framework and the government will recognize its role in providing health care. Financial benefit could be realized by all of the stakeholders. Additionally the CME office at MH will benefit by using this information to determine the direction of its CME program. The research will help decide if transforming traditional CME by incorporating new CME standards will provide educational interventions that will effectively change physician behaviors, improve organizational framework and offer health care that will positively impact patient outcomes.

According to CME researchers, “Further research is required to identify the qualities essential for measuring casual linkages thought to exist among CME, physician behavior and clinical outcomes.”³⁸⁷ This project will provide an opportunity to research whether CME programs based on quality issues and safety factors provide more meaningful educational experiences to physicians and other health care professionals. It will determine if physicians intend to change their clinical behaviors based on the information they acquired from the educational activity. Finally it will ask physicians if the changes made to their clinical behavior had any impact on how they treated their patients. It will align with Meridian Health’s systematic effort to “overhaul how (they) deliver healthcare services, educate and train clinicians, and assess and improve quality.”³⁸⁸

STUDY POPULATION, LOCATION and DURATION:

- Approximately 200 adult health care professionals will be participating in the research project.
- The participants in this project are not included in a vulnerable population, do not have special needs and do not require translations.
- The participants are known to the researcher.
- Participants will include physicians, nurses, cancer registrars, genetic counselors and other health care professionals who attend Meridian Health’s Multidisciplinary Cancer Conferences. Pediatricians who participated in the 2012 Process Improvement Training at JSUMC will be surveyed. The program coordinator from Medical Management, the physician program facilitator from

³⁸⁶ Shojania, Silver, and Levinson, “Continuing Medical Education and Quality Improvement,” 305-308.

³⁸⁷ Mazmanian, Davis, and Galbraith, “Continuing Medical Education Effect on Clinical Outcomes,” 49S.

³⁸⁸ Chassin and Galvin, “The Urgent Need to Improve Health Care Quality,” 1000.

the department of Pediatrics and the Medical Director of Oncology for Meridian Health will be interviewed.

- Research will be conducted at the Meridian Health hospitals to include: JSUMC, OMC, RMC, SOMC and BCH. The survey will include the name of the hospital and will ask each participant to identify if he or she is a physician or non-physician. It will ask the participant to identify his or her specialty area.
- The research project will last approximately 3 months.

STUDY PROCEDURES:

- Research will be conducted at the Meridian Health hospitals to include: JSUMC, OMC, RMC, SOMC and BCH.
- The survey questionnaire for the Process Improvement Training (see Appendix 1) includes 7 questions. The questions were designed to collect information on health care professionals' attitudes toward their lifelong learning. The cover letter (information sheet) from the researcher will be included in the mailing survey in addition to the prepaid return self-addressed envelope.
- The survey questionnaire for the Multidisciplinary Cancer Conferences (see Appendix 2) includes 13 questions. The researcher will attend the conferences at all hospitals (to include: Breast, Endocrine, General, GI, Hepatobiliary, Melanoma, Neuro-oncology, Thoracic and Urology) and with the cooperation of the Medical Director of Oncology will ask participants to complete the survey. The survey will include a cover sheet (information sheet) describing the purpose of the study with instructions on participation in the study. The survey will also serve as an outcome evaluation for the CME activity. Participants will not include their names on the survey. The forms will be collected by the researcher and stored in a locked drawer in the CME office.
- After the survey process has been completed, the researcher will share the results of the surveys with the Pediatric Physician facilitator and Medical Management coordinator of the Process Improvement Training and the Medical Director for Meridian Health Oncology Services. This interview process will include questions related to identifying a needs assessment, program objectives, program implementation and program outcomes (see attached). The information collected in the interviews will aid the researcher in making recommendations to the MH CME committee related to the future direction of the CME program at Meridian Health.
- Data will be collected through surveys and interviews.

This study does not involve investigational drug or device study.

RISKS and DISCOMFORTS:

NA

BENEFITS to SUBJECTS

NA

ALTERNATIVES TO PARTICIPATION

Participation is voluntary.

PAYMENT to SUBJECTS

No compensation

PLAN for OBTAINING INFORMED CONSENT:

For the survey process the participants will be provided with a cover letter (information sheet) which includes all applicable elements of informed consent. Participating is completely voluntary. By completing the questionnaire and handing it in or mailing it back the researcher, participants agree to participate in the research.

The interviewees will be given an informed consent prior to beginning the interview process.

SUBJECT PRIVACY AND DATA CONFIDENTIALITY:

Participation will be voluntary. Subjects' names will not be included on the survey. Participants will be asked to complete the survey one time only.

By participating in the interview process the interviewees agree to share opinions and feedback on the two Meridian Health CME programs being researched.

Surveys and interview logs will be kept in a locked drawer in the CME office.

DATA ANALYSIS PLAN

This is a qualitative study.

DATA AND SAFETY MONITORING PLAN

NA

PLANS FOR THE SUBJECTS AT THE END OF THE PROTOCOL

There will be no follow up after the completion of the survey questionnaire. No personal identifiers will be collected and no link will be available after the end of the study protocol.

The researcher will continue to work with the interviewees on future Meridian Health CME programs and will make recommendations on the educational design of the programs based on the information collected from the surveys and the interviews.

INVESTIGATOR'S QUALIFICATIONS

The researcher is enrolled in a doctoral program of Medical Humanities at Drew University.

Patricia Jean Primavera is the CME Administrator for Meridian Health and oversees all of the CME programs at Meridian Health.

FUNDING SOURCES

NA

APPENDIX 4

CME Survey for participants in 2012 Process Improvement Training – Department of Pediatrics

Please indicate your title and select your specialty:

Physician Non-Physician

Specialty: _____

In 2012 you participated in a CME program sponsored JSUMC Department of Pediatrics: Process Improvement Training. This follow up survey relates to the effectiveness of the educational activity and will help to provide information to aid in planning future CME programs.

Please respond to the following:	Strongly Agree	Agree	Disagree	Strongly Disagree
One of the goals of this training was to help you become an agent of change in your organization through a Plan, Do, Check, Act (PDCA) format. This training has improved my ability to manage change.				
I utilize the PDCA format when problem solving.				
The training enabled me to incorporate basic process improvement tools in my clinical practice.				
The pilot project completed during the training influenced the way I approach my clinical practice.				
The educational design to include classroom instruction, individual/team coaching and independent activity complemented my learning style.				
I would participate in another CME activity with this same educational design.				
This educational activity positively influenced my commitment to lifelong learning.				

Comments:

APPENDIX 5

CME Survey for participants in the Meridian Health Multidisciplinary Cancer Care Conferences

- Breast Endocrine General GI GYN Hem-onc HPB
 Melanoma Neuro Thoracic Urology
 Physician Non-Physician

- Specialty: Med Onc Surgery Rad Onc Radiology
 Pathology Pulmonology GI Urology GYN Onc
 Nurse Nav Research Genetics Cancer Registry Other _____

Please respond to the following:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The format of the Multidisciplinary Cancer Conferences (MCC) aids in the promotion of comprehensive care for my patient.					
The coordination of care provided by the Nurse Navigators is vital in treating my patients.					
I am satisfied with the nurse navigators' follow-up care.					
I am satisfied with nurse navigators' coordination of the conference.					
The format of the MCC provides useful feedback and recommendations that facilitates and develops an active treatment plan for prospective patients.					
The format of the MCC helps me to consider treatment options that I may not have previously thought of.					
The format offers an opportunity to learn from my colleagues.					
The format offers an opportunity to teach my colleagues.					
The format of the MCC promotes networking among health care professionals that are caring for oncology patients.					
The format of the MCC promotes quality and safety improvement in caring for my patients.					
The information shared in the MCC has improved my clinical knowledge.					
The format of the MCC furthers my commitment to lifelong learning because I am discussing the patient's case in a prospective review.					

Comments:

APPENDIX 6



INFORMATION SHEET FOR PARTICIPATION IN RESEARCH

You are invited to be a participant in a research study about how CME programs focused on patient safety and quality improvement influence health care professionals' attitudes toward their lifelong learning. You were selected as a possible participant because you participated in one of two CME programs, Multidisciplinary Cancer Conference or Process Improvement Training at Meridian Health. We ask that you read this document and ask any questions you may have before agreeing to be in the study. The study is being conducted by Jean Primavera, CME Administrator for Meridian Health and doctoral student in Medical Humanities at Drew University. This study is part of my dissertation research.

The purpose of this study is to collect data on health care professionals' attitudes toward their lifelong learning and to examine various educational designs used for CME programs at Meridian Health. The information obtained from this research will aid in the planning of future CME programs at Meridian Health.

If you agree to be in this study, you will be asked to complete a survey that will take approximately 5 minutes. By completing the survey, you are agreeing to participate in this research study. There are no other alternatives to the study other than not participating. Participation is voluntary and whether you participate or not will not affect you in any way. You have the right to decide not to fill out the survey.

Your answers to the survey are anonymous and cannot be linked back to you in any way. Please do not print your name on the survey if you decide to participate. If you do not want to answer a question for any reason you are free to skip it.

There is no risk for participation in this survey since your name or other personal information will not be collected. Although you may not have a direct benefit from participating in the study, the results will be used to improve the CME programs offered at Meridian Health.

Participation will be voluntary. Subjects' names will not be included on the survey. Surveys will be kept in a locked drawer in the CME office. If the data from this research is published there will be no information included that would make it possible to identify the participants.

Your decision whether or not to participate in this research will not affect your current or future relations with Meridian Health or Drew University. If you decide to participate in

this study, you are free to withdraw from the study at any time without affecting those relationships and without penalty.

If you have any questions, concerns, or complaints about the research please contact Ms. Primavera. She will be glad to answer any of your questions. Ms. Primavera's number is 732-776-4072.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Meridian Health Institutional Review Board (IRB) Chairperson or the IRB Office at 732-776-4850 or Drew University IRB, Bill Rogers at wrogers@drew.edu. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

In addition, you may also call the Meridian Health ComplyLine at 1-877-888-8030 to anonymously report any concerns you have related to the study or research.

Thank you for considering participating in this study. If you decide to participate, please keep this sheet and retain for your records. **If you were provided a prepaid self-addressed envelope please send the completed survey back to me.**

Ms. Jean Primavera
Principal Investigator

BIBLIOGRAPHY

- “2004 letter from the ACCME to the Centers for Medicare and Medicaid Services.”
<http://www.accme.org/news-publications/news/accme-receives-clarification-cms-regarding-stark-ii-regulations> (Accessed January 4, 2015).
- ACCME.org. ABMS Core Competencies.
<http://www.msm.edu/Education/ExtendedProfessionalEducation/EPEDocuments/corecompetenciessflbEpe.pdf> (Accessed July 1, 2015).
- ACCME.org. *Our History*. <http://www.accme.org/about-us/our-history> (Accessed April 22, 2012).
- ACCME.org. *The Accreditation Council for Continuing Medical Education at Work: Accreditation, Recognition, Education, Operations, Governance*. Chicago: ACCME, 2011. 639_20130131_ACCME_at_Work.pdf (Accessed September 5, 2013).
- ACCME.org. *Under Accreditation Requirements*.
<http://accme.org/requirements/accreditation-requirements-cme-providers/accreditation-criteria> (Accessed September 5, 2013).
- ACCME. *Annual Report Data*. 2003.
<http://www.accme.org/sites/default/files/null/Annual%20Report%20Data%20-%2002003.pdf> (Accessed January 4, 2015).
- ACCME. “For Physicians and Health Care Professionals.” <http://accme.org/physicians-and-health-care-professionals> (Accessed November 1, 2014).
- “ACCME Receives Clarification from CMS Regarding Stark II Regulations.”
<http://www.accme.org/news-publications/news/accme-receives-clarification-cms-regarding-stark-ii-regulations> (Accessed January 4, 2015).
- Accreditation Council for Continuing Medical Education. *ACCME 2004 Annual Report Data*, Table 10. <http://www.accme.org> (Accessed October 31, 2014).
- Accreditation Council for Continuing Medical Education. *Annual Report Data 2006*.
http://www.accme.org/index.cfm/fa/home.popular/popular_id/127a1c6f-462d-476b-a33a-6b67e131 Accessed (Accessed April 22, 2012).
- Accreditation Council for Continuing Medical Education. “Standards for Commercial Support.” <http://www.accme.org/about-us/accountability-to-the-public/standards-commercial-support> (Accessed April 22, 2012).

- Accreditation Council for Graduate Medical Education. "Institutional Review Committee: Institutional Requirements." February 2003. <http://www.acgme.org> (Accessed November 17, 2014).
- Alliance for Continuing Education in the Health Professions. "The Alliance 'Focus On' Series," 2014. http://www.acehp.org/imis15/aCME/PDFs/Advocacy/focus_on/Focus_on_Health_care_Reform.pdf (Accessed November 1, 2014).
- American Board of Medical Specialties. "What is Maintenance of Certification?" <http://www.abms.org> (Accessed November 17, 2014).
- American College of Surgeons, Commission on Cancer. *Cancer Standards Programs 2012: Ensuring Patient-Centered Care*. Chicago: American College of Surgeons, 2012. <https://www.facs.org/~media/files/quality%20programs/cancer/coc/programstandards2012.ashx> (Accessed June 18, 2015).
- American Joint Commission on Cancer.org. <http://cancerstaging.org/About/what-is-the-ajcc/Pages/whatisajcc.aspx> (Accessed July 18, 2015).
- AMA. The Stark Law Rules of the Road 2011. <http://www.coa.org/docs/libraryofwebinars/amastarklawrulesoftheroad.pdf> (Accessed January 1, 2015).
- American Medical Association. *The Physician's Recognition Award and Credit System: Information for Accredited Providers and Physicians*, 2010 Revision. <http://www.ama-assn.org/resources/doc/cme/pr-a-booklet.pdf> (Accessed March 4, 2012).
- Angell, Marcia. *The Truth About Drug Companies: How They Deceive Us and What to Do About It*. New York: Random House, 2005.
- Association of American Medical Colleges; American Association of Colleges of Nursing. *Lifelong Learning in Medicine and Nursing: Final Conference Report*. Josiah Macy Jr. Foundation, 2010. <http://www.aacn.nche.edu/education-resources/MacyReport.pdf> (Accessed November 8, 2015).
- Baby-Friendly USA, Inc. <https://www.babyfriendlyusa.org/about-us/baby-friendly-hospital-initiative> (Accessed December 29, 2014).
- Bennett, Nancy L., Dave A. Davis, William E. Easterling Jr., Paul Friedmann, Joseph S. Green, Bruce M. Koeppen, Paul E. Mazmanian, and Herbert S. Waxman. "Continuing Medical Education: A New Vision of the Professional Development of Physicians." *Academic Medicine* 75, no. 12 (2000): 1167-72.

- http://www.themedfomscu.org/media/elip/CPD_academ.pdf (Accessed October 12, 2014).
- Berman, H. L. "The Tumor Board: Is it Worth Saving?" *Military Medicine* 140, no. 8 (1975): 529-31. <http://europepmc.org/abstract/med/806846> (Accessed May 21, 2015).
- Best, M., and D. Neuhauser. "Walter A Shewhart, 1924, and the Hawthorne Factory." *Quality and Safety in Health Care* 15, no. 2 (2006): 142-43. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464836/> (Accessed April 6, 2014).
- Bliss, Michael. *William Osler: A Life in Medicine*. Oxford University Press, 1999.
- Bonner, Thomas. *Iconoclast: Abraham Flexner and a Life in Learning*. JHU Press, 2002.
- Boucher, Bradley A., and Timothy J. Hannon. "Blood Management: A Primer for Clinicians." *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy* 27, no. 10 (2007): 1394-1411.
- Buerki, R. C. *Report of the Commission on Graduate Medical Education*. Chicago: University of Chicago Press, 1940
- Bush, Vannevar. (1945) *Science, the Endless Frontier: A Report to the President*. Washington, DC: National Science Foundation, 1960.
- Cancer Program Manual*. Commission on Cancer, American College of Surgeons. <http://link.springer.com/article/10.1245/s10434-010-0985-4#page-1> (Accessed May 21, 2015).
- Chassin, Mark R., and Robert W. Galvin. "The Urgent Need to Improve Health Care Quality: Institute of Medicine National Roundtable on Health Care Quality." *Journal of the American Medical Association* 280, no. 11 (1998): 1000-1005. <http://jama.jamanetwork.com/article.aspx?articleid=187987&resultclick=1> (Accessed January 7, 2014).
- Chassin, Mark R. "Is Health Care Ready for Six Sigma Quality?" *Milbank Quarterly* 76, no. 4 (1998): 565-591. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2751107/pdf/milq_106.pdf (Accessed June 28, 2015).
- Clinton, William J., and Albert Gore, Jr. "Science in the National Interest." (1994). Based on the forum on "Science in the National Interest" (Washington, DC, January 31-February 1, 1994). <http://files.eric.ed.gov/fulltext/ED373994.pdf> (Accessed March 9, 2014).

- Combs, J. R., and E. Arespachaga. *Continuing Medical Education as a Strategic Resource*. American Hospital Association's Physician Leadership Forum, Chicago, IL. September 2014.
<http://www.ahaphysicianforum.org/resources/leadership-development/CME/index.shtml> (Accessed November 2, 2015).
- Cole, Stephen, Leonard Rubin, and Jonathan R. Cole. *Peer Review in the National Science Foundation: Phase One of a Study: Prepared for the Committee on Science and Public Policy of the National Academy of Sciences*. Vol. 2788. National Academies, 1978.
- Collaborative Institutional Training Initiative Official. <https://www.citiprogram.org/> (Accessed July 19, 2015).
- Cooke, Molly, David Irby, and Elizabeth O'Brien. *Educating Physicians: A Call for Reform of Medical School and Residency*. San Francisco, CA: Jossey-Bass, 2010.
- Council on Medical Education and Hospitals (American Medical Association), and Douglas Dee Vollan. *Postgraduate Medical Education in the United States: A Report of the Survey of Postgraduate Medical Education Carried Out by the Council on Medical Education and Hospitals... 1952-1955*. American Medical Association, 1955.
- Council of Medical Specialty Societies. "Repositioning for the Future of Continuing Medical Education" 2002. <http://www.jcehp.com/vol125/2503CMEReport.pdf> (Accessed April 8, 2012).
- Craven, Edward D., John Clark, Mary Cramer, M. D. Corwin, J. Steven, M. D. Cooper, and Mary Reich. "New York-Presbyterian Hospital uses Six Sigma to Build a Culture of Quality and Innovation." *Journal of Organizational Excellence* 25, no. 4 (2006): 11-19. http://sixsigma.nl/pdf/six_sigma_nyph.pdf (Accessed June 28, 2015).
- J. M. Croke and S. El-Sayed. "Multidisciplinary Management of Cancer Patients: Chasing a Shadow or Real Value? An Overview of the Literature." *Current Oncology* 19, no. 4 (2012).
- Darley, Ward, and Arthur S. Cain. "A Proposal for a National Academy of Continuing Medical Education." *Academic Medicine* 36, no. 1 (1961): 33-37.
http://journals.lww.com/academicmedicine/Citation/1961/01000/A_Proposal_for_a_National_Academy_of_Continuing.3.aspx (Accessed April 22, 2012).
- Davis, Dave. "Does CME work? An Analysis of the Effect of Educational Activities on Physician Performance or Health Care Outcomes." *The International Journal of Psychiatry in Medicine* 28, no. 1 (1998): 21-39.

<http://www.gwern.net/docs/spacedrepetition/1998-davis.pdf> (Accessed October 12, 2014).

- Davis, Dave, Mary Ann Thomson O'Brien, Nick Freemantle, Fredric M. Wolf, Paul Mazmanian, and Anne Taylor-Vaisey. "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, no. 9 (1999): 867-874.
- Davis, David A., Mary Ann Thomson, Andrew D. Oxman, and R. Brian Haynes. "Changing Physician Performance: A Systematic Review of the Effect of Continuing Medical Education Strategies." 274, no. 9 (1995): 700-05. <http://jama.jamanetwork.com/article.aspx?articleid=389532> (Accessed November 1, 2014).
- Davis, David A., Mary Ann Thomson, Andrew D. Oxman, and R. Brian Haynes. "Evidence for the Effectiveness of CME: A Review of 50 Randomized Controlled Trials." *Journal of the American Medical Association* 268, no. 9 (1992): 1111-17. <http://jama.jamanetwork.com/article.aspx?articleid=399544> (Accessed June 13, 2015).
- Deming, W. Edwards. "Out of the Crisis, Massachusetts Institute of Technology." Cambridge, MA: Center for Advanced Engineering Study, 1986.
- Dornan, Tim. "Osler, Flexner, Apprenticeship and the New Medical Education." *Journal of the Royal Society of Medicine* 98, no. 3 (2005): 91-95. <http://jrs.sagepub.com/content/98/3/91.full.pdf+html> (Accessed April 12, 2014).
- Eiser, Arnold R., William B. McNamee, and Jean Yodis Miller. "Integrating Quality Improvement into Continuing Medical Education Activities within a Community Hospital System." *American Journal of Medical Quality* 28, no. 3 (2013): 238-42. <http://ajm.sagepub.com/content/early/2012/09/11/1062860612458825> (Accessed July 2, 2015).
- Fennell, Mary L., Irene Prabhu Das, Steven Clauser, Nicholas Petrelli, and Andrew Salner. "The Organization of Multidisciplinary Care Teams: Modeling Internal and External Influences on Cancer Care Quality." *JNCI Monographs* 2010, no. 40 (2010): 72-80. https://www.researchgate.net/profile/Andrew_Salner/publication/43131230_The_Organization_of_Multidisciplinary_Care_Teams_Modeling_Internal_and_External_Influences_on_Cancer_Care_Quality/links/00b495229f9c2d6792000000.pdf (Accessed May 21, 2015).
- Flexner, Abraham (1910). *Medical Education in the United States and Canada A Report to the Carnegie Foundation for the Advancement of Teaching*. New York: The

Carnegie Foundation for the Advancement of Teaching.
<http://ia700308.us.archive.org/22/items/medicaleducation00flexiala/medicaleducation00flexiala.pdf> (Accessed March 30, 2012).

Fox, Robert D., and Clint Miner. "Motivation and the Facilitation of Change, Learning, and Participation in Educational Programs for Health Professionals." *Journal of Continuing Education in the Health Professions* 19, no. 3 (1999): 132-41.
<http://www.cpd.utoronto.ca/celp/files/2014/03/Fox-motivation-of-change.pdf> (Accessed December 29, 2012).

Gatcliffe, Troy A., and Robert L. Coleman. "Tumor Board: More than Treatment Planning—A 1-Year Prospective Survey." *Journal of Cancer Education* 23, no. 4 (2008): 235-37.
<http://www.tandfonline.com/doi/abs/10.1080/08858190802189014> (Accessed September 30, 2015).

David Glendinning. "New Stark Rules add Third Layer to Physician Self-Referral Restrictions." *AMA American Medical News*, 2007.
<http://www.amednews.com/article/20070924/government/309249985/1/> (Accessed January 2, 2015).

Gross, Gary Edward. "The Role of the Tumor Board in a Community Hospital." *CA: A Cancer Journal for Clinicians* 37, no. 2 (1987): 88-92.
<http://onlinelibrary.wiley.com/doi/10.3322/canjclin.37.2.88/abstract> (Accessed May 21, 2015).

Halpern, Edward, Jay Perman, and Emery Wilson. "Abraham Flexner of Kentucky, His Report, Medical Education in the United States and Canada, and the Historical Questions Raised by the Report." *Academic Medicine* 85, no 2 (February 2010): 203-10
http://journals.lww.com/academicmedicine/abstract/2010/02000/abraham_flexner_of_kentucky_his_report_medical.16.aspx (Accessed February 2, 2010).

Harris, Jerome J. "Television as an Educational Medium in Medicine: An Historical Purview." *Academic Medicine* 41, no. 1 (1966): 1-19.
http://journals.lww.com/academicmedicine/Abstract/1966/01000/Television_as_an_educational_medium_in_medicine_.1.aspx (Accessed August 26, 2014).

Harry, Mikel J. "Six Sigma: A Breakthrough Strategy for Profitability." *Quality Progress* 31, no. 5 (1998): 60.
<http://crawl.prod.proquest.com.s3.amazonaws.com/fpcache/12b866a8d582c8ab5faff897bd7c414d.pdf?AWSAccessKeyId=AKIAJF7V7KNV2KKY2NUQ&Expires=1435525538&Signature=rtyGfz2ebejP54bBHijLTjlniKo%3D> (Accessed June 28, 2015).

- Hayes, T. M. "Continuing Medical Education: A Personal View." *BMJ: British Medical Journal* 310, no.6985 (1995): 994.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2549367/pdf/bmj00588-0048.pdf>
 (Accessed March 30, 2014).
- Hayes, T. M., L. A. Allery, K. G. Harding, and P. A. Owen. "Continuing Education for General Practice and the Role of the Pharmaceutical Industry." *British Journal of General Practice* 40, no. 341 (1990): 510-512
<http://bjgp.org/content/bjgp/40/341/510.full.pdf> (Accessed March 30, 2014).
- Institute of Medicine. *Health Professions Education: A Bridge to Quality*. 2003.
http://www.med.und.edu/continuing-medical-education/_files/docs/iom-competencies.pdf (Accessed July 1, 2015).
- Helin-Salmivaara, Arja, Risto Huupponen, Timo Klaukka, and Kalle Hoppu. "Focusing on Changing Clinical Practice to Enhance Rational Prescribing—Collaboration and Networking Enable Comprehensive Approaches." *Health Policy* 66, no. 1 (2003): 1-10.
<http://www.sciencedirect.com/science/article/pii/S0168851003000204> (Accessed November 17, 2014).
- Hong, Nicole J., Frances C. Wright, Anna R. Gagliardi, and Lawrence F. Paszat. "Examining the Potential Relationship between Multidisciplinary Cancer Care and Patient Survival: An International Literature Review." *Journal of Surgical Oncology* 102, no. 2 (2010): 125-134.
<http://onlinelibrary.wiley.com/doi/10.1002/jso.21589/abstract> (Accessed July 2, 2015).
- IOM. *Statement on Quality of Care: National Roundtable on Health Care Quality—The Urgent Need to Improve Health Care Quality*. 1998.
<http://www.iom.edu/Reports/1998/Statement-on-Quality-of-Care-National-Roundtable-on-Health-Care-Quality--The-Urgent-Need-to-Improve-Health-Care-Quality.aspx> (Accessed November 17, 2014).
- Jennett, P. A., and O. E. Laxdal. "Assessing Educational Needs in Medical Practice: Guidelines for the CME Planning Committee Member." *Canadian Family Physician* 30 (1984): 1917.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2154214/pdf/canfamphys00223-0209.pdf> (Accessed January 4, 2015).
- Johnson, David A., Dale L. Austin, and James N. Thompson. "Role of State Medical Boards in Continuing Medical Education." *Journal of Continuing Education in the Health Professions* 25, no. 3 (2005): 183-89.
<http://onlinelibrary.wiley.com/doi/10.1002/chp.27/abstract> (Accessed December 29, 2014).

- Kahn, Norman, Bruce Bagley and Susan Tyler. "Performance Improvement CME: Core of the New CME." *CPPD Report 22* (Spring 2007): 1-3.
- Kairys, Steven. Chair, Department of Pediatrics, Jersey Shore University Medical Center. Interview by author, November 24, 2015. Neptune, NJ. Tape Recording.
- Katterhagen, J. G., and D. L. Wishart. "The Tumor Board—How It Works in a Community Hospital." *CA: A Cancer Journal for Clinicians* 27, no. 4 (1977): 201-204. <http://onlinelibrary.wiley.com/doi/10.3322/canjclin.27.4.201/abstract> (Accessed May 21, 2015).
- Kaufman, David M. "Applying Educational Theory in Practice." *BMJ* 326, no. 7382 (2003): 213-16. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1125068/> (Accessed October 14, 2014).
- Koop, C. Everett. "Why CME?." *Journal of Continuing Education in the Health Professions* 10, no. 2 (1990): 103-109. <http://onlinelibrary.wiley.com/doi/10.1002/chp.4750100202/abstract> (Accessed April 20, 2012).
- Kovaleski, David. "CME Stakeholders Look at New CME Funding Model." *Medical Meetings* http://meetingsnet.com/medicalmeetings/cme_rules_regs/0907_CMSS_new_funding_model/#ixzz1rN6TGpc2 (Accessed April 7, 2012).
- Krasna, Mark. Corporate Medical Director, Meridian Cancer Care, Jersey Shore University Medical Center. Interview by author, December 3, 2015. Neptune, NJ. Tape Recording.
- Kuhn, Herb B. Director, CMS Center for Medicare Management. Letter. 2006. http://accme.org/sites/default/files/null/31b0007c-0a6c-4e0e-86f7-55d835ef6d5b_uploaddocument.pdf (Accessed January 4, 2015).
- Lamb, B. W., N. Sevdalis, H. Mostafid, C. Vincent, and J. S. A. Green. "Quality Improvement in Multidisciplinary Cancer Teams: An Investigation of Teamwork and Clinical Decision-Making and Cross-Validation of Assessments." *Annals of Surgical Oncology* 18, no. 13 (2011): 3535-43. <http://link.springer.com/article/10.1245/s10434-011-1773-5#/page-1> (Accessed March 29, 2015).
- Lamb, Benjamin W., Helen W. L. Wong, Charles Vincent, James S. A. Green, and Nick Sevdalis. "Teamwork and Team Performance in Multidisciplinary Cancer Teams: Development and Evaluation of an Observational Assessment Tool." *BMJ Quality & Safety* (2011): bmjqs-2010. <http://qualitysafety.bmj.com/content/early/2011/05/24/bmjqs.2010.048660.full.pdf+html> (Accessed March 29, 2015).

- Lamb, Benjamin W., Nick Sevdalis, Sonal Arora, Anna Pinto, Charles Vincent, and James S. A. Green. "Teamwork and Team Decision-Making at Multidisciplinary Cancer Conferences: Barriers, Facilitators, and Opportunities for Improvement." *World Journal of Surgery* 35, no. 9 (2011): 1970-76.
<http://link.springer.com/article/10.1007/s00268-011-1152-1#/page-1> (Accessed March 29, 2015).
- Leist, James C. "Alliance for Continuing Medical Education Center for Learning and Change—Fostering Innovations in CME Practice." *CPPD Report*, 13, (Winter 2004). <http://www.ama-assn.org/resources/doc/cme/cppd13.pdf> (Accessed April 13, 2013).
- Lewis, C. E. "Continuing Medical Education: Past, Present, Future." *Western Journal of Medicine* 168, no. 5 (1998): 334.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1304976/> (Accessed April 5, 2014).
- Lewis, Charles. The UCLA AIDS Education and Training Center Trigger Tapes. Center for Health Promotion and Disease Detection. Videotapes, 1989.
- Mann, Karen V. "The Role of Educational Theory in Continuing Medical Education: Has It Helped Us?" *Journal of Continuing Education in the Health Professions* 24, no. S1 (2004): S22-S30.
- Manning, Phil. "Continuing Medical Education 1906-1975: How the Past Influences the Present." *Almanac Alliance for CME* 27, no 12 (December 2005): 3-5.
- Manning, Phil R., and Donald W. Petit. "The Past, Present, and Future of Continuing Medical Education: Achievements and Opportunities, Computers and Recertification." *Journal of the American Medical Association* 258, no. 24 (1987): 3542-46. <http://jama.jamanetwork.com/article.aspx?articleid=369929> (Accessed March 16, 2014).
- Mazmanian, Paul E., and David A. Davis. "Continuing Medical Education and the Physician as a Learner: Guide to the Evidence." *Journal of the American Medical Association* 288, no. 9 (2002): 1057-60.
<http://acmd615.pbworks.com/f/CMEphysicianaslearner.pdf> (Accessed June 13, 2015).
- Mazmanian, Paul E., David A. Davis, and Robert Galbraith. "Continuing Medical Education Effect on Clinical Outcomes: Effectiveness of Continuing Medical Education: American College of Chest Physicians Evidence-Based Educational Guidelines." *Chest Journal* 135, no. 3_suppl (2009): 49S-55S.
http://acmd615.pbworks.com/f/CME_clinicaloutcomes.pdf (Accessed November 14, 2014).

- Medical Society of New Jersey Procedure and Instructional Manual.
<http://www.msnj.org/p/cm/ld/fid=482> (Accessed January 27, 2015).
- Moore, Donald E. "Needs Assessment in the New Health Care Environment: Combining Discrepancy Analysis and Outcomes to Create More Effective CME." *Journal of Continuing Education in the Health Professions* 18, no. 3 (1998): 133-41.
- Moore, Donald E., Joseph S. Green, and Harry A. Gallis. "Achieving Desired Results and Improved Outcomes: Integrating Planning and Assessment throughout Learning Activities." *Journal of Continuing Education in the Health Professions* 29, no. 1 (2009): 1-15.
<http://www.drazzam.ca/resources/Moore,%20Green,%20Gallis%202009%20%20Achieving%20desired%20results%20and%20improved%20outcomes%20Integrating%20planning%20and%20assessment%20throughout%20learning%20activities.pdf>
 (Accessed January 1, 2015).
- National Comprehensive Cancer Network.
http://www.nccn.org/professionals/physician_gls/f_guidelines.asp (Accessed May 31, 2015).
- National Institutes of Health, Office of Extramural Research.
<https://phrp.nihtraining.com/users/login.php> (Accessed July 19, 2015).
- Norman Geoffrey R., Susan I. Shannon, and Michael L. Marrin. "The Need for Needs Assessment in Continuing Medical Education." *BMJ* 328, no. 7446 (2004): 999-1001. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC404504/> (Accessed January 4, 2015).
- O'Neil, Edward. "The Transformation of Academic Health in the United States." *Western Journal of Medicine* 168 (1998): 355
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1304979/> (Accessed January 3, 2013).
- O'Reilly, Patrick, Charles P. Tiff, and Charlene DeLena. "Continuing Medical Education: 1960s to the Present." *Academic Medicine* 57, no. 11 (1982): 819-26.
http://journals.lww.com/academicmedicine/Abstract/1982/11000/Continuing_medical_education__1960s_to_the_present.1.aspx (Accessed March 16, 2014).
- Osler, William. "An Address on the Importance of Post-Graduate Study: Delivered at the Opening of the Museums of the Medical Graduates College and Polyclinic, July 4th, 1900." *British Medical Journal* 2, no. 2063 (1900): 73-75.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2463081/> (Accessed January 3, 2013).

- Patkar, Vivek, Dionisio Acosta, Tim Davidson, Alison Jones, John Fox, and Mohammad Keshtgar. "Cancer Multidisciplinary Team Meetings: Evidence, Challenges, and the Role of Clinical Decision Support Technology." *International Journal of Breast Cancer* (2011). <http://www.hindawi.com/journals/ijbc/2011/831605/abs/> (Accessed May 21, 2015).
- Partin, Clyde, Howard I. Kushner, and Mary E. Kollmer Horton. "A Tale of Congress, Continuing Medical Education, and the History of Medicine." *Proceedings (Baylor University. Medical Center)* 27, no. 2 (2014): 156. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3954679/> (Accessed April 13, 2014).
- Petty, John K., and John T. Vetto. "Beyond Doughnuts: Tumor Board Recommendations Influence Patient Care." *Journal of Cancer Education* 17, no. 2 (2002): 97-100. <http://www.tandfonline.com/doi/abs/10.1080/08858190209528807#.VXyNQv05K1s> (Accessed June 13, 2015).
- Porter, Michael E., and Elizabeth Olmsted Teisberg. "How Physicians Can Change the Future of Health Care." *Journal of the American Medical Association* 297, no. 10 (2007): 1103-1111. <http://www.istud.it/newsletter/san/future.pdf> (Accessed October 29, 2014)
- Porter, Michael E., and Elizabeth Olmsted Teisberg. *Redefining Health Care: Creating Value-Based Competition on Results*. Harvard Business Press, 2006.
- Radecki, Stephen E., Julie G. Nyquist, Jerry D. Gates, Stephen Abrahamson, and Donald E. Henson. "Educational Characteristics of Tumor Conferences in Teaching and Non-Teaching Hospitals." *Journal of Cancer Education* 9, no. 4 (1994): 204-216. <http://www.tandfonline.com/doi/abs/10.1080/08858199409528310> (Accessed October 3, 2015).
- Regnier, Kate, Murray Kopelow, Dorothy Lane, and Errol Alden. "Accreditation for Learning and Change: Quality and Improvement as the Outcome." *Journal of Continuing Education in the Health Professions* 25, no. 3 (2005): 174-82. <http://onlinelibrary.wiley.com/doi/10.1002/chp.26/abstract> (Accessed November 21, 2014).
- Richards, Robert. "The Growth of Continuing Medical Education" *The Yale Journal of Biology and Medicine* 51 (1978). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2595661/> (Accessed November 21, 2014).
- Rosof, Adrienne B., and William Campbell Felch, eds. *Continuing Medical Education: A Primer*, 2nd ed. New York: Praeger, 1992.

- Russell Carol. Coordinator Medical Management, Jersey Shore University Medical Center, Interview by author, November 30, 2015. Neptune, NJ. Tape Recording.
- Ruzek, Jennifer, Renee Williard, Edward H. O'Neil, and Rebecca Webster Rimel. *Trends in US Funding for Biomedical Research*. University of California: San Francisco, Center for the Health Professions, 1996.
- Sanazaro, Paul J. "Medical Audit, Continuing Medical Education and Quality Assurance." *Western Journal of Medicine* 125, no. 3 (1976): 241.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1237295/> (Accessed March 2, 2014).
- Sarff, Maryclare, Wendy Rogers, Charles Blanke, and John T. Vetto. "Evaluation of the Tumor Board as a Continuing Medical Education (CME) Activity: Is it Useful?*" *Journal of Cancer Education* 23, no. 1 (2008): 51-56.
http://www.tandfonline.com/doi/abs/10.1080/08858190701818226#.Uzb5u_1OX5o (Accessed March 29, 2014).
- Shepherd, Glen R. "History of Continuation Medical Education in the United States since 1930." *Academic Medicine* 35, no. 8 (1960): 740-58.
http://journals.lww.com/academicmedicine/Citation/1960/08000/History_of_Continuation_Medical_Education_in_the.2.aspx (Accessed March 29, 2012).
- Shojania, Kaveh, Ivan Silver, and Wendy Levinson. "Continuing Medical Education and Quality Improvement: A Match Made in Heaven?" *Annals of Internal Medicine* 2012, 156: 305-308.
- Slotnick, H. B. "Physicians' Learning Strategies." *CHEST Journal* 118, no. 2_suppl (2000): 18S-23S. <http://acmd615.pbworks.com/f/Slotnick.Strategies.pdf> (Accessed January 1, 2015).
- Smith, Bruce H. "Is the Tumor Board Doomed?" *Journal of the American Medical Association* 233, no. 10 (1975): 1048.
<http://jama.jamanetwork.com/article.aspx?articleid=340622> (Accessed May 21, 2015).
- Smith, David E., Scott Davis, and Lincoln Polissar. "The Hospital Cancer Program: Its Impact on Care of the Rural Cancer Patient." *Am Surg* 45 (November 1979): 730.
- Spivey, Bruce. "Continuing Medical Education in the United States: Why It Needs Reform and How We Propose to Accomplish It." *Journal of Continuing Education in the Health Professions* 25, no. 3 (2005): 137-41.
http://journals.lww.com/jcehp/Abstract/2005/25030/Continuing_medical_education_in_the_United_States_.2.aspx (Accessed March 30, 2012).

- Staker, Larry V. "Teaching Performance Improvement: An Opportunity for Continuing Medical Education." *Journal of Continuing Education in the Health Professions* 23, no. S1 (2003): S34-S52. <http://www.physiciansinstitute.org/wp-content/uploads/2012/10/teachingpistaker.pdf> (Accessed April 6, 2014).
- Stark Law: Information on Penalties, Legal Practice Latest News and Advice. <http://starklaw.org/> (Accessed January 1, 2015).
- Stark Law Guidelines 511.357, Exceptions to Referral Prohibitions related to Compensation Arrangements. <http://starklaw.org/PDF/Stark411.357.pdf> (Accessed January 2, 2015).
- Steiner, Rose M., and David T. Walsworth. "Using Quality Experts from Manufacturing to Transform Primary Care." *Journal of Continuing Education in the Health Professions* 30, no. 2 (2010): 95-105. <http://onlinelibrary.wiley.com/doi/10.1002/chp.20065/abstract> (Accessed May 21, 2015).
- Steinman, Michael, S. Landefeld, and R. Baron. "Industry Support of CME-Are we at the Tipping Point?" *The New England Journal of Medicine* 366, no. 12 (March 2012). <http://www.nejm.org/doi/full/10.1056/NEJMp1114776> (Accessed January 1, 2013).
- Stone, Marvin. "The Wisdom of Sir William Osler." *The American Journal of Cardiology* 75, no. 4 (1995): 269-76.
- Taylor, C., A. J. Munro, R. Glynne-Jones, et al. "Multidisciplinary Team Working in Cancer: What is the Evidence?" *BMJ* 340 (210): 951. <http://www.bmj.com/content/340/bmj.c951.full> (Accessed May 31, 2015).
- Taylor, Michael J., Chris McNicholas, Chris Nicolay, Ara Darzi, Derek Bell, and Julie E. Reed. "Systematic Review of the Application of the Plan-Do-Study-Act Method to Improve Quality in Healthcare." *BMJ Quality & Safety* (2013). bmjqs-2013. http://qualitysafety.bmj.com/content/early/2013/09/11/bmjqs-2013-001862.long?utm_campaign=tw&utm_source=hs_email&utm_medium=email&utm_content=10586856&_hsenc=p2ANqtz--SSfSR0nZJThoHLI9yKxsReAfnO9jgdF-KrIZJptp3px1O2ThovJFgaZBLJv2waqgMuHTuGS0iteBCXD2yKbwJzzwPQ&_hsmi=10586856 (Accessed June 28, 2015).
- Van De Wiel, Margie, WJ, Piet Van den Bossche, Sandra Janssen, and Helen Jossberger. "Exploring Deliberate Practice in Medicine: How do Physicians Learn in the Workplace?" *Advances in Health Sciences Education* 16, no. 1 (2011): 81-95. <http://link.springer.com/article/10.1007/s10459-010-9246-3/fulltext.html> (Accessed November 7, 2015).

- Van den Bossche, Piet, Wim H. Gijsselaers, Mien Segers, and Paul A. Kirschner. "Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments Team Learning Beliefs and Behaviors." *Small Group Research* 37, no. 5 (2006): 490-521.
<http://www.tandfonline.com/doi/abs/10.1080/08858199409528310> (Accessed October 3, 2015).
- Van Harrison, R. "The Uncertain Future of Continuing Medical Education: Commercialism and Shifts in Funding." *Journal of Continuing Education in the Health Professions* 23, no. 4 (2003): 198-209.
<http://deepblue.lib.umich.edu/handle/2027.42/35025> (Accessed August 28, 2014).
- Van Harrison, R., N. Bennet, S. Duncan, D.W. Holmes, J.R. Kues, and P.E. Mazmanian. *SACME Survey for 2002-Descriptive Results*. Birmingham, AL: Society for Academic Medical Education, 2002
- Varkey, Prathibha, M. Katherine Reller, and Roger K. Resar. "Basics of Quality Improvement in Health Care." In *Mayo Clinic Proceedings*, vol. 82, no. 6, 735-739. Elsevier, 2007. [http://www.mayoclinicproceedings.org/article/S0025-6196\(11\)61194-4/pdf](http://www.mayoclinicproceedings.org/article/S0025-6196(11)61194-4/pdf) (Accessed June 28, 2015).
- Vetto, John T., Kathryn Richert-Boe, Marilyn Desler, Larry DuFrain, and Hazel Hagen. "Tumor Board Formats: 'Fascinating Case' versus 'Working Conference.'" *Journal of Cancer Education* 11, no. 2 (1996): 84-88.
http://www.tandfonline.com/doi/pdf/10.1080/08858199609528401#.VZ7qN_05K1s (Accessed July 9, 2015).
- Vollan, Douglas D. "Preview of Principal Findings of American Medical Association Survey of Postgraduate Medical Education." *Journal of the American Medical Association* 155, no. 4 (1954): 389-92.
<http://jama.jamanetwork.com/article.aspx?articleid=317926> (Accessed March 30, 2012).
- Wazana, Ashley. "Physicians and the Pharmaceutical Industry: Is a Gift ever Just a Gift?" *Journal of the American Medical Association* 283, no. 3 (2000): 373-80.
<http://actoolkit.unprme.org/wpcontent/resourcepdf/Physicians%20and%20the%20pharmaceutical%20industry-%20is%20a%20gift%20ever%20just%20a%20gift.pdf> (Accessed April 5, 2014).
- Wennberg, John E., Elliott S. Fisher, David C. Goodman, and Jonathan S. Skinner. "Tracking the Care of Patients with Severe Chronic Illness-The Dartmouth Atlas of Health Care 2008." (2008): 1-174. http://health-equity.pitt.edu/981/1/2008_Chronic_Care_Atlas.pdf (Accessed April 9, 2014).
- Wentz, Dennis K. "Forty Years for the AMA PRA: 1968-2008: Origins and Early Years." *CPPD Report* 25 (Spring 2008b) 1-3.

- <http://www.amaassn.org/resources/doc/cme/cppd25.pdf> (Accessed March 30, 2012).
- Wentz, Dennis K. "Leaving the AMA—A Farewell." *CPPD Report*, No 13, (2004): 1-2. <http://www.amaassn.org/resources/doc/cme/cppd26.pdf> (Accessed March 30, 2012).
- Wheless, Stephen A., Kibwei A. McKinney, and Adam M. Zanation. "A Prospective Study of the Clinical Impact of a Multidisciplinary Head and Neck Tumor Board." *Otolaryngology-Head and Neck Surgery* 143, no. 5 (2010): 650-654. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2994101/pdf/nihms-248576.pdf> (Accessed June 28, 2015).
- Woolsey Jr., Frank M. "Two years of Experience with Two-Way Radio Conferences for Postgraduate Medical Education." *Academic Medicine* 33, no. 6 (1958): 474-82. http://journals.lww.com/academicmedicine/Citation/1958/06000/Two_Years_of_Experience_with_Two_Way_Radio.2.aspx (Accessed May 21, 2012).
- World Health Organization. "International Code of Marketing of Breast-Milk Substitutes." (1981). http://www.who.int/nutrition/publications/code_english.pdf (Accessed December 29, 2014).
- World Health Organization. "Evidence for the Ten Steps to Successful Breastfeeding." (1998). http://apps.who.int/iris/bitstream/10665/64877/1/WHO_CHD_98.9.pdf?ua=1 (Accessed December 29, 2014).
- Wright, F. C., C. De Vito, B. Langer, and A. Hunter. "Multidisciplinary Cancer Conferences: A Systematic Review and Development of Practice Standards." *European Journal of Cancer* 43, no. 6 (2007): 1002-10. <http://www.sciencedirect.com/science/article/pii/S0959804907000706> (Accessed May 21, 2015).
- Wyatt, Tarrant, and L. L. P. Combs. "Physician Refer Thyself: Is Stark II, Phase III the Final Voyage?" *Pain Physician* 10 (2007): 725-41. <http://www.painphysicianjournal.com/2007/november/2007;10;725-741.pdf> (Accessed January 1, 2015).
- Youmans, John B. "Experience with a Postgraduate Course for Practitioners: Evaluation of Results." *Academic Medicine* 10, no. 3 (1935): 154. http://journals.lww.com/academicmedicine/Citation/1935/05000/Experience_with_a_Postgraduate_Course_for.5.aspx (Accessed March 2, 2014).

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