

## CLIENT SATISFACTION AND WAITING TIME IN MCH EMERGENCY

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(Received, 09<sup>th</sup> July 2023, Revised 05<sup>th</sup> September 2023, Published 28<sup>th</sup> October 2023)

**Abstract:** *The emergency departments are often a source of complaints. Due to the COVID-19 pandemic, we are facing an increase in the number of patients in MCH ER. The patients are referred from all over the country, which increases the burden on the facility compared to the available resources. The department has to face the burden of non-booked patients secondary to the COVID-19 pandemic presenting to the MCH ER, leading to increased complaints about client dissatisfaction regarding the Emergency department. Hence, we decided to audit our current ER and plan interventions to improve our practices. We propose to formulate recommendations for other facilities facing similar challenges. This study aimed to determine the waiting time and total length of stay in the mother and child health care emergency of the Pakistan Institute of Medical Sciences to plan interventions to reduce client dissatisfaction. An audit study was conducted from 1st September 2021 to 30th September 2021, and then a re-audit with interventions was carried out from 1st April 2022 to 30th April 2022 at the Emergency of Mother and Child Health and Care Center of Pakistan Institute of Medical Sciences. The Study had the active participation of duty doctors, nurses, paramedics, statisticians, computer operators, personnel from HMIS, workers, and patients. This study was conducted to determine our practices in an emergency. The data was collected from maintained existing paper-based doctors' and staff nurses' registers. The duty doctor manually enlisted patient's data on worksheets, this data was then shared in the "MCH ER WhatsApp group" and compiled. The data was entered on SPSS 25 and analyzed. Primary Outcome measures were waiting time for assessment, primary (registration to triage time), secondary assessment (triage to decision time), and total length of stay in ER (Door to deposition time). Secondary outcome measures included client dissatisfaction rate. A total of 1447 patients were included, of which 46 % were from Islamabad and 38% were from Rawalpindi. The first assessment by a duty ER doctor within 5 minutes (registration to triage time) was 16.4%, which increased to 25.5%, and 59.2% at 30 minutes, which increased to 70.7% in the re-audit. The second assessment by senior (doctor to decision time) within 30 minutes was 59% and increased to 69% in re-audit. Admissions were offered to 33.6%, 1.1% left against medical advice (LAMA), and 38 % were lost to follow-up. The total length of stay in MCH ER (Door to deposition time) was 3 hours mean (195 min) in 60% of the patients (37.9% of patients were admitted, 22.1% were discharged). In the re-audit, 69.6% were admitted after interventions, 27.6% were discharged (97% door to deposition time within 3 hours with a (mean time of 180 min ), 1.8% LAMA and only 1% were lost to follow-up. Both study cycles had no significant change in CTGs, ultrasounds, or baseline investigation frequency. Complaints can be curtailed by taking measures such as adding another duty doctor in emergency for immediate triage, early second assessment by seniors to shorten the triage to decision time, and avoiding unnecessary ultrasounds and baseline investigations. The most significant determinant of client satisfaction in the ER is the short length of Stay in the ER that is, arrival to deposition time.*

**Keywords:** Emergency, Assessment, Triage, Decision Time, Door Deposition Time

### Introduction

MCH emergency is a busy area where initial management occurs, followed by definitive management in Operation Theater and labor room. Triage also takes place there. An increasing number of complaints of patients, especially non-emergent cases were the main reason for conducting this audit.

Maternal morbidity and mortality is a serious issue that initially starts from emergencies. It is estimated that each woman who dies from pregnancy or childbirth-related causes or pregnancy-related illness or experience has a devastating effect on the family (Paul et al., 2020)). Hence, triage in Emergency is important in preventing morbidity. It is seen that good quality clinical care will eventually lead to a reduction of maternal mortality and morbidity in poor countries. Audits are conducted to evaluate standard practices and critically analyze patients. It is, defined as:

‘the systematic and critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient’. This study aims to assess important issues that can be addressed. New interventions, timeliness, service organization, and staff roles and responsibilities can be looked into. More effective working of the healthcare system can be achieved (Filippi et al., 2004).

Naturally, it was seen that as a developing country, we had poor outcomes during pregnancy and childbirth. Many social reasons like poverty, low social status of women, lack of education, poor nutrition, lack of transport facilities, etc. The ever-increasing rise in referrals. The COVID-19 pandemic is the leading cause of the worsening of situation. We need to self-evaluate ourselves (Bindal et al., 2017).

[Citation: Zafar, M., Mazhar, S.B., Sehar, T., Ainy., Mumtaz, A., Bano, N., Usman, Z. (2023). Client satisfaction and waiting time in MCH emergency. *Biol. Clin. Sci. Res. J.*, 2023: 495. doi: <https://doi.org/10.54112/bcsrj.v2023i1.495>]

Patients with gynecological emergencies and early pregnancy complications also make up a big chunk of emergency patients who are now referred directly to MCH. Quality measurement for emergency obstetric and gynecological services is difficult yet important. Still, researchers are going on how best to manage such a department that should set standards, which is one such trial (Rimmer et al., 2020). Patients' complaints regarding emergency staff are mainly due to the increased waiting time in decision making and increased length of stay in emergency, mainly due to the increased patient turnover rate. The addition of another duty doctor to facilitate early assessment of patients significantly reduces the patients' waiting time, hence dissatisfaction rates.

**Methodology**

An audit study was planned to be carried out at the Maternal and Child Health Care Center, unit 1 Pakistan Institute of Medical Sciences, Shaheed Zulfiqar Ali Bhutto Medical University for a period of two months. The study was forwarded to the ethical review board and granted permission. All Patients coming to MCH Unit 1 were recruited. The patient then came into the emergency room and got their slips made from the admission counter after showing their Identity cards if they had one. The computer operator or admission clerk documented the initial bio data. A letter was sent to HMIS to collect and analyze data of the given months of the patients reporting to Emergency. The patient then reported to the nurse on duty. She entered the patient on her register. initially, she took her vitals, but after interventions, she triaged her and sent her to the concerning duty doctor. The duty doctor entered the patient on her register, took a brief history, did an examination, did an ultrasound, and ordered CTG and baseline investigations to the nursing staff. The senior doctor came for rounds, and secondary assessment was done upon which the patient was admitted, discharged or retained in ER. The data of the whole day was collected by the duty doctor and put on a manual worksheet. This worksheet was shared in a ER slips WhatsApp group and was supervised by consultant. The data compiled by duty doctors was also compared with the data in the staff registers and HMIS. Then, the data was

entered into SPSS 25 and analyzed with the help of a statistician, and results were obtained.

**Results**

A total of 1447 patients were included, of which 46 % were from Islamabad and 38% were from Rawalpindi. The first assessment by duty ER doctor within 5 minutes (registration to triage time) was 16.4%, which increased to 25.5%, and 59.2% at 30 minutes, which increased to 70.7% in the re-audit. Table 1 shows the distribution of time taken for the second assessment (triage to decision time) during two different periods (Period 1 and Period 2). It provides information on the time intervals within which the second assessment occurred.

In Period 1, 13.1% of assessments were completed within 5 minutes; in Period 2, this decreased to 10.9%. The 5–10-minute interval saw an increase from 9.7% in Period 1 to 16.7% in Period 2. For the 10–20-minute interval, there was a decrease from 21.7% in Period 1 to 25.7% in Period 2. In the 20–30-minute interval, the percentage of assessments dropped from 14.4% in Period 1 to 15.9% in Period 2. The 30–to 60-minute interval witnessed a decrease from 26.6% in Period 1 to 19.9% in Period 2. Assessments taking over 60 minutes saw a decrease from 14.4% in Period 1 to 10.9% in Period 2.

The table suggests changes in the distribution of time taken for the second assessment between the two periods, with shifts in the time intervals.

Table 2 displays the final outcomes of patients during Period 1 and Period 2. It includes categories such as admission, discharge, leaving against medical advice (LAMA), and patients lost to follow-up. In Period 1, 37.9% of patients were admitted; in Period 2, this percentage increased significantly to 69.6%. Discharges were at 22.1% in Period 1 and slightly increased to 27.6% in Period 2. Leaving medical advice (LAMA) was relatively low, with 1.1% in Period 1 and 1.8% in Period 2. A notable change is observed in the "Lost to follow up" category, which decreased significantly from 38.9% in Period 1 to just 1.0% in Period 2. The table demonstrates substantial changes in the distribution of final outcomes between the two periods, particularly regarding admissions and patients lost to follow-up.

**Table 1: Distribution of Time to Second Assessment (triage to decision time)**

Time to second assessment	Period 1		Period 2	
	Frequency	Percent	Frequency	Percent
Within 5 min	58	13.1	30	10.9
5-10 min	43	9.7	46	16.7
10-20 min	96	21.7	71	25.7
20-30 min	64	14.4	44	15.9
30-60 min	118	26.6	55	19.9
> 60 min	64	14.4	30	10.9
Total	443	100.0	276	100.0

**Table 2: Final Outcome**

Final Outcome	Period 1		Period 2	
	Frequency	Valid Percent	Frequency	Valid Percent
Admission	298	37.9	272	69.6
Discharge	174	22.1	108	27.6
LAMA	9	1.1	7	1.8

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Lost to follow up	306	38.9	4	1.0
Total	787	100.0	391	100.0

**Table 3: Comparison of time taken till admission (Door to deposition time)**

Period of study	N	Meantime min)	Std. Deviation	P-value
Period 1	298	195.46	190.996	0.290
Period 2	260	178.70	180.880	

## Discussion

Audits are conducted to bring about clinical improvements and compare them with international standards to re-visit our practices. A study of audits on adding international tools for betterment in management had good results (Gilani et al., 2020). The studies performed in the Emergency department settings indicated that educational strategies such as academic meetings or training staff as sole intervention or combined with audit and feedback were effective in improving guideline adherence and overall better department management (Ebben et al., 2018). A Major chunk received in our emergency was from Islamabad and of obstetric patients that needed to be triaged into categories. MCH mainly deals with poor patients. It was observed that queuing up of patients had to be avoided as it was a major reason for complaints. We all know that the waiting times can be lengthy when presentation numbers are high. A similar audit conducted in Australia identified three main topics: lengthy pre-triage wait times, pre-triage queuing, and observed barriers to triage. Median pre-triage wait time was 12 min, and unrecorded waiting time was more than 20 minutes; our results show that almost half the patients on emergency days are catered to within 30 minutes and two-thirds of patients on non-emergency days (Sedgman et al., 2022). Surprisingly, it was seen that we have faced a rising number of patients during the COVID-19 pandemic. Other countries had the opposite scenario (Yambasu and Gaughan, 2021). Another study carried out in California demonstrated a steep decline in obstetric and gynecologic visits to the emergency department to 42% between March and May 2020 but then returned to near-2019 levels despite a substantial increase in COVID-19 cases and hospitalizations. The study also highlighted the need for plans for disaster-preparedness care and later COVID-19 surges; however, we faced a baby boom (Abel et al., 2021). Various interventions were carried out by different countries to effectively manage the emergency department, including OTDA and TREWS (McCarthy et al., 2022). We added another duty doctor and some SOPs with a very significant decrease in complaint level as the first assessment triage time within 30 minutes increased from 59.2% to 70.9%. The second assessment by a senior doctor (triage to decision time) within 30 minutes was 59% and increased to 69% in re-audit. This means that the intervention significantly improved by reducing the waiting time for most patients.

The total length of stay in MCH ER (Door to deposition time) was 3 hours (195 minutes) in 60% of the patients (37.9% of patients were admitted and 22.1% were discharged). In the re-audit, 69.6% were admitted after interventions, and 27.6% were discharged (97% door to deposition time within 3 hours (180 min). This is comparable to the 4 hours of arrival to deposition time in

80% of the patients presenting to emergency in a study conducted by Al Nhdi et al. (Al Nhdi et al., 2021), and similar results were shown by a study conducted by Australian Federal Government and NEAT (National Emergency Access Target).

Sometimes, patients did not wait for a second assessment and left without being assessed by a senior. This grey area must be addressed “left without being seen” and “left against medical advice.” Our doctor’s notes on slips could well predict the patient’s compliance and whether she would go to LAMA or wait. Similar nursing notes in studies abroad also demonstrated the same principle (Lee et al., 2020). This number was reduced significantly by re-audit cycle interventions from 38% to 1%. It was seen that most of the patients in our setup wanted to get a free ultrasound, investigations done, or booking cards made and were not actual emergency cases; hence, they discharged or left themselves. These patients presenting to emergencies complained about waiting time, unmet expectations, and negative interactions with ED staff. Local studies also confirmed that patients often utilized emergency services for non-emergent causes (Ahmed et al., 2018; Baugh et al., 2021; Marco et al., 2021). COVID-19 had a negative effect on the mental health of healthcare workers that included post-traumatic stress, anxiety, acute stress disorder, burnout, sleep problems, insomnia, eating disorders, adjustment disorder, emotional exhaustion, and depressive symptoms (Chatzittofis et al., 2021; Uphoff et al., 2021). Substance abuse and alcohol intake were also on the rise among healthcare workers in other studies. It was due to losing loved ones in the COVID-19 pandemic (Uphoff et al., 2021).

The clinically stable patients and attendants were the most to complain. It seemed as if we were more counseling patients than treating them. Other countries also state the deterioration of the patient’s mental health (Bo et al., 2021). While other countries had to face the COVID-19 pandemic, we were facing the disbelief that “COVID does not Exist” (Fond et al., 2021).

The patients presenting us were not receiving or having minimal healthcare providence, and worse-case scenarios were dealt with. Never before seen extensively spread cancers and their complications and wound infections to gangrenous abdominal walls were also witnessed studies carried out also favored the disabling conditions of the cancer patients (Ciążyńska et al., 2020)

The patients received required quick triage management CTGS, and baseline investigations were done urgently, followed by a senior review. The COVID-19 pandemic significantly negatively affected healthcare utilization, resulting in serious cases presenting to emergency for immediate management (Zhang et al., 2020).

Strengths and limitations. Like all human studies, there are limitations such as staff personnel, patient staff behavior,

patient load, patient education, and the amount of medical equipment present due to lack of funds.

### Conclusion

MCH emergency audit highlighted that the COVID-19 pandemic was a major factor in increasing complaints. Interventions to decrease patient waiting time followed by senior assessment time needed to be done for better department management.

### Declarations

#### Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

#### Ethics approval and consent to participate

Approved by the department concerned.

#### Consent for publication

Approved

#### Funding

Not applicable

### Conflict of interest

The authors declared the absence of a conflict of interest.

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