

# Visits Where Patients Were Told to Return Back to Emergency Departments, National Hospital Ambulatory Medical Care Survey, 2018

Research Article

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## Abstract

**Objective:** In 2018, about 130 million visits were made to U.S. emergency departments (ED). Upon discharge, ED providers often refer patients back to the ED for follow-up care; this practice might be contributing to ED crowding. We characterize ED visit with referrals back to the ED by visit and patient characteristics.

**Data Source:** National Hospital Ambulatory Medical Care Survey.

**Methods:** Data from the 2018 National Hospital Ambulatory Medical Care Survey were used to analyze visit disposition with referrals back to the ED. Dispositions wherein patients were asked to return to the ED for follow-up is a subset of overall discharge dispositions. Visit rates were calculated per 100,000 population using the US Census Bureau data. Weighted proportions were used to analyze major diagnoses categories. Data were weighted to generate national, regional, and demographic estimates.

**Results:** In 2018, an estimated 2.4 million visitors were referred back to the ED for follow-up care (730visits/100,000 population). Rates of referrals back to the ED were highest in visits made by female (800/100,000) and Black patients (1,570/100,000 population), visits that occurred in the South (970/100,000 population), and visits wherein Medicaid (1,310/100,000 population) was the payor. Diagnoses of abnormal clinical findings (24.4%), injury or poisoning (26.8%) represented half of all discharge diagnoses with return to ED referrals.

**Conclusion:** Referrals back to the ED add to the volume of ED visits. Although some referrals back to the ED are clinically indicated, efforts to reduce the volume of unnecessary ED visits include connecting patients to appropriate routine follow-up care in person and via telehealth and integrating quality assurance steps during discharge planning (e.g., chart reviews).

**Keywords:** Emergency service; Hospital; Prognosis; Case management; Quality assurance; Health care; Wounds and injuries

## What is Known on this Topic?

- Limited knowledge exists regarding information on when patients were asked to return back to the ED after a visit.
- ED is not an ideal setting for provision of health care because it is not designed for continuity of care.
- Millions of visits are made to ED annually and a considerable number ended up returning back to the ED.

## What this Study Adds to our Knowledge?

- More than two million visits result from a return back to the ED annually.
- Major diagnostic groups and patient characteristics associated with these return visits are presented for health practitioners, policy makers and health services researchers.
- Possible solutions to address this public health concern are discussed.



## Introduction

The Emergency Department (ED) is not the best location to receive primary medical care treatment because it is not designed to provide long-term care or comprehensive care [1]. However, citizens continue to use the ED both for emergency and ancillary care services [1-4]. Several reasons have been cited for using this mode of care, including lack of insurance, lack of Primary Care Provider (PCP), and lack of access to a PCP. In 1986, the Emergency Medical Treatment and Active Labor Act<sup>1</sup> was passed by the Congress in response to ongoing concerns with the use of EDs for primary care and the frustrations of hospitals in providing care which might not be compensated. The Act requires individuals seeking emergency care to be screened and treated regardless of method of payment; hospitals to treat and examine the patient until emergency medical care is resolved or stabilized; and arrangements to be made to transfer the patient to another hospital if the hospital cannot treat the patient. According to the Act, an emergency medical condition is defined as one with severe acute symptoms that require immediate medical attention to prevent jeopardizing the health of the individual.

After ED treatment, patients are required to follow up with their PCPs; however, in some instances, ED /providers recommend that these patients return to the ED<sup>2</sup>. Nevertheless, this type of discharge disposition is not ideal for case management which a recent systemic review of ED visits indicated is needed for these patients [3]. Visits which are referred back to the ED has inclination to contribute to overcrowding because it is not designed to function as a source of continued care and reducing ED crowding and unnecessary return visits are important for patient care and staffing/resource management. ED crowding leads to delays in assessing and treating patients and can have negative effects on patient outcomes. We describe characteristics of visits for which providers asked to come back to ED by major diagnoses groups, and demographics of these patients to understand the burden of this type of discharge disposition on ED.

## Methods

We analyzed data from the Centers for Disease Control and Prevention's National Center for Health Statistic's 2018 National Hospital Ambulatory Medical Care Survey (NHAMCS) to identify patient visits where discharge disposition indicated "Return to ED" based on the chart review by the Census data abstractor who reviewed the medical record and completes the visits disposition item on the Patient Record form. The NHAMCS is an annual, nationally representative survey of visits to emergency hospitals. Data for a systematic random sample of visits are recorded by Census interviewers using a computerized Patient Record Form. Because visit disposition is "check all that apply" to a patient during a visit and each option is not mutually exclusive, we

set all other available options to "0" such that only visits that are truly "Return to ED" are analyzed. For example, our initial analysis indicates that 84% of the visits with a disposition of "Return to ED" (estimated 15.2 million visits) also have a disposition of "Return/Refer to physician/clinic for FU". By definition, "Return to ED" means a patient was told to schedule an appointment or was given an appointment to return to the emergency department at a particular time; and "Return/Refer to physician/clinic for FU" means the patient was referred to a physician outside of the ED, such as a personal physician, or an outpatient clinic for follow-up after being screened, evaluated, and stabilized in the ED.

During each visit, referral included categories of all disposition variable that indicated referral to a source of care which the attending provider felt are consistency with the patient's clinical condition at ED discharge. NCHS administers the NHAMCS-ED annually and data from this source are often used in research because of its reliability and complex design. We used the International Classification of Diseases, 10th Revision (ICD-10) to broadly categorize diseases and injuries (e.g., certain infectious diseases, blood disorders, neoplasm, digestive system, ear disease, eye and adnexa diseases, musculoskeletal system, or respiratory diseases) for each visit. Other visit characteristics included patient demographics (age and race), payment type (private insurance, Medicare, Medicaid, Other), US Census region (Northeast, Midwest, West, South), and metropolitan statistical area ([MSA]; MSA and non-MSA). For insurance payment source, the survey instrument asked for the Expected Source(s) of Payment for this Visit, and this is a "Check all that apply" format. NCHS has developed a hierarchy for NHAMC data which considers the "Check all that apply" data and create "Primary Expected Source of Payment" which we used in this study. Estimates of the 2018 US population denominators for calculating visit rates were obtained from the US Census Bureau and data were weighted to generate national visit estimates (e.g., demographics, diseases, injury).

Data analysis was performed using SAS version 9.4 software (SAS Institute, Cary, NC, USA). Generally, NCHS recommends that visits where unweighted count (sample size) is <30 is unstable or, if based on 30 or more, and the relative standard error is more than 30%, the estimates should be suppressed. We considered this sample size too restrictive when visits by categories were examined in Table 2. Alternatively, we considered estimates to be unreliable if the (sample size is < 30) and the corresponding coefficient of variance percentage (CV%) > 30%. The CV% measure is simply the ratio of the standard deviation / point estimate. A rule of thumb is that CV% or relative error (std deviation / point estimate) is large if it exceeds 30%. However, some analyst will also examine the width of confidence interval, which is equivalent to studying the size of the relative error (CV%). For our research the top 6 categories are presented in Table 2 with corresponding CV%.

**Table 2:** Number and percentage of visits where patients were told to return to the emergency department follow-up care, by condition diagnosis category, National Hospital Ambulatory Medical Care Survey-United States, 2018.

Diagnosis Category (ICD-10)	Unweighted no. of Visits Referred for Follow-up	Weighted no. of Visits Referred for Follow-up	Weighted % (95% CI)	CV %
Injury, poisoning, or other external cause	121	639,000	26.8 (20.2-33.3)	12.40%
Abnormal clinical finding	68	583,000	24.4 (17.7-31.1)	13.70%
Health status factor	25	212,000	8.9 (4.6-13.2)	24.30%
Skin or subcutaneous disease	36	211,000	8.8 (4.8-12.8)	22.80%
Respiratory system disease	32	211,000	8.8 (5.0-12.7)	21.90%
Musculoskeletal system	24	179,000	7.5 (3.7-11.3)	25.70%

CI: Confidence Interval; CV: Coefficient of Variation=The CV% measure is the ratio of the std deviation/point estimate.



**Table 1:** Number and rates of visits where patients were told to return to emergency department for follow-up care, by age, sex, race/ethnicity, US census region, Metropolitan Statistical Area, and insurance payment type, National Hospital Ambulatory Medical Care Survey - United States, 2018.

Characteristic	Unweighted No. of Visits	Weighted No. of Visits	Visits per 100,000 US Resident Population (95% CI)
<b>Age Group (yrs.)</b>			
0-17	83	553,000	750 (260-1,250)
18-29	88	526,000	970 (660-1,280)
30-39	61	432,000	990 (610-1,370)
40-49	41	288,000	710 (350-1,080)
50-59	39	248,000	580 (350-830)
≥60	50	348,000	480 (280-680)
<b>Sex</b>			
Female	189	1,332,000	800 (570-1,040)
Male	173	1,063,000	660 (470-850)
<b>Race/Ethnicity</b>			
White NH	215	1,239,000	620 (430-800)
Black NH	87	673,000	1,570 (740-2,390)
Hispanic	49	397,000	660 (240-1,090)
Other NH	12	n/a	n/a
<b>US Census Region</b>			
Midwest	71	535,000	780 (170-1,390)
South	142	1,210,000	970 (630-1,310)
West	67	394,000	510 (320-690)
Northeast	82	256,000	460 (220-690)
<b>Metropolitan Statistical Area (MSA)</b>			
MSA	301	2,078,000	740 (520-970)
Non-MSA	61	317,000	760 (100-1,430)
<b>Insurance Payment Type</b>			
Private insurance	106	755,000	440 (250-620)
Medicaid	109	653,000	1,310 (770-1,860)
Medicare	42	278,000	500 (250-750)
Other	105	709,000	1,640 (1,110-2,160)
Total	362	2,395,000	730 (540-920)

CI: Confidence Interval; NH: Non-Hispanic; n/a, not applicable.

## Results

In 2018, the return to ED discharge disposition rate was 730 visits/100,000 US resident population (Table 1). The highest referral rate was among those aged 30–39 years (990 visits/100,000 population), but there are no marked differences in referral rates among age groups. Female patients (800 visits/100,000 population) were referred for return visits to the ED more often than male patients (660 visits/100,000 population). Approximately half of visits discharged as return to ED were made by non-Hispanic White patients; the rate of referral for non-Hispanic White patients (620 visits/100,000 population) was less than half the referral rate for non-Hispanic Black patients (1,570 visits/100,000 population). The highest return to ED referral rate was in the South (970 visits/100,000 population), followed by the Midwest (780 visits/100,000 population). The return to ED referral rate was lower for visits in the Northeast (460 visits/100,000 population) compared with other regions. The majority of visits that were referred back to the ED occurred in MSAs (87%); however, referral rates were similar for visits in MSAs and non-MSAs (740 versus 760 visits/100,000 persons). Medicaid was the most commonly used insurance type in

visits that were referred to the ED for follow-up care (1,310/100,000 population). Half of visits referred to the ED for follow-up care were for an injury, poisoning, and other external cause (26.8%) or abnormal clinical findings (24.4%) (Table 2).

## Discussion

This research adds to our knowledge and fills an important gap in our understanding of ED visits. An estimated 2.4 million ED visits are referred back to the ED. Referral rates differed by patient and visit characteristics, including race/ethnicity, sex, region, and insurance type. Referrals back to the ED were higher among Black patients. Medicaid was the most common payment source for this disposition, which could be problematic as several states prepare to expand Medicaid coverage. Visit referral rates were similar across age groups, as well as between Non-MSA and MSA. Most visits that resulted in referrals back to the ED were for a diagnosis of injury, poisoning, or other external cause or because of abnormal clinical findings. These diagnoses appear to be well suited for follow-up care in other health care settings, such as primary care settings.



There are at least two major implications in this study. Telehealth technology provides an opportunity for virtual follow up with patients who are discharged from the ED<sup>3</sup>. Use of telehealth has the potential to greatly impact emergency and acute care because of its ability to expand access to care and address capacity challenges facing EDs [5,6]. Researchers at the University of Washington used telehealth to successfully deliver treatment for post-traumatic stress disorder and bipolar disorder to rural patients receiving care through Federally Qualified Health Centers (FQHC) [7]. Because of ED overcrowding, telehealth could be used to increase the number of providers during surges of patients and provide remote consultation services when resources are limited. However, in this study, we are unable to conduct chart review to determine appropriateness of “Return to ED” visits as medical reasons justify economic reasons/concerns.

Two, another way to reduce return to ED dispositions might be to institute re-reviews of discharge dispositions for patients who are instructed to return to the ED at discharge. Additional review of these referrals could be used to connect patients with more appropriate follow-up care (e.g., community services, urgent care, telehealth, PCP) or confirm the need to return to the ED. Gutherz et al. [1] suggest that it is beneficial for patients with PCPs to follow-up with their PCPs after ED visits because PCPs have a more complete understanding of an individual’s medical history and are better equipped to provide nonurgent follow-up care.

There are at least two limitations in this study. First, we don’t know if the mix of rural and urban EDs in the study population affected our findings. Second, we cannot ascertain how many patient visits actually resulted in a return trip back to the ED (i.e., whether or not the patient actually returned to the ED). Therefore, more, or fewer patients than expected from the count of referrals might have actually returned to the ED. Despite the limitations, the findings in this report are well supported in the literature (i.e., Medicaid, sex, race/ethnicity).

In summary, many patients who use ED services have primary care providers [1,2] and Black patients often utilize the ED for ambulatory care sensitive condition which are treatable or preventable in a primary care setting [8]. Additionally, Medicaid patients have a history of higher rates of ED utilization [2,9]. Referrals back to the ED might be contributing to the strain on EDs and more needs to be done to ensure appropriate follow-up care (e.g., telehealth and re-reviews of disposition prior to discharge). Because excess volume of inappropriate ED visits might strain a State’s Medicaid program resources, which paid for majority of these visits, studies are needed to understand why these return ED visits could not be managed by primary care providers.

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## Declaration of Conflicting Interests

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## Contributors’ Statement

NA, HR, and BIT conceptualized and designed the study. HR analyzed the surveillance data. NA drafted the initial manuscript. All authors critically reviewed and revised the manuscript. Additionally, all authors approved the final manuscript submitted to the journal.

## Note

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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