NEW TRENDS


Izakovic M

Mercy Hospital, Iowa City, Iowa, USA. martin.izakovic@mercyic.org

Abstract

Objectives: To summarize and analyze the Premier/CMS Hospital Quality Incentive Demonstration (HQID) Project that is being conducted in the U.S. and to propose acceptance and implementation of similar initiatives in Slovak health care.

Background: New trends in the management of hospitalized patients in the United States include standardization of medical care, application of evidence-based medicine in everyday medical practice, introduction and usage of computerized medical documentation (including computerized physician order entry), efficient use of financial resources, detailed measurements of outcomes, and availability of the data to the public. Centers for Medicaid and Medicare Services (CMS), largest third party payer in the U.S., has introduced the pay-for-performance (P4P) initiative, a new pilot program designed to promote high quality medical care based on evidence-based medicine by reimbursing top performing hospitals at a higher level than poor performing hospitals. The primary objectives of this program include increasing clinical quality and saving lives. A secondary objective is to improve the cost-effectiveness of health care delivery.

Results: Data from the first year of the CMS/Premier Hospital Quality Incentive Demonstration Project reflect a significant improvement in the quality of care across five clinical focus areas as measured by 33 nationally standardized and widely accepted quality indicators. The average improvement across the clinical areas was 6.6%. These performance gains have outpaced those of hospitals involved in other national performance initiatives. An evidence-based analysis suggests that the lives of approximately 235 acute myocardial infarction patients were saved as a result of quality improvements in that related focus area alone.

Conclusion: The author believes that similar programs can have a beneficial impact on the Slovak health care system and can promote and encourage the broader introduction of evidence-based medicine in hospitals in Slovakia (Tab. 2, Fig. 2, Ref. 7). Full Text (Free, PDF) www.bmj.sk.

Key words: quality improvement, patient safety, hospitalist, pay for performance.

Centers for Medicare and Medicaid Services (CMS) / Premier Hospital Quality

Incentive Demonstration (HQID) Project was started in October 2003. This program was designed to provide financial incentives and public recognition to hospitals that demonstrate high quality performance in a number of acute care areas. CMS is a U.S. federal agency providing health care coverage to approximately 40 million Americans; Premier, Inc. is a nationwide organization of not-for-profit hospitals. The purpose of the demonstration was to improve the quality and efficiency of patient care by providing economic incentives to the best performing hospitals. The three-year demonstration used a nationally standardized set of quality measures to evaluate individual hospital performance. Results from the first year showed significant improvement in the quality of care in all measured clinical areas and provide support for the positive influence of financial incentives on facilitating health care quality improvement.

Mercy Hospital, Iowa City, Iowa, University of Iowa, Iowa City, Iowa, and Des Moines University, Des Moines, Iowa

Address for correspondence: M. Izakovic, MD, FACP, Mercy Hospital, 500 East Market Street, Iowa City, Iowa 52245, USA.
Phone: +1.319.688.7349, Fax: +1.319.688.7350
<table>
<thead>
<tr>
<th>Clinical Conditions</th>
<th>Quality Measures</th>
</tr>
</thead>
</table>
| Acute Myocardial Infarction (AMI)   | 1. Aspirin at arrival (1,2,3,4,P)  
2. Aspirin prescribed at discharge (1,2,3,4,P)  
3. Angiotensin converting enzyme inhibitor (ACEI) for left ventricular systolic dysfunction (LVSD) (1,2,3,4,P)  
4. Adult smoking cessation advice/counseling (1,2,3,P)  
5. Beta blocker prescribed at discharge (1,2,3,4,P)  
6. Beta blocker at arrival (1,2,3,4,P)  
7. Thrombolytic agent received within 30 minutes of hospital arrival (1,2,10,P)  
8. Percutaneous coronary intervention (PCI) received within 120 minutes of hospital arrival (1,5,10,P)  
9. Inpatient mortality rate (1,3,6,O) |
| Isolated Coronary Artery Bypass Graft (CABG) | 10. Aspirin prescribed at discharge (5,P)  
11. CABG using internal mammary artery (IMA) (1,5,P)  
12. Prophylactic antibiotic received within one hour prior to surgical incision (1,2,10,11,P)  
13. Prophylactic antibiotic selection for surgical patients (1,2,10,11,P)  
14. Prophylactic antibiotics discontinued within 24 hours after surgery end time (1,2,10,11,P)  
15. Inpatient mortality rate (7,0)  
16. Post operative hemorrhage or hematoma (8,0)  
17. Post operative physiologic and metabolic derangement (8,0)  
18. Left ventricular function (LVF) assessment (1,2,3,4,P)  
19. Discharge instructions (1,2,3,P)  
20. Angiotensin converting enzyme inhibitor (ACEI) for left ventricular systolic dysfunction (LVSD) (1,2,3,4,P)  
21. Adult smoking cessation advice/counseling (1,2,3,P) |
| Heart Failure (HF)                  | 22. Percentage of patients who received an oxygenation assessment within 24 hours prior to or after hospital arrival (1,2,3,4,P)  
23. a) Initial antibiotic selection for CAP in immunocompetent patients – ICU patients (1,2,10,P)  
b) Initial antibiotic selection for CAP in immunocompetent patients – non-ICU patients (1,2,3,P)  
24. Blood culture collected prior to first antibiotic administration (1,2,3,P)  
25. Influenza screening/vaccination (1,2,10,P)  
26. Pneumococcal screening/vaccination (1,2,3,4,P)  
27. Antibiotic timing, percentage of CAP patients who received first dose of antibiotics within four hours after hospital arrival (1,2,4,10,P)  
28. Adult smoking cessation advice/counseling (1,2,3,P)  
29. Prophylactic antibiotic received within one hour prior to surgical incision (1,2,9,10,11,P)  
30. Prophylactic antibiotic selection for surgical patients (1,2,9,10,11,P)  
31. Prophylactic antibiotics discontinued within 24 hours after surgery end time (1,2,9,10,11,P)  
32. Postoperative hemorrhage or hematoma (8,9,O)  
33. Postoperative physiologic and metabolic derangement (8,9,O)  
34. Readmissions 30days post discharge (9,O) |
| Community Acquired Pneumonia (CAP) | 35. Adult pneumonia mortality rate (1,3,6,O)  
36. Inpatient mortality rate (1,3,6,O)  
37. Inpatient pneumonia severity index (1,3,6,O)  
38. Hospital acquired pneumonia (1,3,6,O)  
39. Prophylactic antibiotic received within one hour prior to surgical incision (1,2,9,10,11,P)  
40. Prophylactic antibiotic selection for surgical patients (1,2,9,10,11,P)  
41. Prophylactic antibiotics discontinued within 24 hours after surgery end time (1,2,9,10,11,P)  
42. Postoperative hemorrhage or hematoma (8,9,O)  
43. Postoperative physiologic and metabolic derangement (8,9,O)  
44. Readmissions 30days post discharge (9,O) |
| Hip and Knee Replacement Surgery    | 45. Prophylactic antibiotic received within one hour prior to surgical incision (1,2,9,10,11,P)  
46. Prophylactic antibiotic selection for surgical patients (1,2,9,10,11,P)  
47. Prophylactic antibiotics discontinued within 24 hours after surgery end time (1,2,9,10,11,P)  
48. Postoperative hemorrhage or hematoma (8,9,O)  
49. Postoperative physiologic and metabolic derangement (8,9,O)  
50. Readmissions 30days post discharge (9,O) |

Key:  
1 National Quality Forum measure  
2 CMS 7th Scope of Work measure  
3 JCAHO Core Measure  
4 Hospital Quality Alliance; Improving Care Through Information (HQA)  
5 The Leapfrog Group proposed measure  
6 Risk adjusted using JCAHO methodology  
7 Risk adjusted using 3MTM All Patient Refined DRG (APR-DRG) methodology  
8 AHRQ Patient Safety Indicators; risk adjusted using AHRQ methodology  
9 Medicare beneficiaries only  
10 CMS and/or JCAHO to align with this measure in 2004  
11 Surgical Infection Prevention (SIP) measure  
P Process measure  
O Outcomes measure

**Methods**

Recruitment of participating hospitals was completed by March 31, 2003, and 276 hospitals were enrolled. Data collection was initiated on October 1, 2003. Participation was on a voluntary basis and required hospitals to allow Premier to submit to CMS patient-level data and hospital-level quality data for all discharges from five high-volume clinical conditions for which national measures of quality exist:

- Acute myocardial infarction (AMI)
- Isolated coronary artery bypass graft (CABG)
- Heart failure (HF)
Tab. 2. Number of Hospitals and Case Volume by Clinical Area. Adapted from article: Centers for Medicare and Medicaid Services (CMS)/Premier Hospital Quality Incentive Demonstration Project - Project Overview and Findings from Year One.

<table>
<thead>
<tr>
<th>Clinical Area</th>
<th>Number of Hospitals</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI</td>
<td>243</td>
<td>82 853</td>
</tr>
<tr>
<td>CABG</td>
<td>134</td>
<td>38 327</td>
</tr>
<tr>
<td>CAP</td>
<td>261</td>
<td>134 828</td>
</tr>
<tr>
<td>HF</td>
<td>259</td>
<td>118 914</td>
</tr>
<tr>
<td>Hip/Knee</td>
<td>214</td>
<td>41 453</td>
</tr>
<tr>
<td><strong>Total Participating Hospitals</strong></td>
<td><strong>262</strong></td>
<td><strong>416 375</strong></td>
</tr>
</tbody>
</table>

- Community acquired pneumonia (CAP)
- Hip and knee replacement surgery (Hip/Knee)

Hospitals had to participate in each of the five clinical areas. If, at the end of each year, there was a clinical area in which the hospital cared for fewer than 30 patients, the hospital was considered ineligible in that area. At the beginning of the project, 34 quality measures were identified for implementation; they included measures representing process of care (e.g., administration of aspirin for a patient experiencing a heart attack) and patient outcomes (e.g., mortality). To be considered for HQID, measures had to have gone through extensive testing for validity and reliability by national organizations including CMS and its Quality Improvement Organizations (QIOs), the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and the Agency for Healthcare Research and Quality (AHRQ). Highest priority was given to measures which had already been evaluated and endorsed by the National Quality Forum (NQF) (1) (Tab. 1).

Results

The pay-for-performance initiative started as a pilot program in 262 selected hospitals in the first year and involved a total of 416,375 patients. This program is so far voluntary but it is more than likely that it will soon be obligatory. Recommendations included in the guidelines are based on evidence-based medicine and broadly accepted recommendations. Target areas included acute myocardial infarction, isolated coronary artery bypass graft surgery, congestive heart failure, community acquired pneumonia, and hip and knee replacement surgery (Tab. 2).

Average improvement in the composite score was 6.6% in the first year of the project (Fig. 1). Evidence-based analysis suggested that the lives of 235 patients with AMI alone were saved as a result of quality improvement in this area. The most important observation was that the range of variance between the best and the worst hospitals was observed to be closing during the duration of the project, which means that overall quality was constantly improving. Financial incentives totaled $8.8 million in the first year and so far there have been no penalties. Penalization began in October 2006 as follows: 1st decile will receive an additional 2% bonus in reimbursement 2nd decile will receive an additional 1% bonus, 9th decile will receive 1% less payment, and 10th decile will receive 2% less payment. Payment to intermediate deciles will not change. There will be public acknowledgement of performers in the top 50% as another incentive.

HQID: Quality Improvement During Year 1

![Graph showing trend of Average (Mean) CQS Rates by Quarter](image)

Fig. 1. Trend of Average (Mean) CQS Rates by Quarter. Adapted from article: Centers for Medicare and Medicaid Services (CMS)/Premier Hospital Quality Incentive Demonstration Project - Project Overview and Findings from Year One.
Discussion

The above-described project is resulting in several changes in the U.S. health care system. Practicing evidence-based medicine is being encouraged not only by literature and hospital-based protocols, but also through financial incentives. Hospitals that entered the project with less optimal quality indicators were shown to be improving faster than the better hospitals and getting closer to the measures of hospitals that started with better indicators. This, in this author’s opinion, is a very important observation and indicates that projects such as this can create a positive and motivating environment for the improvement of weaker performing hospitals and thus improvement of the overall quality of the U.S. health care system.

Current trends leading to very detailed measurement of outcomes in inpatient medicine create more pressure on providers practicing inpatient medicine. Ambulatory and hospital care in the U.S. is becoming more separated and specialized and hospital medicine is further evolving as a subspecialty. Hospital medicine is the fastest growing specialty in the U.S., and the growth of the hospitalist movement is a logical sequel of this process. (2). Hospitalists are physicians whose primary professional focus is the general medical care of hospitalized patients. Their activities include patient care, teaching, research, and leadership in hospital care. Hospitalists also consult on and treat patients referred by medical subspecialists during their hospitalization (3). Patients cared for by hospitalist have a decreased chance of dying during hospitalization after age, severity of illness, and other variables that might influence statistical significance are adjusted. Patients cared for by hospitalists typically have shorter hospital stays than patients cared for by traditional internists, resulting in lower costs. (4, 5). Hospitalists use fewer resources and at the same time improve the quality of care (6). Hospitalists are poised to pioneer initiatives that improve the outcomes of hospitalized patients, and their participation and contribution to projects like CMS/HQID is substantial. Their expertise involves quality measurement and improvement, patient safety, systems solutions, efficient use of resources, and reducing clinical variation (7).

Mercy Medical Center-North Iowa (MMC-NI) has been named one of the nation’s 100 Top Hospitals by Solucient, a leading source of health care intelligence, for the last five consecutive years. This award recognizes hospitals that achieve excellence in quality of care, operational efficiency, financial performance, and adaptation to the environment. The hospitalist program at MMC-NI was started in 1999 and now plays an inte-

![CMS PAY FOR PERFORMANCE PROJECT](image)

**Fig. 2. CMS Pay For Performance Project – MMC-NI.** Published with permission from Mercy Medical Center – North Iowa, Mason City, Iowa, USA.
eral part in the quality improvement process across the hospital (2). One of the initiatives in which hospitalists took a leadership role was community acquired pneumonia, a task in the pay-for-performance project in which MMC-NI participates. The most significant improvement in this project was noted in the pneumonia project, underlining the essential role of hospitalists in progressive medical care and quality improvement projects (Fig. 2).

We think that health care in Slovakia can benefit from experiences like this. Making several crucial refinements can, in our opinion, facilitate speedy reform in Slovak health care. These suggestions are:

1) Define the rules and governmental regulations more clearly and make the flow of finances in health care more transparent.

2) Separate providers from payers and minimize the ability to alter the rules for financing health care providers during the process.

3) Reform the overall system of health care delivery by introducing and encouraging standardization of care in all hospitals and promoting and supporting computerized medical records in health care facilities.

4) Measure quality of care by utilizing evidence-based medicine criteria in everyday practice (according to a recent news release there is a pilot program starting in fall 2006 announced by Vseobecná Zdravotná Poistovňa, the largest third-party payer in Slovakia, which is promising but so far has very unclear criteria).

5) Redistribute financial resources by financially rewarding cost effectiveness. Introduce pay-for-performance-like projects and financially reward institutions practicing evidence-based medicine and delivering high quality of care.

6) Measure and emphasize patient satisfaction by expanding patient education and putting value on patient satisfaction.

7) Increase provider satisfaction by differentiating reimbursement based on the above-mentioned criteria.

Medicine is part science, part art, and, whether we want to admit it or not, part business. We think that accepting this complexity and focusing on all three aspects with equal attention will lead to lasting progress and better patient care. In our opinion utilizing methods and results from the above-discussed project being conducted in the U.S. and from similar programs in other progressive health care systems will help with the reform of health care in Slovakia, which is so much needed.

References

1. Centers for Medicare and Medicaid Services (CMS)/Premier Hospital Quality Incentive Demonstration Project - Project Overview and Findings from Year One.


Received November 30, 2006.
Accepted Januar 26, 2007.