

To Improve Operational Efficiency of the Outpatient Department Using Lean Six Sigma Methodology

Internship & Dissertation

at

Burjeel Hospital for Advanced Surgery

Under Guidance of
Major (Dr.) Vinod Kumar

Presented By:
Kritika Swaroop
Roll Number : 1401
PGDHM -17
Hospital Batch

Contents

- ▶ Objectives & Learning Outcomes of Dissertation & Internship
- ▶ About BHAS
- ▶ Activity Plan
- ▶ Project Undertaken
- ▶ Methodology Employed
 - Observations
 - Issues Identified
 - Fish Bone Analysis
 - Proposals Implemented by Hospital
 - Other Suggestions
 - Findings
- ▶ Conclusion



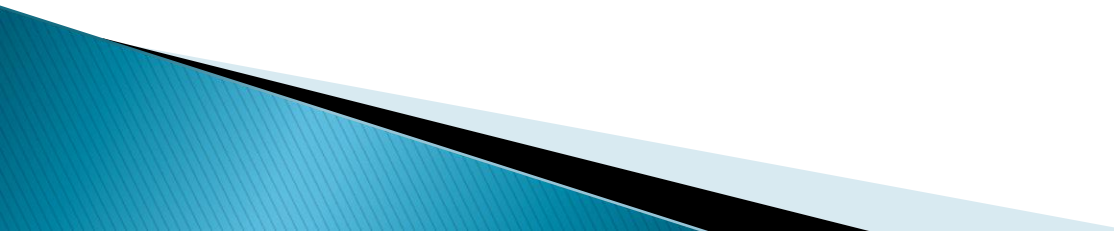
Dissertation – Objectives & Learning Outcome

The Objectives of the dissertation were to:

- ▶ Put into practice theories and concepts learned on the programme;
- ▶ Provide an opportunity to study a particular topic in depth;
- ▶ Show evidence of independent investigation;
- ▶ Combine relevant theories and suggest alternatives;
- ▶ Enable interaction with practitioners (where appropriate to the chosen topic);
- ▶ Show evidence of ability to plan and manage a project within deadlines

What I achieved from doing this Dissertation / Learning Outcome

I have been able to:

- ▶ Present independently an academic project work similar in many ways to a research work;
 - ▶ Apply theoretical concepts taught in class to specific situations which arose during the project work;
 - ▶ Sharpen my critical judgment by interacting with practitioners and professionals in the real world
 - ▶ Gain a deeper understanding of my chosen subject area;
 - ▶ Manage a project within strict deadlines by understanding related processes and limitations
- 

About BHAS

- ▶ Commenced operations in **June 2013**
- ▶ **35-bed** super specialty hospital- specialized in **Orthopedic Surgery**
- ▶ One of the 12 hospitals of the **VPS Group of Hospitals** in Middle East and India
- ▶ Owned by **Dr. Shamsheer Vayalil Parambath**
 - One of youngest Indians to have received **Pravasiya Bharatiya Award** in 2014
- ▶ **Dr. Samih Tarabichi**- Director General of the hospital
 - Foremost orthopedic surgeon in the Middle East
 - Holds **four orthopedics patents** in the United States

Activity Plan

TIME →	February		March				April				May				
↓ ACTIVITY	wk3	wk4	wk1	wk2	wk3	wk4	wk1	wk2	wk3	wk4	wk1	wk2			
Understand the working of hospital, get acquainted with various departments, discuss project with HOD															
Start survey of OPD: interview/discuss with staff; register timings, find possible gaps															
Transfer collected data into MS Excel and contrust tables and pie-charts to analyze the results															
Discuss with HOD possible measures to reduce waiting time, suggest alternatives															
Implement corrective meausres															
Analyse waiting time after implementation of corrective measures															

Project Undertaken

TO IMPROVE OPERATIONAL EFFICIENCY
IN OUTPATIENT DEPARTMENT OF
BURJEEL HOSPITAL FOR ADVANCED SURGERY (BHAS)
USING LEAN SIX-SIGMA METHODOLOGY

Reasons for Selecting Topic

- ▶ Provide faster & more efficient treatment to patients
- ▶ Implement **Mandate from Health Authority of Abu Dhabi (HAAD) & Dubai Health Authority (DHA)** - 30 minutes mandated max. waiting time for Orthopedic clinics
(Present average waiting time- 65 minutes)
- ▶ Align with the overall CQI project of hospital's Quality Department
- ▶ High Waiting time was a **Pain Point** of the hospital
- ▶ High Waiting time reduces overall efficiency
- ▶ High Waiting time leads to bad marketing- brings down image of hospital

Methodology

▶ **STUDY DESIGN**

- Cross-sectional study
- Data sources:
 - Primary Data
 - Manual data collection from OPD
 - Interview with staff (Doctors, nurses, front desk staff)
 - On-field notes
 - Brainstorming amongst
 - Operations Director
 - Medical Director
 - Front Office Supervisor
 - Quality Manager
 - OPD in-charge
 - Nursing Director

Methodology (...contd.)

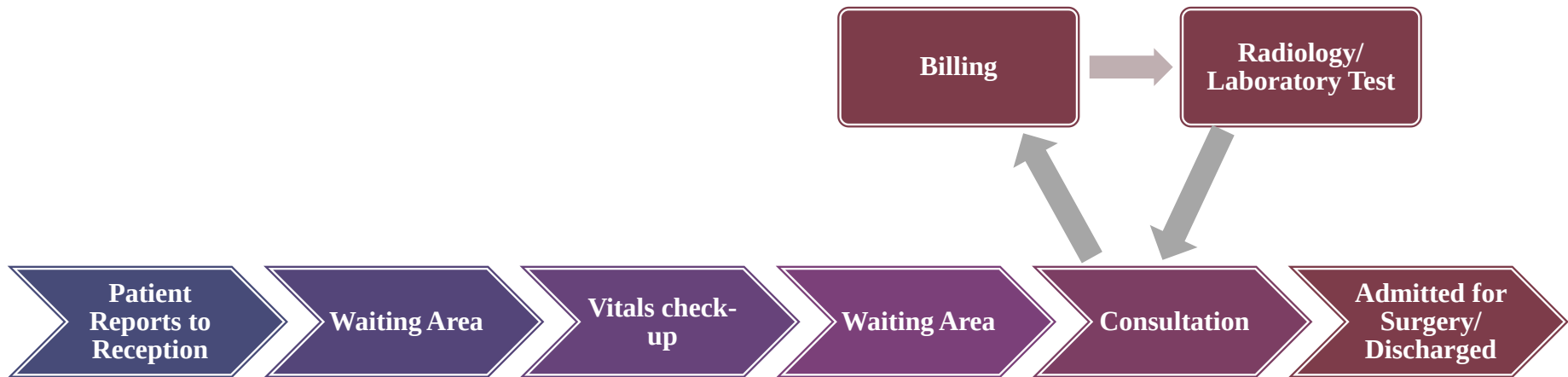
- Secondary Data
 - Recordings of SAP
 - Patient feedback forms

▶ STUDY DESIGN (...contd.)

- Sampling Technique:
 - Non-Probability Sampling
- Research Instruments:
 - FOCUS/ PDCA
 - Risk Assessment Chart
 - Ishikawa Analysis

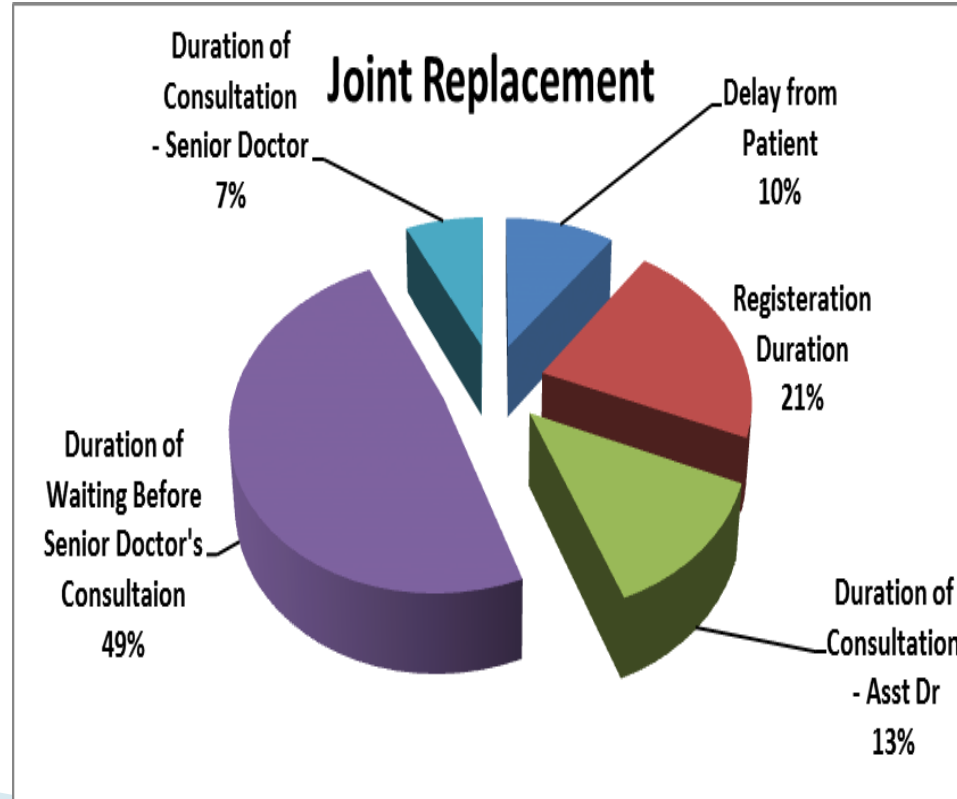
Outpatient Department

- ▶ OPD of BHAS receives 45 patients approximately on a daily basis
- ▶ Staffing: 9 Doctors, 7 Nurses, 11 Registration & Billing Staff
- ▶ Work flow:



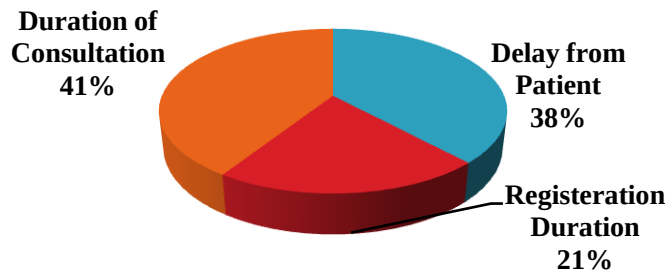
Joint-Replacement Clinic

- ▶ Receives majority of patients in hospital (~ 75%)
- ▶ Waiting time is often stretched - averaging 60 mins
- ▶ Break-up of patients' time spent in joint replacement clinic (N=91 mins):

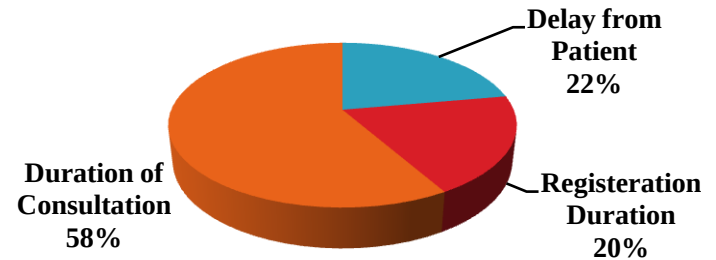


Break-Up of Patients' Time in Other Clinics

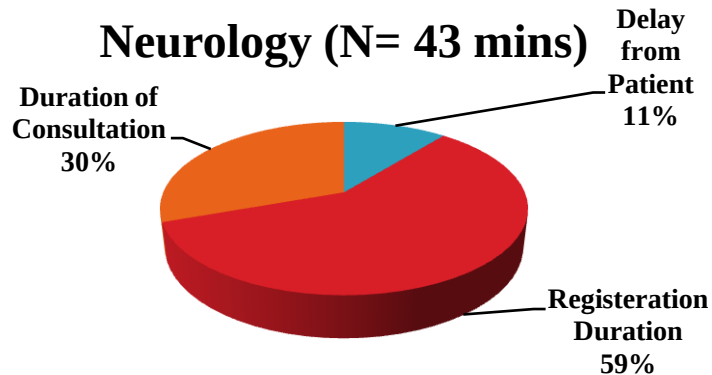
Sports Ortho (N=73 mins)



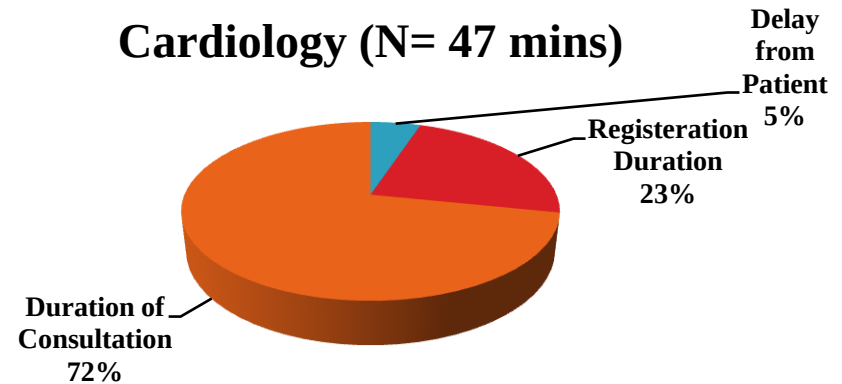
Pediatric Ortho (N=71 mins)



Neurology (N= 43 mins)



Cardiology (N= 47 mins)



Reasons Identified for Increased Waiting Time

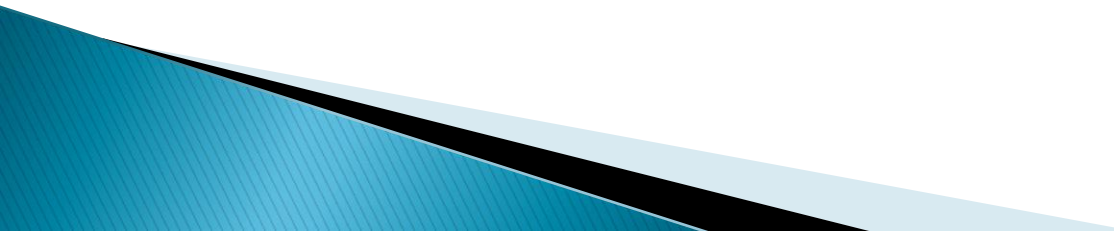
▶ **Equipment**

- Printer, Computer and ID card reader
- Printer machine
- Insurance claim forms

▶ **Site**

- Over-crowding and mix-up during the peak hours
- Registration Desk
- Common counter for new & follow-up visits

▶ **Skills**

- Competency of front-desk staff during peak hours
 - Organizing Medical Records & stationery
- 

Reasons Identified for Increased Waiting Time

(contd...)

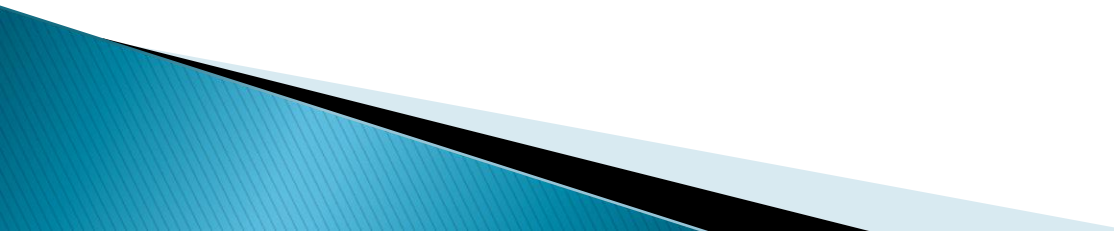
▶ System

- Replacement during prayer/lunch time
- Advance notification to patients

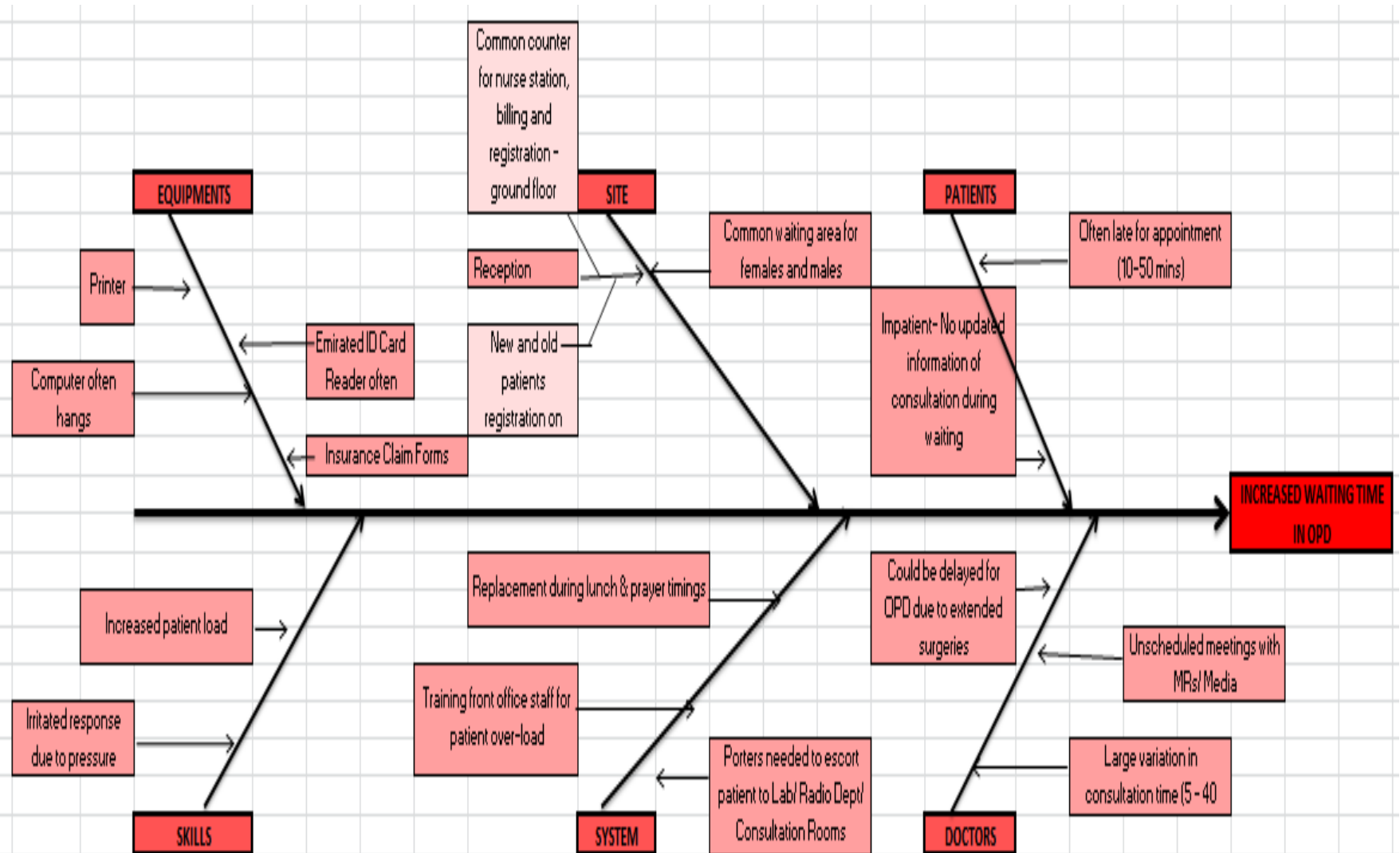
▶ Doctor

- Variation in duration of consultation (ranging from 5 to 40 minutes)

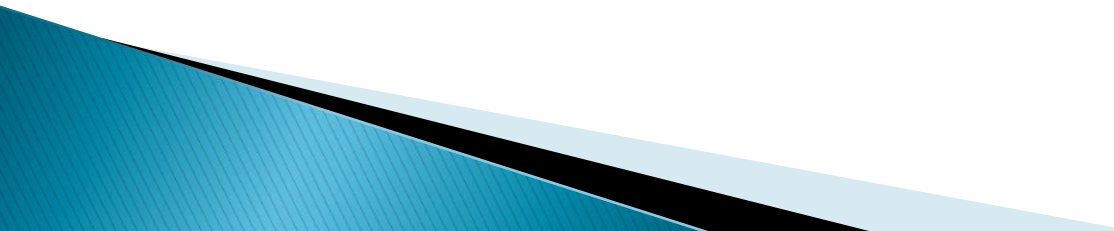
▶ Patient

- Delay in arrival (ranging from 10-50 minutes)
 - Walk-in patients
- 

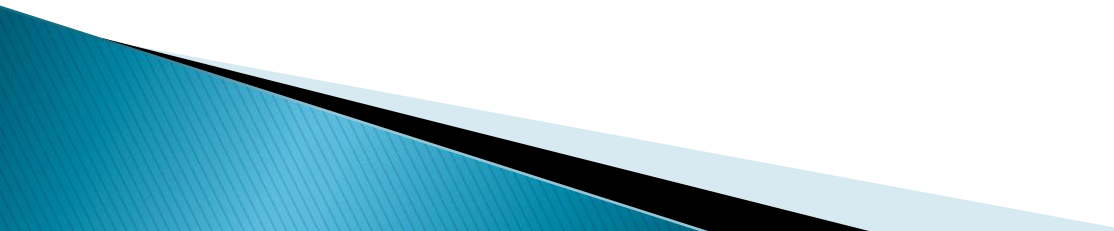
Fish Bone Diagram



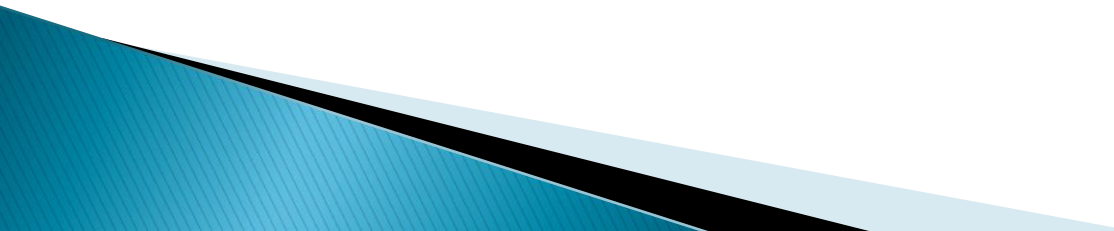
Proposals & Implementations

- ▶ Increase number of Assistant doctors
 - ▶ Set time limit of consultation for Senior Doctor to 15 minutes
 - ▶ Change time slots of appointments (from 30 minutes gap to 45 minutes)
 - ▶ Advance scheduling of meetings with Medical Representatives & Media
 - ▶ Install separate Nursing unit & Billing counter
 - ▶ Redistribute consultation rooms between 1st & ground floor OPDs
 - ▶ Appoint Front Office Supervisor
 - ▶ Reduce total appointments per day from 45 to 30
 - ▶ Train Front desk staff
- 

Proposals Yet to Be Implemented

- ▶ Dedicating one nurse to organize patient flow
 - ▶ Installing a Zebra printer in Nursing Station
 - ▶ Installing a new billing counter on Ground floor
- 

Conclusion

- ▶ Average waiting time reduced from 65 minutes to 30 minutes
 - ▶ Efficiency of project supported by reduced number of complaints from patients in OPD
 - ▶ Higher rate of staff satisfaction achieved
 - ▶ As part of CQI, further reduction in waiting time is being targeted
- 

Thank
You

Q & A

