

The Waiting Time of Non-Urgent Patients in the Emergency Room – Triage and Ambulatory Care in the Northern Mindanao Medical Center from May 2016 To October 2016*

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Background: The Northern Mindanao Medical Center has set standards for quality of care as it was awarded ISO accreditation last 2015. Patient's waiting time in the Emergency Room (ER) of a tertiary hospital is a measure of effective health care delivery.

Objective: To determine the waiting time among non-urgent adult patients seen in the Emergency Room-Triage and Ambulatory Care of the Northern Mindanao Medical Center - Department of Family and Community Medicine (NMMC-DFCM) from May 2016 to October 2016.

Methodology: The descriptive research design using time and motion activities of each non-urgent case at the NMMC Emergency Room was used. The following variables were included: the socio-demographic data as to the patient's age, gender, address, and occupation; as well as physician-related and administrative-related factors. Tabulation was done using Microsoft Excel. The Central Tendency (Mean) and Dispersion (SD, Range) were computed.

Results: A total of 1,290 patients were examined and who experienced average waiting time of 247.1 minutes. Patients were mostly in 18-30 age-group (45%), females (52%), came from within Cagayan de Oro City (71%) and unemployed (67%). The longest waiting time (257.3 minutes) were handled by junior residents and seen in the Morning Shift (263.7 minutes). Higher caseloads were noted in the Afternoon Shift (587 patients). On the other hand, the weekdays were busiest and longest waiting time (762 patients and 263.4 minutes, respectively).

Conclusions: The demographic profile of the youngest and female population in the study and coming from Cagayan de Oro City used the ER for non-urgent conditions and majority of patients were unemployed. The mean waiting time was 247.1 minutes. Patients managed by junior residents and seen during the Morning Shift revealed longest waiting time. On the other hand, Weekdays were busiest overall and were noted in the Afternoon Shift; with pronounced during the Holidays.

Keywords: waiting time, emergency room, non-urgent cases

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INTRODUCTION

The Wait times are an increasingly popular measure of health care delivery. In Canada, initiatives have been developed to ensure wait times experienced by patients are reasonable and do not adversely affect patients' health.¹ Hospitals are facing the challenge of improving service to meet patient demands with limited staff resources. Many patient complaints come from the long waiting time and long waiting time at the outpatient clinics has been shown to have caused major dissatisfaction with medical care delivery and a barrier to the further use of healthcare facilities by affected patients.

Managing ambulatory care has become critically important in the financing and delivery of comprehensive, coordinated patient care. Waiting time is a factor of patient satisfaction and indicator of effective medical care delivery.² The Emergency Room (ER) Triage and Ambulatory Care of the Northern Mindanao Medical Center-Department of Family and Community Medicine (NMMC-DFCM) had an increase in patient attendance from 4,734 in 2014 to 36,739 in 2015.³ In mainland China, the increasing numbers of visits to community hospitals can be explained by lower costs of laboratory examinations and medicines, increasing demands of immediate care and disposition from patients, hospitals' improved service quality and medical payment policy orientation through the use of Social Services scheme. Consequently, these hospitals are facing delayed consultation, lack of procedural flow and limited staff resources.⁴

The NMMC has set standards for quality of care as it was awarded ISO accreditation in 2015. It guarantees customer satisfaction by treating the customer with utmost dignity and compassion by competent and highly qualified health care providers in a safe and secure environment.⁵ As part of encouraging and assessing progress towards the target of quality health care, the NMMC ER, based on the Department of Health⁶, required and set a four-hour waiting and stay period standard of all patients seen, managed and disposed. A study was done by Perez in 2012 that determined the patient waiting time in the NMMC-DFCM-Out-Patient

Department (OPD) and revealed a mean standard of 95 minutes as compared to the institution's standard waiting time of 45 minutes.⁷

NMMC-DFCM ER Triage Services Standard Operating Procedure - Triage Levels categorized patients as Triage Levels: 1) Critical – life-threatening disease/injury requiring immediate life-saving interventions within 30 seconds, 2) Emergent – significant health problems that can become life-threatening requiring medical care within 10 minutes, 3) Urgent – non-disabling medical condition but requiring further diagnostic work-up, treatment or specialty consultation within 30-60 minute, 4) Non-urgent – has stable medical condition needing medical care within 60-120 minutes, and 5) Fast-Track – has stable medical condition needing medical care within 240 minutes.

The purpose of the study was to determine the waiting time among non-urgent patients seen at the NMMC-DFCM ER Triage and Ambulatory Care from May 2016 to October 2016 and specifically aimed to know the factors affecting the patient's waiting time.

MATERIALS AND METHODS

Research Methodology

The researcher used the descriptive research design using secondary data. The objective of the study was to determine the waiting time of non-urgent patients seen at NMMC-DFCM ER Triage and Ambulatory Care from May 2016 to October 2016. The setting of the study was at the NMMC, a 600-bed capacity tertiary hospital. The study population was composed of patients residing in Cagayan de Oro City and parts of Northern Mindanao. The DFCM is delegated to sort patients coming in the ER Triage Area.

Inclusion and Exclusion Criteria

Non-urgent patients who came at the NMMC ER for BP monitoring, Immunization, patients asking for directions, those patients referred from DFCM-OPD, and patients

referred from other departments and outside institutions were excluded from the study as well as those patients categorized as Triage Levels Critical, Emergent, Urgent and Fast-Track based on the ER Triage Services Standard Operating Procedure.

Data Collection Procedure

The patient entered and proceeded to the Triage Registration Counter at the ground floor of the ER Building. The Registration Counter is open 24 hours a day, Monday to Sunday, including holidays. The Triage physician asked the chief complaint or reason for consult and did focused history and physical examination. On the other hand, the Triage Nurse took the vital signs and recorded the patient's data. Based on the NMMC-DFCM ER Triage Services Standard Operating Procedure, the priority classification of patient by Triage Physician/Triage Nurse was done.

After the short interview the NON-URGENT patient took a seat and waited for the ER Record personnel to make the ER Record and fill up the Patient Index Card. The personnel entered the patient's data in the Emergency Room Registry. The Patient Index Card was placed in a plastic envelope.

The process of consultation of the patient included the Triage Registration, waiting and actual consultation which was comprised of physician's history-taking, physical examination, diagnosis and management (diagnostics, therapeutics, and non-pharmacologic interventions). Data for each patient were reported from the time at the Triage Registration until the time the patient left the consultation area or departure in the ER Triage Area.

The descriptive data were recorded including the name, age, sex, address, occupation, time of Triage registration, and waiting time. The name of physician on duty and level were recorded as well as the time and day of consult.

RESULTS

A total of 1290 non-urgent patients were seen at NMMC-DFCM ER Triage and Ambulatory Care and included in the

study. The majority of non-urgent patients catered were 671 females (52%). Of the total number of patients managed, 581 (45%) belonged to the 18-30 age group while 913 (71%) lived within Cagayan de Oro City. Furthermore, 871 (67%) patients were unemployed.

The data also revealed the physician- and administrative-related factors affecting waiting time. The patient's mean waiting time was 248.7 minutes for third-year resident physicians, 243.1 minutes for second-year resident physicians and 257.3 minutes for first-year resident physicians.

For the time of consult, the patient's mean waiting time was 263.7 minutes in the Morning Shift; 239.7 minutes in the Afternoon Shift; and 237.6 minutes in the Night Shift. On the other hand, the patient's mean waiting time was 263.4 minutes on Weekdays; 229.3 minutes on Weekends; and 186.9 minutes on Holidays.

The data showed the average patient stay at the NMMC DFCM ER Triage and Ambulatory Care was 247.1 minutes, in contrast to the 60-120 minutes NMMC ER Standard Waiting Time, with standard deviation of 195.4.

Table 1. Socio-demographic characteristics of patients.

Variables	n	Mean Waiting Time (minutes)
<i>Age (years)</i>		
18-30	581 (45%)	239.5
31-59	542 (42%)	257.8
60 and Above	167 (13%)	249.9
<i>Sex</i>		
Male	619 (48%)	249.6
Female	671 (52%)	245.2
<i>Address</i>		
Within CDOC	913 (71%)	246.6
Outside CDOC	377 (29%)	247.4
<i>Occupation</i>		
Government Employee	34 (3%)	190.2
Private	326 (25%)	241.3
Self-Employed	59 (5%)	255.8
Unemployed	871 (67%)	250.5

Table 2. The waiting time of patients.

n	Mean Waiting Time	SD	Range
1290	247.1	195.4	1431

Table 3. The mean standard waiting time of Emergency Room NMMC and the mean waiting time of patients.

Waiting Time	Mean (minutes)
NMMC ER Standard Waiting Time	60-120
Waiting Time	247.1

Table 4. Physician-related factors and waiting time.

Factors	n	Mean Waiting Time (minutes)
Year Level of Physician		
Third	262	248.7
Second	779	243.1
First	249	257.3
Time of Consult		
Morning (6AM-2PM)	440	263.7
Afternoon (2PM-10PM)	587	239.7
Night (10PM-6AM)	263	237.6
Days of Consult		
Weekdays	762	263.4
Saturdays and Sundays	451	229.3
Holidays	77	186.9

DISCUSSION

The adult non-urgent patients seen during the study experienced the longest time in waiting as opposed to the set standard waiting time in NMMC ER. The demographic profile of the patients seen in the NMMC ER gave a picture of a wide variety of age groups present to the ER; however, the youngest and female population in the study and coming from within Cagayan de Oro City used the ER for non-urgent conditions. Self-employed, private, and government employees who sought consult in the ER were uncommon

and majority of patients were unemployed. Waiting time of non-urgent patients in NMMC ER was 247.1 minutes. Non-urgent patients seen by junior residents had longest waiting time. Higher caseloads were noted in the Afternoon shift but longest waiting times were seen in the Morning shift. On the other hand, the Weekdays were busiest overall; with a pronounced drop during the Holidays.

Our average waiting time is in contrast to the results of a study done by Joel in 2014 in which the mean waiting time of patients at the Emergency Room of VSMMC was 146 minutes.¹⁴ The number of consultations and the profile of patients both in the outpatient and emergency rooms are factors that affect the waiting time. In the 2004 United States National Hospital Ambulatory Medical Care Survey¹², an estimated 110.2 million visits were made to Hospital Emergency Departments. Trends in Emergency Department visits were found for persons 22-49 years of age (15%), 50-64 years of age (17%), and 65 years of age and over (8%). Locally, a study by Querubin¹³ revealed 3,180 emergency visits at the University Santo Tomas Hospital and majority of whom were between the ages 22-45 years old (34.8%) and there was a decline in the number of patients after age 45. The study population was evenly split between male (49.35%) and female (50.65%) patients.

Due to limited experience, younger physicians have longer waiting time compared to the more senior physicians. Present experience is similar to a study done by Lara in 2005 which showed the patients spent the longest time with the junior physicians and the nurse on duty.¹⁵ The results were also congruent with the study by Booth, et al.¹⁶ that have shown morning shift as having the longest waiting time. In contrast to this study's findings, Booth, et al. said the longest waits occurred at the weekends due to fewer medical, nursing and laboratory staff on duty.

Many patient-related, physician-dependent and administrative-based factors affecting patient's waiting time, including staff motivation, patient-to-staff ratio, proportion of emergency and urgent cases, consultation time spent by doctors on each patient, and availability of supporting service and space may also affect waiting time.¹⁷ Other administrative factors such as efficiency of laboratory

personnel as well as availability of laboratory reagents may be one of several factors affecting such. Likewise, the data in this study have limited performance benefit. However, there may be other explanations that need to be explored.

It is recommended that further investigation be done as to patient-related factors such as diagnosis, duration of illness, self-medication and behavior at the Emergency Room.

REFERENCES

1. Canadian Surgical Wait Times (SWAT) Initiative. Consensus document: Recommendations for optimal surgical wait times for patients with urological malignancies. *Canadian J Urol* 2006; 13(Suppl 3):62-4.
2. Ambulatory Care of the Future: Optimizing Health, Service and Cost by Transforming the Care Delivery Model. The Chartis Group 2011; p1.
3. Department of Family and Community Medicine Annual Census 2015.
4. Impact of Adjustment Measures on Reducing Outpatient Waiting Time in a Community Hospital: Application of a Computer Simulation 2010; 123(5):574-80.
5. Northern Mindanao Medical Center Quality Policy.
6. The National Health Service Plan: a plan for investment, a plan for reform. Department of Health. The Stationery Office, London. 2000.
7. Perez, et al. The waiting time of patients in the department of family and community medicine, Northern Mindanao Medical Center from September 2011 to February 2012. *Northern Mindanao Medical J* 2015; 1(1):17-26.
8. Canadian Emergency Department Triage and Acuity Scale: Implementation in a tertiary care center in Saudi Arabia. *Emerg Med J* 2011; 11:3.
9. Department for Health. The NHS Plan. A plan for investment, a plan for reform, Cm 4818-I. Norwich: The Stationery Office, 2000.
10. Munro, et al. Effectiveness of measures to reduce emergency department waiting times: A natural experiment. *Emerg Med J* 2006; 23: 35-9.
11. Oredsson, et al. A systemic review of triage-related interventions to improve patient flow in emergency departments. *Scandinavian J Trauma, Resusc Emerg Med* 2011; 19: 43.
12. National Hospital Ambulatory Medical Care Survey: 2004 Emergency Department Summary. U.S. Department of Health and Human Services, Center for Disease Control and Prevention, National Center for Health Statistics. Number 372. June 2006.
13. Querubin J. Emergency Room: Patients and physicians perception of the urgency of need for medical care. *The Filipino Family Physician* 1989; 17(1):1-8.
14. Joel AR. Time and motion study of patients at the emergency room service of the Vicente Sotto Memorial Medical Center (VSMMC). Department of Family and Community Medicine – Vicente Sotto Memorial Medical Center. 2 December 2014.
15. Lara M. Patient flow analysis of patients seen at the pediatric emergency room section of MCU-FDTMF. *Phil Sci J* 2005; 38(2): 34-42.
16. Booth AJ, et al. Waiting times and patient satisfaction in the accident and emergency department. *Arch Emerg Med* 1992; 9: 162-8.
17. Lau, et al. Waiting time in an urban accident and emergency department – A way to improve it. *J Accident Emerg Med* 1997; 14: 299-301.