

Hospital Readmissions

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Welcome to Quality Matters, a bimonthly roundup of news and opinion on quality and efficiency, information technology, performance improvement initiatives, and policy innovations.

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In Focus: Preventing Unnecessary Hospital Readmissions

Summary: Although there is consensus that the current rate of hospital readmissions needs to be reduced, a lack of consistent terminology, disagreement over the use of financial incentives, and the shortage of all-encompassing solutions hamper the ability of providers and payers to address the problem.

By Sarah Klein

Reducing hospital readmissions—especially those that result from poor inpatient or outpatient care—has long been a health policy goal because it represents an opportunity to lower health care costs, improve quality, and increase patient satisfaction at once.

"It's a win, win, win," says Robert Berenson, M.D., senior fellow with the Urban Institute in Washington, D.C., and formerly the director in charge of Medicare payment policy at the Health Care Financing Administration (now the Centers for Medicare and Medicaid Services, or CMS).

The rate at which patients return to the hospital and the cost of those readmissions are staggering by most accounts, though the figures vary depending on the age of the patients involved and the severity of their illnesses. [1] MedPac's 2007 report to Congress found 17.6 percent of Medicare patients were readmitted to hospital within 30 days of

discharge, accounting for \$15 billion in spending in 2005. [2]

While some readmissions may be necessary, many are not. "If there is such a thing as low-hanging fruit, this is low-hanging fruit," Berenson says.

An Agency for Healthcare Research and Quality study of patients admitted to hospital with preventable admissions found 19.4 percent had at least one preventable readmission within six months. The cost of those admissions, which occurred in four states in 1999, was \$729 million, or \$7,400 per readmission. [3] The numbers are not much better in the commercial population. When PacifiCare Health Systems Inc. reviewed discharge data for its enrollees between 2005 and 2006, it found readmission rates at hospitals ranged from as low as 0 percent to as high as 44 percent, with an average around 10 percent.

"Many of the quick returns to the hospital appear to be avoidable and represent a major setback for the patient," Michael Rapp, M.D., J.D., director of CMS' quality measurement and health assessment group, said in a statement. According to Rapp, the reasons for early rehospitalization include defects in care, medication errors, failure to plan for necessary equipment, and shortcomings in the preparation of the patient and family for his or her care outside the hospital.

Poorly Defined Problem

Financing mechanisms don't help. The fee-for-service system, as well as some capitation methods, offer few incentives for preventing readmissions that result from poor outpatient care or complications related to an initial hospitalization. "The incentives are not aligned to support the coordination of care at

transitions," says Amy Boutwell, M.D., M.P.P., content director with the Institute for Healthcare Improvement (IHI) in Cambridge, Mass., which is working on methods to engage patients, caregivers, and payers in reducing rehospitalization rates on a regional basis.

Creating incentives requires some consensus about the nature of the problem itself, which is a challenge in complex systems where breakdowns in care occur at different points. Is the primary problem "potentially preventable hospitalizations," "inappropriate hospitalizations," or "readmissions"? Boutwell says all three terms are used to describe potentially problematic hospitalizations. But each suggests a different root cause and solution.

According to Boutwell, the term "potentially preventable hospitalizations" is used to describe hospitalizations from conditions such as dehydration and angina, which result in hospitalization if left untreated or inadequately treated in the outpatient setting. Reducing those would require focusing on the ambulatory setting to determine how such patients are falling through the cracks. Such an intervention may be tailored to patients, rather than providers, to encourage their early use of health care services. It may also require bolstering the primary care system to ensure patients have adequate access to doctors and doctors have sufficient resources to provide chronic care management services.

The second term, "inappropriate hospitalization," refers to the use of hospitalization for problems that can be managed on an outpatient basis but aren't, perhaps for patient or provider convenience. A study by David Grabowski, Ph.D., an associate professor of health care policy at Harvard Medical School, and colleagues found approximately 40 percent of nursing

home-to-hospital transfers in New York were inappropriate, meaning the problems could have been handled at a lower level of care.[4] This suggests that closer monitoring of nursing home care and hospital admissions for those patients is required, rather than a review of the ambulatory care system.

The third term, "readmissions," is used to describe situations in which patients return to the hospital within days or months of their initial hospitalization. The cause may be related to a patient's treatment during the first hospitalization, or it may be the result of a secondary condition, suggesting possible quality problems in the hospital care received during the initial visit or problematic transitions between hospitals and the outpatient care setting.

Looking for Solutions

So where should those working to reduce avoidable hospitalizations focus their attention? Staff at the IHI believe the focus should be on rehospitalizations. "An emphasis on rehospitalizations will focus energy and attention on a commonly accepted goal and provide a concrete basis on which to initiate activities," Boutwell says. In addition, there is a large body of evidence suggesting ways to reduce rehospitalizations, including chronic disease management, remote patient monitoring, and/or improved home care. Further, the impact of these interventions would be system-wide, and would affect inappropriate and preventable hospitalizations, too.

But choosing this focus introduces another complication: Should providers attempt to reduce readmissions for specific conditions—perhaps for those with highest incidence of hospitalizations and/or cost, such as heart failure, chronic obstructive pulmonary disease, and renal failure—or should they look at the problem more broadly, by

treating all readmissions as equal? The answer isn't so straightforward.

"One of the things that is very striking about congestive heart failure work is how often people's readmissions are not related to congestive heart failure. It begs the question: how many of these interventions are condition specific and how many more general," says Helen Burstin, M.D., senior vice-president of performance measures for the Washington, D.C.-based National Quality Forum.

Pursuing low readmission rates for all conditions may identify other important problems in the system or at least require that providers focus on all patients. "You should do it globally," says Norbert Goldfield, M.D., medical director of 3M Health Information Systems in Wallingford, Conn. Otherwise, clinicians "make a beeline" toward those conditions on which they are being judged and pay less attention to those that are not under scrutiny.

However the problem is defined, many think the data should also reflect the stage of a patient's illness. To be helpful, readmissions data need to be combined with other quality measures "to make sure you are looking at readmissions that are likely to be indicative of a problem in care, rather than the expected course of treatment of a disease," says Nancy Foster, vice president for quality and patient safety policy at the American Hospital Association in Washington, D.C.

Finally, would financial penalties for unnecessary readmissions encourage better care and improve communication between hospitals, doctors, and patients? Of all the unanswered questions about the most effective and efficient way to reduce readmissions, this may be the one that provokes the most disagreement.

"It's not just the hospital that's responsible. We need shared accountability," Burstin says. "With the emergence of the advanced medical home, we can begin to make that argument."

Others think hospitals should be paid reduced rates for readmissions—at least for a select group of diagnoses, such as heart failure, for which readmissions can be reduced by good care, focused discharge planning, and follow-up after discharge. "I wouldn't pay nothing" for the care of rehospitalized patients, Berenson says. "You pay the marginal cost," of additional services.

Still others urge caution. Arnold Epstein, M.D., M.A., chair of the department of

health policy and management at the Harvard School of Public Health, says it seems premature to use financial incentives to reward or punish hospitals with low or high rates of readmission without more data to substantiate the nature of the problem and to identify what hospitals can do to ameliorate the situation. "I think it's fine, perfectly fine, to hold them responsible for effective discharge planning, assuring a smooth transition to ambulatory care, and other services that are clearly under their control." But doing more could have dire consequences and may not be helpful, he says. "Hospitals are operating on 1 percent, 2 percent, and 3 percent margins."

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Case Study: Reducing Hospital Readmissions Among Heart Failure Patients at Catholic Healthcare Partners

By Martha Hostetter

Summary: *A quality improvement program implemented at a large nonprofit health system relied on performance reporting, financial incentives, and a nursing intervention to promote evidence-based care for heart failure patients and to lower readmissions among these patients. Specially trained nurses, called "heart failure advocates," were hired to educate patients about their disease, coordinate their care, and follow-up with them after discharge.*

Issue

More than 5 million Americans are living with heart failure (HF), a life-threatening condition that impairs the heart's ability to pump enough blood to meet the body's oxygen needs. It is most common among the

elderly. While this chronic condition can be managed with appropriate medication and lifestyle changes, many patients experience acute exacerbations that result in trips to the emergency room. HF is one of the most common reasons people are admitted to a hospital—and the most common reason for

readmission. Between 29 to 47 percent of elderly HF patients are readmitted for their condition within three to six months of an initial hospitalization. [1]

Programs such as [Duke University's Heart Failure Program](#) and the [Transitional Care model](#) created by Mary Naylor, R.N., at the University of Pennsylvania have shown that effective management of the condition could avoid many hospitalizations.

Catholic Healthcare Partners created a program—called Heart Failure Guidelines Applied in Practice (HF GAP)—to improve care for heart failure patients within its system by promoting the consistent use of evidence-based guidelines. This initiative grew out of an American Heart Association [scientific statement](#) published in 2000 that advocated the use of team care for heart failure management. (There is no formal relationship between Catholic Healthcare Partners' HF GAP program and other Guidelines Applied in Practice programs, such as one launched by the [American College of Cardiology](#).)

Organization and Leadership

[Catholic Healthcare Partners](#) (CHP), which operates nine regional health care networks, is one of the largest nonprofit health systems in the U.S. Based in Cincinnati, Ohio, it operates hospitals, long-term care facilities, home health agencies, hospice programs, wellness centers, and other health care facilities in Indiana, Kentucky, Ohio, Pennsylvania, and Tennessee.

Donald Casey, M.D., currently the vice president for quality and chief medical officer at Atlantic Health, was the principal investigator of the HF GAP initiative while serving as chief medical officer at Catholic Healthcare Partners, from 2002 to 2005, and

remained principal investigator until the project's completion.

William Abraham, M.D., a professor of internal medicine and heart failure cardiologist at Ohio State University, and Ileana L. Piña, M.D., a heart failure and transplant cardiologist, professor of medicine at Case Western University, and the creator of the [National Heart Failure Training Program](#), provided advice on the program's design and execution. Margie Namie, R.N., M.P.H., vice president for chronic care management at Mercy Health Partners, one of CHP's regional networks, served as project manager during the first three years.

Target Population

This initiative sought to improve care for all heart failure patients treated at Catholic Health Partners hospitals and clinics. In addition, a targeted intervention at six hospitals focused on patients admitted with a primary diagnosis of heart failure and found to be at high risk for readmission or death. Patients were identified using a screening instrument that takes into account their clinical condition, as well as social risk factors such as unstable living situations and low education levels that put them at increased risk of hospitalization.

Key Measures

CHP assessed performance on the following measures across 22 of the health system's hospitals:

1. Four national, process-of-care quality measures for heart failure (now reported by nearly all U.S. hospitals on [Hospital Compare](#)):

- percent of patients given angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker

(ARB) for left ventricular systolic dysfunction;

- percent of patients given an evaluation of left ventricular systolic function;
- percent of patients given discharge instructions; and
- percent of patients given smoking cessation advice/counseling.

CHP's initial goal, set in 2002, was to achieve 75 percent success for each of these measures. From 2003 and on, the target was to achieve top decile performance on a composite of all four measures, based upon nationally available benchmarks.

2. Readmissions for any cause within 30 days of discharge among patients with a primary diagnosis of heart failure upon admission. In 2002, the readmission rate for HF patients among the 22 hospitals was 22 percent. CHP set a target readmission rate of 17.5 percent with a stretch goal of 15 percent.

The system's trustees evaluated all senior leadership and hospital CEOs on their progress toward the targets for these measures, in addition to other key metrics. A substantial part of their performance incentive was based on achieving these targets.

Implementation Timeline

In 2002, CHP won a [Partnership for Quality grant](#) from the Agency for Healthcare Research and Quality (AHRQ) for its HF GAP project. These grants were provided to 22 institutions nationwide to support projects that accelerate the adoption of practices that have been shown to improve patient care.

The AHRQ grants encourage participants to forge partnerships between researchers and practitioners. Catholic Health Partners'

response was to include senior management, cardiologists, nurses, primary care physicians, and other specialists from the CHP health system, as well as heart failure experts from Case Western University and Ohio State University, on its leadership team. During the project's first year, the team reviewed the evidence on best practices for HF care, selected performance measures, and developed training materials for providers.

Beginning in 2002, CHP set system-wide goals to improve HF care and began measuring performance on the indicators described above.

In 2004, six CHP hospitals each hired a registered nurse to work in a newly created staff position as "heart failure advocates."

Process of Change

CHP sought to reduce the gap between the best clinical evidence for HF care—guidelines established by the American College of Cardiology, the American Heart Association, and the Heart Failure Society of America—and actual practice. The project's leadership did not mandate that participating hospitals use a particular method to implement these guidelines. Instead, the hospitals chose the strategies and tools that best enabled them to achieve the performance goals.

Six CHP hospitals adopted an additional intervention. [2] They each recruited a registered nurse to serve as a heart failure advocate by guiding and promoting more consistent levels of guideline-based care for HF patients found to be at high risk for readmission or death. Heart failure advocates also developed and implemented broader organizational initiatives to improve HF care, such as provider-based educational events and medication-access programs. The heart failure advocate concept arose from

discussions among CHP caregivers, who noted that many HF patients needed help coordinating their care among specialists, primary care physicians, home health providers, and family caregivers.

"We had to make it clear that advocates would function very differently than traditional hospital case managers, who tend to focus solely on discharge planning," says Casey. "Their job would not be to collect quality data for the hospital; we saw them as expertly informed, credible, and reliable care coordinators between providers and patients."

The advocates' training program combined clinical information with communication and management skills. Participants attended a two-day session offered through the National Heart Failure Training Program, which Piña created in 1995 and later customized for this initiative. Namie identified advocates' learning needs through a skills assessment process and connected them with appropriate resources. Overall, their training focused on:

- physiology and causes of heart failure;
- evidence-based approaches to medication adherence and management, especially for ACE-ARB inhibitors and beta blockers;
- patient-centered care coordination techniques that go beyond traditional case management, with special emphasis on post-discharge follow-up and communication with providers responsible for outpatient care; and
- leadership skills, effecting change, problem-solving, and conflict resolution.

"The advocates learned basic physiology, about the various medications and why they are used, and how to deal with comorbidities," says Piña. "But they also

learned how to manage change and put into practice what they learned."

Using case studies, the advocates explored clinical profiles and complicating factors, such as physicians who resist nurses' suggestions or family caregivers who don't want to change complex medication regimens. "The case studies helped advocates think through how they could effectively overcome barriers on an individual patient level," says Namie.

Advocates also helped to raise awareness of heart failure within the hospitals and to improve systems of care for these patients. This included educating patients and hospital staff about HF self-management, the importance of a low-salt diet, monitoring weight, medication reconciliation, and watching for symptoms that indicate decompensation.

They learned to do "whatever it takes" to improve HF patients' quality of life, says Casey, from paying attention to behavioral strategies that increase medication adherence to addressing personal, financial, and social barriers. For example, advocates helped patients who could not afford their medications take advantage of pharmaceutical company programs that offer prescription drugs at low or no cost.

"Heart failure is a frightening diagnosis, and tends to come later in life when people are already dealing with other issues," says Namie. "All of a sudden they have to manage multiple medications, a completely different diet, and have to be active at a time when they may be feeling tired and wrung out. But we found that—with the help of the advocates—the vast majority of the patients were able to manage their condition."

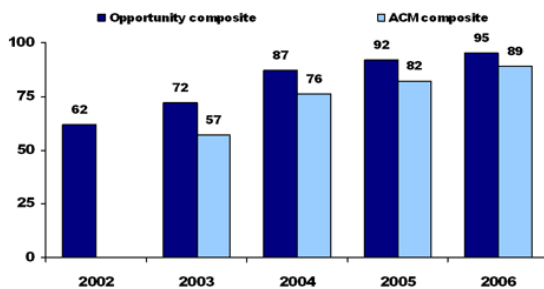
The AHRQ grant initially paid the salaries of

the six HF advocates, and continuing medical education programs spread the knowledge gained from this intervention to all HF community physicians and hospital staff. Once the funding ended, three CHP hospitals chose to maintain the HF advocate positions and one, St. Rita's Medical Center in Lima, Ohio, created an advocate position for diabetes patients.

Results

Among the 22 hospitals, performance on a composite of the four Hospital Compare heart failure measures showed statistically significant improvement every year between 2002 and 2006, ultimately reaching 95 percent (Figure 1). Several individual CHP hospitals achieved top decile performance nationally for these measures. Performance levels improved on the opportunity measure, which is calculated by dividing the total number of achieved interventions by the total number of opportunities to achieve them. Performance also improved on the appropriate care quality measure composite, which calculates the proportion of HF patients receiving 100 percent of the care for which they were eligible.

**Figure 1. Performance on Heart Failure Quality Measures
22 Catholic Healthcare Partners Hospitals**



Data: Hospital Quality Alliance measures for HF care. Opportunity composite = number of HF patients who received intervention / number of opportunities to deliver that intervention. ACM (appropriate care measure) composite = percentage of HF patients who received all four measures of HF care.

Source: D. Casey, January 2008.

Aggregate all-cause HF readmissions within 30 days also decreased among the 22 hospitals from 22 percent in 2002 to

consistently below 20 percent between 2004 and 2006. Notably, there was a 40 percent decline in inpatient mortality for all HF patients admitted to CHP hospitals during the same period, suggesting an important linkage between care processes, systems changes, and outcomes.

A separate analysis was used to measure the impact of the heart failure advocates at four of the six hospitals that implemented this intervention. (The two other hospitals did not have sufficient staff available to provide the necessary data.) The outcomes for 405 patients followed by HF advocates were compared with 1,974 patients who received usual care. This analysis included all heart failure patients who did not expire during the evaluation period or leave the hospital against medical advice. The data suggest that heart failure advocates had a strong positive effect on the risk of subsequent hospitalizations: when compared with baseline rates, the patients they cared for were five times less likely to be readmitted within 30 days for any cause than patients who were not enrolled in the program (Figure 2). Hospital costs were also substantially lower for patients supported by heart failure advocates, according to the analysis.

**Figure 2. Readmissions Among HF Advocate Patients
and Non-Advocate Patients**

Population	Number of Readmissions	Patient Days	Incidence of Readmissions per Patient-Month
Advocate patients during pre-enrollment period	385	40,863	28.6%
Advocate patients during post-enrollment period	236	129,677	5.5%
Non-advocate patients over full evaluation period	3,115	1,031,636	9.1%

Data: Index admission = first HF admission in the enrollment period. Readmissions = all-cause unexpected admissions subsequent to index admissions. Patient days = number of days patients were followed. Patient Month = 30 days. Incidence of readmissions = Number of readmissions / Patient Months. Data are from four CHP hospitals with HF advocate programs, from admissions occurring from 2004 to 2006.

Source: D. Casey, January 2008.

The results also indicate that, based on their high rates of readmission prior to enrollment,

those enrolled in the advocate program appear to have been more seriously ill and thus more in need of care coordination than those not enrolled.

Implications

Setting organizational goals to achieve top national performance and rewarding senior management for successful clinical quality improvements are powerful motivators of change. "Adhering to nationally standardized, evidence-based clinical guidelines is crucial for advancing quality care, but health care providers need to focus on valid performance measures in order to achieve the highest levels of improvements in that care," says Casey. "Many have spent their efforts trying to translate guidelines into practice tools. But properly constructed performance measures, such as those used in this HF GAP initiative, give physicians and hospitals creative leeway to get to top performance, while also letting them know whether their quality improvements are actually helping patients."

Giving hospital providers access to academics who specialize in heart failure research and treatment can also help to spur change. "CHP's physicians and nurses obviously understand the science of heart failure," says Casey, "but it was a great psychological and morale booster to have ready access to nationally recognized, state-of-the-art expertise for the good of their HF patients."

The intervention also found that nurses can be trained as heart failure advocates and do not need an advanced practice degree to improve HF care and help reduce readmissions among these patients. This is important because many regions of the United States have a limited supply of advanced practice nurses, making the use of specially trained registered nurses for care

coordination programs more feasible than the use of advanced practice nurses.

Better management of chronic conditions is likely to lower overall costs to the health system, but current payment policies create few incentives for hospitals to invest in it. In fact, hospitals may lose money by investing in programs that reduce the number of hospitalizations, because most are not reimbursed for their efforts and they stand to lose business as hospital admissions decline.

Still, under the current Medicare payment system, treating acute, decompensated heart failure is minimally or not at all profitable for most hospitals, say Casey and Piña. Therefore, appropriate incentives, such as a shared savings approach, could encourage hospitals to focus on heart failure management. Further research is needed to explore the potential return on investment from care management programs for heart failure and other chronic conditions leading to frequent hospitalizations.

CHP's efforts have particular salience given that the Joint Commission and the Centers for Medicare and Medicaid Services are increasingly focusing on readmission rates as a marker of hospital quality, and the National Quality Forum is set to vote on new consensus standards for hospital readmissions, including one for heart failure similar to that used in CHP's HF GAP initiative. If Medicare and/or other payers begin to curtail payments for certain kinds of readmissions, more hospitals may be encouraged to focus on the intersections between acute and chronic care.

For Further Information

Contact Donald Casey at don.casey@atlantichealth.org.

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News Briefs**Patients To Have Their Say on Hospital Compare**

Later this month, the federal health care quality reporting Web site, [Hospital Compare](#), will expand to include patients' views on their care. Hospital Compare currently reports how often hospitals provide evidence-based care to patients for certain conditions, as well as mortality data.

Findings from the [Hospital Consumer Assessment of Healthcare Providers and Systems](#), the first standardized survey of hospital patients, will be posted on Hospital Compare, enabling comparisons between facilities based on patients' perspectives. The survey includes questions about the communication skills of physicians and nurses, pain control, and the quality of discharge instructions. Hospitals that do not report the results of the 27-question survey stand to lose 2 percent of their Medicare reimbursement.

AHRQ Report: Health Care Quality Improvements Slowed, Costs Increased

Health care costs are rising at a faster rate than that of quality improvement nationwide, according to the fifth annual [National Healthcare Quality Report](#), released by the Agency for Healthcare Research and Quality (AHRQ) early this month.

The report found a modest improvement in quality from 1994 to 2005, on average about 2.3 percent each year. This rate has slowed from an average of 3.1 percent annual improvement documented from 1994 to 2004. (AHRQ is mandated by Congress to track U.S. health system performance on 41 measures of the effectiveness, timeliness, safety, and patient-centeredness of care.) In comparison, health care expenditures rose by an average rate of 6.7 percent per year from 1994 to 2005.

Still, the report identified several areas of improvement in quality. For example, more than 93 percent of hospitalized heart attack patients received recommended care in 2005, up from about 77 percent in 2000–2001. The percent of heart attack patients who were counseled to quit smoking also increased, from 43 percent in 2000–2001 to about 91 percent in 2005.

A companion report on health care disparities related to race, ethnicity, and income found some evidence of progress. However, black children are still 3.8 times more likely than white children to be hospitalized for asthma, and new AIDS cases are 3.5 times more common among Hispanics than whites.

Survey: Health Data Exchange Tops States' Priorities

Most states are promoting the use of health information technology (HIT) in both the public and private sectors as a way to improve the quality and efficiency of care, according to the results of a [new survey](#).

Jointly sponsored by The Commonwealth Fund, National Governors Association, and Health Management Associates, the survey asked states about their current HIT activities, the challenges they have faced, and opportunities for further development.

According to the survey, state governors' two highest priorities for the next two years are the development of electronic health information exchanges and the creation of policies fostering such exchanges, to ensure interconnectivity among health care providers. They cited funding as the biggest barrier to implementing these initiatives.

Michigan Hospitals Can Continue Using Infection-Control Checklist

Last month, the U.S. Department of Health and Human Service (HHS) Office for Human Research Protections (OHRP) [announced](#) that Michigan hospitals may continue using a checklist aimed at cutting the rate of catheter-related infections in

intensive care units. Last year, OHRP had said that the use of the checklist—which reminds physicians to wash their hands and take other steps to avoid infections—should be subject to regulations governing human subjects research. Because the hospitals did not obtain written, informed consent from each patient and health care provider, the agency concluded that the quality improvement intervention violated the federal regulations.

In its February 15 announcement, OHRP stated that the regulations governing human subjects research apply only when institutions are planning research activities examining the effectiveness of interventions to improve the quality of care—not when they are implementing proven practices to improve the quality of care. In this case, the results of the intervention had already been published in a December 2006 *New England Journal of Medicine* [article](#).

Noting that they do "not want to stand in the way of quality improvement activities that pose minimal risks to subjects," agency officials say that HHS will review its application of human subject research regulations to evidence-based quality improvement initiatives.

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Recent Publications of Note

Selected articles on quality improvement from a number of journals, including the *American Journal of Medicine*, *Annals of Internal Medicine*, *Archives of Pediatric and Adolescent Medicine*, *BMJ*, *Health Affairs*, *Health Services Research*, *International Journal for Quality in Health Care*, *Joint Commission Journal on Quality and Safety*, *Journal of the American Medical Association*, *Journal of General Internal Medicine*, *Journal of Patient Safety*, *Journal of Safety and Quality in Health Care*, *Medical Care*, *The Milbank Quarterly*, *The New England Journal of Medicine*, and *Pediatrics*. The articles are nominated by Editorial Advisory Board members from a preselected list.

Health Care System Performance

Improving Systems of Care

To improve safety in the U.S. health care system, improvement should be approached from a systems point of view, the authors write in this commentary. This includes thinking broadly about changes to the interorganizational and interunit processes through which patients receive care. Specifically, they recommend the "implementation of systems thinking throughout the organization and across organizations, the development and empowerment of teams, a foundation of information that is used for accountability and learning, and shared responsibility for system improvement." S. M. Shortell and S. J. Singer (2008) [Improving Patient Safety by Taking Systems Seriously](#). *Journal of the American Medical Association* 299, 445–447.

Patient Safety

Post-Discharge Adverse Events

A literature search of U.S. and Canadian articles published from 1966 through May 2007 identified two studies that examined the incidence rate of all types of postdischarge adverse events. These studies suggest that about one of five internal medicine patients discharged home from major North American teaching hospitals suffered an adverse event. Patient safety experts, the authors conclude, should recognize postdischarge care as an important area for improvement, particularly: transitional care, information transfer, medication reconciliation, test result follow-up, and the identification of patients who suffer from adverse events. D. Tsilimingras and D. W. Bates (2008) [Addressing Postdischarge Adverse Events: A Neglected Area](#). *Joint Commission Journal on Quality and Patient Safety* 34, 85–97.

Pediatrics Resident Depression Affects Error Rate

A prospective cohort study was used to assess the prevalence of depression and burnout among pediatrics residents at three U.S. children's hospitals and to determine whether a relationship exists between these disorders and medication errors. It found 24 of the 123 participating residents, or 20 percent, met the criteria for depression and 92, or 74 percent, met the criteria for burnout. Of the 45 errors identified, depressed residents made 6.2 times as many medication errors per resident month as residents who were not depressed. However, the rates did not vary between burnt out and non-burnt out residents. A. M. Fahrenkopf et al. (2008) [Rates of Medication Errors Among Depressed and Burnt Out Residents: Prospective Cohort Study](#). *British Medical Journal* 336, 488–491.

Quality Tools in Practice

Is Root Cause Analysis Effective?

In the last decade, root cause analysis has become the central method the health care system uses to learn from mistakes and to mitigate future hazards. This process answers three basic questions: what happened, why did it happen, and what can be done to prevent it from happening again? The authors argue that a fourth question is necessary in medicine: has the risk of recurrence actually been reduced? They recommend evaluating root cause analysis for its effectiveness, working to develop consistent mechanisms for its implementation, and tracking the outcomes of these interventions—perhaps through a national oversight body. A. W. Wu et al. (2008) [Effectiveness and Efficiency of Root Cause Analysis in Medicine](#). *Journal of the American Medical Association* 299, 685–687.

CTM Supported for Diverse Populations

A cross-sectional study with purposive sampling of traditionally underserved populations was used to examine the performance of the Care Transitions Measure (CTM) and introduce a three-item CTM. The analyses supported the use of the 15-item CTM among diverse populations, and regression analyses found that the three-item CTM explained 88 percent of the variance in the 15-item CTM score. These findings, the authors conclude, support the use of the CTM, which has been endorsed by the National Quality Forum, for use in national reporting efforts. Further, they suggest the three-item CTM approximates the 15-item measure and may be attractive to practices that want to assess quality in this area while minimizing time and cost burdens. C. Parry et al. (2008) [Assessing the Quality of Transitional Care: Further Applications of the Care Transitions Measure](#). *Medical Care* 46, 317–322.

CPOE Reduces Prescribing Errors

A literature review (of articles published in English from 1990 through December 2005) identified 252 studies that examine the association between the computerization of physician orders and prescribing medication errors. The use of computerized orders was associated with a 66 percent reduction in total prescribing errors in adults and a positive tendency in children. More specifically, 80 percent of the studies reported that computerized orders resulted in a significant reduction in total prescribing errors, 43 percent in dosing errors, and 37.5 percent in adverse drug events, as compared with handwritten orders. T. A. Shamliyan et al. (2008) [Just What the Doctor Ordered. Review of the Evidence of the Impact of Computerized Physician Order Entry System on Medication Errors](#). *Health Services Research* 43, 32–53.

Evaluating Heart Failure Interventions

A multicenter, randomized controlled trial, called the Coordinating Study Evaluating Outcomes of Advising and Counseling in Heart Failure (COACH), enrolled 1,023 patients after hospitalization due to heart failure. Two interventions, basic or intensive support by a nurse specializing in heart failure management, were compared with standard care, consisting of follow-up with a cardiologist. Though neither intervention was found to reduce the combined end points of death or hospitalization, the authors found a "nonsignificant, potentially relevant reduction in mortality, accompanied by a slight increase in the number of short hospitalizations in both intervention groups." T. Jaarsma et al. (2008) [Effect of Moderate or Intensive Disease Management Program on Outcome in Patients With Heart Failure: Coordinating Study Evaluating Outcomes of Advising and Counseling in Heart Failure \(COACH\)](#). *Archives of Internal Medicine* 168, 316–324.

Public Reporting's Effect on Quality

The authors reviewed 45 peer-reviewed articles (published since 1986) assessing the effect of publicly releasing performance data on health care quality. They found that the heterogeneity of the available studies made comparisons challenging, with little evidence available on individual providers and practices or rigorous evaluation of many major public reporting systems. Thus, despite evidence that public reporting stimulates quality improvement activity at the hospital level, its impact on effectiveness, safety, and patient-centeredness remains unclear. C. H. Fung et al. (2008) [Systematic Review: The Evidence That Publishing Patient Care Performance Data Improves Quality of Care](#). *Annals of Internal Medicine* 148, 111–123.

Financial Incentives for Quality

Limiting Payment for Preventable Errors

Medicare plans to withhold additional payments for "serious preventable events," beginning in 2009. The authors review this new policy and conclude that it "seems reasonable if evidence demonstrates that most of the adverse events can be prevented by widespread adoption of achievable practices, the events can be measured accurately, the events resulted in clinically significant patient harm, and [present on admission] determination is feasible." However, close monitoring of this new Medicare policy will be necessary, they say, as it will likely lead to "instances of unfairness, gaming, and unforeseen consequences." R. M. Wachter et al. (2008) [Medicare's Decision to Withhold Payment for Hospital Errors: The Devil Is in the Details](#). *Joint Commission Journal on Quality and Patient Safety* 34, 116–123.

Reduced Copayments Improve Medication Adherence

A large employer's value-based insurance initiative, designed to improve adherence to recommended treatment regimens, was found to reduce copayments for five chronic medication classes in the context of a disease management program. Medication adherence increased for four of five medication classes, reducing nonadherence by 7 to 14 percent, as compared with a control employer using the same disease management program. The authors conclude that copayment reductions for highly valued services have the potential to increase medication adherence above that achieved by existing disease management programs. M. E. Chernew et al. (2008) [Impact of Decreasing Copayments on Medication Adherence Within a Disease Management Environment](#). *Health Affairs* 27, 10–112.

Ethics of Quality Improvement

OHRP's Conclusion Regarding Consent Erroneous

The authors review the Office for Human Research Protections (OHRP) suspension of a quality improvement research project, aimed at reducing catheter-related infections in the intensive care unit at 67 Michigan hospitals, from both ethical and regulatory perspectives. They conclude that the institutional review board "should have undertaken a full or expedited review of the study protocol instead of deeming it exempt." They also believe that OHRP was incorrect in its conclusion that informed consent was necessary for the improvement project to continue. F. G. Miller and E. J. Emanuel (2008) [Quality Improvement Research and Informed Consent](#). *New England Journal of Medicine* 358, 765–767.

QI, Not Human Subjects Research

This perspective reviews the Office for Human Research Protections' decision to suspend an intervention that aimed to reduce infections in the intensive care units of 67 Michigan hospitals. The author writes: "In my view, the project was a combination of quality improvement and research on organizations, not human subjects research, and the regulations did not apply." She concludes that the regulations need to be modified or reinterpreted to "protect people from risky research without discouraging low-risk, data-guided activities designed to make our health care system work better." M. A. Baily (2008) [Harming Through Protection?](#) *New England Journal of Medicine* 358, 768–769.

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