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Healthcare Quality Improvement: Then and Now

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Improving healthcare quality in 1970 was more of a wish than a mandate. Labeled quality assurance or quality control, hospitals had only just begun to experience regulations to drive improvement or an awareness that the use of process improvement might be more effective than a philosophy of working harder. Too often, quality was defined as "I'll know it when I see it," and managed by someone responsible for auditing. Despite the delivery of care in ambulatory clinic settings, the focus was on hospital care. Hospitals were stand-alone organizations, not a continuum of services, and had the capacity to admit patients for an unregulated spectrum of care for an unregulated period, with fee-for-service billing. Approaches to care were based on the best education at the time, firmly grounded in

opinion, experience, and "the way we do it here." The role of the healthcare consumer was yet to be valued and, moreover, was taken for granted. The concept of organizational culture was only just forming and systems thinking was still on the horizon. Little connection was articulated between cost and quality, with a broad regulatory expectation focused heavily on the presence of a quality committee structure and minutes reflecting activity. Public reporting of quality metrics was unconscionable.

The 1970s and early 1980s were a time of significant change in the world of healthcare quality improvement (QI). Within other industries, W. Edwards Deming was changing science and the world through his 14 points for improvement.[1,2] Healthcare disciplines began exploring the structure-process-outcome triad of Avedis Donabedian, and nursing turned to quality models through Norma Lang's model for quality, which engendered support from the American Nurses Association.[3-5] This growth in theory, models, and expanding regulatory expectations was the foundation of a virtual explosion of knowledge and impact in the world of healthcare QI. Publications, including books, journals, and newsletters, were born to support the sharing of the quality work being done during this preinternet time.[6] And professional organizations focusing on the work of healthcare QI were formed such as the National Association of Utilization Review Coordinators, which began in 1976 (now called the National Association for Healthcare Quality).

Where we are

The world of healthcare QI is now fully recognized as being integrated into the world of care delivery. Healthcare leaders learned that improving quality isn't the work of an isolated department, in a single setting, by a single discipline, separate from the patients we serve. Patient safety has also become a focus unto itself, expanding research and implementation of evidence-based practice (EBP). Quality programs no longer focus on catching people doing something wrong, but rather finding ways to ensure consistent delivery of EBP, error prevention, understanding system and process breakdowns, population health, and continuous process improvement. Data analytics and the use of health information are guiding approaches to understanding patterns and trends that can proactively guide us to error prevention and improved outcomes, both clinically and organizationally.

A culture of quality and safety

The past years have demonstrated that quality and patient safety in healthcare require an entire organizational culture grounded in effective leadership, science, resources, teamwork and collaboration, communication, and more. Accreditation requirements around quality and safety have expanded dramatically but may no longer serve as the sole reason for quality programming in most settings. Most healthcare organizations are now guided by the Triple Aim, which includes a focus on improved outcomes of individuals and populations, better patient experience, and lower cost.[7] More recently, this has been expanded to the Quadruple Aim, moving beyond the patient focus to include addressing the well-being of the clinical team. A culture of quality and safety isn't created with one specific action, at one point in time, or with one passionate leader, but rather includes a spectrum of components that must be identified, measured, developed, and enhanced. Many healthcare organizations now measure their progress using tested culture of quality tools to identify opportunities for improvement, such as the culture of patient safety tools developed by the Agency for Healthcare Research and Quality.[8]

Perspectives have undoubtedly been influenced by the landmark work of the National Academy of Medicine (formerly the Institute of Medicine) panels on quality, reported in *To Err is Human* (2000) and *Crossing the Quality Chasm* (2001), with the latter providing insights on the six quality aims: safe, effective, patient-centered, timely, efficient, and equitable.[9,10] Health systems aspire to eliminate errors and improve care outcomes, yet medical errors are now recognized as the third leading cause of death in the US.[11] Root cause analysis and failure modes and effects analysis have allowed us to better understand our complex systems; what it takes to prevent errors; and how to infuse the organizational culture with science, passion, and ongoing accountability for making care better and safer.

A powerful perspective on addressing errors has been to establish a just culture.[12] A just culture is grounded in the belief that complex organizational and human systems can make it too hard to avoid errors. Improve the system, rather than punish the staff, and you'll most likely avoid the error going forward. A just culture fosters a transparent, nonpunitive environment and a systems-oriented approach for clinicians to describe unintended errors that result in harm or injury, providing an opportunity to analyze and improve processes and outcomes. There are models to support the analysis of these situations to distinguish personal and professional accountability and knowledge deficits versus system defects. Much has been written and more development is needed on the topic. The challenge remains to establish a culture where the focus can be placed on error prevention, systems improvement, and clinician process development and engagement.

A culture of quality requires consistent focus on and feedback from healthcare consumers, whose numbers have expanded significantly in recent years. Perspectives on improving the patient experience, as well as publicly reporting metrics, have strengthened improvement efforts. They've also driven a focus on episodes of care, going beyond the care provided in one setting to instead the care received from multiple healthcare providers in different settings within the episode of clinical illness.

Leadership for quality

As organizations have developed a keener focus on organizational culture and providing consistent, safe, and high-quality care, the role of leaders at all levels has been enhanced. Inspirational, aspirational, and strategic leaders are expected to create a culture that fosters improvement. Donnelly identifies eight characteristics of aspirational leaders that drive effective improvement, including being a good listener, leading with optimism and humility, and effectively communicating the accountability cycle.[13]

Over the past 50 years, leaders at all levels have recognized that the healthcare system's viability, impact, and mission must be grounded in being safe, effective, patient-centered, timely, efficient, and equitable. Those goals can't be accomplished by a single, separate, and at times marginalized department. Although select leaders may have greater accountability for one of these elements, leaders at all levels must ensure that each of these aims is pursued, and better yet achieved.

Healthcare increasingly employs the high reliability organization concept, defined as a complex organization/industry whose services carry high risk with potential for significant negative impact and a very narrow range between doing something right and devastating error. Beyond healthcare, examples include the airline and nuclear power industries. Healthcare leaders who aspire to effective leadership

in high reliability organizations hold intense focus and accountability on all elements of quality and safety, holding others at all levels to the same.

Healthcare workforce

High-quality, safe care requires delivery by a well-prepared healthcare workforce in sufficient numbers. Nurses now number more than 4 million across the US. Despite this large number, growing care needs have resulted in predictions of shortages in nursing and across multiple healthcare roles. Today's fast pace of knowledge generation and information growth requires that nurses and others be able to access and evaluate information to guide care delivery. No longer can we pretend to know it all at graduation. Now we recognize that best practices can change with new knowledge. The skills of accessing and evaluating information, and their importance in care, have been increasingly integrated into the education of the healthcare workforce. In recognition of the critical importance of quality, the Quality and Safety in Nursing competencies are consistently built into nursing curricula, reinforced by accreditation of nursing education programs.[14] These competencies reflect patient-centered care knowledge skills and attitudes, teamwork and collaboration, EBP, QI, safety, and informatics.

Although the healthcare workforce and its education have changed and expanded, so too has the development of those leading QI efforts and functions. The role of the quality professional can be developed by experience, educational programs, academic degrees, and certifications. There's a proliferation of graduate programs grounded in healthcare quality and safety as the field of practice expands to include such concepts as population health management, data analytics, public data reporting, and value-based payment management. Those with quality skills from other industries are entering healthcare settings and enhancing the range of approaches used for improvement. The National Association for Health Care Quality recently completed a workforce study defining eight competencies for the healthcare quality professional, including quality review and accountability, professional engagement, quality leadership and integration, performance and process improvement, population health and care transitions, heath data analytics, patient safety, and regulatory accreditation.[15]

Concepts and tools

Research and EBP increasingly define the best ways to deliver care and achieve positive outcomes. Many aspects of nursing care can now be grounded in evidence based on years of research and expert knowledge in ways that didn't exist in the past, with guidelines, checklists, and care delivery bundles demonstrated to achieve positive outcomes. Catheter-associated urinary tract infections, skin breakdown, falls prevention, postoperative and ventilator-associated pneumonia, and surgical site infections are but a few of the clinical conditions described in easily available, free evidence charts and tools. Best practices in medication management are also well defined and accessible. Surgical procedures are now guided by required double-check practices.

Consumer feedback can be elicited using valid and reliable tools to understand the patient experience. National collaboratives, metrics, and patient safety goals guide improvements in local, regional, and national efforts, emanating from such sources as the Institute for Healthcare Improvement. Competition around quality has been fostered through the pursuit of national and international recognition, accreditation, and certification, such as the Magnet Recognition Program.® Regulatory

initiatives such as value-based care and public reporting of quality metrics have driven change. Yet preventable adverse conditions continue to plague many clinical settings, at times resulting in patient harm. If we know how to prevent these issues, why aren't we doing so?

The science of QI provides models, methods, and tools that are useful across industries to understand and improve processes and outcomes, reduce variations, and engage those closest to the action and most knowledgeable about the work in the change process. Lean concepts have taught us to look at processes and create improvements. Six Sigma has demonstrated new approaches to measurement and analytics. Healthcare settings have embraced these tools and their successes in other industries, but the ability to sustain improvements from our efforts is still elusive.

Information and clinical technology

The development and expansion of information and clinical technology has created dramatic changes, both positive and negative. It's almost hard to recall the not-so-distant past world of paper records and forms with handwritten notes. This progress in information technology (IT) allows us to effectively secure and retain high-risk and complex information, integrate data across sites and departments, connect data to organizational operations, and manage clinical complexity. An effective electronic health record (EHR) trends clinical conditions and responses; tracks clinical interventions; integrates data, such as lab results, with medication management; and triggers high-risk situations—all central to ensuring high-quality, safe care.

Unfortunately, not all EHRs achieve these goals given their genesis in financial rather than clinical systems. Further, the amount of time that clinicians spend documenting is extraordinary, with anecdotal reports of more than 50% of working hours taken away from being with and caring for patients in any setting. And it's sometimes challenging to get a clear clinical picture of care delivery and patient responses in some electronic systems given their structures.

Although the EHR was envisioned to facilitate data collection and demonstrate improvement, review of clinical notes for narrative confirmation of the provision of quality care still occurs. Some measures of quality lend themselves to discrete data elements that may be easily abstracted from the EHR, whereas others don't. Quality of nursing care may be demonstrated from lack of negative events, such as infections, pressure injuries, falls, and medication errors, or from positive patient outcomes, such as wound healing, adherence to evidence-based care standards with associated quality outcomes, and other nursing-sensitive indicators reported and benchmarked with the National Database of Nursing Quality Indicators® and other databases.

Beyond IT and its significant changes to the clinical environment and care delivery, clinical technologies are revolutionizing the quality and safety of care. From infusion pumps to eICUs to home management technology to telehealth, there's tremendous opportunity to improve access to and quality of care. There's also simultaneously new potential risks and safety concerns. We haven't eliminated the safety risks, but rather changed them.

Where we're going

No doubt, the discipline of improving healthcare quality and patient safety has never been more robust. Yet with all of our commitment to and resources for QI and patient safety activities across US

health systems over the past 50 years, why isn't healthcare delivery more safe, effective, patient-centered, timely, efficient, and equitable? Why do accidents, errors, and injuries continue to plague our healthcare environments? Why are medical errors considered the third leading cause of death in the US? Can we continue to rely on incremental improvements or should we be more actively pursuing disruptive innovations? Why haven't we figured out how to hardwire quality into the healthcare experience? And what are we going to do about it? If another high-reliability industry achieved the results and outcomes of healthcare, would we find that justifiable? It can no longer be acceptable to have the gap between what's learned and what's practiced in the assurance of safety and quality. Leaders must be relentless in their high expectations and support of care delivery and organizational performance.

These reflections must serve as a call to action for healthcare leaders at all levels. Fifty years ago, we naively suggested that care would be high quality and safer if only we had evidence of best practices, insights into how to improve care, consistent feedback from consumers, structures and regulations to mandate quality programming, and links between cost and quality. We've gotten too accepting of the improvement and backslide cycle, and too comfortable with using buzzwords and activities that don't result in enduring improvements. We've been busy with the work of quality but haven't made enough sustainable progress.

The QI journey in the US has been significant and demonstrated many improvements itself, but it's far from over. The complexity of healthcare and its massive challenges and rapid changes continue to confound us with organizational and clinical outcomes that don't match our expectations. Talk with those who are dependent on healthcare systems and delivery and many will report experiences that show we have farther to go on our journey. Healthcare QI has come a long way, and we all have so very much more to do.

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