How CMS Hospital Quality Star Ratings Work

How CMS Hospital Quality Star Ratings Work:

Ways Language Services Managers Can Contribute to Improved Overall Ratings

The Center for Medicare and Medicaid Services (CMS) released their much-discussed Hospital Star Rating system in July of 2016. Designed to increase transparency and allow patients to make an informed decision about which hospital to utilize, the new program raised questions among hospital leadership: How are these star ratings determined? Do they represent a fair assessment of hospital performance? How can hospitals improve their ratings?
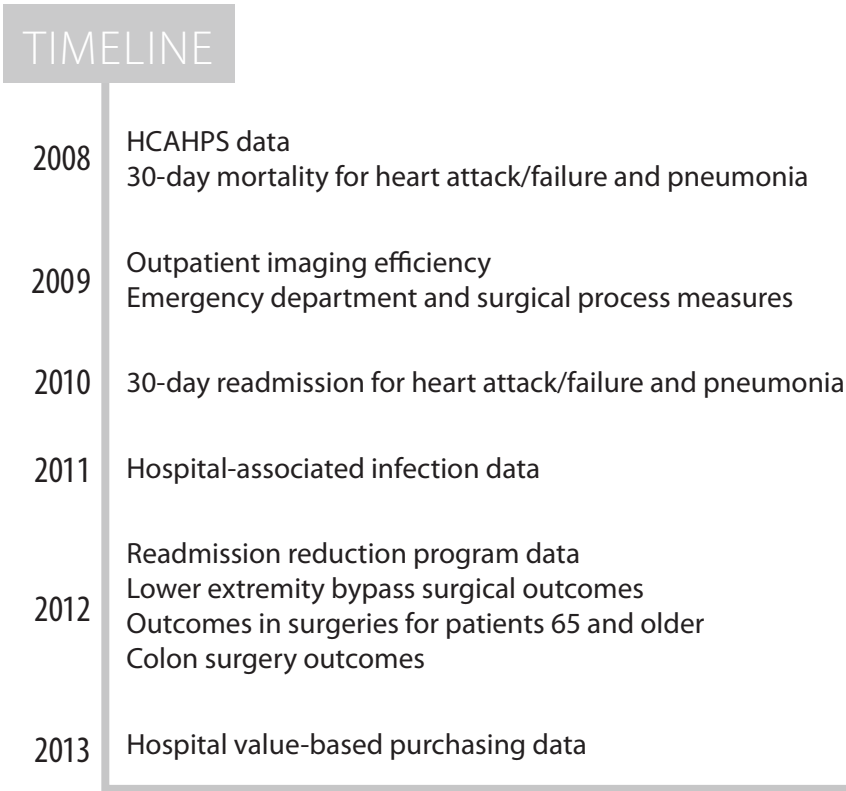
As the leading provider of language services in healthcare, CyraCom partners with hospitals nationwide. We've created this guide to help providers understand how CMS Star Ratings work – and how a quality language services program may impact key CMS metrics like mortality and safety, readmissions rates, and patient satisfaction, improving a hospital's overall rating.

I. What are the CMS Star Ratings?

Created in partnerships with the Hospital Quality Alliance (HQA), CMS star ratings combine a series of Hospital Compare core measures "to make it easier for consumers to make informed health care decisions and to support efforts to improve quality in U.S. hospitals."

5 STAR RATED CMS
CENTERS for MEDICARE & MEDICAID SERVICES

ISO Certified Quality
9001:2015, 13611:2014, 17100:2015
Quality Management System
Guidelines for Community Interpreting
Translation Services

The original Hospital Compare site, released in 2005, featured 10 core processes of care measurement. Since then, the list has grown substantially, adding:

TIMELINE

2008
HCAHPS data
30-day mortality for heart attack/failure and pneumonia

2009
Outpatient imaging efficiency
Emergency department and surgical process measures

2010
30-day readmission for heart attack/failure and pneumonia

2011
Hospital-associated infection data

2012
Readmission reduction program data
Lower extremity bypass surgical outcomes
Outcomes in surgeries for patients 65 and older
Colon surgery outcomes

2013
Hospital value-based purchasing data

**Hospital Care
Measurements
for Comparison**

By 2016, Hospital Compare included over 100 measures of comparison, available online for potential patients to review. CMS then sought to simplify the hospital comparison process by creating the Overall Hospital Quality Star Rating. This new measure would incorporate various Hospital Compare scores to assign each hospital a single rating – from one to five stars.[1]

II.   How are CMS Star Ratings Calculated?

1
CMS Hospital Compare collects over 100 measures of data from hospitals.

2
57 of these are used to determine a hospital's star rating.

Why not all 100+? Some are duplicative, some apply to only a small number of hospitals, and others were considered relevant when collected but no longer apply.

3
The 57 relevant measures are grouped into seven categories: *(see page 3, figure 1)*

4

Each category is scored, weighted, and combined to create a Summary Score.

Not every hospital reports enough data to generate a score in all seven categories. When that's the case, categories they do report on are weighted heavier to make up the difference.

5

A statistical clustering algorithm called k-means clustering analysis is used to divide the Summary Scores of hospitals nationwide into five groupings "in a way that minimizes the distance between summary scores and their assigned category mean." In other words, the algorithm calculates the "average" score in each category, then assigns each individual hospital to whichever category their score most closely resembles.

6

CMS assigns the hospital a rating from one to five stars based on the hospital's summary score grouping.

The algorithm looks like this:

$$\arg\min_{\mathbf{S}} \sum_{i=1}^{k} \sum_{\mathbf{x} \in S_i} \|\mathbf{x} - \boldsymbol{\mu}_i\|^2$$

FIGURE 1. Star Rating Weight (%)

Group	# of Measures	Star Rating Weight
Mortality	7	22%
Safety of Care	8	22%
Readmission	8	22%
Patient Experience	11	22%
Effectiveness of Care	11	4%
Timeliness of Care	7	4%
Medical Imaging	5	4%

Critics have expressed concern that the formula behind the star rating lacks transparency and consistency; hospitals are unable to input their own data and calculate their ratings. As it currently stands, the CMS system contains several elements which hospitals argue are problematic:

CMS assigns star ratings according to a bell curve model. A hospital seeking to predict its rating would need not only its own scores in all 57 measures, but also the scores of every other hospital evaluated under the CMS system, since the scores are assigned on a comparative basis.

Not every hospital evaluated has sufficient data/interactions to submit a score for each of the 57 measures. CMS has to adjust the weight of the measures for which a hospital can supply data to account for any missing categories. In some cases, hospitals which report on fewer individual measures seem to benefit from doing so.[3]

III. Concerns and Controversy Surrounding CMS Ratings

The Overall Hospital Star Ratings have generated significant controversy. CMS originally planned to release them on April 20th, 2016, but agreed to delay publication after significant pushback from the American Hospital Association and other hospital leadership groups. These groups released a letter on March 18th, raising concerns about the fairness of the new system.

"Our hospitals support public reporting of provider quality data that is reliable, valid, and meaningful to consumers," the letter read. "Due to our serious concerns that these star ratings will be misleading to consumers, we believe that a delay is necessary to allow CMS to fully understand the impact of the star ratings on all hospitals and to address the flaws in the measures and methodology."

Specifically, the letter continued, CMS star ratings fail to account for hospitals that handle the "hard cases":

"Many of the nation's best-known hospitals, institutions that serve low income and complex patients, and are highly rated in other quality rating reports, will be receiving 1 and 2 stars…These ratings do not account for hospitals that serve highly complex patients with significant socioeconomic challenges, and that also perform a greater number of complex surgeries."

The writers also expressed concern that the way the ratings were determined was opaque, describing that:

"Prior to public release of these ratings, CMS must provide hospitals with the data that was used to calculate their ratings and answer questions about the methodology. To date, hospitals have been unable to replicate or evaluate CMS's work to ensure that the methodology is fair and the ratings are accurate."[4]

Congress weighed in as well, with 60 Senators and 225 Representatives sending a letter of their own to CMS on April 18th and expressing concerns which mirrored those of hospitals:

"We want to make sure that the star rating system is not misleading to consumers because of flaws in the measures that underpin the ratings... Additionally, we are concerned that CMS has provided insufficient details regarding the methodology used to determine these star ratings."[5]

In response to the controversy, CMS delayed the release of Overall Star Ratings for three months, releasing them on July 18, 2016. CMS has since released updates to the program in October and December of 2016.

IV. Measuring the LEP Patient Impact on CMS Quality Measures and Hospital Star Ratings

Based on the existing formula, no hospital is likely to have the data needed to *predict* their actual star rating. However, they may be able to improve it by understanding and targeting the inputs. Since ratings depend on the seven categories and 57 measures CMS uses in their scoring system, improvement in any category – especially improvement that exceeds that of the average hospital – should result in a better overall score and an improved star rating.

For hospitals with a high percentage of non-English-speaking patients, improving these limited-English proficient (LEP) patient interactions may go a long way toward bettering CMS metrics.

WHY

Why? LEP patients, on average, have worse outcomes and rate their providers lower than their English-speaking counterparts in the categories with the greatest impact on overall star ratings:
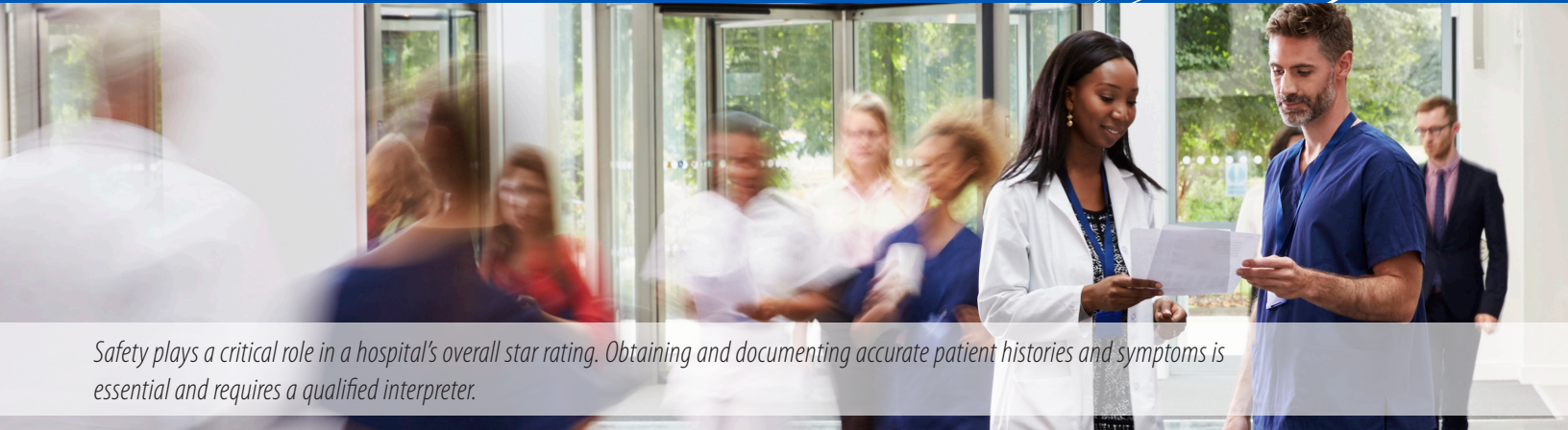
Safety plays a critical role in a hospital's overall star rating. Obtaining and documenting accurate patient histories and symptoms is essential and requires a qualified interpreter.

Mortality/Safety of Care

44% of the Overall Star Rating; 15 Measures

The Joint Commission classifies doctor/patient communication as "a core component of health care." Due to the language barrier, limited-English proficient (LEP) patients face elevated risks when hospitalized: more adverse events, longer hospital stays, and medical misunderstandings resulting in unnecessary or even counter-productive treatment.

The Journal for Healthcare Quality studied the disparity in outcomes and concluded that adverse events are often caused by hospital staff failing to use an interpreter with every LEP patient.[6]

Some language service programs enlist support from their executive teams to enact programs and training that promote consistent use of interpretation services. Regular, effective staff training for everyone who interacts with patients may also improve staff adoption and utilization of interpreters.

Steward Health Care's Director of Diversity Services Carla Fogaren told CyraCom that this kind of training can make all the difference.

"We provide a lot of continuing education - over 12,000 staff, in-person, in one year. With sufficient training, we can hold staff accountable for properly utilizing our interpreter staff, as well as CyraCom's dual handset blue phones."

In addition to training, interpretation services should feature user-friendly access methods, physical accessibility, and high-quality, consistent interpretation, as staff will likely avoid interpretation services they find annoying, inconvenient, or low-quality.[7] CyraCom believes that staff satisfaction with an interpretation service correlates strongly with compliance and that patients will reap the benefits of this increased utilization.

"It's not just about choosing a vendor," Fogaren noted. "Anyone who connects directly with our patients represents our organization, so they need to understand the quality of care that we provide."

Factors to consider when choosing a language services partner to maximize staff adoption:

Convenience: Interpreter resources like phones and video carts should be kept close and accessible to staff.

Support: Language service providers should provide quality training and implementation.

Simplicity: Connecting to an interpreter should be easy, with few steps.

Speed: Staff should wait seconds, not minutes, on average, for a remote interpreter.

Effectiveness: Quality of interpretation provided should be consistently high.

ISO Certified Quality
9001:2015, 13611:2014, 17100:2015
Quality Management System
Guidelines for Community Interpreting
Translation Services

Readmissions

22% of the Overall Star Rating; 8 Measures

Readmissions rates factor significantly into a hospital's CMS star rating, comprising nearly a quarter of the overall score. In addition, the Affordable Care Act mandated that hospitals cut unnecessary patient readmissions, and failure to do so carries significant consequences. More than 2,600 hospitals nationwide faced $420 million in Medicare reimbursement cuts based on their 2015 readmissions rates.

Statistically, non-English speakers, particularly in Latino and Chinese populations, readmit at a significantly higher rate than the general population.[8]

Why the difference? A review of 10.7 million Medicare patient records revealed that avoidable readmissions cost Medicare $17 billion a year because patients do not:

- Understand their diagnosis.
- Know which medications to take and when.
- Comprehend important information or test results.
- Schedule a follow-up appointment with their doctor.
- Receive adequate care at home.[9]

For LEP patients, a reliable language services program may prevent these misunderstandings. Hospitals committed to reducing readmissions among their LEP patient populations are making interpreters part of their continuum of care, active in each stage of the treatment process:

Admissions:
Interpretation at check-in expedites the process and puts LEP patients at ease.

Consent & Pre-Procedure:
Doctors can obtain patient informed consent in-office well before a procedure.

Checkups & Rounds:
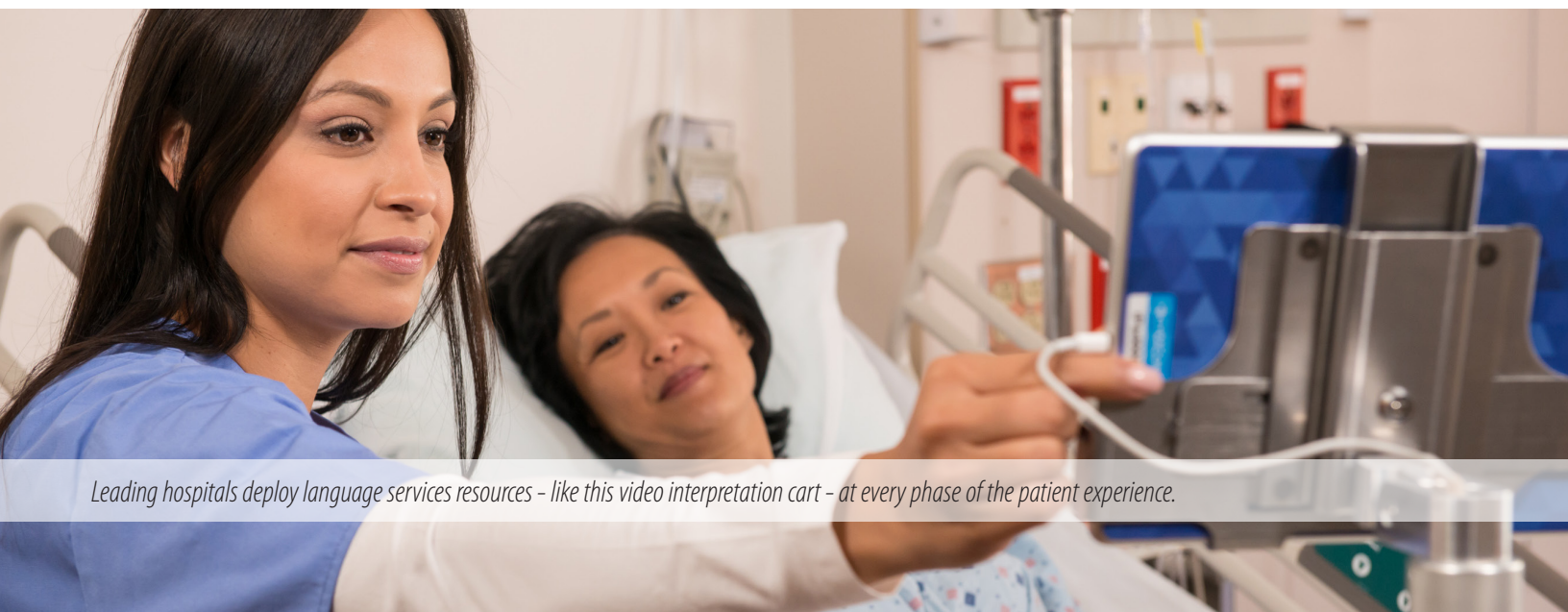Nursing staff can use in-room interpretation to check in on LEP patients.

Discharge:
Physicians can provide aftercare instructions in-language using an interpreter.

Post-Discharge:
Aftercare professionals can use an interpreter when checking on patients post-discharge.

Leading hospitals deploy language services resources – like this video interpretation cart – at every phase of the patient experience.

Patient satisfaction depends heavily on making sure each patient - regardless of language, culture, or national origin - feels heard, understood, and respected.

Patient Experience/HCAHPS

22% of the Overall Star Rating; 11 Measures

Limited-English Proficient (LEP) patients represent an opportunity for hospitals to better their HCAHPS scores (and corresponding CMS Star Ratings) because they tend to rate hospitals worse than English-speaking patients. The cause? Negative experiences during treatment may contribute. The National Center for Biotechnology Information (NCBI) found that LEP patients are:

- *9x more likely to have trouble understanding a medical scenario.*
- *4x more likely to misunderstand medication labels.*
- *4x more likely to have a bad reaction to medication.[10]*

NCBI concluded that patients who spoke a different language than their providers reported worse interpersonal care and were more likely to rate providers poorly when surveyed.[11]

The HCAHPS Patient Experience Questionnaire includes many questions on provider/patient communication, with a heavy focus on whether the patient felt listened to, understood, and respected; and whether the patient could understand their provider's instructions. Despite the presence of some level of language services in most hospitals, HCAHPS results for LEP patients indicate they don't feel these standards are always being met.

Offering high-quality language access to LEP patients may succeed at improving HCAHPS scores where basic compliance has failed. NCBI analyzed over 19,000 HCAHPS surveys from 66 California hospitals and learned that:

"Hospitals with greater cultural competency have better HCAHPS scores for doctor communication, hospital rating, and hospital recommendation. Furthermore, HCAHPS scores for minorities were higher at hospitals with greater cultural competency on four other dimensions: nurse communication, staff responsiveness, quiet room, and pain control."[12]

NCBI also found that "quality of interpretation correlates with patient understanding and satisfaction with the encounter." In contrast, relying on bilingual staff and/or patient family and friends "appears to have many negative clinical consequences including reduced trust in physicians [and] lower patient satisfaction."[13]

These findings for hospitals mirror those of another industry with a heavy focus on satisfaction scores: the customer service industry.

The International Customer Management Institute (ICMI) studied the impact of businesses adding language services support to their customer service channels. A majority of contact center managers told ICMI that providing language services:

- Improved satisfaction with customer support
- Positively impacted customers that prefer a language other than English
- Increased customer loyalty[14]

ISO Certified Quality
9001:2015, 13611:2014, 17100:2015
Quality Management System
Guidelines for Community Interpreting
Translation Services

End Notes

1. https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/hospitalqualityinits/hospitalcompare.html
2. https://blog.cms.gov/2016/07/27/helping-consumers-make-care-choices-through-hospital-compare/
3. http://healthaffairs.org/blog/2016/11/14/cms-hospital-quality-star-ratings-fail-to-pass-the-common-sense-test/
4. http://www.aha.org/advocacy-issues/letter/2016/160405-let-healthorgs-cms-starrate.pdf
5. https://www.aamc.org/download/458978/data/houselettertocmsonhospitalcomparestarratings.pdf
6. www.modernhealthcare.com/article/20140830/MAGAZINE/308309945
7. http://www.simplypsychology.org/edward-thorndike.html
8. https://www.ncbi.nlm.nih.gov/pubmed/20533573
9. http://www.dartmouthatlas.org/downloads/reports/Atlas_CAYC_092811.pdf
10. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1490205/
11. https://www.ncbi.nlm.nih.gov/pubmed/25940305
12. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3726251/
13. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495243/
14. http://www.icmi.com/~/media/Files/Resources/Whitepapers/Press-one-for-English-Voiance-WP.ashx

ABOUT CYRACOM

CyraCom is the leading provider of language interpreting services to healthcare. CyraCom services thousands of healthcare clients throughout the US, including many Fortune 500 healthcare providers – hospitals, systems, and insurers. We support hundreds of languages and operate 24/7.

CyraCom's employee interpreters work in the most extensive network of large-scale interpreter contact centers: all HIPAA-compliant and located in the continental US. Our interpreters receive 120 hours of initial, in-person training in the centers – three times longer than is typical in the language service industry. In training, interpreters learn medical terminology, anatomy and physiology, and other topics essential for healthcare interpreting. Upon completion of training and testing, they become certified interpreters.

CYRACOM®
Language Solutions

Contact CyraCom today to discuss how we can improve your language services program.

Phone: (800) 713-4950 | info@cyracom.com | www.cyracom.com

Mailing Address: CyraCom | 5780 North Swan Road | Tucson, Arizona 85718