Medical Reversals: The Challenge of Replacing Outdated Medicine

Healthcare in the U.S. has achieved significant milestones over the past several decades, including advances in clinical research, diagnostic and therapeutic technologies, and medical treatment. However, while improvements in diagnostic and treatment modalities offer additional options to patients, they, likewise, have the potential to be more costly. Additionally, newer treatments typically go through rigorous safety testing and approval processes, resulting in additional time to review and evaluate them against existing treatment methodologies to determine their relative effectiveness. When a medical practice or test is determined to either: (1) be less effective than current treatment options or, (2) actually cause more harm than “traditional” or existing practices, it can fall from favor—a situation termed medical reversal.¹

Studies regarding the incidence and prevalence of medical reversals have only really begun to gain traction in the medical literature over the past few decades. A recent study found that reversal is common; examination of 10 years of original research articles revealed that over 40% (146 of the reviewed articles) identified reversal of an established medical practice. These 146 reversals impacted several classes of medical practice, from medications to diagnostic and screening tests, as well as medical procedures and treatment technology.² Similarly, in 2011, a review of all of the articles published in the New England Journal of Medicine in 2009 found that 13% of the articles constituted a reversal of medical practice. The most common reason underlying the adoption of a reversed practice was confidence in the pathophysiological rationality of the concepts underlying the proposed practice or model.³ Further, a 2013 project by the BMJ Group evaluated the effectiveness of certain medical treatments based on the results of randomized controlled trials, and found that approximately (1) 50% were of unknown effectiveness; (2) 11% were shown to be beneficial; (3) 3% likely to be ineffective or harmful; and (4) the remaining treatments fell somewhere in the middle of the effectiveness spectrum.⁴

The incidence rates of medical reversals appearing in published medical literature have the potential to have a negative impact on the U.S. healthcare system and the practice of medicine. Aside from the potential harm an unproven medical practice can have on patients—either by worsening a medical condition or delaying more effective treatment—once it becomes prevalent in medical practice, it can be difficult to replace, resulting in the potential for a loss of trust by patients in their medical provider.⁵ The U.S. medical system, currently navigating through an era of healthcare reform, constitutes an environment whereby quality improvement and evidence-based medicine is considered the “gold standard” for medical care. In this type of healthcare milieu, high rates of medical reversals documented in the literature have the potential to cast doubt over current device and treatment approval processes, as well as the validity of medical decision-making.

One perspective from which to address this issue is for every medical specialty to discourage the use of the top five commonly utilized (and expensive) tests or treatments that lack sufficient evidence to show “meaningful benefit” to the patient population that would typically receive them.⁶ However, the National Institute for Health and Clinical Excellence (NICE), charged with the responsibility of identifying opportunities for disinvestment in low value practices, notes that, although disinvestment in these medical practices may increase efficiency and quality of care, it likely won’t garner all of the cost savings needed to meet the reduced spending goals called for under healthcare reform. In addition, the process of convincing the medical field to disengage with highly utilized practices has been proven to be difficult, e.g., one study that reviewed the literature citations for controversial medical treatments found that specialty journals tended to show a publication bias towards studies that had been contradicted by well-designed randomized trials when the reversed practice was beneficial to that specialty.⁷

Medical reversals can impact healthcare delivery in a variety of ways, and have begun to amass more interest in recent years, most notably with regard to improving healthcare efficiency and reducing unnecessary costs in an overburdened and expensive healthcare system. In 2010, the Archives of Internal Medicine initiated a series of articles entitled “Less is More,” for the purpose of drawing attention to circumstances when “less” medical care may actual have a better outcome.⁸ As the U.S. healthcare delivery system continues to work...
through the challenges of healthcare reform, the effective utilization of medical reversal data and evidence-based medical practice, in an effort to contain costs and improve efficiency, is likely going to continue to gain momentum over the next several years.

2 “A Decade of Reversal: An Analysis of 146 Contradicted Medical Practices”, by Prasad et al. (August 2013), Mayo Clinical Proceedings, Article in Press, p. 3-4
3 “The Frequency of Medical Reversal”, by Prasad et al. (October 11, 2011), Archives of Internal Medicine, Vol. 171, No. 18, p. 1676
4 “What Conclusions has Clinical Evidence Drawn About What Works, What Doesn’t Based on Randomised Controlled Trial Evidence?”, BMJ Publishing Group, 2013,

8 “Persistence of Contradicted Claims in the Literature”, by Tatsioni, et al. (December 5, 2007), Journal of the American Medical Association, Vol. 298, No. 21, p. 2525
9 “Less is More: How Less Health Care Can Result in Better Health”, by Deborah Grady and Rita F. Redberg (May 10, 2010), Archives of Internal Medicine, Vol. 170, No. 9, p. 749-750
Mr. Cimasi holds a Masters in Health Administration from the University of Maryland, as well as several professional designations: Accredited Senior Appraiser (ASA – American Society of Appraisers); Fellow Royal Intuition of Chartered Surveyors (FRICS – Royal Institute of Chartered Surveyors); Master Certified Business Appraiser (MCBA – Institute of Business Appraisers); Accredited Valuation Analyst (AVA – National Association of Certified Valuators and Analysts); and, Certified Merger & Acquisition Advisor (CM&AA – Alliance of Merger & Acquisition Advisors). He has served as an expert witness on cases in numerous courts, and has provided testimony before federal and state legislative committees. He is a nationally known speaker on healthcare industry topics, the author of several books, the latest of which include: “Accountable Care Organizations: Value Metrics and Capital Formation” [2013 - Taylor & Francis, a division of CRC Press], “The Adviser’s Guide to Healthcare” – Vols. I, II & III [2010 – AICPA], and “The U.S. Healthcare Certificate of Need Sourcebook” [2005 - Beard Books]. His most recent book, entitled “Healthcare Valuation: The Financial Appraisal of Enterprises, Assets, and Services” will be published by John Wiley & Sons in the Fall of 2013.

Mr. Cimasi is the author of numerous additional chapters in anthologies; books, and legal treatises; published articles in peer reviewed and industry trade journals; research papers and case studies; and, is often quoted by healthcare industry press. In 2006, Mr. Cimasi was honored with the prestigious “Shannon Pratt Award in Business Valuation” conferred by the Institute of Business Appraisers. Mr. Cimasi serves on the Editorial Board of the Business Appraisals Practice of the Institute of Business Appraisers, of which he is a member of the College of Fellows. In 2011, he was named a Fellow of the Royal Institution of Chartered Surveyors (RICS).

Todd A. Zigrang, MBA, MHA, ASA, FACHE, is the President of HEALTH CAPITAL CONSULTANTS (HCC), where he focuses on the areas valuation and financial analysis for hospitals and other healthcare enterprises. Mr. Zigrang has significant physician integration and financial analysis experience, and has participated in the development of a physician-owned multi-specialty MSO and networks involving a wide range of specialties; physician-owned hospitals, as well as several limited liability companies for the purpose of acquiring acute care and specialty hospitals, ASCs and other ancillary facilities; participated in the evaluation and negotiation of managed care contracts, performed and assisted in the valuation of various healthcare entities and related litigation support engagements; created pro-forma financials; written business plans; conducted a range of industry research; completed due diligence practice analysis; overseen the selection process for vendors, contractors, and architects; and, worked on the arrangement of financing.

Mr. Zigrang holds a Master of Science in Health Administration and a Masters in Business Administration from the University of Missouri at Columbia. He is a Fellow of the American College of Healthcare Executives, and serves as President of the St. Louis Chapter of the American Society of Appraisers (ASA). He has co-authored “Research and Financial Benchmarking in the Healthcare Industry” (STP Financial Management) and “Healthcare Industry Research and its Application in Financial Consulting” (Aspen Publishers). He has additionally taught before the Institute of Business Appraisers and CPA Leadership Institute, and has presented healthcare industry valuation related research papers before the Healthcare Financial Management Association; the National CPA Health Care Adviser’s Association; Association for Corporate Growth; Infocast Executive Education Series; the St. Louis Business Valuation Roundtable; and, Physician Hospitals of America.

Anne P. Sharamitaro, Esq., is the Executive Vice President & General Counsel of HEALTH CAPITAL CONSULTANTS (HCC), where she focuses on the areas of Certificate of Need (CON); regulatory compliance, managed care, and antitrust consulting. Ms. Sharamitaro is a member of the Missouri Bar and holds a J.D. and Health Law Certificate from Saint Louis University School of Law, where she served as an editor for the Journal of Health Law, published by the American Health Lawyers Association. Ms. Sharamitaro has presented healthcare industry related research papers before Physician Hospitals of America and the National Association of Certified Valuation Analysts and co-authored chapters in “Healthcare Organizations: Financial Management Strategies,” published in 2008.