



Reducing Hospital Readmissions: Lessons from Top-Performing Hospitals

Synthesis Report • April 2011

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SUMMARY

Significant variability in 30-day readmission rates across U.S. hospitals suggests that some are more successful than others at providing safe, high-quality inpatient care and promoting smooth transitions to follow-up care. This report offers a synthesis of findings from four case studies of hospitals with exceptionally low readmission rates.

Hospitals' environments contribute to their capacity to reduce readmissions. The four hospitals studied—McKay-Dee Hospital in Ogden, Utah; Memorial Hermann Memorial City Medical Center in Houston, Texas; Mercy Medical Center in Cedar Rapids, Iowa; and St. John's Regional Health Center in Springfield, Missouri—are influenced by the policy environment, their local health care markets, their membership in integrated systems that offer a continuum of care, and the priorities set by their leaders.

These hospitals do not focus on readmissions per se, but instead seek to achieve clinical excellence and invest in quality improvement strategies. They follow many of the same improvement strategies of hospitals that were profiled in a [case study series](#) of top performers on the Hospital Quality Alliance process-of-care, or core, measures. For example, the hospitals incorporate evidence-based practices into daily protocols, standardize procedures, and use electronic information systems as tools to gather information, provide feedback, and support clinical decisions.

But hospitals with low readmission rates also seek to ensure smooth care transitions as their patients are discharged—helping to avoid the deterioration in health status that often brings patients back to the hospital. The hospitals identify and target patients at the highest risk for readmissions, particularly heart failure patients, the very elderly, patients with complex medical and social needs, and those without the financial resources to obtain post-hospital care. For example, they help the uninsured and underinsured obtain primary care and other needed services through free clinics and prescription drug assistance programs.

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By providing individualized education and medication reconciliation, emphasizing warning signs, and scheduling follow-up appointments with community physicians, the case study hospitals seek to ensure that patients and their families not only receive post-discharge instructions, but that they understand them, follow them, obtain appropriate care, and know when to seek additional help. Some of these strategies involve workforce innovations by creating new roles for nurses and pharmacists and by promoting use of hospitalists and care coordinators to manage patients' needs.

The hospitals also check in with high-risk patients after discharge by having nurses call patients and by using telemonitoring devices that relay critical information (e.g., blood pressure and weight) to providers.

Integrating hospital and outpatient care is key to reducing readmissions. Formal or strong informal relationships between hospitals and local primary care providers, heart clinics, nursing homes, home health care agencies, and health plans appear to improve outcomes for patients at the four case study hospitals. Close coordination between the hospitals and palliative care and hospice programs—and efforts to understand and honor patients' preferences for end-of-life care—seem to reduce unwarranted and unwanted readmissions as well.

Hospitals' membership in integrated health systems can contribute to lower admissions and avoidable readmissions through the systems' emphasis on primary and preventive care, community-based education and health promotion, and enhanced communication and flow of information (e.g., through shared electronic health records) among inpatient and outpatient providers. Systems can promote sharing of best practices, and a continuum whereby patient care can be coordinated across settings.

The experiences of the four case study hospitals offer the following lessons for hospitals seeking to reduce avoidable readmissions:

- Invest in quality first: care for patients correctly and readmission rates fall, performance on quality

measures improves, and savings are realized as byproducts.

- Use health information technology (e.g., electronic health records, patient registries, and risk stratification software) to improve quality and integrate care across settings.
- Begin care management and discharge planning early, target high-risk patients, and ensure frequent communication across the care team.
- Educate patients and their families in managing conditions. Teach at a level appropriate to patients and ensure they understand and can teach back key instructions.
- Maintain a “lifeline” with high-risk patients after discharge through telephone calls, telemonitoring, or other practices.
- Align hospitals' efforts with those of community providers to provide a continuum of care. While this may be best achieved in integrated systems, such cooperation can be facilitated through collaborative relationships among hospital and community providers.

Payment reforms across the U.S. health care system are needed to reinforce hospital providers' desire to “do the right thing” for patients. Financial incentives that reward or hold providers accountable for patient outcomes across inpatient and outpatient settings are emerging with the piloting of new delivery methods such as bundled payments and accountable care organizations. Refining and expanding such reforms could help reduce avoidable readmissions and improve the effectiveness and efficiency of the health care system.

INTRODUCTION

At a time when health care leaders are driven to reduce waste and inefficiency, eliminating unnecessary readmissions has been identified as a desirable and achievable goal by both practitioners and policymakers. A readmission is defined as a hospitalization that occurs shortly after a discharge; “shortly” is most often

measured as 30 days but it could be shorter or longer. Such readmissions are often but not always related to a problem inadequately resolved in the prior hospitalization, such as a hospital-acquired infection or unstable heart functioning. They also can be caused by deterioration in a patient's health after discharge due to inadequate management of their condition, misunderstanding of how to manage it, or lack of access to appropriate services or medications. Therefore, interventions to reduce readmissions target both inpatient care, through efforts to improve the quality and safety of care, and the transition to outpatient care, through efforts to ensure continuity and coordination between providers and timely access to needed follow-up services.

Hospital-specific readmission rates for three common diagnoses—heart attack, heart failure, and pneumonia—are available on the Centers for Medicare and Medicaid Services (CMS) Web site, Hospital Compare.¹ The Commonwealth Fund's Web site, WhyNotTheBest.org, includes this information from CMS as well as data from other sources, composite scores, and state and national benchmarks. A recent study suggests that public reporting may be associated with hospital process improvement and better patient and quality outcomes, including readmissions.²

Reducing Readmissions Through Payment Reforms

The predominant fee-for-service payment system means that, in many cases, any hospital admission results in additional revenue for hospitals—creating little incentive for hospitals to seek to reduce readmission rates. Yet both public and private health care purchasers have begun to look critically at readmission rates and introduce payment policies designed to discourage them.

Data on the costs of readmissions are not available across the entire health system, but the largest payer, Medicare, spent \$17 billion (20 percent of all Medicare payments) for unplanned readmissions in the fee-for-service segment of its program in one year.³ The Medicare Payment Advisory Commission estimated that Medicare spends \$12 billion per year for

hospital readmissions deemed “potentially preventable.”⁴ Until recently, the cost of readmissions was borne entirely by those who paid the bills: health plans, employers, consumers, and government agencies. However, payers have begun to limit the amount they will pay by denying payment for readmissions deemed preventable. Medicare, for example, contracts with quality reviewers to investigate readmissions and may deny payments if discharge planning was deemed to be inadequate.⁵

Section 3025 of the Affordable Care Act includes a provision for CMS to reduce its payments to hospitals with high readmission rates (the details are forthcoming as CMS promulgates health reform regulations). One health system raised the bar on providers' responsibility for reducing readmissions when they announced they would waive charges for any heart patients who were readmitted within 90 days.⁶

A small but growing number of payers and providers are experimenting with bundling payments in a manner that encourages accountability for use of all health services related to an episode of care, including multiple hospitalizations. Pilots in New Hampshire, Massachusetts, and elsewhere are exploring how a single payment for both inpatient and outpatient care might encourage better care coordination and quality, as well as efforts to reduce avoidable admissions and readmissions.⁷ National health reform legislation calls for additional testing of this model, which is intended to create opportunities for providers to retain savings if they provide care in ways that reduce costs and reach quality standards.

Reducing Readmissions Through Process Redesign

A review of studies published from 1998 to 2008 revealed that a variety of quality improvement and process redesign approaches have lowered readmission rates, including: “close coordination of care in the post-acute period, early post-discharge follow-up care, enhanced patient education and self-management training, proactive end-of-life counseling, and extending the resources and clinical expertise available to patients

over time via multidisciplinary team management.”⁸ The California HealthCare Foundation profiled nine efforts in the state that sought to coordinate post-hospital care across settings, reconcile patients’ medications, schedule follow-up appointments, and engage patients and families in managing health needs.⁹ Now it is working with a set of hospitals to implement changes that may reduce readmissions.¹⁰

Recognizing that reducing readmissions may require changes across the health care system, the Institute for Healthcare Improvement with support from The Commonwealth Fund has embarked on a three-state effort called State Action on Avoidable Rehospitalizations, or STAAR. STAAR seeks to improve coordination across the health care continuum, reduce shortcomings of the current system such as volume-based incentives, and create new public and professional norms that support improvements in care.¹¹

Despite a growing knowledge base about how to reduce readmissions, there remains a great deal of variability in readmission rates. Some hospitals have reduced readmissions below 18 percent (heart attack), 21 percent (heart failure), and 15 percent (pneumonia), but these are the positive outliers. At the other extreme, hospitals with the highest readmission rates are readmitting more than one of five heart attack and pneumonia patients and more than one of four heart failure patients.¹²

Goal of Synthesis Report

To learn what leading hospitals have done that may contribute to their low readmission rates and to inspire improvement in other hospitals, The Commonwealth Fund supported the development of case studies of top performers. This report summarizes findings, best practices, and lessons learned at four U.S. hospitals that had readmission rates in the lowest 3 percent among all U.S. hospitals in at least two of three clinical areas (heart attack, heart failure, and pneumonia) during the Q4 2007 through Q3 2008 period.

The four hospitals examined for this case study series are:

- *McKay-Dee Hospital* is a 352-bed, private, nonprofit hospital in Ogden, Utah. A member of Intermountain Healthcare, McKay-Dee was selected because it was among the best 3 percent in terms of low readmission rates for heart attack, heart failure, and pneumonia patients among more than 2,800 hospitals eligible for the analysis.
- *Memorial Hermann Memorial City Medical Center* is a 427-bed, private, nonprofit hospital in Houston, Texas, belonging to Memorial Hermann Health System. It was among the best 3 percent in low readmission rates for heart attack and pneumonia patients among more than 2,800 hospitals.

Figure 1. 30-Day Readmission Rates Among Case Study Hospitals

	Heart Attack (2,427 hospitals reporting)	Heart Failure (3,935 hospitals reporting)	Pneumonia (4,095 hospitals reporting)
McKay-Dee Hospital Center	17.70%	19.30%	13.70%
Memorial Hermann Memorial City Medical Center	18.00%	24.60%	14.30%
Mercy Medical Center—Cedar Rapids	17.20%	20.10%	14.90%
St. John’s Regional Health Center	17.10%	21.30%	15.60%
Top 10%	18.40%	22.40%	16.50%
National Average	19.97%	24.73%	18.34%

Notes: All-cause 30-day readmission rates for patients discharged alive to a non-acute care setting with principal diagnosis. These data are based on the most recently available, from reporting period Q3 2006 through Q2 2009.

Source: WhyNotTheBest.org, accessed Dec. 14, 2010.

- *Mercy Medical Center* is a 305-bed, private, nonprofit hospital in Cedar Rapids, Iowa. Mercy Medical Center owns a physician network, hospice, and home health service. It was among the top 3 percent in low readmission rates for heart attack, heart failure, and pneumonia patients among more than 2,800 hospitals.
- *St. John's Regional Health Center* is an 866-bed, private, nonprofit hospital in Springfield, Missouri. St. John's is a member of St. John's Health System, and scored in the best 3 percent in low readmission rates for heart attack and heart failure patients among more than 2,800 hospitals.

Figure 1 illustrates the four hospital's readmission rates, which are significantly lower than the national average and nearly all better than the top 10 percent of hospitals reporting to CMS (these are in bold).

DRIVERS OF READMISSIONS: INTERNAL AND EXTERNAL ENVIRONMENTS

One of the lessons gleaned from the four case studies is that hospitals' environments contribute to their capacity to reduce readmissions. Hospitals are influenced by the policy environment, the local health care market, whether they belong to an integrated health system, and the priorities set by their leaders.

State Capacity and Local Market Dynamics

A study by Jencks et al. vividly illustrates the enormous variation in readmission rates across states, ranging from a low in Idaho of 13.3 percent to a high in Maryland of 22 percent (Figure 2). The authors discussed the potential for higher numbers of available hospital beds to correlate with higher rates of rehospitalization, while areas with greater access to primary care and better continuity of care could be expected to have lower readmissions. However, data limitations prevented explicit study of these questions.

In our case studies, the local environment appears to play an important role in readmissions. In Cedar Rapids, Iowa—recognized by the Institute for

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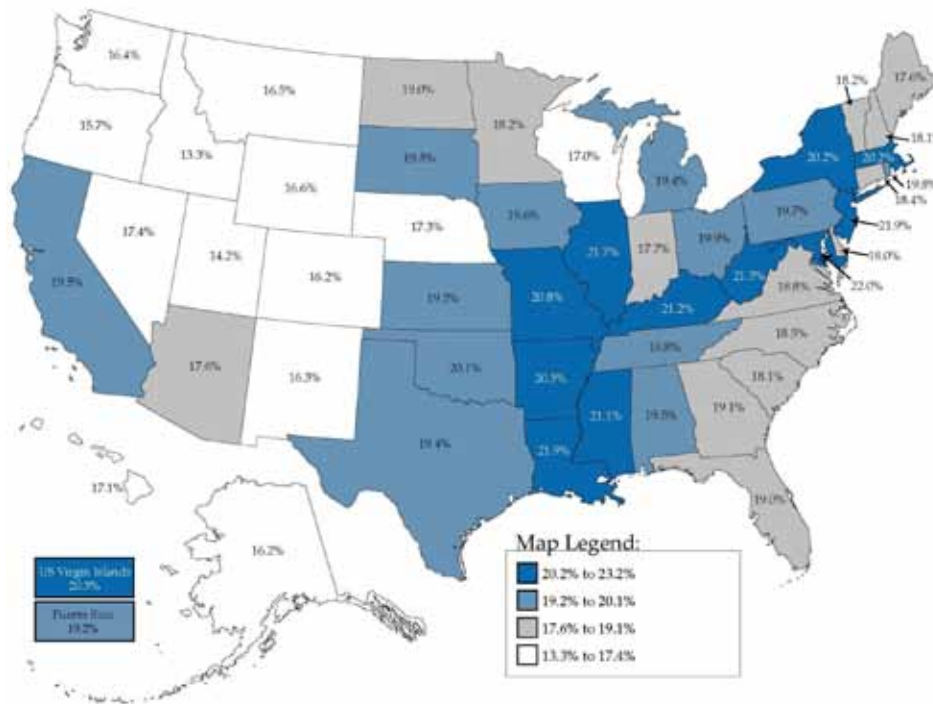
Tim Charles, CEO, Mercy Medical Center

Healthcare Improvement (IHI) as a high-performing health care community for its high quality of care and low cost of health care services—Mercy Medical Center has engaged with a competitor hospital and other local providers to establish common processes for improving patient care. Mercy also has joined with its competitor and other providers to support a safety-net clinic serving over 200 patients a day. The availability of free care to the uninsured likely reduces the risk that the uninsured will be rehospitalized. Tim Charles, CEO, says that if a hospital continues “to think simply within our own silo as an acute care facility, we won't be effective in managing the [readmission] issue.”

Though the state of Texas is generally resource-poor and Texas hospitals as a group have worse than average readmission rates, discharge planners at Memorial Hermann Memorial City Medical Center in Houston, Texas, take advantage of the practices of local home health agencies to arrange post-discharge care for all of their patients, even the uninsured. Local home health companies provide free care in their first few months of operation in order to gain experience for the Medicare certification process.¹³ Also, all home health companies in the Houston area—including Memorial City's agency and start-up companies—employ home health liaisons, who follow discharged patients to ensure they receive ordered services and answer their questions, which likely helps to avoid readmissions.

Membership in an Integrated Health System

Being part of an integrated health system gives hospitals access to data and support that independent hospitals may not have. McKay-Dee Hospital Center in Ogden, Utah, is a member of Intermountain Healthcare, a system that invests heavily in

Figure 2. State-by-State Variation in Readmission Rates

Source: S. F. Jencks, M. V. Williams, and E. A. Coleman, "Rehospitalizations Among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine*, April 2, 2009 360(14):1418–28.

developing, testing, and sharing best practices among its members. Members work together to provide the right care the first time, under a conviction that this leads to better care, fewer readmissions, and lower costs in the long term. The health system established an institute devoted to this work, the Intermountain Institute for Health Care Delivery Research.

Also, being part of an integrated system helps bring all parties to the table and enhances communication and flow of information among inpatient and outpatient providers. It promotes a continuum whereby patient care can be coordinated across settings.

"Don't undersell the importance of being an integrated delivery system. We have the luxury of having hospital officials, clinic physicians, and our health plan at the table always," said Ann Cave, vice president of health plans medical management at St. John's Regional Health Center in Springfield, Missouri. Many hospital leaders face perverse financial incentives, in that readmitting patients can lead to additional revenue—though this is changing as part of ongoing

policy and payment reforms discussed above. Leaders of hospitals that are part of health systems may care less about the number of admissions overall and more about serving patients in the most appropriate and least costly setting.

Clinical Excellence and Quality Improvement

The four case study hospitals do not focus on reducing readmissions per se, but on improving clinical quality and patient care in the belief that readmissions will decline as a byproduct of their broader improvement efforts. Like other high-performing hospitals, St. John's Regional Health Center pays close attention to its performance on the core measures and implementing evidence-based care; these indicators are viewed by hospital leaders as major contributors to its low readmission rates.

McKay-Dee is shaped by a leadership team and culture that promote patient-focused care. Administrators and providers seek to "do the

right thing” for patients, believing this will have a positive impact on their finances in the long term. Administrators at two of the case study hospitals, McKay-Dee and Memorial Hermann, report that lower readmission rates and other efficiencies help them negotiate better rates from health plans and other payers, enabling them to recoup some of the revenue lost through lower numbers of admissions.

The four hospitals emphasize standardization of care and use of best practices, use of information systems to support performance reporting and decision-making, and review of data in real time while problems can still be fixed. Some use workforce innovation, extending the role of nurses, pharmacists, and hospitalists to help educate patients and coordinate their care. These strategies are discussed further below.

CARE TRANSITION STRATEGIES

As noted above, research shows a strong link between attention to care transitions and lower readmission rates. When patients move from the hospital to the next site of care—be it their home or a nursing home, rehabilitation facility, or hospice—they benefit from having a clear treatment plan they can understand and follow, providers who are aware of and able to carry out the plan, access to the right medications, and support services. The case study hospitals used several strategies to help ensure smooth care transitions and well-coordinated care.

The four hospitals focused on patients at the highest risk for readmissions, including heart failure patients, the very elderly, and those with complex medical and social needs. They also sought to help uninsured or underinsured patients make connections with needed services in their communities.

Care Coordination and Discharge Planning

While all hospitals plan for patients’ discharge, the four case study hospitals paid particular attention to discharge planning from the first day of patients’ stay. Staff assess patients’ risk factors, needs, available resources, knowledge of disease, and family support shortly after admission, typically within eight hours. As

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Ann Cave, vice president of health plans medical management, St. John’s Regional Health Center

described by Kathy Kipper-Johnson, director of case management at Memorial City, “We pay close attention to the comorbidities and knowledge base of each patient to form a community plan of care.”

The hospitals also target patients who are likely to have problems following discharge for enhanced care coordination and/or case management. For example, at Mercy, social workers visit all patients over 80 years old to address their needs.

The hospitals use technology to assist them in assessing, tracking, or referring patients. At Memorial City, risk-assessment software helps case managers establish the appropriate level of care and assess patients’ readiness for discharge. This tool also helps the hospital make the case with patients’ insurance plans about needed care.

While all hospitals coordinate with home health agencies and connect patients to available community resources, McKay-Dee and Mercy take an extra step by scheduling follow-up appointments for most of their patients prior to discharge. The two other hospitals are only able to make appointments on an ad hoc basis for the neediest patients, because of limited staff and resources. Scheduling appointments for patients can ensure they receive follow-up care and comply with recommended treatment.

Like other top-performing hospitals profiled for case studies on WhyNotTheBest.org, these four hospitals commit to regular communication across care teams and with patients and their families. Daily, interdisciplinary care coordination meetings, or rounds, are common, providing an opportunity to raise issues or concerns about patients, adjust the discharge date based on progress, and arrange for equipment or

services that may be needed in the community. In some of the hospitals, whiteboards are located in patients’ rooms to keep families apprised of the target discharge date and other important milestones.

Despite their successes, the hospitals noted some aspects of discharge planning are beyond their current capacity or could be improved, such as universal scheduling of follow-up appointments or developing a care plan with every patient.

Patient Engagement and Patient-Centered Education

The hospitals try to help patients understand their conditions—and empower them to manage their diet, activities, medications, and care regimens and know when to seek care—through educational activities throughout the stay. This can reduce patients’ fear and uncertainty, which are factors that contribute to readmissions.

The hospitals employ various methods to engage patients. For example, Memorial City nurses review discharge instructions thoroughly with patients and their families, who are then asked to demonstrate or “teach back” the instructions. This method strengthens

patients’ understanding and identifies for nurses areas that may be confusing and require additional attention. At McKay-Dee, nurses and case managers receive training to assess patients’ literacy level and adjust materials and teaching methods to ensure they are understood.

Medication compliance is critical for discharged patients to remain stable at home, and hospitals have been working hard to improve their medication education and reconciliation approaches. Memorial City places pharmacists in high-risk units to educate patients and try to minimize the number of prescriptions a patient takes home. McKay-Dee uses a checklist to ensure heart disease patients are discharged with the right medications and provides each patient with a customized list that describes, in simple language, the purpose and timing of each medication (Figure 3).

Lack of access to affordable medication is a risk factor for readmission, too. To ensure access to needed medications, McKay-Dee, St. John’s, and Mercy refer patients who cannot afford prescription drugs to medication assistance programs or a clinic with free medications.

Exhibit 3. Sample Personalized Medication List: McKay-Dee Hospital Center

Date: February 19, 2010

Please keep this record of your current medications in your wallet or purse. Update it when medications are added or stopped. This will help others to better assist you in the future.

Medication	Reason	Dose	How to Take	AM	Lunch	PM
Diltiazem	Heart Rate	180 mg	Once daily		X	
Potassium	Electrolytes	10 meq	Twice daily	X	X	
Lasix (furosemide)	Water Pill	40 mg	Twice daily	80	80	22-Feb
Spironolactone	Water Pill	50 mg	Twice daily	X	X	
Synthroid (levothyroxine)	Thyroid	150 mcg	Once daily	X		
Colace	Stool Softener	100 mg	Twice daily	X		X
Pravachol	Cholesterol	20 mg	One pill once daily			X
Aspirin (ASA)	Clot Prevention	81 mg	Once daily	X		
Prevacid	Stomach Acid	15 mg	Once daily			
Dilantin	Seizures	100 mg	3 pills once daily			X
Coumadin	Clot Prevention	5 mg	Once daily as prescribed per CAC		X	
Allopurinol	Gout	300 mg	Once daily	X		
Ambien	Sleep	10 mg	Once daily			X
Metolazone	Water Pill	2.5 mg	See below	X		

Other instructions:

1. Metolazone 2.5mg Mon & Thurs only as of 2/25

Source: McKay-Dee Hospital, 2010.

Cardiovascular patients receive special consideration at all four of the case study hospitals. For example, St. John’s cardiac rehabilitation educators work with heart failure patients to prepare them for transition into the community and refer them to the hospital’s cardiac rehabilitation program for post-discharge care. At McKay-Dee, the computer system flags any patient with a history of heart failure, triggering tailored education, including use of the MAWDS (Medications, Activity, Weight, Diet, Symptoms) teaching approach and a referral to the hospital’s outpatient heart failure clinic for ongoing management of the disease (Figure 4).

Post-Discharge Follow-Up

A common concern that emerged from interviews with staff at the four hospitals is the need to ensure patients do not “fall off a cliff” after returning home. The hospitals provide support after discharge, even if it results in higher costs in the short term. One of the simplest ways they do this is through telephone calls one week after discharge to answer patients’ questions, reinforce disease-specific education, and confirm patients are receiving the recommended follow-up care—including reminding them to see their primary care physician.

This method was employed to some degree by all four hospitals. Some indicated that the process is not standardized or it is available only to a subset of patients, such as heart failure patients or the uninsured. Patients at St. John’s who are members of the hospital’s affiliated health plan also receive follow-up calls from the health plan’s care manager, illustrating a benefit of integrated health systems.


At Memorial City, home health liaisons follow up with patients referred for home health care to confirm that ordered services have been received and answer questions. Even uninsured patients are referred to local home health care agencies, and some uninsured patients with chronic illness are referred to Memorial City’s community-based disease management program. The hospital targets emergency department “frequent flyers” and those with certain chronic conditions for telephone-based disease management education and help finding a medical home. It has seen a drop in emergency visits and inpatient admissions among those receiving this support.


Two hospitals use telemonitoring devices that make it possible to monitor patients remotely so that clinicians can intervene early if there is evidence of clinical deterioration. At Mercy, all cardiac patients


Exhibit 4. The MAWDS Heart Failure Patient Education Mnemonic


SELF-MANAGEMENT WITH MAWDS


Self-management is key to heart failure treatment. Teach Intermountain’s **MAWDS** mnemonic to help promote compliance with these important self-care steps:


 **MEDICATIONS: “Take your MEDICATIONS”**
Make sure your patients understand the importance of medications in their heart failure management. Tell them which medications they are taking and why. Most importantly, make sure they understand the necessity of taking their medications every day, even when they are feeling well.


 **ACTIVITY: “Stay ACTIVE each day”**
Many patients with heart failure are afraid to be active. For others, it just seems like too much of an effort. Encourage your patients to participate in some form of physical activity every day. Participation in a supervised cardiac rehabilitation program is a good way to help patients overcome their fears and understand their limits.


 **WEIGHT: “WEIGH yourself each day”**
It is critical that your patients understand the importance of weighing themselves daily. Patients will be more likely to comply with daily weighing if they understand that you are concerned about fluid retention as it relates to heart failure. Patients should notify their provider when they gain more than 2 pounds in one day or 5 pounds from their usual/target weight.

 **DIET: “Follow your DIET”**
A good diet—especially sodium restriction—is critical to heart failure management. Helping patients understand how to restrict their sodium and learn other important diet elements can be time consuming. A referral to a registered dietitian is recommended for most patients.

 **SYMPTOMS: “Recognize your SYMPTOMS”**
Make sure your patients know how to recognize the signs and symptoms of heart failure, and tell them what you want them to do when they experience them. The *MAWDS Self-Care Diary* and *Living with Heart Failure* booklets described at right provide an action plan to guide patients.

 **MAWDS Self-Care Diary:** Encourage your patients to use the MAWDS self-care diary to record their daily weight and symptoms, and keep track of their medications and appointments. **Reviewing the diary at every office visit** promotes a partnership between you and your patient, and may help you better coordinate with other physicians involved in the patient’s care — thereby improving treatment outcomes and quality of life.

 **If your patient smokes, provide resources to help them quit.** Intermountain provides a smoking cessation booklet for this purpose.

 **Other patient education resources:** Intermountain also provides a *Living with Heart Failure* booklet and a heart failure DVD for patients. View and order these and other resources from intermountainphysician.org/PEN.

Source: Intermountain Healthcare, 2009.

are discharged with a telemonitoring device. The devices, which are provided free of charge to patients who cannot afford to pay for them, monitor blood pressure, pulse, oxygen saturation, weight, and blood sugar and transmit this information through a phone line to the hospital, where a registered nurse reviews it and initiates appropriate follow-up steps if results are not within the physician-approved parameters for the patient. Since implementing the devices in February 2008, the hospital has experienced a 47 percent decrease in readmissions and a 57 percent decrease in average length of stay among participating patients.

At St. John's, an interactive voice response (IVR) system—referred to as the Teleheart Program—provides a mechanism for the hospital to monitor cardiac patients after discharge. Cardiac patients are given a scale and blood pressure cuff at discharge, and instructed to call in every day with their current weight and blood pressure. When abnormal results are reported, the IVR system automatically notifies the nurse on duty, who calls the patient and coordinates appropriate follow-up care.

Collaborating with Community Providers to Promote a Continuum of Care

Collaboration and close communication between inpatient and outpatient providers can enhance care transitions and reduce readmissions. For example, McKay-Dee takes advantage of Intermountain's network of physician practices and clinics. One leader there noted, "We can find a [medical] home for almost anyone. Without this system alignment, some patients could be difficult to place."

McKay-Dee and St. John's engage community providers and support patients after discharge with outpatient clinics for ongoing management of the patient's condition.

At McKay-Dee, many doctors—both those employed by the system and independent physicians—have offices on site in the hospital's physician office wing, adjacent to the related inpatient floor. The proximity of physicians' offices to the hospital promotes follow-up care. Hospital patients also have access to

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Charlotte Foy, quality and case management director, McKay-Dee

an affiliated home health network, which provides coordination and support to help patients stay out of the hospital. If a patient does not have a medical home, hospital staff will help the patient secure one—either within the Intermountain network or with one of the community clinics with which the hospital partners.

St. John's efforts to coordinate inpatient and outpatient care include engagement of local primary care physicians. For example, the hospital sponsored a "heart failure summit" to bring physicians up to date on current guidelines for heart failure treatment—a step that could help reduce admissions as well as readmissions. The hospital also provides electronic notification to community physicians via its electronic medical record system when one of their patients is discharged from the hospital with heart failure.

McKay-Dee, Mercy, and St. John's provide all community physicians with access to their patients' electronic medical records. At McKay-Dee and St. John's, physicians are asked or required to have follow-up phone calls or appointments with their patients within one week of discharge. At St. John's, this applies to heart failure patients only; community physicians are asked to give them priority access through a "call in, get in" standard of care. Although the standard is not mandatory, it appears to be capturing physicians' attention.

Both McKay-Dee and St. John's also run outpatient cardiac clinics and other services that provide education, rehabilitation, and ongoing management to help patients stay out of the hospital. St. John's makes resource centers available to support patients with heart failure, asthma, and diabetes. McKay-Dee has an outpatient heart clinic on site to which it refers at-risk cardiac patients at discharge. Having such clinics and resource centers on site provides clear advantages;

clinicians can for example send a heart failure patient with high fluid levels, or “overload,” directly to McKay-Dee’s intravenous clinic, where successful fluid reduction can avoid an admission to the hospital. For more serious situations, patients can be admitted immediately.

Use of Information Technologies

All four case study hospitals use health information technology (HIT) to improve quality and reduce avoidable readmissions. The hospitals have implemented electronic medical records (EMRs) that provide access to patient medical histories, facilitate computerized ordering, and standardize care with automatic patient alerts and electronic order sets. The EMRs also track and report outcomes in real time, enabling hospitals to benchmark their performance against others and compile physician report cards. The records also enhance communication across care settings through fast and accurate sharing of patient information among hospitals, physician offices, and even affiliated insurance plans.

HIT also can be used to support coordinated discharge planning and improvements in chronic care. For example, St. John’s uses a sophisticated patient registry to notify community physicians about their patient’s condition and recent hospitalizations. The registry is populated based on diagnosis codes, laboratory codes, and manual entries and linked to the hospital’s EMR. The patient registry generates a Visit Planner Tool and Exception List to inform physicians of needed tests or interventions and highlight any gaps in care.

Some hospitals leverage HIT in the patient assessment and discharge planning process. Branching logic can be built into nursing assessment tools to trigger automatic referrals for case management, social work consults, or other services based on a patient’s answers to an assessment. As noted above, case managers at Memorial City use risk stratification software to assess a patient’s readiness for discharge and ensure they receive the appropriate level of care according to evidence-based practices.

Telemonitoring and interactive voice response systems, as discussed above, also help these hospitals monitor high-risk patients and provide early interventions that can avoid readmissions.

Strong End-of-Life Care

Mercy Medical Center links its strong end-of-life care—including palliative care teams, portable advance directives, and a hospice program—to its low readmission rates. Mercy provides a palliative care consultation to patients with complex illnesses or serious health conditions, as identified by frequent visits to the emergency department, frequent admissions, poor prognoses, or prolonged hospital stays. A palliative care team helps clarify patients’ goals, leads discussions about advanced directives, and guides care transitions so patients can receive the right level of care at the right time. The team also works closely with the hospital’s hospice program, which provides an alternative to inpatient care for patients who are unable to stay in their home.

Mercy and other area health care providers developed a pilot program called IPOST to improve communication and honor a patient’s end-of-life decisions across care settings.¹⁴ The IPOST tool, signed by a physician, captures a patient’s advance directives and creates a set of orders that follows the patient from facility to facility or home setting. The program helps the hospital maintain its low readmission rate by enabling it to honor patients’ wishes, for example to spend their final days at home or avoid extraordinary interventions.

McKay-Dee also has palliative care and hospice programs, both of which work closely with the hospital’s heart failure clinic to help patients make decisions about end-of-life care. This can provide great comfort to patients’ and their families, and may also reduce readmissions.

Testing Payment Incentives

Two of the hospitals, McKay-Dee and St. John’s, are testing ways to better align incentives to promote high-quality, efficient care and discourage

avoidable readmissions. McKay-Dee’s health system, Intermountain, is piloting three elements of a “shared accountability organization.” In one pilot, Intermountain and a large payer are working on an agreement whereby hospitals will receive a single bundled payment for pregnancy, labor, and delivery services. A second pilot involves bundled payments for hip, knee, and heart services. In the third pilot, patient-centered medical homes will be expanded to include patients insured through Intermountain’s health plan, with the “coordination fee” to participating clinics covering preventive services, certain acute conditions, and eventually chronic disease management.

St. John’s physician group has been participating in the Medicare Physician Practice Group demonstration, a pay-for-performance program that offers financial rewards or shared savings for improving patient outcomes and achieving efficiencies.¹⁵ The physicians’ participation reflects their leadership’s belief in aligning incentives to promote health outcomes and efficiency, and encouraging actions that better integrate inpatient and outpatient care.

RESULTS

The four case study hospitals had exceptionally low 30-day readmission rates (among the best 3 percent of U.S. hospitals) for at least two of the three conditions reported by CMS (heart attack, heart failure, and pneumonia).

These hospitals attribute their success at reducing readmissions to their commitment to clinical excellence—commitment that has resulted in high scores on other performance measures as well. For example, Memorial City has achieved high adherence to recommended process-of-care measures for heart attack and pneumonia care during the initial inpatient stay, which they believe has helped reduce readmissions (Figure 5).

The results of Mercy Medical Center’s targeted initiatives are striking. Mercy attributes a 47 percent decrease in readmission rates for its heart failure and chronic obstructive pulmonary disease patients to the installation of home monitoring devices (Figure 6). McKay-Dee has had success in reducing readmissions through efforts to target, educate, and follow up with heart failure patients.

**Figure 5. Memorial Hermann Memorial City Medical Center
Heart Attack and Pneumonia Care Performance, 2006–09**

Clinical Measures	2006	2007	2008	2009
Heart Attack Care				
Aspirin administered within 24 hours	99%	99%	97%	98%
Aspirin prescribed at discharge	98%	96%	95%	99%
ACEI or ARB prescribed at discharge	96%	93%	89%	100%
Counseling for adult smokers	99%	100%	100%	100%
Beta blockers prescribed upon arrival	99%	96%	95%	95%
Beta blockers prescribed at discharge	98%	99%	98%	99%
Pneumonia Care				
Antibiotic within six hours of arrival	78%	86%	100%	98%
Oxygenation assessment	100%	100%	100%	100%

Note: other pneumonia measures were not tracked in the same way during this entire time period.
Source: Memorial Hermann Healthcare System, 2006–08; CMS, 2009.

However, the hospitals acknowledge they do not excel in all areas and need to continuously measure several aspects of performance to target areas in need of improvement. For example, Memorial City’s interventions to prevent readmissions contributed to very low rates, compared with national averages, for pneumonia and heart attack, but just average rates for heart failure. This suggests that conditions such as heart failure require focused interventions. While St. John’s performance is above average on most quality measures reported by CMS, it has a surprisingly low score for documentation of heart failure discharge instructions. Although the problem may be more a failure to document the delivery of discharge instructions than a failure to deliver them, it nevertheless indicates an area for improvement.

While McKay-Dee has low readmission rates in all three clinical areas, hospital leaders say that their performance on surgical process-of-care measures is not as good as it should be; according to the leaders, they are working to convince surgeons to follow recommended care guidelines but are “still fighting that battle.”

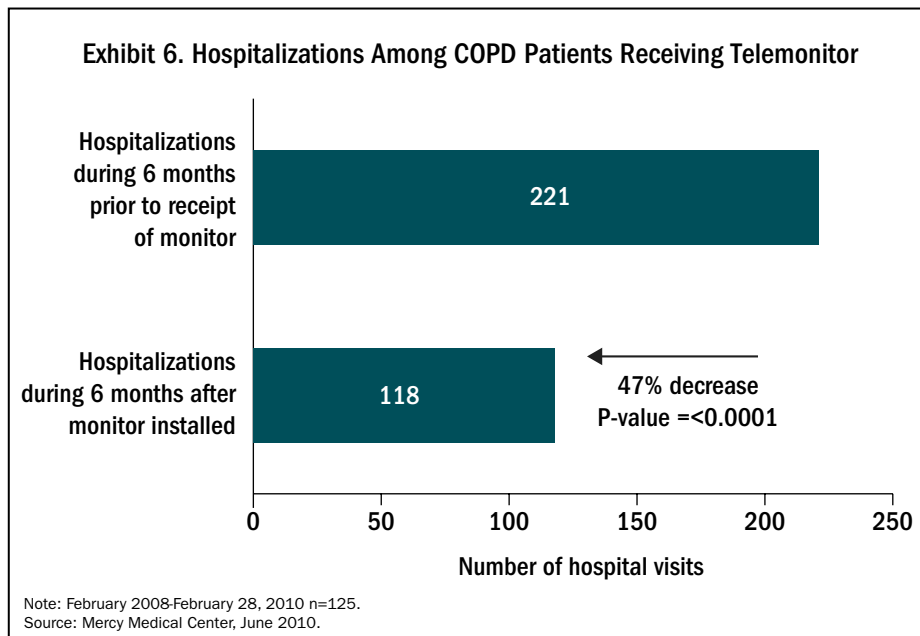
LESSONS

The four hospitals’ experiences offer several lessons for hospitals seeking to reduce their readmission rates.

Care for patients correctly and readmission rates fall, performance on quality measures improves, and savings are realized as byproducts.

The case study hospitals have found that dedication to clinical excellence and patient safety can result in declines in readmissions and costs over the long term. Hospital leaders should focus on the performance measures they believe are most strongly connected to meaningful improvements. This requires investments in dedicated quality improvement staff, tools such as electronic monitoring of key performance measures, development of care standards and protocols, financial incentives, and other strategies described in the [Summary Table of Improvement Strategies of Top-Performing Hospitals](#).

Hospitals that do not have a major improvement infrastructure or a long history of performance measurement can still make progress. They could begin



by selecting a few priorities, building data systems to measure outcomes, testing new care processes, and then incorporating them into daily protocols. A key is to standardize and simplify processes, so they are easy to follow and reflect evidenced-based care.

A hospital committed to providing the best care must be prepared to make decisions that may result in higher costs over the short term. For example, among the case study hospitals such decisions included: ceasing to perform elective preterm births, creating a research institute dedicated to improving care delivery, and founding a home health network.

A successful improvement program must obtain commitment from providers. To encourage this, hospitals should monitor adherence to evidence-based care standards and identify and address causes of nonadherence, including those that lead to readmissions.

Hospital leaders must demonstrate their commitment to quality and safety. For example, leadership rounds can encourage communication between administrators and frontline staff about how to improve quality. Hospitals and hospital systems must establish accountability for meeting performance benchmarks—with rewards and penalties—up and down the ladder, from individual physicians to managers to CEOs.

Use information technologies as tools to improve quality, integrate care, and ease patient transitions.

While information technologies are not solutions, they can be used to support clinical, financial, and operational decisions that can improve quality and outcomes and potentially reduce readmissions. Various software systems track performance at the system, hospital, department, and provider levels, enabling creation of dashboards that benchmark performance; identify outliers; and facilitate targets and incentives for improvement. Patient registries, clinical risk assessments, and decision support software provide evidence-based protocols, warnings, and reminders. Telemonitoring devices enable hospitals to obtain critical information about discharged patients and address problems before they lead to complications that may require hospitalization.

Begin case management and discharge planning early, target high-risk patients, and ensure frequent communication across the whole care team.

Planning for patients' discharge should begin on the day of admission and involve social workers in the case of elderly and high-risk patients. Strong case management and discharge planning—by qualified staff with manageable caseloads—can reduce patients' confusion and ensure they receive appropriate care.

Ingredients for successful case management and discharge planning include: daily team meetings during which floor nurses, care coordinators, social workers, and hospitalists discuss each patient, their expected discharge date, and issues that need to be addressed; whiteboards in patient rooms that alert the patient and family to the anticipated discharge date so they can plan accordingly; scheduling of follow-up appointments before the patient is discharged; home health liaisons rounding with case managers; and effective education.

Teach patients and families how to manage their conditions.

By helping patients understand and manage their disease, hospitals can reduce patients' fear and uncertainty and avoid the medication mistakes and missed warning signs that can result in readmissions. Staff at the case study hospitals credit educational methods such as teach-back—not merely read-back—with giving patients greater confidence when they leave the hospital.

Staff must engage patients at their level by assessing their literacy skills and adjusting their verbal and written materials accordingly. Some hospitals have had success using pharmacists to teach patients about their medication regimens.

Targeted education to heart failure patients—whether or not heart failure is their primary diagnosis—can help reduce avoidable readmissions among this high-risk group. But education is important for all patients. By teaching patients how to recover from acute episodes and control even minor chronic conditions, hospitals can slow or prevent further deterioration and reduce readmissions.

Maintain a “lifeline” with high-risk patients after discharge.

Taking care of patients after discharge helps keep them from coming back to the hospital. Two strategies that the case study hospitals have found to be effective are: 1) post-discharge phone calls for all patients with certain conditions or characteristics (e.g., heart failure, diabetes, post-catheter, elderly); and 2) use of tele-monitoring devices that transmit vital information to a trained clinician who can determine whether follow-up care is needed.

In addition, hospitals can help uninsured patients find a medical home for follow-up care and provide or refer patients to community-based telephone case management when needed.

Align the efforts of hospital and community providers to ease transitions across care settings.

Access to a continuum of care facilitates smooth transitions across settings and helps ensure delivery of appropriate care. Vertically integrated systems may have an advantage in providing continuous and coordinated care. For example, their members—including hospitals, primary care networks, rehabilitation centers, home care agencies, nursing homes, and other providers—may share electronic health records that give them easy access to comprehensive patient information. Still, there are ways to create effective partnerships between hospital and community providers apart from formal ownership arrangements.

The case study hospitals nurtured partnerships and collaborations with nonaffiliated clinics in low-income neighborhoods as well as with specialists and even competitor hospitals that resulted in smoother patient transitions and higher-quality care. For example, a health system could extend access to its electronic health records to nonaffiliated physicians through Web portals (for a fee or no fee), permitting timely access to a patient’s history, medications, test results, and other information.

Improving health requires a community-wide effort. Hospitals and hospital systems must reach out to colleagues in their communities in order to manage readmissions and improve overall health. Such collaboration is likely to have benefits for the participating organizations as well as for the local population.

Incentives are needed to encourage hospitals to “do the right thing.”

Traditional fee-for-service reimbursement by public and private payers, and even discharge-based payments based on individual hospital stays, create incentives for hospitals to increase the volume of hospital admissions. New payment mechanisms that alter these incentives are emerging as public and private payers are looking for ways to reduce costs and waste. Medicare has announced it will no longer pay for readmissions within 30 days of discharge for the same diagnosis. In addition, it is supporting efforts to expand primary care medical homes, testing bundled payments that cover a total episode of care, and promoting accountable care organizations—all of which should create incentives to reward quality and outcomes, such as fewer readmissions, instead of volume.

Although low readmission rates may in the short term result in lost revenue, two hospital leaders noted that lower readmission rates and other efficiencies help them when negotiating rates with health plans and other payers. They also say that—while they are motivated to achieve clinical excellence—incentives are needed to motivate inpatient and outpatient providers to work together to integrate patient care and take other steps to reduce avoidable readmissions.

With new opportunities presented by national health reform and other changes in the health care system, hospitals stand to benefit from being pioneers in providing high-quality, coordinated care and avoiding readmissions.

NOTES

- ¹ Began June 2009. www.hospitalcompare.hhs.gov.
- ² Researchers found that during the first three years of CMS public reporting (2004 to 2006), hospital process performance improved and was associated with better patient and quality outcomes. For heart attack, performance improvements were associated with declines in mortality rates, lengths-of-stay, and readmission rates. Although the authors could not conclude that public reporting caused the improvement in processes or outcomes, they found the results encouraging. R. M. Werner and E. T. Bradlow, "Public Reporting on Hospital Process Improvements Is Linked to Better Patient Outcomes," *Health Affairs*, July 2010 29(7):1319–24, available at <http://content.healthaffairs.org/content/29/7/1319.abstract>.
- ³ S. F. Jencks, M. V. Williams, and E. A. Coleman, "Rehospitalizations Among Patients in the Medicare Fee-for-Service Program," *New England Journal of Medicine*, April 2, 2009 360(14):1418–28.
- ⁴ Medicare Payment Advisory Commission, *Report to the Congress: Reforming the Delivery System* (Washington, D.C.: MedPAC, Sept. 16, 2008).
- ⁵ Some hospitals have reported that Medicare has begun denying payments for unnecessary readmissions, which may indicate that quality improvement organizations have recommended that Medicare do so based on their reviews. It does not appear that this has become standard practice across the country.
- ⁶ Geisinger Health System does not charge for avoidable readmissions within 90 days of discharge if they are related to certain elective procedures. See "Medicine That Comes with a Warranty: A Hospital System Pioneers a New Approach to Reducing Complications and Readmissions," *Today's Hospitalist*, Oct. 2009, available at http://todayshospitalist.com/index.php?b=articles_read&cnt=889.
- ⁷ New Hampshire launched five pilot projects in 2010 in which organized groups of providers were able to apply to be recognized as accountable care organizations by public and private payers in the state. For more information, see www.stepsupnh.org or read the briefing paper: http://www.unh.edu/chi/media/Payment_Reform/2010_ACO_Issue_Brief.pdf. In Cambridge, Massachusetts, Mt. Auburn Hospital, the Mt. Auburn Cambridge Independent Practice Association, and Blue Cross Blue Shield of Massachusetts have entered into a risk-sharing arrangement with the goal to improve quality and lower costs. The providers receive a global payment to encourage efficiency and have performance incentives worth up to 10 percent of the global budget for meeting inpatient and ambulatory quality and outcome goals. See <http://www.commonwealth-fund.org/Content/Newsletters/Quality-Matters/2010/June-July-2010/Case-Study.aspx>.
- ⁸ A. Boutwell and S. Hwu, *Effective Interventions to Reduce Rehospitalizations: A Survey of the Published Evidence* (Cambridge, Mass.: Institute for Healthcare Improvement, 2009), p. 14.
- ⁹ S. B. Kanaan, *Homeward Bound: Nine Patient-Centered Programs Cut Readmissions* (Oakland, Calif.: California HealthCare Foundation, Sept. 2009), available at <http://www.summahealth.org/media/2932/16148.pdf>.
- ¹⁰ Project Boost, www.CHCF.org, 2010.
- ¹¹ For more information about STAAR, visit www.ihl.org. Findings are not yet available.
- ¹² Based on data from [WhyNotTheBest.org](http://www.WhyNotTheBest.org).
- ¹³ A home health agency must have patient records for at least 10 patients before the state survey agency will conduct an initial certification survey visit. For more information, see www.cms.gov/SurveyCertificationGenInfo/downloads/SCLetter01-02.pdf.

- ¹⁴ Iowa Physician Orders for Scope of Treatment, based on the National Physician Order for Life-Sustaining Treatment Paradigm and the La Crosse Respecting Choices model, <http://www.ohsu.edu/polst/about/index.htm>. For more information see: Patient Autonomy in Health Care Decisions Pilot Project, 2010 Report, http://www.idph.state.ia.us/adper/common/pdf/legis/archive/2010/2010_patient_autonomy.pdf.
- ¹⁵ In a demonstration mandated by Section 412 of the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000, CMS rewards 10 physician groups through shared savings related to improving patient outcomes by proactively coordinating their total health care needs, particularly for those with chronic illness or multiple comorbidities or who are making a transition between care settings. For more information see http://www.cms.gov/DemoProjectsEvalRpts/downloads/PGP_Fact_Sheet.pdf.

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