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SAGES QUALITY OUTCOMES AND SAFETY REVIEW

Public reporting and transparency: a primer on public outcomes reporting

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Abstract

Introduction Healthcare consumers seeking accurate information about where to find quality surgical care face a confusing constellation of rating systems that lack transparency or consistency of opinion. For example, a 2016 report in Health Affairs demonstrated that no hospital was rated as a high performer by all four prominent national ratings systems: Consumer Reports, Leapfrog, Healthgrades and U.S. News & World Report (Austin et al. Health Aff 34:423–430, 2015). Surgeons should have an understanding of the current state of public reporting of quality; hospital ratings and data sources; physician ratings and data sources; and transparency of reporting.

Methods We conducted a non-systematic review of the literature.

Results Hospital quality ratings remain nebulous and there is not universal opinion on the utility of voluntary participation in ranking systems, leaving the current systems largely opinion-based. Early attempts at physician ranking systems are rudimentary at best and suffer from methodological concerns. Publicly reported metrics should be easily understandable, accessible, clinically relevant, reliable, non-punitive, and shielded from legal discovery. Transparency is increasing within institutions to help align staff to institutional objectives, while specialty specific registries are helping to standardize care pathways and outcomes measures across organizations. Measuring surgical outcomes beyond 30-day morbidity and mortality has been plagued by a lack of understanding on how to create metrics that matter; the four attributes of relevance, scientific soundness, feasibility and comprehensiveness set a high bar for the development of effective and efficient quality measures in surgery.

Discussion SAGES, via the Quality, Outcomes, and Safety Committee, is committed to learning how to develop meaningful quality metrics in general surgery and will continue to work in other areas that impact quality, such as opioid prescribing, and surgeon wellness.

Keywords Transparency · Quality · Healthcare reporting · Ratings

Healthcare consumers seeking accurate information about where to find high quality surgical care face a dizzying array of sources of information: CMS star ratings of hospitals, Leapfrog grades and numerous other internet sources purporting to assess "quality". The public is clamoring for information yet these disparate data sources are often conflicting as each uses its own methods and emphasizes different aspects of care. A 2016 report in Health Affairs demonstrated that no hospital was rated as a high performer by all four prominent national ratings systems: Consumer Reports, Leapfrog, Healthgrades and U.S. News & World Report. Only 10% of the 844 hospitals rated as a high performer by one rating system were highly rated by any of the others [1]. As consumers seek more sophisticated information about the quality of healthcare, the surgical community should lead efforts to promote transparency in outcomes reporting.

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to enable these efforts, surgeons should understand several aspects of data collection and reporting, including:

- Current state of public reporting of quality
- Hospital ratings and data sources
- Physician ratings and data sources
- Transparency as the path to improving care and enabling consumers to make good choices

Internal transparency for hospitals can lead to specific performance objectives that can drive changes in care than can lead to better outcomes. External transparency, while a larger risk for hospitals that may not score well in certain areas, can help patients to choose where to receive care. There is even external transparency about surgeon results in some publicly searchable databases that could be of value when patients begin looking for a surgeon.

Materials and methods

This article represents a non-systematic review of the literature combined with expert opinion from the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Quality, Outcomes and Safety Committee. Institutional Review Board approval was not sought in development of this manuscript.

Results

Current state of public reporting of quality

By the beginning of this decade, over half a million Americans searched for hospital quality information on the internet [2]. Public reporting of healthcare data in this country has occurred for the last four decades and despite initial criticism and efforts to shield healthcare institutions and individual providers from involuntary participation, it is here to stay.

Public reporting today provides information on the performance of physicians, hospitals, insurance plans and healthcare systems to all consumers of healthcare. Early efforts to provide publicly available information on healthcare performance date back to the 1980s, when the Health Care Financing Administration (HCFA), now the Medicare and Medicaid Services (CMS), published risk-adjusted data on hospital mortality [3]. These early public reports focused on outcomes of cardiac interventions including mortality rate of coronary artery bypass surgery in New York State, and interventional cardiac catheterization through the American College of Cardiology Foundation database [4]. Registries of surgical outcomes proliferated over the years, beginning with the society of thoracic surgeons (STS) registry of cardiac surgery in 1990 [5].

Public reporting is currently executed via a large number of complex datasets and reporting systems, with different stakeholders emphasizing different criteria. Ideally, publicly reported metrics should be [4]:

1. Easily understandable by all stakeholders, including lay persons
2. Accessible to all through common information technology platforms
3. Useful by providing statistically significant and clinically relevant information
4. Reliable through approved data management techniques
5. Non-punitive by focusing on system improvement
6. Shielded from discovery in legal proceedings

Most common public reporting of healthcare performance in industrialized countries focus on metrics of patient experience and hospital-based care [6]. In the United States, national and state governmental agencies as well as many private regional coalitions contribute to a growing portfolio of publicized healthcare reporting tools. Most of these reports are published through websites.

Although CMS began publishing national data in 2005 on individual hospital performance through the Hospital Compare web site [7] these efforts were accelerated by the passage of the Patient Protection and Affordable Care Act (ACA) in 2010. The ACA called for a national healthcare quality improvement process directed by two federal agencies: CMS and the Agency for Healthcare Research and Quality (AHRQ) [3]. It included directives to identify the best performance measures and develop appropriate programs for public reports. Today, the National Quality Forum (NQF) is leading this effort to solicit performance measures for public reporting from a public–private partnership [8]. In alignment with the Hospital Compare site and as part of this initiative, CMS has developed the Physician Compare website [9]. It reports on quality data from group practices nationwide. Research on public reporting is sponsored by Grants from CMS and AHRQ and in 2012, 17 research projects were funded to evaluate issues in quality reporting.

Hospital Compare is a good example of the evolving integration of several public reporting tools under one "roof." It was created in 2002 as a joint public and private effort by the Hospital Quality Alliance (HQA) and CMS. Public reporting began in 2005 after identification of ten key care process measures. In 2008, the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey data were added. Quality and performance measures on hospital outpatient facilities was added by CMS in 2009 and data on hospital-acquired infection through the four CDC National Healthcare Safety Networks (NHNS) was added in 2011.

CMS data on re-admission reduction and surgical outcomes data provided by the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) was included as of 2012. Value-based purchasing data for hospitals was added in 2013 and in 2016 outcomes data from the VA system and the Overall Hospital Quality Star Rating was integrated in the report.

Other entities providing public reports on healthcare include: The National Committee for Quality Assurance (NCQA), the Leapfrog group, the Commonwealth Fund, Healthgrades and many others. Many of these sources depend on the source data reported to CMS, as well as the annual survey of hospitals conducted by the American Hospital Association. Despite the common data sets used in these reports, conclusions often vary because of different weights placed on the data.

Hospital quality ratings

In addition to publicly reported national quality rankings by the many sources described in the preceding section, additional information is available from state governmental agencies. Information from state governments tends to be related to safety reporting of adverse events. Although this information is publicly available in most states, the information is not generally risk-adjusted for patient risk or hospital size and activity. Many hospitals choose to report outcomes for selected procedures or conditions. For example, registry data such as the STS cardiac surgery data can be made available to the public. Hospitals can choose to have their data publicly reported through an agreement between the STS and Consumer Reports [5]. Hospitals that participate in the American College of Surgeons NSQIP program can also choose to have some of their surgical outcomes reported in the CMS Hospital Compare data.

An increasing number of hospitals are now choosing to report outcomes data for a variety of clinical programs. The Cleveland Clinic has been a leader in this area with the on-line availability of its Institute Outcomes reports [10]. Detailed information about clinical outcomes with benchmarked data is available. Other organizations such as Hartford HealthCare [11] are also publishing similar reports for a variety of conditions and procedures. In general, information about specific procedural and disease-specific results are not publically reported by most hospitals.

Physician quality ratings

For as long as the profession of surgery has existed, surgeons have been interested in measuring their outcomes to improve [12]. Ernest Codman, MD made famous the "End Results" concept in 1914 insisting that it was imperative for surgeons to measure and report patient outcomes to improve the profession [13]. The SAGES has repeatedly endorsed the idea of measuring quality, sharing quality data and developing methods for reporting on the quality of care patients' receive to improve. However, relevant and useful physician quality reports are even more difficult to obtain than reports on hospital quality. A number of health systems are now reporting patient experience ratings of their physicians. University of California Los Angeles, University of Utah Health System, and Geisinger were early adopters of this approach which is now spreading across the country. However, reports on physician-specific outcomes remain extremely uncommon. Pennsylvania and New York states have reported cardiac surgical outcomes by surgeon for a number of years, but this trend has not spread. The CMS Physician Compare website is rudimentary at present.

Nonetheless, there are ongoing efforts to publicly report surgeon-specific outcomes. In the 1990s mortality rates related to cardiac surgery were reported by the New York State Department of Health [14] followed by Pennsylvania [15]. These state-wide efforts were followed shortly thereafter by efforts in Cleveland, Minneapolis and others. The influential Institute of Medicine report, "Crossing the Quality Chasm", highlighted the large amount of variation in surgical quality across the United States and suggested that publicly reporting quality data would help decrease variation and drive improvement [16]. Efforts to measure and report quality of care, even at the surgeon level, grew significantly following the report.

Public reporting of individual physician's performance and quality has understandably lagged behind system reporting as controversies regarding transparency, non-punitive design and statistics when reporting small sample sizes are difficult to resolve. The largest organization to publicly report on physicians is ProPublica, a highly regarded group of independent investigative journalists. It began publishing reports of individual surgeons in a "Surgeon Scorecard" that contained adjusted complication rates based on administrative Medicare billing data in 2015. The individual reports are adjusted for comorbidities and derived solely from "healthy" patients undergoing eight specific inpatient surgical procedures [17].

However, methodological concerns such as "adjusted complication rates" are actually derived from readmission data, not complication rate data, thus missing complication rates during index hospitalizations; hospital-level performance variations that could drive differences in care are ignored in this model; the accuracy of the assignment of performance data to the correct surgeon in the "Scorecard" is questionable; and the adequacy of the case-mix adjustment is questionable. These concerns raise questions about the utility of the entire effort [17]. This is of great concern because reporting inaccurate data on physician quality could have deleterious effects such as driving patients away

from highly qualified surgeons or driving surgeons away from treating higher risk patients [18]. Therefore, while it is important that we continue to find ways to measure and report quality of care, we must assure accuracy to achieve the intended effect of improving care.

Transparency: informing consumers and driving better outcomes

Healthcare consumers make choices on a daily basis about their care. Whether it is what care provider to choose or which hospital to visit for care, they use a variety of methods to find the information they need. Despite the fact that a significant amount of information is available, many consumers are not utilizing this information when making decisions. In the United States, consumers tend not to search for public quality reports, do not understand the reports, mistrust the reports, or minimally use the reports when making decisions [19].

According to a U.S. News & World Report survey done in 2014, 35% of respondents rely on asking a friend when searching for a doctor, 30% search the internet, and 24% check their insurance to find a provider. When asked what the most important factor in considering a doctor was, 21% cited whether their insurance was accepted was the most important factor, followed by word of mouth (15%), personal connection (12%), and proximity to their home (10%). Only 8% of respondents cited the physician's website ratings as the most important factor. However, this survey did not specifically offer quality or outcomes as an option for the factor in considering a doctor [20].

Consumers are seeking greater transparency about the quality of care they and their families receive. In the past, savvy consumers would ask for recommendations from their physician and nurse friends and acquaintances—there was little objective data available to inform decision-making. An organization's readiness for greater transparency is highly dependent on its strategic priorities, its degree of physician engagement, its competitive stance within a region, regulatory requirements and its desired relationship to its patients.

Internal transparency refers to the degree to which information about quality and outcomes is shared within an organization. The best performers share information freely with stakeholders as a way to drive better results. Internal transparency assumes that peer-benchmarking will drive improvements—in a transparent environment, those with poorer outcomes can look to their colleagues for best practices and improve their performance. Internally, metrics have become a daily part of all physicians' lives as a result of CMS and organizational quality improvement initiatives. Nationally, these metrics have had beneficial impact over the past two decades in improving compliance with a number of perioperative processes of care measures and have improved aspects of surgical care. There has been a shift from reporting process measures to outcomes measures. Healthcare systems have had to think about how to increase staff engagement to drive performance improvement as the result of the financial penalties now imposed by CMS as well as increased public reporting. Internal dashboards have become tools for quality improvement across organizations, departments and divisions. These dashboards should reflect the strategic priorities set by hospital leadership. A Quality and Safety Committee translates the hospital's strategic goals into a set of measures and outcomes that individual Departments are responsible for. Taken in sum, the prioritized set of high level goals is translated into performance measures for the various divisions in the organization. On a year to year basis, a hospital can use this process to shift or fine tune their focus. Department Chairs have found it vitally important to distribute the goals across their department to help improve performance in specific areas. Ultimately, it means that in a department of surgery, internal transparency seeks to align the members of a department with annual objectives of an institution; these alignments may further help meet increasingly stringent requirements from CMS.

Internally, a hospital needs to only be transparent enough to drive specific performance objectives in specific areas. A hospital with external transparency opens its whole systems of care and operations to the public for scrutiny. A belief in external transparency—sharing information with the public—must be values-driven. Historically, structural measures of excellence have been important to the public; it gives them an easily measured sense of safety and performance when encountering labels like, "center of excellence", or "ranked number one". Hospitals spend significant time and resources strategically picking and choosing which external rankings and accreditations they wish to participate. Regional and national ranks for a given department or program can change dramatically depending on the ranking agency. Some hospitals are satisfied by obtaining a few "good" albeit opaque rankings, however, competitive environments can create conditions for greater public transparency. A long studied example is the New York State Cardiac Surgery reporting system. External transparency down to the surgeon level helped drive improvements in mortality across the state, and the STS created one of the first and best performing clinical registries to help track and drive performance improvement. As calls for external transparency in pricing and physician performance have increased, professional societies have begun to use the STS database as a model to think about performance in their own specialties using nationally pooled data. We now have vascular and bariatric registries which track highly specific, specialty-defined outcomes. CMS rewards this practice, as it alone does not have the tools to define the targets for performance improvement at more granular levels of care. The next evolution in

transparency is the use of patient reported outcomes (PRO). CMS already has incorporated the patients' perceptions of quality in payments, but professional societies are hoping to engage their patients on their own terms in order to create a fair and relevant dialog that we hope will help us perform better. An example of a PRO tool that is helping to close the loop on internal and external transparency is a smartphone application to incorporate patient-reported measures into clinical risk stratification. Studies are demonstrating that PRO variables benefit preoperative and postoperative care in herniorraphy, cholecystectomy, bariatrics, and peripheral vascular disease.

Transparency is increasing within institutions to help align staff to institutional objectives, while specialty specific registries are helping to standardize care pathways and outcomes measures across organizations. With the public increasingly engaged, we are finding new ways to help educate and align care and reduce variations. Done well, patients can help their own care and gain a better understanding of what measures matter. It may not be enough to have a high reputational rank; hospitals, physicians and professional societies will have to increasingly demonstrate it.

Measures that matter

The AHRQ has defined the four characteristics of an effective quality measurement strategy to include relevance, scientific soundness, feasibility and comprehensiveness [21].

The AHRQ indicates that relevance encompasses, "is it a meaningful measure that identifies potential for improvements?" Both components of this two-part ask are important. Regarding meaningfulness, it is critical to define the stakeholder whose eye is beholding the outcome. What may be meaningful to the surgeon could be very different from what is meaningful to the patient. To this end, we should strive to measure functional recovery of patients after injury, illness and intervention. This will require of the use of PRO and touches on issues of frailty, nutrition, prehabilitation and psychosocial distress, in addition to routine physical performance outcomes [22–24].

The second AHRQ component of scientific soundness is interpreted as, "is it a scientifically valid, accurate, and reproducible measure? Is there clinical evidence to support its use? Can it provide a process-outcome link?" Currently, the field is flush with process measures that more often than not do not demonstrate a confident link to actual outcomes (e.g. SCIP measure adherence and wound infection rates) [25–27]. But there is a delicate balance here with the third criteria of feasibility, defined as, "is it fiscally and logistically workable? Can it be precisely specified and conducted within confidentiality parameters? Is it auditable?" The feasibility of monitoring process measures will almost always exceed our practical ability to measure functional outcomes. Despite these obstacles, we are charged to constantly seek process measures that strongly correlate with functional outcomes, while simultaneously moving the field toward techniques and technologies that measure the actual outcome of interest (e.g. wearable accelerometers) [25, 26].

Finally, we are challenged with developing metrics that are comprehensive, or in other words, "how extensive is the information yielded through the measure?" Here, surgeons are given the difficult task of creating valid measures that apply to large populations. Concepts of risk adjustment are particularly relevant to this component as any increase in the ability to compare outcomes across patients with varied comorbidities, age, cancer stage, etc. will increase comprehensiveness and confidence in the measure [28].

Clearly, the four attributes of relevance, scientific soundness, feasibility and comprehensiveness set a high bar for the development of effective and efficient quality measures in surgery. However, they provide a meaningful roadmap, when coupled with a vigilant focus on patient-centric measures, which are likely to lead us (and our patients) to success.

What is SAGES doing in the quality landscape?

SAGES, through the quality, outcomes, and safety (QOS) Committee, has contributed its first set of general surgery recommendations to Choosing Wisely. Choosing Wisely is an initiative of the American Board of Internal Medicine that seeks to create a dialogue on avoiding unnecessary tests, treatments, and procedures for the purposes of reducing waste and increasing quality. Choosing Wisely currently has 540 recommendations from specialty societies. Our first recommendations revolved around procedures such as cholecystectomy and opioid prescribing, and it is the intent to submit new or updated evidence-based recommendations on a yearly basis.

SAGES, via the QOS Committee, has formed an Opioid Task Force, which is charged with educating its membership about the current opioid crisis in North America. With data suggesting that opioid-naïve patients have a 5.9–6.5% conversion to chronic use after a postoperative prescription [29], it is incumbent on prescribers to become knowledgeable about non-opioid treatments for their patients. The Task Force, which is composed of both surgeons and anesthesiologists, will be compiling resources for its membership on topics such as multi-modal therapy, surgeon-administered blocks, state-by-state resources, regulations, and laws for opioid prescribers and more to come.

Another issue that affects patient safety is the ever-growing problem of surgeon burnout. To address this, the QOS Committee is in the process of forming a Surgeon Wellness Task Force to look at what we can do to educate and provide resources for members who are showing signs of diminishing wellness. We as a society recognize that the culture is

changing around this issue, and it is important for SAGES to be at the forefront of the changing landscape as this remains a critical issue for surgical quality and safe patient outcomes.

Lastly, SAGES remains interested in learning how to create patient-centered metrics that might more accurately describe true outcomes of surgical procedures. For example, at the 2018 Annual Meeting, held in Seattle, Washington, members of the QOS Committee held a panel session about creating the optimal patient quality metric, which was turned into a workshop to develop metrics around cholecystectomy, inguinal hernia, and ventral hernia. In addition, SAGES, through its SMART Enhanced Recovery Program, continues to be a leader in the development and implementation of enhanced recovery pathways, which may in turn help to produce better patient outcomes that can be measured in meaningful metrics.

Discussion

There is an increasing appetite to measure and report on quality with important parties such as patients and payers carefully watching what develops. The current landscape is littered with confusing information that has not yet resonated with the public and does not specifically speak to outcomes measurement as desired by the government and third party payers. The initial foray into quality reporting has been both hospital- and physician-centered, but transparency in reporting remains a concern. While many seek to understand how to define quality, there remains a void in gastrointestinal surgery with outcomes measures beyond the standard reported metrics such as mortality and 30-day readmission rates that do not tell the full story, especially for procedures that are designed to improve health-related quality of life. Physician and hospital reimbursement will soon be affected by outcomes as we transition to a system of value-based care, adding to the need to properly define quality. SAGES will continue to provide leadership and support to surgeons working to define appropriate metrics that are procedure specific, patient reported, easily understood by the public, and simple to measure.

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Compliance of ethical standards

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