

Original Research Article

Determinants of length of stay and associated outcomes in patients attending emergency department of Gatundu level V Hospital, Kiambu, Kenya

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ABSTRACT

Background: The study aimed to determine the duration of stay and associated outcomes of patients attending the emergency department at Gatundu Level V Hospital, Kiambu, Kenya, and compare these findings to the internationally recognized benchmark of four hours for emergency department visits.

Methods: Longitudinal research was used with 182 participants selected through a systematic random sampling technique. Data was collected using pretested structured questionnaires. The Pearson-Chi square method was utilized for proportionate patient features. The data was analyzed and cleaned using the SPSS version 27.

Results: This showed that the average length of stay was 2 hours and 27 minutes, with the longest stay being 18 hours (15.4%), representing 28 out of 182 patients who spent more than 4 hours in the emergency department. The rest of the patients (84.6%) stayed less than 4 hours, with a majority (48.4%- 88 patients) being inpatient, 13.2% (24) under 24-hour observation, 29.1% (53) were discharged, 8.1% (16) were referred to tertiary institutions, and 0.5% (1) died. 72.6% were satisfied with their care while 27.4% were dissatisfied with their quality of care.

Conclusions: The Pearson correlation revealed a significant relationship between the length of stay and illness acuity indicating that patients with more severe conditions tend to remain in the department longer than those who are more stable. The length of stay was significantly related to the patient's outcome ($p=0.368$) and showed a strong correlation with illness type ($p=0.002$) and patient type ($p=0.002$).

Keywords: Emergency, Duration of stay, Patient outcomes

INTRODUCTION

Background information

"An integrated platform for providing accessible, high-quality, time-sensitive health care services for acute illness and injury across the life course" defines emergency care as in WHA resolution 12.9 of the year 72.¹⁻⁴ The ability of a person or community to seek out, access and use health care services is based on its accessibility, acceptability, availability, accommodation,

affordability, and appropriateness. Given the key emphasis on emergencies, accessibility is more crucial when obtaining medical care.² Healthcare delays and poorer outcomes were caused by difficulties obtaining emergency treatment due to systematic barriers or lack of availability.

According to Lamberski (2022), health outcomes are defined as events occurring as a result of an intervention and are measures of quality of care.⁵ A health outcome encompasses both physical and physiological well-being,

considering not only the length of life but also the quality of life.

Minutes assess how long a patient spends in the emergency room or hospital after admission. The entire amount of time from the patient's initial documented time at the emergency room-whether for triage or registration-until their discharge is known as the emergency department duration of stay.⁵ Across the globe, emergency departments (EDs) provide crucial support to healthcare systems. In this unit, it is common practice to provide emergency treatment for serious illnesses and injuries that pose a life threat and demand swift, aggressive interventions.²

Emergency room care is prioritized based on two primary factors. Finding a patient's prognosis comes first. Choosing whether to admit the patient for further care or transfer them to a different healthcare institution is the second stage in determining whether the patient can be safely treated at the emergency room and returned home. Notably, 10% of all deaths worldwide are attributed to injuries, which claim the lives of about five million people annually and about 15,000 people every day.¹¹ Most of these deaths occur in low- and middle-income nations because most medical facilities are not equipped to offer essential trauma treatment services.

Facility-based emergency care systems are quickly developing in Africa even though they are a relatively new idea in many nations. Emergency care systems must integrate this concern when providing facility-based emergency care needs. Using system designs such as the Kenya emergency medical care policy for 2020-2030, which are aimed at promoting health care among centers in emergency treatment. This approach is compliant with the WHA 72.16 (2019), which called on member states to create policies for sustainable funding, effective management, and universal access to safe, excellent, needs-based emergency treatment.⁸ This emphasis ensures that emergency medical care provided to Kenyans meets the highest standards as stipulated in the nation's 2010 Health Act.

The WHO emergency trauma and acute care program is committed to supporting the emergency care systems that are so many people's first point of interaction with the world's health systems and championing the development of high-quality, timely emergency care, that is available to everyone.¹¹ At the facility level, assessment, resuscitation, intervention, and monitoring are done then disposition, either admission, transfer, or discharge home.

Even while acute care systems can considerably lower, the morbidity and mortality associated with a wide range of medical and surgical disorders in adults and children, certain healthcare facilities in Kenya use an integrated strategy for resuscitation and stabilization. Acute care places limitations on the components of the healthcare system that treat patients with life-threatening illnesses.³

Kenya as a nation has a framework for trauma services created via extensive stakeholder and sector consultation and serves as a guide for providing high-quality trauma care services. The procedure ensured the strategy was supported by evidence and included recommendations from pertinent international and national sources.

Statement of the problem

It has been demonstrated that postponing medical attention for accidents increases morbidity and death. Effective trauma care systems that guarantee prompt care delivery are necessary to reduce the detrimental effects of injuries to one's health such as death or permanent impairment. Additional research demonstrates that enhancing the way trauma services are organized results in a notable decrease in trauma mortality.⁴ In Kenya, a study was done at the Mater Misericordiae Hospital, in Nairobi County on factors affecting the length of stay at accidents and emergency department in a Teaching and Referral Hospital in Nairobi and found that the emergency length of stay to be 5 hours 28 minutes.⁹ The study concluded that the delays were occasioned by delays by insurance companies, patients' financial constraints, inadequate staffing, and long diagnostic waiting times.

Previous studies primarily examined the length of stay in the emergency departments, often generalizing patient characteristics. Most of these studies reported an average length of stay exceeding 4 hours. The purpose of this study was to identify the factors associated with patient length of stay within 4 hours of arrival at the emergency department of Gatundu Level Five Hospital. The study findings will help emergency department specialists and hospital administration develop a standardized patient length of stay, from triage to disposition protocols.

Objectives of the study

Broad objective

To determine factors associated with the length of stay and healthcare outcomes among patients seeking care at the accident and emergency department of Gatundu Level V Hospital, Kiambu, Kenya.

Specific objectives

To determine the average duration of stay for patients visiting the emergency room at Gatundu Level V Hospital Kiambu, Kenya. To describe characteristics of patients influencing length of stay attending the accident and emergency department at Gatundu Level V Hospital, Kiambu, Kenya. To determine which aspects of the health system, affect how long patients stay in the accidents and emergency rooms of Gatundu Level V Hospital, Kiambu, Kenya. To evaluate the clinical results of patients presenting to Gatundu Level V Hospitals, accident and emergency department, Kiambu, Kenya.

Research questions

What is the average length of stay at the facility among patients attending accidents and emergency departments at Gatundu Level V Hospital, Kiambu, Kenya?

What are the demographics and characteristics of patients attending accidents and emergency departments at Gatundu Level V Hospital, Kiambu, Kenya?

What aspect of the health system affects how long patients stay at the accidents and emergency rooms of Gatundu Level V Hospital, Kiambu, Kenya?

What are the clinical results of patients visiting the accidents and emergency department of Gatundu Level V Hospital, Kiambu, Kenya?

Null hypothesis

There is no correlation between the duration of stay and clinical results for patients presenting at the accidents and emergency room of Gatundu Level V Hospital, Kiambu, Kenya.

METHODS

Research methodology

The research used both qualitative and quantitative approaches, utilizing a longitudinal prospective study design conducted at Gatundu Level Five Hospital, a County Referral level five in Gatundu, Kiambu County, Kenya. This design is mostly applied in medicine to observe study subjects and track their developments over time. Data was recorded from patient inpatient files, outpatient cards, and direct observation by research assistants at the emergency department. The study was conducted in the emergency unit at Gatundu Hospital in Kiambu, Kenya.

Inclusion/exclusion/selection criteria

The study targeted all patients attending the emergency department as walk-ins, referrals as self or by ambulance, and those transferred to the facility from outpatient clinics and general outpatients. A patient population of 462 was selected from the ED register with an average monthly attendance. The research used the probability sampling method, applying a systematic random sampling procedure to the population. Every third patient was sampled until a sample size of 182 was achieved. Participants were selected at the accidents and emergency nurse triage desk and their outcomes followed as they exited the department. The research assistants who were two working day and night shifts were able to input patients' arrival and discharge times, admission, and referral times in the questionnaires. All referrals were excluded, including those brought in dead and those who did not consent to the study.

Sample size determination

Sample size (n=182) was obtained by applying the Cochran formula with a finite patient population of 462.

$$n = \frac{n_0}{1 + \frac{(n_0-1)}{N}}$$

$$\text{where } n_0 = \frac{Z^2 p(1-p)}{d^2}$$

Z=1.96, p- 73.5% d-error 5%

$$\frac{1.96^2 \times 0.735 \times 0.265}{0.0025}$$

=299

$$n = \frac{299}{1 + \frac{(299-1)}{462}}$$

n₀= equals 299 after calculation, using the above Cochran formulae we deduce the equation to arrive at 182 subjects. Using a population proportion of 73.5%, a population size of 462 arrived at 182 sample size.

Quantitative data was recorded via structured questionnaires while qualitative data was via interview guide by the research assistants and principal researcher. A pilot study was done on the Karatu Level 4 hospital for the testing of the questionnaire. 12 patients were interviewed, and their data was entered into SPSS for analysis of reliability. This data was representative with a Cronbach Alpha coefficient of 0.89 as the first round of data collection was completed during the first week of July 2024. The questionnaire was modified and adapted. The data on the questionnaire was tested for face validity by interviewing the emergency department nurses and medical officers on how effective the tool was and if it captured the patient's management to their exit at the department.

Data collection procedures/techniques

The principal researcher and research assistants observed patients. They collected data on patients' length of stay at the department from patient's cards and files from the casualty and boarding areas. We measured the patients' waiting times (registration time through the doctor's consultation, procedures done to exit time) of initial cases. Then, we linked this information to those patients already in the department, imaging, and laboratory areas. This was plotted on their cards and files to arrive at the length of stay. The initial contact time was recorded from the payment receipt. Descriptive analysis was used to measure median waiting time and average length of stay, stratified by the patient's acuity and age group.

The data collection period was from July 7, 2024, to August 15, 2024, covering both weekends and weekdays

with day and night shifts, all diligently recorded by the research assistants. Patient outcomes were measured based on mortality and morbidity including triage, resuscitation, intervention, and monitoring. To determine patients' outcomes, the effectiveness of care, early imaging, and early lab turnaround times were plotted against the length of stay

Data processing and analysis

The collected data was analyzed and cleaned using the statistical package for the social sciences (SPSS) version 27. Statistical analysis was used for continuous variables, applying means, modes, and standard deviation, while the Pearson Chi-square was applied to proportions such as patient characteristics. The cleaned and coded data were presented in tables and bar graphs.

Ethical considerations

An ethical review certificate was obtained from the Mount Kenya University ethics review committee. The research coordinator for Kiambu County Government granted access after we submitted the necessary documents. The Gatundu Level 5 Hospital Training Committee permitted us to conduct research in the emergency department under the supervision of the General Surgeon. We also obtained a permit from the National Commission of Science and Technology Institute to conduct research from June 2024 to June 2025.

The research team observed autonomy, did not harm, and showed empathy during the study period. All patients

over 18 signed an informed consent form, while those under 18 had assent obtained by their parents/guardians giving consent for data collection.

RESULTS

Rural residences made up the majority at 54.4%, signifying the proximity to the facility. Males were predominant (53.8%) of the patients. Students comprised the largest group of those presenting, at 29.7%. Most patients (36.8%) spent less than an hour at the emergency department. The average length of stay was 2 hours and 27 minutes and patients' satisfaction was at a commendable 72.6%. The facility admission rate was at 61%. Rural residents comprised 54.4% (99), semi-urban residents accounted for 26.4% (48), and urban represented 19.2% (35) of the patient population. Males were more predominant (53.8% compared to females, 46.2%). On weekdays, the most common age group was 16-30, with 31 out of 182 patients facing emergencies, followed by urgent cases for the same age group.

The majority of occupations were students, 29.7% (54), followed by business, 26.4% (48), and farming, 22% (40). The highest level of education was college, 31.3% (57), and secondary, 42.9% (78), had the highest number of respondents. The overall response rate was 100%, and all 182 questionnaires were fully completed.

The average length of stay at the emergency department

The average length of stay was 2 hours and 27 minutes with a median of 1 hour and 30 minutes and the least time being 15 minutes.

Table 1: Average duration of stay in the emergency room.

Independent factor	Time in hours	Frequency n=182	Percentage	Chi-square	P value
Length of stay	<1 hour	67	36.8	3.545	0.471
	1-2 hours	43	23.6		
	2-3 hours	25	13.7		
	3-4 hours	19	10.4		
	4 hours	28	15.4		
Length of stay	2 hour 27 minutes	182	100		

Table 2: Comparison of length of stay in different countries.

Country	Length of stay (minutes)	Chi-square	P value
Kenya-Mater Misecoridiae	5 hours 28 minutes	-62.3563	0.001
United Kingdom	4 hours	14.5991	0.001
South Africa	73 hours 49 minutes	28.6	0.005

Most patients spent less than one hour in the emergency department (36.8%). This was followed by 23.6% of patients who spent between one and two hours, 10.4% who spent between two and four hours, and 15.4% who

exceeded four hours. The difference was not statistically significant ($\chi^2=3.545$, p value=0.471). 84.6% of patients attended had their length of stay within 4 hours while 15.38% experienced a prolonged length of stay above 4 hours.

Table 3: Association between patient characteristics and length of stay.

Variable	Respondent's response	Length of stay <4 hours (%)	n=182 <4 hours (%)	Chi-square	P value
Age in years	<15	11 (78.6)	3 (21.4)	3.96	0.413
	16-30	62 (83.8)	12 (16.2)		
	31-45	45 (86.5)	7 (13.5)		
	46-60	20 (95.2)	1 (4.8)		
	>60	16 (76.2)	5 (23.8)		
Sex	Male	98 (53.2)	84 (46.8)	0.145	0.703
	Female	84 (46.8)	98 (53.2)		
Area of residence	Urban	35 (16.2)	147 (83.8)	6.169	0.36
	Semiurban	48 (28.6)	134 (71.4)		
	Rural	99 (55.2)	83 (45.8)		

Table 4: Association between patient's characteristics and length of stay.

Variables	Respondent response	Length of stay <4 hours	Length of stay >4 hours	Chi-square	P value
Occupation	Business	48 (27.3%)	72.7%	6.538	0.589
	Farming	40 (20.1%)	79.9%		
	Student	54 (31.2%)	68.8%		
	Formal employment	20 (9.7%)	90.3%		
	Informal employment	15 (9.1%)	90.9%		
	Artisan	5 (2.6%)	97.4%		
Mode of arrival	Self	38 (20.8%)	79.2%	2.572	0.462
	Private means	130 (72.7%)	27.3%		
	Police vehicle	8 (3.3%)	96.7%		
	Ambulance	6 (3.2%)	96.8%		

Table 5: Patient cases presentation.

Variables	n=182	Less than 4 hours	More than 4 hours	Chi-square	P value
Patient case	Surgical/surgical emergencies	50%	50%	24.052	<0.001
	Medical	29.2%	69.8%		
	Pediatrics	11%	89%		
	Obs and Gyn	9.7%	90.3%		
Total		100%	100%		

Table 6: Association between health systems factors and length of stay.

Variables	Time in hours	<4 hours (%)	>4 hours (%)	Chi-square	P value
Lab turn-around time	<30 minutes	94 (51.6)	88 (48.4)	17.75	<0.001
	31-60 minutes	75 (41.2)	107 (58.8)		
	1-2 hours	12 (6.6)	170 (93.4)		
	>2 hours	1 (0.5)	181 (99.5)		
Imaging turn-around time	<30 minutes	114 (62.6)	68 (37.4)	39.889	<0.001
	31-60 minutes	37 (20.3)	145 (79.7)		
	1-2 hours	16 (8.8)	166 (91.2)		
	>2 hours	15 (8.2)	167 (91.8)		
Staff on duty	Medical officer	70 (38.5)	112 (61.5)	3.831	<0.061
	Clinical officer	111 (61)	71 (49)		
	Nurse	1 (0.5)	181 (99.5)		
Specialist needs	Yes	61 (33.5)	121 (66.5)	13.250	<0.001
	No	121 (66.5)	61 (33.5)		

Table 7: Patient's clinical outcomes and nature of injury.

Variables	Respondent response	Frequency n=182	Percentage	Chi-square	P value
Patient's outcomes	Admitted for 24 hours observation	24	13.2	24.292	<0.001
	Admitted to inpatient	88	48.4		
	Referred to a tertiary facility	16	8.8		
	Discharged	53	29.1		
	Died	1	0.5		
Nature of injury	Fall	19	10.4	4.798	0.696
	Blunt force	13	7.1		
	Road traffic accident	27	14.8		
	Poisoning	3	1.6		
	Stabs	6	3.3		
	Burns	9	4.9		
	Others	105	57.7		

Table 8: Patients outcomes versus nature of patients presentation.

Variables	Medical n=182	Surgical emergency (%)	Pediatrics (%)	Obs/Gyn (%)	Chi-square	P value
Admitted for observation	8 (4.4)	14 (7.7)	1 (0.5)	1 (0.5)	23.440	0.001
Admitted to inpatient	22 (12.1)	35 (19.2)	13 (7.1)	18 (9.9)		
Referred to a tertiary hospital	7 (3.8)	7 (3.8)	2 (1.1)	0		
Discharged home	15 (8.2)	37 (20.3)	1 (0.5)	0		
Died	1 (0.5)	0	0	0		
Total	53 (29.1)	93 (51.2)	17 (9.3)	19 (10.4)		

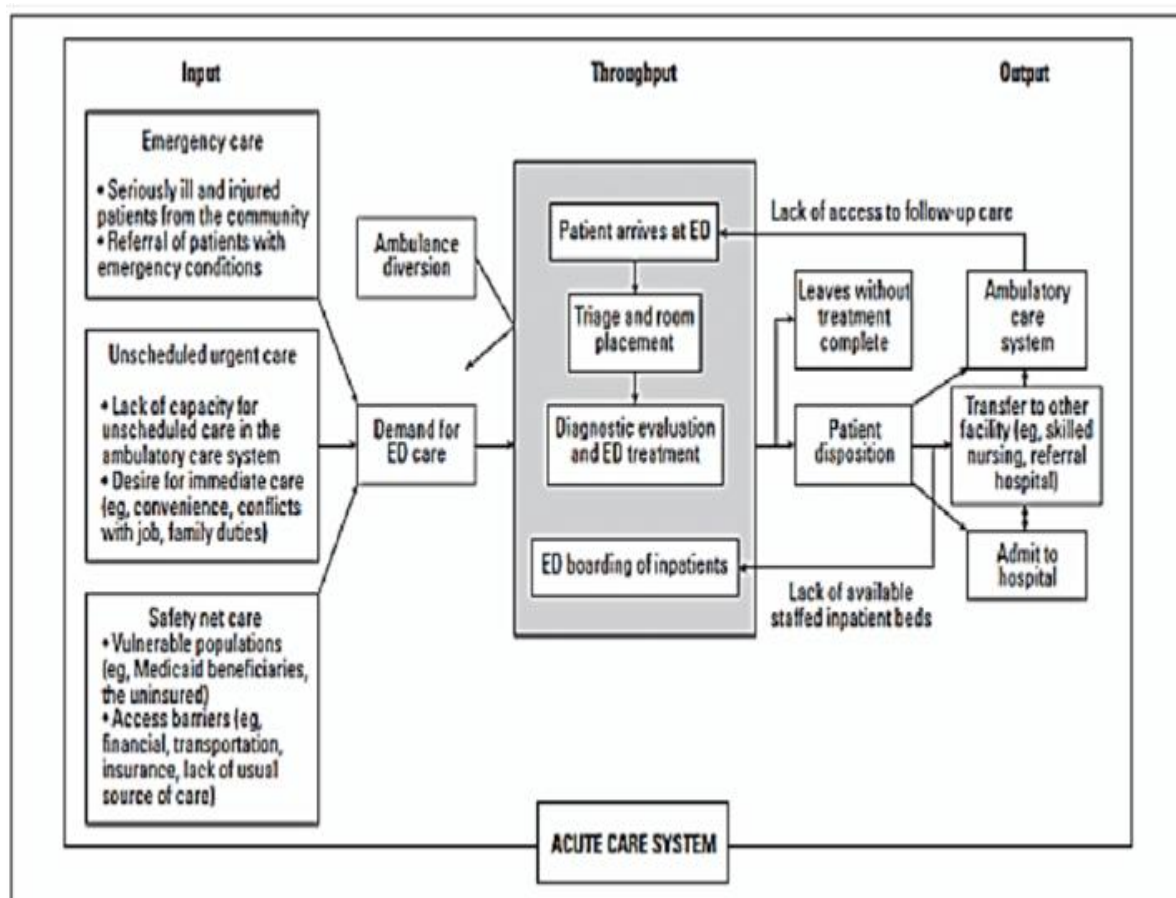


Figure 1: Asplin et al input throughput output model.

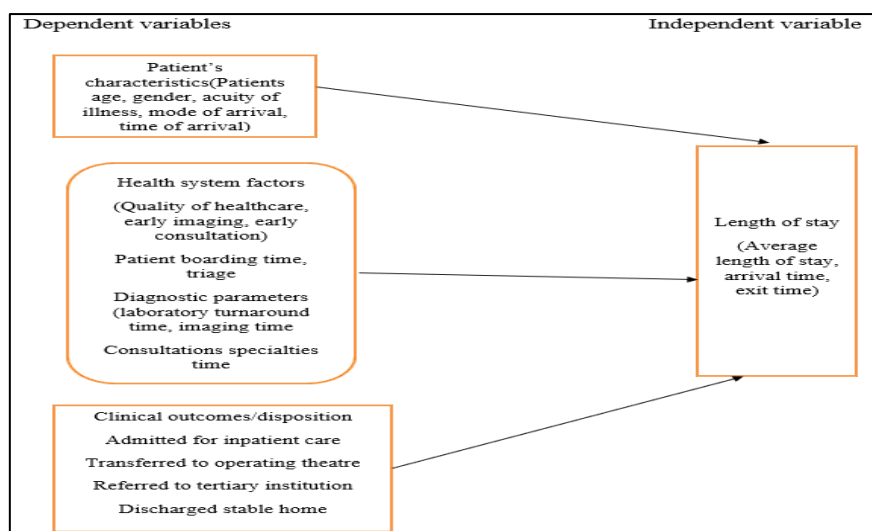


Figure 2: Conceptual framework.

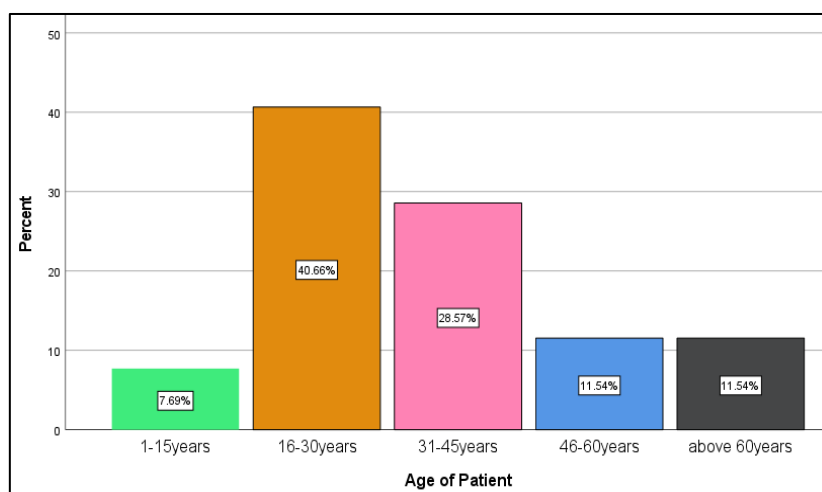


Figure 3: Age of patient.

The mean length of stay was 2 hours 27 minutes with a standard deviation of 2 hours 32 minutes.

DISCUSSION

The average length of stay was a mean of 2 hours and 27 minutes which corresponds with the international length of stay at the emergency room of fewer than 4 hours.⁶ Perceptions of emergency care in Kenyan communities lacking access to formalized medical systems: a qualitative study.

The longest stay was 18 hours, primarily due to delayed ambulance transfers. In contrast, the average stay was 5 hours and 28 minutes at Matter Misericordiae Hospital, and 11 hours and 36 minutes at Kenyatta National Referral Hospital. At Apex Hospital, the prolonged stay was occasioned by inadequate staffing and numerous complicated cases, making the length of stay exceptional in Kenya.

Onditi undertook a study investigating factors affecting the length of stay in patients attending accidents and the emergency department of a referral Hospital, in Nairobi. The average stay in Mater Misericordiae in Kenya was 5 hours 28 minutes, more than the recommended international rate of 4 hours.⁹

The average length of stay in Gatundu Level Five Hospital was 2 hours and 27 minutes, which is lower than the global rates for the same window period. Thus, Gatundu Level Five Hospital is an excellent healthcare partner for patient care.

In Kenya, a study by Onditi found that the average length of stay at Matter Misericordiae was 5 hours and 28 minutes.⁸ Kapari Mashao et al conducted a comparison study in South Africa in 2021 on Areas for delay related to prolonged length of stay in an emergency department of an academic hospital in South Africa and it was found that the average length of stay was 73 hours and 49 minutes. This is more than the Kenyan emergency stays.

Patient age group in the emergency department

Patients' presentation by age groups was as follows: 16-30 years 40.7% (74), 31-45 years 28.6% (52), and the same number 11.5% across 45-60 years and above 60 years old. The proportionate of patients who stayed at the emergency department increased with age i.e. 78.6%, 83.8%, 86.5%, and 95.2% for age groups <16 years, 16-30 years, 31-45 years, and 46-60 years respectively. However, for those >60 years, the proportionate was 76.2%. This means with increasing age patients were likely to spend more time at the emergency department. The OR (3.946, DF=4, p value =0.413).

Association between patient characteristics and length of stay

The majority of patients presenting within the first 4 hours were aged 16-30 years, accounting for 32.4% of the cases (p=0.413, chi-square =3.96). Males were likely to present earlier than females, with 53.2% of early presenters being males (p=0.703). Additionally, the majority of patients, 55.2% resided in rural areas (p=0.36). Males were more predominant (53.8% compared to females, 46.2%). On weekdays, the most common age group was 16-30, with 31 out of 182 patients facing emergencies, followed by urgent cases for the same age group.

In a study conducted by Prudencia et al on factors influencing patient waiting time in the emergency department of Khunyangu Sub-District Hospital, Busia, 56.5% were females, while males were 45.5%, with a majority between 25 and 31 years of age (n=67, 35.1%).¹⁰

Association between patient's characteristics and length of stay

The leading occupation was a majority of students (29.7%) followed by business (26.4%) with a chi-square of (6.538) and p (0.589). Most patients came on their own 71.4% with a chi-square of 6.538 and a p value of 0.58.

Health system factors affecting the length of stay at the emergency room

Within the first 4 hours of presentation, 50% of the cases were surgical, and this proportion increased to 57% for the cases beyond the 4-hour mark (p<0.001).

Medical cases comprised 29.2% of the total, while obstetrics and gynecology were the least frequent in the first 4 hours. Prioritization of surgical cases was attributed to the facility's comprehensive standard operating procedures. Notably, there was 100% boarding for the cases assigned to each ward, ensuring that all patients received the necessary care and attention.

Association between health system factors and length of stay

The lab turnaround time was 51.6% within the first 30 minutes of the tests being ordered, imaging time turnaround was 62.6% for the same duration. At the time of presentation, the majority of patients were attended to by clinical officers (61%). In contrast, medical officers attended to 38.5% of patients 66.5% did not require a specialist while 33.5% required a consultant review. These showed a significant relationship with a p<0.001.

Weekdays had a large patient flow of 80.2% (146 of 182) compared to weekends with 9.8% (36 of 182). Surgical cases were the most common, with a total of 51.5%, and had the most emergency presentations. These patients were mainly in the 16-30 and 31-45 age groups.

This denotes that the facility improved its staffing levels on weekdays compared to weekends, leading to higher patient satisfaction due to more efficient system organization, as evidenced by the timing.

The lab turnaround time was 51.6% within the first 30 minutes of the tests being ordered, imaging time turnaround was 62.6% for the same duration. The effectiveness of consultations and early imaging contributed to the reduced patient stay at the department. Compared to Matter Hospital, Nairobi, A study conducted by Onditi on factors affecting the length of stay at accidents and emergency department of a teaching and referral hospital, found that 58% of patients described a long waiting time for diagnostic intervention which included CT scan imaging as a contributor of their delayed management.⁹

66.5% of patients did not require a specialist while 33.5% required a consultant review. This implies that there was effectiveness in patient care hence a faster turn-around time in the department.

The average time from arrival to initial contact with a healthcare provider ranged between 3 to 12 minutes, with an average initial contact time of 6 minutes.

The main challenges with the system include a lack of imaging tests during the night and weekends, delays in ambulance arrivals for imaging tests outside the facility, patients' financial limitations causing delays in imaging tests, and the acuity of patients' illnesses, with sicker patients requiring admissions.

Patients' satisfaction with their care and management was about 72.6% with 66.1% experiencing smooth boarding, and 29.1% discharge throughout the study. However, 27.4% experienced delays due to referrals for more tests, the majority 50/182 being imaging tests outside the facility. Of the 27.4% (8.8%) experienced delayed ambulance arrivals and were dissatisfied with their care.

A study on patient satisfaction with emergency care services accessed at selected facilities in Nairobi City County: Edwin et al, found that the quality of care has a positive and significant influence on access and patient perspective to emergency healthcare services in public hospitals in Nairobi County ($r=0.257$, $p=0.001$).⁶ This signifies patients are more inclined to value the quality of care in a facility.

Clinical outcomes of patients attending the emergency room

The procedures done in the emergency department were: 30 cases of stitching and dressing, 23 cases of intravenous fluids, 15 cases of plaster of Paris and reduction, 16 cases of oxygen administration, 12 cases of invasive surgery in Theatre, 9 cases of catheterization, 8 cases of surgical toileting, 5 cases of blood transfusion and 3 cases of manual vacuum aspiration.

The main reason for presentations was as follows: combined medical cases accounted for 57.6%, followed by road traffic-related injuries at 14.8%, falls at 10.4%, burns at 4.9%, stabs at 3.3, and poisoning at 1.6%. The most common presenting symptoms were upper and lower limb pains (20), loss of consciousness (17) as a result of injuries from road traffic accidents, abdominal pains and distension (13), and active bleeding from limbs and wounds (10).

Association between clinical outcomes and patient case

Surgical cases/surgical emergencies were the most common, with a total of 51.5%, and had the most emergency presentations. These patients were mainly in the 16-30 and 31-45 age groups.

48.4% were stabilized and admitted to the boarding areas (medical, pediatrics, general surgery, and gynecology wards). 13.2% were observed at the emergency department, 29.1% were treated and discharged home, 8.8% were referred to a tertiary hospital, and 0.5% did not survive resuscitation.

The average admission rate was 61.6%, referrals were 8.8%, and discharge rates were 29.1%.

There was a significant relationship between patient outcomes and patient type ($p=0.001$).

There are some limitations of the study. Patients referred outside the facility for either tests or further treatment affected the ability to identify the right patient population. Specialized care necessitates urgent referral to a more tertiary facility hence these were not followed throughout the study. Readmission cases vary in management, and these patients were excluded because they likely take longer in the boarding areas than in the emergency department.

CONCLUSION

This study found that the average length of stay for patients was commendably within the international standard of under four hours, with a mean duration of 2 hours and 27 minutes. The demographic distribution revealed that 54.4% (99 patients) were from rural areas, 26.4% (48) were semiurban, 19.2% (35) were urban dwellers. Patient satisfaction with the services and quality of care was remarkably high at 72.6%, well above the average for public facilities at this level. Among the patients, 48.4% were stabilized and subsequently admitted, 13.2% were observed in the emergency department, 29.1% were treated and discharged, 8.8% were referred to higher-level care institutions, and 0.5% unfortunately did not survive resuscitation. This study bridged the gap in improved patient waiting times in a public level five facility compared to a private level five facility in Kenya.

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