Patient Safety/Quality Improvement (PS/QI): Florence Nightingale Prevails

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On November 29, 1999, the Institute of Medicine (IOM) released the sentinel report To Err Is Human: Building a Safer Health System, unveiling to the public the harsh reality that up to 98,000 hospital deaths each year are attributed to medical errors. The statistic was startling because it exceeded the number of annual deaths attributed to traffic accidents, breast cancer, and AIDS at that time.2 Within days of the report, the Clinton administration assembled a federal task force, multiple hearings on Capitol Hill were dedicated to medical errors, and Congress allocated $50 million to the Agency for Healthcare Research and Quality (AHRQ) for patient safety research.

But by no means is patient safety/quality improvement (PS/QI) a novel concept born from the 1999 IOM report. In 1859, Florence Nightingale found herself in Turkey during the Crimean War. Although she was stationed miles behind the frontlines, the morbidity and mortality in her small hospital far exceeded those on the battlefield. It was typhus, typhoid, dysentery, and cholera as opposed to war injuries that took the lives of more than 4000 British soldiers during her first year in service. She quickly attributed these deaths to overcrowding, poor hygiene, and lack of ventilation. After implementing hand-washing standards, sterilization of surgical instruments, routine changing of bed linens, and utilization of clean water, the mortality dropped from 42% to less than 2%.3 It was during the Crimean War that she uttered the profound statement: “It may seem a strange principle to enunciate as the very first requirement in a hospital that it should do the sick no harm.” Thus, Florence Nightingale emerged as a PS/QI pioneer, and her words still ring true today.

To what degree is patient safety a problem in 2015? Hospital-acquired infections alone kill 99,000 Americans each year.4 The true magnitude of this number, and therefore the problem, was difficult for me to comprehend until it was driven home by the analogy to a jumbo jet full of passengers crashing every other day in our country—clearly a statistic that we all would find unacceptable and would prompt us to use alternative modes of transportation.

The IOM defines a medical error as either the failure of an intended planned action to be completed or the use of the wrong plan to achieve an aim.1 Commonly cited medical errors include adverse drug reactions, improper transfusions, surgical injury to include wrong-site surgery, restraint-related injury, falls, burns, pressure ulcers, mistaken patient identity, and death. Unfortunately, everyone loses when medical errors occur. The most obvious loss is that of human life. A monetary loss is attached to medical errors: the estimated price tag is $29 billion per year nationwide after accounting for the additional medical expenses necessitated to correct the errors, lost wages, lost household productivity, and disability.1 But the loss reaches beyond just the patient and family. The physician loses morale, resulting in frustration, disenchantment, and, in some instances, burnout, and society loses with the breakdown in trust of our health care system.

It is human instinct to become defensive when an individual finds his or her profession accused of underperformance and errors, especially when the outcome is death. What seems to have been lost in the 1999 IOM report (which incidentally was released prematurely because it had been leaked to one of the major news networks5) was the original intent—to emphasize that patient harm is not a reflection of the work ethic and competency of physicians but rather that the entire health care system has ownership of safety.6

The reality is that physicians alone are not solely responsible for medical errors. For example, during a 4-year period spanning 2003 to 2006, 25,230 drug confusion errors attributed to “look-alike” drug packaging and dangerously “sound-alike” drug names were reported.7 In fact, one of the main conclusions from the IOM committee’s first report was that most medical errors were not the result of a careless individual or even the action of one single group but rather were caused by underlying, fatally flawed systems and processes that ultimately led health care providers to make mistakes.1

British psychologist James Reason created the “Swiss cheese” model to illustrate accident causation.8 Essentially health care is a complex process involving multiple individuals, parties, and even environmental factors, each representing a slice of cheese. Each individual facet has areas of vulnerability as represented by the holes in the Swiss cheese. When a specific aspect of health care is delivered, all of the slices of cheese are stacked. If the holes align, nothing interrupts the

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adverse event and the system fails, resulting in a devastating medical error. It should be noted that in this model, no individual group is held solely responsible. While medical errors can certainly result from one individual’s mistake, the mistake takes place in the context of a very large system; more often, the fault lies in the process as opposed to the person.

It is imperative to realize that PS/QI is not just another bureaucratic hoop through which our profession must jump. In fact, it is a global movement reaching far beyond the borders of the United States. The Ontario Ministry of Health and Long Term Care instituted public reporting of patient safety indicators in December 2012.9 The Australian Department of Human Services requires public reporting of 18 indicators and 7 subindicators of patient safety.10 The World Health Organization (WHO) has made concerted efforts to prioritize patient safety through research, education, and public awareness.11 September 13, 2014, marked the WHO “World Sepsis Day” in which 3424 organizations and hospitals united worldwide in an effort to educate and eradicate this life-threatening infection.

Crossing the Quality Chasm: A New Health System for the 21st Century was the second IOM report published in 2001.12 This follow-up publication took a broader focus on the restructuring of our health care system to “foster innovation and improve the delivery of healthcare.” The IOM acknowledged that our health care system has been taxed over the past half century due to the lightning speed of technology development; our aging patient population, which contributes to the largest number of individuals ever treated within the system; and the complexity of the health care system itself. The IOM outlined 6 specific aims required for the delivery of consistent, high-quality, state-of-the-art care in our country:

1. Safety to all patients, in all aspects of health care, all of the time.
2. Effective care based on scientific knowledge. This aim necessitates evidence-based medicine, best practice guidelines, and the establishment of universal standard of care. Meaningful quality indicators and metrics must be identified, measured, and continuously reevaluated to ensure that current practices remain effective.
3. Patient-centered care that reaches beyond the disease to incorporate a biopsychosocial model.
4. Timely care that holds true not only for the patients receiving medical attention but for the health care providers rendering the care.
5. Efficient care to ensure that resources are used in a beneficial manner while avoiding waste. Atul Gawande13 illustrates this need best in The Cost Conundrum: What a Texas Town Can Teach Us About Health Care. He traveled to the small town of McAllen, Texas, the square dance capital of the world and setting of Lonesome Dove. Despite having the lowest household income in our country, McAllen ranks highest in health care dollars spent, with $15,000 paid annually for each Medicare enrollee—2 times our national average. When Gawande calculated the numbers, Medicare spends $3000 more per resident than the average person earns in McAllen. Extreme poverty and poor health did not account for the exorbitant amount of health care dollars spent—El Paso, Texas, located 800 miles away, shares similar patient socioeconomic demographics and tort reform laws yet costs Medicare only $7504 per enrollee. In addition, high-quality patient care failed to account for this discrepancy—McAllen’s 5 largest hospitals performed worse on average compared with El Paso in 23 or the 25 metrics of quality care measured by Medicare.

6. Equitable care to reduce disparity in health care across our country.

In outlining the above 6 quality health care aims, the IOM made a concerted effort to highlight the point that the aims are not reserved solely for health care workers but rather are the responsibility of our entire health care community to include federal and state policy makers, regulators, organizational managers, and consumers.

Our field of otolaryngology is currently engaged in numerous aspects of PS/QI. The American Academy of Otolaryngology—Head and Neck Surgery Foundation (AAO-HNSF) has partnered with the American Board of Internal Medicine in Choosing Wisely to identify the following 10 medical practices that should be questioned and routinely avoided:

1. Head/brain computed tomography (CT) scans for hearing loss
2. Oral antibiotics for acute, uncomplicated tube otorrhea
3. Oral antibiotics for uncomplicated otitis externa
4. Routine radiographic imaging for uncomplicated, acute rhinosinusitis
5. Radiographic imaging for hoarseness prior to a laryngeal examination
6. Myringotomy tubes in a healthy child following 1 episode of otitis media lasting <3 months
7. Imaging in patients with nonpulsatile bilateral tinnitus, symmetric hearing loss, and a normal examination
8. More than 1 paranasal sinus CT scan within 90 days to evaluate uncomplicated chronic rhinosinusitis when the paranasal sinus CT obtained is of adequate quality/resolution to be interpreted by the clinician and used for clinical decision making
9. Routine use of perioperative antibiotics for elective tonsillectomy in children
10. Routine sinonasal imaging in patients with symptoms limited to allergic rhinitis

In addition, clinical practice guidelines and consensus statements are actively being researched and developed by the Guideline Task Force. Our foundation participates in the Surgical Quality Alliance (SQA) for the development of...
accurate and meaningful surgical care measures used by the Centers for Medicare & Medicaid Services’ Physician Voluntary Reporting Program. The Patient Safety and Quality Improvement Committee is committed to PS/QI research and education, senior leadership is involved with the American Medical Association Physician Consortium for Performance Improvement (PCPI), and the AAO-HNSF established a new Advisory Council for Quality and Research (ACQR) under the leadership of Dr Richard Rosenfeld. Finally, the foundation has created, as part of its strategic plan, a task force to explore use of registries within our specialty.

It is also an exciting time for Otolaryngology–Head and Neck Surgery because the journal now offers the first dedicated platform in which to publish PS/QI research related to our field. Many otolaryngology health care providers are actively engaged, both knowingly and unknowingly, in meaningful PS/QI research. This area is quite broad, spanning single departmental investigations into an issue identified during monthly morbidity and mortality conferences to resident education research such as simulation training and larger outcomes studies using national databases such as the American College of Surgeons’ National Surgical Quality Improvement Program (NSQIP) and the National Inpatient Sample (NIS). Currently, the Accreditation Council for Graduate Medical Education (ACGME) mandates that “residents are integrated and actively participate in interdisciplinary clinical quality improvement and patient safety programs.”14 PS/QI research is now given equivalent weight to that of traditional basic science and clinical research. For this reason, we are excited to offer a dedicated section to publish high-quality, peer-reviewed PS/QI research.

All eyes remain on PS/QI—from patients, providers, professional societies, and payers to consumer groups, hospitals, and accrediting organizations. This attention is appropriate given that patient safety will always remain at the cornerstone of quality health care. PS/QI cannot be viewed as a threat to one’s medical expertise, autonomy, and authority but rather must be accepted as a culture. To successfully cultivate a meaningful PS/QI culture with the ultimate goal of improving health care safety and quality, we need member buy-in, dedicated leadership ideally from the medical community, group efforts, and resources to include financial. Concerted attention to PS/QI is imperative—the journal is excited to take the lead by providing the necessary, dedicated forum for quality PS/QI peer-reviewed research and associated editorials.

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References