ISSUE BRIEF

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Publicly Reported Hospital Quality Rankings

Publicly-reported hospital rankings are released annually and are widely publicized by both the sponsors of the rankings and hospitals that are highly ranked as indicators of hospital quality or safety. Meant to be a useful way for consumers to assess hospital quality, these ranking systems produce inconsistent, contradictory, and confusing results, as some hospitals are highly ranked in some systems but not in others.[1,2,3] The use of a unique set of criteria by each ranking system contributes to these inconsistent results. For example, a 2015 *Health Affairs* study compared hospital rankings from four prominent ranking systems and found that no hospital was ranked as a "top performer" by all four systems and only 10 percent were ranked highly by more than one ranking system, suggesting a lack of agreement regarding what constitutes high-quality hospital performance.[4] Federal ranking systems are no exception. For example, the Centers for Medicare & Medicaid Services (CMS) star ranking system was recently criticized for purportedly giving a disproportionate amount of low rankings to teaching hospitals and hospitals that serve low-income populations.[5] Moreover, there is some evidence that consumers do not utilize hospital rankings to make healthcare decisions,[6,7] calling into question the value of these rankings from a consumer perspective.

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[1] M.B. Rothberg, E. Morsi, E.M. Benjamin, et al., "Choosing the Best Hospital: The Limitations of Public Quality Reporting," *Health Aff*, 2008; 27(6), 1680–5.
[2] L.K. Halasyamani and M.M. Davis, "Conflicting Measures of Hospital Quality: Ratings from 'Hospital Compare' Versus 'Best Hospitals,' *J Hosp Med*, 2007; 2(3), 128–34.
[3] F.A. Manian, M. Gillman, and E.L. Spitznagel, "A Comparison Between Rankings of Top Hospitals by the *U.S. News & World Report* and the Consumer Reports Patient Ratings: Clarity or Confusion for the Empowered Consumer?" *J Consum Health Internet*, 2012; 16(2), 162–9.
[4] J.M. Austin, A.K. Jha, P.S. Romano, et al., "National Hospital Rating Systems Share Few Common Scores and May Generate Confusion Instead of Clarity," *Health Aff*, March 2013; 34(3), 423–30.
[5] J. Rau, "Many Well-Known Hospitals Fail To Score 5 Starts In Medicare's New Ratings," *Kaiser Health News*, July, 2016: http://khn.org/news/many-well-known-hospitals-fail-to-score-5-stars-in-medicares-new-ratings/
[6] D.W. Baker, D. Einstadter, C. Thomas, et al., "The Effect of Publicly Reporting Hospital Performance on Market Share and Risk-Adjusted Mortality at High-Mortality Hospitals," *Med Care*, 2003; 41(6), 729–40.
[7] M.N. Marshall, P.G. Shekelle, S. Leatherman, and R.H. Brook, "The Public Release of Performance Data: What Do We Expect to Gain? A Review of the Evidence," *JAMA*, 2000; 283(14), 1866–74.

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This brief builds on previous findings by examining hospital rankings in Michigan and nationwide from nine well-known hospital ranking systems. This brief also examines the measures and methods used to assess hospital quality, and the extent to which hospital rankings address consumer needs regarding hospital choice. It includes summarized information from a 2014 systematic review of hospital quality rankings, an analysis of 2015 Michigan hospital rankings, and results from three consumer focus groups that were convened in 2016 to understand how consumers interpret and understand these rankings (see **Methodology** for more information regarding the analyses and focus groups).

Key Findings

- In 2012, more than one-third (37 percent) of U.S. hospitals were highly ranked[8] on one of nine hospital ranking systems;
- In 2015, over half of Michigan acute care hospitals (52.7 percent) received a high rank on at least one of nine hospital ranking systems but less than one-fourth (22.5 percent) received a high rank on at least two ranking systems;
- Each ranking system's unique approach to evaluating hospital performance, including different goals, measures, and data sources, contributes to inconsistent results; and
- Consumers report that they are not using rankings to choose a hospital because the rankings do not always include information that consumers are interested in and are not presented in a consumer-friendly manner.

Michigan Hospital Rankings

Overall, hospital quality rankings are inconsistently identify "top" or "high-performing" hospitals. In 2015, out of 129 Michigan acute-care hospitals, 52.7 percent (68 hospitals), received a high rank from at least one of nine prominent hospital ranking systems. **Figure 1** However, only 22.5 percent (29 hospitals) received a high rank from two or more rankings systems and only 7.8 percent (10 hospitals, see **Appendix A**) received a high rank from three or more ranking systems.

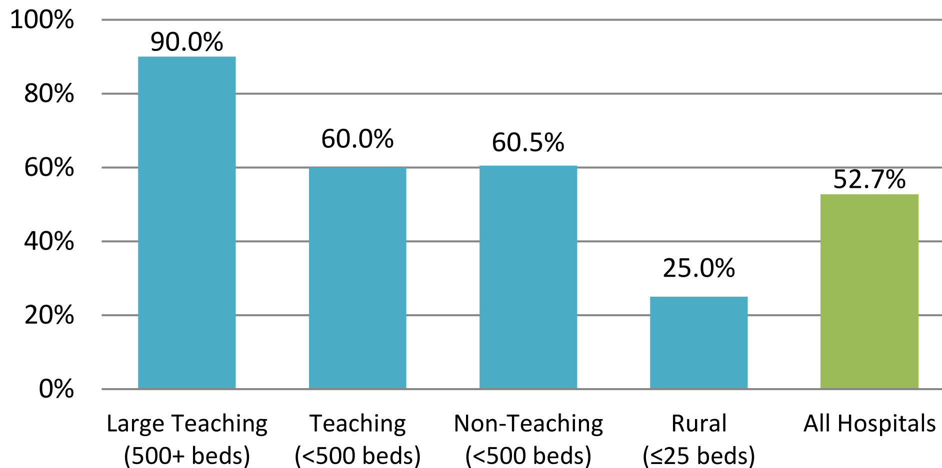
Hospital type[9] seems to be associated with the likelihood of a hospital being highly ranked. In Michigan, 90 percent (nine hospitals) of large teaching hospitals received a high rank. In comparison, 60.5 percent (26 hospitals) of non-teaching hospitals and 60 percent of medium/small teaching hospitals were highly ranked. A minority of rural hospitals, 25 percent (9 hospitals), received a high rank. Some ranking organizations, such as U.S. News & World Report (USNWR), Truven Health Analytics, and Leapfrog Safety Score, exclude rural hospitals from their evaluation. **Figure 1**

[8] Hospitals were counted as "highly ranked" according to the methodology used by each individual ranking system. Because Leapfrog Safety Grade assigns a grade ("A" through "F") to all hospitals, we counted hospitals that received an "A" as "highly ranked."

[9] Hospitals types comprised large teaching hospitals (500+ beds), teaching hospitals (< 500 beds), non-teaching hospitals (< 500 beds and not a teaching hospital), and rural hospitals (Critical Access Hospital).

Figure: 1

Percentage of Michigan Acute-Care Hospitals that Received a High Rank from at Least One of Nine Hospital Ranking Systems, by Hospital Type, 2015



SOURCE: CHRT analysis of 2015 publicly reported Michigan hospital rankings released by nine hospital ranking systems, November 2015.

U.S. Hospital Rankings

Nationally, nine ranking systems each produced a different list of high-performing hospitals, creating uncertainty regarding which hospitals were in fact top performing and what defined a "top performer." For example, USWNR ranked 17 hospitals on their 2012 Best Hospitals Honor Roll but none of those were included as a Truven Top 100 Hospital. Across the nine ranking systems, 37 percent of hospitals received a high rank from at least one rating system but few to none received a high rank from multiple rating systems.[10] **Figure 2**

Figure: 2

Percentage of U.S. Hospitals that Received a High Rank from Nine Hospital Ranking Systems, 2012

Number of Ranking Systems that Awarded Hospital a High Rank	Percentage and Count of U.S. Hospitals
One	37% (1,840)
Two or more	26% (485)
Three or more	18% (332)
Four or more	10% (117)
Five or more	2% (39)

SOURCE: B. Kim, H. Hu, and V. Bahl, "An Analysis of Publicly-Reported Rankings of Hospital Quality," (Unpublished Manuscript, November, 2014).

[10] B. Kim, H. Hu, and V. Bahl, "An Analysis of Publicly-Reported Rankings of Hospital Quality," (Unpublished Manuscript, November, 2014).

Even ranking systems with a similar focus produced inconsistent results. Leapfrog Safety Grade and Healthgrades Patient Safety Excellence Award both assess patient safety, but their top hospital lists differed. Of the 916 hospitals ranked by both ranking systems, only 12.6 percent (115 hospitals) received a high rank from both systems in 2012.[11]

Approaches to Determining Hospital Rank

Hospital rankings reflect different measures of quality performance (such as patient safety or adherence to clinical processes) based on the unique goal(s) established by each ranking system (see **Appendix B**). Goals range in focus, from narrow (for example, identify hospitals with the most favorable patient experience) to broad (for example, identify hospitals with the best organizational function and patient outcomes). **Figure 3**

Figure: 3
Goals of Nine Hospital Ranking Systems

Ranking System	Goals	Consumer Audience[12]
USWNR Honor Roll	Identify the best hospitals for treating most complicated conditions	Yes
USWNR Regional	Identify the best hospitals within a geographic region for treating most complicated conditions	Yes
Truven Top 100 Hospitals	Identify hospitals with the best organizational function and patient outcomes facility-wide	No
Leapfrog Top Hospitals	Identify hospitals with the best quality standards and efficient resource use	Yes
Leapfrog Safety Grade	Rate hospitals on safety practices and complications of care	Yes
Joint Commission	Identify hospitals with the best delivery of evidenced-based care	No
Healthgrades Clinical Excellence	Recognize hospitals performing the best in clinical outcomes	Yes
Healthgrades Patient Safety Excellence	Recognize hospitals that have the fewest complication of care	Yes
Healthgrades Outstanding Patient Experience	Recognize hospitals with the highest patient experience (satisfaction)	Yes

SOURCES: B. Kim, H. Hu, and V. Bahl, "An Analysis of Publicly-Reported Rankings of Hospital Quality," (Unpublished Manuscript, November, 2014); consumer audience was derived from each ranking system's website (accessed 7/8/2016).

Data sources also differ across ranking systems and range from publicly available insurance claims to privately owned survey data. Each data source has its own strengths and weaknesses that influence results (see **Appendix C**). Dataset attributes that impact rankings include the pool of hospitals included (for example,

[11] B. Kim et al., 2014.
[12] U.S. News and World Report, Leapfrog Group, Healthgrades, Consumer Reports, and CMS Hospital Compare include improved consumer-informed healthcare decisions as part of their mission, as published on their websites. Truven Health Analytics and The Joint Commission focus on improving the delivery of care among hospitals.

those participating in data collection), the types of patients included (such as Medicare only), and the performance measures assessed (for example, patient satisfaction only).

In addition to the mix of performance measures included across ranking systems, not all measures take into account certain factors that influence performance quality. For example, rates of hospital-acquired conditions (HACs) are influenced by patient mix (surgical, cardiac, medical, etc.) and risk of complications, which is not always taken into account by ranking systems. Hospitals that serve high-risk patients and see more complicated cases are disproportionately penalized with higher rates of HACs by certain ranking systems.[13] For example, in 2012, the Leapfrog Safety Score included HACs as 25 percent of the total score for each hospital, but it did not take into account that hospitals with sicker patients are more likely to have higher rates of HACs. This put larger and teaching hospitals at a disadvantage, as only 10 percent of hospitals with an "A" Leapfrog Safety Grade were large hospitals and 66 percent were non-teaching hospitals.[14] While large teaching hospitals are often highly ranked by more than one ranking system, they may not be recognized by other ranking systems because of differences in the systems' evaluation methods.

Gaps Between Ranking Systems and Consumers

Several hospital ranking systems specify an overall goal of improving consumer-informed healthcare decision-making through transparency of hospital quality. **Figure 3** In order to better understand consumer perspectives, we conducted three focus groups recruited from patient advisor groups at three Michigan hospitals (see **Methodology** for additional details). Overall, focus group findings underscored the shortcomings of hospital rankings from the standpoint of the consumer. According to participants:

- Hospital choice for consumers is not driven solely by rankings, but by social, personal, and financial factors, including personal experience, word of mouth, physician recommendation, geography, and insurance network). These findings are supported by previous research showing that consumers rely on personal and family/friend experience and physician recommendations in order to make treatment decisions.[15,16,17]
- The quality measures selected by ranking organizations do not always align with what consumers want to know about a hospital. Participants in our focus groups valued knowledge of hospital mortality and infection rates, staff turnover, breadth of clinical studies and research regarding specific conditions, patient safety outcomes, and the volume of patients and procedures across each hospital and physician within each hospital. Previous research has found that consumers value responsiveness to patient needs, cleanliness, smooth care transitions, being treated with respect, receiving honest and specific care information, and management of pain and sleep.[18,19] Some of

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[13] D.E. Fry, M. Pine, B.L. Jones, et al., "Patient Characteristics and the Occurrence of Never Events," *Arch Surg*, 2010; 145(2), 148–51.
[14] B. Kim et al., 2014.
[15] S.B. Arnold, Improving Quality Health Care: The Role of Consumer Engagement (Princeton, New Jersey: Robert Wood Johnson Foundation and Washington, D.C.: Academy Health, Oct. 2007): https://www.academyhealth.org/files/issues/ConsumerEngagement.pdf (accessed 8/30/16).
[16] L. M. Schwartz, S. Woloshin, and J.D. Birkmeyer, "How do elderly patients decide where to go for major surgery? Telephone interview survey," *BMJ*, 2005: http://www.bmj.com/content/bmj/331/7520/821.full.pdf (accessed 8/25/16).
[17] National Survey on Consumers' Experiences with Patient Safety and Quality Information, The Kaiser Family Foundation, Agency for Healthcare Research and Quality, and Harvard School of Public Health, Nov. 2004: https://kaiserfamilyfoundation.files.wordpress.com/2013/01/national-survey-on-consumers-experiences-with-patient-safety-and-quality-information-survey-summary-and-chartpack.pdf (accessed 8/25/16).
[18] S. Sofaer, et al., "What Do Consumers Want to Know about the Quality of Care in Hospitals?" *Health Serv Res*, 2005; 40(6 Pt 2), 2018–36.
[19] L.V. Doering, et al., "Recovering from Cardiac Surgery: What Patients Want You to Know," *Am J Crit Care*, 2002; 11(4), 333–43.

these measures are included in ranking systems, such as mortality and patient safety outcomes, but others, such as volume of procedures performed per hospital and responsiveness to patient needs, are rarely or not included, thus omitting important criteria from the consumers' perspective.

- Ranking system methodologies are not presented in a consumer-friendly manner. Participants expressed confusion when reading online methodology reports, specifically being unequipped to understand quality measures and calculations used to determine hospital rank. Participants expressed a desire for an ideal ranking system that is presented with clarity and simplicity, has a user-friendly interface, is easily accessible, and includes features such as a comparison tool and customizable menu. While some ranking system websites already include several of these components, participants agreed that an ideal ranking system does not exist and that health education regarding hospital rankings and quality information is needed for consumers to understand hospital performance.

Conclusion

This analysis of nationwide and Michigan hospital rankings supports previous evidence that hospital ranking systems produce widely reported yet conflicting lists of top-performing hospitals and fail to meet consumers' needs in assessing hospital quality. Overall, it is clear that major changes need to occur in order to make hospital rankings more useful and consumer friendly, and to overcome the kinds of inconsistencies outlined in this brief. Standardization of measures and evaluation methods across ranking systems would reduce inconsistencies, but it is unlikely that standardization will occur across for-profit, non-profit, and government ranking organizations. One avenue to address this issue could be to create or designate an organization responsible for aggregating results from all hospital ranking systems to provide a balanced, centralized, and reliable source of hospital information for consumer use. These results would provide consumers with a fuller picture of how a hospital performs and would include educational components so consumers are not misled by rankings. In addition, this organization should also work to understand the best ways to communicate and present hospital quality information to consumers to improve healthcare decision-making. Such an entity could assure that hospital ranking results are easily accessible to consumers, with simple layouts and a user-friendly interface.

Methodology

U.S. Hospital Rankings

National hospital rankings were derived from research findings from a 2014 systematic review of 2012 U.S. hospital rankings, measures, and methods of nine well-known hospital ranking systems that publicly reported quality of care of individual hospitals.[20] The ranking systems were:

- U.S. News and World Report (USNWR) Best Hospitals Honor Roll
- U.S. News and World Report (USNWR) Best Regional Hospitals
- Truven Health Analytics 100 Top Hospitals
- Leapfrog Top Hospitals
- Leapfrog Safety Grade
- Joint Commission Top Performers
- Healthgrades Distinguished Hospital Award for Clinical Excellence
- Healthgrades Patient Safety Excellence Award
- Healthgrades Outstanding Patient Experience Award

Michigan Hospital Rankings

CHRT analyzed 2015 hospital rankings among 129 acute-care Michigan hospitals. The ranking systems were the same nine used in the U.S. ranking analysis, except Leapfrog Top Hospitals also included Leapfrog Top Rural Hospitals. The 129 hospitals included all licensed acute-care hospitals listed on the Michigan Department of Health and Human Services (MDHHS) licensed bed inventory list in July 2015.[21]

In order to compare rankings by hospital type, Michigan hospitals were categorized into four groups based on bed count (size), teaching status, and status as a rural hospital. These were:

- **Large Teaching** (500+ beds, teaching hospital)
- **Teaching** (100–499 beds, teaching hospital)
- **Non-Teaching** (25–499 beds)
- **Rural** (Critical Access Hospital)

Bed count was pulled from the monthly MDHHS licensed bed inventory list. Teaching status was defined as that designated by the Michigan Health & Hospital Association (MHA) as of 2014. Hospitals had one of the following: residency training approved by Accreditation Council for Graduate Medical Education (ACGME), medical school affiliation reported to the American Medical Association (AMA), member of Council of Teaching Hospital (COTH), internship or residency approved by the American Osteopathic Association (AOA).[22] Rural hospitals were those designated as a Critical Access Hospital (CAH). A CAH is defined as a hospital with 25 or fewer licensed beds that provides 24/7 emergency services, located at least 35 miles away

[20] B. Kim et al., 2014.
[21] *Hospital Group (HG) 1 Hospital Bed Inventory (Oakland, Wayne, City of Detroit)*, Michigan Department of Health and Human Service, 2015: http://www.michigan.gov/documents/mdch/HOSPBEDINV.xls_Nov._2010_337358_7.pdf (accessed 7/22/15).
[22] Personal communication with Laura Peariso, Senior Director of Health Care Information at Michigan Health & Hospital Association, June 2015.

from another hospital and in a rural geographic area, with a minimum average length of stay of 96 hours or less for acute patients.[23]

Focus Groups

Three consumer focus groups were conducted among patient advisor groups[24] at three hospitals within Michigan: the University of Michigan Health System, St. Joseph Mercy Ann Arbor, and Bronson Methodist Hospital. Patient advisor groups were chosen based on feasibility and convenience, and the authors acknowledge a potential bias that focus group results reflect consumers who are familiar with the healthcare system. To diversify focus groups, each group included patient advisors with a varied range of patient experiences, rather than individuals with a common health condition (such as lung cancer or cardiovascular disease). Focus groups lasted approximately 60 minutes and included 12–18 participants each. Focus group discussions were transcribed from a recording, coded, and thematically grouped by two analysts.

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[23] *Critical Access Hospital*, The Centers for Medicaid and Medicare Services, 2014: http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/CritAccessHospfctsht.pdf (accessed 8/29/16).

[24] Patient advisors are patients and family members/caregivers of patients who received care at a hospital and are recruited to serve as advisors to hospital staff and administration in their efforts to improve patient-centered care.

Appendix A. Michigan Hospitals That Received Three or More High Ranks, 2015

In 2015, ten Michigan acute-care hospitals were highly ranked on at least three of nine ranking systems. Among the ten hospitals, five were highly ranked on three ranking systems, four were highly ranked on four ranking systems, and one was highly ranked on five ranking systems. The hospitals were:

Highly ranked on five ranking systems:

- Providence-Providence Park Hospital

Highly ranked on four ranking systems:

- Beaumont Hospital, Troy Campus
- Mercy Health Saint Mary's Campus
- Spectrum Health Butterworth Hospital
- University of Michigan Health System

Highly ranked on three ranking systems:

- Beaumont Hospital, Grosse Pointe Campus
- Beaumont Hospital, Royal Oak Campus
- Dickinson County Memorial Hospital
- Holland Hospital
- Spectrum Health Zeeland Community Hospital

Appendix B. Hospital Quality Performance Measures Included in Hospital Ranking Systems, 2012

Performance Category	Example Measures	Ranking Systems
Hospital Structure		
Technologies & Services	Presence of a computerized medication ordering system, transplant services, CT/PET scanners, fertility center, hospice, intensive care for newborns, translators, or trauma center	USNWR, Leapfrog Top Hospitals, Leapfrog Safety Grade
Staffing	On-staff physicians trained in critical care management and nurse-to-patient ratio	USNWR, Leapfrog Top Hospitals, Leapfrog Safety Grade
Accreditation	Designation as a Nurse Magnet hospital (low nursing turnover, excellent patient outcomes, etc.), presence of a specialized epilepsy center, presence of a certified Alzheimer's Disease Research Center, accreditation in tissue transplants for cancer treatment (i.e., Foundation for the Accreditation of Cellular Therapy [FACT] accreditation)	USNWR
Processes		
Clinical Processes	Diabetic patients receive cholesterol tests during hospital stay, antibiotic administration before surgery, smoking cessation information to heart attack patients	Truven 100 Top Hospitals, Joint Commission Top Performers
Reputation	Physician-reported "best" hospital for a given specialty	USNWR
Safe Practices	Staff practice standards in informed consent, team-based care, discharge planning, and hand washing, receive annual flu vaccines, monitor patient blood glucose, work to prevent infections and surgical complications	Leapfrog Top Hospitals, Leapfrog Safety Grade
Outcomes		
Mortality	Low percentage of patients die after receiving hospital care	USNWR, Truven 100 Top Hospitals, Healthgrades Clinical Excellence Award
Safety	Low occurrence of post-surgery infection, accidental cut during surgery, in-hospital fall, foreign object left in the body after surgery, catheter infection, death during surgery, post-surgery complication	USNWR, Truven 100 Top Hospitals, Leapfrog Top Hospitals, Leapfrog Safety Grade, Healthgrades Clinical Excellence Award, Healthgrades Patient Safety Excellence Award
Hospital Efficiency	Low rates of readmissions, cost, length of stay	Truven 100 Top Hospitals
Patient Experience		
	Patient satisfaction regarding patient-staff communication, hospital cleanliness, quietness of hospital, information provided during discharge, pain control	Truven 100 Top Hospitals, Healthgrades Patient Experience Award

SOURCE: B. Kim, H. Hu, and V. Bahl, "An Analysis of Publicly Reported Rankings of Hospital Quality," (Unpublished Manuscript, November, 2014)

Appendix C. Strength and Weaknesses of Data Sources Used by Hospital Ranking Systems

Data Source*	Strengths	Weaknesses	Ranking Systems
MedPAR	• Publicly available for all hospitals • Includes all inpatient services for all disease and conditions	• Reflects Medicare fee-for-service population only • Lacks clinical details of patient care	USNWR, Truven 100 Top Hospitals, Leapfrog Safety Grade, Healthgrades Clinical Excellence, Healthgrades Patient Safety
AHA Annual Survey	• Publicly available for all hospitals • Useful to describe hospital characteristics (e.g., size), staffing and services	• Provides information for structural measures only	USNWR, Leapfrog Top Hospitals, Leapfrog Safety Grade
Leapfrog Survey	• Reflects general population • Includes both process and outcome measures • Measurement is based on both clinical and claims data	• Hospital participation tends to be low due to lack of hospital engagement and/or resources required to complete survey[25] • Self-reported • Survey not routinely audited • Some measures (e.g., safe practices) are not evidenced-based • Includes structure measures that may favor large hospitals	Leapfrog Top Hospitals, Leapfrog Safety Grade
Physicians Survey on Hospital Reputation		• Physician opinions are not linked to quality of care	USWNR
CMS/Joint Commission Core Measures	• Reflects general population • Contains evidenced-based measures for select, prevalent conditions	• Small scope of conditions and hospital processes measured	Truven 100 Top Hospitals, Joint Commission Top Performers
National Healthcare Safety Network	• Publicly available for all hospitals • Specialized in hospital-associated infections (HAI)	• HAI measures may be unreliable due to ambiguous and inconsistent application of criteria[26]	USNWR, Leapfrog Top Hospitals, Leapfrog Safety Grade, Healthgrades Patient Safety Excellence
HCAHPS Survey	• Reflects general population • Reports patient experience of care	• Some measures are strong indicators of quality care while others are not	Truven 100 Top Hospitals, Healthgrades Patient Experience

SOURCE: B. Kim, H. Hu, and V. Bahl, "An Analysis of Publicly-Reported Rankings of Hospital Quality," (Unpublished Manuscript, November, 2014).

*Abbreviations: Medicare Provider Analysis and Review file (MedPAR); American Hospital Association (AHA); Center for Medicare & Medicaid Services (CMS); Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)

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[25] Only 25 percent of eligible hospitals participated in the Leapfrog survey in 2012.

[26] R. Perla, C. Peden, D. Goldmann, and R. Lloyd, "Health care-associated infection reporting: The need for ongoing reliability and validity assessment," *Am J Infect Control*, 2009; 37, 615–18.