

PROJECT REPORT

ON

**“A RECOMMENDATION ON REDUCING WAITING
TIME IN THE OUT-PATIENT DEPARTMENT IN
TAIBA HOSPITAL”**

Submitted in partial fulfillment of the requirements for qualifying

MASTER OF BUSINESS ADMINISTRATION

SUBMITTED BY

NAME :

ROLL NO. :

CENTER CODE :

Submitted in partial fulfillment of the requirements for qualifying

Master of Business Administration (MBA)

**“A RECOMMENDATION ON REDUCING WAITING
TIME IN THE OUT-PATIENT DEPARTMENT IN
TAIBA HOSPITAL”**

Under Supervision of :

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CERTIFICATE OF ORIGINALITY

This is to certify that the project titled “**A RECOMMENDATION ON REDUCING WAITING TIME IN THE OUT-PATIENT DEPARTMENT IN TAIBA HOSPITAL**” is an original work of the Student and is being submitted in partial fulfillment for the award of the “**MBA (OPERATION)**” . This report has not been submitted earlier either to this University or to any other University/Institution for the fulfillment of the requirement of a course of study.

Signature of Student

.....

Signature of Supervisor

.....

ACKNOWLEDGEMENT

With Candor and Pleasure I take opportunity to express my sincere thanks and obligation to my esteemed guide..... It is because of his able and mature guidance and co-operation without which it would not have been possible for me to complete my project.

It is my pleasant duty to thank all the staff member of the computer center who never hesitated me from time during the project.

Finally, I gratefully acknowledge the support, encouragement & patience of my family, and as always, nothing in my life would be possible without God, Thank You!

NAME

ROLL NO

DECLARATION

I hereby declare that this project work titled “**A RECOMMENDATION ON REDUCING WAITING TIME IN THE OUT-PATIENT DEPARTMENT IN TAIBA HOSPITAL**” is my original work and no part of it has been submitted for any other degree purpose or published in any other from till date.

NAME

ROLL NO

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Title of the Project

**“A RECOMMENDATION ON REDUCING WAITING
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TAIBA HOSPITAL”**

Chapter – 1

INTRODUCTION



An outpatient is another hugely important area for the majority of patient pathways. It is usually the step in the patient's pathway where the majority of different pathways intersect, diagnostic tests are reviewed and the decision to treat (or request additional testing) is made.

Most patient referrals from primary care that initiate an 18 week clock start will find themselves in outpatients. This high volume area can benefit greatly from some of the basic service improvement tools and techniques – some of which are simply about understanding the process and administrative bottlenecks.

Most trust activity data is captured for outpatients. It is only when you try to wholly understand the outcome of an individual patient consultation that the current systems fail to inform, particularly if a patient is referred onto another centre for treatment. Records of this are often patchy and ad-hoc, as are dates when decisions are made to treat or not treat the patient. For the purposes of 18 weeks recording, it will be imperative to capture these additional dates in order to measure and calculate patient journey times accurately.

Demand for outpatient consultations remains high and has increased over the previous year nationally. Frequently a high demand and stagnant capacity will drive waiting times

higher. New ways of working and delivering services are required that differ from the more traditional methods along with regular validation and screening of referrals to manage demand at the source of referral. The outpatient waiting list is dynamic - the number of patients entering and leaving the lists at the various stages will differ between organisations, specialties and individual consultants of the same specialty. Understanding the flows on and off the waiting list forms the basis of waiting list and activity modelling and monitoring.

The Basics (First Outpatient Appointment)

- Access the background reading materials available for improvement and project management.
- Link to the NHS Improvement System to see if there are similar change ideas, related documents and improvement stories that can be used for your work.
- Process maps the service in order to understand the patient flow dynamic and potential bottlenecks.
- Understand the demand and capacity of the service.
- Understand the baseline levels of activity of the service.
- Review the booking process in order to understand the administrative processes involved with these clinics.
- Review the clinic templates and schedules for all staff that hold these clinics.
- Understand the baseline waits that patients experience and the overall variation.

- Understand the did not attend (DNA) rates, new to follow-up ratios and hospital clinic cancellation rates for each clinic and member of staff who hold these clinics.
- Review the referral criteria and guidelines for the clinic in order to understand what patients are currently referred to the service.
- Discuss the service with all related staff – get a feel for how the service is viewed and used and also establish the current issues and challenges of the service.

Further Considerations (First Outpatient Appointment)

- There are often a high proportion of non-cardiac referrals made to the cardiology department. Improved screening of patients in primary care is required; possibly through diagnostics prior to when the decision to refer is made.
- All referrals should be generically addressed unless the referral is for a sub-specialist opinion that only specific consultants can provide.
- A high proportion of patients can be referred for a general cardiology outpatient appointment when their referral meets the criteria for Rapid Access Chest Pain Clinic (RACPC). Improved communication to GPs on the criteria is required in order to maintain the referral process along agreed pathways of care.
- It is clear that a ‘rapid access’ model of care for outpatients has a significant impact on overall pathway times. Trusts need to consider duplicating similar models for other high volume specialty conditions such as heart failure and arrhythmias.
- A review of diagnostic access for outreach clinics should be made (if relevant) to prevent the post-outpatient appointment (OPA) diagnostic scenario. The benefits of a

locally accessible service versus overall service efficiency and the potential for reduced waits will need to be balanced. It may be possible to continue these services based on tighter screening of patients requiring little diagnostic intervention.

- The times between referral letter receipt, letter grading and appointment are often too long. While the Choose and Book initiative will alleviate some of these problems, trusts will need to consider the full implications of Choose and Book for the purposes of 18 weeks.
- The vast majority of clinics are currently managed by medical staff and some cardiologists participate on the general medical rota. Trusts need to consider the workforce implications of this decision and allow for new ways of working which include the development of nurse and General Practitioners with a Special Interest (GPwSI) led clinics in primary and secondary care in order to increase overall capacity. Some follow-up clinics such as post myocardial infarction (MI) or post-revascularisation can be wholly nurse-led.
- Some GPs may only require advice from a consultant for the treatment of a patient, but find that the current system only supports direct referrals. New ideas such as advice by telephone or email or the introduction of a web-based cardiology information store to support GPs decision making may prevent a number of referrals. Another option may be a system of GPwSI referral triage in primary care with the benefits of improved grading consistency.
- The development of a detailed pathway of care, agreed across primary and secondary care will help support decision making for a range of clinical conditions.

- Some patients will experience multiple pathways of care at any one time and cross a number of specialist areas. Tighter integration of systems will be required to improve the efficiency of monitoring these patients, but particularly where stand alone data systems are used.
- Improve the utilisation and co-ordination of one-stop clinics (where diagnostics are held on the same day as the outpatient appointment) to maximise diagnostic activity during these sessions and avoid unused diagnostic slots.
- The Department of Health 18 week delivery trajectory will be challenging as maximum outpatient waits will need to reduce over the coming years. A system to identify and reduce backlog will need to be introduced that enables sustainability as opposed to a 'quick fix'.
- There is often very little to distinguish the difference in average waiting times for urgent and routine outpatient appointments. Multiple slot types add inefficiency and reduce productivity so the trust will need to simplify clinic slot types as overall waits reduce.
- One of the major constraints on the efficiency of outpatients departments is the fixed nature of clinic rules. Consultants and their teams are allocated clinic sessions in much the same way as hospital beds used to be allocated. When a consultant (or member of their team) is not available for a particular clinic, it is then often cancelled (or reduced).
- The number of patients seen by each consultant should be standardised in order to meet existing demand. The practice of over-booking should be reduced by clinic template review and modification which will lead to reduced cancellations.

- The DNA rate is the traditional method of performance measurement and reducing DNA rates remains as a key objective. DNA rates normally increase with length of wait due to patients moving, change in condition etc. Evidence suggests that greater sophistication in measuring DNA rates is required as high level analysis can disguise problems with individual patient groups.
- It is commonly accepted that when clinics are cancelled or reduced by the hospital, patients with clinical priorities retain priority access. An analysis of the clinic rules is essential. This should be coupled with an analysis by waiting time for urgent and soon to be seen patients. The review of clinic rules should ensure they reflect the priority mix of the referrals.
- The majority of outpatient services use a traditional fixed appointment system, where patients are given appointments on receipt of a referral letter. This system has many weaknesses. Patients are appointed well in advance so any changes to the clinic schedule or frequency of clinics will affect the appointments of all the patients waiting. Choose and Book will address some of these issues but close monitoring will still be required.
- Although patients are originally appointed in chronological order, changes to appointments (e.g. as a result of clinic cancellations) lead to widely different waiting times for individual patients when attending clinic. Maintain chronological booking as far as possible for similar patient group types.
- Ongoing work is often required in order to analyse outpatient demand and 18 weeks modelling in order to identify gaps in current delivery.

- Involve commissioners as part of any service transformation work in order to provide a mutual understanding of the service delivered and changes required.

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Chapter – 2

HOSPITAL OVERVIEW

Hospital Introduction:

“**Taiba Clinic**” was named after Dr. Sanad Al Fadala’s late mother, Taiba Sayed Yaseen Al Tabtabai. It is also worth mentioning the woman behind the idea of naming the hospital, the late Fatima Sulaiman Ibrahim Al Mussalem, the wife of Dr. Sanad Al Fadala. “**Taiba Clinic**” officially opened on 8/12/2002 as the first day-case surgery center in Kuwait under the slogan of “**Care & Cure**”, providing comprehensive medical services.

Now after 4 years have passed and after having achieved exceptional success at “**Taiba Clinic**”, we have decided to expand even further and become the first private hospital in Mubarak Al Kabeer governorate. We have expanded our premises and opened new departments that are equipped with the latest medical technologies and state-of-the-art equipment. Moreover, we have recruited high skilled professionals to ensure the adequate management and organization of the hospital’s dealings, both internally and externally.

On December 2010, Taiba Hospital has acquired the Joint Commission International Accreditation (JCIA) with highest scores in the first attempt. JCI, the world’s leading organization in evaluating healthcare service and quality, awarded Taiba Hospital, the coveted JCI Accreditation certificate, for implementing safe and effective healthcare in

highest quality and value, thus setting Taiba Hospital to be the first medical organization in Kuwait to acquire this outstanding evaluation.

Giving patients information about how long they may wait is considerate and helpful. Waiting longer than expected may make patients anxious, particularly if they have had no warning, or if they believe they have missed their turn. A Waiting times should not usually exceed 30 minutes. A It is important that reception staff are kept informed about any delays and that this information is passed on to patients on arrival. A If there are any delays that occur after patients' initial arrival and during the waiting time, they should be told as soon as possible, so that if necessary they can rearrange their transport or take care of other matters, such as childcare or work arrangements. The use of digital display boards may assist in providing information about waiting times in particularly busy clinics.

A Doctor should make every effort to start outpatient clinics on time. A Patient who arrives late can disrupt an orderly clinic, but their appointment time can often be filled by those who arrive early. As a last resort, it may be necessary to give late arrivals a new appointment. A Waiting times for both inpatients and outpatients should be monitored.

Mission

To our Patients:

We will align our operations around the patients and their families. We will treat all patients with confidentiality, compassion, care, and respect. We shall provide competent, innovative, and accessible care. We shall commit ourselves to continuously improving our service quality.

To our Employees:

We acknowledge our employees efforts in executing our mission. We will provide a safe, comfortable, and clean working environment. We respect each employee's individuality and shall listen to their concerns and suggestions. We will empower our employees with the necessary equipments and technologies. We shall provide opportunities for our employee's professional growth and development.

To our Organization:

We are accountable and responsible for the future success, sustainability, and financial viability of our organization. We shall be active contributors in framing the future of our organization and shall be active team players. We will protect our organization's assets, resources, and interests.

To our Community:

We are responsible to our community both as an organization and as individuals. We shall show interests in the total community welfare, not just those aspects in which we have a business interest. We shall undertake the lead in the creation of healthier lives within the community.

Vision

Taiba Hospital shall assume the leading role in redefining healthcare delivery in the Middle East and shall be a model for excellence in quality healthcare services.

The mission of Taiba hospital is to provide superior quality services across the healthcare continuum to the community of Kuwait. We shall provide competent, innovative, and accessible care. We shall commit ourselves to continuously improving our service quality.

We are responsible to our community both as an organization and as individuals. We shall show interests in the total community welfare, not just those aspects in which we have a business interest. We shall undertake the lead in the creation of healthier lives within the community. American Bilingual School (A.B.S.)

A team of Taiba Hospitals' physicians paid a visit to the American Bilingual School (A.B.S.) In Khaitan area, where they performed a number of medical tests to students to check on their health, which would help in enhancing students' performance and increase the level of their educational achievement "Good hearts to donate blood" campaign: Taiba Hospital hosted a two-days campaign under the title of "good hearts to donate blood" which emphasizes on the social and humanitarian role played by the hospital to the community, and in order to support this humanitarian project which aims to help patients and emergency cases that need a blood transfusion.

Social Care Dar

During the month of Holly Ramadan, Taiba Hospital participated in the celebration of "Gurgaian" which took place at the Social Care Dar (department of the Ministry of Social Affairs) in collaboration also with the Public Authority for Youth and Sports, where Taiba hospital distributed a various range of gifts and "Gurgaian" items for people with special needs and aged people of the Dar as an attempt to spread a happiness.

The American University of Kuwait

Under the sponsorship of Taiba Hospital, The American University of Kuwait organized a campaign under the title of (Pink Week) which aims to spread the awareness of breast cancer, considering breast cancer as the second most causes of death in the world. Taiba Hospital distributed educational brochures that enhance the students' knowledge and awareness of the disease.

Campaign for breast cancer disease:

On the event of the international month of breast cancer, which coincided with the period from October 24 to November 25, 2009, Taiba hospital organized a weekly campaign on every Saturday and Wednesday of the same period, where clinical examination of the breast are done for a group of women to detect the disease. This service is provided free of charge at Taiba Specialized centers at Farwaniya and Fintas. Taiba Hospital also granted a discount of 25% for all those who wish to use the mammogram for early detection of breast tumors and also for x-color channels in the breast milk.

Kuwait Disable Sport Club

Taiba Hospital has signed a cooperation protocol with M/S. Kuwait Disable Sport Club granting the members of the club's General Assembly a discount of 50% on all services provided by the hospital. This was done in the presence of Taiba Hospital Chairman, Chief Operating Officer and some members of the club Board Directors.

Medical aid shipment to Somalia

Taiba Hospital and its specialized Clinics conveyed a medical aid shipment to the Kuwait Red Crescent to be transferred to the affected people in Somalia due to the drought which is considered as the worst of its kind in the history of humanitarian disasters. The shipment included aid medical supplies and other instruments to help affected children, the shipment meets the need of around 43 thousand of affected children.

Medical aid shipment to Gaza

Taiba Hospital, in cooperation with the Kuwaiti Red Crescent, has sent a medical aid shipment to Gaza, where tons of medicines were prepared and sent to our brothers in the Palestinians territories to be submitted to the wounded and victims of the Israeli aggression.

Get Healthy Kuwait (GHK) campaign

A campaign that aimed to help people in losing their weight was arranged by Taiba Hospital and Diet Care Company, this campaign is a national campaign where Taiba hospital sought to help individuals and families to avoid the risk of diabetes and obesity. The hospital provided medical examinations and tests in addition to providing free and immediate health consultations to the largest number of people. Consultations were provided by nutrition specialists from Diet Care Company during their visits to a number of schools, banks, oil companies, commercial centers and institutions in the State of Kuwait.

"Your health is your happiness" campaign

The campaign of "your health is your happiness" was organized by the Department of Public Relations and Media of the Public Authority for Applied Education and Training under the sponsorship of Taiba Hospital, for all workers in the body, where a medical team from the

hospital provided medical advices in addition to medical tests to ensure that the body is free from diseases.

Twinkle Star Nursery

Children of Twinkle Star Nursery paid a visit to Taiba Hospital site. During their visit, the hospital's dental specialist introduced them with a detailed explanation on how to take care of the teeth and keep them clean and how to avoid teeth decay. At the end of their visit, a team from the hospital's management distributed some gifts to the children in order to spread an atmosphere of pleasure and enjoyment.

Kuwait Gulf Oil Company (K.S.C)

Throughout its constant and persistent efforts to create a community with a good standard of health awareness, Taiba Hospital organized a seminar at Kuwait Gulf Oil Company (K.S.C.) for the purpose of increasing the awareness of how to protect from premature aging. The seminar was held with the presence of: Senior Director of Public Relations, and Director of group services, and many other administrative personalities of the company.

Contribution with students in receiving the new school year

Taiba Hospital contributed with students their pleasure in receiving the new school year through the distribution of a large number of gifts, bags and school stationery to the students of some schools, orphanages and schools for those with special needs, this step came in line with the hospital's humanitarian role which is stemmed from its vision in providing a range of services to the society in all respects.

AWARDS & RECOGNITION:

In a first of its kind accomplishment, in the state of Kuwait, Taiba hospital, the youngest leading Kuwaiti hospital in healthcare services in Kuwait, acquired the joint commission international accreditation with highest scores in the first attempt.

JCI, the world's leading organization in evaluating healthcare service and quality, awarded Taiba Hospital, the coveted JCI Accreditation certificate, for implementing safe and effective healthcare in highest quality and value, in its first attempt with the high score, thus setting Taiba Hospital to be the first medical organization in Kuwait to acquire this outstanding evaluation.

Joint Commission International conducted the survey from 19th December to 22nd December 2010. Surveyors assessed the organization's compliance with the JCI Standards and evaluated the organizations compliance based on:-

- Interview with staff and patients and other verbal information
- Onsite observations of patient care process
- Policies, Procedures, Clinical practice guidelines
- Compliance with the International Patient Safety Goals.

Details of JCI Survey Standards

- Total Number of JCI Chapters: - 14.

- Total Standards from all the Chapters: - 314
- Total Measurable Elements from all Chapters: - 1110

JCI Survey Findings in Taiba Hospital.

- Total number of JCI Chapters Fully Met:- 8
- Total number of JCI Chapters Partially Met:- 6
- Total Number of Standards Fully Met:-304
- Total Number of Standards Partially Met:-10

(Out of which 5 standards were corrected before the end of the survey)

- Total Number of Measurable elements Fully met:- 1098
- Total Number of Measurable elements Partially met:- 12

(Out of which 6 were corrected before the end of the survey)

97% of standards were fully met.

99% of Measurable elements were fully met.

Riqas

RIQAS is the biggest international EQA scheme in the world, used by more than 18,000 laboratories in 92 countries worldwide. This large number of participants makes RIQAS the best quality EQA scheme in the world and ensures an extensive database of results for many analytical methods directly increasing statistical validity as a result.

External Quality Assessment (EQA) is an essential aspect of any laboratory operation providing labs with a means of assessing their analytical performance compared to other laboratories utilizing the same methods and instruments. The main functions include:

- Maintaining and improving analytical quality
- Improving inter-laboratory agreement thus raising standards
- Detecting equipment failures, identifying reagent problems, reviewing staff training
- Initiating and evaluating corrective actions
- Comparing different analytical methods

CAP Certificate

More than 60 years ago, the College of American Pathologists (CAP) developed the first continuing external proficiency testing Survey. The goal is to maintain the highest standards for laboratory medicine through education evaluation and certification. CAP proficiency testing programs include more than 580 Surveys, and they are used by nearly 22,000 laboratories in 108 countries. The CAP's Surveys provides the most comprehensive laboratory peer-comparison program in the world with large peer groups to ensure accurate evaluations, rich education tools, broad technical backup, and support for the latest testing methodologies.

The best distinguishes the CAP Surveys program is the involvement of more than 500 leading medical and scientific experts across 25 CAP scientific resource committees. These practicing laboratory professionals join the CAP professional staff and collaborators from the CDC, AABB, AACC, and elsewhere to keep CAP Surveys current and relevant. This remarkable network of contributors helps the program provide the assurance you demand an assurance you can pass along to patients, the health care team, and regulators.

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Chapter – 3

REVIEW OF LITERATURE

Evidence of poor and sub-par quality among hospitals has been well documented in recent years.⁶ In response, the federal government, foundations, and the private sector have funded research to identify best clinical practices and develop strategies to reduce medical errors and improve health outcomes. A major element of this work has involved defining and measuring quality and developing indicators of performance to compare hospitals across the country.

Am J Hosp Pharm. 1984 (6):1127-30.

The cost of various options for reducing patient waiting time in an outpatient pharmacy was studied through computer simulation. The time required to complete prescription filling tasks was recorded for a baseline of five pharmacy employees: technicians A, B, and C, a typist, and a pharmacist. A fixed factorial design of 12 configurations was used in which the number of pharmacy employees was varied (one, two, or three technician As; one or two typists; and one or two technician Bs). Patient waiting time for each configuration was determined through computer simulation. Pharmacy employee salaries were used to calculate the relative cost of six of the configurations that were predicted to reduce waiting time to less than 10 minutes. Configurations with additional technician Bs or typists, or both, exhibited reductions in total waiting time of comparable magnitude. One of these configurations was identified as the least expensive per daily hours saved. Without disturbing the operation of

the pharmacy, computer simulation was found useful in identifying the least expensive method of reducing patient waiting time in an outpatient pharmacy.

This report focuses on the dynamics of hospital performance: how hospitals achieve and sustain improvements over time. Case studies of four hospitals that made substantial improvements reveal a pattern: 1) a trigger such as a crisis or new leader serves as a “wake-up call” that prompts the hospital to make 2) organizational and structural changes such as multidisciplinary teams, quality-related committees, and technology investments, which facilitate 3) a systematic problem-identification and problem-solving process, resulting in 4) new treatment protocols and practices, which in turn result in 5) improved outcomes. Success strengthens commitment to quality improvement and turns this temporal pattern into an ongoing cycle. The entire process reflects the establishment, growth, and reinforcement of a culture of quality.

Jack A. Meyer, Ph.D., is a health economist with more than 20 years of experience leading health care research and consulting projects. He has directed in-depth health research projects for numerous foundations and conducted policy analysis and strategic planning for government agencies and clients in the business community. Dr. Meyer specializes in developing and evaluating proposals to cover the uninsured at both the national and state levels. He has also focused on initiatives of both private employer groups and government to improve quality and patient safety. Prior to joining HMA, Dr. Meyer was the president of the Economic and Social Research Institute

Sharon Silow-Carroll, M.B.A., M.S.W., is a health policy analyst with nearly 20 years of experience in health care research. She has specialized in health system reforms at the local, state, and national levels; strategies by hospitals to improve quality and patient centered care; public-private partnerships to improve the performance of the health care system; and efforts to meet the needs of underserved populations. Prior to joining Health Management Associates (HMA) as a principal, she was senior vice president at the Economic and Social Research Institute (ESRI), where she directed and conducted research studies and authored numerous reports and articles on a range of health care issues.

Following the Institute of Medicine (IOM) reports, *To Err Is Human* and *Crossing the Quality Chasm*, several studies were conducted to ascertain how quality within the hospital setting could be appropriately measured. Perhaps the most far-reaching of these studies was the “High Performers Special Study” (HPSS), supported by the Centers for Medicare and Medicaid Services (CMS).

The goal of the HPSS was to develop and implement a methodology for defining quality performance and identifying high performing hospitals and the practices and characteristics that set them apart from other hospitals. Using quantitative performance data on acute myocardial infarction (AMI), congestive heart failure (CHF), and pneumonia, the researchers identified high performing and non-high-performing hospitals throughout the nation. Based on in-depth interviews with 110 key informants at six matched pairs of high and non-high performers, four common quality improvement models of high-performing hospitals were differentiated according to various aspects of culture, technology, responsibilities, priorities,

and targets. Within these four models, the researchers further identified specific basic and high-leverage “change ideas.” In addition to developing methodologies for scoring hospitals on their performance and levels of leadership effort and commitment to quality improvement, the authors found that achieving high levels of quality in hospital performance requires an approach that actively creates links between the quality improvement dimensions of responsibility/involvement/reward; communications; quality management strategies; clinical management strategies; and monitoring.

Factors behind Disparities in Quality

Once major disparities in hospital quality were acknowledged, many researchers and clinicians have tried to understand why some institutions perform better than others. They have shed some light on the role played by a number of factors, or “ingredients.” For example, in a prior study we conducted for The Commonwealth Fund, we found that top-performing hospitals are distinguished from others in the following ways:

- They develop the right culture for quality to flourish;
- They attract and retain the right people to promote quality;
- They devise and update the right in-house processes for quality improvement; and
- They give staff the right tools to do the job.

A number of hospitals and health systems have put such practices in place, often supported by information technology to assist physicians and patients. Others have instituted an explicit quality-related mission and aggressive quality-related targets; emphasized selective hiring, credentialing, and re-credentialing; instituted an iterative process of discovery followed by

corrective actions and accountability; and invested in tools to abstract medical records, analyze data, and facilitate the improvement process.

The outpatient services often are the first point of contact with a hospital. It is an extremely busy area as all the patients have to pass through this area. It is important it is well managed, as the first impressions get shaped during this process.

This issue of Sitenews on the theme "eyecare outpatient management" provides an overview of the various outpatient examination processes that are there for an eye hospital both at primary and secondary level. The next section provides an overview of e-resources to help plan the layout and the resource requirement of the outpatient department. Some of the major management challenges in outpatient management are waiting time, communication, employee behaviour for promoting service excellence, ambience for creating healing environment, and health education. Each of this is looked at to get different perspectives on how to address it in a patient friendly way. Another important aspect of OPD management is leveraging the use of information technology.

ZHU Zhecheng; HENG Bee in 2002:

This paper is focused on the factors causing long patient waiting time/clinic overtime in outpatient clinics and how to mitigate them using discrete event simulation. A two-week period of data collection is conducted in an outpatient clinic of a Singapore government hospital. Detailed time study from patient arrival to patient departure is conducted, and the possible factors causing long patient waiting time/clinic overtime are discussed. A discrete simulation model is constructed to illustrate how to improve the clinic performance by

mitigating the detected factors. Simulation and implementation results show that significant improvement is achieved if the factors are well addressed. An outpatient clinic is known as a private or public healthcare facility which is devoted to diagnoses and treatments of outpatients [1]. The types and functions of outpatient clinics cover different specialties and vary from country to country [2]. Study in this paper is focused on outpatient clinics in Singapore, which is known as specialist outpatient clinics (SOC). SOC in Singapore are clinics associated with hospitals and medical centers. Each SOC is specialized on one type of diseases, e.g., orthopedic clinic, ear, nose and throat clinic, eye clinic, etc. An SOC mainly accepts patients referred by various sources with appointments. SOC staffs arrange an appointment for each appointment request by picking up a free slot of a specific specialist through the appointment management system.

Recent years SOCs are facing increasing pressure to handle more appointment requests than before due to the aging and growing population [3]. The lead time between an appointment request and the actual visit tends to be longer because the growth of SOC capacity cannot catch up with the increasing demand. In order to mitigate the increasing appointment lead time, more slots are arranged in each operating session to maintain a constant appointment lead time. However, the rising workload per session causes other problems. The overloaded clinic becomes more congested and patients have to wait longer for their consultations. There is also higher chance of overrunning session time. The increasing waiting time and overtime have negative impact on patient satisfaction and staff morale.

The Out Patient Department (OPD) provides clinical services to patients without the need to stay overnight. Patients who need medical or surgical care but are not in acute emergency generally attend the OPD. In comparison to indoor care the outpatient care is relatively more convenient to patients and is less expensive. The chances of hospital-acquired infections are less. Shortage of hospital beds in the country also encourages outpatient services to be utilized optimally.

Among all departments in a hospital, the OPD caters to maximum number of patients. It is generally the first point of contact of patients and their attendants with a hospital, and thus creates first impression about the hospital services. Therefore, it has wider implications on the reputation and brand image of the hospital. Although OPD is not a major profit center of hospitals, it generates revenues indirectly through diagnostic services and admissions.

Scope of services

Clinical consultations are provided to patients in OPD. The consultations include history taking, clinical examination, diagnosing and providing prescription to patients. The support of diagnostic services like laboratories, radiology and cardiac lab etc might be required to confirm the diagnosis. Minor surgeries or procedures are also carried out in the OPD.

The patients who need indoor care are advised admissions through the OPD and thus OPD also acts as a filter for indoor admissions.

Besides the curative services, certain preventive services like immunization; promotive services like dietary counseling and rehabilitative services like physiotherapy and occupation

therapy are also provided in OPD of many hospitals. The OPD provides excellent opportunity for providing health education to the clients.

Modern concept of Ambulatory Services encompasses wider range of services that also include therapeutic services like dialysis, blood transfusion, chemotherapy, daycare surgeries and diagnostic services like angiography etc.

Workflow

The patients who attend the OPD may be new (who have come for the first time) or repeat patients. Majority of them pay in cash for the services whereas some corporate or insured patients avail cashless services.

Health care providers are under a great deal of pressure to reduce costs and improve quality of services. In recent years, given the greater emphasis on preventive medicine and shorter lengths of stay, outpatient services are becoming an essential component of health care. Hospitals that cannot make their outpatient services more efficient and cost-effective find themselves in financially unviable positions in this fast-growing competitive industry.

Over the years, population has increased several folds and the greater demand and expectations of patients from hospitals are far more than what is currently being perceived. As a result, it has become a constant rat-race to make our current systems faster. This brings about questions such as how do we measure such improvements? Is there a standard procedure?

Today lot of research is taking place to make systems that provide critical life support to work faster. For example, the NHS has introduced performance specific targets which demands 98% of the patients enter an accident and emergency service unit, to be treated in less than 4 hours (response time).

Now the challenge is how to achieve such targets. The first thing that comes into mind is to increase the number of doctors and paramedics and the speed of the equipments in Hospitals. This would be possible if one has unlimited resources but, since this isn't feasible in most of the cases, we would have to look at alternatives. In essence, the hospital could vary their limited number of staff at different departments according to the arrival rate and see what happens to the overall process time. However, this will prove to be time consuming and very expensive for the hospital and hence isn't feasible.

This motivates to find appropriate models that would help us to simulate and predict the behaviour of an OPD. Various studies such as simulations, statistical modelling etc have been done in this area with all of them broadly based upon queuing theory. Since its inception by A.K Erlang in 1909, this has been the basis for modelling many different systems. If modeled accurately, not only will such a model give managers an insight into optimizing their resources, but will also show them which departments are bottlenecks. The problem of waiting is recognized as one of the major challenges of many hospitals. This problem limits hospitals from serving population who are mostly busy and want to spend their valuable time productively. In an eye hospital where this study was carried out approximately it takes about 1 hour and thirty minutes to serve a patient.

Many research works have been done to address the long patient waiting time/clinic overtime by proposing various appointment scheduling schemes to better utilize the session time. As early as the 1950s, [4] proposed an appointment rule known as the Bailey's rule. The basis of Bailey's rule is to book two appointments at the beginning of a session, which is known as initial block. Successive appointments are then booked one by one at a fixed interval of mean consult time. Experiments results showed that such an appointment schedule effectively utilized the session time. Similar rules were proposed in. Other than booking one patient in one time slot, some literature proposed the idea of booking multiple patients in one time slot. Proposed a rule which booked two patients in each time slot. Argued that it was better to book different number of patients in different time slots. Some literature also proposed rules with different intervals between two successive time slots. One approach is to assign different intervals based on patient types. For instance, it is a common practice to assign different intervals for new patients and follow-up patients. Another approach is to adjust the intervals according to different time of the session. [11] pointed out that it was helpful to arrange a longer interval at the latter part of the session compared to the early part of the session. Pointed out that the intervals should follow an increase then decrease manner. A more comprehensive review of various appointment rules can be found.

One problem of above mentioned research works is that most of the proposed appointment schedules are applicable to simplified clinic scenarios. Most appointment rules treat SOC as a production line. Uncertainties considered in the appointment schedules usually include no-show appointment, late appointment, etc. However, SOC itself is a more complex system with lots of uncertainties, which should not be ignored.

For instance, inefficiency may incur during the clinic session and cause extra patient waiting time/clinic overtime. By ignoring the additional uncertainties, the proposed appointment schedules are unlikely to perform well in actual practice. Simulation is widely applied to simulate the complexity and uncertainties of outpatient clinic and to test the performance of different process improvement techniques applied simulation models in queue management in outpatient clinics. Developed a simulation model to test the efficiency of different appointment schedules developed a detailed simulation model of an outpatient department. Various appointment schedules were examined to reduce patient waiting time. Studied the effects of patient and consultant punctuality on an outpatient clinic using a simulation model. [19] compared different appointment schedules through simulation to minimize patient waiting time and clinic idle time in an outpatient clinic. Conclusion was drawn from the simulation results that scheduling appointments with more variation toward the end of the schedule helped reduce both terms.

In this paper, actual clinic session operating data is collected and detailed analysis is conducted to detect factors and uncertainties causing long patient waiting time/clinic overtime. A discrete event simulation model is constructed to show how the clinic performance would improve if the detected factors were addressed well. New appointment schedules are then implemented in the SOC by removing the detected factors. The implementation results show that new appointment schedules significantly outperform the original ones.

The rest of this paper is organized as follows: Workflow of an SOC and method of data collection are given. Then detailed analysis and discussion are given to detect factors causing long patient waiting time/clinic overtime. Discrete event simulation model is constructed and implementation results are analyzed in the following section.

Investigates the increased waiting time costs imposed on society due to inappropriate use of the emergency department by patients seeking non-emergency or primary care. Proposes a simple economic model to illustrate the effect of this misuse at a public or not-for-profit hospital. Provides evidence that non-emergency patients contribute to lengthy delays in the ER for all classes of patients. Proposes a priority queuing model to reduce average waiting times.

C A Stone, J H Palmer, P J Saxby, and V S Devaraj in 2000:

Outpatient non-attendance is a common source of inefficiency in a health service, wasting time and resources and potentially lengthening waiting lists. A prospective audit of plastic surgery outpatient clinics was conducted during the six months from January to June 1997, to determine the clinical and demographic profile of non attenders. Of 6095 appointments 16% were not kept. Using the demographic information, we changed our follow-up guidelines to reflect risk factors for multiple non-attendances, and a self-referral clinic was introduced to replace routine follow-up for high risk non-attenders. After these changes, a second audit in the same six months of 1998 revealed a non-attendance rate of 11%--i.e. 30% lower than before. Many follow-up appointments are sent inappropriately to patients who do not want further attention. This study, indicating how risk factor analysis can identify a group of

patients who are unlikely to attend again after one missed appointment, may be a useful model for the reduction of outpatient non-attendance in other specialties.

According Norman T.J. Bailey:

An investigation, based on the use of random numbers, has been made into the kind of queueing process occurring in hospital out-patient departments. Special attention has been paid to the patients' waiting time and also to the time which a consultant may waste waiting for the next patient. As compared with many appointment systems at present in use, it is concluded that by suitable choice of the system to be adopted a substantial amount of the patients' waiting time may be eliminated without appreciably affecting the consultant. A recommended procedure is to give patients appointments at regular intervals, each equal to the average consultation time; the consultant commencing work when the second patient arrives. The effect of variations in the appointment interval, the number of patients attending the clinics, and the distribution of queue-size are discussed. The precision of the results obtained is also considered.

Fenghueih Huarng, Mong Hou Lee, (1996):

Overwork and overcrowding in some periods was an important issue for the out-patient department of a local hospital in Chia-Yi in Taiwan. The hospital administrators wanted to manage the patient flow effectively. Describes a study which focused on the utilization of doctors and staff in the out-patient department, the time spent in the hospital by an out-patient, and the length of the out-patient queue. Explains how a computer simulation model

was developed to study how changes in the appointment system, staffing policies and service units would affect the observed bottleneck. The results show that the waiting time was greatly reduced and the workload of the doctor was also reduced to a reasonable rate in the overwork and overcrowding periods.

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Chapter – 4

OBJECTIVES AND SCOPE OF STUDY

AIM / OBJECTIVES

Fixing the objective is like identifying the star. The objective decides where we want to go, what we want to achieve and what is our goal or destination.

- To determine the flow of patient and the average time spent in Taiba Hospitals.
- To identify the factors those are responsible for high waiting time in Taiba Hospitals.
- To recommend appropriate suggestions to optimize the waiting time in Taiba Hospitals

Scope:

The primary activity of the Taiba hospitals is providing medical, diagnostic and treatment services and also specialized accommodation services to in-patients i.e., receiving individuals for medical reasons, providing them with medical care on an on-going basis and offering diagnostic and treatment services. The Secondary activities of Taiba hospitals provide wide variety of outpatient services at low cost.

Chapter – 5

RESERCH METHODOLOGY

Research methodology in a way is a written game plan for conducting research. Research methodology has many dimensions. It includes not only the research methods but also considers the logic behind the methods used in the context of the study and complains why only a particular method of technique has been used.

RESEARCH DESIGN: - The research design will be used in this study on both 'Descriptive' and 'exploratory'.

DATA COLLECTION METHODS:

The data will be collected using both by primary data collection methods as well as secondary sources.

PRIMARY DATA: Most of the information will be gathered through primary sources. The methods that will be used to collect primary data are:

- Questionnaire
- Interview

SECONDARY DATA: secondary data will be collected through:

- Text Books
- Magazines

- Journals
- Websites

METHOD USE TO PRESENT DATA:

Data Analysis & Interpretation – Classification & tabulation transforms the raw data collected through questionnaire in to useful information by organizing and compiling the bits of data contained in each questionnaire i.e., observation and responses are converted in to understandable and orderly statistics are used to organize and analyze the data:

- ◆ Simple tabulation of data using tally marks.
- ◆ Calculating the percentage of the responses.
- ◆ Formula used = $(\text{name of responses} / \text{total responses}) * 100$

Graphical analysis by means of pie charts bar graphs etc.

NUMBER OF RESPONDENTS

Total samples of 100 respondents will contact who respond to the questionnaires.

SAMPLING TECHNIQUE:-

The technique will be used for conducting the study will convenience sampling technique as sample of respondents will be chosen according to convenience.

STASTICAL TOOLS:

The tools uses in this study will MS-EXCEL, MS-WORD. MS-EXCEL use to prepare pie-charts and graphs. MS-WORD was used to prepare or write the whole project report

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Chapter – 6

ANALYSIS & INTERPRETATION

Keeping in mind the objectives of the study, the surveys were being done & following interpretation were being drawn:

Evaluation:-

Keeping this point in view and to fulfill the evaluation variants of which may form the basis for objectives of the studies an attempt has been made to segment the various respondents on the basis of some aspects collected from them through questionnaire. There are depicted through tables and graphs.

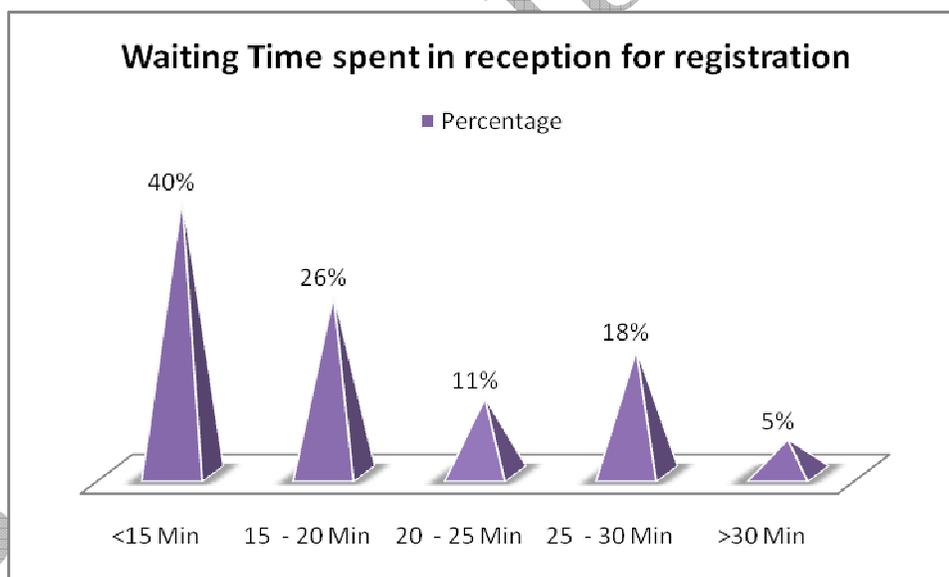
The copy of questionnaire administered is enclosed and the sample size was 100 respondents are enclosed at the end of this project. All the calculations and numerical interpretations are for 100%

1) Waiting time spent in reception for registration.

Table 1.1 Distribution of Patient view on Waiting Time spent in reception for registration

Criteria	Frequency	Percentage
<15 Min	40	40%
15 - 20 Min	26	26%
20 - 25 Min	11	11%
25 - 30 Min	18	18%
>30 Min	5	5%

Graph 1.1 Distribution of Patient view on Waiting Time spent in reception for registration



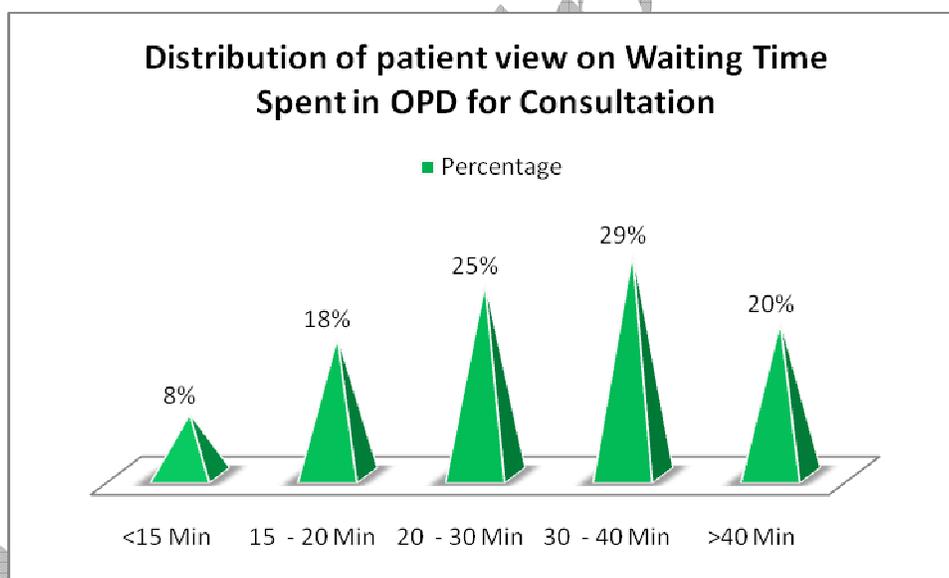
It is evident from the above table that the maximum time spent by the patients in the reception for registration. Out of 100 patients, 40% patients had to wait for less than 15 min, 26% waited for 15-20 min, 11% had to wait for 20-25 min, 18% waited for 25-30 min and only 5 no. of patients had to wait for more than 30 min in the reception for registration.

2) Waiting time for consultation.

Table 1.2 Distribution of Patient view on Waiting Time spent in OPD for Consultation

Criteria	Frequency	Percentage
<15 Min	8	8%
15 - 20 Min	18	18%
20 - 30 Min	25	25%
30 - 40 Min	29	29%
>40 Min	20	20%

Graph 1.2 Distribution of Patient view on Waiting Time spent OPD for consultation.



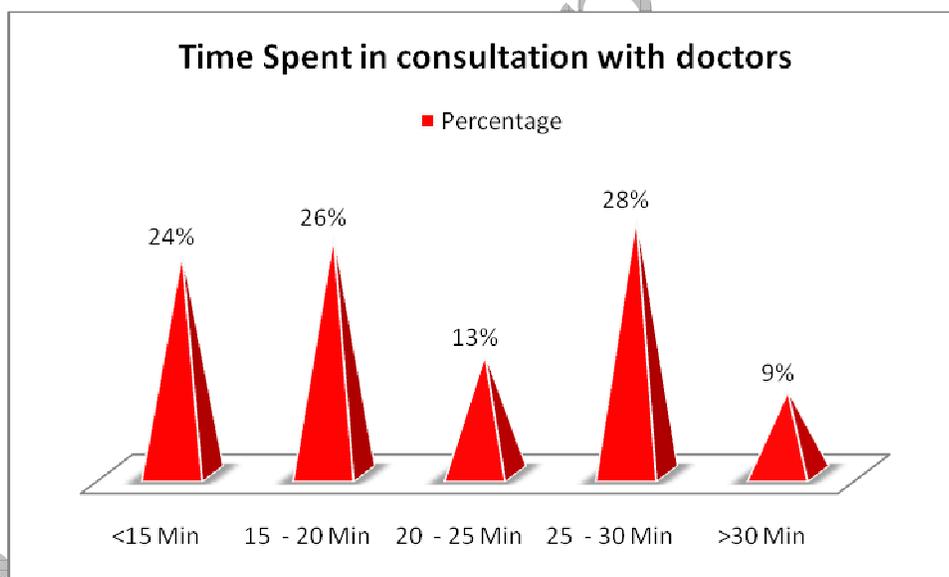
It is evident from the above table that the maximum waiting time spent by the patients in the OPD for consultation with doctors. It shows that out of 100 patients, highest is 29% patients had to wait for 30-40 and lowest 8% patient waited for less than 15 min. While 25% patient waited for 20-30 min. 18% patient waited for 15-20 min and 20% patient waited for more than 40 min in the OPD for consultation.

3) Time spent for consultation.

Table 1.3 Distribution of Patient View on Time Spent in consultation with doctors

Criteria	Frequency	Percentage
<15 Min	24	24%
15 - 20 Min	26	26%
20 - 25 Min	13	13%
25 - 30 Min	28	28%
>30 Min	9	9%

Graph 1.3 Distribution of Patient View on Time Spent in consultation with doctors

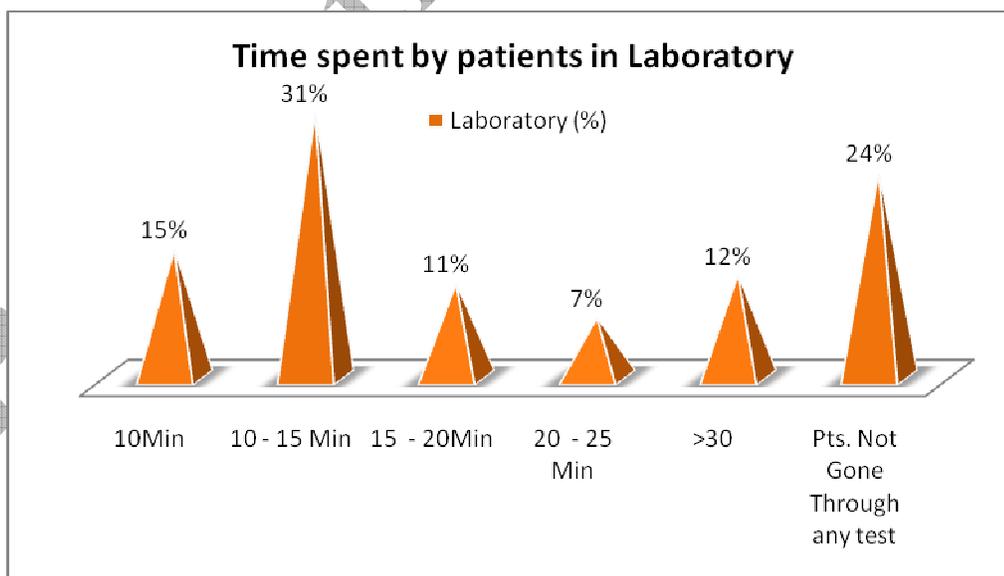


As per shown in the above graph the maximum time spent by the patient in the OPD for consultation with doctors. It show that out of 100 patients, according to 9% patients' doctors take more than 30 min for consultation , 13% patients says 20-25, 24% patients sys it takes less than 15 min and from the rest 26% patients, according to half 28% patients , doctor takes 25-30 min and 26% patients, doctors take 15-20 min in consultation.

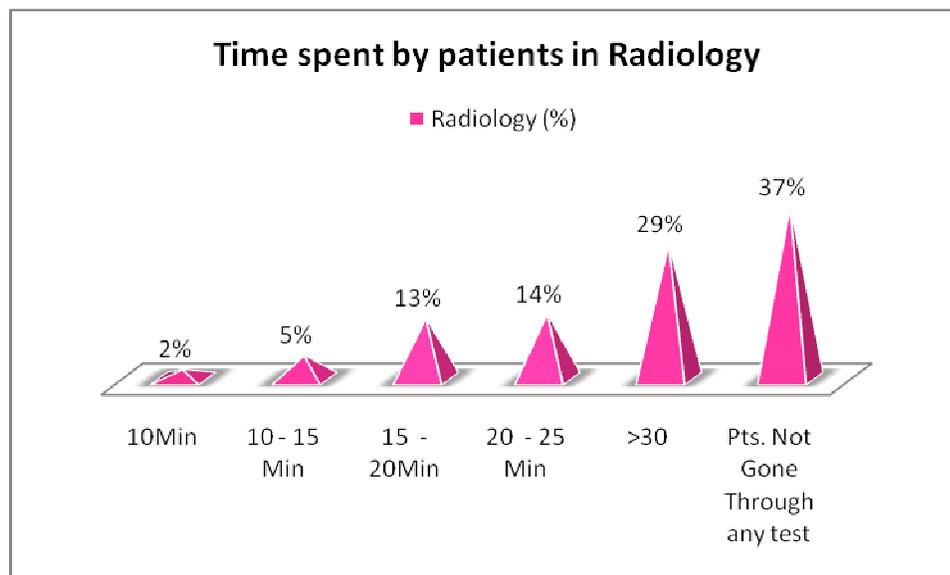
4) Time spent for investigation.

Table 1.4: Distribution of Patient view on time spent in Investigation.**(Laboratory, Radiology, Pharmacy)**

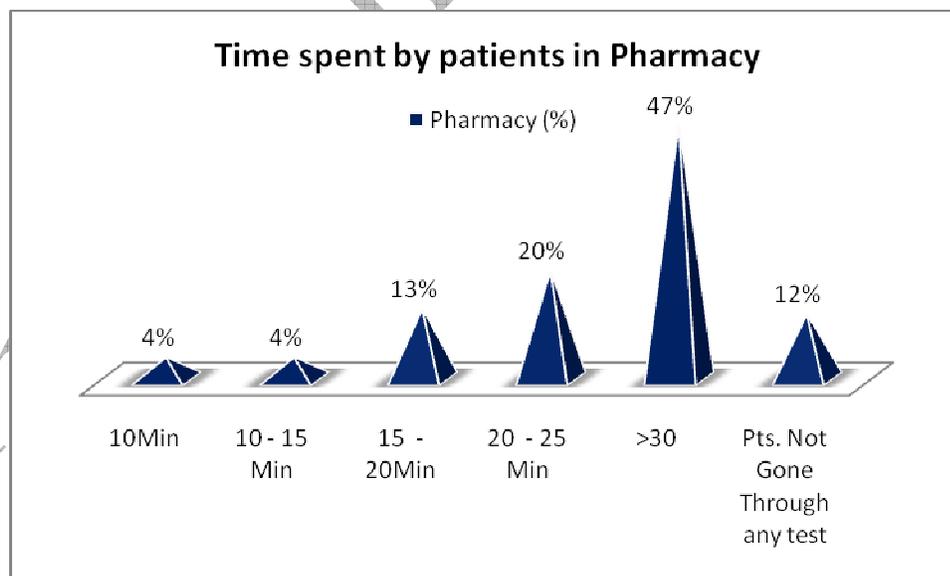
Criteria	Laboratory (%)	Radiology (%)	Pharmacy (%)
10Min	15(15%)	2(2%)	4(4%)
10 - 15 Min	31(31%)	5(5%)	4(4%)
15 - 20Min	11(11%)	13(13%)	13(13%)
20 - 25 Min	7(7%)	14(14%)	20(20%)
>30	12(12%)	29(29%)	47(47%)
Pts. Not Gone Through any test	24(24%)	37(37%)	12(12%)

Graph 1.4: Distribution of Patient view on time spent in Investigation.**1.4. A: Time spent by patients in Laboratory**

1.4. B: Time spent by patients in Radiology.



1.4. C: Time spent by patients in Pharmacy.



As per shown in the above graphs the average time spent by the patients in investigation (Laboratory, Radiology, Pharmacy).

For investigation in laboratory out of 100 patients, according to 31% patients; time taken is 10-15min. According to 15% patients, 10 min of time is taken. 11% patients had to wait for 15-20 min while for the other 12% patients it took more than 30 min and for 7% patients; it took 20-25 min. while 24% patients did not go through laboratory test.

For investigation in Radiology out of 100 patients, according to 5% patients; time taken is 10-15min. According to 2% patients, 10 min of time is taken. 13% patients had to wait for 15-20 min while for the other 29% patients it took more than 30 min and for 14% patients; it took 20-25 min. while 37% patients did not go through laboratory test.

For investigation in Pharmacy out of 100 patients, according to 4% patients; time taken is 10-15min. According to 4% patients, 10 min of time is taken. 13% patients had to wait for 15-20 min while for the other 47% patients it took more than 30 min and for 20% patients; it took 20-25 min. while 12% patients did not go through laboratory test.

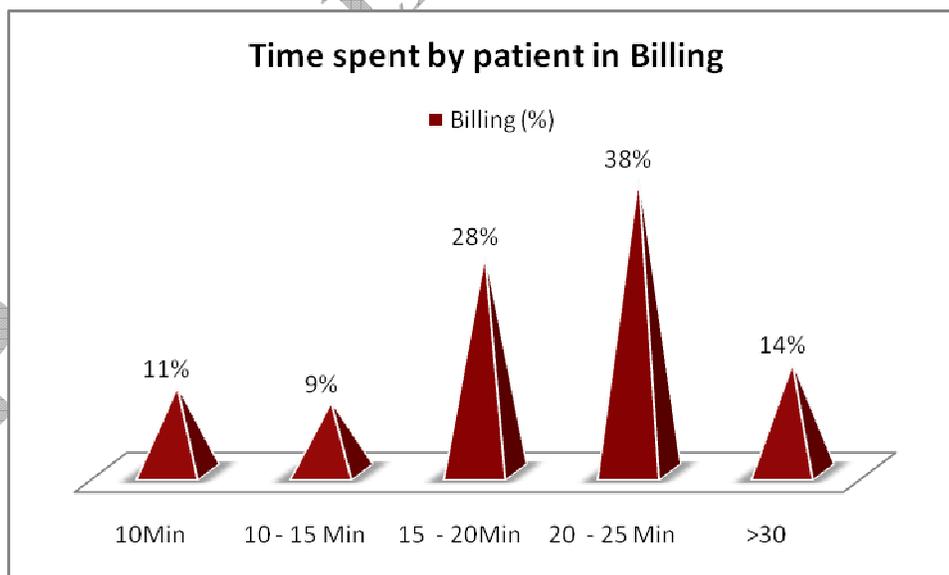
5) How much time did you spend for completion of each of the following activity?

Table 1.5: Distribution of Patient View on Time Spent in Billing, Cash Payment and collection of reports.

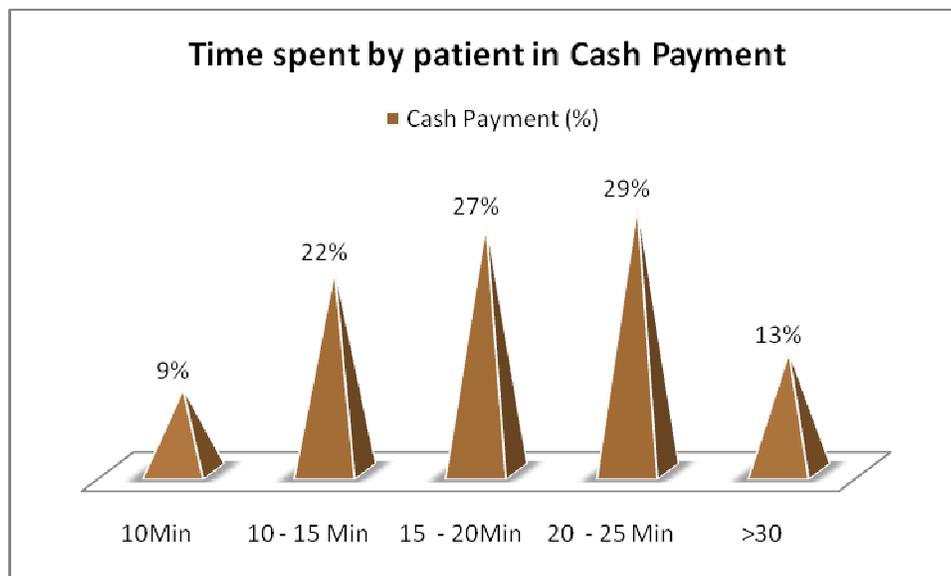
Criteria	Billing (%)	Cash Payment (%)	Collection of Report (%)
10Min	11(11%)	9(9%)	31(31%)
10 - 15 Min	9(9%)	22(22%)	36(36%)
15 - 20Min	28(28%)	27(27%)	20(20%)
20 - 25 Min	38(38%)	29(29%)	13(13%)
>30	14(14%)	13(13%)	0(0%)

Graph 1.5: Distribution of Patient View on Time Spent in Billing, Cash Payment and collection of reports.

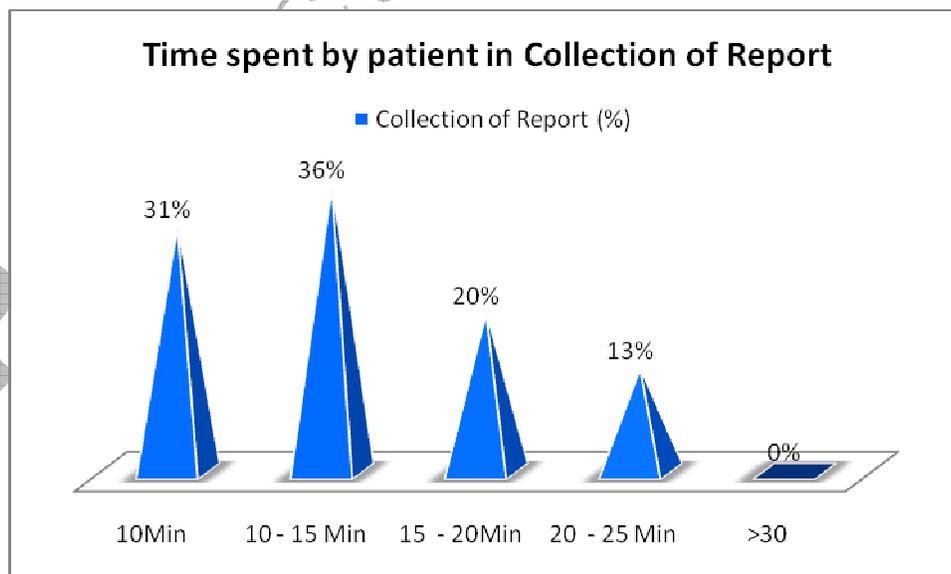
1.5. A: Time spent by Patient in Billing.



1.5. B: Time spent by Patient in Cash Payment.



1.5. C: Time spent by Patient in collection of reports.



As per shown in the above graph the average time spent by patient in billing, cash payment and collection of reports. For Billing, out of 100 patients, the highest 38% patients, waited for 20-25 min and least 9% waited for 10-15min. The second highest is 28% patients, which had to wait for 15-20min, 11% patients waited for 10min and 14% patients waited for more than 30 min.

For Cash Payment, out of 100 patients, the highest 29% patients, waited for 20-25 min and least 9% waited for 10min. The second highest is 27% patients, which had to wait for 15-20min, 22% patients waited for 10-15min and 13% patients waited for more than 30 min.

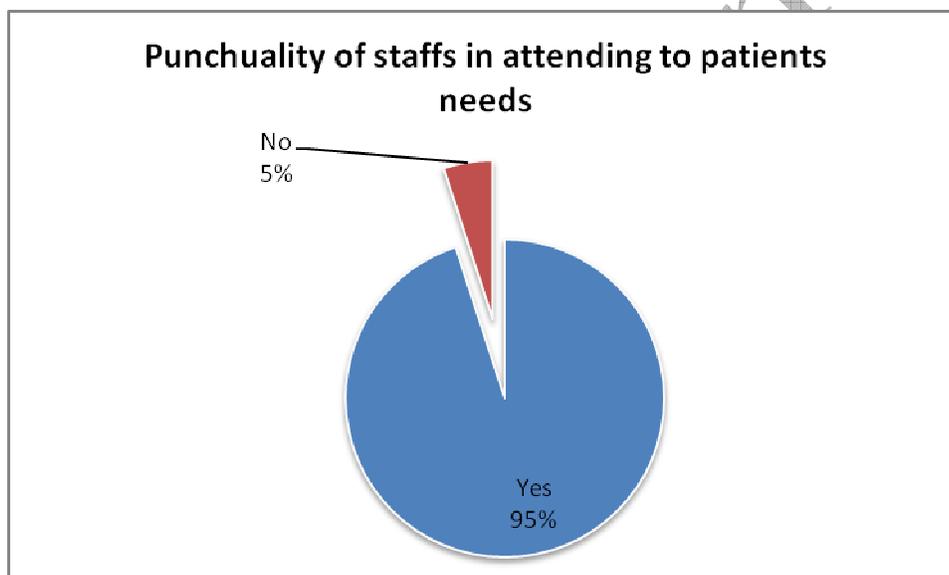
For Collection of reports, out of 100 patients, the highest 36% patients, waited for 10-15 min and least 0% waited for >30min. The second highest is 31% patients, which had to wait for 10min, 20% patients waited for 15-20min and 13% patients waited for more than 20-25 min.

Q6. Were the staffs punctual in attending to your needs?

Table 1.6: Staff's Punctuality on Attending to Patient's needs.

Criteria	Frequency	Percentage
Yes	95	95%
No	5	5%

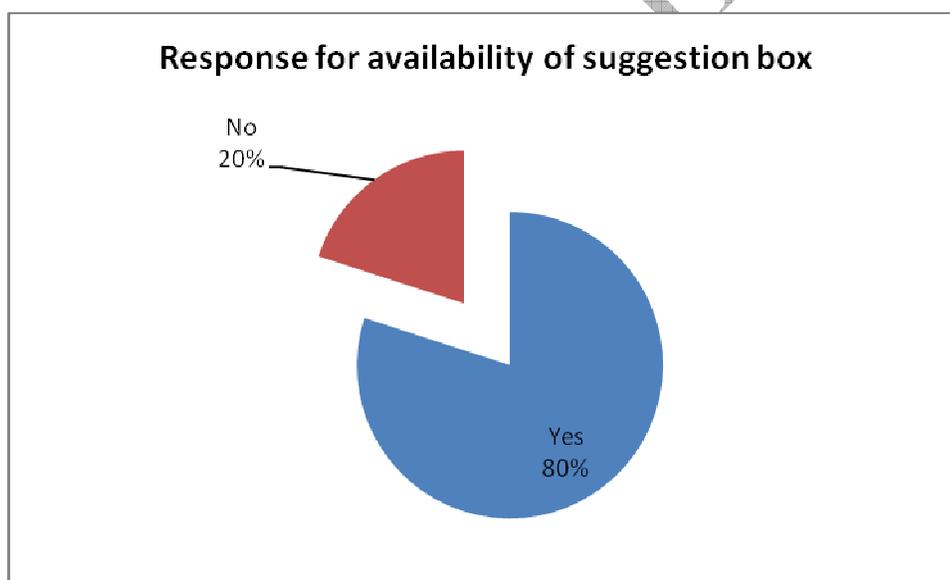
Graph 1.6: Staff's Punctuality on Attending to Patient's needs.



The patients view on punctuality of the staffs in attending to their needs,. Out of 100 patients, 95% patients agreed that staffs are Punctual in attending to the patients' needs and 5% patients disagreed to this.

Q7. Availability of suggestion / feedback box.**Table 1.7: Distribution of responses of the administration based on the availability of suggestion box for the patients.**

Criteria	No. of Respondent (Admin)	Percentage
Yes	4	80%
No	1	20%

Graph 1.7: Distribution of responses of the administration based on the availability of suggestion box for the patients.**Data analysis and interpretation:**

As per shown in the above pie graph the responses of the Administrators regarding the availability of suggestion box for patients. Out of 5 administrators, 4(80%) of them agreed to the availability of suggestion box while 1(20%) disagreed to this.

Q8. Respond to the suggestion / feedback of patients / visitors.**Table 1.8: Distribution of opinions of the administration regarding the response to the suggestion of the patients.**

Criteria	No. of Respondent (Admin)	Percentage
Good	1	20%
Satisfactory	3	30%
Average	0	0%
Need Improvement	0	0%
no suggestion box	1	20%

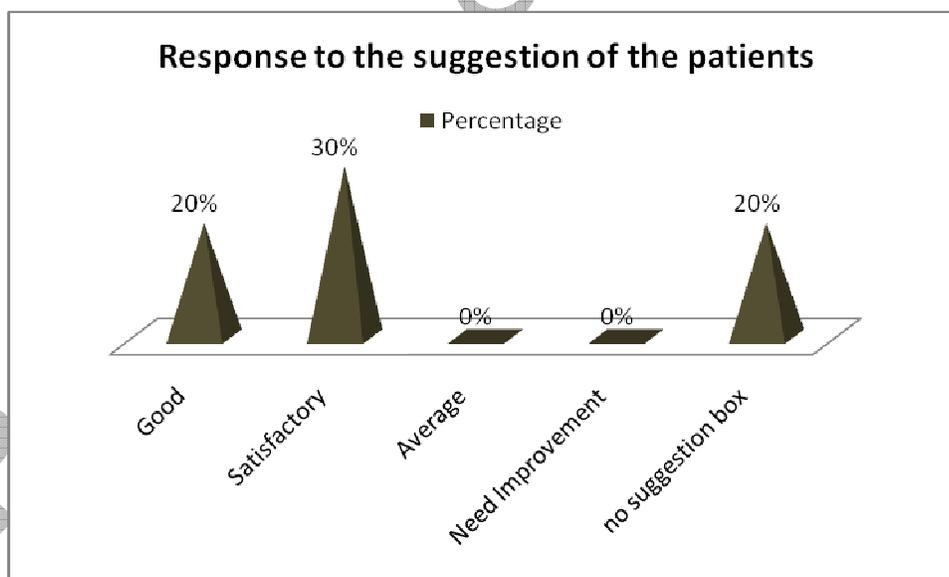
Graph 1.8: Distribution of opinions of the administration regarding the response to the suggestion of the patients.

Table 1.8 and graph 1.8 shows the responses of the administrators regarding the responses to the suggestion of the patients. Out of 5 (100%) administrators, 3 (60%) of them agreed that

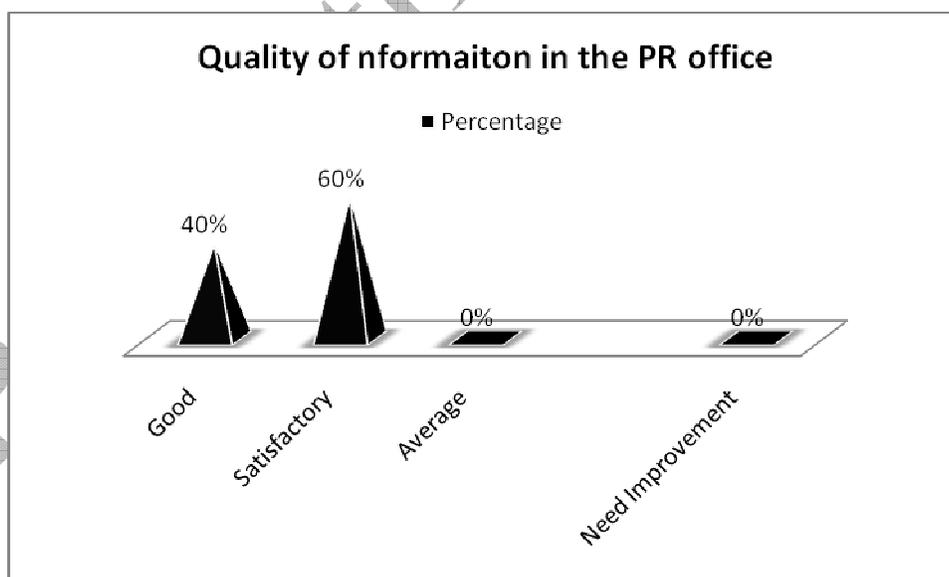
the response to the suggestion of the patients is satisfactory. 1 (20%) says that response to the suggestion of the patients is good whereas 1(20%) denied to the presence of suggestion box.

Q9. Quality of information given in the PR office for the queries.

Table 1.9: Distribution of opinions of the administration regarding the quality of information in the PR office.

Criteria	No. of Respondent (Admin)	Percentage
Good	2	40%
Satisfactory	3	60%
Average	0	0%
Need Improvement	0	0%

Graph 1.9: Distribution of opinions of the administration regarding the quality of information in the PR office.



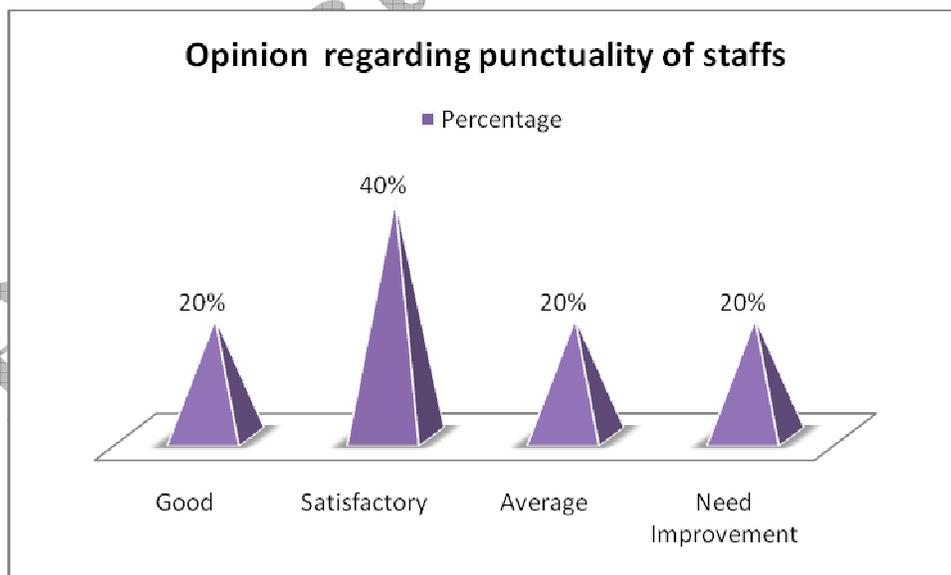
As per shown in the above graph the Administrators regarding the quality of information in the PR office. Out of 5(100%) administrators, 3(60%) of them agreed that information given in the PR office is satisfactory. 2(40%) says that information given in the PR office is good.

Q10. Punctuality of staffs in attending to Patients' needs.

Table 1.10: Distribution of opinions of the administration regarding the punctuality of staffs.

Criteria	No. of Respondent (Admin)	Percentage
Good	1	20%
Satisfactory	2	40%
Average	1	20%
Need Improvement	1	20%

Graph 1.10: Distribution of opinions of the administration regarding the punctuality of staffs.



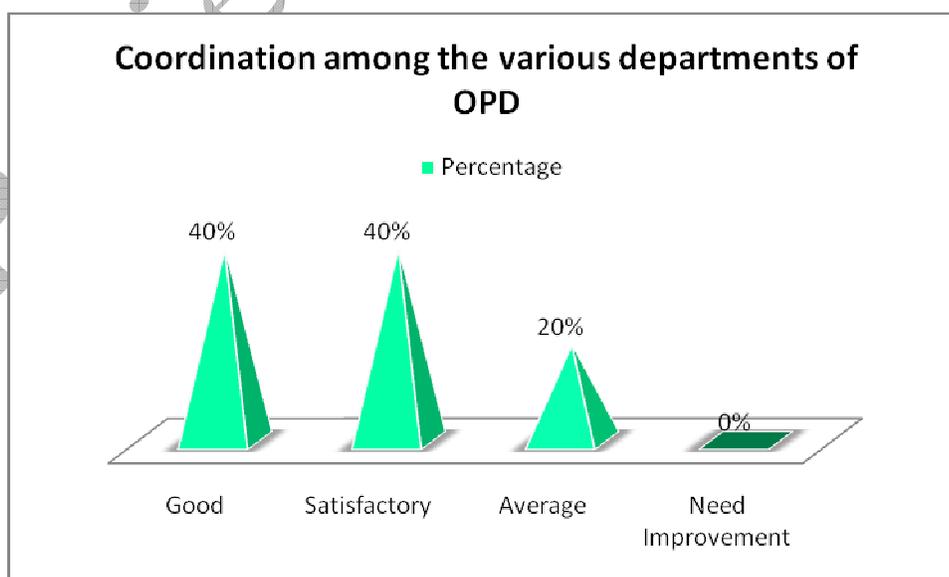
As per shown in the above graph the responses of the Administrators regarding the punctuality of staffs. Out of 5(100%) administrators, 2(40%) of them responded that punctuality of the staffs is satisfactory. 1(20%) says that it is good, 1(20%) responded to it as average and the rest 1(20%) says that punctuality of the staffs need improvement.

Q11. Coordination among the various departments of the OPD.

Table 1.11: Distribution of opinions of the administration regarding the Coordination among the various departments of OPD.

Criteria	No. of Respondent (Admin)	Percentage
Good	2	40%
Satisfactory	2	40%
Average	1	20%
Need Improvement	0	0%

Graph 1.11: Distribution of opinions of the administration regarding the Coordination among the various departments of OPD.



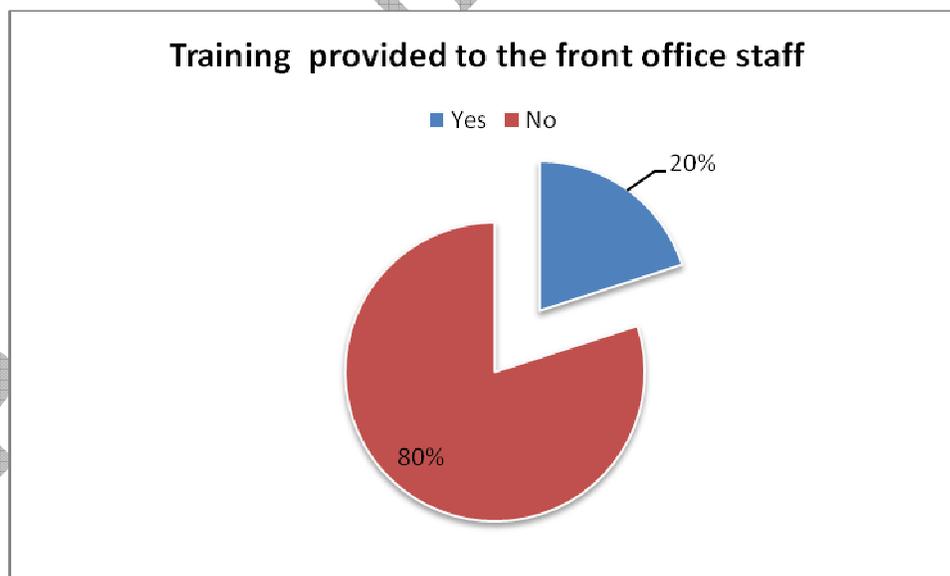
As per shown in the above graph the responses of the Administrators regarding the Coordination among the various departments of OPD. Out of 5(100%) administrators, 2(40%) of them responded that Coordination among the departments of OPD is good. 2(40%) says that it is satisfactory.

Q12. Do you provide any training for the front office staff in the OPD?

Table 1.12: Distribution of responses of the administration regarding any training being provided to the front office staff.

Criteria	No. of Respondent (Admin)	Percentage
Yes	1	20%
No	4	80%

Graph 1.12: Distribution of responses of the administration regarding any training being provided to the front office staff.



Shows the responses of the Administrators regarding any training being provided to the front office staff. Out of 5(100%) administrators, 4(80%) disagreed while 1(20%) agreed to this.

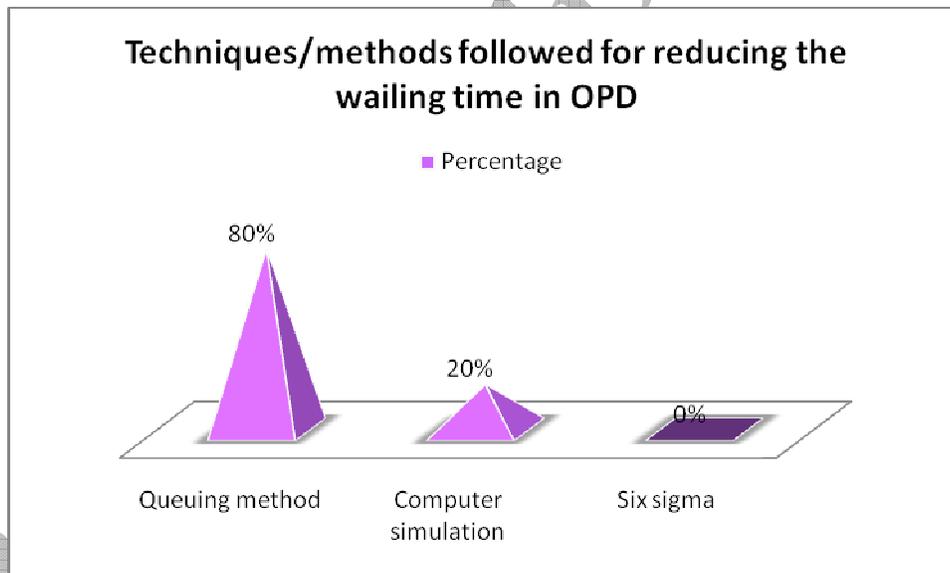
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Q13.Are the following techniques/methods followed for reducing the wailing time in OPD?

Table 1.13: Distribution of opinion of the administration regarding any techniques/methods followed for reducing the wailing time in OPD.

Criteria	No. of Respondent (Admin)	Percentage
Queuing method	4	80%
Computer simulation	1	20%
Six sigma	0	0%

Graph1.13: Distribution of opinion of the administration regarding any techniques/methods followed for reducing the wailing time in OPD



As per shown in the above graph the responses of the Administrators regarding any techniques/methods followed for reducing the wailing time in OPD. Out of 5(100%) administrators, 4(80%) of them responded that Queuing method is followed while 1(20%) says that Computer simulation is followed.

Q14. Does the OPD start on time?**Table 1.14: Distribution of Staff view on starting of the OPD in time.**

Criteria	No. of staffs	Percentage
Yes	10	100%
No	0	0%

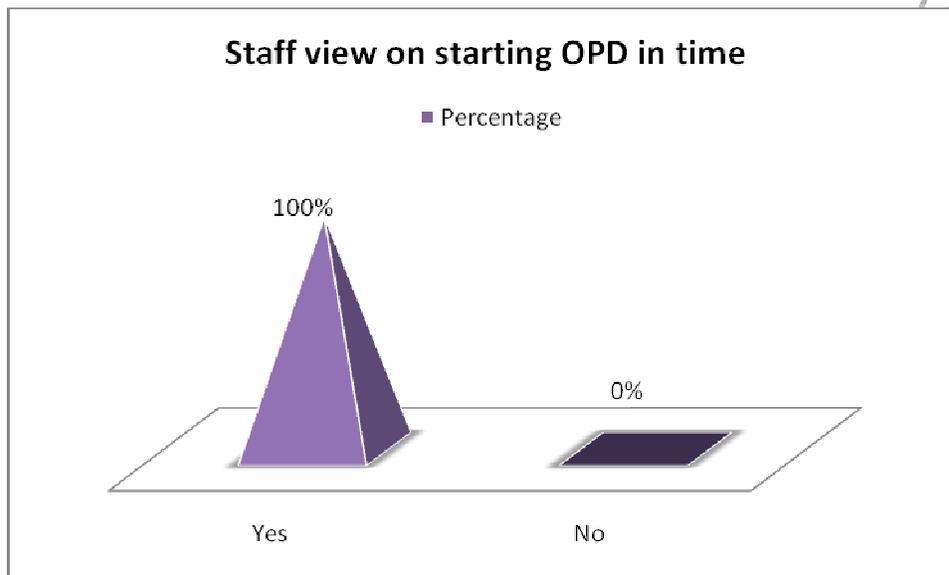
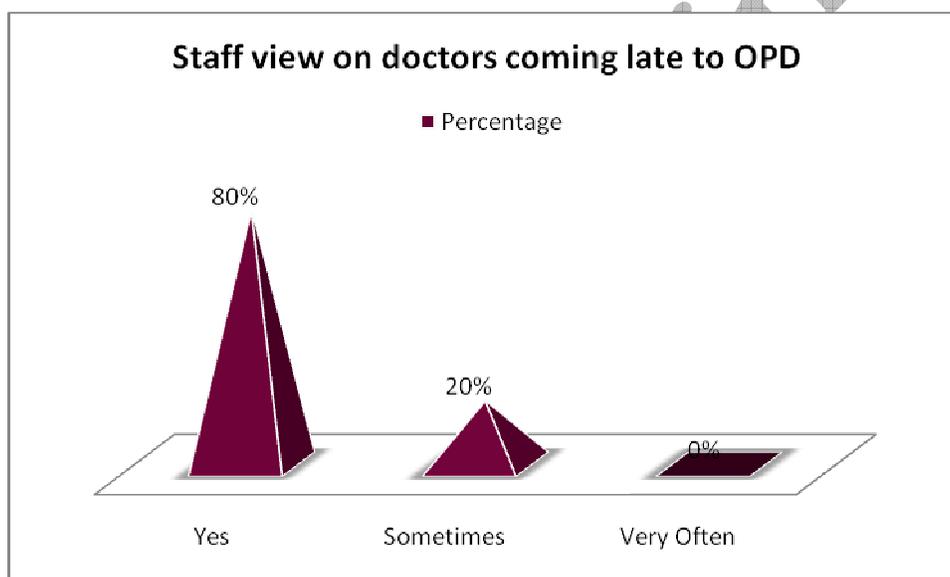
Graph1.14: Distribution of Staff view on starting of the OPD in time.

Table 1.14 and graph 1.14 shows the distribution of Staff view on starting of the OPD in time. Out of 10(100%) staff, all 10(100%) of them responded that OPD starts on time.

Q15. Do the doctors come late?**Table 1.15: Distribution of Staff view on doctors coming late to OPD.**

Criteria	No. of staffs	Percentage
Yes	8	80%
Sometimes	2	20%
Very Often	0	0%

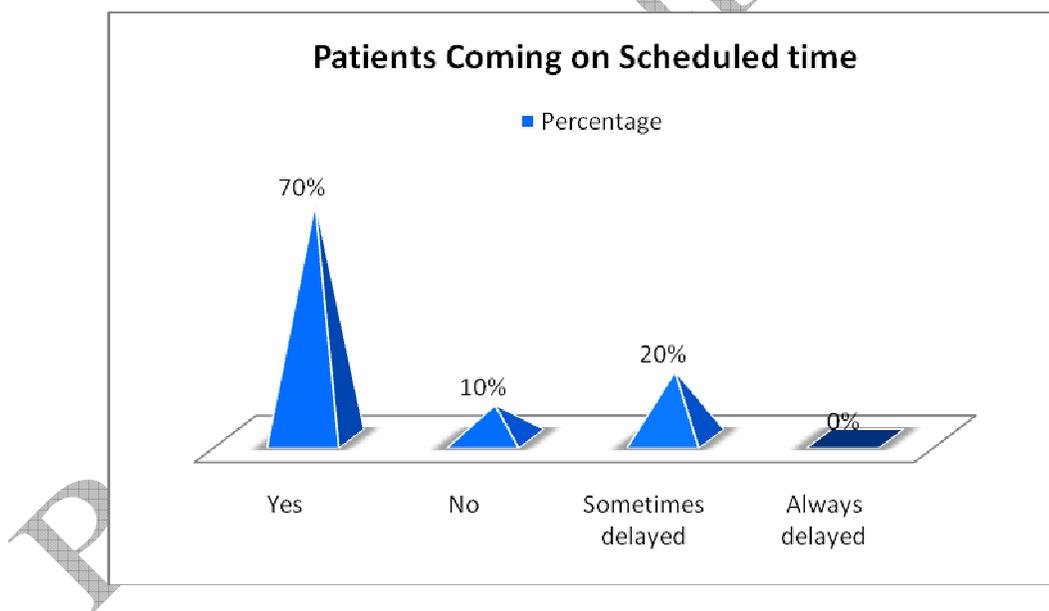
Graph 1.15: Distribution of Staff view on doctors coming late to OPD.

As per shown in the above graph the distribution of the staff view on doctors coming late to OPD. Out of 10(100%) staff, 8(80%) of them says that doctors do not come late to OPD.

While 2(20%) staffs responded that sometimes the doctors do come late.

Q16. Do the patients come on scheduled appointment time?**Table 1.16: Distribution of Staff view on Patients Coming on Scheduled appointment****Time to OPD.**

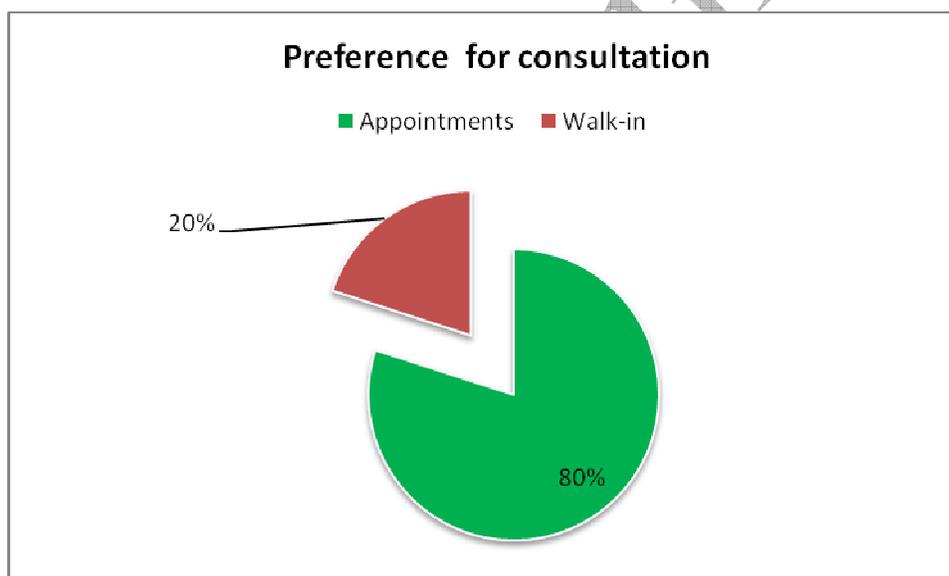
Criteria	No. of staffs	Percentage
Yes	7	70%
No	1	10%
Sometimes delayed	2	20%
Always delayed	0	0%

Graph 1.16: Distribution of Staff view on Patients Coming on Scheduled appointment**Time to OPD.**

Shown in the above graph and table the distribution of the staff view on patients coming on scheduled appointment time to OPD. Out of 10(100%) staff,7(70%) of them says patients do come on scheduled time. 2(20%) responded that sometimes the patients get delayed and the rest 1(10%) says that patient do not come on scheduled appointment time.

Q17. Who is given the preferences for consultation/investigation?**Table 1.17: Distribution of Staff view on Preference given to patient for consultation.**

Criteria	No. of staffs	Percentage
Appointments	8	80%
Walk-in	2	20%

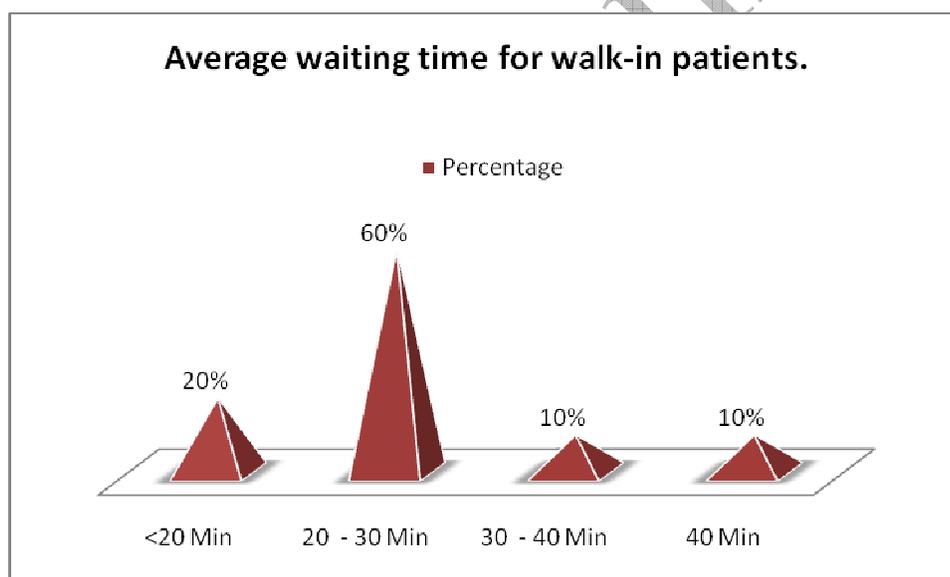
Graph 1.17: Distribution of Staff view on Preference given to patient for consultation.

As per shown in the above graph the Distribution of Staff view on Preference given to patient for consultation. Out of 10(100%) staffs, 880%) of them says that walk-in patient are given the preferences for consultation.

Q18. In case of heavy patient flow in any department, do you limit the no. of patients in each OPD?

Table 1.18: Average waiting time for walk-in patients.

Criteria	No. of staffs	Percentage
<20 Min	2	20%
20 - 30 Min	6	60%
30 - 40 Min	1	10%
40 Min	1	10%



As per shown in the above graph the distribution of staff view on average time for the walk-in patients. Out of 10(100%) staffs, 60% of them says that average waiting time for the walk-in patients is 20-30 min, 2(20%) says waiting time is less than 20 min, while among the rest 2(20%), 1(10%) staff says 30-40min and 1(10%) staff says more than 40min

Chapter – 7

FINDINGS AND SUGGESTION

The study entitled- **“A RECOMMENDATION ON REDUCING WAITING TIME IN THE OUT-PATIENT DEPARTMENT IN TAIBA HOSPITAL”** was under taken with main objectives to demine the flow of patient and average time spent in the OPD, to identify the factors those are responsible for high waiting time and to recommend appropriate suggestions to optimize the waiting in OPD.

The study is conducted in a 550 bedded multi specialty hospital at Kuwait. This esteemed institute is well known for its multitude of services. The hospital is equipped withal modern technologies and rendering excellent services at an affordable cost.

Analysis of data was done through tables and graphs showing the number of respondents and their respective percentage and percentage bar diagrams were used for the interpretation of the results.

- The result shows that average no. of patients coming to OPD each day as walk in (100-150) is more in comparisons to the appointment patients (20-30) approx.
- The study shows that the waiting time spent by the patients in reception for registration is much less in case of maximum no. of patients compared to lesser no. of patients whose waiting time exceeds more than 30 min. This represents the efficiency of the registration process in the OPD.

- Study depicts that the average waiting time spent in OPD for consultation is around 30 min and time taken during consultation is 20-30min which states that OPD of the hospital functions satisfactorily.
- It is found that the time consumed during investigation viz, laboratory and radiology is less in compared to time taken in pharmacy. More patients are satisfied with the time taken during laboratory and radiology test while maximum no. of patients are dissatisfied with the functions of the pharmacy. Patients had to wait for long in the queue of pharmacy to collect the medicine.
- Study revealed that billing and cash payment consumes 25-30 min which itself serves as dissatisfaction for the patients.
- Collection of reports consumes least time i.e. 10-15min.
- The study shows that maximum no. of patients are satisfied with the punctuality of the staffs in attending to their needs.
- Administrative staffs are quite concerned towards the patients' expectation. They serve the suggestion box for patients and make sure to respond to the suggestion satisfactorily.
- Queuing method is followed for reducing waiting time in OPD.
- Study depicts that OPD always starts on time and the doctors mostly comes on time. Patients also come on scheduled appointment time sometime getting delayed.
- Preference for consultation is always given to the appointment patients and records of the arrival, departure and waiting time of patients is maintained.

- Hospital has future plans of renovate their OPD infrastructure to provide the better facilities to their patients.

SUGGESTION (RECOMMENDATIONS)

Some suggestion to improve the OPD facilities are as follows:-

- Number of counters and staffs in pharmacy must be increased to avoid long waiting time for the patients.
- Number of staffs should be increased in the depts., with large no. of patients.
- Number of registration counters should be increased because during the peak hours it may result in the negative image of the hospital in the mind of the patients.
- The waiting area should be more spacious.
- Hospital should give separate outpatient feedback form.
- Regarding the design of the OPD, the registration counter and enquiry desk should be open and near to the entrance of OPD and emergency dep., all the diagnostic dept. should be near to the consultancy rooms.
- Divide the whole OPD into two sections, one for the Surgical OPDs and another for the other OPDs along with separate nurse stations. It helps patients to find their way more easily without any confusion.
- Hospital authorities should appoint more qualified and senior staff in OPD.
- Parking of vehicles should be free of cost for the patients and their attenders.

Chapter – 8

CONCLUSION

Patients attending each hospital are responsible for spreading the good image of the hospital and therefore satisfaction of patients attending the hospital is equally important for hospital management. Various studies about outpatient service have elicited problems like overcrowding, delay in consultation, proper behaviour of the staff etc. The study reveals the average spend by the patients and also expresses their view towards the hospital and hospital's services provided by the hospital and the total consumed on each activity. In this study, it was found patients constitute of all age groups and genders among which most of them were females. Study depicts that average no. of patients coming to OPD each day as walk-in is more in comparison to the appointment patients.

Administrative staffs are quite concerned towards the patient's expectation. They serve the suggestion box for patients and make sure to respond to the suggestion satisfactorily. Queuing method is followed for reducing waiting time in OPD. Study depicts that OPD always starts on time and the doctors mostly comes on time. Patients also come on scheduled appointment time sometimes getting delayed.

Since Reception centre being the primary bottleneck of the system, by increasing another server here, the system may be made to work in steady state.

- The possibility of clubbing function of Reception centre with the registration may also be explored since this could cut down one additional node and a total process time of 10 minutes approximately for each patient.
- However it was evidently proved through the simulations that having a single refraction chamber with 8 or even 6 technicians, the hospital could reduce waiting time up to 25 percent, as well as better utilization of resources.
- Advanced simulations using simulators would help the administrators to visually see what happens when we change the resources in the system. In healthcare Queue modeling can be applied in the areas wherever queue is involved such as rationing, scheduling, Bed allocation, laboratory design, and so on.

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QUESTIONNAIRE

Dear Respondents,

I am **MOHAMED EI ZOGBHY EI BADRAWY** a student of **MBA**, as a part of my curriculum; I am to take a research Project on **“A RECOMMENDATION ON REDUCING WAITING TIME IN THE OUT-PATIENT DEPARTMENT IN TAIBA HOSPITAL”** To enable to undertake above mentioned study, I request you to give your fair views. Your insights and perspective are important and valuable for my research.

Policy on Confidentiality: Please feel free to give your honest responses. The confidentiality of the information provided by the respondent is completely assured.

Name :

Age :

Sex :

Address :

Gender :

Contact No. :

FOR PATIENTS

Section - I

Waiting Time:

6) Waiting time spent in reception for registration.

- a. <15 Min
- b. 15 - 20 Min
- c. 20 - 25 Min
- d. 25 - 30 Min
- e. >30 Min

7) Waiting time for consultation.

- a. <15 Min
- b. 15 - 20 Min
- c. 20 - 30 Min
- d. 30 - 40 Min
- e. >40 Min

8) Time spent for consultation.

- a. <15 Min
- b. 15 - 20 Min
- c. 20 - 25 Min
- d. 25 - 30 Min
- e. >30 Min

9) Time spent for investigation.

Laboratory

- a. 10Min
- b. 10 - 15 Min
- c. 15 - 20Min
- d. 20 - 25 Min

Radiology

- e. 10Min
- f. 10 - 15 Min
- g. 15 - 20Min
- h. 20 - 25 Min

Pharmacy

- a. 10Min
- b. 10 - 15 Min
- c. 15 - 20Min
- d. 20 - 25 Min

10) How much time did you spend for completion of each of the following activity?

Billing:

- a. 10Min
- b. 10 - 15 Min
- c. 15 - 20Min
- d. 20 - 25 Min

Cash Payment:

- a. 10Min

- b. 10 - 15 Min
- c. 15 - 20Min
- d. 20 - 25 Min

Collection Reports:

- a. 10Min
- b. 10 - 15 Min
- c. 15 - 20Min
- d. 20 - 25 Min

Q6. Were the staffs punctual in attending to your needs?

- a. Yes
- b. No

For OPD Supervisors & Administrators

SECTION II

1 Availability of suggestion / feedback box:

- a. Yes
- b. No

2. Respond to the suggestion / feedback of patients / visitors.

- a. Good

- b. Satisfactory
- c. Average
- d. Need Improvement

3. Quality of information given in the PR office for the queries.

- a. Good
- b. Satisfactory
- c. Average
- d. Need Improvement

4. Punctuality of staffs in attending to Patients' needs.

- a. Good
- b. Satisfactory
- c. Average
- d. Need Improvement

5. Coordination among the various departments of the OPD.

- b. Good
- c. Satisfactory
- d. Average
- e. Need Improvement

6. Do you provide any training for the front office staff in the OPD?

- a. Yes
- b. No

7. Are the following techniques/methods followed for reducing the waiting time in OPD?

- a. Queuing method
- b. Computer simulation
- c. Six sigma
- d. Appointment and scheduling system

For Staff

Section III

1. Does the OPD start on time?

- a. Yes
- b. No

2. Do the doctors come late?

- a. Yes
- b. Sometimes
- c. Very Often

3. Average no. of patients coming to the different OPDs each day?

- a. Appointments
- b. Walk-in

4. Do the patients come on scheduled appointment time?

- a. Yes
- b. No
- c. Sometimes delayed
- d. Always delayed

5. Who is given the preferences for consultation/investigation?

- a. Appointments
- b. Walk-in

6. In case of heavy patient flow in any department, do you limit the no. of patients in each OPD?

- a. <20 Min
- b. 20 - 30 Min
- c. 30 - 40 Min
- d. >40 Min

7. In case of heavy patient flow in any department, do you limit the no. of patients in each OPD?

- a. Yes
- b. No

8. Do you maintain any record of the arrival, departure and waiting patients at different times of a day?

- a. Yes
- b. No

9. How do you respond to the calls?

- a. Quickly
- b. Very quality

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