

Factors Influencing Patient Waiting Time in Out Patient Department at, National Hospital of Sri Lanka - Colombo, Sri Lanka

Liyanage D H¹, Wickramaratne N P², Krishanth M D A³

¹Clinical Fellow – Milton Keynes University Hospital NHS FT- UK

²Clinical Research Assistant

³Acting Consultant in Medical Administration, Ministry of Health Sri Lanka

Abstract: Long waiting time is identified as a major problem in healthcare institutions. This can be rectified to certain extent with trivial changes. OPD Service of NHSL is facing Lengthy queues at the Out Patient Department (OPD) at any given time. Objective of this case study is to analyze the factors for Lengthy queuing at NHSL OPD and to make evidence base recommendations to overcome priority issues. Many root causes were identified in four main areas; delays in registration or admission, delays in consultation, delays on patient investigations and delays in issuing drugs. Overburden of OPD staff was another root cause found during discussions and data analysis. Application of queuing model with proper triage system will reduce the waiting time considerably at NHSL-OPD.

1. Introduction

The outpatient department (OPD) is a key unit of a hospital, reflecting most of its values and a place to serve the various needs of people seeking care and services. Patient Waiting Time (WT) is a key performance indicator that indirectly demonstrates patient satisfaction (1).

OPD wait time defines the amount of time a person who comes to OPD will need to remain in the room to seek care, excluding time spent on consultations, treatments, or procedures. This will reflect time spent waiting in lines and time spent on logistical requirements, including registration processes (1). Patient wait times vary because of individual differences, differences in services provided, availability of space, and human resources in OPD. Thus, information obtained to set standards in an individual hospital or department should consider all of the above factors to provide a reasonable standard operating environment for healthcare providers and patients (2).

In a congested and busy environment, it is often observed that data collection is challenging in OPD in most countries. Therefore, many studies should be used to model methods to extrapolate real-world observations when patients and caregivers often do not meet questionnaire completion requirements or participate in research team interviews (3). Their most common and expected method is to submit a suggestion to the suggestion box.

Most developed and developing countries use computerized systems to record, organize patient flow through counseling, investigation, medication dispensing, and follow-up strategies. This will allow for more consistent and continuous data collection (3). Mostly recent studies conducted in developing countries and based on satisfaction data have shown average values related to patient wait times that were acceptable within the busy schedule of these departments. Some of these units are designed to provide specialized care (4). Identifying factors such as logistics,

waiting area management, appointment schedules and patterns, individual areas, and triage systems have been identified as steps to reduce patient wait times on busy schedules (5).

Breuler, (6) defines congestion as "a state of production in which processes are slowed down due to insufficient capacity of critical resources in the production pathway." He suggests improving demand forecasting capabilities, managing the flow of arrivals, or reorganizing critical service delivery components to reduce congestion. Mutlu (7) said in 2012 that inefficient admissions systems, resource allocation and patient behavior explain OPD congestion. When the number of patients to OPD increases, stagnation will occur. Stagnation forces physicians to see more patients per session, increasing the physician-patient ratio, thereby lowering the cost per unit in OPD while worsening the quality of care (8). At this point, authorities have to engage more physicians to reduce wait times. But in our practice, this benefit will not be divulged to patients, and it will only benefit physicians if they spend more free time (personal experience).

2. Background

Congestion is not a specific case in our system because of the underutilization of small medical facilities hospitals, and there is an attempt to increase the use of underutilized hospitals (9). The National Hospital of Sri Lanka (NHSL), which is the largest hospital and referral center in the country, is facing many problems due to congestion. In the future, with the advent of a new building complex, with proper supervision and monitoring and productive use of human resources, we will be able to reduce congestion to some extent.

OPD provides a variety of free services ranging from physician consultations, examinations, x-rays, ECG, and procedure rooms; from pharmacy services to highly specialized complex medical care through clinics and

departments. OPD is led by an SMO / OPD with 41 medical staff members and a large support staff including nurses, paramedics, clerks and paramedics.

As soon as a patient approaches the front desk, they are directed to the front desk. Two types of rooms are issued at the front desk,

1. Blue - staff patients.
2. Red - Normal patients to register and tokens are issued.

For repeat visits for the same reason, the previous record must be obtained from the records room and presented to the front desk for them to receive a number.

A lengthy queue was noticed at the registration and admission counters. After receiving the OPD number, they must wait until their number is displayed on the digital boards. The waiting area is usually very crowded and congested. In the morning shift, there are usually 12 doctors consulting OPD, 2 doctors at the reception and two nurses for blood draws. Full Blood Count services are available at OPD with one analyzer that reports within half an hour. For other tests, the patient must go to the OPD main lab to have the tests done. This takes another 30 minutes to two hours depending on the time, number of investigations (10). With the report, patients return to the OPD physician.

Same area is crowded with patients who are waiting for admissions. Those who warrant admission will be admitted by the admission officer and they are registered at the admission registration counter (ROOM 6). Admission registration counter is located at the entrance and give rise to further congestion with patient flow in and out to the OPD.

The injection room, ECG room, dressing room and dispensary are located separately and beside the OPD and directions were displayed. The patient pathway and the layout of the OPD is demonstrated below.

Objective of the case study

To analyze the Congestion of out patient’s Department

3. Methodology

- 1) Key informants’ interviews
- 2) Direct observation
- 3) Review of secondary data
- 4) Collection of primary data –survey on waiting time in the OPD

Issues identified in Out Patient’s Department.

- Lengthy queue observed at the Out Patient Department (OPD)
- The OPD operates on manual system
- Registration and admission counters are not adequate
- Second visitors have to go to two counters
- Entrance for other departments crosses the OPD
- Lack of adequate space
- SMO/OPD cannot directly observe the OPD

Problem prioritization

My three co-medical Registrars in Medical Administration identified seven problems considering the urgency, magnitude and the relevance. Then nominal group technique was used to prioritize identified problems confirm to the elements mentioned in the below chart.

Problems Identified	Marks given out of 10							Total
	Technical Feasibility	Administrative Feasibility	Financial Feasibility	Practical possibility	Impact	Time factor	Acceptance	
1 Lengthy queue observed at the Out Patient Department (OPD)								
2 The OPD operates on manual system								
3 Registration and admission counters are not adequate								
4 Second visitors have to go to two counters								
5 Entrance for other departments crosses the OPD								
6 Lack of adequate space								
7 SMO/OPD can’t directly observe the OPD								

Lengthy queues observed at the Out Patient Department (OPD) got highest marks conducted a survey apart from other methodology to find out root cause, bottle necks and red tapes.

Findings of Survey

The OPD serves at an average of 1100- 1300 patients per day according to the 2018 statistics and the average patients per medical officer per day is 68. These patients are from various residential locations ranging from a distance of less than 10km or more than 10o km away from the hospital. The average patients waiting time at the OPD is 43.6 minutes according to a survey done in February 2018. This survey has signified the time spent in the queues to obtain medicine is a problem to be addressed specially in the peak time from

09.30^{am} to 11^{am} when a maximum number of patients will gather in the OPD.

The OPD services are delivered from 08^{am}- 10^{pm} throughout the year and during weekends and public holidays 08^{am}- 12^{noon}. The pharmacy for the OPD patients is located within a space in the same building. The pharmacy serves patients with a staff of five dispensers with supporting staff members on an average of two per day.

The impact on the quality of service provision and patient satisfaction is significant due to long waiting queues and will affect the productivity parameters. Having identified the problem a project to reduce the number of patients waiting in the queue has been developed as follows.

Objective of the project

Strategies to reduce the number of patients on queues from 30 to 15 patients that is observed within a duration of 15 minutes at the OPD within 6 months.

Benefits

Benefits to the hospital and management

- 1) Proper registration with basic details necessary for future references and audits
- 2) Less congestion and burden when arranging in a systematic manner as slots
- 3) Less chances to miss important needs of patient care
- 4) Accountability of consumables and human resources
- 5) Improving the satisfaction in service care providers
- 6) Help to extrapolate the demands and trends of pharmaceutical needs and priorities, in turn helping to maintain buffer stocks, reducing the chance of out of stock and reducing the amount of waste etc.

For the patient

- 1) Less time in the queue
- 2) Better satisfaction
- 3) Able to seek solutions to issues
- 4) Better time to communicate
- 5) Less congestion and exhaustion
- 6) Able to trace the past visits even lost of prescription or medicines

Steps:

- 1) Identifying average number of patients to the OPD per day.
- 2) At the registration desk, a colour code will be used categorizing the patients according to the urgency of need
 - a) Red- life threatening/ emergency
 - b) Orange- acute but not life threatening
 - c) Yellow-minor ailments
 - d) Green- procedures/ injections etc.

- 3) Each category of patients will be issued a number starting from 01, 02, and 03 etc..... Written/ printed on the background of the respective colour code. This number is issued after feeding the basic details, Name with initials, Age, place of residence, telephone number of the patient, guardian accompanying the patient. Information will be filled by the patient/guardian or filled by the staff member wherever necessary and fed into the computer.
- 4) The **A** and **B** patients will be diverted to the emergency Unit since they will most likely to be admitted to the hospital for subsequent care after the initial stabilization
- 5) There will be five OPD consultation rooms each manned with an OPD Medical Officer and **A** supporting staff member serving 2 Medical officers.
- 6) Each patient will be assessed, taken histories; relevant examination and advice are given spending 2-5 minutes depending on the clinical necessity.
- 7) The **C** and **D** patients who are once seen by the medical officers will be directed to the pharmacy, bleeding room, injection room or the procedure room after which they will be directed to the pharmacy to get medicine.
- 8) In the pharmacy, the outlet fence will be segregated with the colour codes, yellow and green.
- 9) Each outlet will be serving 15 patients within the duration of 5 minutes through 2 outlet windows for each colour code, manned by a pharmacist and the supporting staff per colour.
- 10) Since the drug drawers, shelves and stocks are being systematically sorted already, selection, packing, labeling and issuing will be done using the same process functioning as at the pharmacy.
- 11) Once the prescription is issued, the entry number will be fed to a data base for the logistic purposes.
- 12) At the end of the day, a summary of medicine, issued by the pharmacy through each outlet will be produced and sent to the director with copies to the, Medical Officer in charge OPD, Sister in charge OPD Chief Pharmacist and planning unit of the hospital.

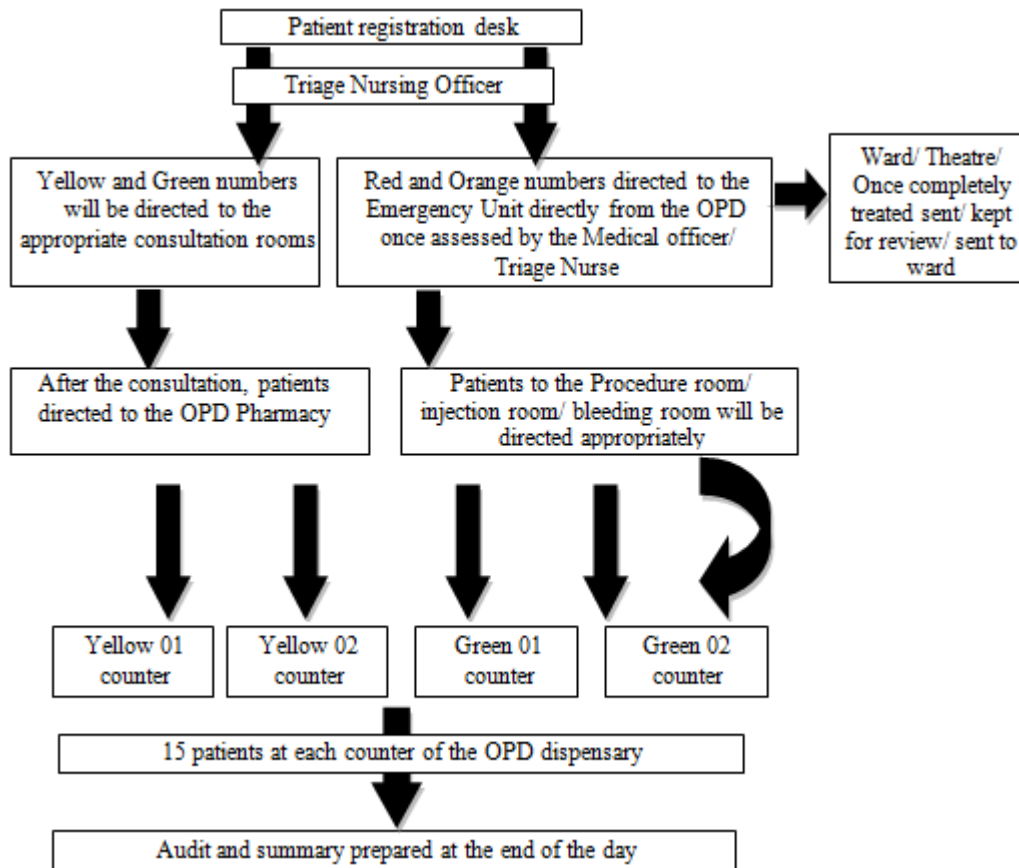


Figure 1: Patient Triage system

Process Plan of patient flow from the registration desk to the Pharmacy

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