Pay for Performance and the Hospital Quality Initiative

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Abstract

This paper describes the history of the Hospital Quality Initiative (HQI) and describes plans that the Centers for Medicare and Medicaid Services (CMS) have for this data set. There are suggestions on how to improve physician acceptance of these benchmarks and how an institution can improve compliance rates with the data elements. There is also a discussion with respect to weaknesses and strengths of HQI. The advantages occuring to both the patient and physician when the physician participates in the HQI initiative are emphasized.

INTRODUCTION

In the questions posed in a recent joint commission hospital accreditation survey, one of the surveyors asked the participants in the room to articulate what they believed was the hospital's biggest challenge. There were the common responses, such as maintaining healthy finances, staff recruitment and retention, computerization, and physician relations. However one individual remarked that participating in the new "voluntary" accountability standards that Centers for Medicare and Medicaid Services (CMS) had placed on the institution was a substantive issue. This person was referring to the reporting requirements of Medicare's *Hospital Quality Initiative* (HQI). This initiative currently measures accountability by evaluating how often clinical benchmarks are met, and after validating the data makes it available to anyone via the Internet. The Centers for Medicare and Medicaid Services has no statutory authority to require hospitals to report quality data as it has for Home Health Agencies and Nursing Homes. Consequently CMS cannot require hospitals to participate in this program. However, for a variety of reasons, including pay for performance (P4P), the vast majority of eligible hospitals take part in this accountability initiative.

Accountability in some form is not new to the medical profession. Historically, the barest accountability issue for the physician was demonstrating that one met the requirements to obtain a license. If you were on the staff of a hospital, there were requirements with respect to medical staff bylaws, rules, and regulations. If challenged in a malpractice action the physician would have to account for his or her actions. With the advent of managed care, there is a new layer of accountability, such as obtaining preapprovals for certain types of care and agreeing to record reviews and office visit surveys. For hospitals, accountability at its minimum includes being able to demonstrate meeting licensing and accreditation requirements. The institution must satisfy Medicare's Conditions of Participation (COP) if it participates in the Medicare program. Like the physician, a hospital might have to account for its actions during

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an alleged malpractice action. The staff of the hospital, community and managed care might also place expectations on the institution.

For both physician and hospital, this historical focus for assessing accountability was on structural requirements that needed to be met, while the contemporary focus personified by the HQI is emphasizing processes that lead to good patient care outcomes. Medicare's COP, which harkens back to the start of Medicare in 1964, requires that "Nosocomial infections ... must be evaluated," and this historical requirement will not disappear. However, a new focus will measure the processes in place for preventing or treating infections and the aggregate of patient care outcomes, i.e. how often were prophylactic antibiotics given within the proper time frame to the surgical patient and when were they stopped, or how long it takes to administer an antibiotic to a pneumonia patient. A second important difference between the old and new system of measuring accountability is that the new system provides benchmarking information that can be used to compare clinical processes from hospital to hospital.

OVERVIEW OF THE HOSPITAL QUALITY INITIATIVE

As stated by CMS, the essential goals of the HQI are to give patients quality of care information so they can make more informed decisions about their health care and to encourage providers and clinicians to improve the quality of health care. There are three major initiatives of the HQI. The first involves a set of 22 core measures, which are being phased in on the national level. This initiative is supported by the Hospital Quality Alliance, which is composed of the American Hospital Association, Federation of American Hospitals, and Association of American Medical Colleges. The second portion is the Premier Hospital Quality Incentive Demonstration, which involves a set of 34 quality measures. The third portion, which is under development, is a set of questions designed to elucidate patients' perceptions of their care. Implementation of this third data set is planned for 2007. Participation is voluntary for hospitals; however, as Medicare is tying reimbursement to participation, most eligible hospitals participate in the program. As of April 1, 2005, CMS had updated many of its Web pages, and so this is a particularly good time to visit them.[1] HQI methodology is here to stay and will become more common in both the public and private sector. The Medicare Payment Advisory Commission recently recommended that CMS tie physician reimbursement to performance.[2]

THE 22 CORE MEASURE SET AND ITS EVOLUTION

This began with 10 core measures that evolved from the benchmarks the Professional Review Organizations, currently called Quality Improvement Organizations, developed in conjunction with the medical and hospital community. Until April 1, 2005, these 10 measures were the required elements for the voluntary reporting under this program. The original ten core measures are listed in Table 1.[3] On April 1, seven more indicators were added; three for acute MI, two for CHF and two for pneumonia.

MI patients:

- Thrombolytic agent received within 30 minutes of hospital arrival
- PTCA received within 90 minutes of hospital arrival (effective March 2004 this measure becomes "PCI received within 120 minutes of hospital arrival")
- Adult smoking cessation advice/ counseling.

For CHF patients:

- Discharge instructions
- Adult smoking cessation advice/counseling.

For pneumonia patients:

- Blood culture performed before first antibiotic received in hospital.
- Adult smoking cessation advice/ counseling.

This summer five more indicators are planned; two for pneumonia and three for surgical patients.

For pneumonia patients:

- Initial antibiotic selection for community-acquired pneumonia in imunocompetent patients.
- Influenza vaccination.

For surgical patients:

- Prophylactic antibiotic received within 1 hour prior to surgical incision.
- Prophylactic antibiotic selection for surgical patients.
- Prophylactic antibiotics discontinued within 24 hours after surgery end time.

Many of these indicators have been used by hospitals for a period of time, as they are common to core measure sets the Quality Improvement Organizations and Joint Commission on Accreditation of Healthcare Organizations (JCAHO) utilize.

As they are all process rather than outcome indicators, risk adjustment is not an issue.[4]

Participating hospitals must report this data for both Medicare and non-Medicare patients. Those eligible institutions that did not commence reporting data by November 1, 2003, will receive a 0.4% lower payment update for Fiscal Year 2005 than a hospital that submitted performance data. As of April 1, 2005, more than 4200 or 98% of Acute Care and Critical Access Hospitals that were eligible to participate are reporting information to this database. This covers the first two quarters of calendar year 2004. In Delaware, all acute care hospitals participate. Psychiatric, children's, rehabilitation, and long-term care hospitals currently are not eligible for HQI, as much of their patient mix is not appropriate to the core measures. Details and technical reporting requirements are at http://www.cms.hhs.gov/quality/hospital/FactSheetAP.pdf.[5] Hospital performance data is available to the public at http://www.hospitalcompare.hhs.gov/.[6] This section of

Table 1. HQI Ten Measure "Starter Set"*

Performance Measures	Measure Description
AMI - Aspirin at Arrival	Acute myocardial infarction (AMI) patients without aspirin contraindications who received aspirin within 24 hours before or after hospital arrival.
AMI – Aspirin Prescribed at Discharge	Acute myocardial infarction (AMI) patients without aspirin contraindications who are prescribed aspirin at hospital discharge.
AMI – ACEI for LVSD	Acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications who are prescribed an ACEI at hospital discharge.
AMI - Beta Blocker at Arrival	Acute myocardial infarction (AMI) patients without beta blocker contraindications who received a beta blocker within 24 hours after hospital arrival.
AMI - Beta Blocker at Discharge	Acute myocardial infarction (AMI) patients without beta blocker contraindications who are prescribed a beta blocker at hospital discharge.
HF-LVF Assessment	Heart failure patients with documentation in the hospital record that left ventricular function (LVF) were assessed before arrival, during hospitalization, or planned for after discharge.
HF-ACEI for LVSD	Heart failure patients with left ventricular systolic dysfunction (LVSD) and without angiotensin converting enzyme inhibitor (ACEI) contraindications who are prescribed an ACEI at hospital discharge.
PNE-Initial Antibiotic Timing	Pneumonia patients who receive their first dose of antibiotics within 4 hours after arrival at the hospital.
PNE- Pneumococcal Vaccination	Pneumonia patients age 65 and older who were screened for pneumococcal vaccine status and were administered the vaccine prior to discharge, if indicated.
PNE-Oxygenation Assessment	Pneumonia patients who had an assessment of arterial oxygenation by arterial blood gas measurement or pulse oximetry within 24 hours prior to or after arrival at the hospital.

Data reported from the CMS ten-core measure starter set.[3]

Web pages gives in layperson terms a description of the measures, why they are important, and information about how the data is collected. When an institution reports less than 25 patients for a given measure, the data is still reported. However, there is a cautionary note with respect to interpreting small numbers. There is also a note stating that if the patient's chart documented a particular medication as inappropriate, then this patient would be excluded from that particular data set. As an example, if a patient were allergic to aspirin, one would not expect this patient to receive it when presenting with an acute myocardial infarction, and this chart would not be counted in calculating the hospital's compliance rate with respect to aspirin usage. Data schedule updates are quarterly.

PREMIER HOSPITAL QUALITY INCENTIVE DEMONSTRATION PROJECT

This is a joint venture between CMS and Premier, Inc., which is an alliance of not-for-profit hospitals and healthcare systems. It was started when CMS received an unsolicited proposal from Premier for this project. It is voluntary for Premier system hospitals and includes 34 clinical measures. The data set includes mortality rates for acute myocardial infarction and coronary artery bypass graft, and 30-day readmission rates for hip and knee surgery. These four outcome measures are being risk-adjusted. Most of the other indicators are process measurements that do not require risk adjustment. As in the basic 22-core-measure set, if the measure is not appropriate to the patient, it will be excluded. Medicare will provide pay incentives to institutions that do well, and in year three of the demonstration project hospitals will receive lower DRG payments if they score below performance baselines set in the first year. The clinical indicators and notes are included in Table 2.[7] The CMS/Premier quality measures are based on clinical evidence and industry recognized metrics and include:

- All 10 indicators from the starter set of "The National Voluntary Hospital Reporting Initiative: A Public Resource on Hospital Performance" (AHA Initiative).
- Twenty-seven indicators are National Quality Forum (NQF) indicators.
- Twenty-four indicators are CMS 7th Scope of Work indicators.
- Fifteen indicators are JCAHO Core Measures indicators.
- Three indicators are proposed by The Leapfrog Group.
- Four indicators are the Agency for Healthcare Research and Quality (AHRQ) patient safety indicators.[7]

MEASURING PATIENTS' PERCEPTIONS OF THEIR HEALTH CARE

In October 1995, the Agency for Healthcare Research and Quality (AHRQ), then called the Agency for Health Care Policy and Research, developed CAHPS, which initially stood for the Consumer Assessment of Health Plans Study. The initial goal of CAHPS was to develop a set of questions that would capture the patient's perception of the quality of his or her health plan. In 1996, CMS partnered with AHQR to further develop and refine CAHPS, and currently CAHPS has data sets for a variety of providers. The draft CAHPS germane to hospitals contain seven sections: *Your Care From Nurses*, *Your Care From Doctors*, *The Hospital Environment*, *Your Experiences in this Hospital*, *When You Left the Hospital*, *Overall Rating of the Hospital* and *About You*. These sections contain 27 questions. The doctor portion asks whether the doctors treat the patient with courtesy and respect. How often did doctors listen carefully to you? How often were their explanations understandable? To respond you check boxes ranging from the first choice "Never" to the last choice "Always." I find it regrettable that the emphasis is on the negative. Why not say: "Doctors explained things in a fashion I could understand", and then have the first choice "Always" down to the last choice "Never". The Hospital CAHPS draft is available at http://www.cahps-sun.org/Products/Hospital/H-CAHPS_27-%20item_draft.pdf.

Table 2. The Premeier Hospital Quality Incentive Demonstration: Clinical Conditions and Measures for Reporting. Taken from http://www.cms.hhs.gov/quality/hospital/PremierMeasures.pdf.

Clinical Conditions	Measures
Acute Myocardial Infarction (AMI)	1. Aspirin at arrival [a,b,c,d,k] 2. Aspirin prescribed at discharge [a,b,c,d,k] 3. ACEI for LVSD [a,b,c,d,k] 4. Smoking cessation advice/counseling [a,b,c,k] 5. Beta blocker prescribed at discharge [a,b,c,d,k] 6. Beta blocker at arrival [a,b,c,d,k] 7. Thrombolytic received within 30 minutes of hospital arrival [a,b,j,k] 8. PCI received within 120 minutes of hospital arrival [a,e,j,k] 9. Inpatient mortality rate [a,c,f,l]
Coronary Artery Bypass Graft (CABG)	10. Aspirin prescribed at discharge [e,k] 11. CABG using internal mammary artery [a,e,k] 12. Prophylactic antibiotic received within one hour prior to surgical incision [a,b,j,k] 13. Prophylactic antibiotic selection for surgical patients [a,b,j,k] 14. Prophylactic antibiotics discontinued within 24 hours after surgery end time [a,b,j,k] 15. Inpatient mortality rate [g,l] 16. Post operative hemorrhage or hematoma [h,l] 17. Post operative physiologic and metabolic derangement [h,l]
Heart Failure (HF)	18. Left ventricular function (LVF) assessment [a,b,c,d,k] 19. Detailed discharge instructions [a,b,c,k] 20. ACEI for LVSD [a,b,c,d,k] 21. Smoking cessation advice/counseling [a,b,c,k]
Community Acquired Pneumonia (CAP)	22. Percentage of patients who received an oxygenation assessment within 24 hours prior to or after hospital arrival [a,b,c,d,k] 23. Initial antibiotic consistent with current recommendations [a,b,j,k] 24. Blood culture collected priot to first antiobiotic administration [a,b,c,k] 25. Influenza screening/vaccination [a,b,j,k] 26. Pneumococcal screening/vaccination [a,b,c,d,k] 27. Antibiotic timing, percentage of pneumonia patients who received first dose of antibiotics within four hours after hospital arrival. [a,b,d,j,k] 28. Smoking cessation advice/counseling [a,b,c,d,k]
Hip and Knee Replacement[9]	29. Prophylactic antibiotic received within one hour prior to surgical incision [a,b,i,j,k] 30. Prophylactic antibiotic selection for surgical patients [a,b,i,j,k] 31. Prophylatic antibiotics discontinued within 24 hours after surgery end time [a,b,i,j,k] 32. Post operative hemorrhage or hematoma [h,i,l] 33. Post operative physiologic and metabolic derangement [h,i,l] 34. Readmissions 30 days post discharge [i,l]

a. National Quality Forum measure
b. CMS 7th Scope of Work measure
c. JCAHO Core Measure
d. The National Voluntary Hospital Reporting Initiative (AHA Initiative)
e. The Leapfrog Group proposed measure
f. Risk adjusted using JCAHO methodology
g. Risk adjusted using 3M All Patient Refined DRG methodology
h. AHRQ Patient Safety Indicator and risk adjusted using AHRQ methodology
i. Medicare beneficiaries only
j. CMS and/or JCAHO to align with this measure in 2004
k. Process measure
l. Outcomes measure.

As with the data elements which measure clinical processes in hospitals care, CAHPS is designed to provide a common data set which will allow for valid, widespread comparisons between hospitals. Currently, hospitals measure patient satisfaction using a variety of tools so direct comparisons between institutions is difficult, and from CMS's perspective this is a shortcoming that CAHPS will address. Further information is available from the CAHPS Web pages at http://www.cahps-sun.org/Products/Hospital/HCAHPSIntro.asp#fmi. For some of the information on these pages, one must register; however registration is free to providers and one can subscribe to the CAHPS automated e-mail update service.

DISCUSSION

The HQI initiative is indirectly encouraging a variety of trends. As a hospital's income is enhanced by reporting these measures, more emphasis is being placed on physician compliance with these benchmarks, and they are starting to be considered at the time of credentialing. This is a positive trend as it looks more at the physician's overall practice patterns in treating patients as opposed to evaluating clinical outcomes based on the very few cases that do not have optimal results. Standardized order sets and the requirement or strong encouragement that they be used is becoming more common. These pre-printed or computerized order sets decrease variation and increase the probability that the measure will be met. If a core measure is an order for something and it is not done – for instance, if ASA is not prescribed at the time of admission for a MI patient – the order will often have a prompt asking the physician to document why it was not prescribed.

The HQI enhances the value of the computerized patient record (CPR) to the hospital as the collection of data becomes less labor intensive. For example, determining the door to antibiotic administration time for pneumonia patients is no longer time consuming. By using the computer time stamps, asking the software to calculate the interval between when the patient presented for treatment and when the nurse barcoded the antibiotic prior to administrating it, it then automatically computes the percentage of patients that met the standard. A CPR can have automated prompts reminding a physician when a data element is not met. Access to knowledge based resources about the clinical usefulness of a measure can be built into the CPR should a prescriber wish to access this information while caring for a patient or writing orders.

As the core measures represent valid clinical parameters, compliance should improve patient care unless there is a specific contraindication. The implementation of the core measures will decrease variability in patient care, and decreasing the degree of variation in a complex process is a generic indicator of better quality. Physician reluctance to use the core measures often revolves around the issues that the core measures are simply "cookbook medicine" and a physician may not be able to do what he/she deems best for a specific patient. Clinical knowledge changes and a core measure may become inappropriate. These concerns are not valid. With respect to the cookbook issue, compare medicine to another complex system such as flying. There are varieties of cookbooks from checklists to federal aviation regulations that must be scrupulously followed. In the final analysis, most of us who fly would not want it any other way. Nevertheless, this does not make all fights the same nor disallow variation. Weather conditions dictate changes, and flight profiles legitimately vary based on a variety of factors. However, successful flights have a greater probability of being safe if they are conducted in a framework of safety and performance standards.

In medicine, we have our "cookbooks." However, often we do not think of them as such. Guidelines from training and specialty best practice recommendations come to mind. If you have an excellent cookbook, using it makes sense. This will still permit you to tailor care for a specific patient when indicated. Good cookbooks also change in light of new research and knowledge. The most recent change in the core measures was accepting ACE receptor blockers as an alternative to ACE Inhibitors for CHF patients. This change became effective January 1, 2005, and the details are in a report of the CMS/JCAHO Technical Measures Workgroup.

A summary is available at http://www.cms.hhs.gov/quality/hospital/SummaryOfMeeting1.pdf.

All measurement tools have to strike a balance regarding what will be measured, how it will be done, how one validates and reports the findings, and how the findings are used to affect improvement and costs. There can be weaknesses in measuring quality issues using HQI methodology. The focus of most of the HQI indicators are on the process and not the outcome, yet in the final analysis the outcome is what counts. With HQI, the question is not, "Did your joint replacement patient get an osteomyelitis?" but rather, "How did you utilize preoperative antibiotics?" If HQI process indicators are important in ensuring good outcomes, then emphasizing them is not a concern. A fundamental goal of HQI is providing valid comparisons between hospitals, so coding consistency is essential. A patient comes into the emergency department with CHF, COPD, and pneumonia. Assume it takes five hours to evaluate the patient, and antibiotics are not administered in a timely fashion. If one hospital codes the patient as pneumonia and another codes the patient as CHF, how valid is the compliance comparison between the two hospitals with respect to the antibiotic – pneumonia data element? At some of the hospitals I have surveyed, standard compliance was present, but it was not documented. Smoking cessation documentation or spelling out why a specific drug was not given despite it being called for in the measure are examples where some of the improvements noted in data set compliance represent improvements in documentation and not actual patient care. When calculations are made with respect to determining how valuable HQI is in improving patient care, this is important to consider. Documentation and coding issues can be a problem with other methods of patient care review; however with HQI these issues are critical to the hospital as the information is being made public and reimbursement may be tied to performance.

A hospital may believe it is important to look at issues not in the HQI dataset, and conversely some HQI indicators may not be useful considering the institution's patient mix or numbers. Because of reimbursement issues, the institution most likely will believe it must use the HQI indicators. Will the institution have the resources to do both HQI and what they believe to be more important? With the focus on HQI, will the institution also analyze certain cases that did not do as well as expected? One can learn valuable lessons from problematic cases, and this information may not be obtainable by looking at process indicators. Some HQI indicators are incomplete and just meeting the standard will not give optimal care. With respect to preoperative antibiotics, the indicator states that patients will have received a prophylactic antibiotic within one hour prior to surgical incision. This only tells part of the story, as prior to starting surgery it is important to have a tissue level of the antibiotic, and depending on how the drug is given, this may take 10 or even 15 minutes. If a tourniquet is used, the antibiotic needs to be given prior to it being applied. The HQI emphasizes the examination of process indicators. Most of the process indicators are based on fundamental, sound medical principles and should not change. If new information comes to the forefront, though, will the indicators be promptly modified?

By using the CAHPS tool, HQI will compare patients' perceptions of care. It is important to realize patients tend to judge care based upon the hotel functions of the hospital and the communication abilities of the providers. Was the admitting clerk friendly, was the place clean, was the food that was supposed to be hot arrive hot, did the nurses seem knowledgeable, did the physician communicate well, etc. This emphasis on hotel functions and the art of communication is understandable as it is difficult for a patient to judge the technical aspects of care. A surgeon may be superb in the operating room and have excellent clinical outcomes but be a poor communicator. Patients' perceptions are vitally important to a health care provider, but they may not be valid markers for technical expertise. When this data is made public, it is important to emphasize that it measures the patients' perception of their care and not the technical aspects of their treatment.

Measuring quality using HQI methodology has specific strengths. The 22 HQI measures look at important clinical processes as opposed

to outcomes, and when one considers how difficult valid risk adjustment is, less emphasis on outcomes is welcome. Some of the measures will help patients beyond the ones with the disease in question. The process for promptly obtaining cultures and starting antibiotics for pneumonia patients is applicable to other patients presenting with serious infections. When one judges care by measuring processes as opposed to outcomes, there is less probability of penalizing health care providers who treat patients with a guarded prognosis. The indicators are widely accepted by both the hospital and physician community as being pertinent and valid proxies of quality health care. The measures change when dictated by new clinical information as illustrated by the previous example with respect to ACE blockers. Knowing patient satisfaction is important, as a satisfied patient is more likely to return. A patient who believes that his or her care was good is far more willing to accept an outcome that is less than optimal than is a disgruntled individual. A physician who is a poor communicator in the eyes of patient should be made aware of this issue and learn new skills.

CONCLUSION

The first goal of the HQI measurement system is to improve clinical outcomes by focusing on processes so that all patients consistently receive the best possible care. For HQI to be successful, practicing physician participation is crucial with respect to successfully implementing these benchmarks and evaluating results. Based on findings, changes may have to be implemented and then a reevaluation done to see if patient care is improved. This evaluation process, implementation of changes, and reevaluation of changes are difficult for a hospital to accomplish if clinicians are not participating. When this cycle of improvement is successful, a fundamental goal of all physicians is met: enhancing patient care. With P4P these good results will improve payments, and this is welcome. In the rare instance where a patient does not do well, if the benchmarks were met, the physician will demonstrate that pertinent standards of care were satisfied. It makes good sense for physicians to participate from a patient care perspective, financial vantage point, and for medical-legal reasons.

The second goal of HQI is public disclosure. This should not be problematic, as it will demonstrate to all the excellence level of patient care provided in Delaware.

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