

Emergency Department Discharge Turnaround Time and Associated Factors: A Descriptive Retrospective Study for Policy Enhancement

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ABSTRACT

This study determined emergency department (ED) discharge turnaround time (DTAT) and its associated factors in a government-owned primary hospital in San Jose del Monte, Bulacan, addressing a gap in Philippine literature. A quantitative, descriptive-correlational-comparative retrospective design was used to analyze 216 adult medical records (September 2025–February 2026) selected through simple random sampling. Given a non-normal distribution (Shapiro-Wilk $W = 0.921$, $p < .001$), non-parametric tests were used at $\alpha = .05$. DTAT averaged 113.88 minutes ($Mdn = 99.00$), with 63.9% completed within two hours. Pending clinical requirements showed the strongest association ($r_{rb} = .788$, $p < .001$), followed by discharge disposition and imaging turnaround; diagnostic category and laboratory turnaround were not associated. Delays clustered around coordination-level factors rather than fixed patient characteristics, providing facility-level evidence for policy enhancement.

Keywords: Emergency department, discharge turnaround time, patient flow, retrospective study, Philippines

INTRODUCTION

Emergency departments serve as the critical entry point of hospitals, and the efficiency of their discharge process directly determines patient flow, safety, and system capacity. When discharge takes too long, overcrowding worsens, and the entire system suffers. In the Philippines, government hospitals experience chronic ED congestion from high patient volumes and limited resources (Valdez, 2024). Most existing research measures total ED length of stay rather than isolating discharge turnaround time as a distinct metric, and no published study has quantified factors associated with discharge turnaround time in Philippine government primary hospitals (Vista et al., 2023). This study determined ED discharge turnaround time and identified its associated factors in a government primary hospital in San Jose del Monte, Bulacan, to generate evidence-based policy and program recommendations.

Statement Of The Problem

This study determined ED discharge turnaround time and its associated factors in a government-owned primary hospital in San Jose del Monte, Bulacan. Specifically, it sought to determine: (1) the demographic profile of patients; (2) the ED discharge turnaround time; (3) the clinical characteristics; (4) the temporal patterns of discharges; the significant relationship between turnaround time and (5) demographic profile and (6) clinical characteristics; (7) the

significant differences in turnaround time grouped by temporal patterns; and (8) the policy and program that may be enhanced.

Scope And Delimitations

This study examined ED discharge turnaround time and associated factors among 216 adult patients (≥ 18 years) in a government-owned primary hospital in San Jose del Monte, Bulacan, using medical records from September 2025 to February 2026 to capture seasonal variation in patient volume and staffing. It was delimited to a single facility, focused on discharge turnaround time rather than overall length of stay, and relied on pre-existing documentation. The effectiveness of any recommendations depends on institutional leadership and interdepartmental cooperation, beyond the study's scope.

Review of Related Literature

Effective patient flow requires coordinated interventions across the care continuum (Samadbeik et al., 2024). Advanced age (1.84 times for those aged 85 and above; Ogliari et al., 2022), lack of insurance (adjusted odds ratio [AOR] 2.11), and delayed specialist consultation (AOR 9.5) prolong ED stay (Belayneh et al., 2023), as does shift timing (Alnahari & A'aqoulah, 2024). In the Philippines, ED research remains limited, with prolonged stay traced to co-management and pending-treatment burden (Besa et al., 2023). No study has quantified discharge-specific turnaround time or its factors in Philippine government hospitals (Vista et al., 2023; Valdez, 2024); this study addresses that gap.

Theoretical Framework

Meleis' Transitions Theory, Donabedian's Structure-Process-Outcome Model, and the Theory of Constraints provided the integrated lens for this study. Meleis' Transitions Theory (Meleis, 2010) conceptualizes ED discharge as a situational health-illness transition influenced by personal, clinical, and organizational factors. Donabedian's Structure-Process-Outcome Model (Donabedian, 1966) categorizes variables into structure, process, and outcome dimensions. The Theory of Constraints (Goldratt, 1984) directs attention to the bottlenecks that most critically limit throughput.

Conceptual Framework

INPUT	PROCESS	OUTPUT
• Demographics: age, sex, financial status • Clinical: diagnostic TAT, discharge disposition, pending requirements • Temporal: shift & day of discharge	• Retrospective review of 216 records • Descriptive statistics • Non-parametric correlation and group comparison at $\alpha = .05$	• Discharge turnaround time: average duration and distribution • Factors significantly associated with turnaround • Evidence for policy enhancement

METHODOLOGY

A descriptive retrospective approach was utilized to examine existing emergency department records, enabling the systematic assessment of turnaround time and its associated

factors. The methodology was designed to ensure the reliability and validity of the findings while providing evidence that may contribute to policy enhancement and improvements in emergency department operations.

Research Design

This study employed a quantitative, descriptive-correlational-comparative retrospective design that described variables, examined relationships without manipulation, and tested group differences using pre-existing medical records. It was selected because the study required simultaneous description, correlation, and group comparison in a single facility, where experimental manipulation was neither feasible nor appropriate.

Research Steps

Data collection proceeded through five phases: securing ethics clearance with a waiver of informed consent (retrospective, minimal-risk design); obtaining administrative approvals from the SBLC Graduate School Dean, Medical Center Chief, and ED Head Physician; validating the Data Extraction Form via the expert panel; extracting data from eligible records over four to six weeks; and securing data through research codes, encryption, and five-year retention before destruction.

Data Collection and Sample Selection

The sample consisted of 216 medical records of adult patients (≥ 18 years) discharged between September 2025 and February 2026, with complete discharge-order and departure timestamps; patients who left against medical advice, expired in the ED, had incomplete timestamps, or were pediatric were excluded. Sample size was computed using G*Power 3.1.9.7 ($f = 0.25$, $\alpha = .05$, power = .80), yielding 216 with a buffer, and simple random sampling was applied. A researcher-developed data extraction form was used; content validity by three experts yielded an S-CVI/Ave of 0.95.

Data Analysis Methods

Data were analyzed in IBM SPSS Version 28.0 at $\alpha = .05$. Descriptive statistics summarized the profile variables. Normality was assessed via the Shapiro-Wilk test, Q-Q plots, and skewness/kurtosis within ± 1 ; because turnaround time was non-normal, non-parametric tests were applied — Spearman rho for continuous predictors, Mann-Whitney U for two-group comparisons, and Kruskal-Wallis H with Dunn's Holm-adjusted post-hoc for multi-group comparisons.

Research Hypotheses and Validation

Three null hypotheses were tested at the 0.05 level. H₀₁: no significant relationship between demographic factors and turnaround time. H₀₂: no significant relationship between clinical characteristics and turnaround time. H₀₃: no significant difference in turnaround time across shifts and between weekdays and weekends. Instrument validation used the content validity index, with item- and scale-level indices computed.

Study Limitations and Ethical Considerations

The study was delimited to a single facility and relied on record completeness; small subgroups (e.g., HMO, Other, Transferred) limit some comparisons. A waiver of informed consent was obtained given the retrospective, minimal-risk design, and privacy was protected under Republic Act No. 10173.

RESULTS AND DISCUSSION

SOP 1–2. What is the demographic profile of the patients, and what is the ED discharge turnaround time? The patients had a mean age of 46.72 years (SD = 16.00; range = 18–92), with females comprising 52.8% of the sample. Most were covered by PhilHealth (47.7%) or indigent/charity assistance (39.8%), while ED visits were highest in January 2026 (25.4%).

The mean ED discharge turnaround time was 113.88 minutes (SD = 62.22), with a median of 99.00 minutes (range = 10–386). Overall, 63.9% of patients were discharged within 2 hours, 30.1% within 2–4 hours, and 6.0% after 4 hours, with no stay exceeding 8 hours. The median turnaround time was within the recommended 4-hour ED benchmark (Samadbeik et al., 2024).

SOP 3–4. What are the clinical characteristics and temporal patterns of ED discharges? Medical, non-surgical cases predominated (75.0%), and most patients were discharged home (83.8%). Among those tested, laboratory turnaround (M = 157.22) ran roughly three times longer than imaging (M = 55.09), and about one in four patients (24.1%) had a pending requirement at discharge, most often medication/prescription or specialist clearance. Discharges concentrated in the afternoon (40.7%) and evening (30.6%) shifts and on weekdays (68.5%). This is the profile expected of a primary-level ED managing non-operative presentations; the longer laboratory pathway and pending-requirement burden flag coordination steps at the discharge interface (Besa et al., 2023).

SOP 5. Is there a significant relationship between demographic profile and turnaround time? Age was weakly but significantly associated with ED turnaround time ($p = .187$, $p = .006$). No significant association was found between sex and turnaround time ($p = .552$). However, turnaround time differed significantly by financial status ($H = 13.15$, $p = .011$), with indigent/charity patients having longer median turnaround times than PhilHealth patients (118.50 vs. 89.00 minutes).

SOP 6. Is there a significant relationship between clinical characteristics and turnaround time? Diagnostic category ($p = .335$) and laboratory turnaround time ($p = -.059$, $p = .520$) were not significantly associated with ED turnaround time. In contrast, imaging turnaround time ($p = .310$, $p = .024$), patient disposition ($H = 20.35$, $p < .001$), and pending discharge requirements ($p < .001$) were significantly associated with longer ED turnaround times.

SOP 7. Are there significant differences in turnaround time by temporal patterns? ED turnaround time differed significantly across shifts ($H = 18.93$, $p < .001$, $\varepsilon^2 = .088$). The afternoon shift had the shortest median turnaround time (87.50 minutes), compared with evening (113.00 minutes) and night shifts (121.00 minutes). No significant difference was observed between weekdays and weekends ($p = .311$).

SOP 8. Based on the findings, what policy and program may be enhanced? The findings identified discharge coordination, disposition handoffs, imaging result release, and shift-based support as key areas for improvement. Factors without significant associations, including diagnostic category, laboratory turnaround, sex, and day of visit, were not considered primary targets for intervention. The median turnaround time of 99 minutes and the 6.0% prolonged-case rate provide baseline measures for future monitoring and policy enhancement.

SUMMARY

This study determined ED discharge turnaround time (DTAT) and its associated factors among 216 randomly sampled adult records over six months. DTAT averaged 113.88 minutes (Mdn = 99.00), with 63.9% of discharges within two hours and only 6.0% exceeding four. Turnaround correlated weakly with age ($\rho = .187$) and differed by financial status ($p = .011$). Among clinical factors, pending requirements were most strongly associated ($r_{rb} = .788$), followed by disposition ($p < .001$) and imaging turnaround ($\rho = .310$); diagnostic category and laboratory turnaround were not. Turnaround differed by shift ($p < .001$) but not by day.

CONCLUSIONS

Discharge performance was reasonable overall (median 99.00 minutes), with delays concentrated in a small minority of prolonged cases; demographic factors mattered only weakly, while pending clinical requirements were most strongly associated with prolonged turnaround, followed by disposition and imaging turnaround, and turnaround varied by shift but not by day — showing that process- and coordination-level factors, not fixed patient characteristics, drove delays, consistent with the Theory of Constraints, Donabedian, and Meleis.

RECOMMENDATIONS

The facility may prioritize the factors most strongly associated with prolonged turnaround: a pre-discharge coordination checklist flagging pending medication/prescription and specialist clearance, defined handoff timeframes for admissions and transfers, and concentrated discharge-support staffing in the evening-to-night window using the 99-minute median as the monitoring benchmark. These require institutional review and validation, and future work may pursue prospective, multi-site, and mixed-methods designs.

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AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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