

Transitional Care Medication Safety and Reducing Medical Liability: Closing the Chasm

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Abstract

Purpose: To improve medication safety and quality of care and reduce medical liability during the hospital-to-community transition.

Scope: The magnitude of medication errors in the United States and the associated human and economic costs are unacceptable. The transition from hospital to community is an exceptionally risky time. Data suggest that up to 90% of patients experience at least one medication discrepancy in the transition from hospital to home. Patients with hospital-to-community medication discrepancies are almost twice as likely to be readmitted to the hospital within 30 days than are patients with no medication discrepancies.

Methods: A multi-method study was conducted that used both retrospective and prospective data and quantitative and qualitative procedures and analyses.

Results: Antecedent, structure, process, and outcome factors associated with medication discrepancies, adverse events, and medical liability during hospital-to-community transitions within a complex healthcare system were identified. Strategies to mitigate those problems were generated using a comprehensive process that engaged a variety of stakeholders in focus groups and failure modes and effects analyses.

Key Words: transitional care; medication safety; medication discrepancy; medication errors; adverse drug events; medical liability; risk management; quality of care; patient safety

Purpose

The overall objective of this research was to identify strategies to improve medication safety and quality of care during the hospital-to-community transition. Two specific aims guided the research team to meet the objective:

1. Evaluate antecedent, structure, process, and outcome factors associated with medication discrepancies, adverse drug events, and medical liability during hospital-to-community transitions within a complex healthcare system; and
2. Design best practice risk management strategies that can be integrated into transitional care to reduce medication discrepancies and associated errors and adverse events while minimizing medical liability.

Scope

Background: The magnitude of medication errors in the United States and its associated human and economic costs are unacceptable (US Institute of Medicine [IOM], 2007). Health systems expend considerable resources reducing medication errors in the hospital setting. Increasingly, inpatient medication risk management efforts focus on preventing errors by improving systems and creating safety cultures rather than by assigning blame for unsafe practice (e.g., Goeschel et al., 2006; Hsia, 2003; Pronovost et al., 2006). Unfortunately, the potential for patient harm and increased medical liability due to medication discrepancies does not end at hospital discharge. The transition from hospital to community settings is an exceptionally risky time (Forester et al., 2003; Foust, et al., 2005; Greenwald, Denham, & Jack, 2007; Kripilani, 2008). Data suggest that up to 90% of patients experience at least one medication discrepancy in the transition from hospital to home, and discrepancies occur for all classes of medications (Corbett et al., 2010; Setter et al., 2009). Patients with hospital-to-community medication discrepancies are almost twice as likely to be readmitted to the hospital within 30 days than are patients with no medication discrepancies (Coleman, et al., 2006). Recent research aimed at improving transitional care and medication safety demonstrates enhanced patient outcomes and reduced costs (e.g., Balaban et al., 2008; Jack et al., 2009). However, the contribution of medication risk management systems into these transitional care quality improvement efforts has not been previously evaluated.

Context: The specific aims of this research were developed in response to astounding findings from a prior study conducted by our team in which 90% of the participants being discharged from an acute care hospital to a home healthcare agency had at least one medication discrepancy, with a mean of four medication discrepancies per participant. Additionally, medication discrepancies were identified in nearly all medicine classes. Medication errors for ambulatory patients are more difficult to record; however, more than 2.5 billion prescriptions are dispensed yearly (Kohn et al., 2000). Research indicates that rates of adverse drug events (ADEs) in ambulatory care may be up to four times as high as that reported in hospital studies (Ghandi et al., 2003). Fatal medication errors in the home, not involving alcohol or street drugs, increased 564% during the past 20 years (Phillips et al., 2008). As rates of per-capita prescription use continue to rise, ambulatory medication errors of even greater magnitude are estimated (Catlin et al, 2006). Finally, limited available data on medication-related medical malpractice claims suggest that 50% of claims are related to outpatient care and 74% are preventable (Rothschild et al., 2002). As evolving payment reform systems mandate that health systems initiate transitional models to better coordinate care across the continuum, healthcare systems' risk of medical liability for care during this period will be greater. Thus, effective strategies are critically needed to reduce the incidence of medication discrepancies and the associated errors and ADEs. Such strategies have the potential to improve the overall health of the population and reduce the risk of medical liability.

Settings: The first aim of the study involved retrospective analyses of the medication discrepancies from our team's prior study. Those data were collected in eastern Washington state as patients transitioned from acute care to home care. The second aim of the study was conducted in rural and urban communities of eastern Washington state.

Participants: Secondary data analysis for Aim 1 of the study was conducted based on 1392 medication discrepancies experienced by 258 participants from a prior study. Participants in the prior study were hospitalized adults, 50 years of age or older, who were referred to home healthcare services after hospital discharge. Participants had one or more of the following chronic conditions: heart disease, peripheral vascular disease, cerebral vascular disease, diabetes mellitus, and/or chronic obstructive pulmonary disease.

Participants (N=70) in Aim 2 were community stakeholders who had an interest in improving medication safety and reducing medical liability. Stakeholders included 12 patients/family members who live in urban areas; six patients/family members who live in rural areas; seven physicians who practiced in primary care or as hospitalists; five nurses who practiced in urban hospitals; seven nurses who practiced in rural hospitals; eight pharmacists who practiced in either an acute care hospital or retail pharmacy; 12 social workers who practiced in acute, home, or long-term care; three health plan administrators; and six healthcare lawyers.

Methods

A multi-method study was conducted that used both retrospective and prospective data and quantitative and qualitative procedures and analyses.

The objective of Aim 1 of the study was to accurately characterize the impact of medication discrepancies on patient safety and medical liability. To attain this objective, we used results from our current hospital-to-community medication discrepancy data (n=1392 medication discrepancies) to 1) statistically analyze factors that contribute to discrepancies and adverse drug events (ADRs) and 2) evaluate the medical liability risk associated with the ADRs when applied to statutory, regulatory, and appellate case law. Three distinct analytic processes were required. First, we retrospectively evaluated and categorized data from our hospital-to-community medication discrepancy study to identify the potential risk of each medication discrepancy to contribute to patient harm. Second, based on a systematic review of statutory, regulatory, and case law, we ascertained the medical liability associated with medication discrepancies according to the potential for patient harm. Third, we used multivariate analysis to identify antecedent factors predictive of medication discrepancies for the varying degrees of patient harm and risk of medical liability.

To accomplish Aim 2 of the study, three analytic processes were required. First, we presented the information generated in Aim 1 to relevant focus groups of stakeholders (N=70) to seek their perspective and interpretation of the data and their ideas about how the information can be used to design safer medication risk management strategies during hospital-to-community care transitions. Second, we convened a Community-Based Patient Safety Advisory Council and used the collective information generated from the stakeholder focus groups to inform a Failure Modes and Effects Analysis (FMEA). The findings of the FMEA were then used to design strategies to improve medication safety and reduce medical liability during care transitions. Third, we are calculating the cost-effectiveness of the best practice medication risk management strategies (note: cost effectiveness analyses are still in progress).

Study limitations include the use of one health system and one geographic area of the United States. The findings may differ in other parts of the United States or within other health systems. In particular, this study involved a health system that primarily functioned on a fee-for-service payment schedule; results in a health system that was more integrated and and/or used capitated or bundled payment structures may differ significantly. Furthermore, the legal data used in these analyses were based on laws from the United States. Also, because medical liability laws in the United States differ from state to state, implications of the research findings may also differ slightly from state to state.

Results

The research team for this study is just beginning to disseminate the findings. Therefore, we will provide general, versus specific, results so as not to compromise future copyrighted publications. As results are published, we will submit them to the Agency for Healthcare Quality and Research to provide a detailed accounting of the findings.

Findings from Aim 1 included:

- Discrepancies occur across all classes of medicines and are surprisingly common in medication classes that are considered at high risk to cause patient harm.
- The risk of harm from identified medication discrepancies is generally minimal but occasionally serious, including the risk of permanent disability and death.
- Five types of medicines were found to pose a high risk for medical liability.
- Patient- and system-level structure and process variables offer minimal to modest contributions toward identifying the risk of medication discrepancies.

Findings from Aim 2 included:

- Stakeholder groups were able to identify factors that impact antecedent, structure, process, and outcomes related to medication discrepancies during the transition from home to hospital and hospital to home; interestingly, differing stakeholder groups often identified similar factors.
- Emerging themes identified as contributing to medication discrepancies during hospital-community care transitions included:
 - Patient choice
 - Communication
 - Costs
 - Education
 - Teamwork
 - Care coordination.
- Strategies identified by the Patient Safety Advisory Council for improving hospital-to-community care transitions following the Failure Modes and Effects Analysis included:
 - Develop mechanisms to have a master list of medicines that can be used for all healthcare encounters.
 - Improve medication reconciliation procedures and outcomes.
 - Allocate more resources to healthcare transitions.
 - Improve discharge forms.
 - Engage in a widespread and sustained medication safety public health campaign.

Publications

There are no publications from this research yet, but several are in process. Findings are being disseminated in presentation form this spring, and papers based on those publications will follow.

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