

MANAGEMENT OF WAITING TIME IN THE HEALTHCARE ORGANIZATIONS

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Abstract

Queues are undesirable but ubiquitous in health care sector. Queues cause delay in receiving essential services which may result in causing prolonged discomfort and economic loss for patients. The study examines the current method of managing OPD queue in health care organizations. The study verifies the types of patients visiting health care organizations and the challenges involved before health care organizations in patient management. The study is exploratory in nature. The study is based primarily on secondary information available and is also based on observation of queuing happening in health care organizations in India. Healthcare organizations have to manage waiting time stress reduction among patients by scheduling appointments into two broad categories: i. Static scheduling, and ii. Dynamic scheduling. Patient waiting area may be attractively furnished to make it comfortable for patients while they wait for their turn. Frequent sanitization of comfort rooms and waiting area are also to be monitored. By stacking waiting area with reading materials and fixing television may divert the attention patients from their worries.

Key Words: Waiting time, OPD, Static scheduling, Dynamic Scheduling, Average Consultation Time.

Introduction

Queues are ubiquitous, particularly in health care sector though queues are undesirable (Gupta 2013). Queues cause delay in receiving essential services which may result in causing prolonged discomfort and economic loss for patients. In this context, the following questions naturally arise. Why are queues formed? Why should patients wait long to be attended? Which features of system design affect queuing? The present study is focused towards verifying the current practices of managing OPD queue in the health sector.

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Patient Waiting Time for Medical Attention

The doctor-patient ratio in India continues to be dismal and is less than the WHO-prescribed limit of 1:1000, as is declared by the Union Minister (Nadda, 2015) in the Rajya Sabha. More than two lakh allopathic doctors were registered with state medical councils and Medical Council of India between the years 2007 and 2014, taking the total number of practitioners in the country to around 9.4 lakh in 2014 (zee news 2015). Though the number of dental surgeons have doubled during the period from around 73,000 in 2007 to more than 1.5 lakh in 2014. However, despite this surge, there is only one doctor for 11,528 people in government hospitals. Of all the states, Bihar, Chhattisgarh and Maharashtra have even worse ratios. The average population served by a government dental surgeon is even higher at over two lakh patients but that is because 5,614 dental surgeons are working in government set-ups. These findings are reproduced from the National Health Profile, 2015, released by the Government of India, providing comprehensive data defining India's health status. Every government hospital serves around 61,000 people, with one bed catering to 1833 patients. The above figures shed light into the density of crowd that is formulated in front of the healthcare organizations in queue waiting to be attended across India during OPD hours.

The waiting time is categorized into pre-consultation waiting time and post consultation waiting time under this study. The pre-consultation waiting time is the amount of time spent by patients before consultation. Post consultation waiting time is the total time spent after the consultation. In the present scenario, the patients will have to spend a lot of time on queue to get an appointment with a doctor. After a long queue of waiting, the patients will get an opportunity to meet the doctor for consultation or health check. If the doctor is able to diagnose the disease or health issue, the doctor will prescribe treatment for the patients. If the doctor is not able to diagnose the cause of disease or health issue he may direct the patient for further investigations, to the clinical tests, radiology departments, diagnostics centres and scanning centres, so on. After obtaining the report, the patient has to come back to the doctor for further follow up. In serious situations the patients may be referred to referral hospitals or specialty centres for further investigation and follow up. Whatever be the procedure, a long waiting before a doctors clinic is a regular phenomenon.

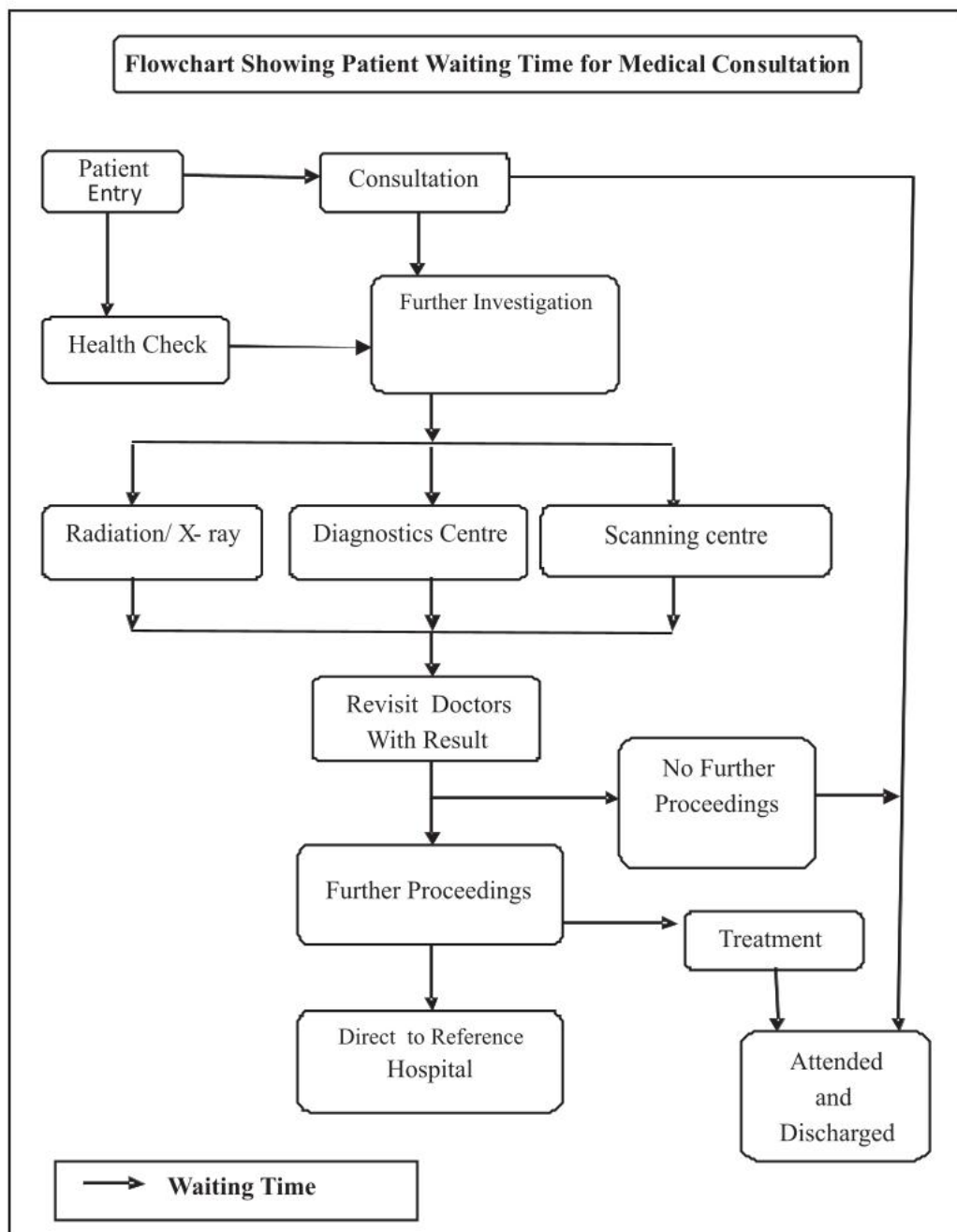
Literature Review

Mehandiratta (2011) analyzes the queuing theory in the health care organizations around the world and the benefits that acquired from the queuing theory for the organization. Mardiah and Basri (2013) discusses the necessity of reducing the out patients waiting time before receiving the medical treatments and also to provide various recommendations on the best strategies to improve the appointment booking system at Indonesia's public hospital. Jacobsson (2012) tries to ensure the need for equal distribution of patients through the healthcare unit for avoiding long waiting time and reducing queues. The study was done for the hospitals in Sweden. Brahma, (2012) examines the optimization of operational cost by comparing the performance of a single channel with multi-channel queuing models in achieving cost reduction and patient satisfaction. The study reveals a multi-channel system which determines limits to its usage and makes recommendations for improvement in service delivery.

Green (2006) describes basic queuing models as well as some simple modifications and extensions that are particularly useful in the healthcare setting. The critical issue of data requirements is also be discussed as well as model choice, model- building and the interpretation and use of results. Oladejo and Aligwo (2014) observes that the existing structure find values for queuing parameters by computation and also to formulate alternate queuing model using various parameter. Singh (2006) highlights the need to minimize the capacity cost, waiting cost, the cost of waiting space for healthcare organizations. This paper also analyzes the theory and instances of use of queuing theory in healthcare organizations around the world. Pouya (2009) examines the queuing network to model the interaction between the ICU and Medical unit, which is believed to be causing a major proportion of the congestion in the Emergency Departments. Rahman and Parvez (2006) investigates into the prevailing queuing system in the private practices of Dhaka city. The basic idea of the study is to improve the existing practice of the queue management.

Statement of the Problem

Queuing at health care organizations deals with one of the most unpleasant experiences of life for patients who are eagerly waiting for proper medical attention at the earliest. Queuing problem hinders prompt delivery of health care services, a situation which could be disastrous as human life is involved and could lead to complications or even death. Long waiting times for treatment in the outpatient department of health centers has long been a complaint from various quarters. Nowadays, customers use waiting time



as a decisive factor in choosing a service provider. This is true in the case of health care organizations also. Therefore, reducing idle time of both patients and service providers must be given due significance while designing an appointment system for the patients.

Relevance of the problem

Healthcare service is a patient-oriented service that requires continuous interaction with customers. It utilizes facilities and equipment, and consumes a large volume of medical attention, including those of doctors, nurses and paramedical services. Therefore, it becomes increasingly important for healthcare executives to understand what kind of facility, equipment, and workforce decisions are critical to achieve the commonly acknowledged goal of providing quality health services at a reasonable cost. Reducing waiting time of patients at OPD is one area where strategic planning, ultimate care and management skill have to be exercised. Failure to address 'patient waiting time management issues' may affect the reputation of the organization in a disastrous manner for the organization in the modern competitive environment (Kotle, 1999). The result of the study will contribute immensely in providing management with an understanding of how to ensure prompt attention to patients by avoiding complications or fatalities that may occur due to delays.

Objectives

1. To examine the current method of managing outpatient department (OPD) queue in health care organizations.
2. To verify the different type of patients visiting health care organizations.
3. To understand the challenges existing before health care organizations in patient management.

Methodology and Scope

The study is exploratory in nature. The study is based primarily on secondary information. The researchers also used observation to verify and understand the problem of queuing in health care organizations in Bangalore, India. This study is based on observation of prevailing waiting line system of different allopathic clinics. In order to gauge the waiting room environment, observation method was used. Data have also been collected from various published books, scholarly journal articles, and internet

browsing. The scope of the study is limited to 'waiting time issues' in front of allopathic treatment centers in Bangalore, India.

Discourse

Method of Managing OPD queues

Patient service discipline associated with methods of managing OPD queues in health care organizations in India, are identified as follows:

- 1. First in First Out (FIFO):** The patients who visit the hospital first will in the head of the queue and the patients will be allowed to consult the doctor according to the queue. Most hospitals provide a token for those who arrive first to determine the priority of meeting a doctor.
- 2. Priority Selection:** Some patients are given priority over others under special circumstances. Such patients may be allowed to meet the doctor before other patients by breaking the priority given based on the urgency or any other factor that the authorities consider necessary.
- 3. Token System:** Each appointment will be given a token number but it is not based on the FIFO method. This is on the basis of prior appointment given to the patients on an advance date, who want to consult, the doctor according to their convenience.
- 4. Tatkal System:** This system is used for meeting those doctors whose future appointments are completely booked by the patients. It will be based on availability of time of doctors who have a large number of personal customers. Tatkal facility may be used if there are a few time slots which are open at the last few minutes due to cancellation or otherwise.

Types of Patients Visiting the Health Care Organizations

- 1. Regular patients:** Regular patients visit health care organizations regularly for continuous medical attention and systematically pursue their health conditions. These patients need to check their health conditions regularly based on a time interval. Such patients are committed to conducting strict follow up of their health status so as to maintain quality health conditions. These groups consists of elderly people, patients who have chronic ailments and those who need close medical attention over a period of time.

2. Walk-in Patient: Patients who have contacted seasonal or temporary ailments, whose medical problems are apparently not serious. They may visit a doctor according to their convenience. A walk in patient may not have any prior appointments.

3. VIP Patients: The patients who hold a very distinguished position in the society. It may not be possible for these people to visit a doctor on a declared period of time due to security reasons or crowd pulling situations. Top politicians, religious heads and celebrities form part of this group. They may be given a convenient time other than the regular OPD time allotment to avoid attracting public attention.

4. Referral patients: These are patients who are referred to super specialty hospitals by primary health care organizations for further investigations.

5. Critical Patients: These are the patients who visit the health care organizations or the doctor for the immediate relief. Their conditions demand immediate medical attention and should be given priority over other patients.

6. Preferred patients: These patients visits health care organizations because of the personal preference of practicing doctors, or their friends, or with the recommendation of close family members of doctors or on the recommendation of management and staff.

Challenges Before Health Care Organizations in Patient Management

Challenges faced by health care organizations are associated with excellence of quality assurance in handling waiting time issues related with patient management. The task of reducing patient waiting time depends on the improvement in quality of three aspects such as appointment system, patient flow and organizational capacity. Proper plan for allocating scarce resources among the various projects of health care organization without losing efficacy of any sector and deploying adequate resource in patient management is a necessity, since patient management is the core of health care organizations. How to allocate limited resources optimally is a question that is to be answered with precise clarity, especially regarding the services of doctors, nurses and other staff. Minimizing waiting time for patients is essential due to two reasons. i). Excessive overcrowding of patients during peak consulting time will create problems for the smooth functioning of the entire organization. Answering queries, directing patients to appropriate medical procedures, providing instructions to too many patients at the

same time period will be a matter of a great stress for the employees who are managing the show. Sudden non availability of doctors due to various reasons may also add to the confusion.

Allocation of infrastructure and facilities needed for physical examination of patients and sanitization facilities are possible only if the crowd can be in manageable limits. The concept of manageable limits is relative to the size of operation of each organization. Organizations with larger capacity can manage larger number patients in comparison with the ones with lesser capacity.

Generalizing average consultation time of doctors is a very tricky and complex task. Physicians and surgeons take different time spans for consulting a patient. This may also vary among patients depending on the complexity of their physical conditions. Again different medical specializations such as ophthalmology, dentistry, psychiatry, orthopedics, gynecology, Hemispherology, so on, demand different consultation time. Therefore, length of a medical treatment and the total time to be spent in a clinic by patients is difficult to estimate.

Facilities That May be Provided by the Health Care Organizations to Reduce Patient Stress Occurring During Waiting Periods

Appointment scheduling can be classified into two broad categories: i. Static scheduling: under static scheduling all decisions regarding appointment must be made prior to the beginning of a clinic session, which is the most common appointment system in healthcare organizations. ii. Dynamic scheduling: in dynamic scheduling future arrivals are revised continuously over the course of the day based on the current state of the system (Mardiah & Basri 2013) . This is applicable when patient arrivals to the service area can be regulated dynamically, which generally involves patients already admitted to a hospital or clinic.

Patient waiting area may be attractively furnished to make it comfortable for patients while they wait for their turn. Frequent sanitization of comfort rooms and waiting area are also to be monitored. Stacking waiting area with reading materials which may provide comfort to depressed patients is also advisable. Television may also be used in the waiting area to divert the attention patients from their worries and to kill time. Informative sign boards may be placed provide information even to illiterate patients and thereby reducing patient stress.

Conclusion

Choosing appropriate method for managing outpatient department (OPD) queue is crucial for the survival and sustenance of health care organizations. Providing excellent services for patients and keeping them happy is a major task in healthcare administration. Excellence of quality assurance in healthcare includes the ability of management in handling patient waiting time issues. The task of reducing patient waiting time depends on the improvement in quality of three aspects such as appointment system, patient flow and organizational capacity.

Bibliography

- Mehandiratta Reetu, (2011), Applications Of Queuing Theory In Health Care, International Journal of Computing and Business Research, 2 (2)
- Brahma Kumar Prasanta,(2012), An Appraisal Of Cost Of Queuing In Health Sector A Case Study Of Ims & Sum Hospital, Bhubaneswar, International Journal of Multidisciplinary Research, 2(4)
- Green., Linda, (2006) Queueing Analysis in Healthcare, Graduate School of Business, Columbia University, New York, New York 10027, Chapter 11.
- Oladej., M.O. and Aligwo. M.C., (2014) Queueing Model for Medical Centers (A Case Study of Shehu Muhammad Kangiwa Medical Centre, Kaduna Polytechnic)IOSR Journal of Mathematics, 10(1)
- Singh Vikas, University of Arkansas for Medical Sciences, December, 2006, Use of Queuing Models in Health Care, University of Wisconsin-Madison.
- Bastani Pouya, (2009) A Queueing Model Of Hospital Congestion, A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in the Department of Mathematics, Simon Fraser University
- Mohammad Anisur Rahman, Mahbub Parvez, (2006) Waiting Line System in Health Sector of Bangladesh: The Case of Dental Care Services in Dhaka City, Daffodil International University Journal of Business and Economics, 1(1)
- Mehandiratta Reetu, (2011) Lecturer, Applied Sciences (Chitkara University Punjab), in International Journal of Computing and Business Research, 2 (2)
- Mardiah Poni Fatma, Basri Hasan Mursyid., (2013) Human Resource Management Research, 3(1): 27-33 DOI: 10.5923/j.hrmr.20130301.06.

- Prasanta Kumar Brahma, (2012), in International Journal of Multidisciplinary Research, 2 (4)
- Jacobsson Torbjörn (2012), Operations Management in Healthcare – principles for creating swift even patient flow and increased accessibility, Department of Technology Management and Economics, Chalmers University of technology, SE-412 96 Goteborg, Sweden.
- J.P. Nadda, Union Minister for Health, released the National Health Profile 2015 prepared by the Central Bureau for Health Intelligence (CBHI) on Tuesday along with officials of the Ministry, the Directorate General of Health Services and the CBHI.<http://www.thehindu.com/data/national-health-profile-highlights-poor-doctorpatient-ratio/article7678343.ece>
- http://zeenews.india.com/news/health/health-news/doctor-patient-ratio-in-india-less-than-who-prescribed-limit_1551946.html
- Kotler, P. (1999) Marketing Management, The New Millennium Edition.
- Gupta., Diwakar, (2013), University of Minnesota, 111 Church Street S. E., Minneapolis, MN 55455, USA e-mail: guptad@me.umn.edu. B.T. Denton (ed.), Handbook of Healthcare Operations Management: Methods and Applications, International Series in Operations Research & Management Science 184, DOI 10.1007/978-1-4614-5885-2 2, © Springer Science+Business Media New York.