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Factors Associated with Congestion and Overcrowding of Patient in the Outpatient Department and Clinic Department in National Eye Hospital, Colombo, Sri Lanka

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ABSTRACT: The National Eye Hospital (NEH) is the largest referral centre of excellence for eye care in Sri Lanka. Patients from every part of the country come to the NEH for treating various eye diseases and the hospital has been overburdened with the problem of congestion and overcrowding.

Congestion and overcrowding of patients are considered as a critical parameter in the evaluation of healthcare quality, safety, productivity, and patients' satisfaction towards healthcare services[1]. This study aims to assess patient congestion and overcrowding in the outpatient department and clinic department in National Eye Hospital (NEH) Sri Lanka.

National Eye Hospital provides treatment, training, rehabilitation and social welfare to the patients. Medical students, post graduate trainers in ophthalmology, ophthalmic technologist are the main categories of that. Most of the patients attend to the NEH, at least with one by stander. Prompt attention, availability of investigation facility, availability of drugs and devices, minimum waiting list for surgery and credibility of service provision are the main reasons for attending to the NEH.

A cross-sectional study was conducted from November 2021 to January 2022 in the OPD and Clinic Department of NEH Hospital.

More congestion was seen during morning compared to the afternoon. It is proposed to separate the OPD, Clinic, A&E and investigation area. Also it is propsed to introduce separate entrance to OPD,Clinic and A&E department.

KEYWORDS: Clinic and congestion, Outpatient department.

INTRODUCTION

Sri Lanka is having a well-established free at delivery healthcare system. The government hospitals provide the majority of curative services. The National Eye Hospital Sri Lanka is the largest tertiary eye care provider in the country. The National Eye Hospital includes general eye care with all other subspecialty (retinal, corneal and occularplasty) and a fully equipped theatre complex. The OPD and Clinic of the National Eye Hospital of Sri Lanka has been overburdened with the problem of congestion and overcrowding. Patients from every part of the country come to the NEH for treatment of various eye diseases.

Congestion and overcrowding of patients are considered as a critical parameter in the healthcare quality, safety, productivity, and patients' satisfaction towards healthcare services[1].

Overcrowding of OPD and Clinic department tends to reduce healthcare quality[4]. Both OPD and Clinics in NEH functioning in adjoining area. OPD is attended by patients coming for new and repeat visit. Clinics get patients as referrals from OPD, Emergency Treatment Unit, wards in the NEH and other peripheral hospitals. Nearly 250 admissions, 1,000 OPD patients and more than 900 clinic patients arrive at the NEH every day. Most of the patients attend to the NEH, at least with one by stander. Prompt attention, availability of investigation facility, availability of drugs and devices, minimum waiting list for surgery and credibility of service provision are the main reasons cited for overcrowding of the NEH.

Overcrowding is also influenced by various factors, such as work procedure, overloading of clinics with patients, availability of human resources, improved skills of the staff, availability of functioning equipment and an appointment schedule[11,12]. Previous studies suggest that appropriate operation of medical examinations and appointment system could shorten patient congestion.[13].

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NEH is the government national centre for eye care, with the aim of ensuring health for all patients. NEH is always seeking evidence-based solutions to enhance the quality of healthcare services.

General objective

To describe the factors associated with congestion and overcrowding of patients in the outpatient department and clinic department in the National Eye Hospital, Sri Lanka.

Specific Objective

1. To describe the crowd management in the outpatient department and clinic department in the National Eye Hospital
2. To describe the factor s associated with overcrowding in the outpatient department and clinic department in the National Eye Hospital

METHODOLOGY

A cross-sectional study was conducted from November 2021 to January 2022 in the OPD and Clinic Department of NEH Hospital. Waiting time was stratified by weekdays, and hours of the day. Data was extracted from Hospital Management records and indicators were calculated. including the average time (M± SD) with frequencies and percentage (%).

RESULTS

Annually more than 200,000 patients are treated from OPD and 150,000 from Clinic in NEH and the average number of patients per day is around 600 OPD and 800 for clinic. The average number of admissions per day was 120 in 2020(Annual Health Bulletin NEH). General OPD and Clinic of the NEH functions from 8.00 am. To 8.00 pm. Around fifty medical officers are working in OPD and Clinics and they start consultation at 8.00 am. Usually, a MO at OPD examines15 to 30 patients per hour. When a patient attends OPD they make several (1-4) visits to the medical officer for various examination purposes. Therefore, consultation time is limited to less than 5 minutes which is highly inadequate. It was revealed that doctors of OPD examine only their quota of patients (a certain number of patients per hour) and they refer the patients for other investigation like IOP, refraction and dilation for examine. After finishing investigations, the patient again visits the relevant MO. Usually medical officers come late for work especially in the morning shift. Medical officers stop the consultation for tea, around 15 -20 minutes, and during that time patients have to wait in the queues. Lacer room, refraction, biometry, laboratory and dispensary is also located in a very small space and congested due to the presence of patients, post graduate trainers and staff with a lot of difficulties. The condition was further aggravated due to the patients wait after taking their reports to MOs again.

There are three separate units named OPD, Clinic and Accident and Emergency (A&E) department in this area. Each department has several units (Dispensary, OPD rooms (3), Clinic rooms (3), A&E unit, mini theatre, dressing room, refraction rooms (4), low vision treatment unit, biometry, stores and health education units).

The main reason for OPD and Clinic overcrowding and congestion is due to lot of patients attending clinics early in the morning. More than 50percent of patients attending NEH are from areas outside the Colombo region. These patients arrive at NEH from 5.00 a.m. onwards. The usual starting time of the OPD and clinics are 8.00 a.m. Therefore, patients arrive at 5.00 a.m. have to spend three hours before attending to OPD or Clinic. OPD patients attending early go to the OPD department without registering and stay in front of the OPD rooms. It was found that on the average a patient spends nearly two hours in the OPD, . In the clinics also, same spending time was observed. it was observed that patients compete with each other to get an early chance to meet the MOs. Twelve (12) MOs examined the patients in the OPD. Medical officers (MOs) start to see patient at around 8.00 a.m. Some MOs do not arrive on time.

Patients at the OPD find it difficult to find places such as lacer room, dressing room, ECG room and refraction area due to unavailability of name boards. Due to this large number of patients go to the reception counter to get directions.

All patients attending the clinic was given the appointment time as 6.30am. Selection of the clinic book stops after 8am. In the OPD, registration of patients, visual examination and selection of the 1st visit chits are the early routine work. Due to everyone getting one time as the appointment time, Clinic patients wait in queue in front of the Clinic rooms to select their files and then wait in

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queue for the visual examination and dilation of the eye before being examined by the medical officers, registrars, senior registrars and consultant. OPD and Clinic rooms open around 7am.
Health care assistants registered the OPD patients and arranged them to sit in the waiting area accordingly to time of arrival

There are no separate MOs attached to OPD. MOs from wards cover the OPD and A&E department on roster basis. OPD is not functioning the Sundays and holidays due to that reason. It is another reason for overcrowding, following weekend/ holiday. .

It was revealed that some patients had to visit the OPD to check the spectacles but they also take the number from the registration.

Patients more than above 40 years refer to measure the eye pressure (IOP). Only one IOP machine for both OPD and Clinic department. More than 300 patients attend for the service.

All the clinic rooms and the treatment units issue next clinic visit in the clinic room itself. Lot of patient gather around the clinic room for taking numbers.

Clinic rooms, OPD room's, investigation rooms and treatment units are mix with each other (fig; 1).Most of the patients in the clinic and OPD need to dilation of the eye for proper examination. Until the eyes are dilated, patents stay in the clinic or OPD More than ½ to 1-hour time.

These patients also spent a significant amount of time to get medicines from the OPD pharmacy.

It was pointed out that patients of staff members by pass the proper root, and a significant number of them were brought for consultation every day. This aggravated the problem of overcrowding and congestion.

The assessment of patient flow in the OPD
OPD Process flow chart

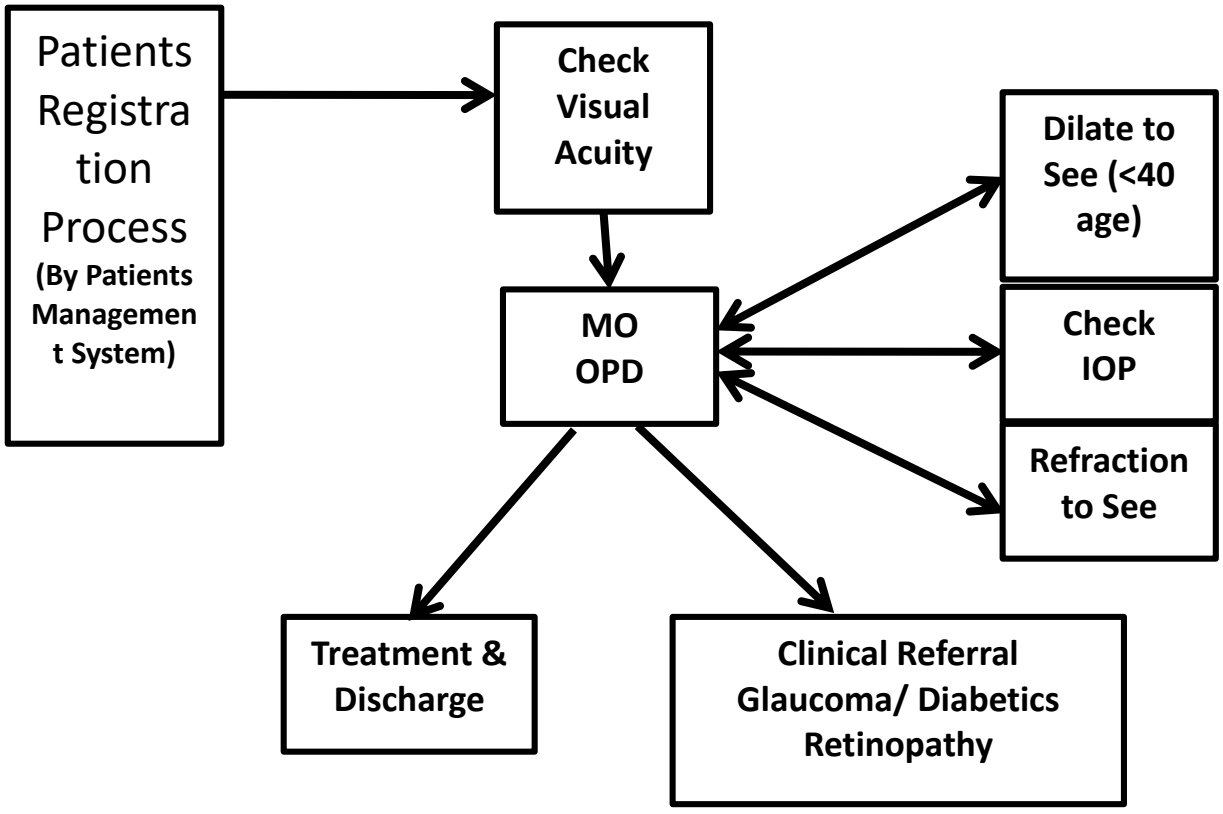

Figure 1: Describe the lay out OPD

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Clinical Process flow chart

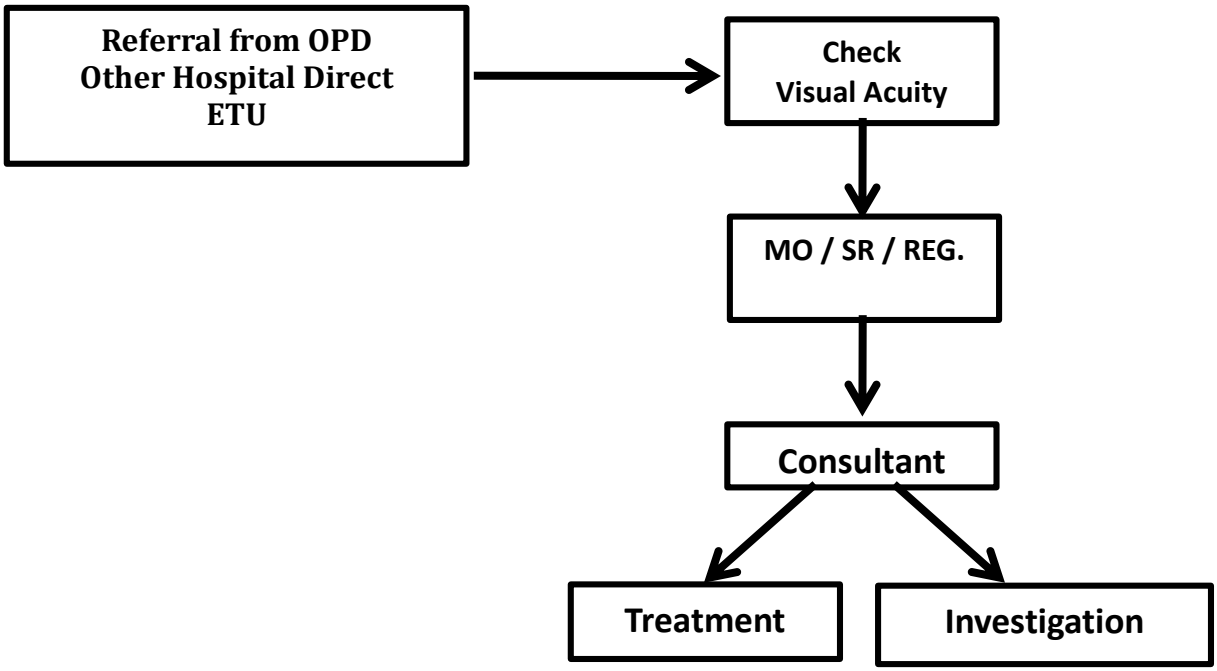
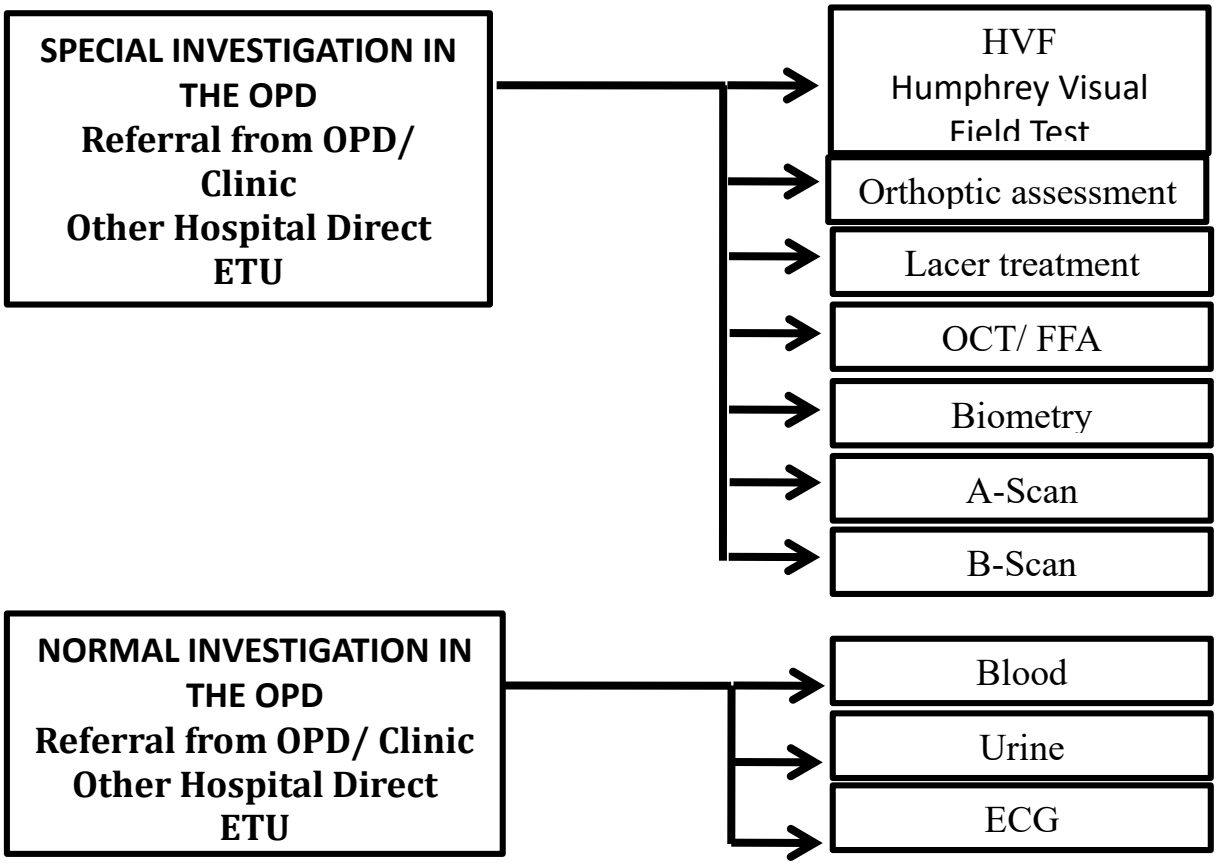


Figure 2: Describe the lay out Clinic

Special investigation in the OPD Normal investigation



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Previous layout of OPD and Clinic

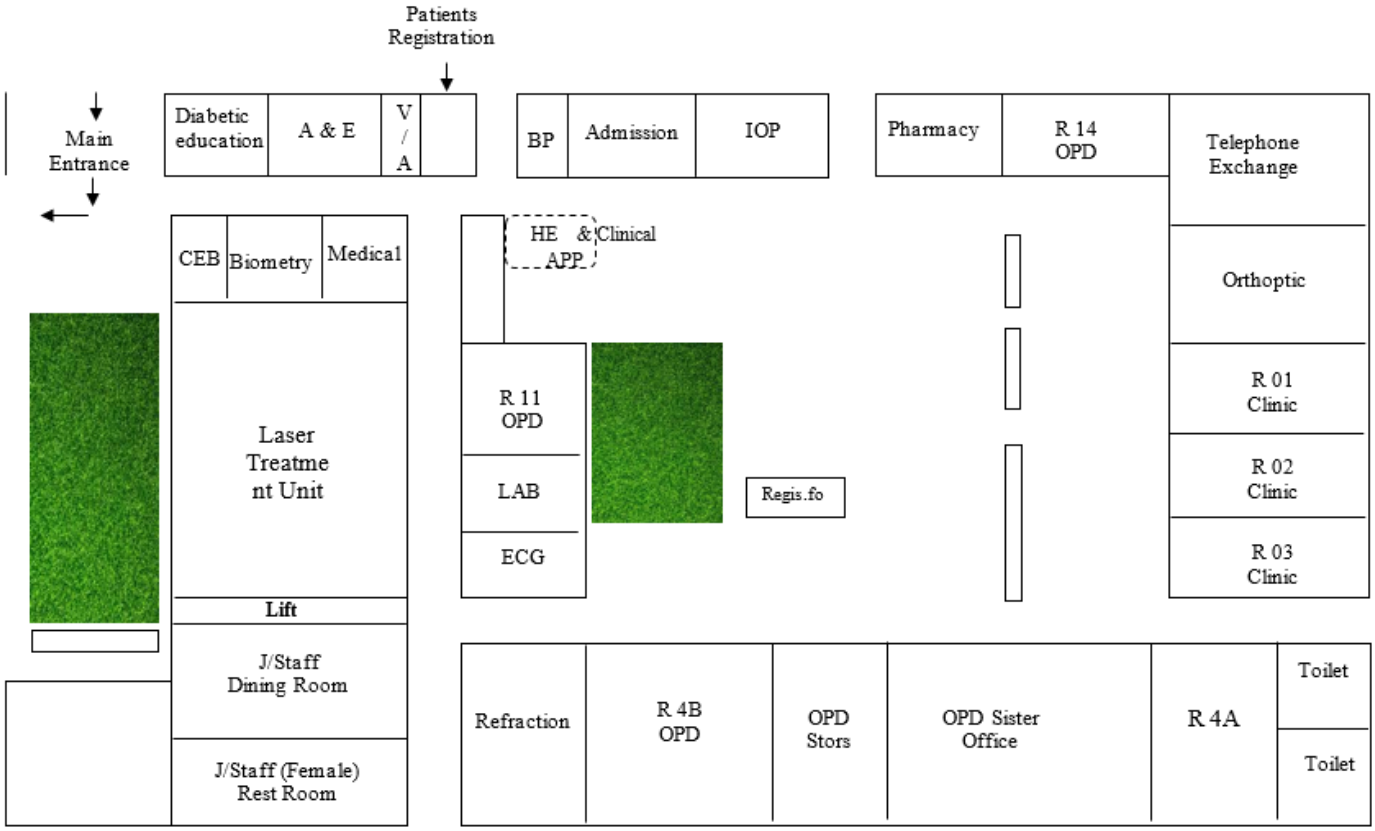

Figure 3: Previous layout of OPD and Clinic

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Current layout of OPD and Clinic

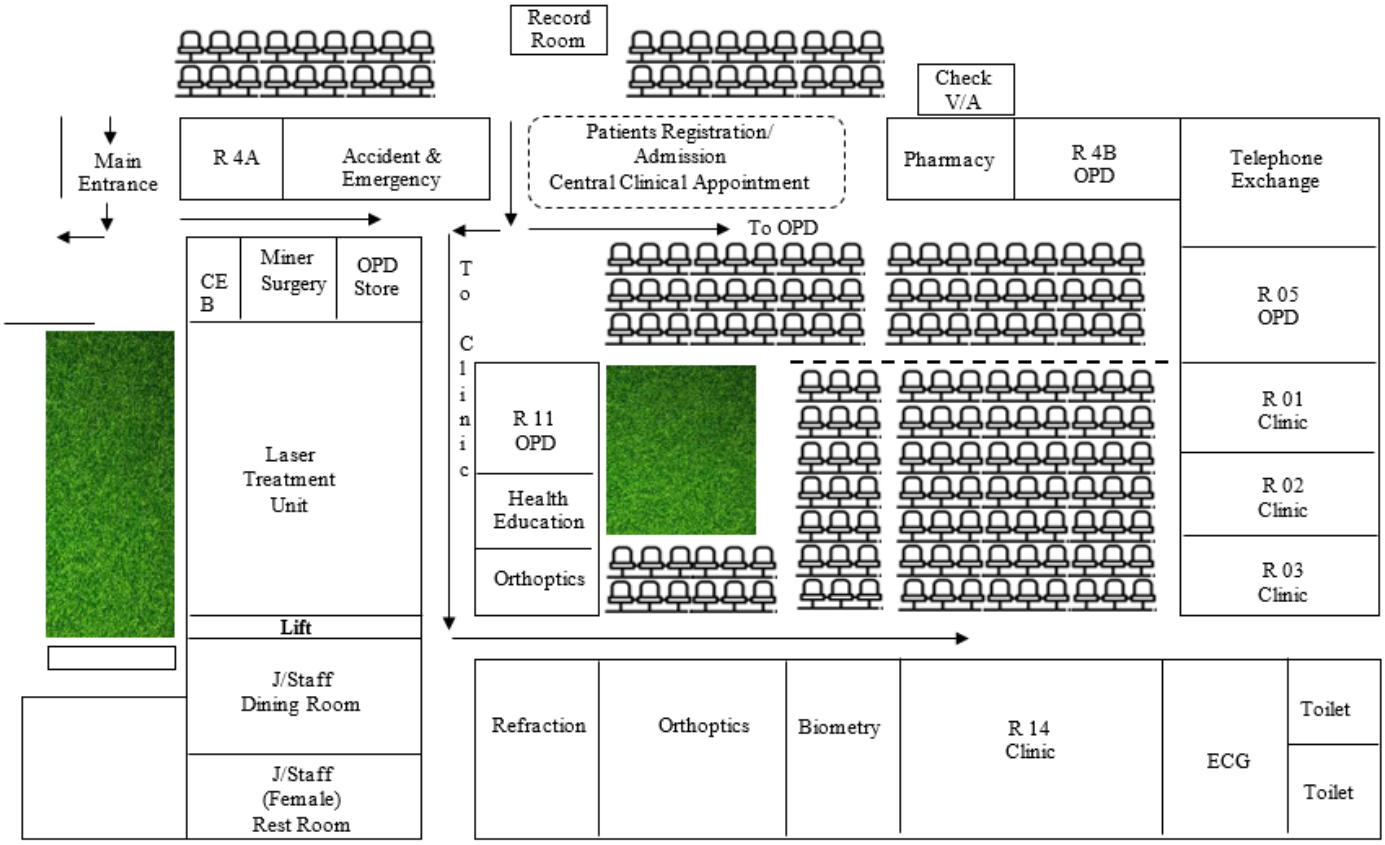

Figure 4: Current layout of OPD and Clinic

DISCUSSION

Outpatient care is defined as medical care or treatment that does not require an overnight stay in a hospital or medical facility (Andria, 2018). Outpatient Department (OPD) is the first contact point of the hospital to the community and it is one of the most important departments in the hospital. The physical arrangement of the OPD is very important. It should allow the free flow of patients in one direction to minimize the congestion (Ministry of Health, 1995). Better OPD care give a good impression to patients and enhance image of the hospital. Clinic is more similar to OPD but mainly functioning as follow up of the ill patients. Congestion and overcrowding will be the end result of the increase number of patients in OPD and Clinic. Most of the patients frustrated due to congestion and overcrowding of the clinics and OPD (Gupta, 2007). Establishing a reception counter near the entrance, unidirectional patient flow, and limited public areas, easy accessibility to other units, providing ancillary services at OPD to minimize cross traffic are some of the solutions introduced by Hospital administration (Gupta, 2007). Ministry of Health noticed that congestion at larger hospitals due to underutilization in primary care hospitals (Jayamanne, 2010). In order to minimize the congestion and overcrowding, streamlining all the clinical processes, management process, and ancillary process were recommended (MoH, 2017). This study was conducted to identify the causes of congestion at OPD and Clinics at NEH.

One Medical Officer in the OPD examines at least 150–200 patients per day in Vietnam earlier. Ministry of Health, Vietnam introduced several programs and reduced the patients examined by one MO to 50 patients in 2015, with a predicted drop to 35 in 2020 (Sakano, 2015). Study conducted in the OPD in Iran revealed that the average time spent for each patient's visit by a doctor is 5 minutes. It may differ from 5 to 15 minutes for each patient. It is a right of the patients to get examined for a considerable time (Mohebbifar et al., 2013). During this study, we found that medical officers who work at OPD of NEH examine 15 to 20 patients per hour. It is a very high number. consultation time is limited to 4 minutes which is highly inadequate to examine the patient, and quality of care may be compromised due to this low consultation time.

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Especially patient attend to OPD, NEH, MO can't complete all the examination and treatment within one day. . Patient need several investigations (IOP, refraction and dilation) and according to results revisit the relevant MO. The congestion and overcrowding varies depending on availability of health facilities, prompt attention, service quality, trust of the institution, economic stability, such as quality of medical facilities, the capacity of human resources, and speed of a treatment process and many other factors (Babalola et al. 2013). Longer registration time was found to strongly affect congestion and total waiting time. Based on these results, establishing an appointment system, allocation and announcement of the time to get results of the blood test, as well as a flexible schedule for MOs, may be recommended to reduce congestion and waiting time (The Thao Nguyen et al.,2018). Study also revealed that patients wait for an extended period of time at the registration desk, causing congestion. This finding is quite similar to previously explained studies in other countries. In focus group discussions and Key Informant Interviews participants suggested that the introduction of e- registration system and appointment system would be useful to overcome the issues. Delay in consultation due to late coming of MOs, quota system for consultation, tea break with group, inadequate human resources in the premises, small consultation rooms with PG trainers were identified as another major cause for issue.

It was not feasible to address the space issue due to limitations in space and funds. Laboratory services at primary care settings should be strengthened to improve the OPD care (Jain and Rao, 2019). This also supports the findings and suggestions to improve outpatient care in the current study. Importance of organized and unidirectional patient flow to improve service delivery in outpatient departments is emphasized by Babalola et al., (2013). In process evaluation in this study also found that patient flow is not organized at OPD and Clinic NEH and participants of focus group discussions and Key Informant Interviews suggested to establish a unidirectional flow considering the number of current patients and congestion, suggest increasing the number of counters at the outdoor pharmacy. Congestion of OPD was mainly due to delays at registration; consultation and lot of patients attend NEH early morning. Establishing a proper registration system that links consultation, laboratory and pharmacy, improving punctuality and availability of doctors at consultation room during the whole duration, establishing laboratory facilities within OPD, arranging unidirectional patient flow, and increasing more pharmacy counters at OPD will release the congestion at OPD and Clinic in NEH, SL.

CONCLUTION

Our results provided that more congestion and overcrowding in morning time than afternoon.

Patient's arrival time, waiting for registration, waiting for consultation, consultant referral, investigations, treatment procedures, prescription for medicines/ dressings, report Collection and Waiting at the pharmacy queue to obtain the drugs are the main causes as resulting in congestion and overcrowding. The majority emphasized the congestion of the OPD and the Clinic due to limited space in the waiting area and the consultation area. Properly arranged clinic layout is very important in the smooth functioning of OPD and Clinic. There is no proper appointment system to patients attending to the clinic or OPD.

RECOMENDATION

Separate the OPD , Clinic , A&E and investigation area (fig;2) is recommended to reduce congestion. Introducing separate entrance to OPD,Clinic and A&E department will also help in reducing congestion. The layout should be rearranged to maintain the unidirectional patient flow from registration to leaving the department. Also, reception desk should be established closer to the entrance. Establishing more registration counters will reduce congestion at the registration desk.

Well-trained nursing officers should be assigned to registration desk with health care assistants throughout the OPD and Clinic time to provide required information to patients. The introduction of a e- registration system and patient identification number can minimize the time spent at registration. The other recommendations are,

- Establish the public adressing system at the reception.
- Establishing direction boards and sign board in relevant placeses .
- Strengthen the eye care facilities in peripheral hospitals and encouraging the patients to attend peripheral hospital will reduce overcrowding at NEH. A referral system should be established to refer to higher level of care.
- Appointment system also needs to be introduced to patients.

MOs should be advised to start the duties on time, not to take tea breaks as a group. Establish the-registration system must be introduced for smooth functioning of the departments.Establish the central record room for storing and issuing the clinic books and

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OPD tickets(chits).it will prevent the patient congestion infront of the clinic and opd rooms.

OPD and Clinic patiens must be given the appoinment number and the time. The patients are stoped to enter the OPD or Clinic department before their appoinment time .
Expand the patients waiting area with inceasing the seating capasity(at least 1000 chairs are needed).Patients can be wait out side OPD and Clinic until reaching their turn(fig;2).All chairs in the OPD and Clinic departments should allocate to the relevant units with numbering.

Arrange separate area with seating facility for patients those who need to dialation for examination. A computer-based system should be expanded to other clinic and link the laboratory, dispensary, and examination rooms

Establish the Visual examination out side the premises of the OPD and Clinic (fig;2) .
Increase the number of dispensing counters in OPD in the peak time. Inadequate. The number of counters and dedicated pharmacists to OPD should be increased.
Patients can be given appointment numbers and time schedule for issue medicine. The OPD pharmacy can be introduced with computerized medicine issuing system.
Separate medical officer must be arranged to see the staff patients. Mechanism should be developed to identify the real staff patients as introducing staff member Identity card. The causes identified for congestions and suggested improvements were further confirmed by random observations.

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