



Business Process Reengineering of Preventive Health Checkup at Wockhardt, Nagpur

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MEANING OF BUSINESS PROCESS REENGINEERING

- Business Process Reengineering (BPR) refers to an attempt to improvise the operation of the business . 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.

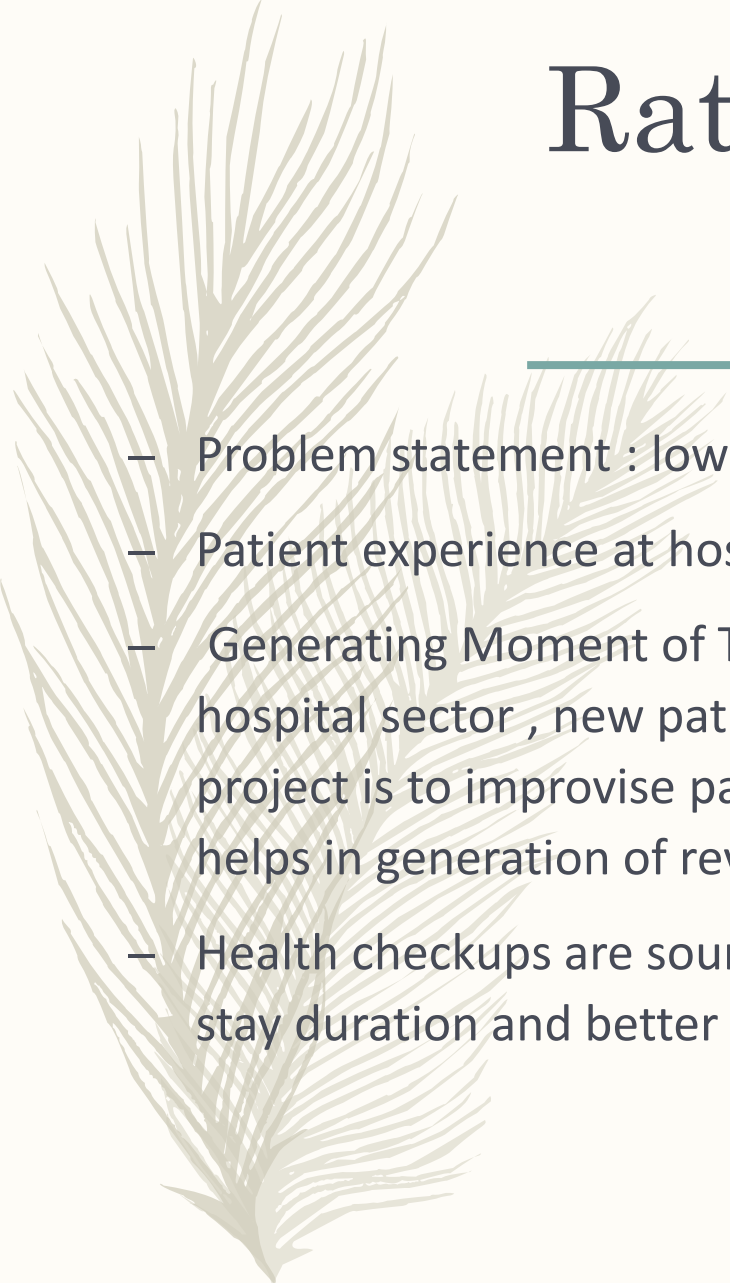


BUSINESS PROCESS REENGINEERING IN HEALTHCARE

- Exponential rise in the cost of delivery of healthcare services, price competition, market alignment are the major factors that are forcing hospitals to scrutinize their business processes and to redesign them in a manner that would not only help to keep the prices competitive but also help in delivering quality care to the patients

The major factors that are forcing hospitals to utilise concepts of BPR are:-

- Reducing bottlenecks by improving service quality to patients- 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 upcoming hospitals and private practitioners



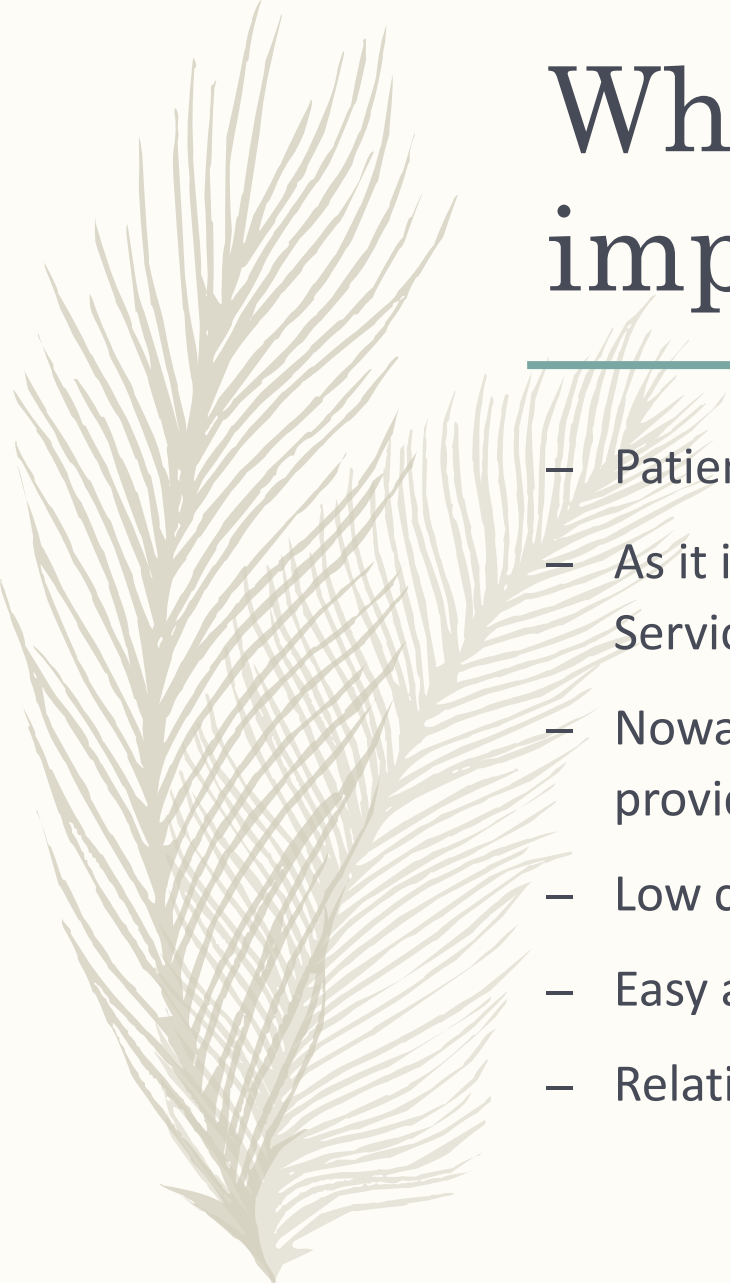
Rationale

- Problem statement : low conversion rate of patient health checkup into ipd patient
- Patient experience at hospital determines future patient visits and patient loyalty towards hospital
- Generating Moment of Truth 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.
- Health checkups are source of patient to hospitals so better facilitation of health checkup ,reducing stay duration and better patient satisfaction would in future reduce new patient requisition cost



What is Patient Experience

- “Patient experience encompasses the range of interactions that patients have with the health care system, 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 highly when they seek and receive care, such as 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 Patient experience is important

- Patient experience at hospital plays important role in conversion of patients
- As it is rightly said” Customer Experience is more important than Customer Service”
- 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



Objectives of the study

- 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

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TOOLS FOR BUSINESS PROCESS REENGINEERING

STEPS	TOOLS
DEFINE OBJECTIVES AND FRAMEWORK	CUSTOMER AND PROCESS FOCUS
IDENTIFY CUSTOMER NEEDS	BUSINESS PROCESS MAPPING, PATIENT FEEDBACK QUESTIONNAIRE, TURN AROUND 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

RESEARCH METHODOLOGY

- Research type : Cross Sectional Descriptive
- Study Population : patient visiting preventive health check-up , wockhardt hospital
- Sample Size : 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 by the researcher.

Method of data collection

- **Data collection technique:**

Primary data:

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

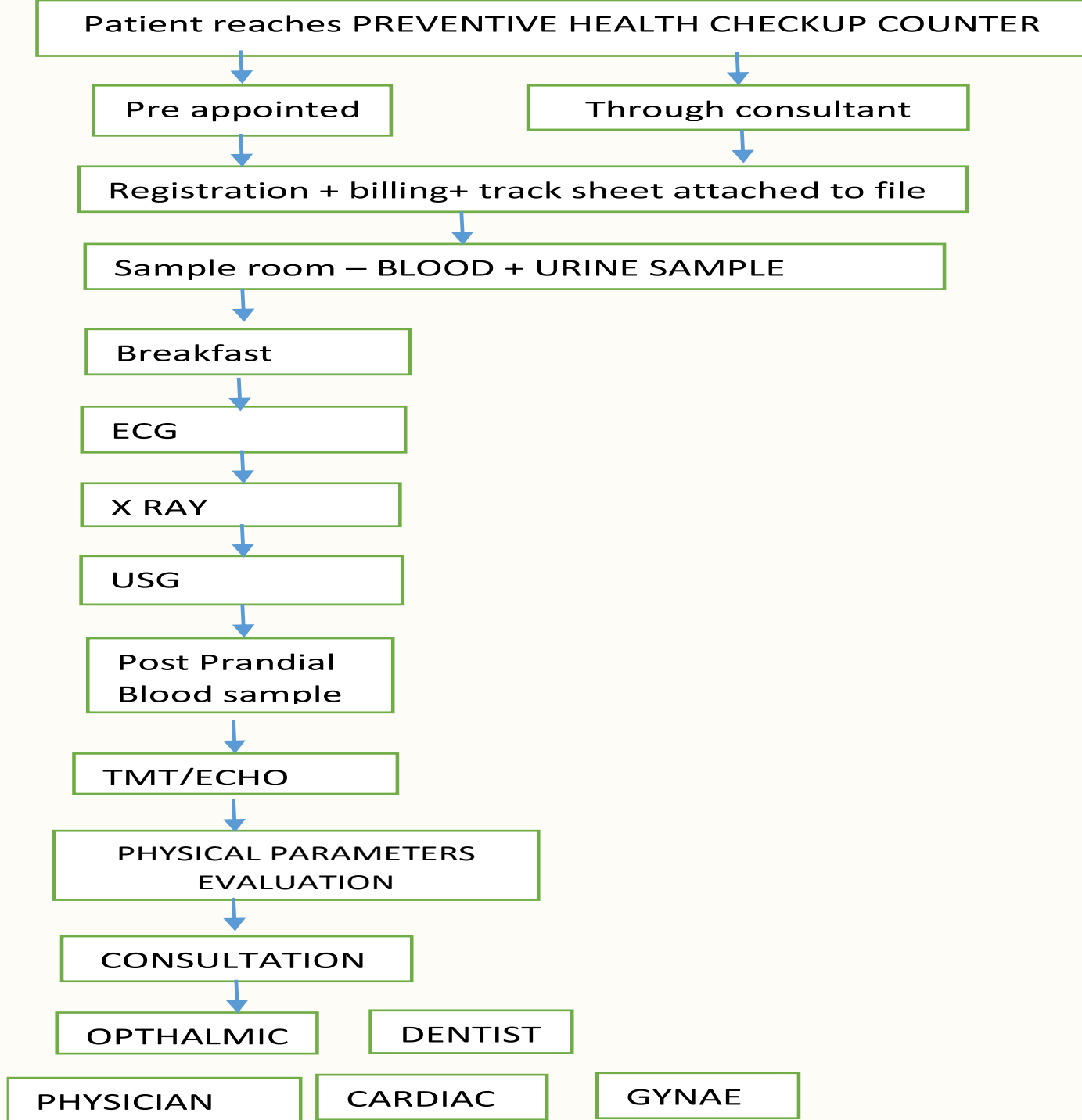
Secondary data:

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

- The data for the study was mainly collected from the primary sources including observation and interviews.

Data Analysis:

- Process Mapping of preventive health checkup
- Root cause analysis
- Value Stream Mapping



Education about the packages available

After registration patient educated regarding the process and proper instructions about departments and test to be conducted

Procedure time is told to reduce confusion and randomisation of patient movement

1.Sample collection

Breakfast

2.Ecg+echo+ physical parameters evaluation

Xray/usg

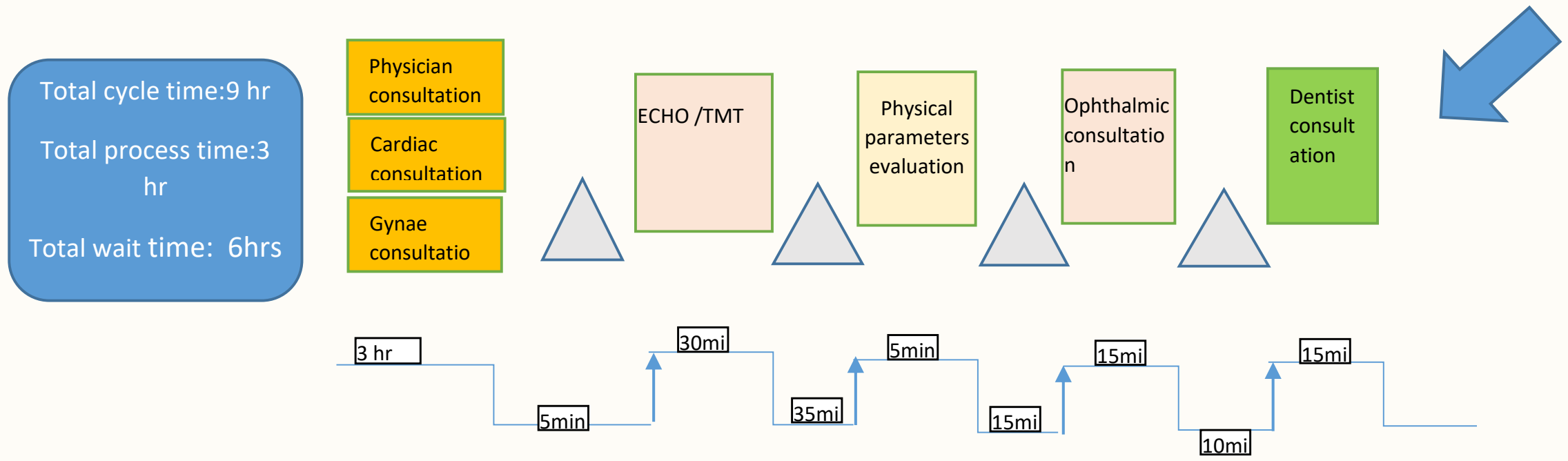
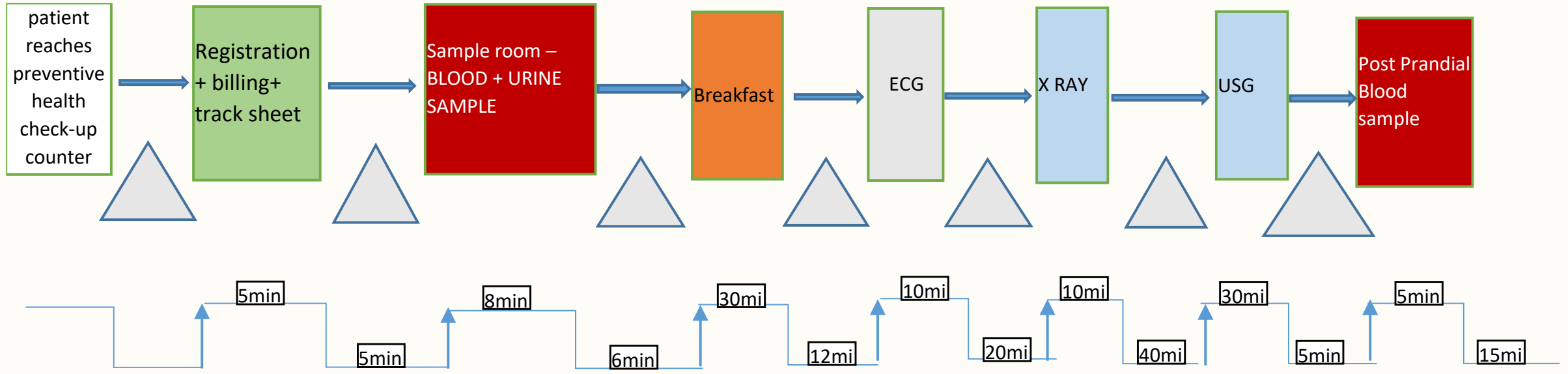
Post meal

Tmt /echo

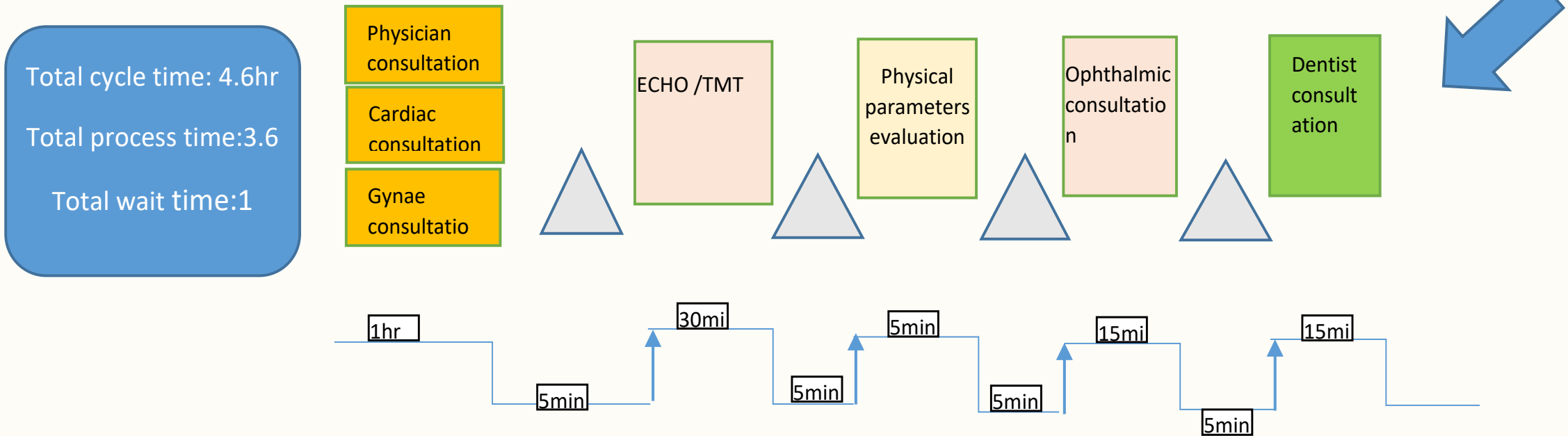
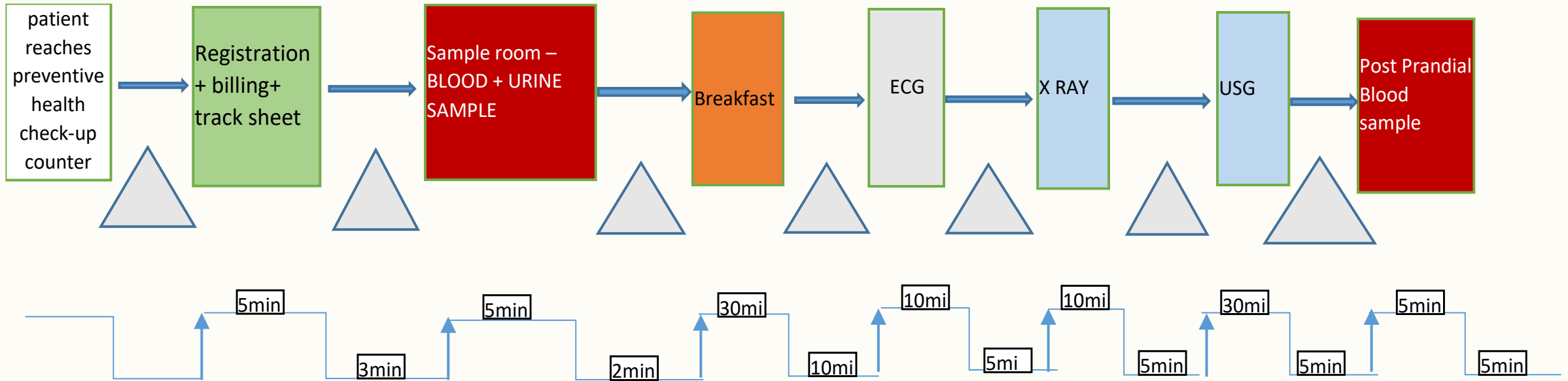
3.Consultations : opthal+ent+dentist+ physiotherapy

Final physician consultation

Value stream mapping : Present Stage

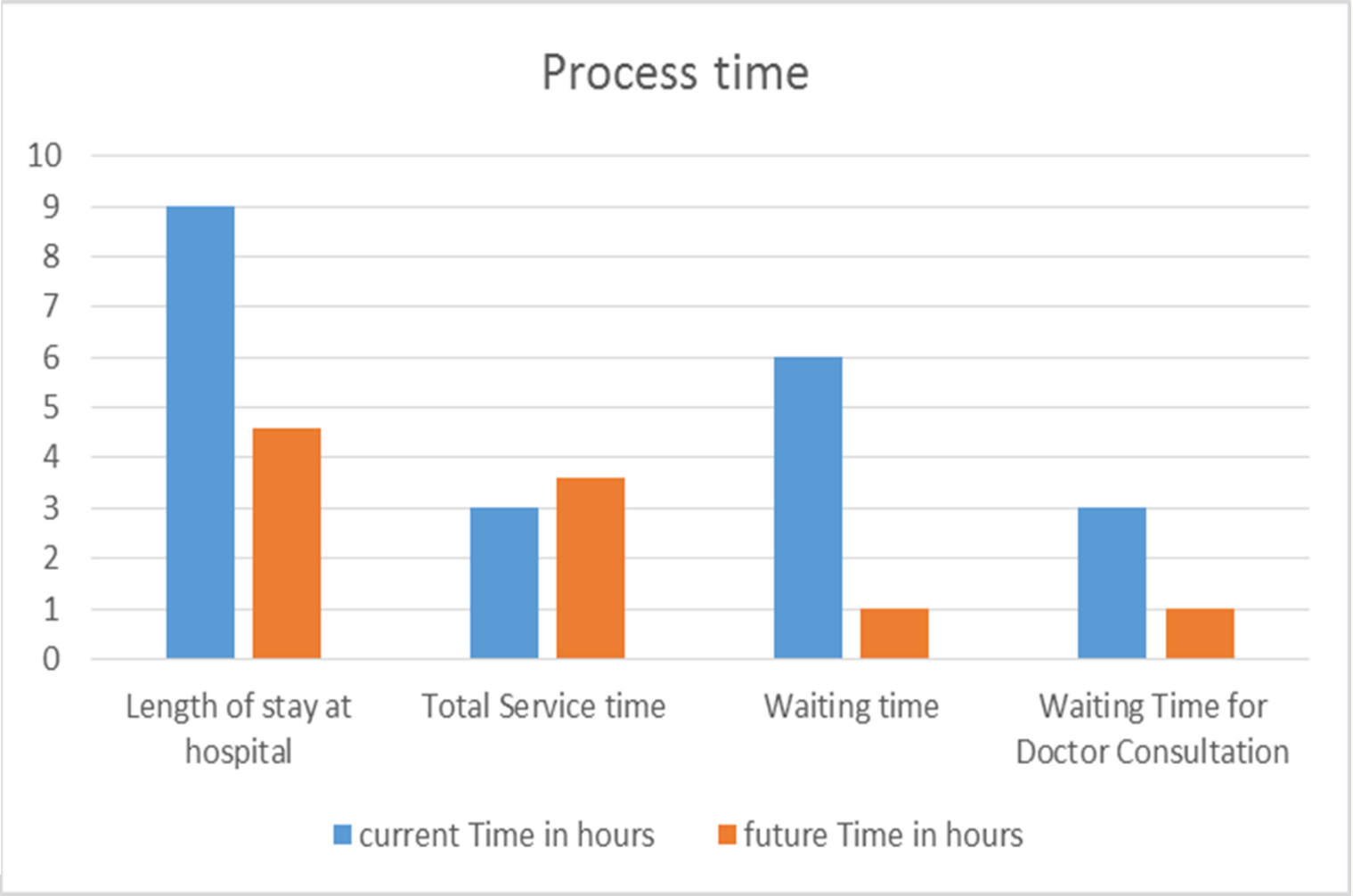


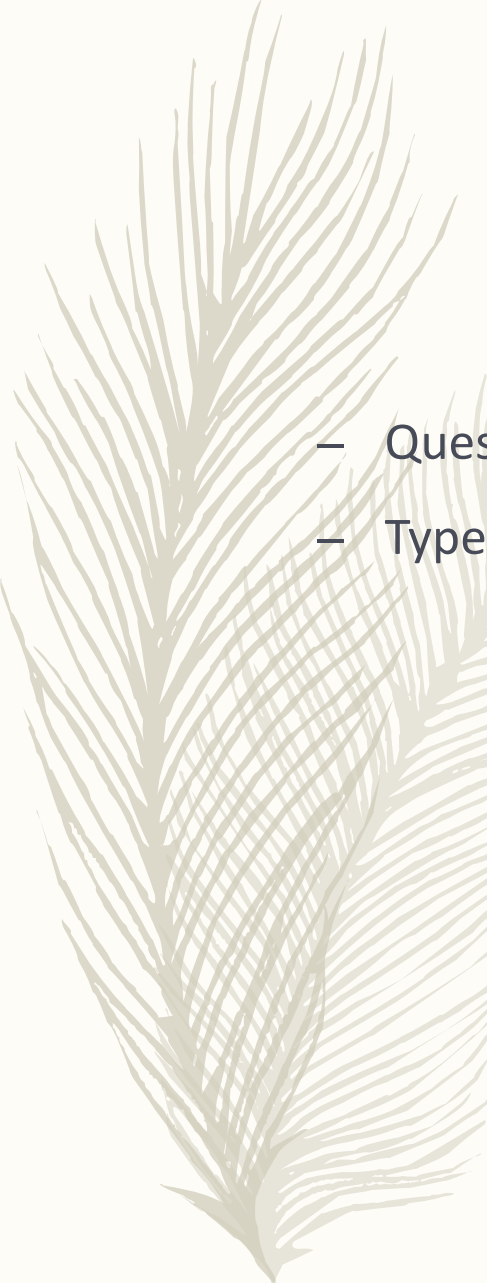
Value stream mapping : Future Stage



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





Patient feedback

- Questionnaire was used to identify patient needs , complains and get patient centric view.
- Types of patient visiting the department was identified and representative sample was taken

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 check up	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 check up by consultants	cc	Consultant converted

FEEDBACK FORM (प्रतिक्रिया फॉर्म)

Thank you for giving us an opportunity to serve you. Kindly, help us to improve with your valuable feedback.
हमें आपकी सेवा करने का अवसर देने के लिए धन्यवाद। कृपया, अपने बहुमूल्य प्रतिक्रिया के साथ सुधार करने में हमारी मदद करें।

☐ Visitor (आगंतुक)

☐ Patient (मरीज)

☐ Relative (सापेक्ष)

☐ Name (नाम)

☐ REG. NO.

☐ Age (उम्र)

☐ Male /Female (पुरुष/ महिला)

1.Services(सेवाएं)	 Good अच्छा	 Average औसत	 Poor बुरा
Billing बिलिंग			
Waiting area प्रतीक्षा स्थल			
Sample room सैम पाल			
X-ray एक्स-रे			
Sonography सोनोग्राफी			
ECG ईसीजी			
ECHO/TMT टीएमटी			
Food And Beverage खाद्य और पेय पदार्थ			
Pharmacy फार्मसी			
Housekeeping साफ़ सफाई			
Pathology reporting पैथोलोजी			

2.Staff behaviour कर्मचारी व्यवहार			
Doctors डॉक्टरों			
Nurses नर्स			
Customer care ग्राहक सेवा			
Technician तकनीशियन			

3. Overall waiting time (कुल मिलाकर इंतजार का समय)

☐ 30 mins तीस मिनट ☐ 1hr 1घंटा ☐ More than 1 hr 1 घंटे से अधिक

4. Would u like to recommend our hospital to others? क्या आप हमारे अस्पताल के बारे में किसी को बताना चाहेंगे

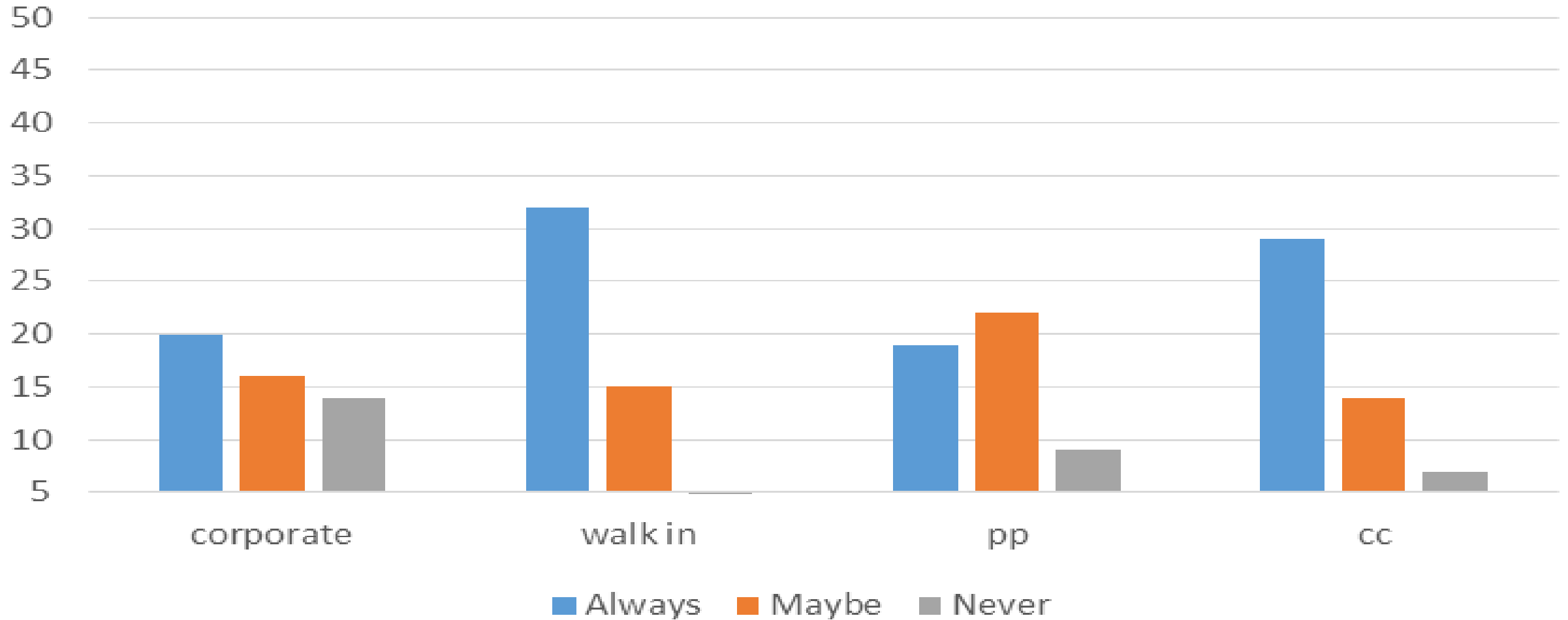
☐ Always हमेशा

☐ Maybe शायद

☐ Never नहीं

5. Any suggestions: कोई सुझाव :

Would you like to recommend this hospital



Q4

Fig 10.1 shows low level of interest of corporate ,consultant converted patients to recommend this hospital to others

waiting time

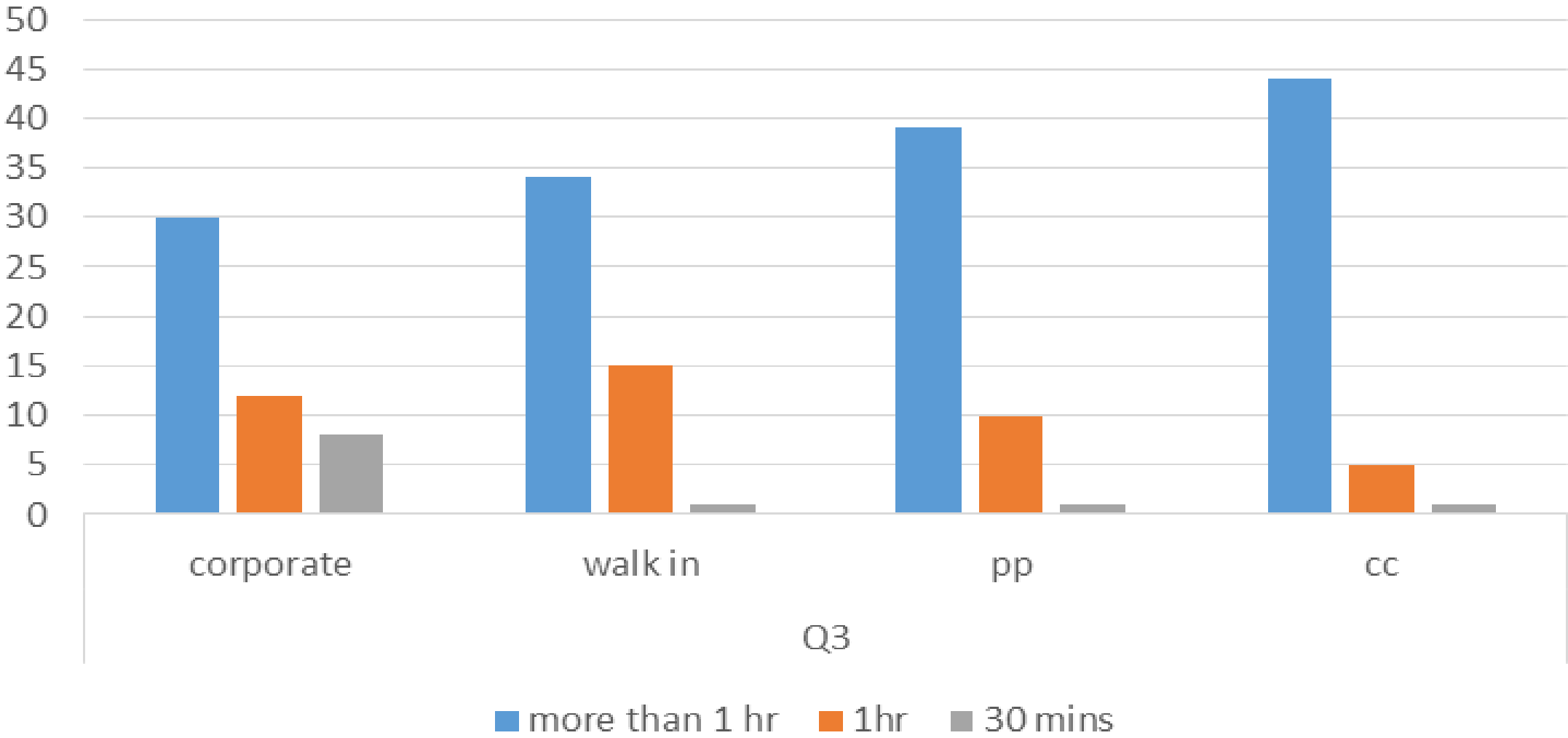


Fig 10.2 higher waiting time among consultant converted and pre appointed patients

BILLING

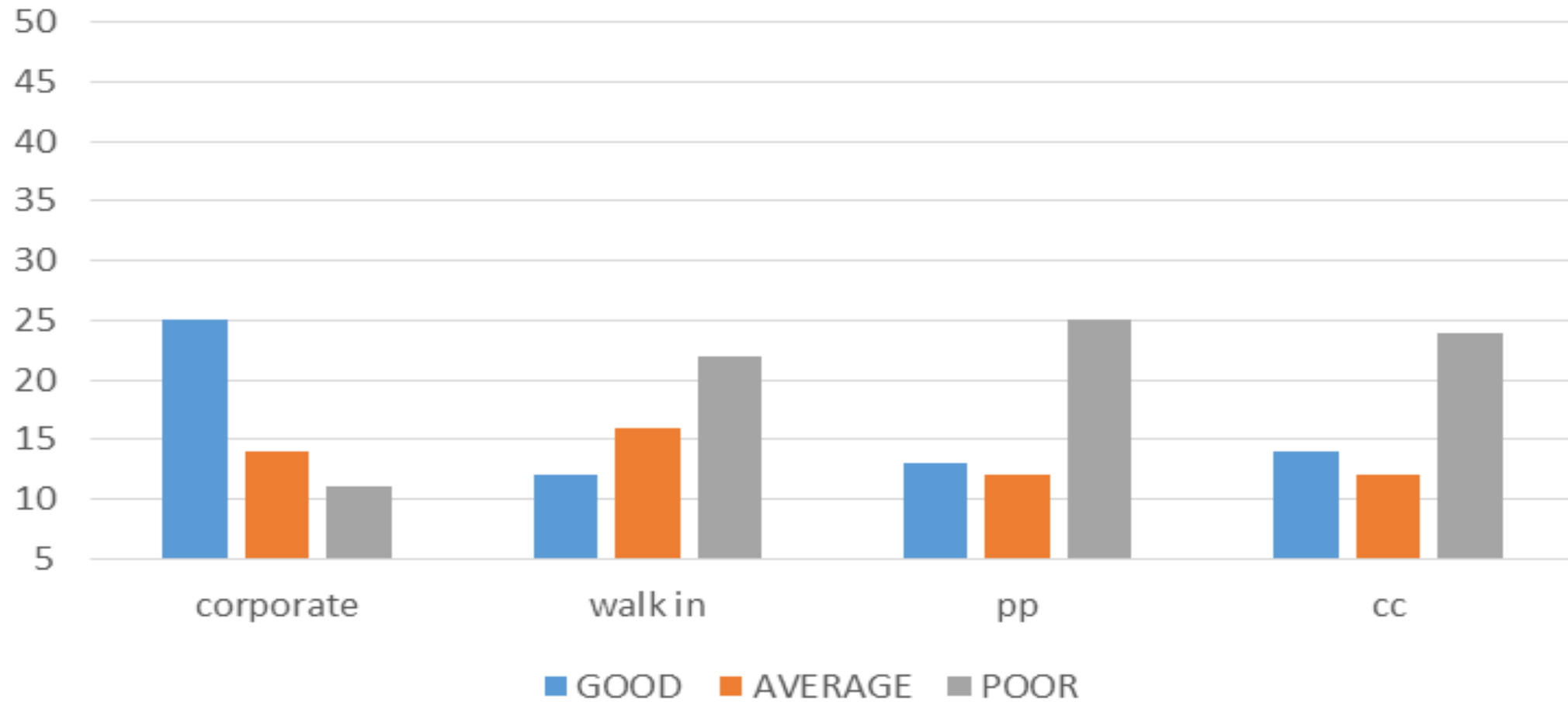


Fig 10.3 shows high dissatisfaction for billing in consultant converted, pre-appointed patient

USG

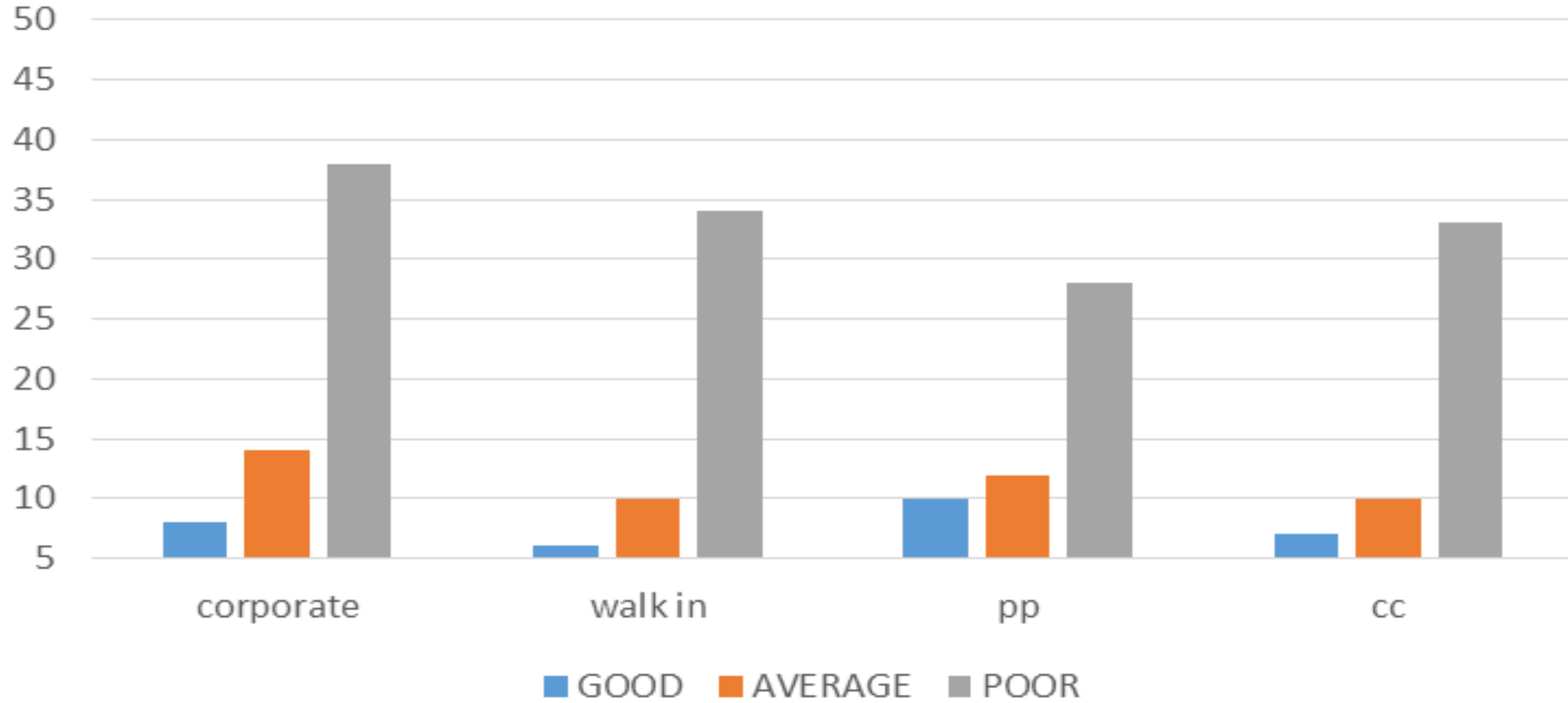


Fig 10.4 shows more dissatisfaction among patient regarding customer care staff

ECHO

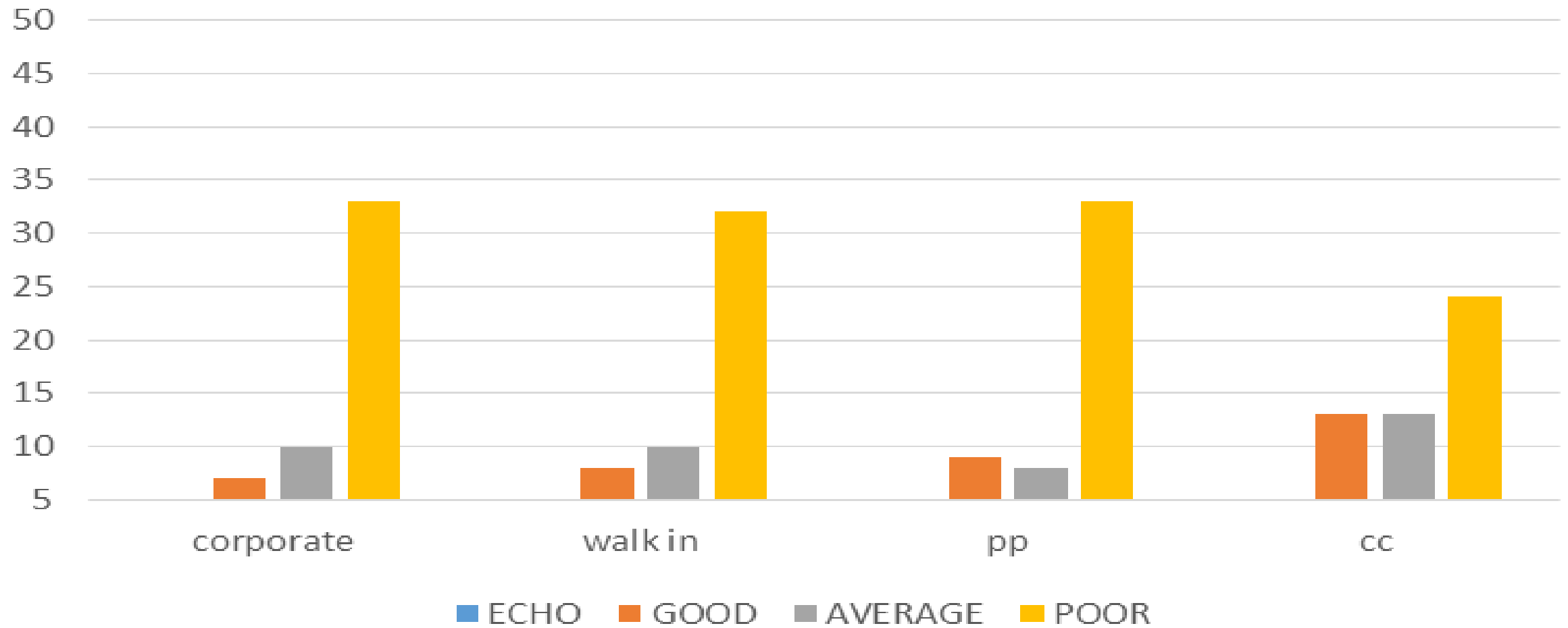
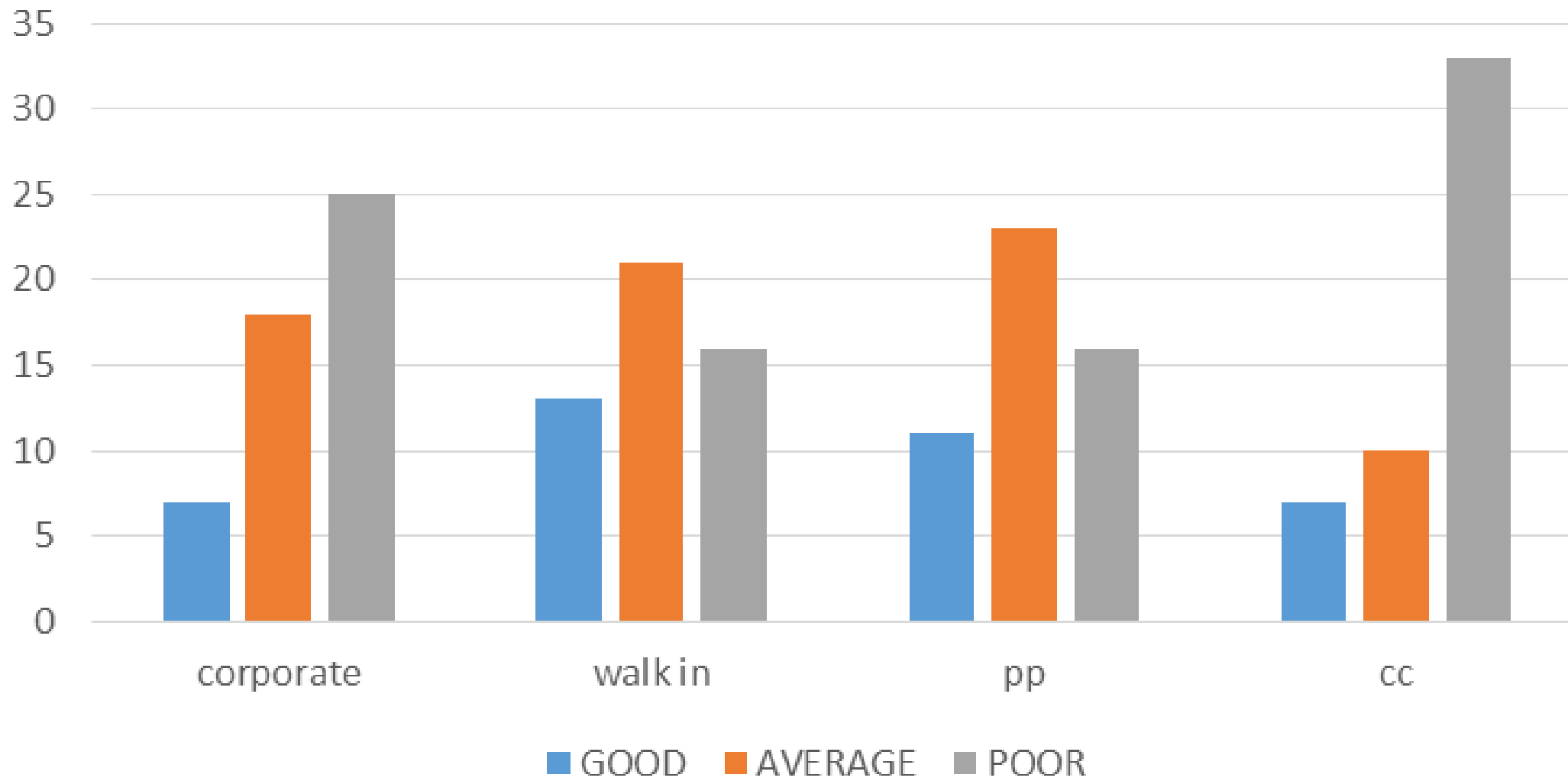


Fig 10.5 shows very low patient satisfaction among all groups in ECHO department

CUSTOMER CARE



Shows high dissatisfaction among consultant converted patients regarding customer care staff behaviour

CONVERSION RATE :

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

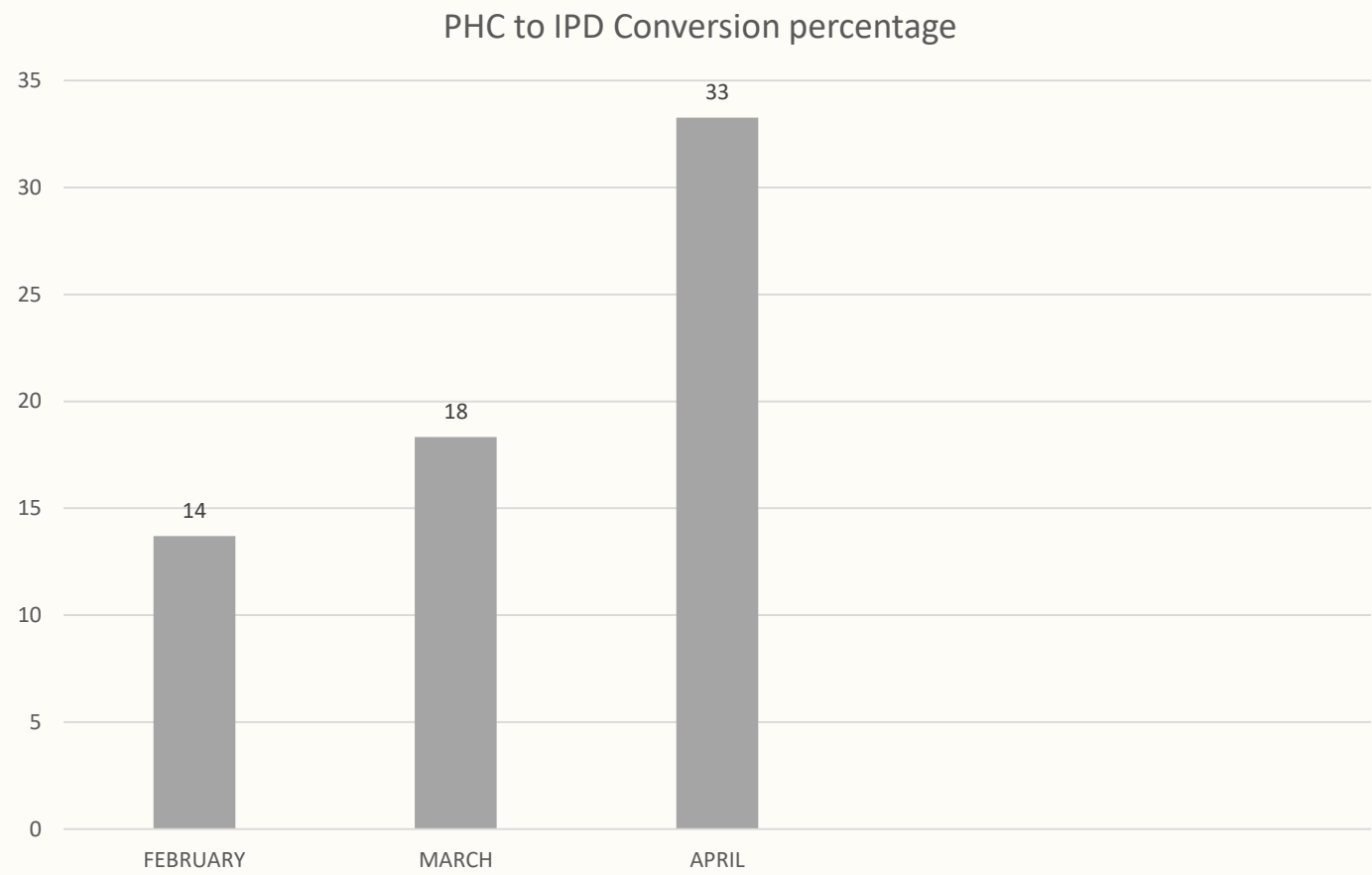
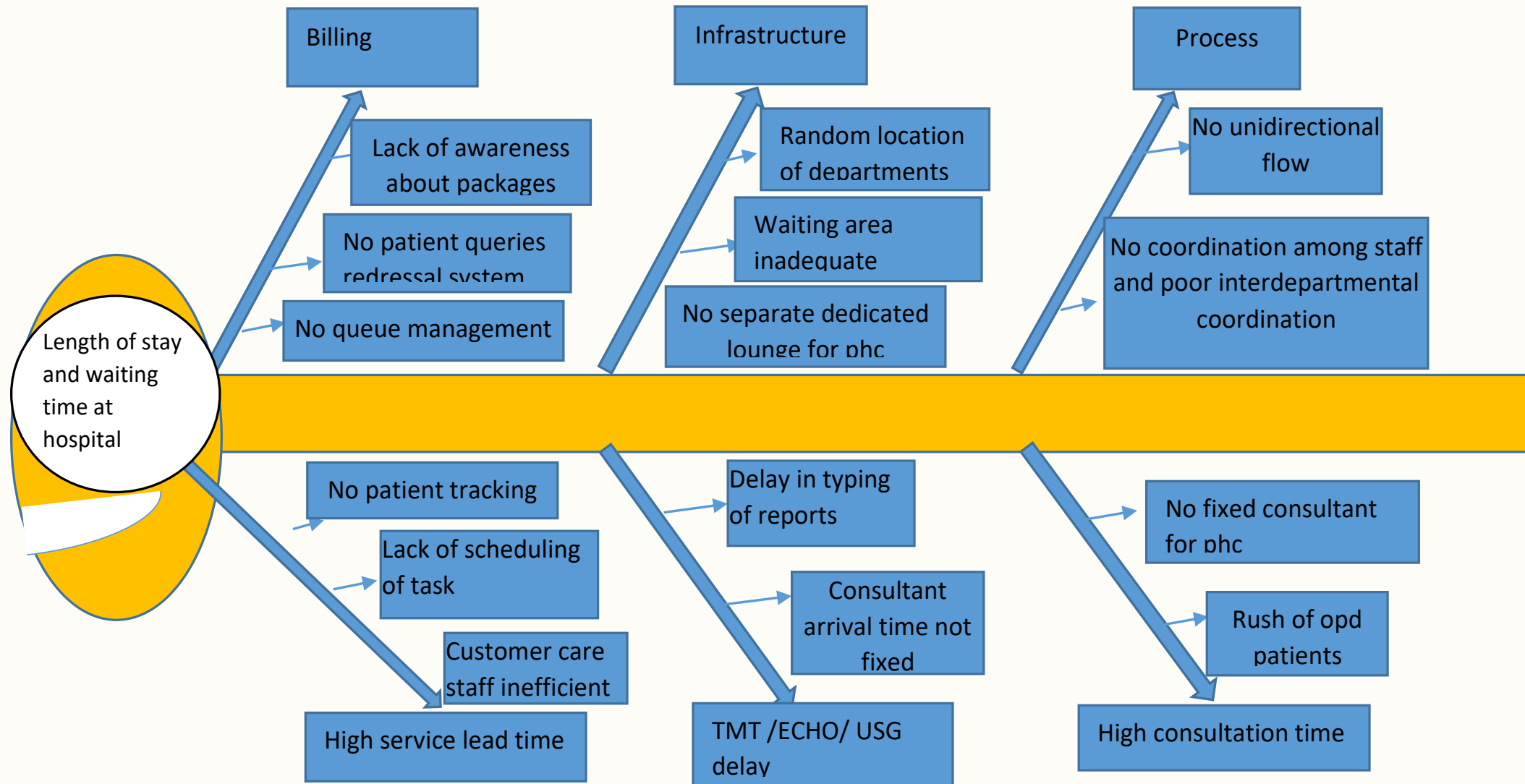


TABLE 11.1 Shows low conversion rate of preventive heath check up patients into in patient which in future is threat to hospital revenue structure

Fig 10.6 shows very low conversion rate of PHC patient into IPD patients

Root cause analysis



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graph TD; A[Consultants arrival time not fixed  
Scheduled time: 9.30 am  
Arrival time –between 10.30 to 11.30] --> B[Corporate patients +consultant  
converted+ pre appointed patients  
arrived at 7.30-8.30 am for fasting  
blood sample]; B --> C[Due to non availability of consultants  
at USG/ECHO the procedures would  
start late]; C --> D[Increased waiting time, delayed  
reports receival];
```

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Due to non availability of consultants
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start late

Increased waiting time, delayed
reports receival

No separate consultants for PHC lead to increased rush
for consultants at customer care counters, lots of
queries, anger , and sometimes altercations

Increased consultation time as consultants had
Out patient +online appointments patients +phc
patients

Patients arriving at 7.30 am got consultations at 5.30-
7.30 pm in evening



Results:

- The process mapping identified large amount of disorientation and non unidirectional flow of patients no proper signage's caused lots of random movement which lead to patient dissatisfaction and lots of complains.
- Feedback system was not strictly being implemented and no grievance redressal system was there.
- 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
- No proper scheduling, improper interdepartmental coordination, on regulation on consultant arrival and departure time specially in USG/ECHO lead to increased consultation time.
- 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.



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.

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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-up has 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 depicting location of departments 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

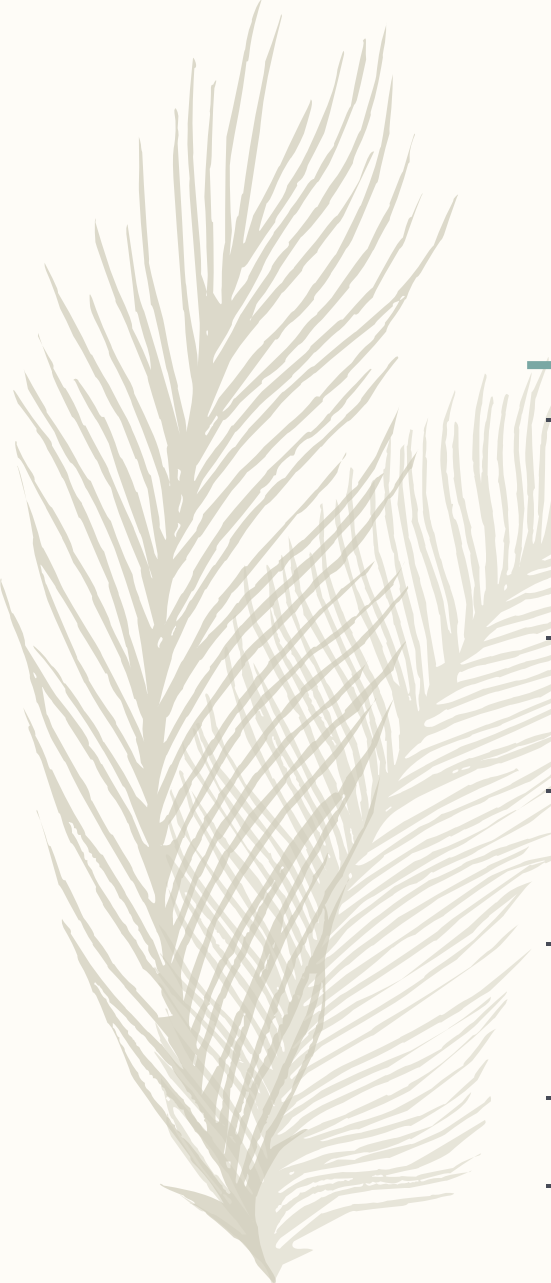
New strategy

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/rmo /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 / gynecologist/urologist/cardiologist/general surgeon

This would generate ADDITIONAL REVENUE + INCREASED CONVERSION RATE+ REDUCED SECOND CONSULTATION TIME+ GREATER PATIENT SATISFACTION



Interventions imlemented

- Separate lounge was constructed and made functional on 28 april 2019 which helped in easy tracing of patients and also ensured better patient experienceat 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.



REFERENCES

1. Andreas Holzinger et.al, (2011), Design and development of a mobile computer application to reengineer workflows in the hospital and the methodology to evaluate its effectiveness, Journal of Biomedical Informatics
2. California Healthcare Foundation, (2011), Using tracking tools to improve patient flow in hospitals
3. ChenBai-lian, Li En-dong, Kazunobu Yamawuchi, Ken Kato, Shinji Naganawa and MIAO Wei-jun, (2010), Impact of adjustment measures on reducing outpatient waiting time in a community hospital: application of a computer simulation approach, Chinese Medical Journal
4. CII Sub-Group, (2014), Universal Health Coverage Report on ‘Moving Towards Universal Health Coverage in India’
5. Elsevier Clinical Solutions, White Paper, (2013), Mobile Applications and the Future of Healthcare
6. Fawaz A. Abdulmaleka, Jayant Rajgopal (2007) - Analysing the benefits of Lean Manufacturing and Value Stream Mapping via Simulation: A process sector case study , International Journal of Production Economies
7. O’Leary KJ, et al. J Am Med Inform Association, (2016); Research and Applications, Oxford University Press on behalf of the American Medical Informatics Association, The effect of tablet computers with a mobile patient portal application on hospitalized patients - knowledge and activation
8. A. F. Najmuddin, I. M. Ibrahim, S. R. Ismail,(2010), A Simulation Approach: