



**Time Motion study to reduce patient waiting time by using
DMAIC approach of Six- sigma at Registration, Refraction
and Retina department of Sankara Eye Hospital,
Coimbatore**

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Introduction

The outpatient department is the division of the hospital which offers types of assistance to a patient who isn't hospitalized. OPD of the medical clinic becomes one of the significant zones as it is the primary spot of direct experience with the patient and one of the significant incomes producing zone too.

The background of the slide is a light gray gradient. It is decorated with several realistic water droplets of various sizes, some at the top and some at the bottom. In the upper center, there is a faint, circular logo or watermark that appears to be a university crest or seal.

Methodology

Research question

What is the current process flow of the OPD department of the hospital?

What are the possible factors, directly affecting increased waiting time in Registration, Refraction, and Retina department (if any)?

What are the possible solutions for reducing the waiting time?

Study setting

Outpatient department of Sankara Eye Hospital, Coimbatore

Sampling

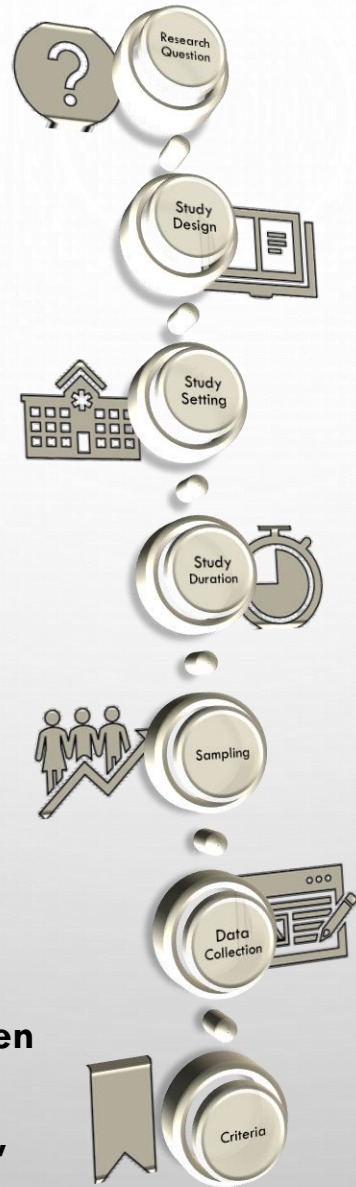
Sample size- 150

Sampling Technique- Non- probability, convenient sampling

Inclusion criteria

Data were collected of the patient visiting OPD between working hours 9 am to 6 pm

Data were collected only from 3 OPD departments i.e., registration, refraction, and retina



Study design

Descriptive Cross-sectional

Study duration

3 months- 3rd February 2020 to 2nd May 2020

Data collection

Primary data- Real-time tracking with a mobile stopwatch

Secondary data- Information gathered from HIS

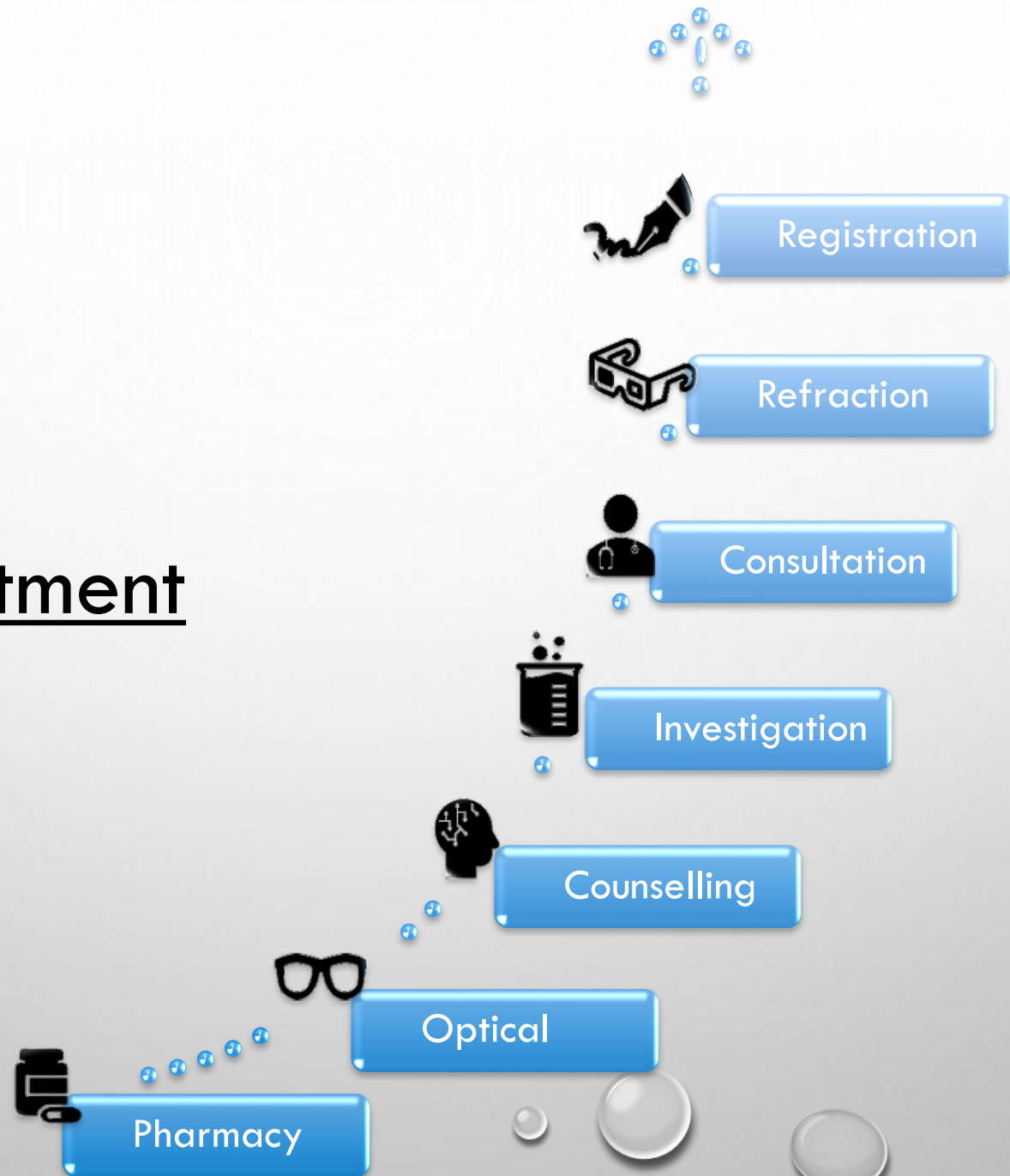
Exclusion criteria

Investigation, counselling, optical and pharmacy waiting time are not included

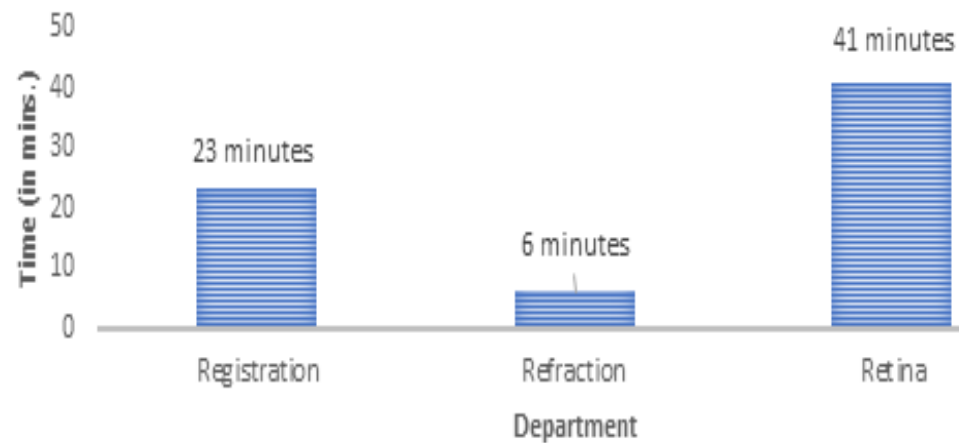


Findings

Process flow of Outpatient department



AVERAGE WAITING TIME IN DIFFERENT DEPARTMENT



Observation

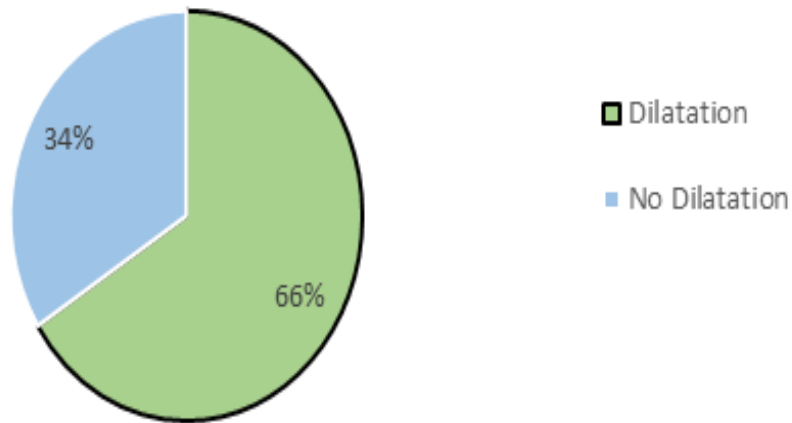
Average waiting time at registration, refraction, and retina were 23 minutes, 6 minutes, and 41 minutes respectively.



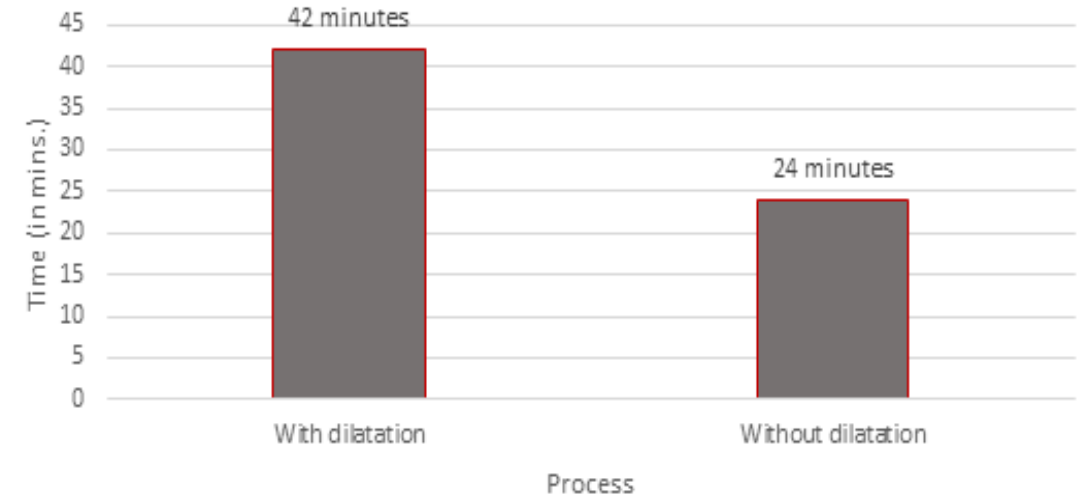
Impact

Increased waiting time leads to dissatisfaction in patient.

Percentage of patient going for dilatation process in
Retina department



Average waiting time of patient with dilatation process
and without dilatation process



Observation

66 percent of total patients going to the retina department were given dilatation drop.



Observation

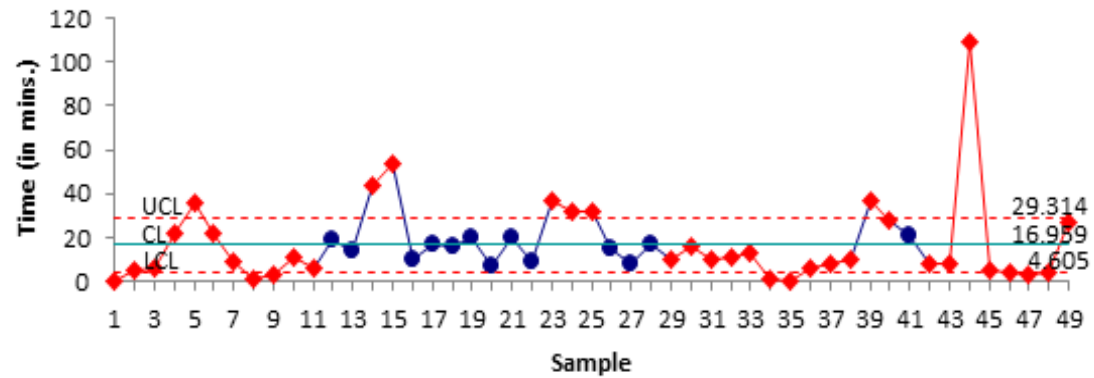
The graphs show the average waiting time of patients with dilatation process and without dilatation process which is 42 minutes and 24 minutes respectively.



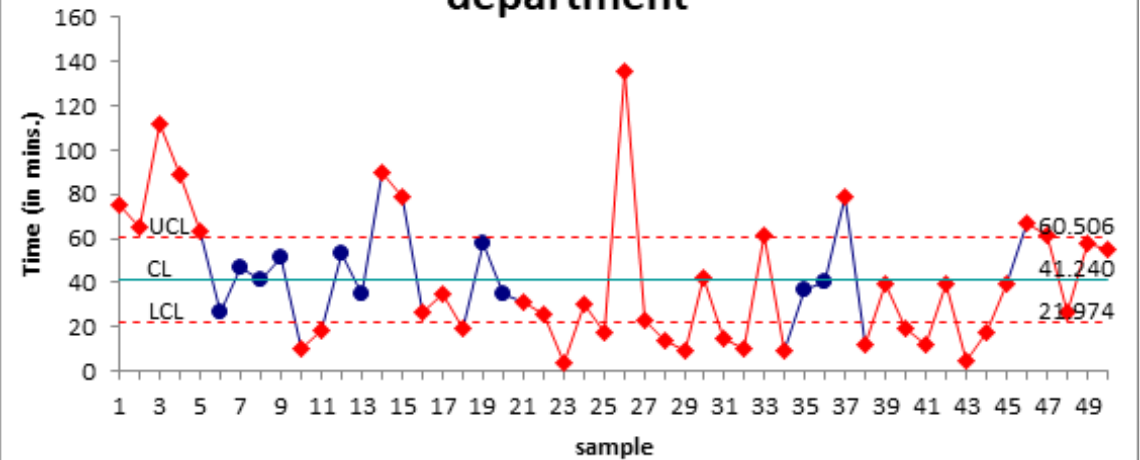
Impact

Dilatation was found to be one of the important causes of delay in the waiting time of the retina department.

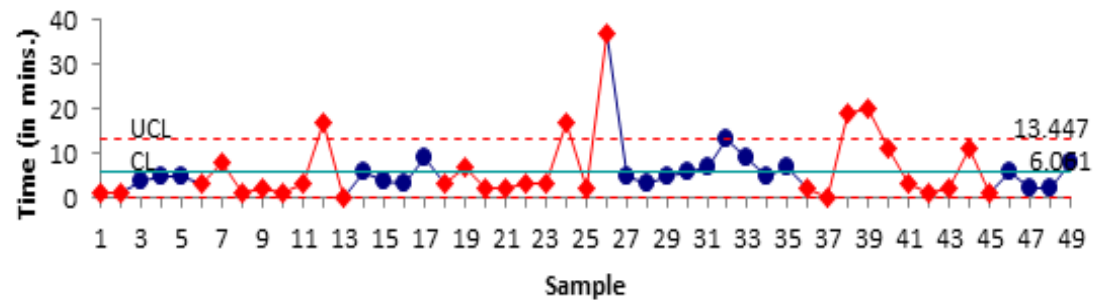
Waiting time c- Chart of Registration department



Total waiting time c- Chart of Retina department



Waiting time c- Chart at Refraction department



Observation

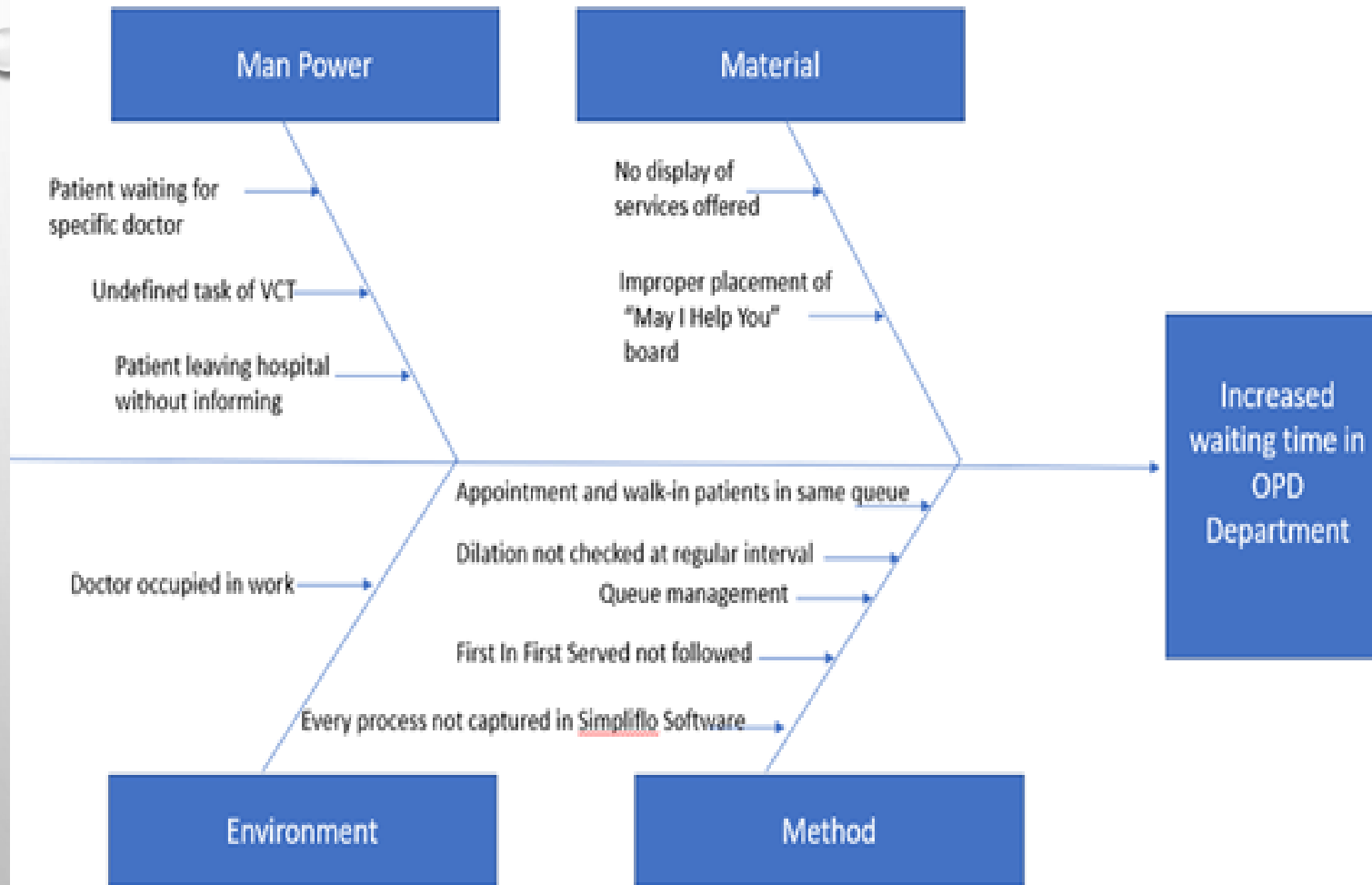
C- chart of all the three department shows unpredictability and instability of the process.



Impact

Increased waiting time.

Fish Bone Diagram



Appointment and walk-in cases are considered the same.

May I help you person given other roles and responsibility as well.

Improper placement of May I Help You board

No display about fast track services.

The undefined task of VCT and optometrist.

Dilation not checked at regular intervals.

Patient waiting for specific doctors.

Process	Waiting time as described by Hospital	Observed average waiting time
Registration	10 minutes	23 minutes
Refraction	20 minutes	2 minutes
Doctor's Consultation	10 minutes	40 minutes
Dilatation Procedure	30 minutes	34 minutes
Doctor's Review	10 minutes	11 minutes

உங்கள் காத்திருப்பு நேர விபரம்
Your Waiting Time Details

Step - 1		பதிவு செய்தல் Registration	10 Min
Step - 2		பார்வை அளவிடுதல் Refraction	20 Min
Step - 3		மருத்துவரின் ஆலோசனை Doctor's Consultation	10 Min
Step - 4		மருந்திட்டு கண் விரிவடையும் சோதனை Dilation Procedure	30 Min
Step - 5		மருத்துவரின் மறு பரிசோதனை Doctor's Review	10 Min
Step - 6		ஆலோசனை Counseling	10 Min
மொத்த நேரம் 1 1/2		Overall time 1 1/2	

எல்லா நோயாளிகளுக்கும் மேற்கண்ட சோதனை நிலைகள் பொருந்தாது
Please note that all procedures may not be applicable for all patients

உங்களுக்குச் சேவை செய்ய எங்களுக்கு உதவுங்கள்
Thank you and help us to serve you better



Observations



The screenshot displays the Zenith Ophthalmic Management software interface. At the top, the browser address bar shows the URL: <http://192.168.1.245/ophtho/medicManager/Dashboard?AT=9c57b39d9a5c610cab6a50x1534275b707bd27245c6e765b00597945d50cb8&UserId=268&CounterId=0&User...>

On the left sidebar, there are five patient status icons with corresponding labels:

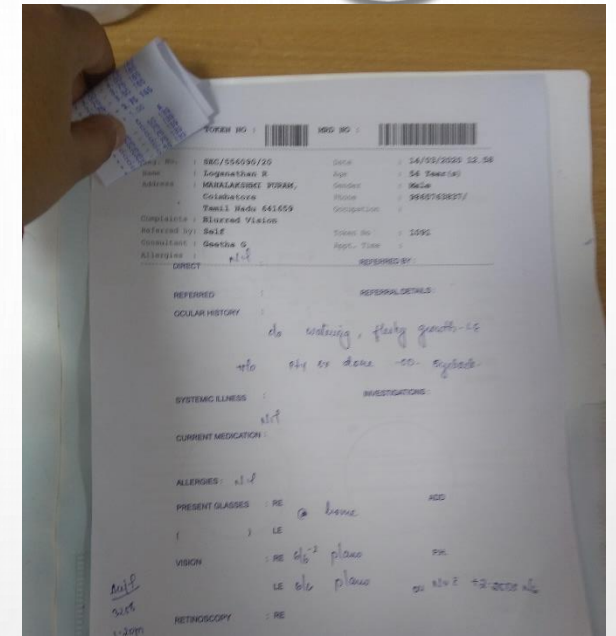
- Yellow smiley face: OPD: 0, IPD: 0, OPT: 0
- Green smiley face: OPD: 0, IPD: 0, OPT: 0
- Blue neutral face: OPD: 0, IPD: 0, OPT: 0
- Light blue sad face: OPD: 0, IPD: 0, OPT: 0
- Red sad face: OPD: 0, IPD: 0, OPT: 0

The main content area displays a table titled "Peak Time Exceptions". The table has the following structure:

Serial No.	Department	Threshold Waiting Time		Total
		Below	Above	
	Appointment	1	3	4
2	Prognostation/Review	1	0	1
8	Paediatric Refraction	0	1	1
4	Cornea OP Unit	0	1	1
5	Cornea OR Unit	1	0	1
6	Spl Counseling	0	2	2
7	Paediatric Ophthalmology	1	0	1
8	Retina	1	0	1
9	General Ophthalmology	1	0	1
10	Refraction	1	0	1
		7	7	14

At the bottom of the screen, there is a status bar with the following information:

- QwinMedic logo
- Speaker icon and "1078 - Called"
- "Counter 12"
- "Called: 1"
- "Waiting: 8"
- Logout button



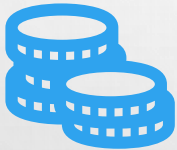
1067

3203

3217

Some observation from software

General observations



Different series of token generated for old and new cases



Different case sheet format for adult and pediatric patient



File is transferred within the departments and not given to patients



Software to keep track of patient movement

Suggestions

- ☐ **Appointment must be given priority and the patient should be encouraged to book an appointment before their visit.**
- ☐ **Dedicated person for may I help you desk and he/she should be allowed to help people in filling registration form who so ever needs.**
- ☐ **Must be in clear view.**
- ☐ **Must be displayed in printed form near registration so that patients can avail of the service.**
- ☐ **Maintaining duty roaster for them.**
- ☐ **Introduction of dilation sheet.**
- ☐ **Displaying consultant timings in OPD as well as an online platform.**

Conclusion

Study affirms that outpatient department is one of the important department of hospital which straightforwardly relates to patient satisfaction and hospitals are facing issue with increased waiting time in outpatient department.

To have a decent informal exchange among patients, outpatient department is the significant area to focus upon.

Thank You!

