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SEVENTY-TWO–HOUR RETURNS ARE NOT USEFUL IN IDENTIFYING EMERGENCY DEPARTMENT PATIENTS WITH A CONCERNING INTRA-ABDOMINAL PROCESS

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□ **Abstract—Background:** Seventy-two–hour returns to the emergency department (ED) have been used to identify patients who are believed to have been more likely to have suffered medical errors, missed diagnoses, or failure or inadequacy of previous treatment or discharge planning. This approach has been criticized as arbitrary, however, citing the lack of evidence to support its homogenous application to all organ system–based complaints and the unclear implication of returns. **Objective:** Given the significant burden of gastrointestinal (GI)-related illness, our objective was to determine if an audit of 72-hour returns of GI-related diagnoses appropriately captures patients who return with a concerning diagnosis (CD) on their second visit. **Methods:** Ten emergency physicians were surveyed and a list of concerning, "not to be missed" diagnoses were generated. The demographic and clinical variables were collected and analyzed on all patients with a GI *International Classification of Diseases, 9th revision* code presenting to an urban, university-affiliated ED between July 2013 and March 2014. **Results:** There were 10,012 patient visits during the study period, including 1006 patients (10%) with ≥ 1 return visits. One hundred forty-seven patients (15%) returned within 72 hours, and 859 patients (85%) returned in > 72 hours. Patients that returned within 72 hours were no more likely to have a CD than those that returned at a later time (13.6% vs. 14.4%; *p* = 0.79). **Conclusion:** An audit of 72-hour returns only captures a small percentage of patients that return with a CD, and these patients are at no greater risk of harboring a CD than those that return at a later date. © 2016 Elsevier Inc.

□ **Keywords**—emergency medicine; health care safety; health care quality; performance measures; quality assessment; quality measurement

INTRODUCTION

Measuring health care quality has become increasingly important as organizations seek to justify the costs and increase the quality associated with the care they deliver. Well-recognized quality metrics within the emergency department (ED) have included duration of stay, time to provider evaluation, and rates of leaving without being seen (1). Another metric often cited as an indicator of the quality of care in the ED is 72-hour returns, defined as patients that are discharged from the ED and return within 72 hours. Seventy-two–hour returns account for roughly 4% of ED visits, and are often thought to be disproportionately likely to represent medical errors, potential missed diagnoses, or inadequacy or failure of treatment or home-going instructions and discharge planning (2–8). As a result, this metric is often used as a

screening tool to help guide ongoing quality assurance (QA) and performance measurement (9,10).

Using 72-hour returns, however, has been criticized as an arbitrary metric. The development of this as a quality assurance indicator originated from consensus guidelines rather than based on evidence that supports its efficacy (11,12). Indeed, Rising et al. found that to maximize the capture of ED returns, 9 days would instead be a better metric (12). In addition, Pham et al. found that when applied to all comers, an audit of 72-hour returns does not identify patients at higher risk of being severely ill when compared to those who had not been previously seen (13).

Abdominal pain is one of the most common reasons for patients to return within 72 hours and represents > 7 million ED visits annually, accounting for 5% to 10% of all ED patients (8,14–19). While one study suggests that abdominal pain patients that return within 72 hours are more likely than any other group to have been mismanaged on their first visit, little is known about how many of these patients return with concerning diagnoses (CDs) (14).

With increasing emphasis on continuous quality monitoring, it is essential that we identify evidence-based QA tools that directly relate to meaningful outcomes. Given the high burden of GI disease, our objective was to determine if an audit of 72-hour returns appropriately captures patients who return with a CD on their second visit.

METHODS

Study Design

We conducted a retrospective review of all patients with a GI *International Classification of Diseases, 9th revision* (ICD-9) code who presented to the ED over a 9-month period (July 2013–March 2014).

Study Setting and Population

This study was conducted at an urban, university-affiliated, 950-bed hospital. The ED is a major referral center and has 100,000 annual visits and an emergency medicine residency program. The institutional review board approved this study.

Study Protocol and Measures

Ten emergency physicians were provided a list of all GI ICD-9 codes represented in our patient cohort and were asked to identify all codes that they believed were concerning, "not to be missed" diagnoses. A list of 18 CDs was generating by using all diagnoses with complete or near complete (appearing on eight surveys) agreement across all 10 physicians. The authors subsequently reviewed the list of CDs and the ICD-9 codes that were not deemed CDs and were in complete agreement regarding inclusions and exclusions. The full list of CDs can be seen in Table 1.

Subsequently, all patients with one return to the ED during the study period were identified. Patients with two or more visits were not included, because we believe that high utilizers represent a distinct population with unique reasons for return. Data regarding patients' age, sex, and presence of health insurance were extracted. Ultimate disposition, including hospital admission, observation admission, or discharge was recorded. All data were extracted for both ED visits. We also collected and analyzed overall ED volumes using ED occupancy rates per hour.

Data Analysis

Data are summarized using descriptive statistics and 95% confidence intervals (CIs). Categorical variables were analyzed with the chi square or Fisher exact tests as appropriate. T tests were used for the analysis of continuous variables.

RESULTS

There were 10,012 patient visits during the study period, which included 9006 patients with single visits and 1006 patients with one or more return visits. Of return visits, 147 patients (14.6%) returned within 72 hours and 859 patients (85.4%) returned in > 72 hours (Figure 1). Of patients who were discharged with a non-CD and returned, those that returned within 72 hours with a GI complaint were no more likely to have a CD than those that returned at a later time (13.6% vs. 14.4%; $p = 0.79$). Patients who returned within 72 hours were more likely to be younger

Table 1. List of Concerning Diagnoses

Intestinal obstruction
Appendicitis
Acute pancreatitis
Diverticulitis
Intra-abdominal abscess
Hepatic encephalopathy
Cholecystitis
Hernia with obstruction
Choledocholithiasis/cholangitis
Clostridium difficile enteritis
Liver necrosis
Intestinal perforation
Mesenteric ischemia
Malignant ascites
Esophageal perforation
Hemoperitoneum
Esophageal obstruction
Esophageal hemorrhage