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The Role of the Observation Ward in Enhancing Quality Care and Reducing Inpatient Admission Overload at a Tertiary Care Hospital in Kathmandu, Nepal

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ABSTRACT

Introduction: Observation wards play a critical role in providing timely, efficient, and effective care in emergency departments, especially in tertiary care hospitals, where managing patient flow is essential to prevent inpatient admission overload. This study aimed to assess patient flow through the observation ward of a tertiary care hospital in Kathmandu, Nepal, and to determine the outcomes of these patients.

Methods: A cross-sectional descriptive study was conducted on all cases admitted to the observation ward over 12 months, from December 2022 to November 2023, at Tribhuvan University Teaching Hospital, Kathmandu. Data were collected from the TUTH Emergency and Observation ward records, and descriptive statistical analysis was performed using SPSS version 20.

Results: During the study period, there were 43,070 emergency department (ED) visits, with 1,911 patients admitted to the observation ward. Of these, 1,631 patients (85.35%) were discharged after being managed in the observation ward. The most common admitting diagnoses were Chronic Obstructive Pulmonary Disease (COPD) (14.75%), Community-Acquired Pneumonia (CAP) (11.09%), and uncontrolled Diabetes Mellitus (DM) (8.37%). The length of hospital stay ranged from 1 to 11 days, with an average length of stay (LOS) of 2.75 days. The turnover rate in the observation ward was 36.36%.

Conclusions: The study highlights the crucial role of the observation ward in managing emergency cases, reducing inpatient admission overload, and providing effective care for common diagnoses such as COPD, CAP, and uncontrolled DM. These findings support the continued use of observation wards to optimize patient flow and resource utilization in tertiary care hospitals.

Key words: *Emergency; General Practice; Observation ward; Quality care; Turnover rate.*

INTRODUCTION

Observation wards are a critical component of emergency departments (EDs) in tertiary care hospitals, providing an intermediate level of care for patients who do not require full inpatient admission but need more than brief emergency care.(1-4) These wards allow for further diagnostic evaluation, treatment, and observation, helping to distinguish between patients who can be safely discharged and those who need inpatient care.(4) In high-volume hospitals, such as Tribhuvan University Teaching Hospital (TUTH) in Kathmandu, effective management of patient flow through observation wards is crucial to prevent inpatient overload and ensure optimal use of hospital resources.

In Nepal, where healthcare resources are often stretched thin, the role of observation wards becomes even more significant. Despite their importance, there is limited research on their impact and effectiveness in this context. This study aims to fill this gap by evaluating patient flow

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through the observation ward at TUTH over a 12-month period. The objective was to assess how the observation ward contributes to quality care and helps reduce the burden on inpatient services, thereby optimizing overall hospital performance and patient outcomes.

METHOD

A cross-sectional descriptive study was conducted to analyze all cases admitted to the observation ward at Tribhuvan University Teaching Hospital (TUTH), Kathmandu, over a 12-month period from December 2022 to November 2023. Data were collected from the TUTH Emergency and Observation ward records. The analysis was performed using Microsoft Excel and Google Sheets. All patients with complete admission and discharge details were included in the study, while those with incomplete data were excluded. The collected data were analyzed using Microsoft Excel.

Source of Primary Data: Primary data were gathered from the admission and discharge registers of the observation ward. The admission register provided information on patient particulars and diagnoses, while the discharge register offered details on patient outcomes such as discharge, transfer to other wards, referral, or discharge against medical advice. Discharge summary sheets were reviewed to analyze disease conditions, vital signs, and any specialty consultations required.

Data were entered into Microsoft Excel for analysis, and graphical representations were created using Google Sheets. Length of Stay (LOS) was calculated as the total length of stay of all patients divided by the total number of patients. The turnover rate was determined using the formula: Turnover Rate = (1 / LOS) × 100.

RESULTS

The data reveals that out of 43,070 emergency department visits, 1,911 patients were admitted to the GP observation unit. Of these, 85.35% were successfully managed within the ward. The length of stay for patients varied from 1 to 11 days, with an average stay of 2.75 days. The turnover rate of 36.36% indicates the proportion of patients who were discharged or transitioned out of the observation unit, reflecting a moderate level of patient turnover during the study period.

Table 1: Key Metrics of the GP Observation Unit

Parameter	Result
Total ED Visits	43,070
Patients Admitted to GP Observation Unit	1,911
Successfully Managed in Observation Ward	85.35% (1,631)
Length of Stay	1 to 11 days
Average Length of Stay	2.75 days
Turnover Rate	36.36%

The table provides key insights into the operational parameters of the observation ward at TUTH between December 2022 and December 2023. The ward consists of 23 beds, with a bed occupancy rate fluctuating between 50% and 95%, indicating varying levels of patient load. The ward is staffed with two nurses per shift, which may suggest a moderate level of nursing care given the patient volume. A total of 1,911 patients were managed in the ward over the year, with one specialty consultation conducted daily, indicating limited but consistent access to specialized care. Notably, there is no designated isolation area for infectious diseases, which could be a limitation in managing such cases.

Table 2: Basic Parameters of the Observation Ward, TUTH (Dec 2022 - Dec 2023)

S.N.	Parameter	Value
1	Total Number of Beds	23
2	Bed Occupancy Rate	50-95%
3	Nursing Staff per Shift	2
4	Total Number of Patients	1,911
7	Specialty Consultations Done	1 per day
8	Isolation Area for Infectious Diseases	None

The most common admitting diagnoses were Chronic Obstructive Pulmonary Disease (COPD) (14.75%), Community-Acquired Pneumonia (CAP) (11.09%), uncontrolled Diabetes Mellitus (DM) (8.37%), poisoning (8.32%), Dengue Fever (7.38%), Urinary Tract Infection (UTI) (5.70%), Acute Kidney Injury (AKI) (5.34%), Acute Gastroenteritis (AGE) (5.13%), Hyperemesis Gravidarum (5.28%), anemia (4.45%), Enteric Fever (2.98%), Mild Head Injury (5.13%), Scrub Typhus (2.72%), and other conditions (13.35%). Descriptive statistics for these visits revealed a mean age of 42.18 years (SD 19.5 years), with 50.70% male and 49.30% female patients.

Table 3; Prevalence of disease in priority order in T.U.T.H. Observation ward

S.N.	Disease	Number of Cases	Percentage(%)
1	COPD	282	14.75
2	CAP	212	11.09
3	Uncontrolled DM	160	8.37
4	Poisoning	159	8.32
5	Dengue Fever	141	7.38
6	UTI	109	5.70
7	AKI	102	5.34
8	AGE	98	5.13
9	Hyperemesis Gravidarum	101	5.28
10	Anemia	85	4.45

S.N.	Disease	Number of Cases	Percentage(%)
11	Enteric Fever	57	2.98
12	Mild Head Injury	98	5.13
13	Scrub Typhus	52	2.72
14	Others	255	13.35

The outcomes of the observation ward indicate that of the patients managed, 8.48% (162 cases) were shifted back to the emergency room (ER), and 6.17% (118 cases) required admission to other wards for further care. A small percentage of patients, 2.35% (45 cases), left against medical advice, while 7.59% (145 cases) were discharged upon their request. The majority, 75.41% (1,441 cases), were successfully discharged after receiving care in the observation ward.

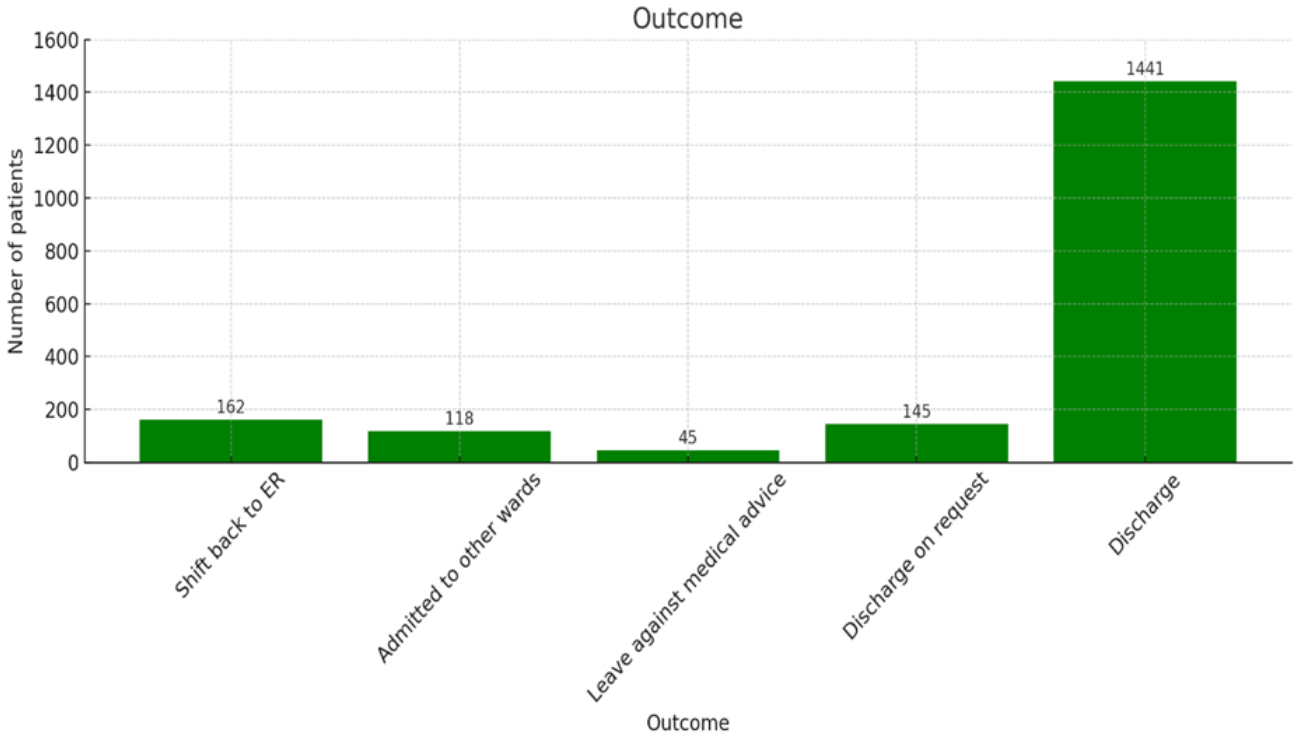

Figure 1 Outcome of Observation ward

DISCUSSION

This study aims to assess the role of the observation ward in enhancing quality care and reducing inpatient admission overload at Tribhuvan University Teaching Hospital (TUTH) in Kathmandu, Nepal. The findings of this study provide valuable insights into the operational parameters and outcomes of the observation ward, highlighting its impact on patient flow, resource utilization, and quality care delivery in the emergency department (ED). The observation ward at TUTH played a critical role in managing a significant proportion of patients presenting to the ED. During the study period, 43,070 patients visited the ED, with 1,911 being admitted to the observation ward. This represents approximately 4.4% of the total ED visits, indicating that a relatively small but important subset of patients required observation for further evaluation or management. The observation ward's turnover rate of 36.36% reflects a moderate level of patient movement, with the majority (85.35%) of patients being successfully managed and discharged. The average length of stay (LOS) in the observation ward was 2.75 days, with a range of 1 to 11 days. This relatively short LOS suggests that the observation ward is efficient in providing timely care and avoiding unnecessary inpatient admissions.(5-8) The turnover rate and LOS reflect a well-functioning ward where most patients can be treated, observed, and discharged without the need for extended hospital stays, thus alleviating pressure on inpatient services and optimizing bed utilization.(9-11)

The most common admitting diagnoses were Chronic Obstructive Pulmonary Disease (COPD) (14.75%), Community-Acquired Pneumonia (CAP) (11.09%), and uncontrolled Diabetes Mellitus (DM) (8.37%). These findings align with global trends, as these conditions are prevalent in the elderly and middle-aged populations,

especially in developing countries.(12-15) The study's results show that patients with respiratory conditions (COPD, CAP) and metabolic disorders (uncontrolled DM) frequently require observation, often due to exacerbations or complications that require short-term monitoring and treatment.

The mean age of patients was 42.18 years, with a nearly equal distribution of male (50.7%) and female (49.3%) patients, indicating that a broad demographic, including both genders and middle-aged individuals use the observation ward. The study's demographic data suggests that the observation ward is serving a population that might otherwise be admitted to inpatient wards, reducing the strain on hospital resources.

The majority of patients (75.41%) were successfully discharged from the observation ward after receiving care, highlighting the ward's ability to effectively manage acute and sub-acute conditions without the need for full inpatient admission. A smaller percentage of patients (8.48%) were referred back to the emergency room, likely due to worsening conditions or the need for further diagnostic evaluation. Additionally, 6.17% required admission to other wards for extended care, while a small percentage (2.35%) left against medical advice, which may reflect patient preferences or dissatisfaction with the care provided.

The relatively low percentage of patients needing further admission suggests that the observation ward is fulfilling its role of providing an intermediate level of care, allowing for timely discharge in the majority of cases. However, the referral of a portion of patients to other wards underscores the necessity for ongoing, specialized care in certain situations.

The observation ward's capacity to manage 1,911 patients over the 12-month period with a turnover rate of 36.36% indicates its role in reducing the burden on inpatient services. By providing a space for patients who do not require full inpatient admission but need more than a brief visit to the emergency room, the observation ward helps alleviate the strain on hospital beds, particularly in a high-volume ED like TUTH. The ward enables better patient flow and more efficient resource allocation, ultimately contributing to enhanced hospital performance.(17,18)

The ability of the observation ward to manage common conditions like COPD, CAP, and uncontrolled DM, which are often responsible for significant inpatient admissions, supports the continued use of such wards as an essential part of emergency care.(19-20) By offering care in a cost-effective manner, the observation ward minimizes unnecessary hospitalizations, reduces healthcare costs, and frees up inpatient beds for more critically ill patients.(21)

Despite the positive outcomes, several limitations were noted in the study. One significant limitation was the lack of a designated isolation area for infectious diseases, which could pose a challenge in managing patients with contagious conditions, particularly in a setting with high patient turnover. The absence of isolation facilities may have increased the risk of cross-contamination, especially during high patient load periods.

Another limitation is the staffing level, with only two nurses per shift in the observation ward. While this may be sufficient for moderate patient volume, it could potentially lead to staffing strain during peak hours or high patient loads. Furthermore, while the ward had consistent access to specialty consultations (one per day), the frequency of consultations may not be adequate for more complex cases, particularly when multiple patients require specialized care simultaneously.

CONCLUSIONS

The observation ward at TUTH plays a vital role in enhancing patient care and optimizing hospital resources by managing a significant number of patients without the need for full inpatient admission. The study highlights the ward's effectiveness in providing timely care, managing common conditions like COPD, CAP, and uncontrolled DM, and reducing inpatient admission overload. These findings support the continued utilization of observation wards to improve emergency care quality, patient outcomes, and resource utilization in tertiary care hospitals.

Going forward, efforts should be made to improve staffing, enhance infection control measures, and expand specialty consultation availability to further optimize the functionality of the observation ward. As Nepal's healthcare system continues to face resource constraints, expanding the use of observation wards could be a critical strategy in improving the efficiency and sustainability of emergency and inpatient care.

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Conflict of interest

None

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