

Report of Business Process Reengineering of Preventive Health Checkup at Wockhardt, Nagpur

By

Madhu Ranjana

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2017-2019



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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. Madhu Ranjana**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **Wockhardt Hospital, Nagpur** from **11th February, 2019 to 6th May, 2019**.

The Candidate has successfully carried out the study on **A Report on Business Process Reengineering of Preventive Health Checkup** assigned to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur



Dr. Arindam Das
Professor
The IIHMR University, Jaipur

15 May 19.

May 07, 2019

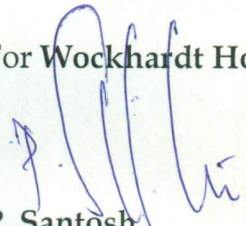
TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Dr. Madhu Ranjana** (Student of Indian Institute of Health Management Research University, Jaipur) she has completed her internship of 84 days from 11/02/2019 to 06/05/2019.

Her dissertation topic was "Business process reengineering of preventive health checkup at Wockhardt Superspecialty Hospital, Nagpur".

During her aforesaid tenure, she has been found to be extremely honest, regular and sincere.

For Wockhardt Hospitals Ltd.,


P. Santosh
Asst. General Manager - HR



THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **A Report "BUSINESS Process Reengineering of Preventive Health Checkup at Wockhardt, Nagpur** and submitted by **Madhu Ranjana** Enrollment No **IIHMR-U/01/2017-19/0594** under the supervision of **Dr. Arindam Das** for award of MBA in Hospital and Health of the University carried out during the period from **11th Feb 2019 to 6th May 2019** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.


Signature

ACKNOWLEDGEMENT

I would take the opportunity to acknowledge the people without whom this project would not have become reality. In my efforts towards the realization of the project work, I have drawn on the guidance of many people who facilitated in shaping and remodelling the project.

I would like to thank my guide Dr. Arindam Das Associate Professor IIHMR Jaipur, for his amicable support and eminent guidance throughout the framing of this report.

I got this opportunity to pursue my dissertation from Wockhardt Hospitals Nagpur and would like to thank centre head Mrs Sujatha Rao for providing me with this opportunity to learn and complete this dissertation study.

I would also like to extend my gratitude to Mr. Mohit Taywande operations HOD for giving me necessary assistance and guidance.

I will also like to extend my gratitude to my guide for guiding me through my dissertation period.

I embrace upon this as an opportunity for my following career and will attempt to use my skills and knowledge in the best possible way.

Sincerely,

Dr.Madhu Ranjana

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LIST OF SYMBOLS AND ABBREVIATIONS :

Phc – preventive health check- up
OPD-Out patient department
Echo –ecocardiogram
TMT-tread mill test
USG- ultra sonography
Corporate- patients from corporate tie-up
Walk in- patients directly walking into hospital
Pp- pre online appointed patient
cc- consultant converted

1. LIST OF GRAPHS AND FIGURES-

Fig.- 1. Process mapping of preventive health check-up

Fig.2. Value stream mapping of current process

fig.3-Value stream mapping of future process

Fig.4- Process Analysis

Fig.5- Would you recommend our hospital

Fig.6-Waiting time

Fig.7- Billing

Fig.8- USG/ECHO

Fig.9- Customer care

Fig.10- Conversion rate

Fig 11 Root cause analysis

Table 1.shows different tools used for business process reengineering

Table 2. shows variety of patients visiting preventive health checkup department at hospital

1. BACKGROUND:

- Business Process Reengineering (BPR) : The primary aim of BPR is to cut down process redundancies and enterprise costs . BPR is also known as process innovation as it attempts to remodel processes to eliminate unproductive layers.
- Problem statement : low conversion rate of patient health checkup into IPD patient
- Patient experience at hospital determines future patient visits ,
- Mot in healthcare: with increasing level of competitions in private hospital sector, new patient requisition cost is higher than retaining old patient so aim of this project is to improvise patient experience at hospital, which increases future patient visits and thus helps in generation of revenue.

- Nowadays patients expect three important criteria from hospitals as the provider of services which includes: Low cost ,Easy availability of information ,Relatively small waiting period

- **What is patient experience:** “Patient experience comprises of the range of interactions that patients have with the hospital right from point of entry to exit, including their care from health plans, and from doctors, nurses, and staff in hospitals, physician practices, and other health care facilities. As an integral component of health care quality, patient experience includes several aspects of health care delivery that patients value when they seek and receive care, for eg: getting timely appointments, easy access to information, and good communication with health care providers”
- **Patient experience** is a key step in moving toward patient-centred care. By observing and analysing at various aspects of patient experience, one can assess the extent to which patients are receiving care, that is respectful of and responsive to individual patient preferences, needs and values. Evaluating patient experience along with other components such as effectiveness, efficiency and safety of care is essential to providing a complete picture of health care quality.

- **Why BPR in Healthcare : NEED**
Exponential rise in the cost of delivery of healthcare services, price competition, market realignment are the major factors that force hospitals to scrutinize their business processes and to redesign them in a manner that would not only help in competitive pricing and also help in delivering quality care to the patients
- The major factors that are forcing hospitals to utilise concepts of BPR are:- Delivery of improved service quality to external customers- Reducing bottlenecks by improving service quality to internal customers- Improve financial performance by cost cutting- Improve clinical performance- Reduce processing time of service delivery- Adopt the positive experiences of healthcare organisations - Pressure to comply with regulatory requirements- To remain competitive with other healthcare organisations

2. **OBJECTIVES:**

- To optimize the health check-up process and identify the bottlenecks in terms of structure, process and outcome being followed at Wockhardt hospital Nagpur
- To develop a Value Stream mapping for the department of Health Check-up for reducing the non - value added activities
- To give remedial and pre-emptive actions and implement new innovative practices to improvise and make it more efficient to face competitions from upcoming hospitals

3. **METHODOLOGY**

- Study type :Cross sectional Descriptive Research
- Study Population : patient visiting for preventive health check-up , wockhardt hospital, Nagpur
- Sample Size and type :200 for patient feedback
- 226 for turn around time
- Study duration : The permission for collecting the data was given from 11/2/2019 to 6/6/2019

Convenience sampling technique was used for the purpose of the study. All the samples have been tracked from the point of entry to exit from the master health check-up department

Study Area: departments of the hospital - Front office, OPD, Laboratory (Phlebotomy,treatment room) Radiology and imaging, Pharmacy, Echo/TMT, USG/XRAY

Data collection technique:

Primary data was collected by the following methods;

1. Direct observation and process mapping, value stream mapping
2. Discussion with the hospital staff
3. Discussion with the patients of the hospital through questionnaire

Secondary data:

1. Hospital Manuals, Policies
2. Records (e.g. - Register of these departments), HMIS

Data collection tool:

Steps	Tools
Define objectives and framework	customer and process focus
Identify customer needs	business process mapping, patient feedback questionnaire, turnaround time
Study the existing process	value stream mapping,
Formulate a redesign business plan	visualisation for end process and apply new innovative solutions
Implement the redesign	change management

Table. 1

4. RATIONALE

Preventive health checkup is doorway to increase overall patient footfall and increase IPD conversion rate, thus increase in revenue generation for a hospital. The key lies in improvising the patient experience and reducing their stay and give them pleasant memory for future which can be done by using tool namely business process reengineering in which we analyse current state and patient needs and implement new ideas to increase overall efficiency thus increased patient satisfaction, reduced new patient requisition cost

5. REVIEW OF LITERATURE:**.REVIEW OF LITERATURE**

California healthcare foundation, (2011), published an article titled ‘Using tracking tools to improve patient flow in hospitals’, which explains the various types of patient tracking systems, the benefits of using the patient tracking systems and the best practices available for using those systems. The major two divisions of patient tracking systems include real time location systems and the data driven patient tracking system. All the types under both divisions are discussed in detail in this article and the paper also suggests that the patient

tracking system should be combined with operation management techniques like lean for its effective utilization.

Chen Bai-lian et al. (2016), in the paper titled 'Impact of adjustment measures on reducing outpatient waiting time in a community hospital: application of a computer simulation approach', aimed to illustrate the distribution characteristics of waiting time in a community hospital and explore the impact of potential measures to reduce outpatient waiting time based on a computer simulation approach. During a one-month study period in 2006, a cross-sectional study was conducted in a community hospital located in Shanghai, China. Baseline data of outpatient waiting time were calculated according to the records of registration time and payment time.

Elsvier Clinical Solutions, White Paper, (2013) titled 'Mobile Applications and the Future of Healthcare', examines how mobile applications and technologies are transforming healthcare, and looks at the effects of mobile and related technologies on patients, IT, developers, providers and payers. The paper explains the existing mobile technologies available in the market and also discusses the constraints and the drawbacks associated with these technologies.

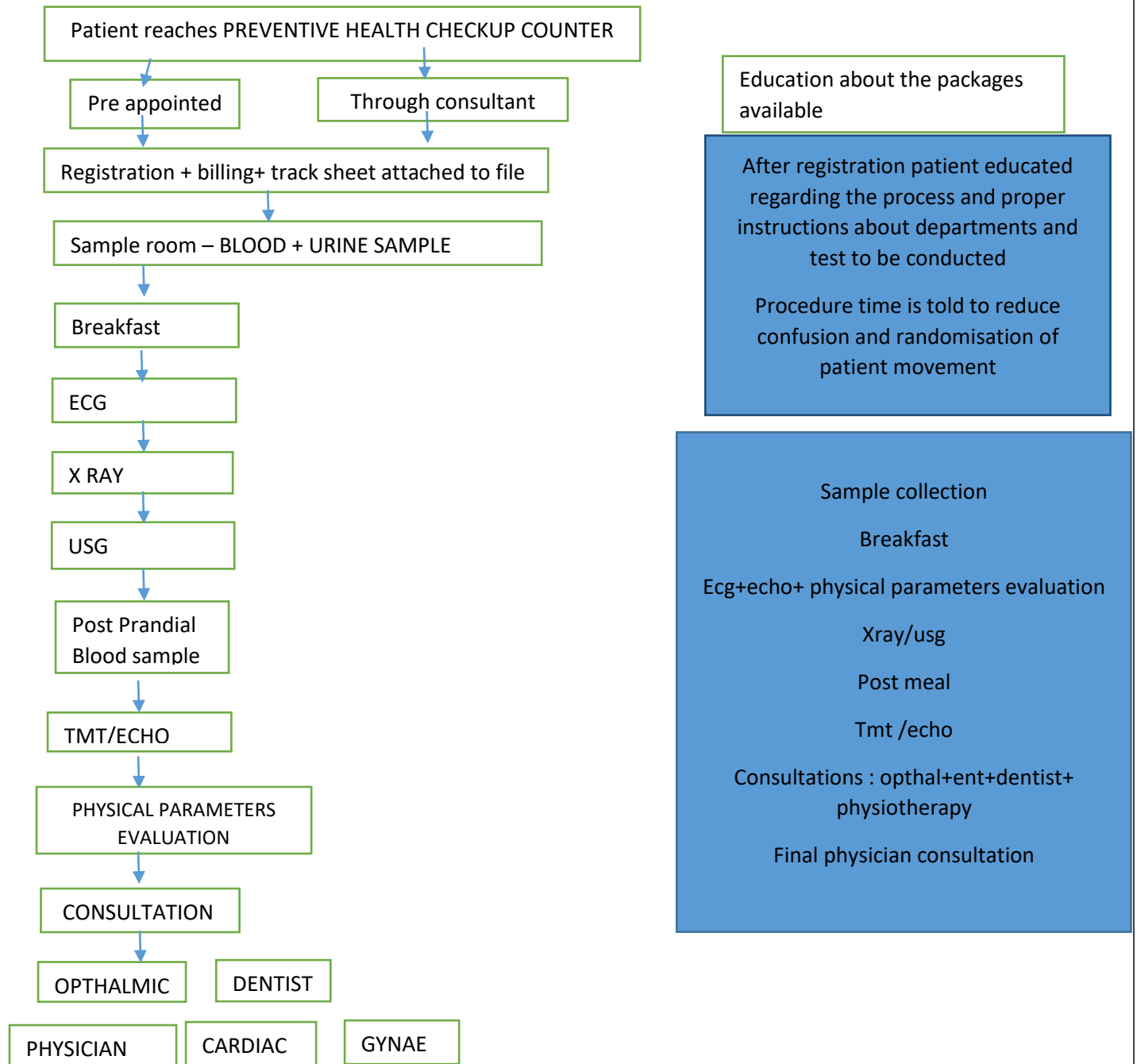
Nihar Bhatia, (2013), in the paper titled 'Process Improvement of Preventive Health-CheckUp', explains that the lean tool - value stream mapping can be used to improve the process of the preventive health check (PHC) up by removing the activities which give no value to the service provided to the customer. The study was carried out at the preventive health check-up department of Fortis Escorts Hospital, Jaipur. The paper portrays that the people hesitate for PHC because of longer waiting times. Thus identifying and eliminating the non-value added activities should be done based on VSM.

Úrsula Maruyama et al. (2010) in the paper titled 'Lean e-health care: its performance improvement based on Brazilian university hospital case study', explain how lean as a management technique applied to the Information Technology department can help to improve the efficiency of the hospital. The research was carried out through a case study at the Brazilian University Hospital, IT department, briefing the effect of applying quality management theories in the real world. Lean tools like Value Stream Mapping, Kaizen, 5S, Muda, Kanban, Gemba, Lean Six Sigma etc are applied depending on the situation in the IT department of the hospital.

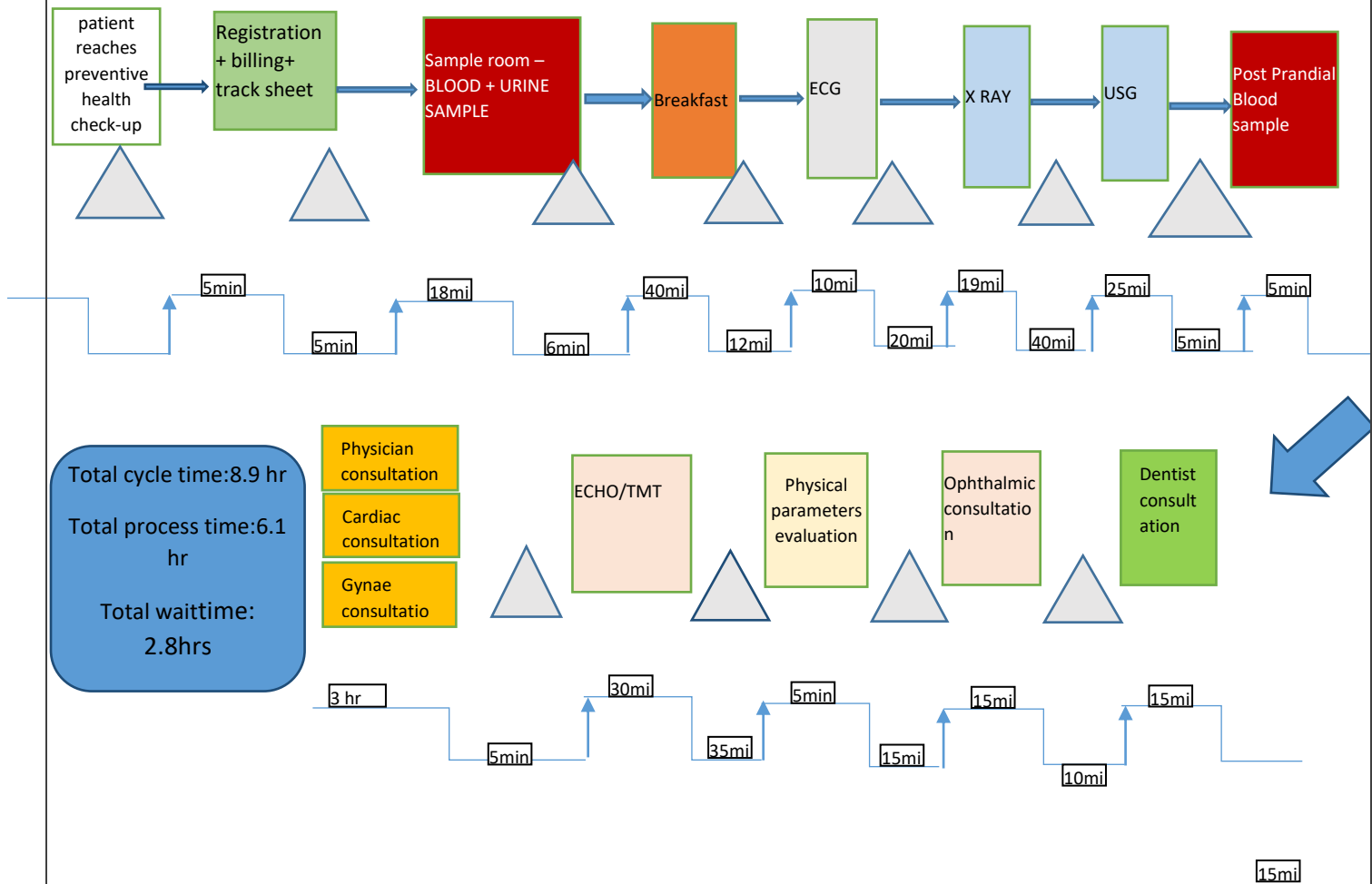
Research Gaps Identified

The reviews identify that waiting time reduction is important for improving the quality of service as well as to lower the operating cost. The literatures also suggested to model the process flow inside the hospital to reduce the waiting time. Most of the papers discussed the usage of mobile technologies or lean management technique

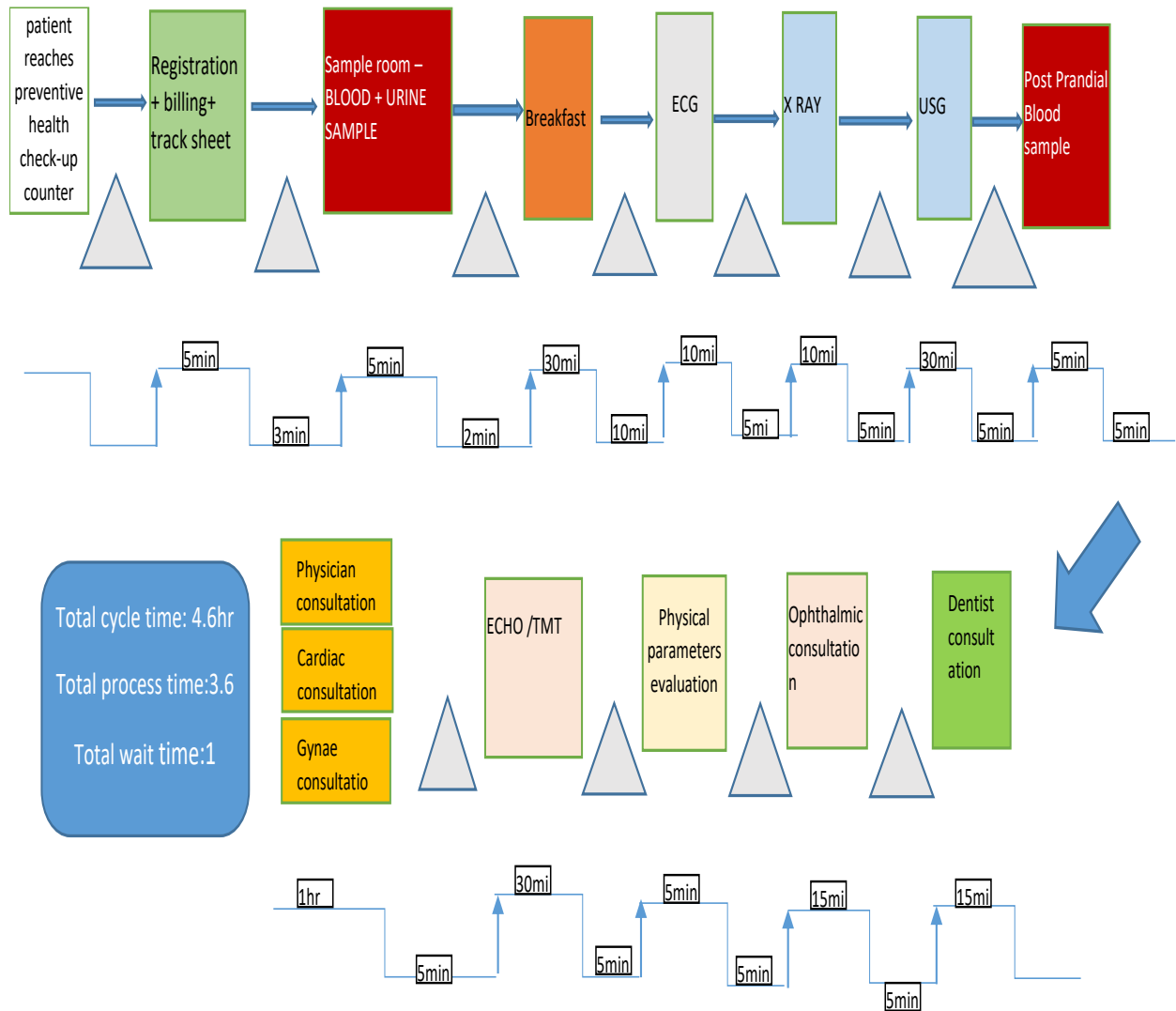
6. PROCESS MAPPING OF PREVENTIVE HEALTHCHECKUP(Fig. 1)



7. VALUE STREAM MAPPING OF CURRENT PROCESS(Fig.2)

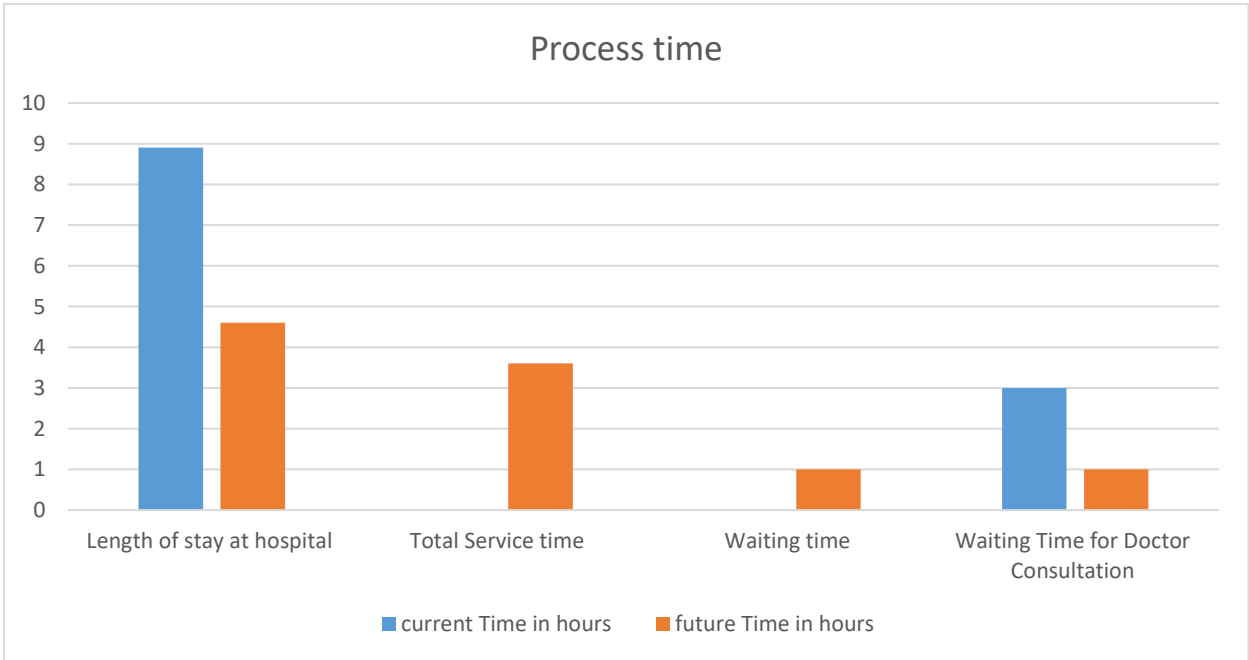


8.VALUE STREAM MAPPING FOR FUTURE :(Fig.3)



Timing related parameters are identified for the various processes through descriptive statistics of data collected and they are depicted below.

	current	future
Process	Time in hours	Time in hours
Length of stay at hospital	8.9	4.6
Total Service time	6.1	3.6
Waiting time	2.8	1
Waiting Time for Doctor Consultation	3	1



9. CONVERSION DATA

	TOTAL PHC	CONVERSION TO IPD	CONVERSION PERCENTAGE OF PHC TO IPD
MONTHS			
FEBRUARY	1460	200	14
MARCH	1800	330	18
APRIL	1368	455	33

Table. 2.

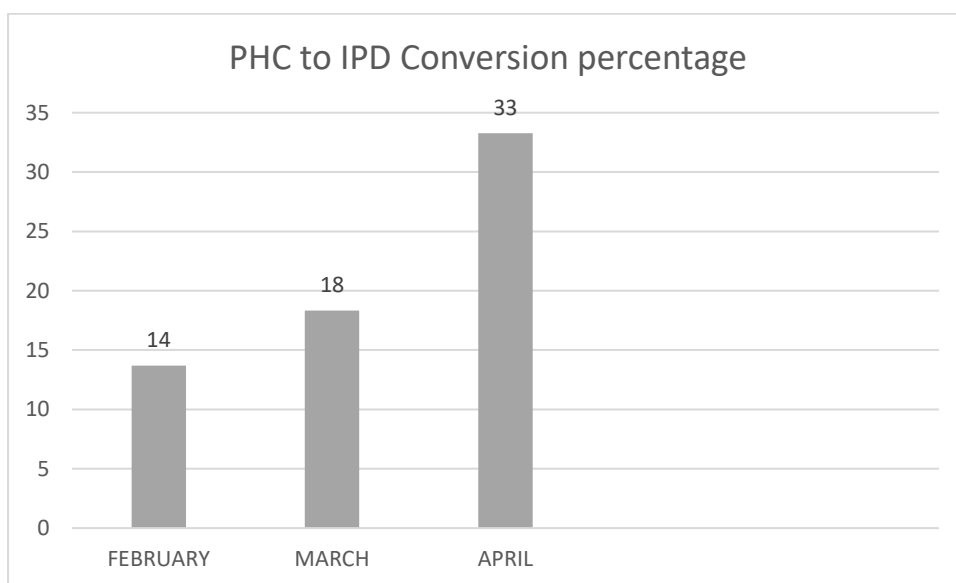


Fig.4 shows very low conversion percentage of preventive health check-up

10.FINDINGS:Total 200 Patients were taken for the study 50 representing each type of patient visiting the health check-up department

First 50	Patients who come from corporates which has tie-up with hospitals	corporate	Corporate patient
Second 50	Patients who directly walk into hospital to avail health checkup	Walk in	Walk in patients
Third 50	Pre appointment taken by patients online and offline both	pp	Pre appointed
Fourth 50	Patients who are prescribed health checkup by consultants	cc	Consultant converted

Table 3.shows different category of patients visiting health check up department

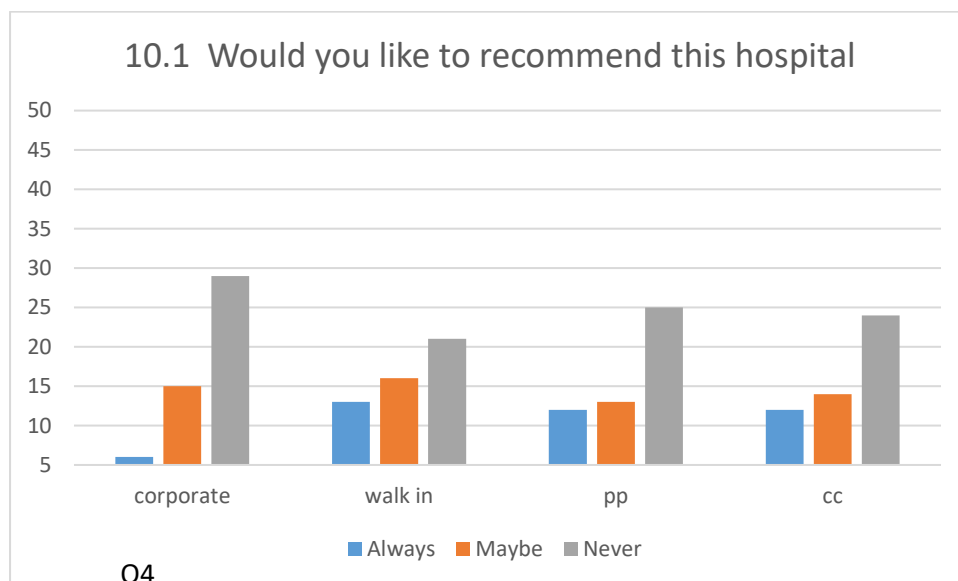


Fig 5 shows low level of interest of corporate ,consultant converted patients to recommend this hospital to others

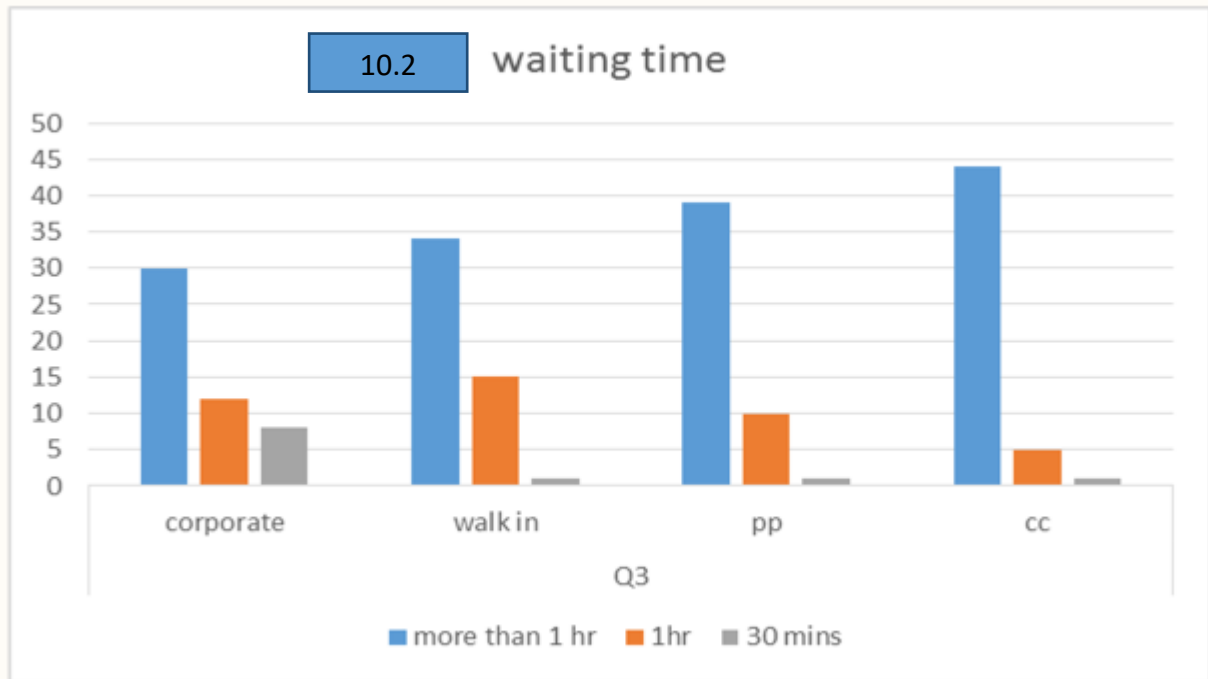


Fig 6. higher waiting time among consultant converted and pre appointed patients

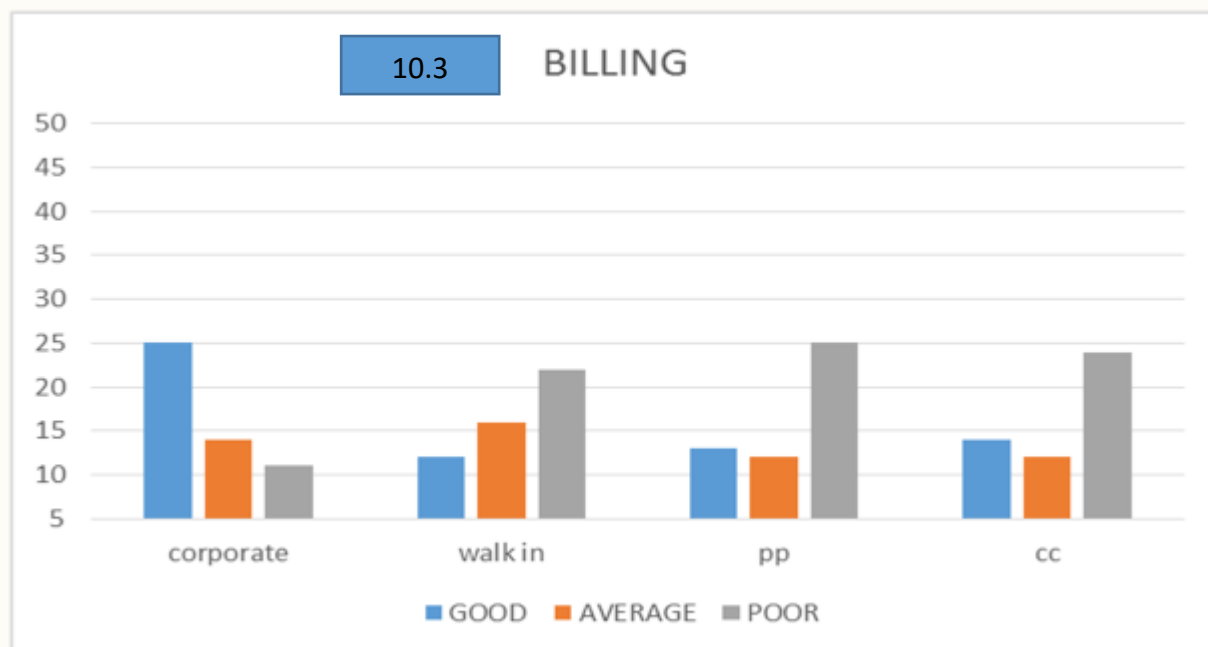


Fig 7. shows high dissatisfaction for billing in consultant converted, pre-appointed patient



Fig 8. shows more dissatisfaction among patient regarding customer care staff

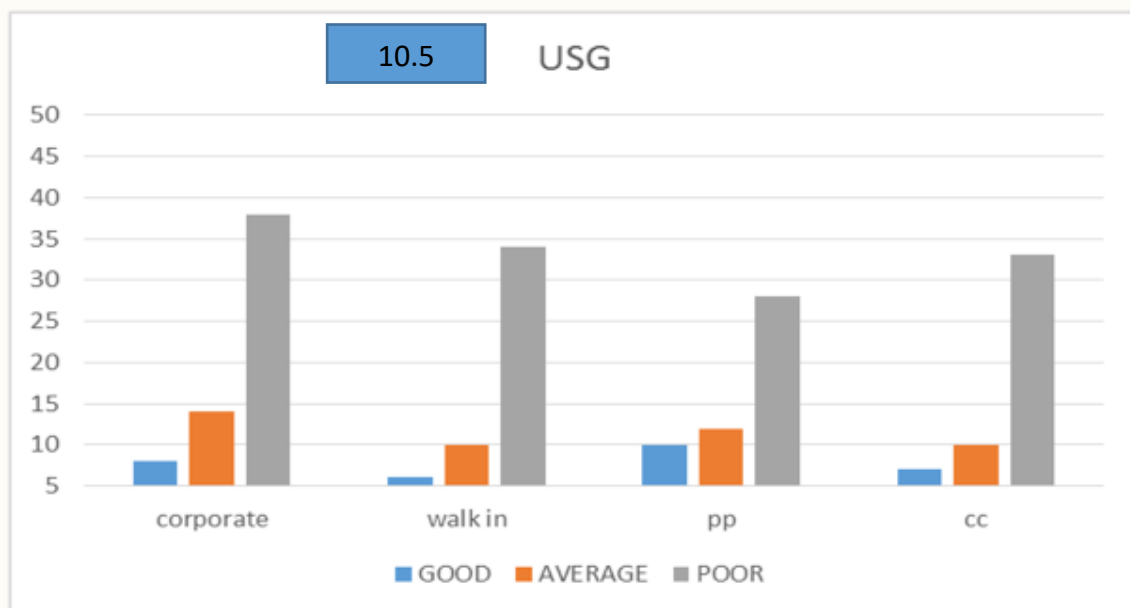


Fig 9. shows very low patient satisfaction in USG department

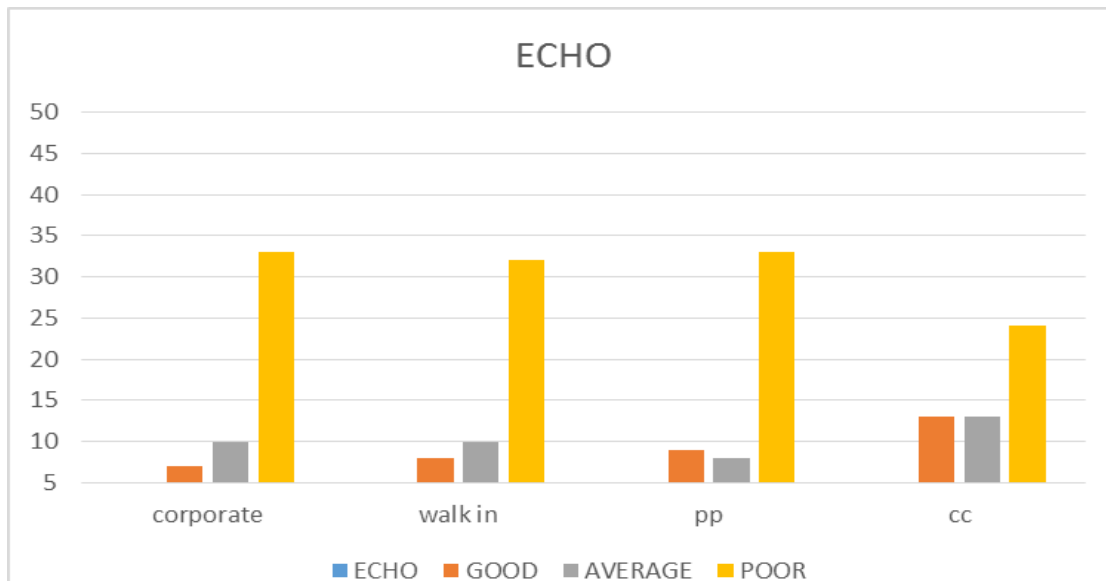
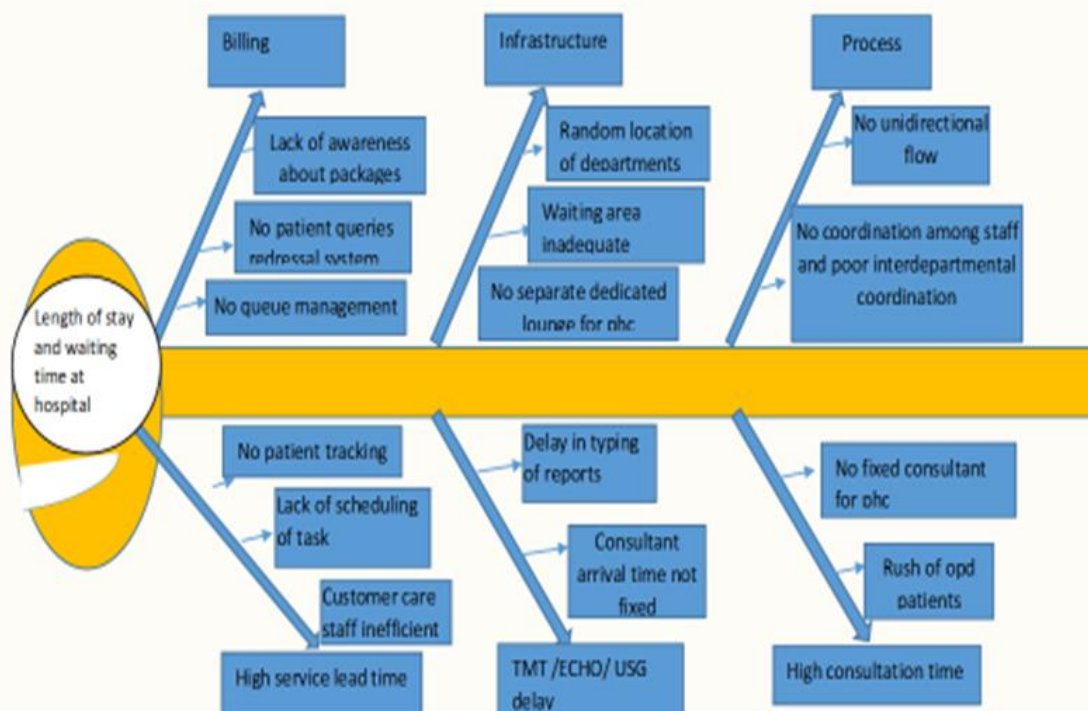


Fig 10.Shows very low satisfaction rate of PHC patient into IPD patients

11.ROOT CAUSE ANALYSIS

Fig .11



12. Results:

1. The process mapping identified large amount of disorientation and non unidirectional flow of patients no proper signage's caused patient huge dissatisfaction and lots of complains.
2. Feedback system was not strictly being implemented and no grievanceredressal system was there.
3. total cycle time as 8.9 hrs in which process time was 6.1 hrs and waiting time was 2.8 hrs which caused very high dissatisfaction among patients
4. No proper scheduling, improper interdepartmental coordination,non regulation on consultant arrival and departure time specially in usg/echo lead to increased consultation time.
5. There was overall high level of dissatisfaction among corporate patients and consultant converted patients regarding inefficient staff, customer care executives behaviour, patient queries redressal, process management and poor information delivery regarding consultation time or duration.

13. CONCLUSION:

- The objective of the research study was to analyse the process of the health check-up at Wockhardt multi-speciality hospital Nagpur and to suggest process improvements through value stream mapping, patient feedback analysis. The findings of the study helped in identifying few bottlenecks in the process and implementable solutions were suggested to overcome these bottlenecks.
- In addition the practical exposure to the service environment gave an idea about the real time difficulties and suggestions were given to overcome these difficulties and help the hospital face competition from upcoming hospitals and also solve its issue of low conversion rate.

14. SUGGESTIONS:

- Appointments for the master health check-up process should be started to avoid registration rush while starting the process and the registration timing on the day of check-uphas to be reduced. Prior appointments can be made through online facilities.
- Sequencing the process will reduce the service lead time to a great extent.

- The existing patient display system should be utilised for identifying the patients instead of calling their names orally.
- Proper signage's and patient education materials display
- Use of queue manager to manage rush at billing counter
- Training of staff for patient education, queries redressal regarding packages
- Implementation of proper feedback system
- Consultants arrival and departure time should be fixed and displayed to reduce patient anxiety and confusion
- Staff training for patient communication and queries redressal
- Infrastructure: construction of a separate lounge/waiting area for preventive health checkup patients easy tracing
- Feedback and complain resolving and grievance redressal
- Home pickup sample collection of pre appointed and corporate patients
- Consultation time pre information
- Segregation of OPD and PHC files giving priority to health checkup patients
- Special arrangements for stay and luggage keeping of patients from rewa and far off places
- Pharmacy should be updated with new formulary and drugs to reduce patient disorientation

NEW STRATEGY:

- Consultants are not fixed for preventive health checkup causes mix up of out patient department patients , walk in patients with preventive patients for consultation by physician .Thus causes chaos and increased waiting time for health checkup patients
- My suggestion:Fix one mbbs/resident medical officer /md physician – screening of patients and identifying the variety of prospects for conversion of patient to IPD – SUGGEST SECOND CONSULTATION(make it chargeable) for higher diabetologist/gynaecologist/urologist/cardiologist/general surgeon
- This would generate ADDITIONAL REVENUE + INCREASED CONVERSION RATE+ REDUCED SECOND CONSULTATION TIME+ GREATER PATIENT SATISFACTION

15. Interventions implemented:

- Separate lounge was constructed and made functional on 28 april 2019 which helped in easy tracing of patients and also ensured better patient experience at hospital
- New signage's were up for package information display , in hospital branding, directions, location of departments on different levels
- Customer care staff was given training for patient interaction, sequencing ,scheduling and complain handling
- New queue manager along with token system was implemented to reduce patient rush at billing counters and easy management of patients
- Consultants time was regulated and were intimated to follow it strictly
- New feedback form was implemented as suggested by me , had ease of use and cost effective ,paper saving.
- Separate screening PHC consultants were fixed and that lead to overall reduced waiting time

16. REFERENCES

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17. Annexure

PATIENT FEEDBACK QUESTIONNAIRE : Thank you for the opportunity to serve you. Kindly, help us to improve with your valuable feedback.

हमें आप की सेवा करने का अवसर देने के लिए धन्यवाद। कृपया, अपने बहुमूल्य प्रतिक्रिया के साथ सुधार करने में हमारी मदद करें।

■ Visitor (आगतुक) ■ Patient (मरीज) ■ Relative (सापेक्ष)

●Name (नाम) ●REG. NO. ● Age (उम्र) ● Male/Female (पुरुष/ महिला)

1.Services(सेवाएं)	 Good अच्छा	 Avera ge औसत	 Poo r <u>बुरा</u>
Billing बिलिंग			
Waiting area प्रतीक्षास्थल			
Sample room सैमपल			
X-ray एक्स-रे			
Sonography सोनोग्राफी			
ECG ईसीजी			
ECHO/TMT टीएमटी			
Food And Beverage खाद्यऔरपेयपदार्थ			
Pharmacy फार्मसी			
Housekeeping साफ़सफाई			
Pathology reporting पैथोलोजी			

2.Staff behaviour कर्मचारीव्यवहार			
Doctors डॉक्टरों			
Nurses नर्स			
Customer care ग्राहकसेवा			
Technician तकनीशियन			

3. Overall waiting time (कुल मिलाकर
इंतजारकासमय)

■ 30 mins तीसमिनट ■ 1hr 1घंटा
More than 1 hr 1 घंटे से अधिक

4. Would u like to recommend our hospital to
others?क्याआपहमारेअस्पतालकेबारेमेंकिसीकोबतानाचाहें
गे

Always हमेशाMaybe शायद

Never नहीं