

HEALTH CARE REFORM

Interventions to Decrease Hospital Readmissions

Keys for Cost-effectiveness

Robert E. Burke, MD; Eric A. Coleman, MD, MPH

Hospitals began paying financial penalties for high-risk–adjusted 30-day readmission rates for certain diagnoses in October 2012. Physician leaders seeking to reduce readmission rates will find that proven interventions often require substantial up-front financial and organizational investment. To reduce readmissions while minimizing the investment, leaders need to develop new and creative strategies guided by the evidence. This article describes 5 proposed strategies or “best practices” derived from critical evaluation of prior interventions and experience in the field. These practices include matching the intensity of the intervention to the patient’s risk of readmission, avoiding commonly used but unproven interventions, using interventions with a durable effect, creating an effective team before selecting an intervention, and focusing on previously unrecognized high-risk patient groups.

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Hospitals were assessed the first round of financial penalties for high-risk–adjusted 30-day readmission rates for congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), and pneumonia in October 2012.¹ Preliminary estimates indicate that, on average, hospitals will be penalized \$125 000 in this first year, an amount projected to triple by 2014.²

Although significant penalties imply that readmission reduction is achievable, physician leaders may struggle to identify interventions that are reliably effective. A systematic review of interventions to decrease readmissions concluded that no intervention “reliably reduced rehospitalization.”³ Given this finding, experts advocate using successful strategies described in single-institution randomized trials, few of which have been validated externally.^{4,5} A key unifying theme among

successful interventions is their “high-touch” nature.⁶ These high-touch interventions require substantial up-front investment in personnel, training, and of care.

See Invited Commentary on page 629

Physicians seeking resources from their hospital partners may find that many hospitals do not consider themselves able to make this investment, particularly if discretionary resources are consumed paying readmission penalties. Even with sufficient financial resources, physicians may find implementing multicomponent interventions with high fidelity (ie, reproducing complex interventions in exactly the same way as the original) challenging given competing priorities and time pressures. For example, hospitals participating in the Hospital to Home initiative of the American College of Cardiology and Institute for Healthcare Improvement used on average only 5 of the 10 practices promoted by the initia-

Author Affiliations: Section of Hospital Medicine, Medical Service, Department of Veterans Affairs Medical Center, Eastern Colorado Health Care System (Dr Burke), Division of General Internal Medicine, Department of Medicine, University of Colorado School of Medicine (Dr Burke), and Division of Health Care Policy and Research, University of Colorado (Dr Coleman), Denver.

tive, with less than 3% of participants using all 10.⁷ This finding suggests that even with direct guidance, physicians and committees charged with implementing complex interventions may struggle.

Given these financial and organizational challenges, more cost-effective and less complex readmission reduction efforts are needed. We suggest, based on critical appraisal of the relevant literature and our experience in the field, that 5 “best practice” principles can be applied to minimize the up-front financial investment and help overcome organizational barriers, increasing the likelihood of success in reducing readmissions. Those principles are as follows:

1. Match the intensity of the readmission reduction intervention to the patient’s risk of readmission.
2. Avoid commonly used interventions that have not been shown to be effective.
3. Use interventions with a lasting effect.
4. Create an effective team before implementation of any intervention.
5. Broaden the intervention to target high-risk groups for readmission who have not been the focus of previous readmission reduction efforts.

BEST PRACTICE PRINCIPLES FOR COST-EFFECTIVE INTERVENTIONS

First, physicians should stratify patients being discharged by risk and match the intensity of an evidence-based intervention to the individual patient’s likelihood of readmission. Physicians need not intervene for every patient discharged from the hospital and should not apply a uniform intervention to all patients. High-risk patients appear to require a higher-intensity intervention,⁸ and a readmission reduction in low-risk patients is difficult to demonstrate.⁹ Applying a high-intensity intervention to all patients is also unlikely to be cost-effective. A risk stratification scheme is needed.

Models predicting readmission risk have limited ability to discrimi-

nate between patients at high and low risk of readmission¹⁰ and are generally not designed to identify those patients with *modifiable* risk. However, the predictive abilities of experienced primary care physicians who have insights gathered from a longitudinal relationship with the patient have not been examined. These risk factors include, for example, the availability of reliable transportation, level of family caregiver support, degree of health literacy, and accurate assessment of baseline cognitive and functional impairment.

Coupling these risk factors with known predictors of readmission derived from utilization data (eg, length of stay, number and severity of comorbidities, and number of prior hospital admissions and emergency department visits)¹⁰ could improve risk stratification. We envision a 2-stage risk assessment. Known risk factors for readmission obtained from utilization or administrative data are used to screen patients being discharged. This risk analysis then is refined using a select number of data elements from longitudinal data sources or from bedside evaluation that address important nonmedical risk factors for hospital readmissions. Such an assessment then could be used to help hospitals match resource expenditures on readmission reduction efforts with individualized risk of readmission.

Second, physicians are advised to avoid commonly promoted interventions to reduce hospital readmissions that have shown mixed or largely negative results despite their intuitive appeal, especially as sole interventions. These interventions include routine postdischarge telephone calls,¹¹ inpatient clinical pathways,¹² telemonitoring,^{13,14} and care management, unless intensive and locally deployed.¹⁵

Third, physicians can select interventions with a lasting effect. An emphasis on 30-day readmissions is currently appropriate given the limited role a hospital-based discharge intervention may have on longer-term outcomes. However, extrapolating from existing initiatives supported by the Centers for Medicare & Medicaid Service that emphasize

60- or 90-day episodes of care, this metric may be subject to change. Initiatives such as the Care Transitions Intervention have demonstrated sustained reductions in use of hospital services during a 6-month period.⁴ Interventions that reduce readmissions at 30 days after discharge but not at more distant points¹⁶ could just delay rather than reduce readmissions.

Fourth, physicians may attend to the appropriate composition of the team that will lead the effective implementation of an intervention because the same intervention can have very different outcomes depending on the team involved. For example, in a promising preliminary study to reduce readmissions among patients with CHF, readmissions were reduced 44%, more than recouping the cost of the intervention. When the same methods were applied in a larger trial and failed,¹³ the authors identified a singularly effective nurse who affected outcomes in the smaller study. In another intervention, when case managers were more geographically distant from the populations they served, the intervention led to significantly *increased* costs and readmissions. After changing the intervention to involve local personnel who understood the patients, services, and physicians better, the intervention became cost-effective in reducing readmissions.¹⁵ Teams deploying an intervention with high fidelity have better results,¹⁷ and training is crucial to this success.⁵ When local expertise is lacking, mentorship from previously successful groups may be available.^{4,18}

Fifth, physicians should broaden their focus to include patient groups at high risk for readmission who have not been the typical focus of previous interventions. Four high-risk groups may have barriers to ideal transitions of care that are simply or inexpensively addressed, offering substantial return on investment in terms of reduced health care expenditures and improved health.

The first group consists of patients discharged with pneumonia, psychiatric disease, metabolic disturbances (including gastrointestinal tract and endocrine disease), and renal impairment. These condi-

tions are the most common reasons for hospital admission after CHF and COPD in the Medicare population,¹⁹ but we are unaware of any specific interventions to reduce the high number of readmissions for these patients. More than 40 publications describe interventions to reduce readmissions for patients with CHF,²⁰ but comparatively few have been published for COPD.^{21,22} Given the prevalence of CHF, an extensive evaluation seems appropriate but may be to the detriment of other significant, costly patient populations, such as patients undergoing dialysis. The dearth of tailored interventions is particularly notable for COPD and pneumonia, for which penalties for high readmission rates are already being assessed.

The second group includes CHF patients with significant comorbid disease. A striking but underrecognized finding is that CHF is not the principal diagnosis in nearly half the readmissions in this population. As a result, interventions that reduce readmissions for CHF often do not reduce all-cause readmissions.²⁰ Developing and reviewing a physician checklist at discharge of all the patient's known comorbidities and attending to those that are not the primary reason for admission may be necessary to reduce all-cause readmissions in CHF patients.

The third group includes patients who are discharged from acute care to skilled nursing or rehabilitation facilities. Readmissions from skilled nursing facilities represent a substantial number of overall readmissions,^{23,24} reflecting the frequency of complex care transitions after discharge²⁵ that are not addressed by current efforts. As the population ages, knowledge of how to achieve optimal transitions in care between the hospital and post-acute care facilities and between these facilities and home becomes increasingly important. Models that enhance relationships between discharging physicians and nursing homes show promise for reducing readmissions²⁶ but remain largely unexplored.

The last group includes patients discharged into the hands of family caregivers. This group may have

unique opportunities for physician engagement in reducing readmissions. Family caregivers (inclusive of relatives, friends, and neighbors) provide substantial amounts of support to older patients with functional deficits and multiple medical comorbidities, who are at highest risk of readmission and poor outcomes.^{27,28} However, helping family caregivers become more effective in this role has received little emphasis. For example, family caregivers are not included routinely when discharge instructions are provided.²⁹ The roles a family caregiver may play currently or in the future in regard to the health care of their loved one are not assessed routinely at admission or discharge, and electronic medical records generally do not have fields for recording this information. Assessment tools for this purpose have been created and are available in the public domain.³⁰ Although patients without family caregivers may also be a group at high risk for readmission, the involvement of a family caregiver may represent a unique opportunity for reducing readmissions.

CONCLUSIONS

To maximize the odds of success, physician-led efforts to reduce hospital readmission rates should include improving risk stratification, avoiding ineffective interventions, using interventions with a durable or sustained effect, and giving thoughtful consideration to the composition of the team charged with implementing the intervention. Broadening the target population to include patients with high-risk disease processes other than CHF, patients with CHF and significant additional comorbidities, those with family caregiver support, and those discharged to locations other than home may further enhance program effectiveness.

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Correspondence: Robert E. Burke, MD, Section of Hospital Medicine, Medical Service, Department of Vet-

erans Affairs Medical Center, Mailstop 111, 1055 Clermont St, Denver, CO 80220 (Robert.Burke5@va.gov).

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