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Strategies to help reduce hospital readmissions

The risk assessment tools, medication reconciliation steps, and discharge script provided here can help you keep your patients from going back into the hospital.

PRACTICE RECOMMENDATIONS

❯ *Use risk stratification methods such as the Probability of Repeated Admission (Pra) or the LACE index to identify patients at high risk for readmission.* Ⓑ

❯ *Take steps to ensure that follow-up appointments are made within the first one to 2 weeks of discharge, depending on the patient's risk of readmission.* Ⓒ

❯ *Reconcile preadmission and postdischarge medications to identify discrepancies and possible interactions.* Ⓑ

Strength of recommendation (SOR)

Ⓐ Good-quality patient-oriented evidence

Ⓑ Inconsistent or limited-quality patient-oriented evidence

Ⓒ Consensus, usual practice, opinion, disease-oriented evidence, case series

CASE ▶ Charles T, age 74, has a 3-year history of myocardial infarction (MI) and congestive heart failure (CHF) and a 10-year history of type 2 diabetes with retinopathy. You have cared for him in the outpatient setting for 8 years. You are notified that he is in the emergency department (ED) and being admitted to the hospital, again. This is his third ED visit in the past 3 months; he was hospitalized for 6 days during his last admission 3 weeks ago.

What should you do with this information? How can you best communicate with the admitting team?

Hospital readmissions are widespread, costly, and often avoidable. Nearly 20% of Medicare beneficiaries discharged from hospitals are rehospitalized within 30 days, and 34% are rehospitalized within 90 days.[1] For patients with conditions like CHF, the rate of readmission within 30 days approaches 25%.[2] The estimated cost to Medicare for unplanned rehospitalizations in 2004 was $17.4 billion.[1] The Centers for Medicare and Medicaid Services penalizes hospitals for high rates of readmission within 30 days of discharge for patients with CHF, MI, and pneumonia.

"Avoidable" hospitalizations are those that may be prevented by effective outpatient management and improved care coordination. Although efforts to reduce readmissions have focused on improving the discharge process, family physicians (FPs) can play a central role in reducing readmissions. This article describes key approaches that FPs can take to address this important issue. Because patients ages ≥65 years consistently have the highest rate of hospital readmissions,[1] we will focus on this population.

Multiple complex factors are associated with hospital readmissions

Characteristics of the patient, physician, and health care setting contribute to potentially avoidable readmissions (**TABLE 1**).[3,4]

TABLE 1

Factors that contribute to potentially avoidable hospital readmissions[3,4]

Patient factors	
Demographic/ socioeconomic	Older age (≥65 years); being married may be protective
	Lack of social support
	Lack of stable housing
	Inability to afford the cost of medications, equipment, care services
Medical	Specific conditions: acute MI, CHF, COPD, diabetes, mental illness, pneumonia, substance abuse/dependence
	Severity of illness
	Having ≥5 chronic conditions
	Taking ≥5 medications
	Vision loss
Nonadherence	Medication-related: cost, psychosocial complexity of issues, adverse effects, adverse drug events, complex regimens
	Nonmedication-related: diet, physical activity, fluid intake, weight monitoring
Utilization of health care services	Lack of transportation
	Lack of insurance
	Difficulty navigating health care system
	Prior hospitalizations
	Lengthy hospital stay
Health beliefs/knowledge/ understanding of medical conditions	Fearful of medical system
	Delays seeking help
	Cultural background
	Language skills
	Cognitive abilities
	Health literacy
Physician factors	
Diagnostic uncertainty	Limited confidence
	Risk aversion
	Limited scope of practice
Outpatient treatment failures	Lack of awareness of alternatives for hospital admissions
Suboptimal monitoring of chronic conditions	Lack of time
	Lack of reimbursement for case management
	Lack of reimbursement of interdisciplinary team members
Patient-provider relationship	Communication skills
	Trust issues
Practice factors	
Limited access to primary care provider	No appointments available
	No access in evening or weekends
Provider-provider miscommunication	Suboptimal or untimely communication between health care providers
Lack of continuity of care	Failure to transmit patient information to and from hospital, subspecialists, and other providers
Health care professional not able to offer medical advice over phone or by other means	Providers unable to return calls during day
	No after-hours provider on call
	Lack of online patient portal

CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease; MI, myocardial infarction.

Medical conditions and comorbidities associated with high rates of rehospitalization include CHF, acute MI, pneumonia, diabetes, and chronic obstructive pulmonary disease. However, a recent study found that a diverse range of conditions, frequently differing from the index cause of hospitalization, were responsible for 30-day readmissions of Medicare patients.[5]

Identifying those at high risk: Why and how

Determining which patients are at highest risk for readmission enables health care teams to match the intensity of interventions to the individual's likelihood of readmission. However, current readmission risk prediction models remain a work in progress[6] and few models have been tested in the outpatient setting. Despite numerous limitations, it's still important to focus resources more efficiently. Thus, we recommend using risk stratification tools to identify patients at high risk for readmission.

� **Many risk stratification methods use data** from electronic medical records (EMRs) and administrative databases or self-reported data from patients.[7] Risk prediction tools that are relatively simple and easy to administer or generate through EMRs—such as the Probability of Repeated Admission (Pra),[8] the LACE (Length of stay, acuity of the admission, comorbidities, ED visits in the previous 6 months) index,[9] or the Community Assessment Risk Screen (CARS)[10]—may be best for use in the primary care setting. These tools generally identify key risk factors, such as prior health care utilization, presence of specific conditions such as heart disease or cognitive impairment, self-reported health status, absence of a caregiver, and/or need for assistance with daily routines.

Many of these tools have been used to identify high-risk older adults and may not be appropriate for patients who are likely to be readmitted for different reasons, such as mental illness, substance abuse, or chronic pain. Therefore, it is important to use a risk stratification method that captures the issues most likely to cause readmissions in your patient population, or to consider using a variety of methods.

> **Use a risk stratification method that captures the issues most likely to cause readmissions in your patient population, or consider using a variety of methods.**

The American Academy of Family Physicians (AAFP) offers resources to help FPs design methods for determining a patient's health risk status and linking higher levels of risk to increasing care management at http://www.aafp.org/practice-management/pcmh/initiatives/cpci/rscm.html.

CASE ▶ Mr. T has been admitted to the hospital 3 times in the past 3 months, so you use the LACE index to evaluate his risk. You determine that Mr. T's score is 15, which means his expected risk of death or unplanned readmission is 26.6% (**TABLE 2**).[8,11] What are your next steps?

Foster communication between the hospital and outpatient office

Patients are particularly vulnerable during the transition from hospital to home. Delayed or inaccurate information adversely affects continuity of care, patient safety and satisfaction, and efficient use of resources.[12] Discharge summaries are the main method of communication between providers, but their content, timeliness, availability, and quality frequently are lacking.[13] Discharge summaries are available at only 12% to 34% of first postdischarge visits, and these summaries often lack important information such as diagnostic test results (33%-63%) or discharge medications (2%-40%).[12] Although researchers have not consistently found that transferring a discharge summary to an outpatient physician reduces readmission rates, it is likely that direct communication can improve the handoff process independent of its effects on readmissions.[12,14]

Timely follow-up appointments are essential

Many factors influence the need for rapid follow-up, including disease severity, management complexity, ability of the patient to provide sufficient self-care, and adequacy of social supports.[15,16] Studies have found that discharged patients who receive timely outpatient follow-up are less likely to be readmitted.[1,17] While the optimal time interval

TABLE 2

Mr. T's LACE index score*[8,11]

Factor	Mr. T's status	Assigned score
Length of stay	6 days	4 points (max: 7)
Acute admission	Yes	3 points (max: 3)
Comorbidities (Charlson Comorbidity Index score†)	4	5 points (max: 5)
Emergency department visits in last 6 months	3	3 points (max: 4)
		Total score: **15 points (max:19)**

LACE, Length of stay, Acuity of the admission, Comorbidities, Emergency department visits in the previous 6 months.

* Higher LACE scores indicate greater number of comorbidities and a higher predicted mortality. Mr. T's score of 15 means his expected risk of death or unplanned readmission within 30 days of discharge is 26.6%. The LACE is just one of several tools that can be used to evaluate a patient's likelihood of readmission.

† The Charlson Comorbidity Index predicts the 10-year mortality for patients with comorbid conditions. It is available at: http://farmacologiaclinica.info/scales/Charlson_Comorbidity/.

> **Set up a follow-up appointment within one or 2 weeks of discharge, depending upon the patient's risk of readmission.**

between discharge and the first follow-up appointment is unknown, some literature supports follow-up within 4 weeks.[15,18] However, because readmissions often cluster in the first several days or week following discharge,[18] follow-up within the first 2 weeks (and within the first week for higher-risk patients) may be appropriate.[19] Ideally, follow-up appointments should be scheduled before the patient is discharged. Patients who schedule a follow-up appointment before they are discharged are more likely to make their follow-up visit than those who are asked to call after discharge and schedule their own appointment.[12]

Employ outpatient follow-up alternatives

Follow-up telephone calls to patients after discharge help patients understand and adhere to discharge instructions and troubleshoot problems. Clinicians who use scripted telephone calls can evaluate symptoms related to the index hospitalization, provide patient education, schedule relevant appointments or testing, and, most importantly, initiate medication reconciliation, which is described at right.[20] The **FIGURE** includes the script we use at our practice.

❚ **Home visits** may be appropriate for certain patients, including the frail elderly. Home visits allow clinicians to evaluate the patient's environmental safety, social support, and medication adherence.[12] Preventive home visits generally have not been found to reduce hospital readmissions, but do enhance patient satisfaction with care.[21]

❚ **Bundled interventions**, such as alternating home visits and follow-up telephone calls, may be more effective than individual interventions in reducing readmission.[22]

Reconciling medications may have far-reaching benefits

Medication discrepancies are observed in up to 70% of all patients at admission or discharge and are associated with adverse drug events (ADEs).[23] To prevent ADEs and possibly readmission, take the following steps to reconcile a patient's medications[23]:

❚ **Obtain a complete list of current medications.** Information on all of the patient's prescription and nonprescription medications should be collected from the patient/caregiver, the discharge summary, prescription bottles, home visits, and pharmacies.[12,24]

❚ **Reconcile preadmission and postdischarge medications.** Clarify any discrepancies, review all medications for safety and appropriateness, and, when appropriate, resume any held medications and/or discontinue unnecessary ones.

❚ **Enlist pharmacy support.** Pharmacists are uniquely positioned to review indications as well as potential duplication and interactions of a patient's medications. Inpatient

FIGURE

A sample discharge assessment and script for follow-up calls*

Today's date	
Time of call	
Admission date	
Hospital discharge date	
Diagnosis	
Primary care physician	
Insurance	
Pharmacy (name, location, phone)	
Patient's name	
Date of birth	
Telephone	

How have you been feeling since you were discharged from the hospital?	
Do you have any questions about your discharge instructions?	
Have you gotten all of your prescriptions filled from the pharmacy? Did you have any issues getting your medications? (Identify issues)	
Are you taking your medications as instructed?	
Are you having any issues with your medications or side effects?	
Do you have an appointment with your primary care physician?	
Can you bring in all of your medication bottles for that appointment?	
Do you have any appointments with other providers? If so, who?	
Do you have any transportation issues?	
Do you have support at home? If so, who? (Identify caregiver)	
Have you fallen during the past 3 months? (If Yes, how many times?)	
Do you have a visiting nurse or home health aide?	

CARE MANAGEMENT			
		YES	NO
Caller's name			

* The authors acknowledge Kathleen Hilbert, RN, MSN, for providing this tool.

> Research shows that patients who received a phone call from a pharmacist within 3 to 7 days of discharge had lower readmission rates.

studies have demonstrated that partnering with pharmacists results in fewer ADEs.[12,25] One study showed that patients at high risk for readmission who received a phone call from a pharmacist 3 to 7 days after discharge had lower readmission rates.[26] The pharmacist reconciled the patients' medications and ensured that patients had a clear understanding of each medication, its common safety concerns, and how often they were supposed to take it.[26]

Make medication adherence as easy as possible

As many as half of all patients don't take their medications as prescribed.[27] There is limited

> **A patient who understands the purpose of a recommendation—especially when directly linked to a patient-derived goal—may be more likely to adhere to a plan of care.**

data on health outcomes associated with medication nonadherence, and existing data frequently are contradictory—some studies have found that as many as 11% of hospital admissions are attributed to nonadherence, while others show no association.[28]

Factors that affect adherence include psychiatric or cognitive impairment, limited insight into disease process or lack of belief in benefit of treatment, medication cost or adverse effect profile, poor provider-patient relationship, limited access to care or medication, or complexity of treatment.[29] To promote medication adherence, consider the following educational and behavioral strategies[30]:

▮ **Identify patients at risk for nonadherence**. This includes those with complex regimens and/or uncontrolled disease states or symptoms.

▮ **Increase patient communication and counseling**. Patient education, particularly on the importance of adherence, is one of the few solo interventions that can improve compliance.[31] Involving caregivers and using both verbal and written materials provides additional benefit.[31,32]

▮ **Simplify dosing schedules**. Simple, convenient medication regimens may improve adherence. For example, adjusting dosing from 3 times a day to once a day can increase adherence from 59% to 83%.[33] Aids such as pillboxes to organize medications may be of benefit.[29,32]

▮ **Ensure consistent follow-up**. Patients who miss appointments are more likely to be nonadherent. They may benefit from easy access, help with scheduling, and frequent visits.[32]

▮ **Be mindful of patients' out-of-pocket expenses**. Reducing copayments improves adherence rates.[30]

▮ **Minimize polypharmacy.** Polypharmacy has been independently associated with nonadherence and increased risk for ADEs.[34]

▮ **Identify patients who have limited health literacy.** Limited health literacy may be linked to increased medication errors and nonadherence.[12,35] Patients with low health literacy may be unable to identify medications recorded in their medical record. **TABLE W3**[36-41] at jfponline.com outlines strategies for identifying patients with low health literacy and improving communication with them.

CASE ▶ By speaking with hospital staff before Mr. T is discharged, you are able to confirm that he has scheduled a follow-up visit with you for one week after discharge, and that a discharge summary will be available for him to bring to that visit. Mr. T brings his discharge summary with him to your office, and you reconcile his medication list. Because he is your last patient of the day, you have some time to sit with him and his wife to explore his goals of care.

Improve care—and possibly reduce readmissions—through goal setting

Goal setting is an important element of post-discharge follow-up, particularly for elderly patients and those with progressive or end-stage diseases. Goal setting can improve patient care by linking care plans with desired outcomes and keeping diagnostic and therapeutic interventions relevant to the patient.[42] A patient who understands the purpose of a recommendation—especially when directly linked to a patient-derived goal—may be more likely to adhere to the plan of care.

Asking patients to articulate their goals of care using "Ask-Tell-Ask" framework described in **TABLE W3**[36-41] at jfponline.com will allow you to deliver the prognosis, reinforce treatment options to achieve patient-specific goals, empower patients to assert their preferences, and develop a follow-up plan to see if treatment is successful.

Empowering patients

Consider using both verbal and written approaches when educating patients about self-care behaviors such as monitoring symptoms and adhering to dietary/behavior restrictions and medication instructions. One study showed that a brief one-on-one patient education session decreased readmissions in patients with heart failure,[43] although another study found that patient education alone yielded a nonsignificant decrease.[44]

Providing caregivers with education and support is a critical and perhaps overlooked

opportunity to reduce readmissions.[45] Involving key family members in discharge planning, preparation, follow-up, and ongoing management is essential in caring for patients with functional deficits and/or complex care needs. Educating caregivers can help them feel more prepared and effective in their roles.

▮ **Establish an "action plan."** For patients with chronic, periodically symptomatic diseases such as asthma and heart failure, action planning can be useful. Action plans should include information that reinforces patients' daily self-care behaviors and instructions for what to do if symptoms get worse. Action planning also might include simple if-then plans ("if x happens, then I will do y"), which can help with problem solving for common scenarios. Action plans have been shown to reduce admissions for children with asthma[46] and adults with heart failure when coupled with home monitoring or telephone support from a registered nurse.[16,47]

▮ **Generate an individualized care plan for each patient,** taking into account your patient's health literacy, goals of care, and level of social support. This care plan may include educational and behavioral interventions, action planning, and follow-up plans. Most successful approaches to reducing readmissions have included both system-level and patient-level interventions that use an interdisciplinary team of providers.[48]

▮ **Make the most of follow-up visits**. The traditional 15-minute FP visit can make it challenging to provide the level of care necessary for recently discharged patients. Multiple models of team-based care have been proposed to improve this situation, including using the "teamlet" model, which may include a clinician and one or 2 health coaches.[49] During each visit, the health coaches—often medical assistants trained in chronic disease self-management skills—see patients before and after the physician. They also contact patients between visits to facilitate action planning and to promote self-management.

Palliative care programs: A resource for FPs

The growth of palliative care programs in US hospitals has helped increase the emphasis on establishing goals of care. Inpatient-based palliative care consultation programs work with patients and families to establish goals. However, after discharge, many of these goals and plans begin to unravel due to gaps in the current health care model, including lack of follow-up and support.[50] Outpatient palliative care programs have begun to address these gaps in care.[50] Comprehensive palliative care programs are quickly becoming an important resource for FPs to help address transitional care issues.

CASE ▶ When you ask Mr. and Mrs. T about his goals for treatment, they say are getting tired of the "back and forth" to the hospital. After discussing his lengthy history of worsening CHF and diabetes, you raise the idea of palliative care, including hospice, with the couple. They acknowledge that they have had family members get hospice care, and they are open to it—just not yet. The 3 of you craft an "if-then" plan of care to use at home. You schedule a 2-week follow-up visit and remind Mr. T and his wife of your office's 24-hour on-call service. **JFP**

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> ❯ Action plans should include information that reinforces patients' daily self-care behaviors and instructions for what to do if symptoms get worse.

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> **In a "teamlet" model, health coaches meet with patients before and after the physician, and contact patients between visits.**

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TABLE W3

Patient has limited health literacy? Try these strategies

Strategy	Comments
Identify demographic risks for limited health literacy	Risk factors include older age, low socioeconomic status, unemployment, not finishing high school, being a member of an ethnic minority group, English as a second language[36]
Identify red flag symptoms of limited health literacy	Signs include filling out registration forms incorrectly, poor adherence to medication schedules
Expand social history to include questions to identify patients at risk	Ask patients "How often do you need help when you read instructions?" or "How confident are you filling out medical forms yourself?"[37,38]
Implement strategies to improve understanding and self-efficacy	Speak in concrete terms when providing instructions Use trained interpreters when necessary Break down complex process into small units and give very specific medication instructions (eg, "Take your blue blood pressure pill at 8 AM and 8 PM" instead of "Take twice daily")[39] Employ the "teach back" technique (the patient repeats information from the provider in his or her own words) Use the "Ask-Tell-Ask" method by asking patients to describe their understanding of a disorder or treatment, then telling them additional needed information, followed by asking what they understand and how they feel about the new information[3,40] Use printed instructions to reinforce verbal instructions and outline key information. Materials should be written at a sixth grade reading level[41]