

Determinants, Causes, and Discharge Care Gaps Associated with 30-Day Hospital Readmissions in a Provincial Government Hospital

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Abstract— Thirty-day hospital readmissions are widely recognized indicators of healthcare quality, continuity of care, and system efficiency, with preventable returns contributing to increased costs, resource strain, and patient morbidity. This study examined the demographic, clinical, and service-related factors associated with early readmissions and identified potential gaps in discharge and transitional care. A retrospective descriptive design was employed using electronic health records and patient charts from a secondary government referral hospital. All patients discharged within a one-year period who were readmitted within 30 days were included. Data on age, sex, residence, admitting service, and documented causes of readmission were collected and categorized into clinical and system-related factors. Descriptive statistics were used to summarize patterns and high-risk groups. Among 344 readmitted patients, the largest proportions were middle-aged (40–65 years, 27.03%) and older adults (≥ 65 years, 22.38%), with males accounting for 58.14%. Readmissions occurred primarily under medical services (48.54%), followed by pediatrics (38.00%) and surgery (13.37%). The most frequent causes were unimproved clinical condition (26%), new signs or symptoms (24%), dialysis-related needs (12%), and missed follow-up or consultation (11%). Overall, 57% of readmissions were associated with potentially preventable or system-related factors, suggesting gaps in discharge readiness and continuity of care. These findings indicate that early rehospitalizations cluster among medically complex and vulnerable populations and may be reduced through strengthened discharge planning, coordinated follow-up, and targeted risk-based interventions to support safer transitions from hospital to home.

Keywords— Transitional Care, Healthcare Quality, Preventable Readmissions, Health Services Research.

I. INTRODUCTION

Hospital readmissions within 30 days of discharge remain a widely used indicator of healthcare quality, care continuity, and system efficiency. Early readmissions are frequently interpreted as markers of unresolved clinical conditions, inadequate discharge planning, or gaps in post-discharge support, and they contribute substantially to increased healthcare costs, overcrowding, and patient morbidity. Globally, reducing preventable readmissions has become a policy priority, with health systems adopting quality improvement initiatives, predictive analytics, and coordinated transitional care models to address this challenge (Agency for Healthcare Research and Quality, 2024; Dhaliwal, 2024; WHO, 2020).

In the United States, national analyses from the Nationwide Readmission Database estimate all-cause 30-day readmission rates of approximately 10–15%, with significant variability by age, diagnosis, and hospital type (Amritphale et al., 2021; Wang & Zhu, 2024; Definitive Healthcare, 2025). These rates have

prompted large-scale interventions such as the Hospital Readmissions Reduction Program, which incentivizes hospitals to reduce avoidable rehospitalizations through improved discharge and follow-up systems (CMS, 2020). Similar concerns have been reported in Europe and Asia, where readmissions impose substantial clinical and economic burdens across both acute and chronic conditions (Reichel et al., 2025; Li et al., 2025; Ministry of Health, Labour and Welfare, 2024).

Evidence consistently demonstrates that readmission risk is multifactorial. Patient-level clinical factors—including advanced age, multimorbidity, frailty, and chronic disease burden—are among the strongest predictors of early return to hospital (Cilla et al., 2023; Glans et al., 2020; Selmer et al., 2025; Kan et al., 2025). Disease-specific studies further highlight elevated risks among patients with heart failure (Bolek et al., 2023; DeAngelo et al., 2025), chronic obstructive pulmonary disease (Meng Li et al., 2023; Chiara et al., 2025; Goldberg, 2025), chronic kidney disease and dialysis dependence (Uy et al., 2024; Kog et al., 2025; Griffin et

al., 2024), sepsis (Amrollahi et al., 2024), pneumonia (Reichel et al., 2025), stroke (Qin et al., 2020), and postoperative or oncologic cases (Alyabsi et al., 2022; Lee et al., 2025). Pediatric populations are likewise vulnerable, with respiratory infections, neonatal conditions, and inadequate follow-up contributing to recurrent admissions (Hamad et al., 2024; Cappelli et al., 2025; Sese et al., 2025; World Journal of Pediatrics, 2024).

Beyond clinical characteristics, socioeconomic and system-related determinants play a critical role. Limited access to primary care, poor medication adherence, financial barriers, transportation challenges, and inadequate post-discharge monitoring have all been linked to increased readmission risk (Andersen et al., 2020; Murray et al., 2021; Perkins & Montemayor, 2021; Ramos & Castillo, 2021). Studies using social determinants and electronic health record data further demonstrate that contextual and environmental factors significantly influence outcomes, particularly among vulnerable populations (Amrollahi et al., 2024; Pattar et al., 2025). Transitional care interventions—including pharmacist-led clinics, structured discharge checklists, early follow-up visits, and home-based support—have shown potential to mitigate these risks (Costello et al., 2025; Wong et al., 2022).

In Southeast Asia, hospital crowding and resource limitations amplify the burden of preventable readmissions. Although national-level statistics are often underreported, disease-specific studies indicate substantial rates among cardiac, pulmonary, and metabolic conditions (Malaysian Ministry of Health, 2024). In the Philippines, the Universal Health Care Act aims to improve access to follow-up services and continuity of care; however, disparities in healthcare delivery, especially in provincial and rural settings, persist (Department of Health, Republic Acts 11223 and 10932). Local investigations in tertiary centers have identified chronic disease progression, premature discharge, and inadequate discharge counseling as common contributors to readmission (Balane et al., 2023; Balane et al., 2023b; Malijan et al., 2020; Santos & Almodovar, 2020; Zamora & de Leon, 2020).

Despite growing international and national evidence, important gaps remain at the level of secondary and provincial hospitals, where patient populations, resource constraints, and follow-up challenges may differ substantially from tertiary institutions. Small-scale

facilities often lack comprehensive readmission surveillance systems, yet they experience significant congestion, staffing strain, and limited post-discharge coordination. A prior local case study identified recurring readmissions and service-specific causes in a provincial government hospital, underscoring the need for more systematic evaluation (Gonzales & Reyes, 2022). However, there remains limited quantitative evidence examining demographic patterns, departmental distributions, and specific causes of 30-day readmissions in such settings.

To address this gap, the present study investigates 30-day hospital readmissions at a provincial secondary government hospital in the Philippines. Specifically, it aims to describe the demographic and clinical characteristics of readmitted patients, quantify readmission distribution across hospital departments, identify primary causes of readmission by service area, analyze common risk patterns, and assess potential gaps in discharge planning and continuity of care. By generating locally grounded evidence within an international quality-of-care framework, this study seeks to inform targeted strategies for reducing preventable readmissions and improving patient outcomes in resource-constrained healthcare systems.

II. METHODOLOGY

This study utilized a retrospective descriptive quantitative design to examine 30-day hospital readmissions in a secondary government referral hospital. Medical records of all patients discharged between January 1 and December 31, 2024 were reviewed to identify individuals who were readmitted within 30 days of discharge. The retrospective approach enabled systematic analysis of routinely collected hospital data to determine demographic trends, service distribution, and causes of early readmission without direct patient contact or clinical intervention.

Data were extracted from the hospital's electronic health record system and corresponding patient charts using a structured data abstraction form. Variables collected included demographic characteristics (age, sex, and geographic classification), clinical information (primary diagnosis and admitting service), and readmission details (date and documented cause of return). Readmissions were grouped by service area (medical, pediatric, and surgical), and causes were categorized into clinical and system-related factors. Descriptive statistics, including frequencies and percentages, were

used to summarize patient characteristics, quantify readmission patterns, and identify common risk groups and potential gaps in discharge planning and continuity of care.

Prior administrative approval was secured before data collection. All procedures adhered to institutional ethical standards and applicable national data protection regulations. Patient identifiers were removed prior to analysis, and records were anonymized to ensure confidentiality. Access to the dataset was restricted to the investigator, and findings were reported only in aggregate form. Given the retrospective and de-identified nature of the study, the requirement for individual informed consent was waived.

Table 1. Demographic and Clinical Profile of Readmitted Patients

Profile	f	%
Age Group (Years)		
0–1	35	10.17
1–3	68	19.77
3–6	19	5.52
6–12	11	3.20
12–18	5	1.45
18–40	36	10.47
40–65	93	27.03
≥65	77	22.38
Male	200	58.14
Female	144	41.86
Urban	215	62
Rural	129	38
Total Population	344	100%

The demographic profile highlights age, sex, and place of residence as important determinants of early readmission. Middle-aged (40–65 years, 27.03%) and older adults (≥65 years, 22.38%) comprised nearly half of all readmissions, indicating that advancing age remains a strong predictor of hospital return. This finding is consistent with multiple studies demonstrating that older adults experience higher readmission risk due to multimorbidity, frailty, polypharmacy, and functional decline. Systematic reviews and cohort studies have identified geriatric syndromes and chronic disease burden as major drivers of early readmission among older populations (Cilla et al., 2023; Glans et al., 2020; Selmer et al., 2025). Similarly, age-related vulnerability has been linked to increased readmissions in patients with heart failure, kidney injury, and other chronic medical conditions (Griffin et al., 2024; DeAngelo et al., 2025). These findings support the need for risk-stratified

III. RESULTS AND DISCUSSION

Demographic and Clinical Characteristics of Readmitted Patients

Table 1 presents the demographic and clinical profile of patients readmitted within 30 days of hospital discharge (N = 344). The table summarizes the distribution of readmissions according to age group, sex, and geographic location, providing an overview of the patient populations most frequently affected by early rehospitalization.

These baseline characteristics help identify vulnerable groups and inform targeted discharge planning and continuity-of-care strategies.

discharge planning and closer follow-up among older patients.

A substantial proportion of readmissions was also observed among pediatric age groups, particularly children aged 1–3 years (19.77%) and infants under one year (10.17%). Young children are physiologically and immunologically more susceptible to infections and acute exacerbations, which may explain frequent returns to hospital care. Pediatric studies have reported similar patterns, with respiratory infections, bronchiolitis, pneumonia, and neonatal complications among the leading causes of early readmission (Hamad et al., 2024; Cappelli et al., 2025; Sese et al., 2025). Early discharge without adequate monitoring has likewise been associated with neonatal and infant readmissions (Villaluz & Santos, 2023; World Journal of Pediatrics, 2024). These findings emphasize the importance of strengthened caregiver education, early follow-up visits,

and community-based pediatric surveillance to reduce preventable returns.

Sex distribution showed a predominance of male readmissions (58.14%), suggesting possible behavioral and clinical differences influencing healthcare utilization. Prior research indicates that males are more likely to engage in high-risk behaviors, delay health-seeking, and present with more advanced or poorly controlled chronic conditions, thereby increasing the likelihood of rehospitalization (Murray et al., 2021; Perkins & Montemayor, 2021). In addition to individual factors, place of residence may shape access to care. Although most readmitted patients were from urban areas (62%), this pattern may reflect greater proximity to hospitals and easier access to readmission rather than better health outcomes. Studies examining healthcare accessibility have shown that geographic and socioeconomic barriers influence readmission patterns, with rural populations sometimes underrepresented due

to transportation limitations and delayed care rather than lower risk (Andersen et al., 2020; Ramos & Castillo, 2021; Li et al., 2025). Collectively, these findings underscore that demographic characteristics interact with both clinical complexity and structural access issues, reinforcing the need for targeted discharge strategies that account for age-specific vulnerabilities, gender-related behaviors, and geographic disparities.

Departmental Distribution of 30-Day Readmissions

Table 2 presents the distribution of 30-day hospital readmissions by clinical service area. Of the 344 readmitted patients, nearly half were from the medical service (48.54%), followed by pediatrics (38.00%) and surgery (13.37%). This distribution indicates that most early rehospitalizations occurred among patients managed for non-surgical, medically complex conditions, suggesting a greater burden of chronic disease, comorbidities, and ongoing treatment needs within the medical departments.

Table 2. Distribution of 30-Day Readmissions by Hospital Department

Department	f	%
Medical	167	48.54
Pediatrics	131	38.00
Surgery	46	13.37
Total	344	100

The predominance of medical readmissions is consistent with previous studies demonstrating that chronic and multisystem illnesses are major contributors to early hospital return. Patients with heart failure, chronic obstructive pulmonary disease, chronic kidney disease, sepsis, and other long-term conditions frequently require repeated admissions due to disease exacerbations, treatment complications, or inadequate post-discharge monitoring. Similar trends have been documented across different settings, where medical services account for the largest proportion of readmissions compared with surgical units (Amritphale et al., 2021; Dhaliwal, 2024; Balane et al., 2023). Disease-specific investigations further support this pattern, particularly among patients with heart failure (Bolek et al., 2023; DeAngelo et al., 2025), chronic pulmonary disease (Meng Li et al., 2023; Chiara et al., 2025), and renal disease requiring dialysis (Uy et al., 2024; Kog et al., 2025). These conditions often necessitate ongoing management and frequent healthcare utilization, increasing the likelihood of readmission.

Pediatric services also represented a substantial proportion of readmissions (38%), highlighting the vulnerability of younger populations to acute infections, recurrent respiratory illnesses, and post-discharge complications. Pediatric readmission patterns observed in this study align with international findings that identify respiratory and infectious diseases as leading causes of early rehospitalization among children (Hamad et al., 2024; Cappelli et al., 2025; Sese et al., 2025). In contrast, surgical readmissions comprised the smallest share (13.37%), which may reflect the episodic and procedure-based nature of surgical care, where successful operative management often resolves the primary condition. Nevertheless, postoperative complications and the need for follow-up procedures remain recognized contributors to surgical readmissions, as reported in studies of orthopedic and oncologic surgery patients (Alyabsi et al., 2022; Lee et al., 2025). Overall, these service-level differences underscore the importance of tailoring discharge planning and transitional care strategies according to department-specific risks, with stronger chronic disease

management for medical patients and enhanced postoperative monitoring for surgical cases.

Service-Specific Causes of Readmission

Table 3 presents the distribution of readmission causes stratified by department, illustrating both the frequency and clinical nature of early returns to hospital care. Overall, the most common causes were unimproved clinical condition (26%), new signs or symptoms (24%), dialysis-related needs (12%), and lack of follow-up or consultation (11%). Together, these categories account for more than two-thirds of all readmissions, suggesting that persistent illness, disease progression, and gaps in post-discharge continuity of care are the principal drivers of rehospitalization.

Medical services recorded the highest number of readmissions, largely attributable to unresolved or worsening conditions and the need for ongoing therapies such as dialysis. Chronic and complex diseases—

including cardiovascular, pulmonary, renal, and infectious conditions—are well established contributors to recurrent hospitalization. Similar findings have been reported in large database studies and cohort analyses, where incomplete clinical stabilization and exacerbation of chronic disease frequently lead to early readmission (Amritphale et al., 2021; Dhaliwal, 2024; Balane et al., 2023). Disease-specific evidence further supports this observation, particularly among patients with heart failure (Bolek et al., 2023; DeAngelo et al., 2025), chronic obstructive pulmonary disease (Meng Li et al., 2023; Chiara et al., 2025), chronic kidney disease requiring dialysis (Uy et al., 2024; Kog et al., 2025), and sepsis or other acute medical complications (Amrollahi et al., 2024; Critical Care Explorations, 2024). These studies emphasize that medical readmissions often reflect the cyclical and progressive nature of chronic illness, necessitating structured follow-up and coordinated outpatient management.

Table 3. Causes of Readmission by Department

Cause	Pediatrics	Medical	Surgery	Total	%
Unimproved condition	23	56	9	88	26
New signs/symptoms	64	16	2	82	24
Recurring symptoms	22	2	0	24	7
Dialysis	0	41	0	41	12
No follow-up/consult	9	28	1	38	11
Blood transfusion	3	11	0	14	4
Procedures	0	1	13	14	4
Post-op discharge/ procedure	1	0	12	13	4
Chemotherapy	0	7	0	7	2
Post-op infection	1	1	4	6	2
Unable to tolerate oral meds	3	2	0	5	1
Early discharge	2	1	1	4	1
Transferred then readmitted	1	3	0	4	1
Wound dehiscence	0	0	2	2	1
Phototherapy	2	0	0	2	1
Total	131	169	44	344	100

In pediatric services, readmissions were predominantly due to new or recurring symptoms, which may indicate evolving infections or acute disease processes common in younger populations. Comparable pediatric studies have identified respiratory tract infections, bronchiolitis, pneumonia, and neonatal conditions as leading causes of repeat hospitalization (Hamad et al., 2024; Cappelli et al., 2025; Sese et al., 2025). These findings highlight the importance of caregiver education, early symptom recognition, and timely post-discharge assessment. Conversely, surgical readmissions were mainly related

to procedures, postoperative monitoring, and complications such as infection and wound dehiscence. This pattern aligns with literature showing that postoperative infections, delayed healing, and procedure-related issues remain significant contributors to surgical readmissions (Alyabsi et al., 2022; Lee et al., 2025). Additionally, the notable proportion of readmissions associated with missed follow-up consultations underscores the critical role of care transitions and access to outpatient services, consistent with studies linking inadequate discharge planning and

poor continuity of care to avoidable hospital returns (Andersen et al., 2020; Perkins & Montemayor, 2021; Wong et al., 2022). Collectively, these service-specific differences suggest that targeted, department-based discharge strategies—focused on chronic disease management, pediatric surveillance, and postoperative care—are essential to reducing preventable readmissions.

Risk Patterns and High-Risk Patient Groups

Table 4 summarizes the high-frequency demographic and service-related groups most commonly associated

with 30-day readmissions, highlighting populations that may be at elevated risk for early hospital return. The largest proportions of readmitted patients were middle-aged adults (40–65 years, 27.03%) and older adults (≥ 65 years, 22.38%), males (58.14%), those admitted under medical services (48.54%), and individuals residing in urban areas (62%).

These findings suggest that readmissions cluster within specific demographic and clinical subgroups, indicating the need for targeted risk stratification and service-specific discharge strategies.

Table 4. High-Frequency Risk Groups Among Readmitted Patients

Variable	Highest Category	f	%
Age	40–65 years	93	27.03
Age	≥ 65 years	77	22.38
Sex	Male	200	58.14
Department	Medical	167	48.54
Residence	Urban	215	62

Age emerged as a prominent risk factor, with nearly half of readmissions occurring among adults aged 40 years and older. This pattern aligns with extensive evidence linking advancing age to higher readmission risk due to multimorbidity, functional decline, frailty, and complex medication regimens. Systematic reviews and predictive modeling studies consistently identify older adults as frequent users of acute care services following discharge (Cilla et al., 2023; Glans et al., 2020; Selmer et al., 2025; Kan et al., 2025). Moreover, chronic diseases that predominate in middle-aged and elderly populations—such as heart failure, chronic lung disease, and renal impairment—are strongly associated with recurrent hospitalization (Bolek et al., 2023; DeAngelo et al., 2025; Uy et al., 2024; Kog et al., 2025). These findings underscore the importance of proactive discharge planning, medication reconciliation, and early follow-up for aging patients with multiple comorbidities.

Male predominance among readmitted patients further reflects known sex-related disparities in health behavior and disease burden. Studies suggest that men are more likely to delay care, demonstrate lower adherence to follow-up recommendations, and experience higher rates of lifestyle-related chronic illness, contributing to repeated hospitalization (Murray et al., 2021; Perkins & Montemayor, 2021). The concentration of readmissions within medical services reinforces the chronic and ongoing nature of many conditions requiring sustained outpatient management, a trend similarly reported in

national and international analyses of hospital utilization (Amritphale et al., 2021; Dhaliwal, 2024; Balane et al., 2023). Although urban residents accounted for most readmissions, this may reflect greater geographic access and healthcare availability rather than inherently higher disease risk. Research on healthcare accessibility demonstrates that proximity to facilities increases the likelihood of seeking hospital care, while rural populations may experience underutilization due to transportation barriers and limited follow-up services (Andersen et al., 2020; Ramos & Castillo, 2021; Li et al., 2025). Collectively, these risk patterns highlight the need for data-driven identification of vulnerable groups and tailored transitional care interventions to mitigate preventable readmissions.

Gaps in Discharge Planning and Continuity of Care

Table 5 summarizes readmissions potentially attributable to discharge-related or system-level gaps. More than half of all rehospitalizations (57%) were associated with potentially preventable factors, including unimproved clinical condition (26%), dialysis scheduling issues (12%), lack of follow-up or consultation (11%), postoperative complications (6%), early discharge (1%), and medication intolerance (1%). These findings indicate that a substantial proportion of readmissions may not solely reflect disease severity but rather shortcomings in discharge readiness, care transitions, and post-discharge support.

Table 5. Readmissions Potentially Related to Discharge Care Gaps

Discharge-Related Factor	f	%
Unimproved condition	88	26
No follow-up/consultation	38	11
Dialysis scheduling issues	41	12
Early discharge	4	1
Post-operative complications (infection/wound/procedure)	21	6
Medication intolerance	5	1
Total (system-related causes)	197	57

The predominance of readmissions due to unimproved clinical condition suggests that some patients may have been discharged before achieving adequate stabilization or recovery. Premature or poorly coordinated discharge has been consistently linked to early hospital return, particularly among medically complex patients with chronic conditions (Dhaliwal, 2024; Balane et al., 2023; Dreyer, 2024). Similarly, the absence of timely follow-up or consultation highlights breakdowns in continuity of care. Transitional care models emphasize that early outpatient review and structured post-discharge monitoring reduce complications and prevent avoidable readmissions (Wong et al., 2022). Evidence shows that lack of access to primary care, transportation barriers, and socioeconomic constraints further exacerbate missed follow-up, especially among vulnerable populations (Andersen et al., 2020; Perkins & Montemayor, 2021; Ramos & Castillo, 2021). These system-level issues reinforce that effective discharge planning must extend beyond inpatient treatment and incorporate coordinated outpatient pathways.

Procedure-dependent needs, such as dialysis scheduling, chemotherapy, and postoperative monitoring, also contributed meaningfully to readmissions. Patients requiring ongoing therapies are particularly susceptible to rehospitalization when appointments are delayed or care coordination is inadequate. Studies among dialysis and chronic kidney disease populations have demonstrated that missed or irregular treatments significantly increase readmission risk (Uy et al., 2024; Kog et al., 2025), while postoperative infections and wound complications remain common causes of surgical returns (Alyabsi et al., 2022; Lee et al., 2025). Medication-related issues further reflect the importance of reconciliation and patient education at discharge. Interventions such as pharmacist-led counseling, medication reviews, and structured discharge checklists have been shown to lower readmission rates (Costello et al., 2025). Collectively, these findings suggest that

strengthening discharge readiness assessment, scheduling follow-up appointments prior to discharge, coordinating specialty services, and enhancing patient education may substantially reduce preventable hospital returns. Addressing these modifiable gaps represents a critical opportunity to improve care quality and optimize healthcare resource utilization.

IV. CONCLUSION

This study demonstrates that 30-day hospital readmissions remain a significant and multifactorial challenge, with patterns strongly influenced by demographic characteristics, service type, and continuity-of-care gaps. Readmissions were most concentrated among middle-aged and older adults, males, and patients managed under medical services, reflecting the burden of chronic and complex conditions that require sustained monitoring beyond discharge. Pediatric readmissions were largely associated with acute or recurrent illnesses, while surgical returns were primarily related to postoperative and procedure-related issues. These findings align with existing evidence that age-related vulnerability, multimorbidity, and disease severity substantially increase the likelihood of early rehospitalization, particularly in settings where outpatient support and follow-up mechanisms are limited.

Notably, more than half of readmissions were linked to potentially preventable or system-related factors, including unresolved clinical conditions, missed follow-up care, scheduling delays for ongoing treatments such as dialysis, and postoperative complications. This highlights that many early returns to hospital are not solely attributable to disease progression but may reflect modifiable weaknesses in discharge planning and transitional care processes. Collectively, the results underscore the importance of strengthening continuity of care, improving discharge readiness, and addressing structural barriers that compromise recovery after hospitalization. Targeted, service-specific strategies that

integrate clinical stabilization with coordinated outpatient management are essential to reducing avoidable readmissions and improving overall healthcare quality.

Hospitals should implement risk-stratified discharge protocols that prioritize high-risk groups—particularly older adults, patients with chronic medical conditions, and those requiring ongoing therapies—through comprehensive discharge readiness assessments, medication reconciliation, and individualized patient education. Follow-up appointments should be scheduled before discharge, supported by reminder systems and telehealth or community-based services to enhance accessibility. Strengthening multidisciplinary transitional care teams, including nurses, case managers, and pharmacists, may improve monitoring of symptoms, adherence, and treatment continuity. Additionally, leveraging electronic health records to flag high-risk patients and track post-discharge outcomes can guide early intervention and resource allocation. Collectively, these measures may reduce preventable rehospitalizations, optimize healthcare utilization, and promote safer transitions from hospital to home.

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