



## Prescriptions for Excellence in Health Care Newsletter Supplement

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# Prescriptions for Excellence in HEALTH CARE

A COLLABORATION BETWEEN JEFFERSON MEDICAL COLLEGE AND ELI LILLY AND CO.

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## Editorial

### Quality Improvement Strategies: Frontline Experience

By David B. Nash, MD, MBA  
Editor-in-Chief

The first 2 issues of *Prescriptions for Excellence in Health Care* addressed quality improvement in general terms (“Doing Things Right *and* Doing the Right Things – Quality and Safety in Health Care,” Fall 2007) and from the hospital’s perspective (“Hospitals Take Ownership for Quality Improvement and Patient Safety,” Winter 2007). In this issue, we feature innovative strategies for improving quality of care in 4 different clinical settings.

Pay for performance (P4P) continues to have both advocates and detractors. Although the Centers for Medicare and Medicaid Services (CMS) and other organizations have promoted P4P as a tool for improving the quality of patient care, there remains little evidence to support its effectiveness at this juncture. The first article, “Effectiveness of Pay for Performance as a Quality Improvement Strategy,” chronicles a study comparing and contrasting the impact of P4P vs. public reporting vs. governance and oversight on specific measures of clinical quality in a large health care system – with surprising results.

The second article, “Heart Failure Advocates Reduce Hospitalizations and

Readmissions for Heart Failure,” describes an innovative strategy whereby non-advanced practice nurses were trained and deployed at 6 different hospitals to promote guideline-based care. The success of this program spurred the development of a National Heart Failure Training Program for heart failure advocates.

An electronic health record was put to the test as a positive change agent in a study intervention targeting lipid management. “Lipid Management Study Shows Value of Electronic Health Records in Improving Quality of Care,” the third article, describes this randomized controlled study and discusses the outcomes.

“Ambulatory Quality Measurement: The Jefferson University Physicians Experience,” the fourth article, details the development and implementation of a faculty-practice-wide ambulatory quality measurement initiative at our own institution. After 2 years of activity, 14 of the 16 Jefferson University Physicians (JUP) clinical departments had at least 1 performance measurement initiative under way. In addition, JUP became one of the first academic group practices to deploy an ambulatory patient safety assessment tool.

*Prescriptions for Excellence in Health Care* is brought to *Health Policy Newsletter* readers by the Department of Health Policy in partnership with Eli Lilly and Company to provide essential information from the quality improvement and patient safety arenas.

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## The Importance of HIT

By Alex Azar

Health information technology (HIT) is generating a great deal of interest in the health care industry. Theoretically, it gives us the ability to coordinate all existing medical knowledge about a patient and to incorporate new information on a real-time basis. By amassing relevant data electronically from many different sources (eg, drug companies' clinical trials, health insurers' claims data, and physicians' documentation of patients' medical histories), HIT could allow us to know more about patients more quickly and in greater detail than ever before.

As is often the case, theory is not easily translated into practice. Individual providers have been slow to adopt new technology, and we have yet to develop the level of systems integration necessary for high-level information exchange. In the next issue of *Prescriptions for Excellence*, this column and the feature articles will highlight HIT applications with a focus on positive solutions to benefit patients, physicians, and the industry as a whole.

*Alex Azar is Senior Vice President for Corporate Affairs and Communications at Eli Lilly and Company*

(continued from page 1)

The final issue in this series of *Prescriptions for Excellence in Health Care* will be devoted to the role of health information technology and public reporting in improving quality and safety. Finally, I am pleased to report that the response to this series has been very positive and that Lilly has agreed to partner with us

on a second series of newsletters.

As always, I am interested in your feedback and you can reach me by email at david.nash@jefferson.edu.

*David B. Nash, MD, MBA is the Dr. Raymond C. and Doris N. Grandon Professor of Health Policy and Chairman of the Department of Health Policy at Jefferson Medical College.*

## Effectiveness of Pay for Performance as a Quality Improvement Strategy

By Stephen R. Grossbart, PhD

### Background

Catholic Healthcare Partners (CHP) is the largest health care provider in Ohio, with other hospitals located in Kentucky, Pennsylvania, and Tennessee. It is organized into 9 regional service areas in 5 states and includes 29 hospitals. When, in July 2003, Health and Human Services (HHS) Secretary Tommy G. Thompson announced a hospital-based pay-for-performance (P4P) demonstration project involving Premier, Inc., hospitals in CHP's network had to decide whether or not to participate. Because Premier, Inc. required that hospitals renew a subscription to a relatively expensive database tool as a condition for participation, cost was a limiting factor.

Even if small-volume hospitals attained the highest performance ratings, they would not earn sufficient bonuses to offset the cost of the Premier database and the additional staff required to support data abstraction. Ultimately, each of 4 regional health systems within the CHP network volunteered to have its largest volume facility join the project. These systems believed that P4P was inevitable and saw

the project as an opportunity to be better prepared for payment reform.

CHP recognized the opportunity to study the impact of public reporting, P4P, and governance oversight on quality improvement in a multihospital system by comparing the P4P participants with a set of similar CHP hospitals that did not join the demonstration project. The study tested the question: Did hospitals participating in the Center for Medicare and Medicaid Services' (CMS) "Premier Hospital Quality Incentive Demonstration Project" have significantly different rates of improvement in the quality of care delivered compared to similar hospitals within the same system that did not participate in the voluntary demonstration project over the course of the 3-year project?

### Study design

The study compared the impact of 1) the Premier Demonstration, 2) public reporting through the Hospital Quality Alliance (HQA), and 3) the evolving role of governance oversight, with particular attention to assessing the long-term impact of the Premier Demonstration project relative to internal and other external drivers of quality improvement.

Within a single health care system, a test group of 4 acute care hospitals that participated in the demonstration project in federal fiscal years (FFY) 2004-2006 was compared to a control group of 5 hospitals that did not participate in the project. The study limited analysis to 3 clinical areas that are included in the Premier Demonstration: 1) acute myocardial infarction (AMI), 2) heart failure (HF), and 3) pneumonia (PN). Performance was compared to a baseline year (2003) for both participating and nonparticipating hospitals to determine if the rate of improvement differed between the 2 cohorts of hospitals over the following 3 years based on a composite opportunity quality score.

### Study results

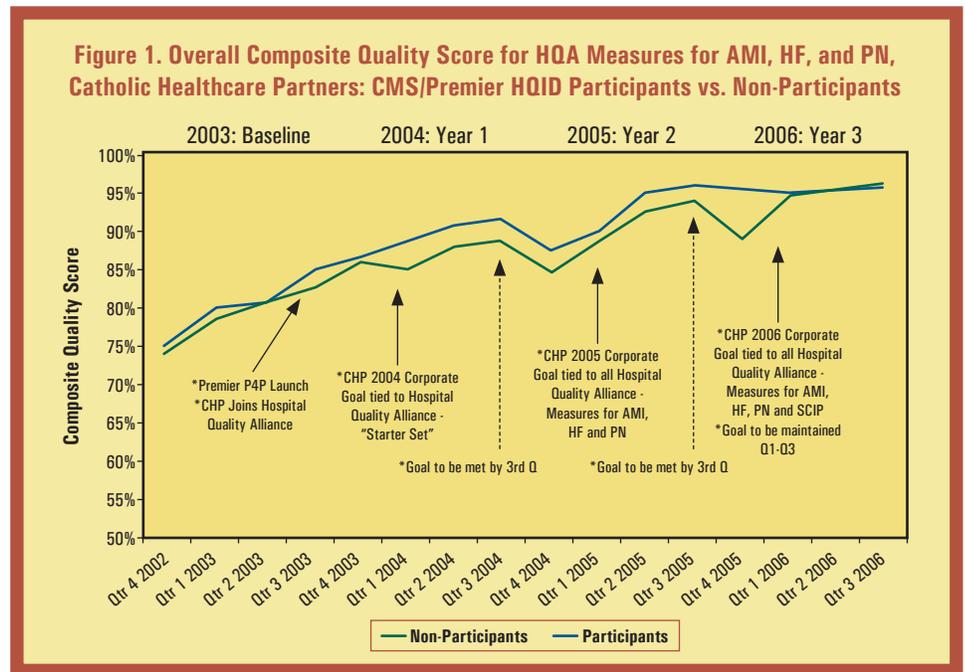
The 4 hospitals participating in the P4P demonstration project had significantly higher composite quality scores in each of the 3 clinical areas studied in Year 1 of the demonstration; however, by Year 3, the added pressure for public reporting of performance coupled with corporate goals requiring all hospitals in the system to be accountable at leadership and governance levels, eliminated the significant differences that once separated the 2 cohorts (Figure 1).

#### Baseline

In the baseline year (2003), the 2 cohorts had similar rates of overall performance, with participating hospitals starting at 80% and nonparticipating hospitals at 79%.

#### Year 1

In 2004, participant hospitals improved their performance in HF and increased their overall composite quality scores to 90% (vs. 86% for nonparticipants). The Year 1 rate of increase for participants (9.8%) was significantly better than the nonparticipant rate (6.7%) ( $p < .001$ ). This difference was attributed primarily to HF care, where improvement from baseline to Year 1 for participating



HQA, Hospital Quality Alliance; AMI, Acute Myocardial Infarction; HF, Heart Failure; PN, Pneumonia HQID, Hospital Quality Improvement Demonstration; SCIP, Surgical Care Improvement Project

hospitals was 19% vs. 11% for nonparticipating hospitals ( $p < .001$ ).

#### Year 2

In 2005, CHP expanded its internal accountability for quality performance at all hospitals in the system by including all measures in the Premier demonstration for AMI, HF, and PN with the goal of achieving a top quartile ranking in the 3rd quarter. Composite scores achieved by the 4 participating hospitals and the nonparticipating hospital group were 92% and 90% respectively. The demonstration project hospitals had only a 2.6% increase in performance, significantly lower than the nonparticipant group, which improved by 4.4% ( $p < .001$ ).

#### Year 3

By year 3, the difference in performance between the 2 cohorts had narrowed and the pace of improvement was virtually identical. This was fueled in part by the increased internal accountability (ie, expansion of CHP performance measurements) and higher levels of expected performance.

Participants in the project achieved an overall composite quality score of 95% (2.7% improvement over Year 2) and nonparticipants improved their composite score by 3.5% to 94% ( $p = .015$ ).

Over the course of 3 years, performance of the 2 groups of hospitals converged. Participants in the demonstration project improved their overall composite quality score by 15.1% compared to 14.6% for nonparticipants ( $p = .543$ ) over the 3-year period (Figure 2).

#### Conclusion

Although the P4P demonstration clearly accelerated performance by participant hospitals in the first year of the project, performance by nonparticipants exceeded the performance of participants in years 2 and 3. Both cohorts of hospitals performed at identical levels by 2006. While nonparticipants had greater opportunity for improvement, the significant drivers of public reporting and internal focus on quality improvement

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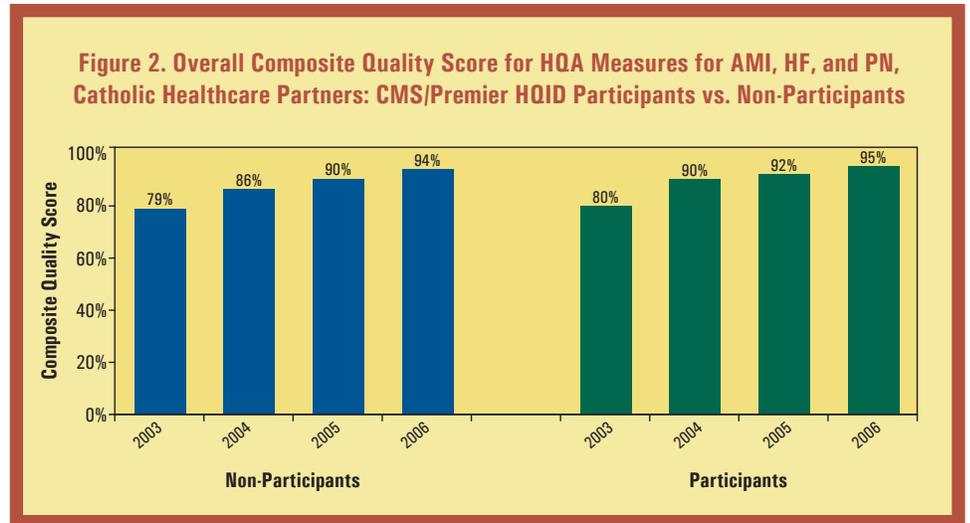
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(ie, tying senior executive accountability to performance on quality indicators and board oversight of corporate quality objectives and goals) created a strong environment for improvement.

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#### Additional Reading:

1. Grossbart SR. What's the return? Assessing the effect of "pay for performance" initiatives on the quality of care delivery. *Medical Care Research and Review*. 2006; 63(1 suppl):29S-48S.



HQA, Hospital Quality Alliance; AMI, acute myocardial infarction; HF, heart failure; PN, pneumonia; HQID, Hospital Quality Incentive Demonstration

## Heart Failure Advocates Reduce Hospitalizations and Readmissions for Heart Failure

By Donald E. Casey, Jr, MD, MPH, MBA, FACP

Randomized clinical trials and observational studies have demonstrated the positive effects of multidisciplinary teams on heart failure (HF) readmissions. Many believe that such teams require the presence of an advanced practice nurse specializing in HF. Catholic Healthcare Partners (CHP) demonstrated that the deployment of Heart Failure Advocates (HFA), non-advanced practice nurses specially trained to promote guideline-based care, can result in significant reductions in both HF hospitalizations and associated costs.

#### HFA Initiative

In 2004, an initial cohort of 6 HFAs were recruited, trained, and deployed in 6 different CHP hospitals in different geographic locations. The training was based extensively upon current clinical practice guidelines for HF published by the American Heart Association (AHA) and the Heart Failure Society of America.

Elements of the HFA training included:

1. Evidence-based approaches to medication adherence and management, especially for angiotensin-converting enzyme (ACE) inhibitors /angiotensin receptor blockers (ARB) and beta-blockers
2. Development of new and extensive patient-centered care coordination skills not currently part of traditional hospital case management, with special emphasis on post-discharge telephonic follow-up, communication with physicians responsible for subsequent outpatient care post hospitalization, and doing "whatever it takes" to improve patients' quality of life through self-management
3. Special organizational skills, such as leadership, influence, clinical and administrative credibility (especially with physicians and hospital CEOs), creative problem solving, and conflict resolution.

#### Results and discussion

Initial analysis showed that the "sickest" patients admitted with DRG (diagnosis-related group) 127 and enrolled under the care of the HFAs experienced fewer readmissions and longer intervals between admissions than HF patients who received the usual care.

Further analysis revealed that patients under the care of HFAs experienced a 66% reduction in hospitalizations with a 41% reduction in all-cause 30-day readmissions when compared with other HF patients who were not cared for by HFAs. On a quarterly basis, the 30-day all-cause readmission rate for HF patients cared for by HFAs consistently ranged between 1% and 10%, compared to national readmission rates of 20%.

Enrollment of HF patients in the HFA program had a strong effect on readmissions. Days elapsed without readmissions doubled in the post-enrollment period (469 days) compared with the pre-enrollment period (211

days). The HFA patients experienced fewer admissions and longer periods of time without readmissions. This translates into improved health status and lower costs. See Table 1 and Figure 1 for more analysis of results.

Because of the remarkable success of this intervention, CHP partnered with the National Heart Failure Training (NHeFT) Program to develop a nationally available program for training nurses to become HFAs. Specially trained nurses without advanced practice degrees can have a significant impact on avoiding hospitalizations for patients with HF. Although this training program is in the early stage of implementation, hospitals interested in developing a HFA program are strongly encouraged to participate in the NHeFT Program.

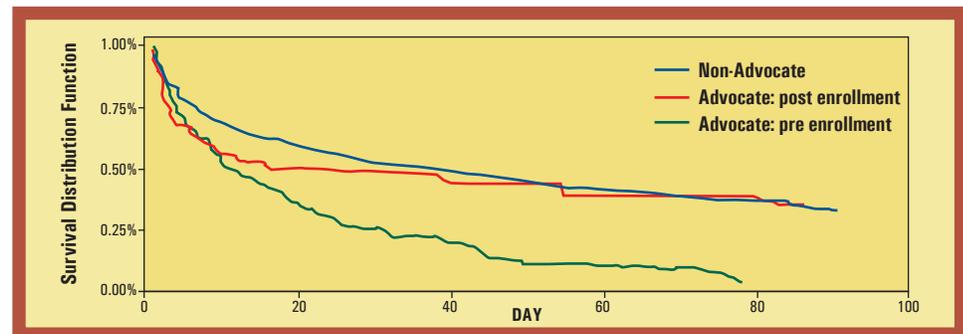
#### Lessons learned

1. Many nonacademic health systems do not have direct access to nationally recognized clinical expertise for HF. Such access can make a huge difference in quality improvement efforts.
2. Appropriate organizational goals and incentives based upon standardized quality measurements (ie, American College of Cardiology [ACC]/AHA) are powerful motivators for promoting and improving quality. Standardized “tools” are less important.
3. Making the transition from focusing on acute hospital management to reducing hospital readmissions for HF is difficult and currently not profitable for most hospital systems; currently hospitals must focus more on chronic care.
4. Significant expertise in evidence-based HF care can

**Table 1. Analysis of 30- and 60-day Readmissions for Heart Failure Patients: Comparisons between Heart Failure Advocates and Usual Care**

	All Cause Readmission		% Difference	Heart Failure Readmission		% Difference
	Advocate	Control		Advocate	Control	
30-day readmissions per patient	0.16	0.19	15.79%	0.03	0.05	40.00%
Patients with at least one 30-Day Readmission	13.83%	14.66%	5.66%	3.22%	4.75%	32.21%
60-day readmissions per patient	0.29	0.33	12.12%	0.08	0.08	0.00
Patients with at least one 60-Day Readmission	22.19%	23.32%	4.85%	7.40%	7.68%	3.65%

**Figure 1: Kaplan Meier Curves for 30-day Readmissions for Patients with Heart Failure: Comparisons between Heart Failure Advocates and Usual Care**



be provided by well-trained HFAs without advanced practice nursing training to improve quality of care and prevent readmissions for patients with chronic HF.

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## Lipid Management Study Shows Value of Electronic Health Records in Improving Quality of Care

By James Gill, MD, MPH

Despite evidence that controlling cardiovascular risk factors reduces cardiovascular disease morbidity and mortality in persons with and without coronary heart disease, research has shown that physicians in clinical practice often do not follow national guideline recommendations for the detection and treatment of hyperlipidemia.<sup>1-3</sup> In addition to promoting better organization of patient data such as medications and test results, studies have concluded that computerized systems, including the electronic health record (EHR), can aid in improving the quality of care by:

- Providing automated reminders of needed tests.<sup>4</sup>
- Highlighting detection/treatment guidelines during office visits.<sup>5</sup>

Although several studies showed improvement in lipid testing when EHR aids were used, few examined the impact of the EHR on lipid control (ie, test outcomes).

#### Study design

To better determine the benefits of EHRs in lipid management, researchers

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conducted a randomized, controlled study to examine the impact of an EHR-based intervention for lipid management in a network of primary care practices. The intervention integrated nationally recognized Adult Treatment Panel III (ATP-III) guidelines from the National Cholesterol Education Program (NCEP) at the point of care using the EHR. The hypothesis was that patients of physicians at the intervention offices would be more likely to have up-to-date lipid testing, to be at their lipid goal, and to be on medications if not at goal than patients at nonintervention offices (control group).

The study's primary focus was to determine whether the intervention group showed greater improvement than the control group on 4 main outcome measures: (a) lipids at goal, (b) lipid testing completed, (c) appropriate use of lipid medications in high-risk patients, and (d) lipid diagnoses recorded. The study included 25 primary care practices within the Medical Quality Improvement Consortium (MQIC), which uses the Centricity® outpatient EHR and regularly downloads de-identified clinical data into a secure central repository. All active patients, ages 20 to 79, for each of the 105 participating physicians were included and categorized as high, medium, or low risk based on modified ATP-III criteria. Overall, there were 64,150 patients in this study with 26,696 in the intervention group and 37,454 in the control group.

### Study intervention

An interactive, point-of-care EHR disease management tool was integrated into the physician's usual EHR encounter form in the following manner:

- The *screening page* appeared during a patient visit if lipid testing was overdue or if lipid goals were not met.
- The *assessment page* highlighted the patient's lipid goal and whether or not he/she met that goal, using information from the EHR. The physician could modify that information (and possibly change the patient's lipid goal) and/or access more information on the ATP-III criteria.
- The *management page* allowed the physician to add or change medications, order lab tests, print patient education handouts, and document counseling, as well as directly access Web sites for physician or patient education about hyperlipidemia.

The intervention employed other reporting tools to identify patients who were not seen in the office and who did not meet lipid management criteria. These tools generated lists of patients who had not been recently tested for hyperlipidemia or were not at goal for lipid management, and provided personalized letters for physicians to send to these patients. Intervention offices were asked to run these reports once at the beginning of the study and again after 6 months.

### Outcome Variables

The 3 main outcome variables were:

- Proportion of patients tested adequately for hyperlipidemia (a full lipid panel within 1 year for persons at high risk, and within 5 years for all others);
- Proportion of patients whose most recent low-density lipoprotein cholesterol (LDL-C) was at goal (<100 for high risk, <130 for moderate risk, and <160 for low-risk patients);
- Proportion of high-risk patients with an LDL-C >130 who were prescribed lipid-lowering medications. Patients with no LDL-C or whose LDL-C was nonnumerical (eg, "unable to calculate" or "normal") were excluded from the analyses of lipids at goal and medication use.

### Results and Discussion

Results showed that the likelihood of achieving the desired outcomes increased significantly from baseline to end point for all groups, with few exceptions. However, the increases were generally modest; the largest increase (7%) was in the likelihood of high-risk persons being on lipid-lowering medication if their lipids were not at goal. Of interest, the increases were observed equally in the intervention and control groups.

After controlling for differences in patient and physician characteristics between the 2 groups and for the "clustering" effect, the only outcome for which the intervention group showed a significant improvement was lipid testing for high-risk patients. These results are surprising given that EHR interventions have been shown to improve preventive care. The researchers cited possible reasons for the marginal differences between the intervention and control groups 1 year after implementing the EHR-based disease management intervention:

- The Hawthorne effect (ie, persons who know their behavior is being observed may be more likely to improve that behavior);
- Potential for similar quality improvement interventions implemented within the control group during the study period (eg,

managed care disease management initiatives);

- High baseline parameters that left little room for improvement (Note: rates in this study were higher than those found in previous studies);
- Physicians, in general, approaching lipid management more aggressively than in previous study periods;
- Lack of office staff involvement in the intervention.

Despite the relatively small increase in quality of care reflected in the study, most physicians surveyed said they found the intervention both helpful and useful in their practices.

### Conclusion

Researchers concluded that, although EHRs are useful tools, they are not a panacea for improving quality without changing other components of usual office care. They suggest that future studies may need to examine more comprehensive interventions that include office staff in a team approach to care.

*James Gill, MD, MPH is President of Delaware Valley Outcomes Research and Associate Professor in the Department of Family and Community Medicine at Jefferson Medical College. He can be reached at gillj@devoresearch.com.*

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## Ambulatory Quality Measurement: The Jefferson University Physicians Experience

By Neil I. Goldfarb

Historically, quality measurement and improvement in ambulatory care was undertaken at the health plan level. Thanks to the standardized Health Plan Employer Data and Information Set (HEDIS®) measurement set, emphasis is increasingly being placed on measuring quality at the level of the individual provider group or provider. As measures are developed, pilot tested, and disseminated, they are fueling quality improvement and value-based purchasing initiatives such as

- public reporting of provider-level quality data,
- consumer incentives for choosing higher quality providers,
- selective contracting with higher quality providers, and
- pay-for-performance (P4P) programs for ambulatory care providers.

Jefferson University Physicians (JUP), the faculty practice plan of Thomas Jefferson University, consists of over 400 physicians in primary care and specialty care practices. As a large multispecialty academic group practice, JUP faces many challenges in ensuring that quality care is provided consistently across all practice sites and providers. A survey conducted in 2003 found that JUP and most of its colleagues in the University HealthSystem Consortium were just beginning to recognize the need to address ambulatory care quality.<sup>1</sup>

In 2004, JUP reconstituted its Clinical Care Subcommittee (CCS) as the main

oversight body for ambulatory care quality measurement and improvement. The CCS includes representation from all clinical departments. JUP leadership agreed to fund a full-time quality review nurse and a half-time data analyst to support the CCS' work. Additional resources were provided in-kind from Jefferson Medical College's Department of Health Policy, including the Department's Chair, who agreed to Chair the CCS, and the Department's Director of Research, who assumed the responsibility of JUP Director of Ambulatory Care Performance Improvement.

Initially, the CCS focused on supporting each of the 16 clinical departments in developing and implementing at least 1 outpatient quality measurement activity. The CCS staff met with representatives of each department to discuss possible measures and provided information on existing specialty-relevant measures (eg, HEDIS or HEDIS-like measures), specialty society guideline and measurement development efforts, and the emerging measurement sets endorsed by the National Quality Forum and the AQA Alliance. Where well-established measures did not exist or did not seem relevant to the practice, the practice representatives were asked to propose measures based on criteria of importance to the practice, feasibility of measurement, and the belief that a quality issue might exist in the area of study.

Nearly all departments were highly receptive to this performance measurement initiative and, within the first 2 years of activity, 14 of 16 departments had at least 1 initiative under way. Examples of projects include:

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- Measuring blood pressure control for patients with hypertension in the Internal Medicine and Family Medicine practices
- Using the SF-12 ([www.iqola.org/instruments.aspx](http://www.iqola.org/instruments.aspx)) survey tool to measure health-related quality of life (outcomes) for patients in the Rehabilitation Medicine outpatient practice
- Reviewing records for patients who were seen in the Emergency Department (ED), returned to the ED within 72 hours, and were admitted to the hospital, in order to determine if a quality-of-care problem occurred during the initial visit
- Surveying patients who underwent ambulatory surgery to identify postoperative infection rates and other complications
- Tracking follow-up on biopsies and time to patient notification in the Dermatology practice

One major initiative, designed by the Otolaryngology Department with support from the CCS staff, examined documentation of smoking history and smoking cessation counseling for patients with head and neck cancers. Several rounds of measurements and feedback to providers in this practice, including redesigned charting tools and patient education materials, resulted in a marked improvement in history taking, counseling, and referring patients who continued to smoke. This project is being expanded into a major public health initiative spanning all departments.

JUP is one of the first academic group practices in the nation to deploy the *Physician Practice Patient Safety Assessment (PPPSA)*, an ambulatory patient safety assessment tool developed by the Medical Group Management Association, the

Institute for Safe Medication Practices, and the Health Research & Educational Trust ([www.physiciansafetytool.org](http://www.physiciansafetytool.org)). The tool is being completed by a multidisciplinary team within each practice site to identify potential areas for safety improvement in domains such as medication safety, patient handoffs and transitions, and practice management and culture. In addition to helping departments identify areas for improvement, the responses will be used to compare JUP performance against national benchmarks, identify best practices across JUP departments, and identify areas for JUP-wide safety improvement initiatives.

National measurement, reporting, and P4P initiatives play an expanding role in shaping the JUP quality measurement and improvement agenda; eg, JUP is participating in the *Physician Quality Reporting Initiative (PQRI)* developed by the Centers for Medicare and Medicaid Services (CMS) ([www.cms.hhs.gov/pqri/](http://www.cms.hhs.gov/pqri/)). Viewed as the precursor to a federal P4P program, PQRI is a pay-for-reporting program in which practices may earn bonus payments for reporting on quality of care using a set of CPT-II (Current Procedural Technology-II) codes. In addition to familiarizing providers and practice administrators with a new lexicon and set of billing codes, implementation of PQRI has required the development of new billing forms to supplement existing ones. Further complicating matters, other payers, including the local Blue Cross Blue Shield plan, have developed their own P4P systems using a largely different set of measures.

An electronic medical record (EMR) system, to be implemented in 2008, should greatly facilitate the CCS team's ability to measure practice- and provider-level performance efficiently, and to accurately report performance data to CMS and other payers. The CCS team is working with the clinical departments and the EMR implementation team to ensure that record templates include essential fields for

quality measurement (eg, date of patient notification of test results) and that these fields will be linked with appropriate alerts and flags (eg, reminders that patients have not been notified of test results). Recent CCS meeting discussions have focused on how to use the EMR as a tool to promote quality and how to dispel commonly held beliefs that the EMR will solve all the practices' quality and safety issues.

### Summary

Performance measurement and improvement activities have advanced rapidly within the JUP academic group practice over the past 5 years. The commitment of JUP leadership to quality improvement is evidenced by the continued dedication of financial resources to the staffing of the CCS' activities (funding increased from 1.5 to 2.0 FTE's as of July 2007). While many of JUP's initial performance measurement activities were home grown, the agenda is shifting toward use of standardized tools and participation in local and national reporting and P4P programs. Implementation of an EMR will undoubtedly simplify some aspects of the measurement and reporting processes, but much work will be needed to determine how best to deploy this *tool* for true quality improvement. Participation in the national University HealthSystem Consortium and partnering with other organizations at the local and national level are critical to continued learning and development and dissemination of best practices for ambulatory group practice improvement.

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