Medication Reconciliation by Pharmacists at Discharge Did Not Lead to Reduced Readmission Rates

Walker PC, Bernstein SJ, Jones JN, et al. Impact of a pharmacist-facilitated hospital discharge program: a quasi-experimental study. Arch Intern Med 2009;169:2003–10.

Study Overview

Objective. To characterize medication discrepancies that occur at discharge and to examine the impact of identifying and reconciling medication discrepancies at discharge by pharmacists on health care resource utilization.

Design. Prospective, alternating-month quasi-experimental study.

Setting and participants. The study was completed on the general medicine service at the University of Michigan and included adult patients managed by either the hospitalist or resident service when a pharmacist was on-service (n = 2232). Eligible patients were those discharged from the hospital and at high risk for medication-related adverse events due to being on multiple medicines, receiving specific high-risk medications, or being at risk for inability to manage their own medications. The intervention group (n = 358) received pharmacist intervention through medication therapy assessment, medication reconciliation, screening for adherence concerns, patient counseling and education, and postdischarge telephone follow-up. Control patients (n = 366), who were randomly selected, met the inclusion criteria and received standard care.

Main outcome measures. Number and types of medication discrepancies, 14-day and 30-day readmission rates, and emergency department (ED) visits within 72 hours of discharge.

Main results. Medication discrepancies at discharge were less likely to occur among intervention patients compared with control patients (33.5% vs. 59.6%, $P < 0.001$). All discrepancies that occurred among patients in the intervention group were resolved prior to discharge. There were no significant differences between readmission rates and the 2 groups at 14 days (12.6% intervention vs. 11.5% control, $P = 0.65$) and 30 days (22.1% intervention vs. 18.0% control, $P = 0.17$). Further, there was no association between ED visits and pharmacist intervention: return to the ED within 72 hours of discharge occurred among 2.8% of intervention patients versus 2.2% of control patients ($P = 0.60$).

Conclusion. Although pharmacist intervention improved quality of care by identifying and reconciling medication discrepancies at discharge, it had no significant effect on clinical outcomes and hospital resource utilization as measured by readmissions and returns to the ED.

Commentary

Hospital readmissions have emerged as a focus among policy makers as they pursue methods to manage the high cost and variable quality of health care [1]. Readmissions to the hospital after care are common, costly, and may represent poor quality of care [2]. However, despite the increasing interest in reducing readmissions, there are few studies that actually show interventions that lower 30-day readmission rates for patients discharged from the hospital.

One cause of hospital readmissions may be adverse events related to medications [3]. Many patients, especially those with chronic illnesses, have significant medication changes that occur when they are admitted to the hospital and again after they are discharged. While some of these changes are clinically necessary, they may also lead to serious complications (eg, when a critical medication is stopped at the time of hospitalization but is not restarted when the patient is discharged). Nearly 20% of patients discharged from the hospital experience some sort of an adverse event, and nearly two-thirds of these are medication-related.

There is hope that hospitals may be able to reduce adverse events (and ideally, readmissions) in patients by focusing on more effective management of medications at the time patients are admitted and discharged from the hospital. However, there are few data to empirically show that this would be a helpful strategy.

The study by Walker et al is very helpful work in this regard. They used a quasi-experimental design (intervening on patients admitted on alternating months) to determine whether detailed review and interventions by a pharmacist can reduce medication-related problems and readmission

rates. Their primary findings—that while medication-related problems can be improved with a pharmacist engaged in the hospital care, pharmacist involvement does not lead to reduced posthospitalization resource use—is both insightful and sobering. The study was conducted in a methodologically sound way and shows that pharmacists can be helpful with respect to avoiding medication-related complications. That alone should help justify the use of these professionals in the hospital setting. However, their lack of impact on readmissions (or visits to the ED) suggests that medication-related problems may not be a major driver of readmission rates.

Several important limitations are worth noting. This was a single-institution study with a single pharmacist involved; there may be some concerns about how well the results generalize to other settings. Not all patients in the intervention group received the intervention due to logistical reasons, which may reduce the ability of the authors to find a relationship between the intervention (pharmacist) and the outcomes of interest (including readmission rates). Finally, even during the control period, physicians were aware of the study and therefore may have paid more careful attention to medication related-issues among control patients.

Applications for Clinical Practice

This is yet another study that shows that pharmacists, when engaged with the medical team on the hospital wards, can be helpful in improving the medication-related care of patients. The results provide further impetus for hospitals to use these professionals as a part of delivering inpatient care. However, the lack of impact on readmissions suggests that we may not understand the underlying causes of readmissions and that adverse events due to drugs may not be the primary culprit in causing patients to return to the hospital.

—Review by Ashish K. Jha, MD, MPH

References

1. Epstein AM. Revisiting readmissions—changing the incentives for shared accountability. N Engl J Med 2009;360:1457–9.
2. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the medicare fee-for-service program. N Engl J Med 2009;360:1418–8.
3. Forster AJ, Murff HJ, Peterson JF, et al. The incidence and severity of adverse events affecting patients after discharge from the hospital. Ann Intern Med 2003;138:161–7.