
Association of Discharge Home with Home Health Care and 30-Day Readmission after Pancreatectomy



Dominic E Sanford, MD, MPHS, Margaret A Olsen, PhD, MPH, Kerry M Bommarito, PhD, Manish Shah, MD, Ryan C Fields, MD, FACS, William G Hawkins, MD, FACS, David P Jaques, MD, FACS, David C Linehan, MD, FACS

BACKGROUND: We sought to determine if discharge home with home health care (HHC) is an independent predictor of increased readmission after pancreatectomy.

STUDY DESIGN: We examined 30-day readmissions in patients undergoing pancreatectomy using the Healthcare Cost and Utilization Project State Inpatient Database for California from 2009 to 2011. Readmissions were categorized as severe or nonsevere using the Modified Accordion Severity Grading System. Multivariable logistic regression models were used to examine the association of discharge home with HHC and 30-day readmission using discharge home without HHC as the reference group. Propensity score matching was used as an additional analysis to compare the rate of 30-day readmission between patients discharged home with HHC with patients discharged home without HHC.

RESULTS: Of 3,573 patients who underwent pancreatectomy, 752 (21.0%) were readmitted within 30 days of discharge. In a multivariable logistic regression model, discharge home with HHC was an independent predictor of increased 30-day readmission (odds ratio = 1.37; 95% CI, 1.11–1.69; $p = 0.004$). Using propensity score matching, patients who received HHC had a significantly increased rate of 30-day readmission compared with patients discharged home without HHC (24.3% vs 19.8%; $p < 0.001$). Patients discharged home with HHC had a significantly increased rate of nonsevere readmission compared with those discharged home without HHC, by univariate comparison (19.2% vs 13.9%; $p < 0.001$), but not severe readmission (6.4% vs 4.7%; $p = 0.08$). In multivariable logistic regression models, excluding patients discharged to facilities, discharge home with HHC was an independent predictor of increased nonsevere readmissions (odds ratio = 1.41; 95% CI, 1.11–1.79; $p = 0.005$), but not severe readmissions (odds ratio = 1.31; 95% CI, 0.88–1.93; $p = 0.18$).

CONCLUSIONS: Discharge home with HHC after pancreatectomy is an independent predictor of increased 30-day readmission; specifically, these services are associated with increased nonsevere readmissions, but not severe readmissions. (J Am Coll Surg 2014;219:875–886. © 2014 by the American College of Surgeons)

Disclosure Information: Nothing to disclose.

Support: This study was supported by the NCI grant T32 CA 009621.

Received April 18, 2014; Revised July 12, 2014; Accepted July 12, 2014. From the Departments of Surgery (Sanford, Fields, Hawkins, Linehan), Neurosurgery (Shah), and Surgical Services (Jaques), Barnes-Jewish Hospital, Division of Public Health Sciences (Olsen, Bommarito), Department of Surgery (Sanford, Fields, Hawkins, Linehan), Division of Infectious Diseases, Department of Medicine (Olsen, Bommarito), Department of Neurosurgery (Shah), and Alvin J. Siteman Cancer Center (Fields, Hawkins, Linehan), Washington University School of Medicine, St Louis, MO.

Correspondence address: David C Linehan, MD, FACS, Department of Surgery, Washington University in Saint Louis, 4990 Children's Pl, Ste 1160, Box 8109, St Louis, MO 63110. email: linehand@wudosis.wustl.edu

Hospital readmissions are being used as a quality metric for patient care. The Patient Protection and Affordable Care Act contains a number of provisions intended to reduce preventable readmissions by reducing Medicare payments to hospitals with high preventable readmission rates.¹ However, studies that investigate factors that contribute to increased rates of readmission, especially in high-risk surgical populations, are lacking. To date, most studies about surgical readmissions have focused on patient-^{2,3} or procedure-⁴⁻⁸ specific risk factors, which are generally nonmodifiable. However, readmission after complex surgical procedures is likely multifactorial, and requires a comprehensive approach to analysis.

Abbreviations and Acronyms

HCUP	= Healthcare Cost and Utilization Project
HHC	= home health care
OR	= odds ratio
SID	= State Inpatient Database

Pancreatectomy has a complication rate of 30% to 60%^{5,9} and a readmission rate ranging from 11% to 59%.^{3,6} Previous studies have identified comorbidities,^{2,3} length of hospital stay,^{3,5} patient age,^{3,5,6} and complications⁴⁻⁸ as being independently associated with readmission after pancreatectomy. However, most of these studies have not examined the role of a patient's discharge disposition in their analyses. Discharge home with a home health care (HHC) agency has recently been implicated as a risk factor for readmission after major abdominal operations, including pancreatectomy.^{7,10} However, the role of HHC in readmission has not been extensively studied in a large multi-institutional study of high-risk surgical patients, such as pancreatectomy patients.

There are few definitive data about the role of HHC as an adjunct to patient discharge.¹¹ The intended goal of this service is to assist patients who are recovering after a hospital stay, or need additional support to remain safely at home and avoid unnecessary hospitalization. Unfortunately, most of these agencies are underfunded and understaffed.¹² Home health care services generally send a home health nurse or aide of varying experience and expertise to the home of patients to assist in their care.¹³ By doing this, patients might be assessed more frequently by less familiar home health staff, which could increase patients' chances

of being readmitted for less severe reasons. This would have important implications, as roughly one third of patients receive these services after pancreatectomy.¹⁴ We used the AHRQ's Healthcare Cost and Utilization Project (HCUP) California State Inpatient Database (SID) for the years 2009 to 2011 to examine whether an association exists between HHC and 30-day readmission after pancreatectomy. We hypothesized that patients discharged home with HHC are at increased risk for 30-day readmission after pancreatectomy compared with patients discharged without these services after risk-adjustment for patient, perioperative, and hospital factors.

METHODS**Study design and patient population**

This was a retrospective cohort study using the AHRQ HCUP SID for California from 2009 to 2011 to identify patients undergoing pancreaticoduodenectomy (ICD-9-CM procedure codes: 52.51 and 52.7), total pancreatectomy (ICD-9-CM procedure code: 52.6), and distal pancreatectomy (ICD-9-CM procedure codes: 52.52). Healthcare Cost and Utilization Project provides variables in the California SID to track sequential visits for a patient within a state and across facilities and hospital settings. These variables include a person-level identifier (VisitLink) and a timing variable (DaysToEvent) that can be used to determine the days between hospital events for an individual. Using this approach, we identified patients with readmission to any hospital from 1 to 30 days post discharge. For simplicity, only the first readmission was considered. We excluded patients younger than the age of 18 years, patients who died before index

Table 1. Postoperative Complications and Invasive Interventions Examined (n = 3,573)

Postoperative complications, n (%)	Invasive interventions, n (%)
Gastroparesis, nausea/vomiting, gastric outlet obstruction, 406 (11.4)	Upper gastrointestinal endoscopy, 219 (6.1)
Acute GI bleeding, 50 (1.4)	Percutaneous abdominal drainage, 270 (7.6)
Superficial surgical site infection, 362 (10.1)	Bronchoscopy, 27 (0.8)
Noninfectious wound complications, 91 (2.5)	Angioembolization/therapeutic blood vessel occlusion, 27 (0.8)
<i>Clostridium difficile</i> colitis, 105 (2.9)	Prolonged mechanical ventilation >96 h, 68 (1.9)
Central venous catheter infections, 36 (1.0)	Exploratory laparotomy/reoperation, 18 (0.5)
Intra-abdominal Infection, 218 (6.1)	
Septicemia, 213 (6.0)	
Sepsis, including septic shock, 173 (4.8)	
Urinary tract infection, 246 (6.9)	
Acute renal failure, 149 (4.2)	
Acute respiratory failure, 121 (3.4)	
Pneumonia, 181 (5.1)	
Myocardial infarction, 28 (0.8)	
Shock, 42 (1.2)	
Venous thromboembolism, 85 (2.4)	
Other surgical complications—bleeding/hematoma, postoperative fistula, others, 735 (20.6)	

Download English Version:

<https://daneshyari.com/en/article/6252842>

Download Persian Version:

<https://daneshyari.com/article/6252842>

[Daneshyari.com](https://daneshyari.com)