

Population Health Management

Patient post-discharge transitions and inpatient readmissions impose costly burdens for employers and carriers

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Patient Post-discharge Transitions and Inpatient Readmissions Impose Costly Burdens for Employers and Carriers

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Abstract

Although the Centers for Medicare & Medicaid Services has focused on Medicare hospital readmissions for select diagnoses through the Hospital Readmissions Reduction program, there is no similar initiative for employers, who account for the majority of the 48% of private health care spending in the United States. Readmissions are costly and it is estimated that as many as half of these may be preventable. This study analyzes a national claims database to understand post-discharge transitions and their cost in the working population. Within an employer-sponsored, commercially-insured population, this study found that 4% of members are hospitalized annually and drive 37% of population health care cost. Of these members, 17% undergo additional admissions in the year following discharge and drive approximately 67% of the cost of the admitted population. This study found that the post-discharge site of care transitions has significant implications for the cumulative cost of care. More than a third of patients discharged home will transition to higher cost settings over the course of a year. Mental health and substance abuse diagnoses add significantly to admission/readmission rates and costs. Prior research indicates that post-discharge interventions that activate and engage patients in self-management are beneficial in mitigating overall cost and readmissions.

Keywords: readmissions, employer, productivity, care transitions

Introduction

TENS OF MILLIONS of working-age Americans undergo ambulatory surgery or inpatient hospitalization each year; most are discharged home to recover.¹ Lack of behavioral and physiological support at home can result in readmissions and lost productivity, all of which impact more than half of the discharged population.²⁻⁵ More than a third of patients initially discharged home ultimately transition to higher cost settings such as nursing homes or skilled nursing facilities (SNFs), or are readmitted to hospital over the course of a year.

Although the Centers for Medicare & Medicaid Services' (CMS) Hospital Readmissions Reduction Program (HRRP) has focused on hospital readmissions, there is no similar initiative for the working population even though employers account for the majority of the 48% of private health care spending in the United States.⁶ According to Bailey et al.,⁷ readmissions cost self-insured employers \$80 billion annu-

ally; 50% of these readmissions are preventable. Quality factors such as adverse events, care gaps, poorly executed care transitions, and lack of self-management skills drive readmissions.^{7,8} Care gaps exist for as many as half of patients who are readmitted within 30 days post discharge, suggesting that a large proportion of readmissions may be preventable.⁸

Reducing preventable hospital readmissions has been a priority for payers, providers, and policy makers seeking to improve health care and lower costs, although the focus has been on Medicare, not commercial patients. CMS's HRRP acts as a key mitigator by imposing financial penalties on hospitals with higher-than-expected readmission rates.^{9,10} Although developed specifically for the Medicare population, there are spillover effects to hospitalizations in other populations, but these fall short, particularly for employer populations.¹¹ HRRP has proven somewhat effective but is insufficient in light of emerging information about post-discharge care transition pathways and their costs among the

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working-age population. Using a national claims database, this study aims to understand post-discharge patient transitions and the costs related to these transitions from the employer perspective.

Methods

Data

This study analyzed administrative claims data extracted from a random sample of the 2015–2016 IBM MarketScan data set, which consists of 3.5 million commercial members nationwide. MarketScan is a large, well-respected, widely-used, nationally-representative database sourced from large employers and health plans. Eligibility, utilization, and cost data for employees, spouses, and dependents (including children) covered by employer-sponsored private health insurance are included. MarketScan members are representative of the employed working-age-group population with a mean age of 34. About half of the members (52%) are female.

Objective

The objective was to understand patient journeys and related costs post discharge from inpatient admissions. Achieving this objective entailed the following steps:

- Identify members with inpatient stays during calendar year 2015 – this is the starting population, which represents 4% of the entire data set.
- For each member identified:
 - Assign the discharge date from their (first) inpatient stay as index date;
 - Assign member to one of the discharge settings of interest (SNF, home health, home) based on the discharge status coded on their (first) inpatient claim;
- Capture each member’s experience (ie, cost, presence of mental health issue, sites of service utilized) during the following 12 months post index date, divided into 3 periods: 1–30 days, 31–90 days, and 91–365 days.

Institutional review board review was not required because this analysis used claims data that were obtained from International Business Machines Corporation.

Results

Analysis of MarketScan data of 3.5 million commercially-insured individuals found health care expenditures to total \$16.4 billion annually, or \$455 per member per month. The average cost of admission (allowed charge) was \$20,670.

Figure 1 illustrates the membership and cost distributions for patients post discharge. Of the 4% of members who are admitted per year, 17% undergo readmission within 12 months post discharge. However, these readmitted patients account for nearly two thirds of the cost of all discharged patients during those 12 months. On the other hand, two thirds of discharged patients remain in the home/self-care setting post discharge, and account for less than 20% of the total cost. Frequencies of membership and cost are more consistent for those who seek care in the SNF (3%–4% of member count and spend) or home health (10%–13% of member count and spend) settings, but these two cohorts make up a small portion of those discharged.

Figure 2 shows the patient journey of a patient discharged home. The analysis shows that 80% of discharged patients (112,241; green bar) are discharged to home (without home health support). During the first 30 days post discharge more than 15% of these patients transition to other settings of care, as indicated by the orange and red bars. A total of 4064 patients terminate coverage (denoted by “Other”). Over the balance of the year more patients transition, resulting in transitions of 40% of the patients initially discharged home; only 60% of patients discharged home remain home without transitioning to a more intensive place of service.

Figure 3 shows the relative cost of the transitioning patients. The green bars (aggregate cost of patients discharged home who do not transition) are now relatively minor compared with those of transitioning patients (orange and

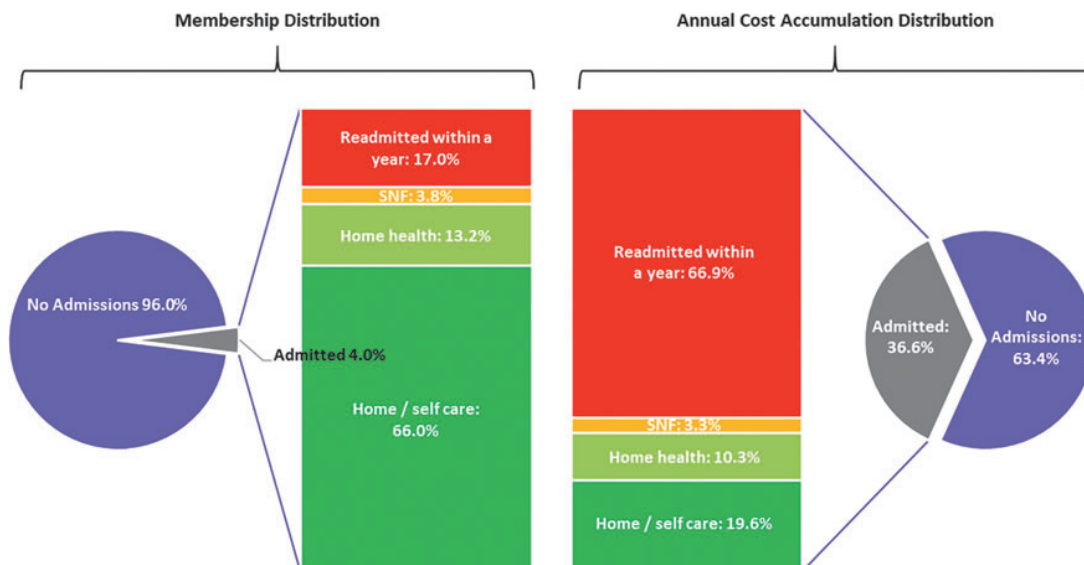


FIG. 1. Relative frequency and costs post discharge. SNF, skilled nursing facility.



FIG. 2. Patient pathways: patients discharged home. D, days; SNF, skilled nursing facility.

red bars). This pattern is most significant by the end of 365 days – patients who are readmitted cost \$1.2 billion in aggregate compared to patients who remain at home, costing \$0.6 billion.

On an annual basis, of patients discharged from a hospital, approximately one third have a mental or behavioral health condition. Half of patients (2504 out of 5481) readmitted within 30 days of discharge have a mental or behavioral health diagnosis.

Discussion

This study is unique in that it examines an employed population, unlike most reviews of hospital readmission costs and comorbidities, which focus solely on Medicare. The Healthcare Cost and Utilization Project, which examines all-cause hospital readmissions, states, “Hospital readmissions serve as a key measure for the quality of patient care in U.S. hospitals.”¹²

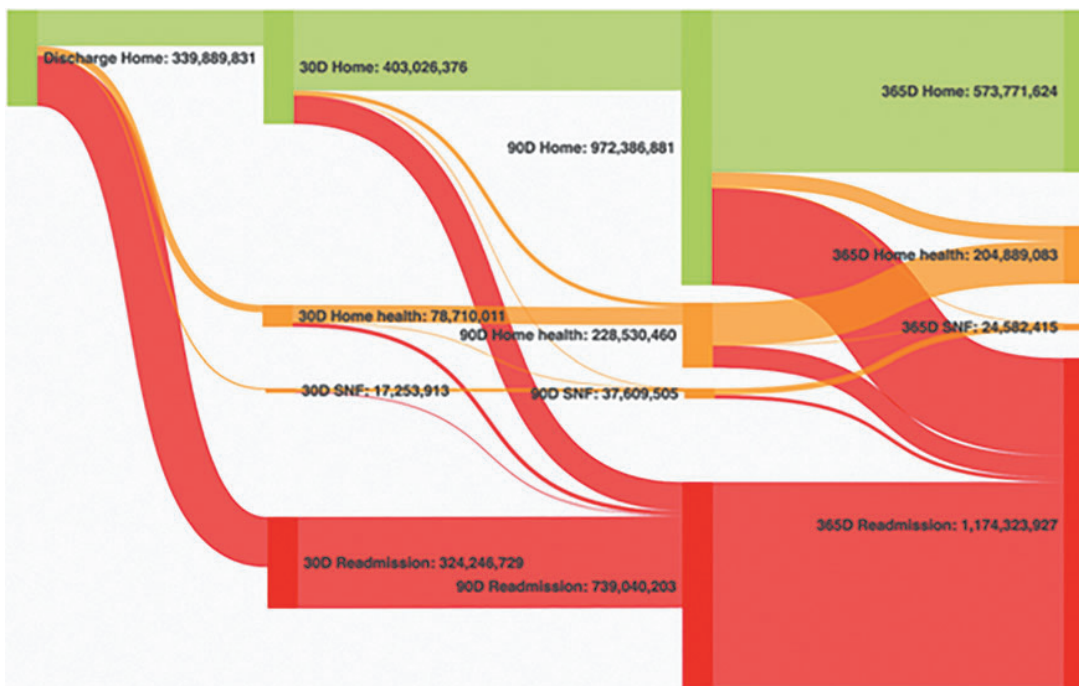


FIG. 3. Cost accumulation: patients discharged home. D, days; SNF, skilled nursing facility.

Quality care is of particular interest for employers and payers because it improves health, saves money, and augments productivity. CMS's HRRP specifically focuses on 6 types of admission and is limited to readmissions within 30 days of discharge. HRRP has had only limited spillover effects on other readmissions and follow-up admissions. An employer, however, is responsible for funding all admissions (including readmissions and follow-up admissions), whenever they occur, leading the authors to consider all primary and follow-up admissions. Therefore, the definition of readmission used in this study is broader than that used by CMS.

This analysis demonstrates the cost imposed on employers by readmissions. Although members with follow-up admissions represent a small fraction of members with admissions, they represent a significant proportion of costs.

Patients who are discharged home are often left to their own devices. The present analysis shows that these patients are often at risk of readmission; a portion of these patients have a follow-up admission and are an obvious target for focused intervention. The problem for employers is that fragmented care and lack of care coordination are important contributors to readmissions and cost to employers. Lack of effective mental and behavioral health treatment also contributes to this high cost.

Prior research shows that reducing readmissions involves a complex set of tasks, technologies, and interventions that employ a variety of specialized team members. Engaging patients in self-management programs and providing ongoing support can be beneficial in mitigating overall cost and readmissions.^{13–15}

During transitions, complex care management and transition models coordinate physical, behavioral, and community-based needs of patients recently discharged with ongoing physical and/or mental health conditions.^{16–18} Programs using proven techniques and therapies can have a measurable impact on positive patient recovery results. Simple techniques, such as follow-up phone calls that assist patients to schedule follow-up appointments or order their medication, can decrease readmissions by 50%.^{19,20} However, this requires interventions that span different settings of care, multiple providers, and engagement with and activation of the patient. Investment in effective patient-centered interventions that augment care management has proven to achieve positive health outcomes and reduce costs for employers.^{21–24} Decreases in readmissions are associated with achievement of desired patient outcomes during and after hospitalization. Moreover, lower rates of preventable readmissions reduce the health care expenditure burden borne by employers and other stakeholders.

Conclusion

This study found that unplanned hospital readmissions impose considerable cost on an employer and diminish productivity. More than a third of patients discharged to their home will transition to higher-cost settings over the course of a year. Mental health and substance abuse diagnoses add significantly to admission/readmission rates and costs. Post-discharge interventions that activate and engage patients in self-management can be beneficial in mitigating overall readmission rates and costs.

Future research analyzing data on hospitalization etiologies would be helpful in filling in gaps in knowledge. Such research also should consider comparisons across populations.

Authors' Note

Certain data used in this study were supplied by International Business Machines Corporation. Any analysis, interpretation, or conclusion based on these data is solely that of the authors and not International Business Machines Corporation.

Authors' Contributions

Dr. Duncan conceived the study and oversaw the analyses. He wrote and edited considerable portions of the manuscript and obtained data for the analysis. Dr. Fitzner conducted the review of prior research and drafted relevant sections of the manuscript. Ms. Zhao conducted the analyses and wrote the methods and results sections, created Figure 1, and edited the manuscript for accuracy. Mr. Shtein developed the research questions, provided references to facilitate the study and developed the graphics.

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Author Disclosure Statement

Drs Duncan and Fitzner are affiliated with Santa Barbara Actuaries, the group that conducted the analyses. Ms. Zhao, is employed by Santa Barbara Actuaries the group that conducted the analyses. Mr. Shtein, is Laguna Health's CEO & Co-Founder. The authors declare that there are no other conflicts of interest.

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