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INTRODUCTION

“It’s a dangerous business, going out your door. You step onto the road, and if you don’t keep your feet, there’s no knowing where you might be swept off to,” writes Tolkien in *The Lord of the Rings*, capturing the uncertainty patients may face following discharge from the emergency department (1). This metaphor aptly parallels the uncertainty of the post-discharge period in emergency care. Much like stepping into the unknown, the post-discharge period can be fraught with clinical deterioration,

diagnostic errors, or treatment nonadherence—factors that may contribute to unplanned return visits (2).

Unscheduled revisits to the emergency department (ED) within a short time frame after discharge are widely recognized as quality indicators of emergency care performance (3,4). These “bounce-back” admissions may reflect premature discharge, diagnostic inaccuracies, insufficient follow-up planning, or natural progression of the initial illness. Such returns place additional strain on overburdened ED systems and may signal

There and back again: The tale of bounce-back admissions in emergency care

Abstract

Aim: Unscheduled return visits to the emergency department (ED), or “bounce-backs” are widely used as indicators of care quality. These revisits may signal deficiencies in initial assessment, premature discharge, or inadequate discharge planning. This study aimed to evaluate the demographic and clinical characteristics, revisit intervals, and in-hospital outcomes of patients who returned to the ED within 72 hours of discharge.

Materials and Methods: A retrospective observational study was conducted at a tertiary training and research hospital. Adult patients (≥ 18 years) who returned to the ED within 72 hours with the same or similar complaints were included. Data collected included triage levels, presenting complaints, diagnostic investigations, and clinical outcomes at both visits. Patients hospitalized after return were compared with non-hospitalized counterparts. Subgroup analyses examined ward admissions, ICU admissions, and mortality. Statistical analyses used chi-square and independent t-tests ($p < 0.05$).

Results: Among the 640 patients who returned to the emergency department, the mean age was 43.1 ± 17.8 years, with a balanced gender distribution. Most revisits occurred within 24 to 48 hours of discharge. The overall hospitalization rate was 7.3%, ICU admission rate was 1.4%, and in-hospital mortality was 0.8%. Red triage level on revisit was significantly associated with ICU admission and mortality ($p < 0.001$). Gastrointestinal/genitourinary and cardiovascular complaints were more frequently observed among hospitalized patients ($p = 0.008$ and $p = 0.004$, respectively). The rates of consultation, laboratory testing, and imaging were significantly higher in the hospitalized group (all $p < 0.001$). No significant difference in hospitalization rates was observed across revisit intervals ($p = 0.863$).

Conclusion: Bounce-back visits within 72 hours highlight critical gaps in emergency care. Higher triage acuity, specific complaints, and increased diagnostic interventions were linked to worse outcomes. Early revisits offer an opportunity to improve discharge processes, follow-up planning, and care continuity.

Keywords: Bounce-back admissions, emergency department, unscheduled revisits, early return visits, continuity of care

preventable lapses in care—particularly when associated with hospitalization, intensive care unit (ICU) admission, or mortality.

Identifying the clinical and demographic factors linked to early ED revisits is essential for optimizing discharge procedures and enhancing patient safety. A better understanding of these patterns may inform targeted interventions to reduce avoidable revisits and improve overall emergency care outcomes (5).

This study aims to investigate the clinical characteristics and outcomes of patients who return to the ED within a short period following discharge. By focusing on early revisits, the study seeks to identify potential gaps in initial evaluation or discharge planning that may contribute to unplanned returns.

Drawing inspiration from *There and Back Again*, the fictional memoir of Bilbo Baggins chronicling his unexpected journey (6), this research metaphorically reflects the return path of patients post-discharge. The goal is to better understand their clinical trajectories and inform targeted strategies to reduce avoidable revisits, enhance patient safety, and improve the overall quality of emergency care (7).

MATERIALS AND METHODS

Study Design and Setting

This retrospective observational study was conducted in the emergency department of a tertiary training and research hospital. The research was initiated following approval from the İzmir Katip Çelebi University Ethical Committee Health Research (Approval No: 0056, Date: 13.02.2025). The objective was to evaluate the demographic and clinical characteristics of adult patients who revisited the emergency department within 72 hours of discharge.

Study Population

The study included adult patients aged 18 years and older who were discharged from the emergency department and returned within 72 hours with the same or similar presenting complaints. Out of 680 identified revisit cases during the study period, 40 were excluded due to referral to other institutions at the time of initial discharge (n=10), elective or administrative revisits (n=13), incomplete or inaccessible medical records (n=17), or inability to reach patients for data verification.

Data Collection

Patient data were retrospectively retrieved from the hospital information management system. A standardized data collection form was used to record the following variables: age, sex, triage level at both the initial and return visits (categorized as green, yellow, or red), presenting complaint category, need for consultation, performance of laboratory tests or imaging studies (e.g., computed tomography [CT], ultrasound), and clinical outcomes. Outcomes included discharge, treatment refusal, ward admission, intensive care unit (ICU) admission, or death.

The time interval between the initial discharge and subsequent revisit was also documented. All data were anonymized prior to analysis in accordance with institutional data privacy and confidentiality standards.

Statistical Analysis

All data were analyzed using IBM SPSS Statistics for Windows, version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as mean $\pm$ standard deviation (SD) for continuous variables, and as frequencies with percentages for categorical variables.

Group comparisons (e.g., hospitalized vs. non-hospitalized patients) were performed using the Pearson Chi-square test or Fisher's exact test for categorical variables, and the independent samples t-test for continuous variables. A p-value of <0.05 was considered statistically significant.

Associations between triage level, presenting complaint category, clinical interventions, and admission outcomes were examined. Subgroup analyses were conducted to assess in-hospital outcomes, including ward admission, ICU admission, and mortality. The relationship between revisit interval and hospitalization rate was also evaluated using Chi-square analysis.

RESULTS

A total of 640 patients who returned to the emergency department (ED) within 72 hours of discharge were included in the study. The mean age was 43.1 years, and the gender distribution was balanced (48.9% female). Most return visits occurred within 24 to 48 hours following the initial discharge.

Triage categories, presenting complaints, and the use of consultation services, laboratory testing, and radiological imaging during both visits are summarized in Table 1. Final clinical outcomes—including discharge, ward admission, ICU admission, and in-hospital mortality during the second visit—are also presented.

Patients who were hospitalized upon their return visit (n=47) were compared with those who were not admitted (n=593) regarding triage level, presenting complaints, and clinical interventions performed during the second ED visit. These comparative findings are summarized in Table 2. Among the hospitalized group, further classification was performed based on in-hospital outcomes: ward admission (n=33), ICU admission (n=9), and mortality (n=5). Differences in clinical parameters among these subgroups are provided in Table 3.

The relationship between the timing of revisit and hospitalization outcomes was assessed across three revisit intervals: 0–24 hours, 24–48 hours, and 48–72 hours. No statistically significant differences were observed among the groups (p=0.863), as shown in Table 4.

Table 1. The fellowship of the bounce-back: demographics of returnees

Characteristic		Initial visit n (%) or mean±SD	Return visit n (%) or mean±SD
Age (mean±SD)		43.1±17.8	
Gender	Female (%)	313 (48.9)	
	Male (%)	327 (51.1)	
Revisit interval	0-24 h	185 (28.9)	
	24-48 h	274 (42.8)	
	48-72 h	181 (28.3)	
Triage	Green	395 (61.7)	407 (63.6)
	Yellow	241 (37.7)	222 (34.7)
	Red	4 (0.6)	11 (1.7)
Presenting complaint	Respiratory	142 (22.2)	128 (20.0)
	Musculoskeletal	163 (25.5)	158 (24.7)
	Cardiovascular	61 (9.5)	58 (9.1)
	GIS/GUS	192 (30.0)	208 (32.5)
	Neurologic	54 (8.4)	63 (9.8)
	Psychiatric	28 (4.4)	25 (3.9)
Required interventions	Consultation	75 (11.7)	120 (18.8)
	Laboratory test	245 (38.3)	214 (33.4)
	Radiological imaging	169 (29.8)	169 (26.4)
Outcome	Discharged	533 (83.3)	544 (85.0)
	Refused treatment	107 (16.7)	49 (7.7)
	Ward admission		33 (5.2)
	ICU admission	N/A	9 (1.4)
	Mortality		5 (0.8)

SD: standard deviation, h: hour, GIS: gastrointestinal system, GUS: genitourinary system, ICU: intensive care unit, N/A: not applicable

Table 2. The burden of return: factors associated with hospital admission

		Admitted (n=47) n (%) or mean±SD	Not Admitted (n=593) n (%) or mean±SD	p value
Triage	Green	5 (10.6)	402 (67.8)	<0.001
	Yellow	33 (70.2)	189 (31.9)	<0.001
	Red	9 (19.1)	2 (0.3)	<0.001
Presenting complaint	Respiratory	3 (6.4)	125 (21.1)	0.019
	Cardiovascular	9 (19.1)	49 (8.3)	0.004
	Musculoskeletal	4 (8.5)	154 (26.0)	0.030
	GIS/GUS	24 (51.1)	184 (31.0)	0.008
	Neurologic	6 (12.8)	57 (9.6)	0.464
	Psychiatric	1 (2.1)	24 (4.0)	0.347
Required interventions	Consultation	42 (89.3)	78 (13.2)	<0.001
	Lab Test	41 (87.2)	173 (29.2)	<0.001
	Imaging	27 (57.4)	142 (23.9)	<0.001

SD: standard deviation, GIS: gastrointestinal system, GUS: genitourinary system

Table 3. The road beyond admission: in-hospital outcomes after bounce-back

		Ward Admission (n=33) n (%) or mean±SD	ICU Admission (n=9) n (%) or mean±SD	Mortality (n=5) n (%) or mean±SD	p value
Triage	Green	5 (15.2)	0 (0.0)	0 (0.0)	<0.001
	Yellow	27 (81.8)	2 (22.2)	1 (20.0)	
	Red	1 (3.0)	7 (77.8)	4 (80.0)	
Presenting complaint	Respiratory	2 (6.1)	0 (0.0)	1 (20.0)	<0.001
	Cardiovascular	4 (12.1)	0 (0.0)	1 (20.0)	
	Musculoskeletal	2 (6.1)	6 (66.7)	3 (60.0)	
	GIS/GUS	20 (60.6)	2 (22.2)	1 (20.0)	
	Neurologic	5 (15.2)	1 (11.1)	0 (0.0)	
	Psychiatric	0 (0.0)	0 (0.0)	2 (40.0)	
Required interventions	Consultation	30 (90.9)	9 (100.0)	4 (80.0)	0.428
	Lab Test	29 (87.9)	9 (100.0)	5 (100.0)	0.396
	Imaging	20 (60.6)	5 (55.6)	4 (80.0)	0.648

SD: standard deviation, GIS: gastrointestinal system, GUS: genitourinary system

Table 4. The time that binds: outcomes by revisit interval

Revisit interval	Total n	Hospitalized n	Hospitalization rate (%)	p value
0–24 h	185	15	8.1	0.863
24–48 h	274	20	7.3	
48–72 h	181	12	6.6	

h: hour

DISCUSSION

In this retrospective study, we analyzed the clinical characteristics, revisit intervals, and in-hospital outcomes of patients who returned to the ED within 72 hours of discharge. The bounce-back rate resulting in hospitalization was 7.3%, with ICU admission and mortality rates of 1.4% and 0.8%, respectively. These figures are consistent with previous reports, which have documented revisit-related admission rates ranging from 4% to 12% (8–10).

Our results indicate that triage level at the time of return visit was a significant predictor of adverse outcomes. Specifically, patients classified as red triage were more likely to require ICU admission or experience in-hospital mortality (p<0.001). This finding aligns with observations by Loi et al., who reported that worsened triage classification and prolonged initial ED length of stay were associated with a poorer prognosis during subsequent visits (8).

Furthermore, certain presenting complaints—particularly cardiovascular and gastrointestinal/genitourinary symptoms—were significantly associated with hospitalization (p=0.004 and p=0.008, respectively). These results echo the findings of Yi-Ju Ho et al., who identified chest pain and missed acute cardiovascular diagnoses as key contributors to severe outcomes upon ED return (11).

We also observed that hospitalized returnees underwent significantly more consultations, laboratory tests, and imaging procedures. These increased diagnostic interventions likely reflect clinical uncertainty or reassessment efforts by physicians. This is consistent with the study by Almugren et al., which highlighted inadequate discharge planning and lack of initial consultation as modifiable risk factors contributing to critical return visits (12).

In terms of timing, our study found no statistically significant difference in hospitalization rates across revisit intervals of 0–24, 24–48, and 48–72 hours (p=0.863). This finding contrasts with the observation by Rising et al., who suggested that very early revisits (e.g., within 24 hours) are more likely to reflect premature discharge decisions (8). The discrepancy may be attributed to institutional variations in discharge criteria, follow-up protocols, or case mix. Furthermore, our results support the findings of the RESALSEVID study, which reported that 30-day COVID-19 revisit rates were more closely linked to patient-specific factors (e.g., immunosuppression) than to system-level follow-up models (13).

Our observed revisit-related hospitalization rate (7.3%) is comparable to the 6.1% reported by Hocagil et al., and slightly higher than the 5.2% noted in the Dokuz Eylül cohort (9,14). However, our rates of ICU admission and mortality were

marginally elevated, potentially reflecting higher clinical acuity, limited outpatient follow-up capacity, or differing hospital-level triage practices. Institution-specific factors such as discharge protocols or access to follow-up care may have contributed to the observed ICU admission and mortality rates, warranting further multi-center investigations.

Interestingly, advanced age and male sex—both identified in prior studies as predictors of ED revisits, particularly in geriatric populations (15,16)—did not show statistical significance in our cohort. This may be attributed to our relatively younger study population (mean age: 43.1 years), suggesting that bounce-back dynamics in middle-aged adults may differ from geriatric patterns and warrant independent analysis.

Study Limitations

Several limitations should be acknowledged. First, the single-center design restricts the generalizability of the findings to other institutions or healthcare systems. Second, the retrospective nature of the study precludes the establishment of causal relationships. Additionally, patients who revisited other hospitals or experienced adverse outcomes outside the institutional system were not captured, potentially leading to underestimation of event rates.

Data on comorbidities, socioeconomic status, and medication adherence—recognized predictors of ED revisits—were not available in our dataset. This limitation may have affected the completeness of risk stratification and limits the generalizability of our findings.

CONCLUSION

Unscheduled revisits to the emergency department within 72 hours represent a meaningful quality indicator, highlighting both patient-related vulnerabilities and potential gaps in initial clinical evaluation or discharge planning. In this study, higher triage acuity, gastrointestinal and cardiovascular complaints, and the need for diagnostic workup or specialty consultation were all significantly associated with hospital admission upon return.

Much like Bilbo Baggins' unexpected journey that led him back to Bag-End forever changed, a patient's return to the emergency department may signify more than clinical deterioration—it may serve as a call to action for healthcare systems. To reduce avoidable returns and improve patient outcomes, these revisits underscore the need to strengthen discharge decision-making, implement structured risk assessment tools, establish post-discharge follow-up mechanisms such as phone calls, and reinforce continuity of care.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

Izmir Katip Çelebi University Ethical Committee Health Research (Approval No: 0056, Date: 13.02.2025).

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