

Ignorance is Bliss

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Quality, safety and value in healthcare are the “catch terms” of today with the new wave of healthcare reform in the United States. After almost fourteen years following the Institute of Medicine’s report “To Err is Human” and almost twenty-four years after the Harvard practice study that revealed almost 200,000 deaths per year in the United States were the result of adverse events, quality and safety remain major problems for physicians, nurses, and hospitals. Little has changed...errors and adverse events continue at unacceptably high rates. Efforts to improve the safety of patients haven’t worked...including pay-for-performance incentives, increased regulation, and advocacy for professionalism and altruism.

Historically, two outstanding physicians have made valiant efforts to reduce medical errors. There have obviously been many others, but this brief paper will focus on only these two...Ignaz Semmelweis and Ernest A. Codman.

But first a brief story about the inadequate medical care of a president of the United States. James Garfield was elected the 20th President of the United States in 1880. Eight months after election, he was shot by an insane man, Charles Guiteau. Garfield was shot twice. One bullet grazed his right arm; the other entered his right flank. Neither wound was life threatening. No major organ was injured. A Dr. D. Willard Bliss was called to treat the President by Robert Todd Lincoln, who had met Dr. Bliss at the bedside of his dying father (President Abraham Lincoln).

Robert Todd Lincoln was obviously unaware of the problems in medical care and professionalism that Dr. Bliss had been accused of publicly. Three major events stand out. First, there had

been public reports and newspaper articles written about his poor care of patients at the Battle of Bull Run in 1863. Second, he had been previously arrested for government fraud after receiving a bribe. And third, he had been expelled from the Washington, D.C. Medical Society in 1853 for advertising and selling cundurango (bark of a South American vine) for the “wonderful remedy for cancer, syphilis, scrofula, ulcer...and all other chronic blood diseases.”

After being called to treat President Garfield, Dr. Bliss took over, dismissing other physicians, and using an occasional consultant, as he deemed necessary. His major goal in treatment was to find and remove the bullet in Garfield’s flank. To do this, Dr. Bliss probed the wound with his unwashed hands and unwashed instruments multiple times daily without the use of ether or chloroform. Although Lister had discovered “antisepsis” 15 years earlier (1865) and carbolic acid had been used in the United States at the Massachusetts General Hospital and by most U.S. surgeons by 1876, Bliss refused to accept Lister’s treatment to avoid infection.

President Garfield died of massive sepsis on September 19, 1881, 80 days after being shot. His original wound had increased from a bullet size hole (.44 caliber) to 20 inches long; his weight had fallen to 130 pounds from 210 pounds. At autopsy the bullet was found behind the pancreas. It had penetrated the disc space between T12 and L1. No internal organs had been injured. He had multiple abscesses.

Charles Guiteau was convicted of murder and hanged on June 30, 1882. Prior to his execution he publicly proclaimed “Yes, I shot him, but his doctor killed him.” The phrase “Ignorance is Bliss” became

popular and had new meaning after the original phrase "Where ignorance is bliss, 'tis folly to be wise", written by Thomas Gray in a poem in 1742.

Ignorance is bliss, 'tis folly to be wise can be applied to the entire effort at reducing medical/surgical errors and improving patient quality and safety. Examples of the medical profession's resistance to the important cultural changes required to improve patient safety and remain in "bliss", rather than becoming "wise", bring us back to our two examples...Ignaz Semmelweis and Ernest A. Codman.

Ignaz Semmelweis was chief of the obstetric service at the Vienna General Hospital in 1846. He was in charge of two wards...Clinic 1 in which physicians and medical students cared for women in labor and Clinic 2 in which midwives delivered the babies. Semmelweis was a keen observer. He noticed that the death rate from postpartum sepsis on Clinic 1 was 12%, but was only 2% on Clinic 2. The only other difference in the two clinics that he observed was that the medical students and physicians performed autopsies on the women and children who died the previous night in the early morning before they began to examine the women in labor and assist in deliveries. The midwives worked only in Clinic 2. Semmelweis had also observed the collections of pus in patients at autopsy and wrote "The transmitting source of those cadaver particles was to be found in the hands of students and attending physicians."

This insightful observation of Semmelweis's in 1846 was before the discoveries of Pasteur and Lister (1865). And yet he had the courage to insist that every physician and medical student wash their hands in a chlorine solution that he placed at the entrance to Clinic 1. The reaction by the doctors and students, similar to reactions we see today, was one of resistance. They objected to this "senseless ritual" imposed by Semmelweis. Yet, within one month of this new policy of hand washing, the mortality rate fell precipitously to 2% -- the same as Clinic 2.

Semmelweis defended his theory before the Medical Society of Vienna. A few physicians supported him but most did not. Opposition

increased. His contract with the hospital was not renewed. Known as "lightheaded and popular...[with a] playful jocular nature," Semmelweis became increasingly impatient with his colleagues. He became abusive with frequent angry outbursts...he became strident. Today he would be labeled a disruptive physician, a troublemaker.

Not known for publishing much, he didn't write his book "Etiology...And Prophylaxis of Childbed Fever" until 1961. He sent copies to the leading obstetricians and medical societies in Europe. Most ignored his book and other publications. Resistance to hand washing increased. Enraged, Semmelweis lashed out...accusing his colleagues of murder..."Since 1847 thousands of women and infants have died...you...have been a partner in this massacre. The murder must cease."

Eventually, unable to find work, Semmelweis became a heavy drinker. Once a happy and popular physician he died at the young age of 47 years. Angry, depressed and strident, he saw himself a failure and didn't understand why. A metaphor used today is called the Semmelweis Reflex or Effect. It refers to the reflex-like tendency to reject new knowledge because it contradicts established beliefs.

Ernest Amory Codman was born four years after Semmelweis's death. He was 11 years old when Garfield died. Appointed assistant surgeon at the MGH in 1897, he is believed to be the founder of the belief that outcomes or results of patients' care should be reported...his "end-result idea." However, George Hayward, assistant surgeon at MGH, had reported the result of 222 surgical cases treated at MGH in 1837 and 1838. He reported the discharge status of patients as well: much relieved, relieved, not relieved, died, unfit, or eloped (7 categories). And Frank Hamilton, a surgeon in Buffalo, New York, published a book in 1855 on the results of fracture treatment. His classification of results of fracture care consisted of five categories: united or not, when united, amount of shortening, remarks, and perfect or imperfect. He was aware that surgeons didn't have accurate data to judge the results of

their care. Litigation was rampant at the time, especially in cases of deformities after fractures. He was also upset that surgeons often stated “their patients all did well.” Hamilton correctly observed “To be honest...they [surgeons] dare not record faithfully their results...the admissions of shortcomings...would be suicidal.” He further wrote “The instinct of self-preservation prompts silence...the first step towards improvements... must be the faithful exposure...of deficiencies.” After his public reporting of outcomes of fracture treatment, the juries stopped favoring plaintiffs. However, his hope that surgeons would agree on a standard of care was not achieved. Treatment uncertainty remained.

Codman’s end-result concept was different than that of Hayward or Hamilton. He wanted the outcomes of treatment of all patients reported publicly at one year after treatment for both the physician and the hospital. He also insisted that an analysis...known today as root-cause analysis...be done to determine the cause of the bad result and how the adverse event could be avoided in the future. His classification system of errors was more comprehensive. Although he didn’t name individual errors versus system errors, he included both in his system. Interestingly, his individual errors were recently reported by Matsen, et al in *The Journal of Bone and Joint Surgery* as common causes of malpractice suits against orthopaedic surgeons...100 years after Codman’s publication. Codman’s individual errors were: lack of technical skill or knowledge, lack of surgical judgment, lack of diagnostic skill and lack of care.”

Codman met strong resistance from his colleagues to the importance of reporting outcomes and analyzing their poor results; similar to the resistance that Semmelweis faced almost 50 years earlier. He did have some support for his concept by hospitals and physicians around the country. But not at home; he made many of his colleagues very uncomfortable. He also engaged in a continuous battle with the MGH Director and Trustees because they would not agree to his sys-

tematic record review and would not serve on his hospital quality committee.

An avid hunter and fisherman, Codman had many friends. He was known as a “kind and sweet person.” But as resistance to his end-result concept grew...a concept he was most proud of... he also became increasingly critical of his colleagues, angry, and combative. Codman became increasingly strident.

Then in 1914 he was asked by HMS Dean Edward Bradford (an orthopaedic surgeon) to organize a clinical congress of surgeons in Boston. He refused unless every case operated upon would have a brief clinical history and an end-result report mailed to all attendees one year after the congress. He also wrote in a personal letter about two cases that he had observed at a previous clinical congress “at a prominent hospital” that bothered him. In one case the patient died during the operation, but the surgeon did not inform the audience. He continued to operate, closed the incision and as Codman stated “smuggled” the patient out of the amphitheater. In the second case, the surgeon performed a routine hysterectomy “for supposed fibroid tumor.” However after the operation, when the specimen was examined in pathology, “it proved to be a full-term pregnancy.” Codman was upset for two reasons...one, the audience was not informed and two, when the surgeon’s hospital colleagues heard about the discovery, the surgeon threw his resident under the bus, stating “that he had taken his house officer’s diagnosis.” Codman went on to write “Both surgeons held the respect of the entire community...[but] are no more to be held guilty than the rest of us who tacitly allow such things to occur.”

Codman became totally fed up with his colleagues and the MGH’s failure to implement his outcomes concept. He resigned from the staff, having reached the limits of rejection. Just as Semmelweis had accused his colleagues of the responsibility of their patients’ deaths from postpartum sepsis, Codman knew that “Harvard was sensitive to ridicule...[he] sincerely believe[d]...

to presentation of facts." In 1916 he presented his infamous cartoon (8 feet long) to the local medical society. With it, he critically insulted his colleagues, the MGH Trustees, and the president and leaders at Harvard. An immediate uproar occurred in the medical and academic community. The local newspaper reported "Cartoon by Physician Makes Stir." As a consequence, Codman lost his Harvard faculty appointment. It has been stated that he "sometimes felt like a quixotic figure at best and, at worse, a failure."

Codman died of melanoma in 1940 at age 71, estranged from his profession, colleagues, and probably his wife. His obituary "omitted completely any mention...of his lifelong crusade to improve the quality of surgical care and...methods...to improve the work of hospitals." He is buried in an unmarked grave in the Mount Auburn Cemetery. This year, the MGH, together with the

American College of Surgeons, the American Academy of Orthopaedic Surgeons and The Shoulder and Elbow Society have contributed to an engrave headstone for Dr. Codman. It is planned to be placed in the cemetery in June, 2013.

Both Semmelweis and Codman challenged the status quo in medical thinking. Both men were rejected by their colleagues. Both men became strident in their efforts to change and improve medical care. Both men died before seeing their major contributions to patient safety accepted by the medical profession. Pursuing improved quality of care, safety for all patients and minimalization of all surgical and medical errors today remains a quest for the ideal. But I still remain optimistic that the cultural changes that these two men strived for will be achieved with the current and next generation of active physicians and surgeons.