Certifying America's Best Hospitals: A Comparison of Consumer Oriented Hospital Ranking Systems

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ABSTRACT

Background: Publicly available hospital rankings have the potential to improve hospital care by guiding patients to higher quality facilities and spurring quality improvement in lower-ranking hospitals. In 2003 the Centers for Medicare and Medicaid Services started requiring hospitals to report certain healthcare quality metrics. Since then many organizations have used this and other data to generate hospital ranking lists. Each organization is at least partially aimed at consumers and claims that their rankings will help them to find the "best hospitals" in their region and in the nation. While hailed by patient advocates and other groups, these ranking systems have received criticism from many stakeholders in healthcare. Such criticisms have included questions as to the validity of these organizations' methodologies and questions about what "best" means when it comes to quality in health care. While some have compared the different methodologies of these organizations, to date there has been no head to head comparison of the concordance between each organization's rankings.

Objective: Main research question: What is the concordance between publicly reported consumer-oriented hospital rankings, and do they each measure the same variables?

Aim 1: Assess the magnitude of concordance between consumer oriented hospital ranking lists.

Aim 2: Assess the similarities and differences in domains and methods used in calculating hospital rankings for each list.

Methods: Using a Google search for terms including "best hospital," "number one hospital," and other terms that a consumer might use the author identified multiple hospital ranking systems. Organizations included in this analysis were restricted to those with a nationwide hospital ranking list based on publically reported and/or individually collected data. Their data also had to be accessible without a membership fee or subscription. The author found five qualifying organizations: the Leapfrog Hospital Survey, Consumer Reports' Hospital Rankings, Healthgrades' America's Best Hospitals, Truven Health Analytics' Top 100 Hospitals, and the US News and World Report's Best Hospitals. In accordance with Aim 1, each organization's rank list was accessed and assessed for concordance. In accordance with Aim 2, the methodologies from each organization were compiled and assessed for types of metrics used. Metrics were organized using the Donabedian (Donabedian, 1966) framework as a model, dividing metrics into Outcome, Process, Patient Satisfaction, and Other (including structural) categories.

Results: Results from Aim 1 suggest that there is marked discordance between consumer oriented hospital ranking lists. Results from Aim 2 suggest that although most hospitals use data from the CMS database, they vary widely in the number and type of metrics that they use in calculating their ratings.

Conclusion: The high level of discordance between ranking lists that all make similar claims (to help consumers find the "best" hospital) is likely frustrating to consumers. Given the high level of discordance between hospital ranking systems, many consumers and stakeholders may be prompted to ask whether such efforts serve any purpose in determining hospital quality. Results from Aim 2 suggest that, while frustrating, such results are not entirely unexpected. Different organizations using different methodologies to analyze different metrics are likely to generate different ratings. Future research should focus on determining which, if any, of these current hospital ranking methodologies correlates to patient-centered measures of quality. A verified methodology could then be used as a "gold standard" for hospital comparison.

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Background

The Institute of Medicine (IOM) reports--"To Err is Human" (Medicine, 1999) and "Crossing the Quality Chasm" (Medicine, 2001) brought to light an alarming lack of quality and safety in healthcare. In Crossing the Quality Chasm the Institute of Medicine provided ten "Rules for Redesign" that they claimed would "inform efforts to redesign the health system." Rule number 7 was "Transparency is necessary" and stated that increased transparency would enable consumers of health care to make more informed decisions when selecting a health plan, hospital, clinical practice, or other health care services.

In 2001 the Centers for Medicare and Medicaid Services (CMS) and the Department of Health and Human Services (HHS) announced the Hospital Quality Initiative "to assure quality health care for all Americans through accountability and public disclosure."(Medicare & Services, 2008) The 2003 Medicare Modernization Act provided strong incentives for hospitals to begin reporting on ten quality initiatives known as the "starter set." Measures continued to be added throughout the years, and yearly data is available through CMS.

With a nationwide mandate for hospitals to report quality metrics and a publicly available database to access them from, the groundwork was laid for analysis and comparison efforts to begin. Some of these efforts came from expert groups formed for the sole purpose of rating healthcare facilities, like the Leapfrog Group's Hospital Ratings project. Others came from consumer oriented organizations with prior expertise in rating other products and services, such as Consumer Reports and the US News and World Report.

While these initiatives have been applauded by some, many have questioned the relevance and usefulness of hospital comparisons and rankings reports, for a variety of reasons. (Rothberg, Morsi, Benjamin, Pekow, & Lindenauer, 2008; State, 2013). Some of their concerns included: a lack of transparency in methodology; concerns that data were gathered from billing statements, and not actual clinical data; conflicts of interest, such as requiring hospitals to pay to use their endorsements; flawed or missing risk adjustment methodologies; and the worry that massive amounts of information may overwhelm and confuse patients rather than being informative.

These concerns are valid and deserve to be addressed. Although there are studies comparing the methodologies of various rating systems (Podolsky, 2014; Werner & Asch, 2005), to date* there has been no head to head comparison of the concordance between the ranking lists of the various publicly reported consumer-oriented rating systems. Such an analysis from a consumer perspective would be useful, as conflicting ratings (or hospitals which ranked highly on one organization's list and poorly on another's) would be confusing to both consumers and

stakeholders, and would raise questions about the methodology and efficacy of hospital ratings. Thus, the objective of this review is to assess the concordance between publicly reported consumer-oriented hospital rankings. Specifically, the author sought to assess the magnitude of concordance between consumer-oriented hospital rankings lists, as well as to assess whether discordance was potentially due to differences in domains and methods used in calculating hospital rankings for each list.

Methods

In line with the author's consumer oriented approach, the following inclusion criteria were used for identifying hospital ranking systems:

Inclusion criteria: Organizations which compared hospitals nationally based on publicly reported and/or individually collected quality data. The organization's rankings had to be accessible without a subscription or membership fee.

Search strategy: Google search for terms including "hospital ratings" "best hospitals" "number one hospital" and "hospital comparison", terms that a consumer might use to search for hospital rankings.

After an extensive search, the author found 5 organizations which met the inclusion criteria:
1. Leapfrog Hospital Survey
2. Consumer Reports Hospital Ratings
3. Healthgrades America's Best Hospitals
4. Truven Health Analytics Top 100 Hospitals
5. US News and World Report Best Hospitals

Each organization's top 17 ranked hospitals were assessed for concordance (the US News and World Report's rank list was the limiting factor as they ranked only 17 hospitals in their overall rank list).

Further, each organization's methodologies were accessed and assessed for number and type of quality metrics used in the calculation of their rank. The author used a modified version Donabedian framework to organize the metrics into the following categories: Outcomes, Process Measures, Patient Satisfaction, and Other, and Aggregated Ranking (Donabedian, 1966). 'Outcomes' included counts and/or rates of care-related complications such as central line-associated bloodstream infection (CLABSI), 30 day mortality, 30 day readmissions, and surgical site infections. 'Process measures' included metrics accounting for specific actions and procedures which, when applied, have been demonstrated to prevent morbidity and mortality such as deep venous thrombosis (DVT) prophylaxis administered to at risk patients, administration of perioperative beta blockers to appropriate patients, etc. 'Patient satisfaction'

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metrics included measures of patient preferences and perceptions (i.e., Was my pain adequately controlled during my visit? Were the facilities clean?). 'Other' included structural metrics (beds per hospital, nurse/patient ratio, etc.) and other metrics not included in the categories above. 'Aggregated Ranking' included overall rankings, safety scores, and any measure that is "calculated" using multiple individual metrics.

The following is a brief description of the five hospital rating systems that will be compared in this paper:

<u>The Leapfrog Group - Leapfrog Hospital Survey</u> (Group, 2014)

> <u>History</u>: The Leapfrog group is a non-profit organization started in 2000 driven by healthcare stakeholders around the nation that attempts to recognize hospitals that are making significant advances, or "leaps" in patient safety.

> <u>Sources of Data</u>: Most of the data comes from a survey sent out to hospitals yearly. The rest of their data comes from the medicare database.

> <u>Aggregated Rankings</u>: Hospital Safety Score - calculated using various safety metrics and reported using a grade scale (A, B, C, D , F; A is best)

<u>Consumer Reports – Hospital Survey</u> (Reports, 2012)

> <u>History</u>: Consumer Reports started as a magazine published by the Consumers Union in 1936. They have long been known for their strict policies on impartiality and editorial independence. Their hospital ratings undertaking is relatively recent, though.

> <u>Sources of Data</u>: Mostly medicare database, but also American Hospital Association and Society of Thoracic Surgeons

> <u>Aggregate Rankings</u>: Safety Score - a numerical rank (0-100, higher is better) that is calculated using 5 safety metrics.

<u>Healthgrades – America's Best Hospitals</u> (Healthgrades, 2014a, 2014b, 2014c)

> <u>History</u>: Founded in 1998, Healthgrades is an organization that offers both hospital and physician grades and comparisons. Healthgrades touts themselves as different from other hospital rating systems because they use only outcome data (Mortality metrics and In-hospital complications metrics) to calculate their aggregate rankings. This is only partly true. Only outcome metrics are used to calculate their overall rankings, but many of their other "awards" and "recognitions" incorporate process measures and patient satisfaction surveys.

> <u>Sources of Data</u>: Medicare database

Aggregate Rankings: Non-ordinal America's Top 50 Hospitals, America's Top 100 Hospitals, Specialty specific recognitions, other awards (patient safety excellence, outstanding patient experience) - >16 such awards

Truven Health Analytics – Top 100 Hospitals (Analytics, 2014a, 2014b)

History: Truven Health Analytics (formerly Thomas Reuters) is a multi-national health analytics company that sells informational healthcare products (Micromedex, CareNotes System, Redbook online, etc.) that assist in patient care and healthcare administration.

Sources of Data: Medicare databases.

Aggregate Rankings: Non-ordinal Top 100 Hospitals, Top 50 Cardiovascular Hospitals, Top 15 Health Systems

The US News and World Report – Best Hospitals (Olmsted, 2014; Reports, 2012)

History: The US News and World Report began publishing rankings for Hospitals, Colleges, etc in 1990. USN Rankings are perhaps the best known source of rankings to the American public, although their rankings have been criticized for their over reliance on reputation (Sehgal, 2010). They provide an overall ranking of hospitals as well as rankings of hospitals in 16 different specialties.

Sources of Data: Medicare databases and their reputation survey

Aggregate Rankings: Top 17 Hospitals, specialty based rankings.

Results

Assessment of Concordance Among Ranking Lists

Table 1: Concordance among ranking lists - Sorted by US News and World Reports Rankings

Hospital name	USN (numerical)	Truven Top 100 (Top 100/n)	Healthgrades America's Best Hospitals (Top 50 or 100/n)
Mayo Clinic	1	n	n
Massachusetts General Hospital	2	n	n
Johns Hopkins Hospital	3	n	n
Cleveland Clinic	4	n	n
UCLA Medical Center	5	n	n
New York-Presbyterian University Hospital of Columbia and Cornell	6	n	Top 50
Hospitals of the University of Pennsylvania-Penn Presbyterian	7	Top 100	n
UCSF Medical Center	8	n	n
Brigham and Women's Hospital	9	n	n
Northwestern Memorial Hospital	10	n	n
University of Washington	11	n	n
Cedars-Sinai Medical Center	12 (tie)	n	Top 100
UPMC-University of Pittsburgh Medical Center	12 (tie)	n	n
Duke University Hospital	14	Top 100	n
NYU Langone Medical Center	15	n	n
Mount Sinai Hospital	16	n	n
Barnes-Jewish Hospital/ Washington University, St. Louis	17	n	Top 100

Table 1 shows the Top 17 USN and World Report hospitals in numerical order and their associated rank from Truven and Healthgrades. The hospitals were listed using the USN's rankings because neither Truven nor Healthgrades had an ordinal list of their top hospitals, but rather just groups. The Truven rankings are indicated with either a "Top 100" indicating they were ranked or "n" for not ranked. The Healthgrades ratings are indicated with either a "top 50" or "top 100" (the Top 100 is just an extension of Top 50 list), or a "n" for not ranked.

The main point that should be noticed from this table is the marked discordance between the rankings. Out of the top 17 USN and WR hospitals, only two of them are ranked in Truven's Top 100 list and only 3 are ranked in Healthgrades Top 100 list, with only 1 in their top 50 list. Between Truven's 2 ranked hospitals and Healthgrades 3 ranked hospitals in this list, there are none that overlap.

Taking this a step further, one would assume that the best hospitals should also be the safest hospitals. This is considered in this next table.

Table 2: Concordance among ranking lists - Sorted by US News and World Reports Rankings, Safety Rankings Added

Hospital name	USN (numerical)	Truven Top 100 (Top 100/n)	Healthgrades America's Best Hospitals (Top 50 or 100/n)	Leapfrog - Hospital Safety Score (A,B,C,D,F)	CR Safety Score (78-0, higher is better)
Mayo Clinic	1	n	n	A/B	not rated
Massachusetts General Hospital	2	n	n	B	54
Johns Hopkins Hospital	3	n	n	no data	59, 46
Cleveland Clinic	4	n	n	C	46
UCLA Medical Center	5	n	n	C	41
New York-Presbyterian University Hospital of Columbia and Cornell	6	n	Top 50	A	44
Hospitals of the University of Pennsylvania-Penn Presbyterian	7	Top 100	n	A	59
UCSF Medical Center	8	n	n	A	50
Brigham and Women's Hospital	9	n	n	A/B	56
Northwestern Memorial Hospital	10	n	n	A	45
University of Washington	11	n	n	C	63
Cedars-Sinai Medical Center	12 (tie)	n	Top 100	A	60
UPMC-University of Pittsburgh Medical Center	12 (tie)	n	n	A/B	56-45
Duke University Hospital	14	Top 100	n	A	60
NYU Langone Medical Center	15	n	n	B	55
Mount Sinai Hospital	16	n	n	C	50
Barnes-Jewish Hospital/ Washington University, St. Louis	17	n	Top 100	B/C	54, 48

Table 2 considers what happens when Leapfrog's "Hospital Safety Score" and Consumer Reports' "Safety Score" (both shaded in gray) are added to the previous table. Leapfrog's rankings are indicated using alphabetical grades with A being the best. CR's rankings are indicated using a numerical scale with higher numbers representing safer hospitals (and 78 being the highest ranking that a hospitals received from them). Some organizations received two letters or numbers from Leapfrog and Consumer Reports, respectively, because they had more than one hospital as part of the system.

Again, the marked discordance should be noted. Consider New York-Presbyterian University Hospital of Columbia and Cornell, for example. On the one hand, they are ranked highly by USN, Healthgrades, and Leapfrog, but on the other hand, they aren't ranked at all by Truven and receive one of the lowest scores from CR among the hospitals included in this list.

Although the discordance here seems pretty pronounced, it seemed appropriate to approach the analysis from another angle as well. This is considered in the next table.

Table 3: Concordance Among Safety Rank Lists, Sorted by Consumer Reports Rankings

Hospital Name	CR- Safety Score (78-0, higher is better)	Leapfrog-Hospital Safety Score (A,B,C,D,F)	Healthgrades – Patient Safety Award (y/n)
Miles Memorial Hospital (damariscotta, ME)	78	n/a	y
Oaklawn Hospital (Marshall, MI)	77	B	n
Aurora Medical Center of Oshkosh (Oshkosh, WI)	75	A	n
Lutheran Hospital (Cleveland, OH)	75	C	n
Palm Drive Hospital (Sebastopol, CA)	74	n/a	n/a
Marshaltown Medical & Surgical Center (Marshalltown, IA)	74	n/a	n
Hillside Hospital (Pulaski, TN)	73	n/a	n/a
Margaret R. Pardee Memorial Hopsital (Hendersonville, NC)	73	A	n/a
Spectrum Health United Hospital (Greenville, MI)	73	B	n
St. John Medical Center (Westlake, OH)	73	A	y
Sonoma Valley Hospital (Sonoma, CA)	73	A	y
UnityPoint Health - Trinity Regional Medical Center (Fort Dodge, IA)	73	C	n
UnityPoint Health - Finley Hospital (Dubuque, IA)	73	A	y
Lovelace Westside Hospital (Albuquerque, NM)	73	n/a	y
Boulder Community Hospital (Boulder, CO)	73	n/a	n

Table 3 examines what happens when we look at the data from a safety perspective, comparing hospitals that received CR safety score (listed numerically, larger numbers indicate a safer facility) and their associated grade from Leapfrog's Hospital Safety Score (letter grade), and Healthgrades' Patient Safety Award (indicated with a yes or a no).

Initial observations include a problem that was not encountered in the previous table - that is, that CR reports on many hospitals that both Leapfrog and Healthgrades either don't report on, or, in Leapfrog's case, didn't receive enough data from (both indicated indicated by n/a). Ignoring these cases, we can see that even among the cases where there were enough data, the results are still markedly discordant. Among the top ranked hospitals by CR, only half of those without an n/a are given an "A" by Leapfrog, and less than half received the Healthgrades "patient safety award"

Table 4: Concordance Among Safety Rank Lists, Sorted by Consumer Reports Rankings, Overall Rank Lists Added

Hospital Name	CR- Safety Score (78-0, higher is better)	Leapfrog- Hospital Safety Score (A,B,C,D,F)	Healthgrades- Patient Safety Award (y/n)	Truven Top 100 (y/n)	US News (type/n)
Miles Memorial Hospital (damariscotta, ME)	78	n/a	y	n	n/a
Oaklawn Hospital (Marshall, MI)	77	B	n	n	n
Aurora Medical Center of Oshkosh (Oshkosh, WI)	75	A	n	n	n
Lutheran Hospital (Cleveland, OH)	75	C	n	n	State
Palm Drive Hospital (Sebastopol, CA)	74	n/a	n/a	n	n
Marshaltown Medical & Surgical Center (Marshalltown, IA)	74	n/a	n	n	n
Hillside Hospital (Pulaski, TN)	73	n/a	n/a	n	n
Margaret R. Pardee Memorial Hopsital (Hendersonville, NC)	73	A	n/a	n	n
Spectrum Health United Hospital (Greenville, MI)	73	B	n	n	n
St. John Medical Center (Westlake, OH)	73	A	y	n	State
Sonoma Valley Hospital (Sonoma, CA)	73	A	y	n	n
UnityPoint Health - Trinity Regional Medical Center (Fort Dodge, IA)	73	C	n	n	n
UnityPoint Health - Finley Hospital (Dubuque, IA)	73	A	y	n	n
Lovelace Westside Hospital (Albuquerque, NM)	73	n/a	y	n	n
Boulder Community Hospital (Boulder, CO)	73	n/a	n	n	n

Following the pattern of the first table, if we add back the remaining rating services in Table 4 we see that the discordance only increases. None of the facilities on Consumer Reports top list were ranked by Truven, and only two were ranked by the USN (and these only received state, not national, distinctions).

<u>Assessment of Data and Methods Used to Calculate Hospital Rankings Among Lists</u>

Figure 1: Total Number of Metrics Used in Rankings

Number of Metrics

(Bar chart — Number of Metrics by Ranking System: Leapfrog - Hospital Safety Score ≈ 28, Consumer Reports - Safety Score = 10, Healthgrades - Patient Safety Award = 14, Healthgrades - America's Best Hospitals = 32, Truven - Top 100 Hospitals = 10, USN - Best Hospitals = 21)
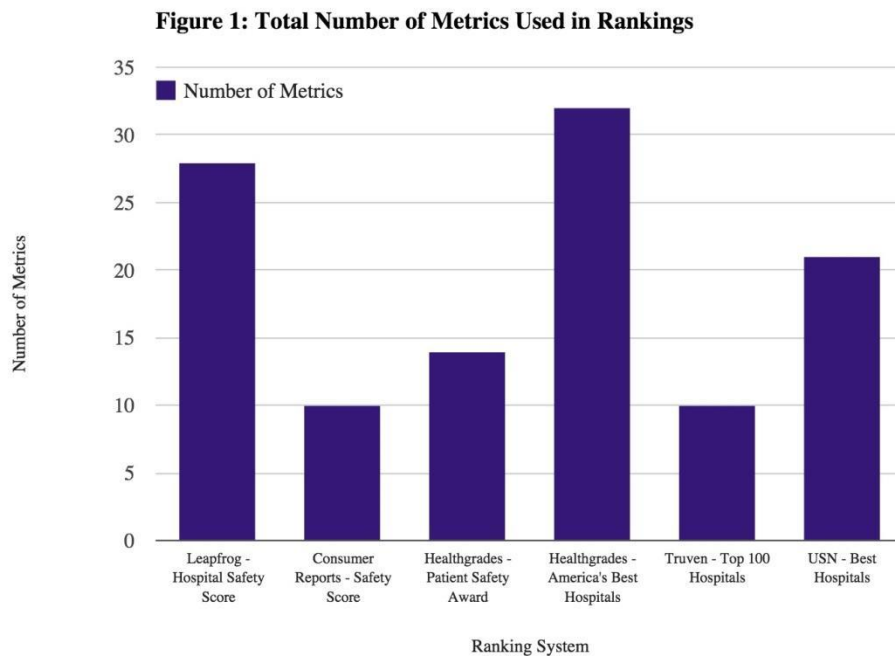
Ranking System

Figure 1 depicts the variety in the total number of metrics that each ranking system uses in its rank list calculations. Healthgrades' overall aggregate metric--America's Best Hospitals-- uses the most metrics in its calculation, while Truven uses the least metrics in their calculation of their Top 100 rank list. While the number of metrics used by each system may or may not contribute to the rank list validity, it is interesting to observe.

Note: A table of the compiled metrics can be found in Appendix A

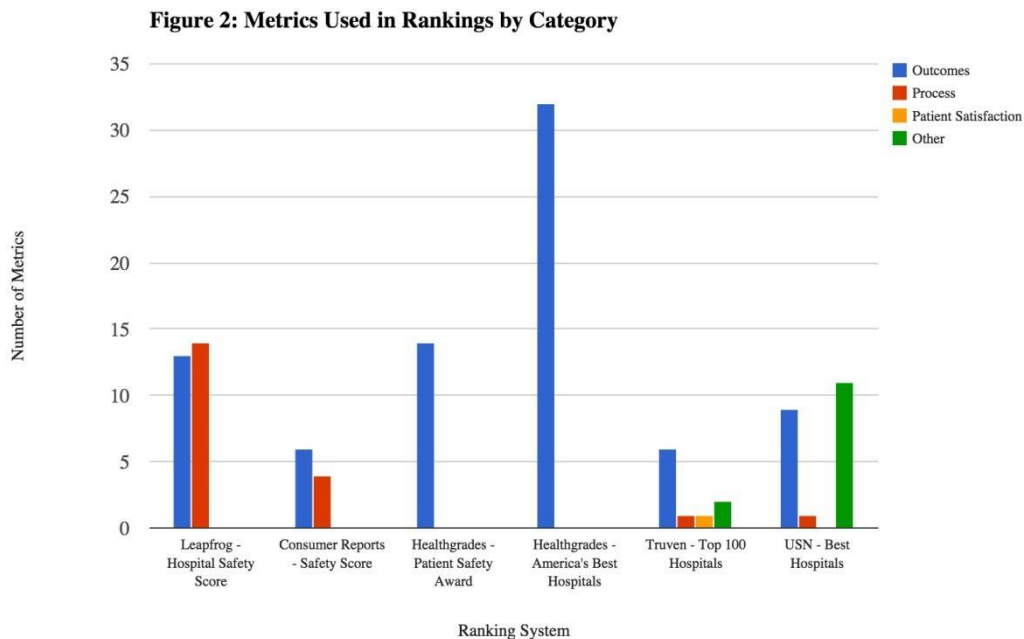**Figure 2: Metrics Used in Rankings by Category**

Figure 2 considers how the metrics from figure 1 look when they are divided into their Donabedian based categories of Outcome, Process, Patient Satisfaction and Other. If the variation in total number of metrics was surprising, the results from this division are even more so. Healthgrades, as they claim, only uses outcome-based metrics in their calculations. The Leapfrog and Consumer reports rankings (both safety rankings) consist of only outcomes and process metrics. Truven and the USN, on the other hand, are the only systems which consider "other" category metrics--including structural metrics--in their rankings. It is also worth noting that Truven is the only system which considers any patient satisfaction metrics in its rankings.
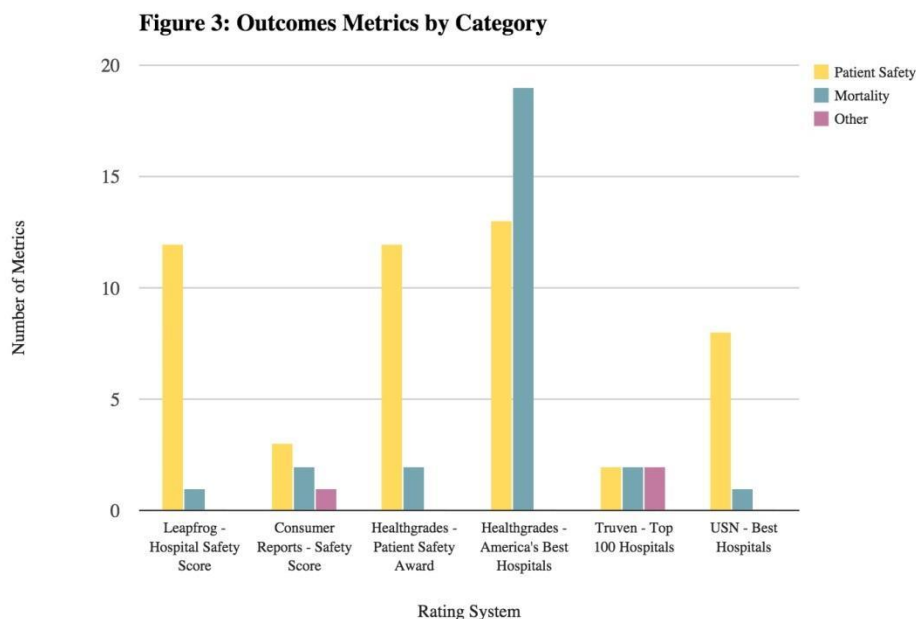
Figure 3: Outcomes Metrics by Category

Figure 3 takes the Aim 2 analysis one step further by breaking the "outcomes" metrics in figure 2 down into their different categories: patient safety metrics, mortality related metrics, and "other". Patient Safety metrics include metrics such as rate of Catheter Associated Urinary Tract Infections, or other errors. Mortality related metrics include all cause mortality during hospitalization, after hospitalization, or mortality rates related to specific procedures and conditions. Outcome metrics in the "other" category include mostly 30 day readmissions metrics, along with some others. Again, a full table of compiled metrics can be accessed in Appendix A.

Discussion

Hospital comparison systems that aggregate large amounts of quality and safety data, such as those analyzed in this paper, have the potential to guide patients to safe and effective facilities as well as to incentivize hospitals to improve their quality of care. The efforts of the many groups and organizations that have spearheaded such projects are to be celebrated. However, these benefits can only be fully realized if consumers and stakeholders can have confidence that the data presented strongly correlate with real quality. While past research has suggested that individual metrics, when subject to stringent standards, result in increased patient quality (Chassin, Loeb, Schmaltz, & Wachter, 2010), this study found marked discordance and a lack of uniformity among five hospital ranking systems, suggesting that there is still much confusion as to how to analyze aggregated data. One would think that top performing hospitals would consistently rank high among all, or at least most, of the various rankings. While there may be a few examples of these facilities, this seems to be the exception, not the rule. These findings are

consistent with a recently published study in Health Affairs also assessing concordance between national hospital ratings systems (Austin JM).

From a consumer's perspective, these comparisons are both confusing and frustrating. Each organization claims to be helping patients to find "America's Best Hospitals." The discordance in rankings lists suggests that there is still much confusion as to how to truly define what "best" means.

Although frustrating, the marked variation in types of metrics used by each organization suggest that such discordance is at least partially expected. Different organizations using different methodologies to analyze different metrics are obviously going come up with different rankings. From a consumer perspective, though, this is confusing because each system claims to be certifying the same thing - America's "best" hospitals.

This paper has focused on demonstrating the difference in the types and number of metrics used by each organization instead of the actual analytical part of the methodologies, but these have also been analyzed and have been shown to demonstrate variation as well (State, 2013)

Conclusion and Future Research

This high rate of discordance would likely lead some to ask whether pursuing quality improvement through hospital rank lists is of any value to either consumers or hospitals. While such results are confusing, the author believes that a wholehearted abandonment of hospital quality reporting and ranking is unwise, sort of "throwing the baby out with the bathwater". If such discordance is to be expected, then the question turns from "why don't the best hospitals rank highly across all lists" to "which ranking methodology is most valid in certifying the 'best' hospitals?"

In order to do this, future research must focus on how to determine whether a ranking system is valuable/valid, or not. Such a validated, simplified hospital ranking system could then be used as the "gold standard" for any subsequent hospital comparison efforts. By reducing both consumer and stakeholder confusion generated by current conflicting ranking systems, a "gold standard" system could help future comparison efforts to realize the potential benefits of hospital quality metric reporting: guiding patients to higher value hospitals, and helping to spur quality improvement among healthcare facilities.

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Appendix A –

Table A - listed metrics included in each organization's aggregate rankings calculation

Organization	Outcome Metrics	Process Metrics	Patient Satisfaction Metrics	Other
Leapfrog - Hospital Safety Score	Foreign Object Retained Air Embolism Pressure Ulcer - Stages 3-4 Falls and Trauma CLABSI CAUTI SSI: Colon Death among surgical inpatients Iatrogenic Pneumothorax Post-op Respiratory Failure Post-op PE/DVT Post-op Wound Dehiscence Accidental Puncture/Laceration	Computerized Physician Order Entry (CPOE) Leadership Structures and Systems Culture Measurement Feedback and Intervention Teamwork Training and Skill Building Identification and Mitigation of Risks and Hazards Nursing Workforce Medication Reconcilitation Hand Hygiene Care of Ventilated Patient Antibiotics within 1 hour Antibiotic selection Antibiotics discontinued after 24 hours Catheter Removal VTE Prophylaxic	none	ICU Physician Staffing
Consumer Reports - Safety Score	CLABSI SSI CAUTI 30 day hospital wide all-cause readmissions 30 day mortality for MI, HF, Pneumonia Surgical Mortality with select complications	Med Rec Discharge communication Double scan rates - Chest CT Double scan rates - Abd CT	none	none
Healthgrades - Patient Safety Score	Death rate among patients with serious treatable conditions Death rate in low mortality DRG's Pressure Ulcer Rate Iatrogenic pneumothorax CLABSI Post-op hip fracture rate post-op hemorrhage/hematoma rate post-op physiologic metabolic derangement rate post-op respiratory failure rate post-op PE or DVT rate post-op sepsis rate post-op wound dehiscence rate accidental puncture or laceration rate foreign object left in during surgery or procedure	none	none	none
Healthgrades - America's Best Hospitals	Mortality (in hospital and 30 day*): Bowel Obstruction COPD	none	none	none

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	Colorectal Surgery CABG Coronary Intervention procedures Diabetic emergencies esophageal/stomach surgeries GI bleed AMI HF Neurosurgery Pancreatitis Pneumonia PE Respiratory Failure Sepsis Small Intestine Surgeries Stroke Valve surgery In-hospital complications: AAA repair Back and Neck surgery (without spinal fusion) Carotid surgery Cholecystectomy Defibrillator Procedures Hip Fracture Treatment Hip Replacement Peripheral Vascular Bypass Pacemaker procedures Prostate Removal Surgery Spinal fusion Total Knee Replacement TURP			
Truven	Risk Adjusted Mortality Index Risk Adjusted Complications Index Risk Adjusted Patient Safety Index 30 Day Mortality Rates 30 Day Readmission Rates Severity Adjusted Length of Stay	Core Measures Mean Percent	HCAHPS	Adjusted Inpatient Expense per Discharge Adjusted Operating Profit Margin
The US News and World Report	30 day mortality Pressure Ulcer Death among surgical Inpateints with serious treatable complications Iatrogenic pneumothorax Post-Op Hip fracture Post-Op Hemorrhage or Hematoma Post-Op respiratory failure Post-Op wound dehiscence Accidental puncture or laceration	Reputation Survey	none	Advanced Technologies Epilepsy Center Intensivist on Staff NCI Cancer Center NIA Alzheimer's Center Nursing Magnet Recognition Nursing Intensity Patient Services Patient Volume Transplant Accreditation Trauma Center

*Healthgrades calculates a mortality score for 19 procedures and conditions. These mortality scores are calculated considering both the in-hospital and 30-day mortality rates, with more weight given to the 30-day mortality (60%, vs 40% for in-hospital mortality). A single score is calculated from these two scores.

Table B – All metrics (detailed) by organization

	Outcomes							
Organization	Patient Safety related	Mortality	Other	**total outcomes**	**total process measures**	**total patient satisfaction**	**total other**	**Total Overall**
Leapfrog	12	1	0	13	14	0	0	**28**
Consumer Reports	3	2	1	6	4	0	0	**10**
Healthgrades – Patient Safety Award	12	2	0	14	0	0	0	**14**
Healthgrads – America's Best Hospitals	13	19*	0	32	0	0	0	**32**
Truven Health Analytics	2	2	2	6	1	1	2	**10**
US News and World Report – America's Best Hospitals	8	1	0	9	1^	0	11	**21**

*Healthgrades calculates a mortality score for 19 procedures and conditions. These mortality scores are calculated considering both the in-hospital and 30-day mortality rates, with more weight given to the 30-day mortality (60%, vs 40% for in-hospital mortality). A single score is calculated from these two scores.

^USN's Reputation survey serves as their single process measure