

Research Article

How Can Patients Determine Reliable Orthopedic Care?

Ian Savage-Elliott^{1a}, Henry Fox^{2b}, Michelle Chang^{2c}, Mary Witkowski^{3d}, Jon Warner^{2e}

¹ Tulane University School of Medicine, ² Massachusetts General Hospital, ³ Harvard Business School

Keywords: value, outcomes, orthopedics

<https://doi.org/10.60118/001c.17086>

Journal of Orthopaedic Experience & Innovation

Vol. 1, Issue 2, 2020

Purpose: The current healthcare system does not afford patients sufficient transparency in order to make informed decisions regarding their orthopedic care. The reason for this is that outcomes reporting is neither standardized nor thorough. Moreover, US News and World Report (USNWR), the agency which ranks best orthopedic programs, uses metrics that do not represent outcomes most important to patients. The purpose of this study

a [Conflicts of Interest Statement for this author](#)

b Hank grew up on Mercer Island, WA. He graduated from Brown University with a Bachelor of Science in Biology in 2015 and a Master's in Biotechnology in 2016. While at Brown, Hank volunteered as an EMT for Brown's 911 ambulance service and played on the varsity water polo team. He also spent time as a student researcher in RI Hospital's Orthopaedic Trauma lab. His interests include hiking, biking, skiing, swimming, and reading. Hank is currently a first-year medical student at Oregon Health & Science University.

[Conflicts of Interest Statement for this author](#)

c Michelle grew up in Taichung, Taiwan and has lived in the United States since high school. She received her Bachelor of Science in Biology from Georgetown University in 2016. She grew up playing the violin and enjoys being part of the chamber ensemble and orchestra. At Georgetown, she served as the President of the Lombardi Ensemble Association for Patients (LEAP) and provided music for patients and their families at the Georgetown MedStar Hospital. She is currently attending Kansas City College of Osteopathic Medicine.

[Conflicts of Interest Statement for this author](#)

d Mary L. Witkowski is a fellow at the Harvard Business School working at the Institute for Strategy & Competitiveness on value-based health care. Her work focuses on research on value-based payments, including the design and implementation of bundled payments in condition-based specialty care as well as primary care. She also is interested in the role and opportunity of employers and suppliers to help drive health care forward toward value.

Previously, Mary directed research and advised senior leadership at hospitals throughout the United States and globally to evaluate impact of a Time-Driven Activity-Based Costing. Her research has been published in the *Journal of Healthcare Management*, *Accounting Horizons*, *New England Journal of Medicine* & *Harvard Business Review Online Forum* and in case studies at the Harvard Business School.

Mary Witkowski received her Bachelor's degree from Harvard College, a Masters of Business Administration from Harvard Business School and a Doctor of Medicine degree from the Harvard Medical School. Previously Mary worked in strategy consulting at Bain in Company in their Boston and New York offices as well as at Massachusetts General Hospital in the department of Obstetrics and Gynecology.

[Conflicts of Interest Statement for this author](#)

e Our mission is to provide state of the art patient care based on evidence, measurement of outcomes and transparency, with the primary focus being what is in the best interest of the patient.

Jon J.P. Warner, M.D. is currently Chief of the MGH Shoulder Service and director of the MGH Shoulder & Elbow Fellowship at Harvard Medical School. He came to Boston in April of 1998 from the University of Pittsburgh Medical Center where he served as Chief of the Shoulder Service for 8 years. He is also Professor of Orthopaedic Surgery at Harvard Medical School and the Founder and Past President of the New England Shoulder and Elbow Society. He served as President of the American Shoulder and Elbow Society (ASES) in 2012. He has authored over 200 peer review publications, more than 200 book chapters and 5 textbooks in shoulder surgery. His clinical and basic research has been recognized by more than 30 regional, national and international awards.

He is Board Certified in Orthopaedic Surgery and is a member of numerous specialty societies including the Orthopaedic Research Society, the American Shoulder and Elbow Surgeons, the American Orthopaedic Society for Sports Medicine, and the Arthroscopy Association of North America.

His Clinical interests include all aspects of problems related to the shoulder, but with a special interest in management of complex problems and failed treatments.

[Conflicts of Interest Statement for this author](#)

[Visit the Open Payments Data Page for this author](#)

was to determine how the best orthopedic programs use outcome measurement and transparently report those outcomes.

Methods: We surveyed the top 30 USNWR ranked orthopedic programs in order to identify what metrics for outcome they were using and reporting as available to patients.

Our search included review of Dept. websites, annual reports and search engines.

Results: Only a minority (17 of 30) of the top 20 USNWR ranked orthopedic programs reported any basic outcomes data on common measures such as surgical site infection rate, reoperation rate and readmissions. And less than 30% disclosed patient reported outcomes (PROMs) for any orthopedic procedure.

Conclusion: The current status quo of transparency for outcomes of orthopedic surgical procedures is poor and remains insufficient for patients to make informed decisions as to their care for a given orthopedic condition.

The current healthcare system fails to provide consumers (patients) with adequate transparency on outcomes and cost by which they may make an informed decision about their orthopedic care. Agreement between governments, payers and providers on the importance of moving toward value-based care has been slow in coming. Thus, patients would benefit from information related to the quality of the care they would receive from a prospective provider. There is virtually no transparent reporting of costs, but what can patients find online regarding outcomes at this time?

Currently, reporting of outcomes is neither standardized nor thorough, and rating agencies such as the US News and World Report (USNWR) are using metrics that do not represent the outcomes most important to consumers. Our review of the consumer's experience when attempting to choose a physician for an orthopedic procedure reveals that patients have no means of appropriately assessing performance outcomes of their physicians. This dearth of reliable outcomes reporting, even amongst purportedly elite institutions, is impeding the transition to value-based care as well as outcomes transparency for patients.

With the continued rise of costs in US healthcare and a growing recognition of uneven quality, the value-based payment model is designed to incentivize both better outcomes and cost reduction (Porter and Lee 2013). The fee-for-service system, which rewards the volume of services rather than outcomes, goes so far as to disincentivize better outcomes for patients, as providers generate greater payments through complications necessitating further care. Value-based payments can reverse this trend but require the accessible measurement and reporting of outcomes so that those outcomes can be rewarded.

Musculoskeletal care accounts for roughly 30% of Emergency Room visits and hospital discharges, and therefore has a significant influence on how healthcare is practiced and how institutions are perceived by their patients (Weinstein, Yellin, and Watkins-Castillo 2014). Furthermore, choosing essential performance measurements and outcomes not only informs patients and referring physicians but also offers an opportunity for high-value providers to report these types of outcome measurements and attract patients.

One of the most well recognized rating systems, the US News and World Report, publishes an annual rating used for the evaluation of orthopedic programs. According to

their methodology, rankings are the sum of a composite score based on Structure (30%), Process (27.5%), Outcomes (37.5%), and Patient Safety (5%). This system is based on Donabedian's landmark work on quality from the 1960s (Murrey et al. 2017). Outcomes are based on an adjusted mortality rate taken from Medicare Provider Analysis and Review (MedPAR) data. While mortality is an important marker, the risk of mortality following the vast majority of orthopedic procedures is below 1% and is not a meaningful differentiator. More modern metrics, such as the Hip and Knee Osteoarthritis Outcomes Survey (HOOS and KOOS, respectively) are both comprehensive and patient reported, going beyond the limited scope of patient mortality. Unlike the HOOS and KOOS, the metrics currently being used do not include the outcomes most important to patients, nor those that Orthopedists use (return to play, pain scores, and functional outcome scores) to justify an orthopedic intervention in controlled studies. Similarly, the scores in the "Process" category are based upon survey results of a group of anonymous orthopedists assessing the best facilities for complex or difficult patients in their subspecialty. The "Structure" metric is based on volume and hospital resources (nursing services, AHA data) with the source of volume being the MedPAR database and Center for Medicaid and Medicare (CMS), both collections of fee-for-service Medicare beneficiaries. Volume assessments therefore only represent a specific portion of the population. Public transparency of outcomes has yet to be incorporated into most external ranking systems, with USNWR being one of the few who have added this category to their ranking methodology. Even here, it is reflected in only two of 16 sub-specialties, Heart Surgery and Cardiology, where it is a part of the "Safety" category, which counts for 5% of the overall score.

A proliferation of government based, third-party websites, external-ranking tools, and online opinion-based polls also exist for consumers to review when considering selection of an orthopedic care provider. On the government side, CMS "Hospital Compare" is one tool used for comparing hospital performance. Orthopedic surgical outcomes data, however, is limited to hospital based risk-standardized complication rates and 30-day readmission rates following elective THA (Bernatz, Tueting, and Anderson 2015). A lack of specialty-specific outcomes data amongst these different external reporting tools makes comparisons between these sources difficult. This lack of breadth and standardization of data leaves consumers with little under-

Table 1 - Survey Results on Publicly Accessible Outcomes Data from Top 30 USNWR Orthopedic Hospitals

Hospital-wide measures? (Y/N)	Orthopedic-specific measures? (Y/N)	Mortality (Y/N)	Readmission (Y/N)	Infection (Y/N)	Surgical volume (Y/N)	Complications (Y/N)	Patient-reported outcomes (Y/N)	Verified findings?	Measured all categories?
25	17	13	11	9	16	8	5	9	6
83.3%	56.7%	43.3%	36.7%	30.0%	53.3%	26.7%	16.7%	30.0%	20.0%

Table 1

standing of the overall cost or outcome of a procedure and no means of interpreting its value.

Seeking to simulate the consumer experience, we surveyed the USNWR's top 30 orthopedic programs, screening them for publicly available outcomes data. We searched their websites, annual reports, and screened search engines. We found that only 17 of 30 programs published any data on orthopedic outcomes (including orthopedic procedure mortality, readmission rate, surgical site infection, and other complications). Less than 30% of the surveyed institutions had publicly available data on Patient Reported Outcome Measures (PROMs) for Orthopedics (See Table 1). On the other hand, upwards of 80% had publicly available data on 'hospital wide measures' (such as number of beds, readmissions and deaths for all specialties). Without reliable, publicly accessible information or ranking systems that are specific to their condition, consumers have no access by which to make an informed decision.

Outcomes reporting also drives providers to face both pressure and incentives to improve (Porter and Lee 2013). In part, the absence of standardized, reliable patient outcomes is due to a lack of pressure from consumers and/or government to demand healthcare services in a traditional economic model where a fee is paid for a specific result. Without further pressure from rating agencies, other providers, or expansion of the pressures to publish outcomes data, orthopedics will continue to lack clear outcome determinants. None of this reporting was required under the fee-for-service model, where payments were 100% based on services provided. Without access to information on the outcomes that matter to them, patients cannot possibly appropriately assess an intervention or care decision and lack shared decision-making. Reporting of outcomes shows consumers that there is a variance in care delivered by providers, which is one reason many providers are pushing back against it. Ultimately, transparency with regard to the variation in outcomes will drive purchasers to demand quality and outcome reporting for payment, which

will drive providers to get on board with outcome measurement.

How do we fix this broken system? It must start with greater standardization of PROMs. While these metrics have issues, such as being subject to temporal biases or overly pain focused, PROMs are valuable in that they are patient-focused and can be subdivided by medical condition. The International Consortium for Health Outcomes Measurement (ICHOM), a non-profit dedicated to establishing and benchmarking the use of specific outcome measure sets for specific diseases (such as 5 scores established for knee and hip osteoarthritis), offers promise for standardizing outcomes for specific diseases that can then be communicated to patients looking for care for their disease as evidence of value. These international standard sets have currently been established for 54% of the burden of medical disease, including hip and knee osteoarthritis and back pain, and will continue to guide the way forward toward establishing appropriate PROMs (Rolfson et al. 2016).

Value from the patient's point of view should be based on their outcome, process of recovery, and durability of the achieved health outcome (Porter and Lee 2013). In our review of the Top 30 USNWR Orthopedic programs, we found that most do not provide sufficient information to permit patients to conclude what the value of their treatment will likely be at that institution.

The current dataset being used to rank orthopedic programs needs to be improved and redesigned so that it measures those elements of appropriate outcomes most important to patients. Without this, they will continue to be frustrated and misled, and programs will lack an invisible hand to direct the publishing and advertising of the value of their specific service. As we look to paying for value rather than volume, we must measure, report and reward providers with the best risk-adjusted outcomes that matter to patients, otherwise it will be a race to lower cost.



REFERENCES

- Bernatz, James T., Jonathan L. Tueting, and Paul A. Anderson. 2015. "Thirty-Day Readmission Rates in Orthopedics: A Systematic Review and Meta-Analysis." Edited by Joel Joseph Gagnier. *PLOS ONE* 10 (4): e0123593. <https://doi.org/10.1371/journal.pone.0123593>.
- Murrey, Olmsted, Emily Geisen, Joe Murphy, Denise Bell, Melissa Morley, Marshica Stanley, and Rebecca Powell. 2017. "Methodology U.S. News & World Report 2017-18 Best Hospitals: Specialty Rankings." RTI International. <https://www.rti.org/publication/methodology-us-news-world-report-2017-18-best-hospitals>.
- Porter, Michael, and Thomas Lee. 2013. "The Strategy That Will Fix Healthcare." *Harvard Business Review* 91 (October):1–19. <https://hbr.org/2013/10/the-strategy-that-will-fix-health-care>.
- Rolfson, Ola, Stephanie Wissig, Lisa van Maasakkers, Caleb Stowell, Ilana Ackerman, David Ayers, Thomas Barber, et al. 2016. "Defining an International Standard Set of Outcome Measures for Patients With Hip or Knee Osteoarthritis: Consensus of the International Consortium for Health Outcomes Measurement Hip and Knee Osteoarthritis Working Group." *Arthritis Care & Research* 68 (11): 1631–39. <https://doi.org/10.1002/acr.22868>.
- Weinstein, Stuart, Edward Yellin, and Sylvia Watkins-Castillo. 2014. "Musculoskeletal Diagnoses and Procedures." In *BMUS: The Burden of Musculoskeletal Diseases in the United States*. <https://www.boneandjointburden.org/fourth-edition/ie0/musculoskeletal-diagnoses-and-procedures>.