Department of Health and Human Services

OFFICE OF
INSPECTOR GENERAL

CMS VALIDATED HOSPITAL INPATIENT QUALITY REPORTING PROGRAM DATA, BUT SHOULD USE ADDITIONAL TOOLS TO IDENTIFY GAMING

Daniel R. Levinson
Inspector General

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Office of Inspector General

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools to Identify Gaming

Why OIG Did This Review

Accurate data are fundamental to the integrity of the Centers for Medicare & Medicaid Services' (CMS) quality-based payment programs, several of which rely on data from Hospital Inpatient Quality Reporting (IQR). This evaluation focuses on CMS's efforts to ensure the integrity of IQR data. These data are used to adjust payments on the basis of quality measures; thus, inaccurate data pose risks to payment accuracy. CMS and the Centers for Disease Control and Prevention (CDC) issued a Joint Reminder regarding their concerns that data was being manipulated, or gamed, by hospital staff who did not follow CDC definitions for reportable infections. This report assesses CMS's validation efforts and recommends ways to strengthen program integrity safeguards.

How OIG Did This Review

We analyzed CMS validation data for payment year 2016 to determine the number of hospitals that CMS selected for validation, why CMS selected them, and the outcome of the validation. We conducted structured interviews with five stakeholder experts about any concerns they had about hospital quality data or CMS's validation. We also conducted interviews with CMS and CDC staff regarding any quality assurance activities or analyses they conduct on the quality data. Finally, we reviewed training materials that CMS and CDC offered to hospitals on how to report their quality data.

What OIG Found

For payment year 2016, CMS met its regulatory requirement by validating sufficient IQR data, which are used to adjust payments on the basis of quality. Almost 99 percent of hospitals that CMS reviewed passed validation, and CMS took action against the six that failed, including reducing their Medicare payments. In addition, CMS and CDC offer training to hospitals to help improve the accuracy of the quality data that hospitals report. However, CMS's approach to selecting hospitals for validation for payment year 2016 made it less likely to identify gaming of quality reporting (i.e., hospitals' manipulating data to improve their scores). CMS did not include any hospitals in its targeted sample on the basis of their having aberrant data patterns. Targeting hospitals with aberrant patterns for further review could help identify inaccurate reporting and protect the integrity of programs that make quality-based payment adjustments.

Key Takeaway

For payment year 2016, CMS validated sufficient IQR data to meet its regulatory requirement, and it took action against the few hospitals that failed validation. However, CMS made limited use of analytics that can help identify gaming of quality data. We recommend that CMS make better use of analytics to ensure the accuracy of Medicare payment adjustments based on these data.

What OIG Recommends

To identify potential gaming or other inaccurate reporting of quality data, we recommend that CMS make better use of analytics to ensure the integrity of hospital-reported quality data and the resulting payment adjustments. CMS could use analytics to select an increased number of hospitals in its targeted validation sample. It could analyze the data to identify outliers (i.e., hospitals with data patterns that are substantially different from other hospitals), determine which of those outliers warrant further review, and then add them to the sample. For example, CMS could use analytics to identify hospitals with abnormal percentages of patients who had infections present on admission; this might help identify hospitals that engage in some of the data manipulation highlighted in CMS and CDC's Joint Reminder. CMS concurred with our recommendation.

TABLE OF CONTENTS

OBJECTIVES

1. To determine the extent to which the Centers for Medicare & Medicaid Services (CMS) validated hospital-reported inpatient quality data in accordance with regulatory requirements,

2. To determine the extent to which CMS's approach to validation is likely to identify gaming, and

3. To assess the outcomes of CMS's validation.

BACKGROUND

Accurate data are fundamental to the integrity of CMS's quality-based payment programs, several of which rely on data from Hospital Inpatient Quality Reporting (IQR). These data are used to adjust payments on the basis of quality measures, so inaccurate data pose risks to payment accuracy. This evaluation focuses on CMS's efforts to ensure the integrity of hospital-submitted data regarding healthcare-associated infections (HAIs) and clinical process of care.

Hospital Inpatient Quality Reporting Program

Beginning in fiscal year (FY) 2005, CMS required Medicare inpatient acute-care hospitals to report quality data or be subject to a payment reduction. For FYs 2005 through 2006, Medicare reduced payment by 0.4 percentage points for hospitals that did not submit the required data for those years. For FYs 2007 through 2014, Medicare reduced payment by 2 percentage points for failure to submit data. Beginning in FY 2015 and all subsequent fiscal years, the reduction is set at one-quarter of the hospital market basket update.[1] (The market basket update is 2.7 percent for FY 2017.[2]) IQR measures include clinical process of care, such as whether aspirin was provided to patients with acute myocardial infarction; HAIs, such as bloodstream infections associated with central lines; claims-based clinical outcomes measures, including readmissions; patient experience of care, which is measured by the Hospital Consumer Assessment of Healthcare Providers and Systems survey; and Medicare spending per beneficiary and payment measures.[3]

---

[1] Social Security Act § 1886(b)(3)(B)(vii)-(viii); 42 CFR § 412.64(d)(2); 81 Fed. Reg. 56939 (Aug. 22, 2016).

[2] The CMS market baskets are used to update payments and cost limits in the various CMS payment systems. The CMS market baskets reflect input price inflation facing providers in the provision of medical services.

[3] Social Security Act § 1886(b)(3)(B)(viii).

Hospitals submit HAI data, including infection data and information used to find the predicted number of infections for each hospital, to the infection database of the Centers for Disease Control and Prevention (CDC). This database is called the National Healthcare Safety Network (NHSN).[4, 5] CDC provides the numbers of reported and predicted infections for each hospital to CMS. Hospitals submit data for the other measures directly to CMS via claims or through CMS's QualityNet website. CMS posts the quality data on its Hospital Compare website. See Exhibit 1 for an overview of how hospitals report the various IQR measures.

Exhibit 1: How Hospitals Report Certain IQR Data

Category of Measures	Examples of Measures	How Hospitals Report the Measures
Clinical Process of Care	Heart attack patients are given fibrinolytic medication within 30 minutes of arrival; pneumonia patients are given the most appropriate initial antibiotics	Data are captured in claims sent to CMS or are uploaded via QualityNet.
HAIs	Central-line-associated bloodstream infections; catheter-associated urinary tract infections	Hospitals provide facility data and report infection cases to the NHSN. CDC then provides the number of reported and predicted infections to CMS.
Patient Experience of Care	Hospital Consumer Assessment of Healthcare Providers and Systems survey	Hospitals can self-administer the survey or use an approved survey vendor. Survey data are uploaded to the CMS data warehouse.
Spending per beneficiary	Price-standardized payments for all Part A and Part B services provided from 3 days prior to a hospital admission through 30 days after the hospital discharge	Data are captured in claims sent to CMS.

Source: CMS, "Hospital IQR Program FY 2017 Reference Checklist" and interviews with CMS and CDC staff.

Medicare Programs Informed by IQR Data

CMS uses the IQR data in certain Medicare programs, such as the Hospital Value-Based Purchasing Program, Hospital-Acquired Condition Reduction Program, and Hospital Readmissions Reduction Program, among others.

The Hospital Value-Based Purchasing Program can trigger payment increases or payment reductions for participating hospitals. Since fiscal year 2013, CMS has used a changing subset of IQR measures for this

---

[4] 76 Fed. Reg. 51631 (Aug. 18, 2011).
[5] 75 Fed. Reg. 50190, 50202 (Aug. 16, 2010).

program. In fiscal year 2017, hospitals may receive a payment increase or reduction in their Medicare payments of up to 2 percent.[6]

The Hospital-Acquired Condition Reduction Program, which began in fiscal year 2015, reduces payments to hospitals with the highest rates of hospital-acquired conditions. This program also uses a subset of IQR measures. The Hospital-Acquired Condition Reduction Program includes HAI measures and other measures, including rates of pressure ulcers and hip fractures. CMS reduces payments by 1 percent to the hospitals that have overall scores in the quartile with the worst performance.[7]

The Hospital Readmissions Reduction Program began in fiscal year 2013. This program reduces payments to hospitals that have readmission rates that are higher than expected. (A readmission is the admission of a patient to any hospital within 30 days of being discharged from a hospital.) CMS uses a subset of IQR data to calculate expected readmission rates for hospitals, and it penalizes hospitals with rates that exceed these expected rates.[8]

How CMS Validates IQR Data

CMS has regulatory authority to validate IQR data by reviewing medical records from participating hospitals.[9] In accordance with regulatory requirements, CMS validates the clinical-process-of-care measures and the HAI measures by annually selecting a random sample of 400 participating hospitals, and then requesting a sample of medical records from those hospitals.[10] It validates the data for the two domains separately, then combines the outcomes into one overall score. The year of reporting that CMS validates lags 1 to 2 years behind the payment year that the validation will affect. For example, CMS validated data for payment year 2016 using data on hospital discharges from the second half of 2013 through the first half of 2014.

In addition to what it is required to validate, CMS can also select a targeted sample of up to 200 additional hospitals on the basis of certain criteria. Most of these criteria place hospitals into the targeted sample if they reach a certain threshold—for example, if they failed validation the

---

[6] Social Security Act § 1886(o).

[7] P.L. No. 111-148, § 3008 (March 23, 2010), as amended by the Health Care Reconciliation Act of 2010, P.L. No. 111-152 (March 30, 2010), collectively known as the Affordable Care Act.

[8] Social Security Act § 1886(q) and 42 CFR §§ 412.150–412.154.

[9] 42 CFR § 412.140(d).

[10] The Patient Experience of Care domain is not currently validated.

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools To Identify Gaming (OEI-01-15-00320)

3

previous year, or if they submitted data to the NHSN after CMS's deadlines. CMS also sets analysis-based criteria for the targeted sample, such as a hospital's having abnormal or conflicting data patterns.[11] These criteria could include the use of analytics—for example, identifying outliers on particular measures. See Table 2 for a list of the criteria that CMS uses to select the targeted sample.

Exhibit 2: CMS Selection Criteria for the IQR Targeted Sample

Selection Criterion	Description
Threshold-Based Criteria	
Failed To Report Half of HAIs	Hospital failed to report to the NHSN at least half of actual HAIs as determined during the previous year's validation
Low Passing Score	In the previous year's validation process, the hospital's score was in the range of 75% plus or minus the statistical margin of error
Late Reporting of HAIs	Hospital reported HAI data within CDC deadline but after CMS deadline
Supplemental	Any hospital that has not been randomly selected in the past 3 years
New Hospital	New hospital that has not been randomly selected in the past 3 years (e.g., hospital has a participation date after January 1, 2011, but has not been selected for validation for fiscal years 2013–2015)
Multiple Reasons	Multiple criteria
Analysis-Based Criteria	
Abnormal/Conflicting Data Patterns	Inconsistencies, such as infection date coded 3 days after culture date
Rapid Change in Data Patterns	Hospital with rapidly changing data patterns
Other Criteria	
CMS can select hospitals for other reasons*	

* For details, see the note following Exhibit 3, page 12.
Source: 77 Fed. Reg. 53552–53 (Aug. 31, 2012) and interviews with CMS staff.

To validate HAI measures, CMS first requests all lab culture results for the quarter being validated from certain units of sampled hospitals (e.g., intensive care units). CMS uses the lab results to identify cases likely to have involved infections that are reportable to the NHSN. It then selects

---

[11] 77 Fed. Reg. 53550–53553 (Aug. 31, 2012).

a random sample of up to 12 of these cases for medical record review. Hospitals send the medical records for those cases to CMS, which then matches the medical records to the NHSN to determine whether the hospitals reported the infections documented in the medical records.[12] For a given year of validation, CMS may review a total of up to 48 cases to validate a hospital's HAI measures. For a given measure, such as bloodstream infections associated with central lines, CMS validates the number of infections (i.e., the numerator), but not the total number of patient-days that included central lines (i.e., the denominator).

To validate the clinical process-of-care measures, CMS requests a sample of 15 medical records per quarter from sampled hospitals, including measures for acute myocardial infarction, pneumonia, and heart failure. CMS matches the medical records with the quality data that hospitals reported, or it identifies a mismatch.[13] For a given year of validation, CMS may review a total of up to 60 cases to validate a hospital's process-of-care measures.

CMS then calculates an overall score that combines the HAI and process-of-care validation results. Because CMS reviews only a sample of records, it projects each hospital's score. A hospital passes validation if its match rate—the rate at which CMS identifies a match between the medical records and the data that the hospital reported—is at least 75 percent plus the statistical margin of error set by CMS.[14] A hospital fails validation if the rate is below 75 percent minus the margin of error. A hospital neither passes nor fails if its projected score is within the range of 75 percent plus or minus the margin of error. CMS may select a hospital that neither passes nor fails for targeted validation the following year.[15] A hospital that fails validation can request a reconsideration, in which case the hospital must explain which data it believes were improperly validated by CMS and why it believes that they are correct.[16]

CDC and CMS Concerns About HAI Data

In October 2015, CDC and CMS issued a "Joint Reminder on NHSN Reporting."[17] This document highlighted concerns raised by staff at some

---

[12] 77 Fed. Reg. 53542–53548 (Aug. 31, 2012).

[13] 76 Fed. Reg. 51645–51648 (Aug. 18, 2011).

[14] 42 CFR § 412.140(d)(2); 77 Fed. Reg. 53550–53551 (Aug. 31, 2012).

[15] 77 Fed. Reg. 53550–53551 (Aug. 31, 2012).

[16] 42 CFR § 412.140(e)(1)-(2).

[17] CDC and CMS, *Adherence to the CDC's Infection Definitions and Criteria is Needed to Ensure Accuracy, Completeness, and Comparability of Infection Information* (joint notice), no date. Accessed at http://www.cdc.gov/nhsn/pdfs/cms/nhsn-reporting-signed.pdf on March 1, 2017.

hospitals regarding three ways that hospitals may be deviating from CDC's definitions for reportable HAIs: overculturing, underculturing, and adjudication. These deviations could be ways in which hospitals game their quality data to obtain payment increases or avoid payment decreases.

Overculturing: Overculturing departs from standard clinical practice by ordering diagnostic tests in the absence of clinical symptoms. Hospitals may order these tests when patients are admitted. For example, hospitals may obtain a urine specimen taken from a patient who shows no symptoms of a urinary tract infection. Many results are negative, subjecting patients to unnecessary tests. Hospitals might use positive results to game their data by claiming that infections that appeared many days later during hospitalization were present on admission, and thus not reportable to the NHSN.[18]

Underculturing: Underculturing departs from standard clinical practice by discouraging the ordering of diagnostic tests in the presence of clinical symptoms. Hospitals may engage in underculturing in cases in which a patient has likely developed an infection during the hospital stay. By not ordering the test, the hospital does not learn whether the patient truly has an infection and therefore the hospital does not have to report an infection to the NHSN. Furthermore, to deal with infections that are possible but unconfirmed, hospitals might—in the absence of diagnoses—treat these patients with broad-spectrum antibiotics, contributing to poor antibiotic stewardship.

Adjudication: In the practice known as adjudication, administrative or clinical superiors inappropriately overrule the hospital staff who are responsible for reporting HAIs to the NHSN, with the result that the hospital does not report infections that should be reported per CDC's definitions for reportable HAIs.

Finally, although the "Joint Reminder on NHSN Reporting" does not assert that these are widespread practices, it does remind hospitals that intentionally reporting incorrect data or deliberately failing to report required data may violate statute and regulations. It recommends that hospital staff contact the Office of Inspector General (OIG) if they become aware of intentional deviations from CDC's reporting protocols.

---

[18] Hospitals can use a "Present on Admission" code on claims to indicate that a patient already had a particular condition upon admission.

METHODOLOGY

Scope

This inspection is national in scope. It included data on CMS's validation of acute-care hospital inpatient quality reporting data used for payment year 2016 (October 1, 2015–September 30, 2016), the most recent year for which complete data were available. The data that CMS validated for payment year 2016 came from hospital discharges from the second half of 2013 through the first half of 2014. Specifically, this inspection examined CMS's validation of the HAI and process-of-care measures. We did not examine the patient-experience-of-care measure, which is not subject to a validation process.

Data Sources and Collection

Validation Data. We obtained summary data from CMS (maintained by its Clinical Data Abstraction Center contractor) on the hospitals that CMS selected for validation for payment year 2016; the reasons it selected hospitals for the targeted sample; and the number of hospitals that failed validation. We analyzed the data to determine the number of hospitals selected for validation, the outcomes of the validation, and the most common reasons hospitals were selected for the targeted validation sample.

Structured Interviews. We conducted structured interviews with CMS staff regarding the actions taken with hospitals that failed validation; quality assurance activities that CMS conducts on the quality measure data it receives; hospital training and outreach; and concerns that CMS staff have regarding the data. We conducted structured interviews with CDC staff regarding quality assurance activities they conduct on the NHSN data, and any concerns they have about the data and validation process.

We conducted structured interviews with five stakeholder experts regarding their concerns about the validation process and data reporting. These experts included representatives from trade associations, members of the research community, and officials from a State department of health. We identified these experts through research, by reviewing published articles, and from individual recommendations from other stakeholders.

Document Review. We reviewed CMS and CDC training materials related to hospital outreach on data validation and submission (e.g., conference call agendas and related materials). We analyzed CMS and CDC training materials to verify hospital training topics.

Limitations

We did not independently verify the results of CMS's validation process.

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools To Identify
Gaming (OEI-01-15-00320)

7

Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

FINDINGS

For payment year 2016, CMS met its regulatory requirement by validating sufficient IQR data, which are used to adjust payments on the basis of quality

CMS's validation for payment year 2016 comprised medical record reviews of hospital discharge data from the third quarter of 2013 through the second quarter of 2014.

CMS validated data from a random sample of 400 hospitals, meeting its regulatory requirement, and also from a targeted sample of 49 hospitals. For this total of 449 hospitals, CMS reviewed 60 medical records per hospital—a total of 26,940 records—to validate process-of-care measures. It reviewed 11,097 cases to validate HAI measures.

Of the 49 hospitals CMS selected for its target sample, it selected 25 hospitals for failing to report half their HAIs and 14 hospitals for having low passing scores in the previous year's validation process. Seven hospitals were selected on the basis of CMS's category "Other."[19]

Almost 99 percent of hospitals that CMS reviewed passed validation, and CMS took action against the six that failed, including reducing their Medicare payments

<div style="float:left; color:#2e74b5;">Six hospitals failed validation and, as a result, received a 0.6 percent cut in their Medicare payments.</div>

Of the 449 hospitals in CMS's sample, 443 (98.7 percent) passed validation. That means CMS found those hospitals' data to have 75 percent or more reliability. Five hospitals from the random sample and one hospital from the targeted sample failed validation.[20] The hospital from the targeted sample that failed also failed validation in the previous year. CMS reduced the Medicare payment for these six hospitals by 0.6 percent, which is one-quarter of the FY 2016 market basket update.[21] This is the same penalty for hospitals that do not submit IQR data. These hospitals will also be excluded from the Hospital Value-Based Purchasing Program and thus will be ineligible for any positive or negative payment adjustments made under that program the following year.[22] The hospitals cannot appeal this action. Excluding hospitals that submitted unreliable data maintains the integrity of the data that underlie this program.

---

[19] CMS did not provide a reason for three of the hospitals.

[20] A sixth hospital from the random sample initially failed validation but successfully appealed that determination.

[21] The FY 2016 market basket update was 2.4 percent. See 80 Fed. Reg. 49508-49509 (Aug. 17, 2015).

[22] We observe that this creates a situation in which a hospital that is penalized under the Hospital IQR Program may avoid a penalty under the Hospital Value-Based Purchasing Program.

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools To Identify Gaming (OEI-01-15-00320)

9

CMS and CDC offer training to hospitals to help improve the accuracy of quality data that hospitals report

Providing ongoing training for hospitals is important to reach new users, meet needs for refresher training, and to teach hospitals about changes to measures and definitions. CMS revises the IQR measures annually; it revises definitions and, in some cases, adds entirely new measures. CDC adjusts the HAI reporting definitions, as needed, in response to feedback from users and to incorporate advancements in infection detection.

CMS and CDC offer training that attempts to reduce subjectivity in hospitals' reporting by focusing on the reporting definitions, among other topics. For example, for a patient with a central line and other clinical conditions, staff in one hospital may attribute an infection to the central line, whereas staff in another hospital may attribute the infection to one of the other clinical conditions. This would affect how each hospital would report the rate of central line infections. As a result, different hospitals would not be reporting rates that are based on consistent measurements. The experts with whom we spoke identified subjectivity in the HAI measures as a concern that could affect validation, though they also acknowledged that CDC and CMS are working to address this concern through training.

CMS develops educational and resource materials and conducts outreach about IQR program requirements via a contractor. The contractor hosts webinars and posts educational materials on its website. It updates the materials about every 6 to 9 months to reflect CMS's revisions to the quality measures. Past training sessions covered reporting to the NHSN; new IQR measures, such as sepsis rates; and the Hospital Consumer Assessment of Healthcare Providers and Systems.

Additionally, hospitals that are being validated in a given year can opt to receive feedback. Specifically, a hospital can ask CMS's validation contractor to conduct an educational review, in which the contractor reviews medical records that the validation process identified as mismatches and provides feedback to the hospital on how it can improve. In FY 2016, 35 hospitals took advantage of this review; in FY 2017, 146 hospitals did so.

CDC offers in-person training for staff from any hospital that submits data to the NHSN. Training designed to improve data quality is also available to hospital staff as webinars, and includes training on definitions for reportable HAIs, entering data in the NHSN, and evaluating entered data for accuracy. The stakeholders we interviewed who were concerned about subjectivity told us that this training helps address their concerns.

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools To Identify Gaming (OEI-01-15-00320)

10

However, CMS's approach to selecting hospitals for validation for payment year 2016 made it less likely to identify gaming of quality reporting

CMS can use analytics to identify hospitals with data patterns that warrant additional review, such as patterns suggesting that a hospital is trying to game its reporting. In fact, CMS can select up to 200 such hospitals for targeted validation. However, despite recognizing the possibility of gaming in its 2015 "Joint Reminder on NHSN Reporting" (which highlighted three types of gaming related to HAIs: overculturing, underculturing, and adjudication), CMS made limited use of these analytical tools in its validation for payment year 2016. Gaming can involve hospitals' manipulating their data to show better performance.

CMS made limited use of analytics that can help identify suspected gaming

A variety of analytic tools could help CMS identify hospitals that might be gaming the quality data that they report. For example, CMS could identify hospitals that are outliers on particular measures (i.e., hospitals that have very high or low values on those measures compared to other hospitals) and include them in its targeted sample for validation. If CMS confirms instances of gaming by certain hospitals, it could further analyze those hospitals' data to refine its analytic tools to identify similar patterns of data from other hospitals that might also be gaming.

These tools could be particularly useful with HAI data. CMS relies on hospitals to submit complete and accurate data on lab cultures. These data in turn become the basis for the individual medical records that CMS requests. (CMS requests all lab cultures from hospitals, and then draws a sample of records on the basis of the results of those cultures.) Hospitals could game their data by inappropriately excluding positive cultures that indicate infections. This makes analytics an important tool to tease out hidden patterns in the data, which could help determine when the cause of variation might be the result of manipulation, rather than subjectivity in the measures or variation in medical practice. CMS can analyze the HAI data to determine whether a hospital's reported rates are so low as to make that hospital an outlier that warrants further scrutiny.

CMS did not include any hospitals in its targeted sample on the basis of aberrant data patterns

Although CMS can include up to 200 hospitals in its targeted sample, it selected only 49 hospitals for payment year 2016. Furthermore, CMS selected none of these hospitals using analysis-based criteria, such as aberrant data patterns or rapid changes in reporting. CMS staff told us that

they identified 96 hospitals with aberrant data patterns but did not select any of them for the targeted sample; instead, they prioritized the hospitals that had reported fewer than half of their HAIs. In fact, CMS selected most of the hospitals for targeted review using threshold-based criteria. These criteria automatically place hospitals in the targeted sample because of an existing problem, such as failing to report HAI data. See Exhibit 3 for the selection criterion of the hospitals that CMS selected.

Exhibit 3: Number of Hospitals Selected for Payment Year 2016 Targeted Sample, by Selection Criterion

Selection Criterion	Number of Hospitals Selected
Threshold-Based Criteria	
Failed To Report Half of HAIs	25
Low Passing Score	14
Late Reporting of HAIs	0
Supplemental (hospital not validated in prior 3 years)	0
New Hospital	0
Multiple Reasons	0
Analysis-Based Criteria	
Abnormal/Conflicting Data Patterns	0
Rapid Change in Data Patterns	0
Other Criteria	
Other	7

Notes: Three targeted hospitals did not have targeting reasons available.
The category of "Other" is not a criterion in its own respect, but rather a system designation.
Hospitals that are in the "Other" category are randomly chosen by the system from any combination of meeting two of the following criteria:
- Abnormal/conflicted data patterns (likely data entry errors)
- Rapidly changing data patterns that improve quality
- Submitted more than one NHSN case to CDC after CMS posted results
- Any hospital that is new and/or has not been selected for validation in any of the previous 3 years

Source: OIG analysis of CMS validation data and interviews with CMS staff.

CMS and CDC analyze quality reporting data, but their analysis has not resulted in CMS's selecting hospitals for targeted review. For example,

CMS uses a contractor to analyze process-of-care data and claims data to evaluate two measures of HAI reporting: surgical site infections and *Clostridium difficile* infections. CDC analyzes NHSN data to identify outliers and reviews specific data elements related to changes in measure definitions or previously identified data inaccuracies.[23]

Both CMS and CDC use edit checks (automated system processes) to help ensure the quality of data that hospitals enter into CMS's reporting portal and CDC's NHSN. These edit checks test for acceptable value ranges for individual data elements and compare two or more data elements against one another for conflicting data. For example, if a hospital enters a patient's discharge date as having preceded the patient's arrival date, the record would be rejected and the hospital would be required to fix the date discrepancy. CMS and CDC's edit checks may be informed by experience over time with quality reporting data as a whole, but their purpose is to improve the quality and accuracy of individual records rather than to identify patterns within the data.

CMS reported that it does not find claims data useful for identifying outliers in quality reporting. For example, CMS staff told us that claims typically include a small number of HAIs and present-on-admission codes, making the claims a poor data source to identify outliers.

CMS plans to obtain patient-level data to allow it to conduct analytics on hospitals' HAI data

Currently, hospitals submit HAI to data to CDC, which then provides aggregated data to CMS. The two agencies are working to give CMS access to patient-level HAI data.

CMS staff told us that to improve CMS's analysis of HAI reporting, they need access to the patient-level data that hospitals submit directly to the NHSN. CMS and CDC staff told us that they are working together to provide CMS with patient-level HAI data. CMS could use these data to identify gaming, outliers, and HAI underreporting, as well as to detect specific types of infection. CMS could also use these data to better understand the reasons for mismatches identified during validation and improve feedback to hospitals. CDC has offered to pair its NHSN data analysts with CMS analysts to assist CMS. However, before CMS can obtain the data, it needs to address some technical and administrative matters. CMS staff told us that the agency needs to establish the computing capacity for storing and safeguarding the data. In addition, CDC has asked CMS to ensure that CMS analysts have signed confidentiality agreements before using the NHSN data, and that CMS track and manage these agreements through a single point of contact.

---

[23] In one instance, CDC's analysis identified hospitals that incorrectly reported their Medicare provider numbers to the NHSN. CDC informed CMS of this problem; in response, CMS initiated training for hospitals on how to report their provider numbers.

CONCLUSION AND RECOMMENDATION

Through its validation of hospital IQR data, CMS has made important strides to ensure that Medicare's payment adjustments linked to measures of quality are based on accurate data. Hospitals have much at stake with their reporting of quality data, as do Medicare and its beneficiaries. Collecting and analyzing quality data is increasingly central to Medicare programs that link payments to quality and value. Therefore, it is important for CMS to ensure that hospitals are not gaming their reporting of quality data.

We found that CMS is validating data according to the process it established in regulation, and that most hospitals pass the validation. However, CMS has yet to take full advantage of data analytics in its process, leaving it less likely to identify patterns that might suggest gaming, including the practices that CMS and CDC listed in their 2015 "Joint Reminder on NHSN Reporting." CMS is taking steps—such as acquiring patient-level HAI data—to enable it to use additional analytics. It is important that CMS follow through on that effort. We recommend that CMS:

Make better use of analytics to ensure the integrity of hospital-reported quality data and the resulting payment adjustments

CMS should analyze IQR data—combining the patient-level HAI data with administrative data such as claims—to do the following: identify hospitals with questionable patterns of data, prioritize hospitals that most warrant further review, and include those hospitals in the targeted sample for data validation. For example, CMS could use analytics to identify hospitals with abnormal percentages of patients who had infections present on admission. This might help identify hospitals that are engaging in overculturing patients, one of the concerns highlighted in the "Joint Reminder on NHSN Reporting." Obtaining patient-level HAI data from CDC will be helpful in these efforts. Going further, CMS could use risk scoring to identify hospitals with a high possibility of manipulating their reporting. CMS could use its experience with these hospitals to create and continuously improve models that identify hospitals most likely to be gaming their reporting.

The benefits of using data analytics to target hospitals for validation extend beyond identifying and addressing gaming. Analytics and patient-level HAI data may help CMS to improve its feedback to and training for hospitals, thereby improving the accuracy of quality reporting. Furthermore, using analytics may help CMS more accurately identify hospitals that are providing better care and those that are poor performers.

CMS could use such insight in its quality improvement efforts—for example, to select high-performing hospitals to serve as mentor hospitals, to target poor performers for outreach, and to assess the performance of its quality improvement contractors.

CMS Validated Hospital Inpatient Quality Reporting Program Data, But Should Use Additional Tools To Identify Gaming (OEI-01-15-00320)

15

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

CMS concurred with our recommendation. The agency stated that it will continue to evaluate the use of better analytics, such as including additional criteria for selecting hospitals in its targeted validation sample, and will use such criteria, as feasible.

We support CMS's actions to continue to evaluate and implement the use of analytics. OIG requests details on CMS's efforts and the results of those efforts in its final management decision.

For the full text of CMS's comments, see Appendix A.

APPENDIX A

Agency Comments

DEPARTMENT OF HEALTH & HUMAN SERVICES　　Centers for Medicare & Medicaid Services

APR – 4 2017

200 Independence Avenue SW
Washington, DC 20201

To:　　Daniel R. Levinson
Inspector General
Office of the Inspector General

From:　　Seema Verma
Administrator
Centers for Medicare & Medicaid Services

Subject:　　CMS Validated Hospital Inpatient Quality Reporting Data But Should Use
Additional Tools to Identify Gaming (OEI-01-15-00320)

The Centers for Medicare & Medicaid Services (CMS) appreciates the opportunity to review and comment on the Office of Inspector General's (OIG) draft report. CMS is committed to providing Medicare beneficiaries with high quality health care and protecting taxpayer dollars by ensuring providers report accurate data.

The Hospital Inpatient Quality Reporting (IQR) Program requires that inpatient acute-care hospitals that do not successfully report data on designated quality measures will be subject to a reduction to the annual update to their payment rates. In addition to giving hospitals a financial incentive to report data regarding the quality of their services, the Hospital IQR Program provides CMS with data, which help consumers make more informed decisions about their health care.

CMS performs random and targeted provider selection of hospitals participating in the Hospital IQR Program on an annual basis. Selected hospitals meet validation requirements by receiving a confidence interval of 75 percent or greater based on the combined chart audit validations for the applicable four quarters. As the OIG reported, for payment year 2016, CMS met the regulatory requirements it has established by validating sufficient Hospital IQR Program data. Almost 99 percent of the hospitals that CMS reviewed passed validation, and CMS took action against hospitals that failed validation, including reducing their Medicare payments.

To ensure the accuracy of quality data submitted by hospitals, CMS validated the data using a variety of tools, such as automated system processes, data analytics, and medical record reviews. These tools allow CMS to identify invalid submissions, target outlier entities, and verify accuracy. Furthermore, CMS educates providers on how to avoid reporting errors through a variety of channels including the Medicare Learning Network, weekly electronic newsletters, quarterly compliance newsletters, and educational feedback reports.

OIG's recommendation and CMS's response is below.

OIG Recommendation

The OIG recommends that CMS make better use of analytics to ensure the integrity of hospital-reported quality data and the resulting payment adjustments.

CMS Response

CMS concurs with the recommendation. CMS will continue to evaluate the use of better analytics, such as including additional criteria for selecting hospitals in its targeted validation sample, and will use such criteria, as feasible, based on CMS's operational capabilities.

ACKNOWLEDGMENTS

Office of Inspector General
http://oig.hhs.gov

The mission of the Office of Inspector General (OIG), as mandated by Public Law 95452, as amended, is to protect the integrity of the Department of Health and Human Services (HHS) programs, as well as the health and welfare of individuals served by those programs. This statutory mission is carried out through a nationwide network of audits, investigations, and inspections conducted by the following operating components:

Office of Audit Services

The Office of Audit Services (OAS) provides auditing services for HHS, either by conducting audits with its own audit resources or by overseeing audit work done by others. Audits examine the performance of HHS programs and/or its grantees and contractors in carrying out their respective responsibilities and are intended to provide independent assessments of HHS programs and operations. These assessments help reduce waste, abuse, and mismanagement and promote economy and efficiency throughout HHS.

Office of Evaluation and Inspections

The Office of Evaluation and Inspections (OEI) conducts national evaluations to provide HHS, Congress, and the public with timely, useful, and reliable information on significant issues. These evaluations focus on preventing fraud, waste, or abuse and promoting economy, efficiency, and effectiveness of departmental programs. To promote impact, OEI reports also present practical recommendations for improving program operations.

Office of Investigations

The Office of Investigations (OI) conducts criminal, civil, and administrative investigations of fraud and misconduct related to HHS programs, operations, and individuals. With investigators working in all 50 States and the District of Columbia, OI utilizes its resources by actively coordinating with the Department of Justice and other Federal, State, and local law enforcement authorities. The investigative efforts of OI often lead to criminal convictions, administrative sanctions, and/or civil monetary penalties.

Office of Counsel to the Inspector General

The Office of Counsel to the Inspector General (OCIG) provides general legal services to OIG, rendering advice and opinions on HHS programs and operations and providing all legal support for OIG's internal operations. OCIG represents OIG in all civil and administrative fraud and abuse cases involving HHS programs, including False Claims Act, program exclusion, and civil monetary penalty cases. In connection with these cases, OCIG also negotiates and monitors corporate integrity agreements. OCIG renders advisory opinions, issues compliance program guidance, publishes fraud alerts, and provides other guidance to the health care industry concerning the anti-kickback statute and other OIG enforcement authorities.