- Turn Around Time 4 Hours for Basic Health Check up & Conversion of Health Check into OP Diagnostic & IP Admission
- Estimate vs Actual Billing for CABG Package

By

Rachana Kashyap

Dissertation submitted for the partial fulfillment of the

MBA Hospital and Health Management

Academic year, 2014-2016

The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer Airport
Jaipur-302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

Internship Training

At

Wockhardt Hospitals Pvt. Ltd., Nagpur

1) “Turn Around Time 4 hours for basic health check up & conversion of health check into OP diagnostic & IP admission”
2) “Estimate vs Actual billing of CABG package”

By

Rachana Kashyap

Under the guidance of

Dr. Daya Krishna Mangal

MBA Hospital and Health Management

2014-2016

The IIHMR University, Jaipur

Abstract:

(1).Time constraints limit the ability of doctors to comply with preventive service recommendations. Nowadays, trend of preventive health check up is increasing but people get annoyed with unusual waiting time in health check ups. Long waiting hours and wastage of valuable time makes people reluctant in investing time for their health. Customer experience is more important than customer service. People coming to hospital for health check up should get the value for money and a good experience. If customer experience is good, there will be more footfalls in hospital for health check up thus increasing revenue. After the study, it was concluded that Average time taken in completing a basic health check up is 6 hours. 20 % of basic health check ups were completed within 4 hours. 70 % of basic health check ups were completed within 6 hours. 10 % of basic health check ups were completed within 8 hours. Main reason for delay was Physician Consultation. Other reasons were radiology reports, lab reports. Out of 100 health check up patients, 46 i.e. 46.00 % were advised additional OP diagnostics and 7 i.e. 7.00 % were converted into IPD admissions. Conversion of health check up patients into In-patients were real as well as planned. Few suggestions were: Doctor's on call for health check up should not be clubbed with emergency and ICU rounds. Appointment of a doctor exclusively for health check up. Patient should be told on a continous basis to come to OPD desk after the completion of one process. In other words, proper tracking of patient. Health check up patients should be given some privilege in case of consultation. There should be a separate time for seeing health check up patients and OPD patients. Some rewards to employees if they are able to complete health check up within time limits. Portable x-ray machine for health check up.

(2).Before any surgery or clinical procedure, estimate is the primary mode to make patient understand that how much they need to spend on a particular procedure and if there is any fluctuation, it ultimately leads to patient dissatisfaction. After the study, it was concluded that, In case of analysis of cash bills, it was found that 26 % of the total bills were exceeding the estimate (if we take alos as 8-10 days). After this, we did critical analysis of these 26 % bills and the results were as follows: Maximum deviation was due to investigations done. In investigations done, blood gas analysis was most critical. Bed rentals was also one of the critical components. Average ICU stay was 3 days. In case of analysis of credit bills, it was found that 48 % of total bills were

exceeding the estimate. In critical analysis of these 48 % bills, components which were responsible for deviation were as follows:

(i).Investigations done (blood gas analysis and blood transfusion).

(ii).Consumables.

In both the cases i.e. cash as well as credit, variation in twin sharing was more than multi bed and single bed.

ACKNOWLEDGEMENT

I extend my sincere gratitude to **Dr. Clive Fernandes (Clinical head, Wockhardt Group of Hospitals,Mumbai), Dr. Tushar Gawad (Manager Administration, Wockhardt super speciality hospital, Nagpur), Mr. Avinash Agrawal (Senior Manager) & Dr. Vikas Chaudhari (Manager Administration, Wockhardt Heart hospital, Nagpur)** who has been my mentor for the dissertation project & has been instrumental in helping me shape this study in a desirable way and for giving me the opportunity to do this study and undergo the process of learning at WOCKHARDT HOSPITALS PVT. LTD., NAGPUR. I thank them for all the trust and faith they posed in me and I only hope that I have been able to live up to their expectations. Their guidance and support was helpful in enhancing my work. I would also like to thank **Mrs. K Sujatha (Centre Head, Nagpur), Mr. Amiya Sahoo (HR-Corporate) and Mr. P Santhosh (HR Head, Nagpur)** for supporting my work all along. Last but not the least **the entire staff of Wockhardt Hospitals Pvt. Ltd.** for their support and guidance.

I would like to express my sincere thanks to **Dr. S.D. Gupta (President, IIHMR University), Col. (Dr.) Ashok Kaushik (Dean, Academics and Student Affairs), Dr. Suresh Joshi (Professor, IIHMR University) Dr. Daya Krishna Mangal (Dean Research & Guide)** of IIHMR university for their proper guidance and cooperation during my dissertation. I am also grateful to my parents, my family and my friends for giving me moral support.

TABLE OF CONTENTS :

Turn Around Time 4 hours for basic health check up & conversion of health check into OP diagnostic & IP admission

1.1 Introduction

1.1.1 About the Hospital:

Wockhardt hospital,Nagpur is a 118 bedded super speciality hospital with a modern cath-lab, 4 operation theatres, 50 beds of ICCU and SICU and with In-house diagnostic facilities like CT scan, MRI, EEG and EMG. It is the first NABH accredited hospital in Central India. It provides medical care in the areas of Cardiac and Cardiac Surgery, Interventional Radiology, Orthopaedics and Joint replacement Surgeries, Minimal access Surgery and Critical care besides other specialities like Urology, Nephrology, Endocrinology, Gynaecology, Paediatrics, Emergency care, Preventive Healthcare and various high end surgeries like Kidney Transplant Surgery, Bariatric Surgery and Minimal Invasive Surgeries.

1.1.2 Background of the study:

Time constraints limit the ability of doctors to comply with preventive service recommendations. Nowadays, trend of preventive health check up is increasing but people get annoyed with unusual waiting time in health check ups. Long waiting hours and wastage of valuable time makes people reluctant in investing time for their health. Customer experience is more important than customer service. People coming to hospital for health check up should get the value for money and a good experience. If customer experience is good, there will be more footfalls in hospital for health check up thus increasing revenue.

1.1.3 Aim:

- To conduct a time motion study of basic health check up patients.
- To suggest ways in order to complete the process on time, if the process is taking longer time than usual.
- To study the conversion rate of health check up patients converted into OP diagnostics and IPD admissions.

1.1.4 Objectives:

- To map the processes involved in basic health check up.
- To streamline the process.
- To conduct a gap analysis.
- To study that how many patients of health check ups are being advised further OP diagnostics and IPD admissions.

1.1.5 Rationale :

- Long waiting hours and wastage of valuable time makes people reluctant in investing time for their health.
- Customer experience is more important than customer service.
- People coming to hospital for health check up should get the value for money and a good experience.
- If customer experience is good, there will be more footfalls in hospital for health check up thus increasing revenue.

1.2 Literature review

The primary goal of tertiary care hospital is to provide best possible health care to the patient. The modern era where it is right of every patient to demand best possible care. It is the duty of every staff member of the hospital to deliver his optimum efforts to the entire satisfaction of the patient. Luthans-F,Organizational behavior (Human Resources Development Oxford and IBH, New Delhi.) Time constraints limit the ability of doctors to comply with preventive service recommendations. Despite evidence of the effectiveness of preventive services and the development of published

national guidelines, actual rates of delivery health care services remain low. Several studies have investigated why preventive services delivery rates are low. The most common barriers identified are lack of time during the office visit, inadequate insurance reimbursement, patient refusal to discuss or comply with recommendations, and lack of physician expertise couselling techniques. Consistent with the finding that time is a salient barrier, Zyzanski and colleagues have shown that high-volume physicians perform fewer preventive services. Although a recent study showed that time spent in office visits has increased slightly in the past decade, doctors continue to claim that not having enough time is a barrier to performing preventive services. Most patients require more than 1 or 2 preventive services each year.

1.3 Methodology

1.3.1 Research questions

- What is the actual time taken to complete a basic health check up?
- What are the reasons of increased time in basic health check up, if any?
- How many patients of all health check ups are advised further OP diagnostics or IPD admissions?

1.3.2 Study design

Study design selected for this project keeping the aims and objectives of the project in mind is as following:

- Type of study: Retrospective
- Nature of study: qualitative and quantitative both
- Location of study: Wockhardt Hospitals, Nagpur
- Study subjects: Patients, patient care staff, Consultants, housekeeping staff
- Sampling process: Stratified Random Sampling
- Sample size: 100
- Duration of study: three months

- Data (information) to be collected:
  (i).Primary data – observations
  (ii).Secondary data - Patient related documentation records, Books,Journals, Internet
- Data collection tools: Qualitative (Observations) and quantitative (value stream mapping, process mapping)
- Data analysis: SPSS , Fish bone analysis, Process Mapping

1.4 Process:

In hospital, Basic health Check up is done at Rs. 1,500/- and includes following tests :

- ✓ Blood test includes :

- ✓ Diabetic Evaluation :
  - o Fasting Blood Sugar (FBS)

- ✓ Lipid Profile :
  - o Cholesterol

- ✓ Thyroid Profile :
  - o Thyroid Stimulating Hormone (TSH)

- ✓ Liver Profile :
  - o Bilirubin and SGPT

- ✓ Kidney Function Test (KFT) :
  - o Creatinine

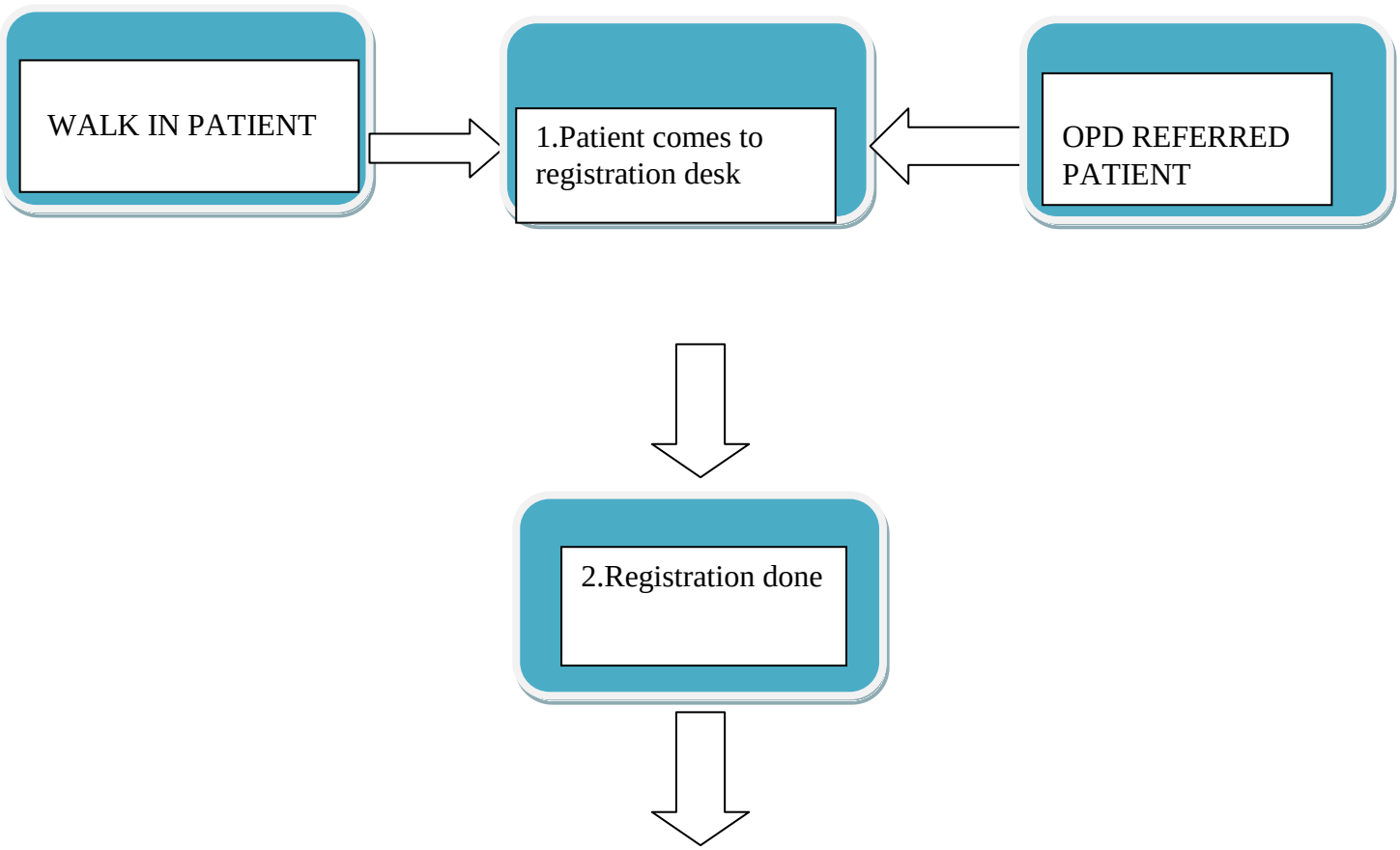
- ✓ General Investigations :
  - CBC with ESR and Urine Routine Examination

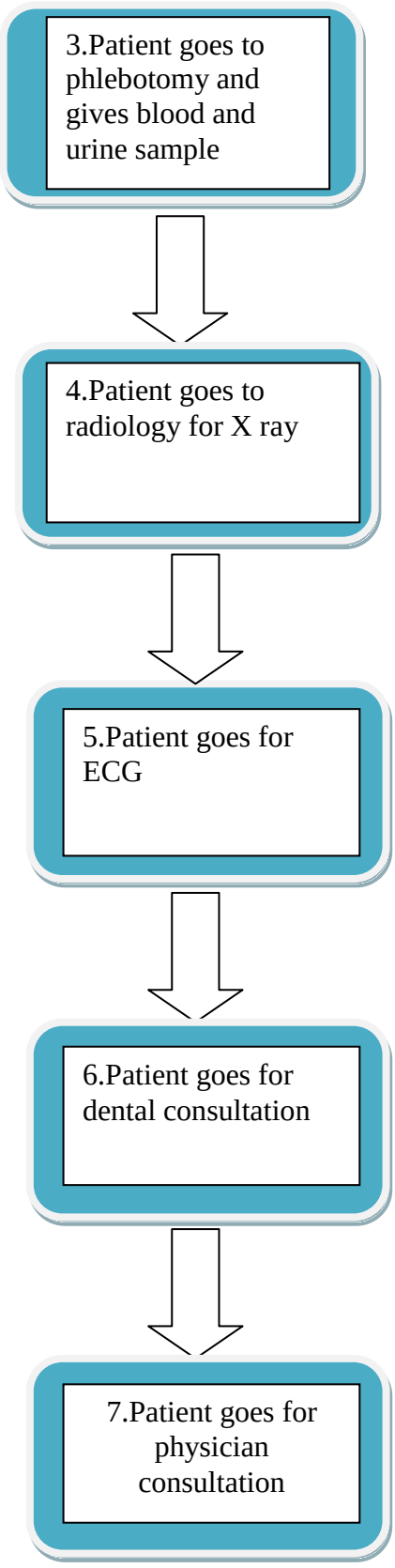
- ✓ Cardiac Risk Evaluation includes :
  - ECG

- ✓ Imaging includes :
  - Chest X- Ray

- ✓ Consultation includes :
  - Physician
  - Dentist

1.4.1 Process flow of basic health check up :




3.Patient goes to phlebotomy and gives blood and urine sample
4.Patient goes to radiology for X ray
5.Patient goes for ECG
6.Patient goes for dental consultation
7.Patient goes for physician consultation

In the above diagram, steps 4,5 and 6 can be parallel and run simultaneously for different patients.

1.4.2 PROCESS MAPPING :

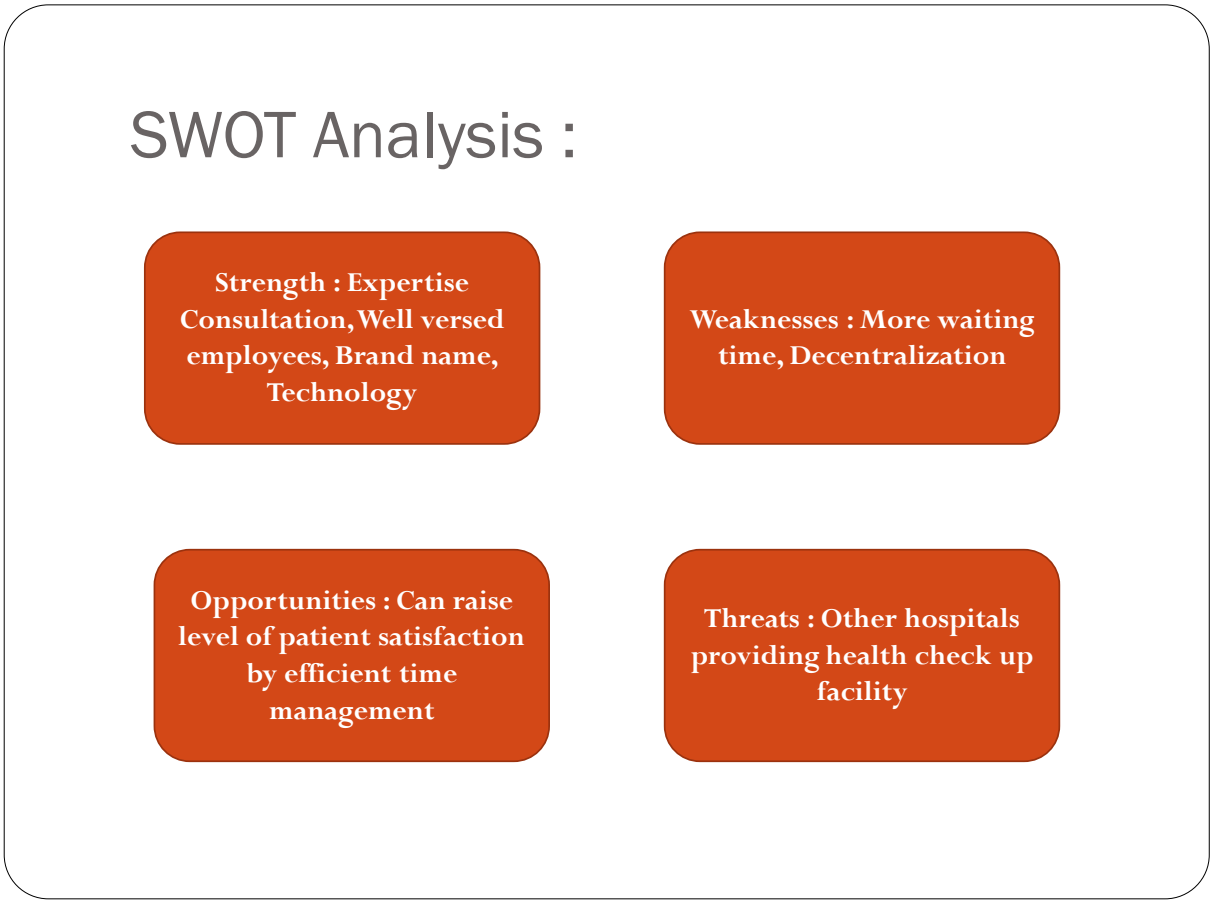
STEPS	PROCESS	MANPOWER	TECHNOLOGY
A	Registration	Customer care staff	HIS
B	Sample Collection	Lab technician	
C	Sample transportation to Lab	Housekeeping staff	
D	Sample run in Lab	Lab technician	Centrifuge machine, Integra 400 machine
E	ECG	ECG technician	ECG machine
F	X-Ray	X-Ray technician	X-Ray machine
G	Dental	Dentist	
H	Lab reports ready	Lab technician, Pathologist	
I	Radiology reports ready	Radiologist, Radiologist technician	
J	All reports sent to customer care desk	Housekeeping staff	
K	Physician Consultation	Physician	

Process mapping refers to activities involved in defining what an entity does, who is responsible, to what standard a business process should be completed, and how the success of a process can be determined.

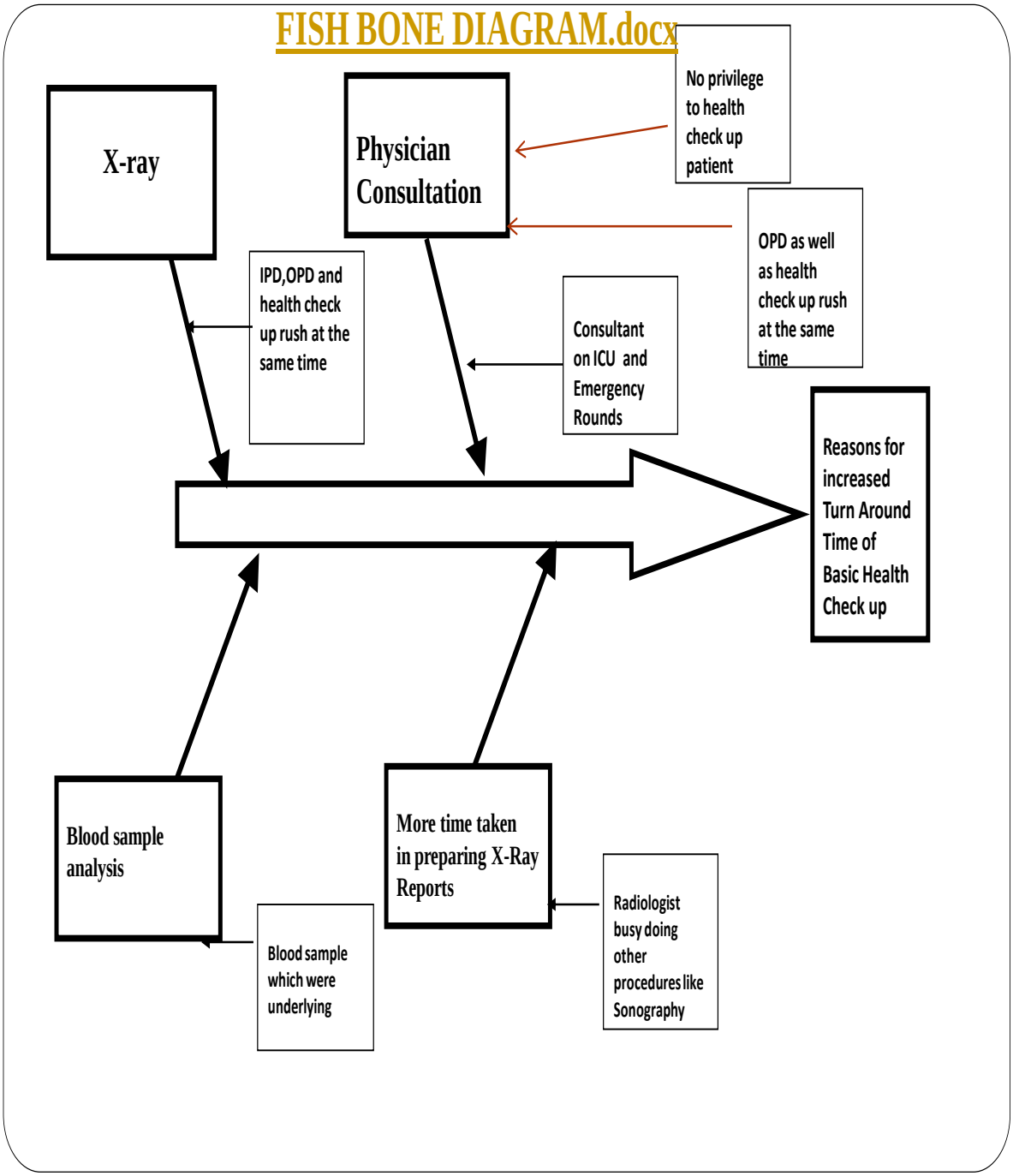
The main purpose behind process mapping is to assist organizations in becoming more efficient. A clear and detailed process map or diagram allows outside firms to come in and look at whether or not improvements can be made to the current process.

Process mapping takes a specific objective and helps to measure and compare that objective alongside the entire organization's objectives to make sure that all processes are aligned with the company's values and capabilities.

1.4.3


SWOT Analysis :
Strength : Expertise Consultation, Well versed employees, Brand name, Technology
Weaknesses : More waiting time, Decentralization
Opportunities : Can raise level of patient satisfaction by efficient time management
Threats : Other hospitals providing health check up facility

1.4.4.


FISH BONE DIAGRAM.docx
X-ray
Physician Consultation
No privilege to health check up patient
OPD as well as health check up rush at the same time
IPD,OPD and health check up rush at the same time
Consultant on ICU and Emergency Rounds
Reasons for increased Turn Around Time of Basic Health Check up
Blood sample analysis
More time taken in preparing X-Ray Reports
Blood sample which were underlying
Radiologist busy doing other procedures like Sonography

1.4.5.

Parameters taken in Track sheet :

- Customer care :

(i). Patient arrival

(ii). Patient departure

(iii). Requisition time

(iv). Procedure time

(v). Waiting time

(vi). Total time

- Phlebotomy :

(i). Patient arrival

(ii). Patient departure

(iii). Procedure time

(iv). Waiting time

(v). Total time

(vi). Sample remained in phlebotomy

- Lab :

(i). Sample reached lab

(ii). Sample run in lab

(iii) Reports generated

(iv). Reports Printed

(v). Reports sent to Customer Care desk

- ECG :

(i). Patient arrival

(ii). Patient departure

(iii). Procedure time

(iv). Waiting time

(v). Total time

- X-Ray :

(i). Patient arrival

(ii). Patient departure

(iii). Procedure time

(iv). Waiting time

(v). Total time

- Dental :

(i). Patient arrival

(ii). Patient departure

(iii). Procedure time

(iv). Waiting time

(v). Total time

- Physician Consultation :

(i). Patient arrival

(ii). Patient departure

(iii). Procedure time

(iv). Waiting time

(v). Total time

1.4.6.

VALUE STREAM MAPPING :

Value stream mapping is a lean-management method for analyzing the current state and designing a future state for the series of events that take a product or service from its beginning through to the customer.

In case of health check up, various processes were mapped and then Cycle time, Waiting time and Value added time was found. Patient never pays for waiting. He pays for value added time. So, it is essential to find out that how much time is value added and how much time is wasted.

Cycle Time = Value added time + Waiting time

VALUE STREAM MAPPING

Patient comes for registration at registration desk
Cycle time = 7.78 minutes
Waiting time = 4.43 minutes
Value added time = 3.35 minutes

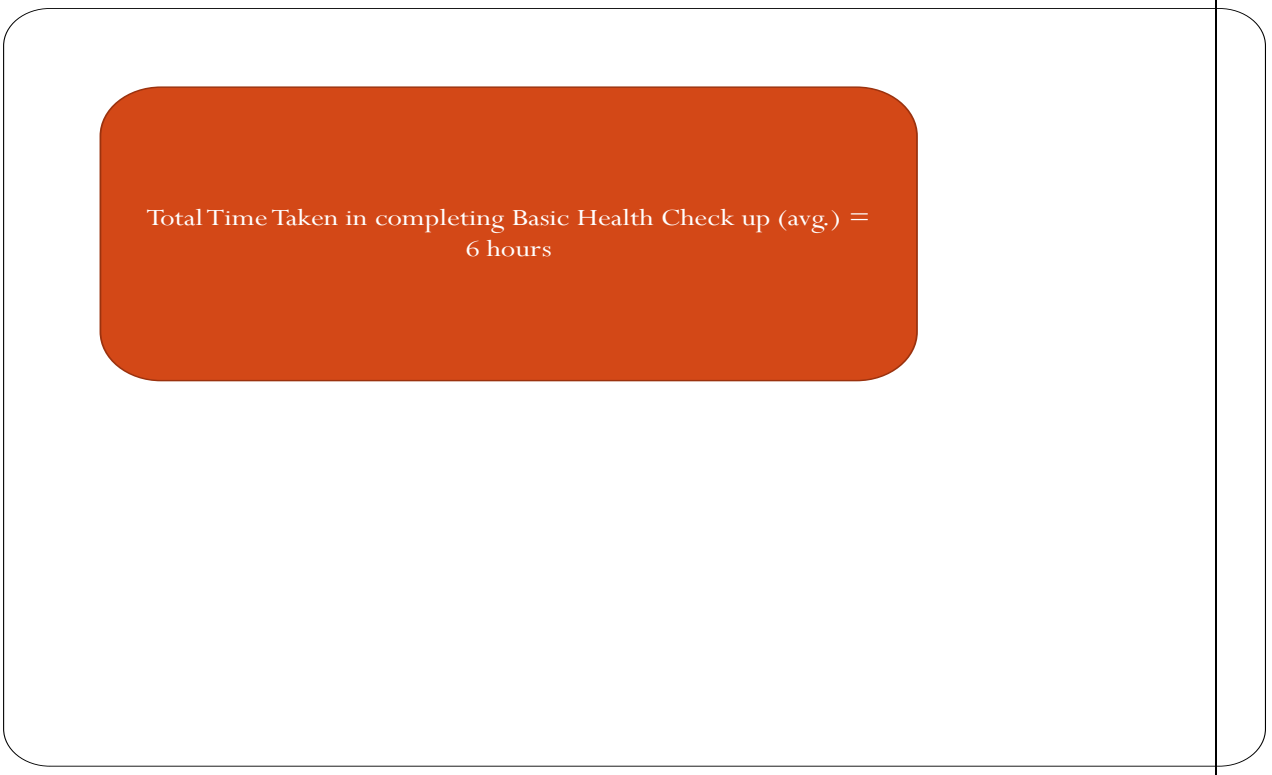
Patient comes for giving blood sample in phlebotomy room
Cycle time = 11.53 minutes
Waiting time = 6.29 minutes
Value added time = 5.24 minutes

Patient comes for ECG in ECG room
Cycle time = 13.48 minutes
Waiting time = 8.24 minutes
Value added time = 5.24 minutes

Patient comes for X-Ray in Radiology room
Cycle time = 27.09 minutes
Waiting time = 21.29 minutes
Value added time = 5.8 minutes

Patient comes for Dental Consultation
Cycle time = 17.92 minutes
Waiting time = 8.95 minutes
Value added time = 8.97 minutes

Patient comes for Physician Consultation
Cycle time = 2 hours 47 minutes
Waiting time = 2 hours 36 minutes
Value added time = 11 minutes



1.5.

RESULTS :

- Average time taken in completing a basic health check up is 6 hours. Benchmark is 4 hours.
- Average time taken in registration is 7.78 minutes. Benchmark is 10 minutes.
- Average time taken in sample collection is 11.53 minutes. Benchmark is 20 minutes.
- Average time taken in ECG is 13.48 minutes. Benchmark is 20 minutes.
- Average time taken in X-ray is 27.09 minutes. Benchmark is 18 minutes.
- Average time taken in dental consultation is 17.92 minutes. Benchmark is 20 minutes.
- Average time taken in physician consultation is 2 hours 47 minutes.

- 20 % of basic health check ups were completed within 4 hours.
- 70 % of basic health check ups were completed within 6 hours.
- 10 % of basic health check ups were completed within 8 hours.
- Main reason for delay was Physician Consultation.
- Other reasons were radiology reports, lab reports.
- Process was streamlined.
- Out of 100 health check up patients, 46 i.e. 46.00 % were advised additional OP diagnostics and 7 i.e. 7 % were converted into IPD admissions.
- Conversion of health check up patients into In-patients were real as well as planned.

1.6.

SUGGESTIONS :

- Doctor's on call for health check up should not be clubbed with emergency and ICU rounds.
- Appointment of a doctor exclusively for health check up.
- Patient should be told on a continous basis to come to OPD desk after the completion of one process. In other words, proper tracking of patient.
- Health check up patients should be given some privilege in case of consultation.
- There should be a separate time for seeing health check up patients and OPD patients.
- Some rewards to employees if they are able to complete health check up within time limits.
- More number of radiologists in order to complete reporting on time.
- Processes should be streamlined.

1. Actual vs Estimate billing of CABG procedure in Wockhardt Heart Hospital, Nagpur:

ABOUT THE HOSPITAL :

Wockhardt Heart Hospital, Nagpur is a 48 bedded (12 ICU and 5 SICU) cardiac care unit which performs all kinds of critical cardiac surgeries. It has full time expert team of cardiologists and cardiac surgeons to drive its cardiac services. It is one of the pioneers of Angiography by the radial method. Apart from other procedures it does around 250 CABG procedures in a year.

INTRODUCTION :

Before any surgery or clinical procedure, estimate is the primary mode to make patient understand that how much they need to spend on a particular procedure and if there is any fluctuation, it ultimately leads to patient dissatisfaction.

AIM OF THE PROJECT :

To find out whether there is any difference between estimate and actual bills of CABG package.

OBJECTIVE(s) OF THE PROJECT :

- To study actual bills and estimate of CABG procedure in detail.
- To list out the critical components contributing in deviation from estimate to actual.

RESEARCH METHODS :

- Type of study : Retrospective mode of study
- Location of study : Wockhardt Heart Hospital, Nagpur
- Study subjects : CABG actual bills and estimate
- Sampling process : Stratified Random Sampling

- Sample Size : 100 (cash and credit)
- Data (information) to be collected:

  (i).Primary data : CABG actual bills from Hospital Information System.

  (ii).Secondary data : Books, Journals, Internet.
- Data collection tools : quantitative

RESEARCH QUESTIONS :

- Is there any deviation between actual bill and estimate of CABG procedure?
- What are the critical components due to which there is a deviation (if any)?

Estimate of CABG in Wockhardt Nagpur

ROOM CATEGORY	MULTI BED	TWIN SHARING	SINGLE
Basic hospital charges (2 ICU, 6 Ward)	101300	113000	142000
Pharmacy, Consumables, Investigation, OP/IP Procedure	128700	137000	143000
CSSD and Cardiologist charges	5000	5000	5000
Total	235000	255000	290000

Actual of CABG in Wockhardt Nagpur

ROOM CATEGORY	MULTI BED	TWIN SHARING	SINGLE
Basic hospital charges (2 ICU, 6 Ward)	101300	113000	142000
Pharmacy, Consumables, Investigation, OP/IP Procedure	131879	151000	171987
CSSD and Cardiologist charges	5000	5000	5000
Total	238,179	269,000	318,987

PARAMETERS USED IN ANALYSIS OF CHECK LIST :

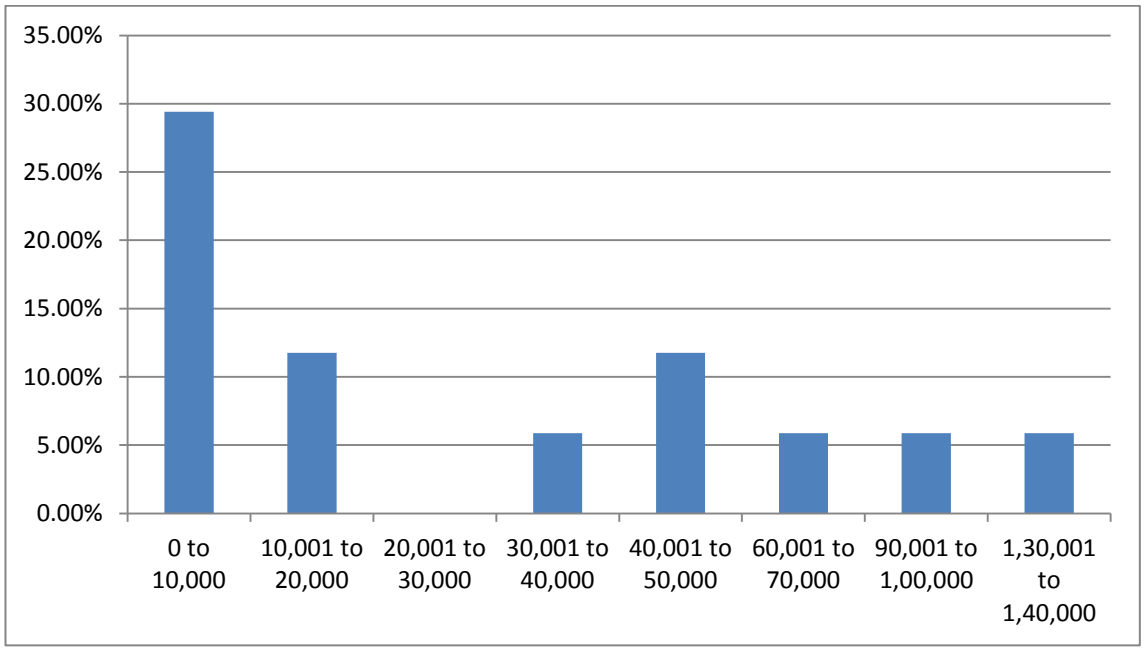
- IP number
- Bed category
- Length of stay

- Stay in days
- Total basic hospitalization charges
- OP/IP procedures
- Pharmacy
- Consumables
- Blood transfusion
- Other investigations
- CSSD and Cardiologist charges
- Diet consultation
- Admission
- Registration
- Physician consultation charges
- Bed rentals
- Bed charges

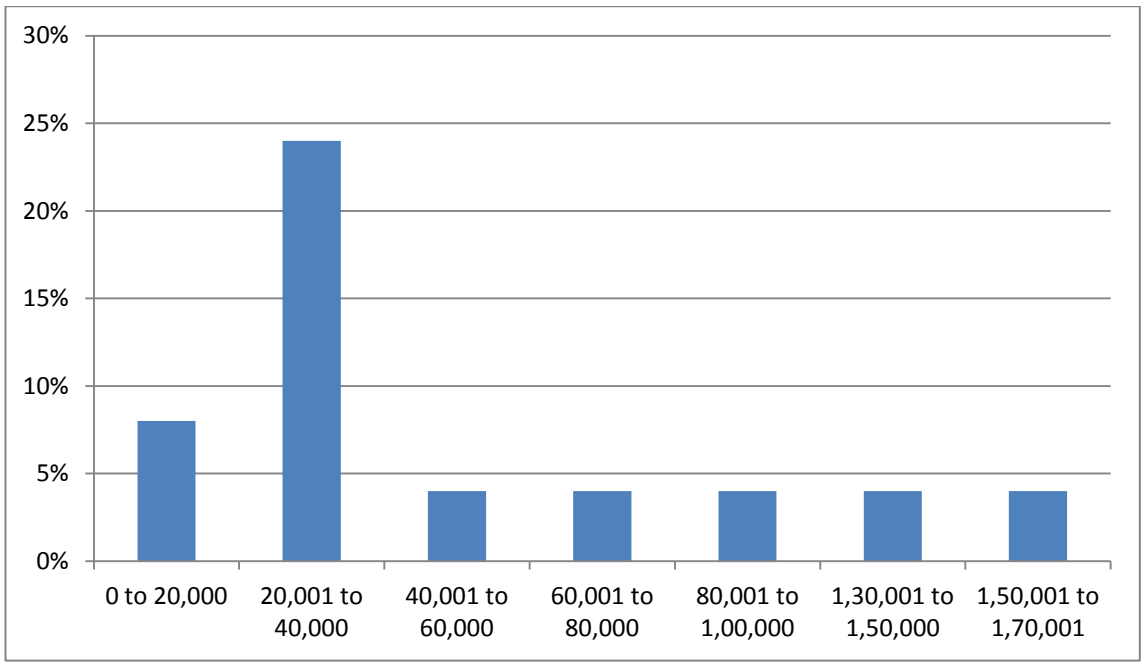
RESULTS :

- In case of analysis of cash bills, it was found that 26 % of the total bills were exceeding the estimate (if we take alos as 8-10 days)
- After this, we did critical analysis of these 26 % bills and the results were :
- Maximum deviation was due to investigations done.
- In investigations done, blood gas analysis was most critical.
- Bed rentals was also one of the critical components.
- Average ICU stay was 3 days.
- In case of analysis of credit bills, it was found that 48 % of total bills were exceeding the estimate.
- In critical analysis of these 48 % bills, components which were responsible for deviation were as follows:
- (i).Investigations done (blood gas analysis and blood transfusion).
- (ii).Consumables.
- In both the cases i.e. cash as well as credit, variation in twin sharing was more than multi bed and single bed.

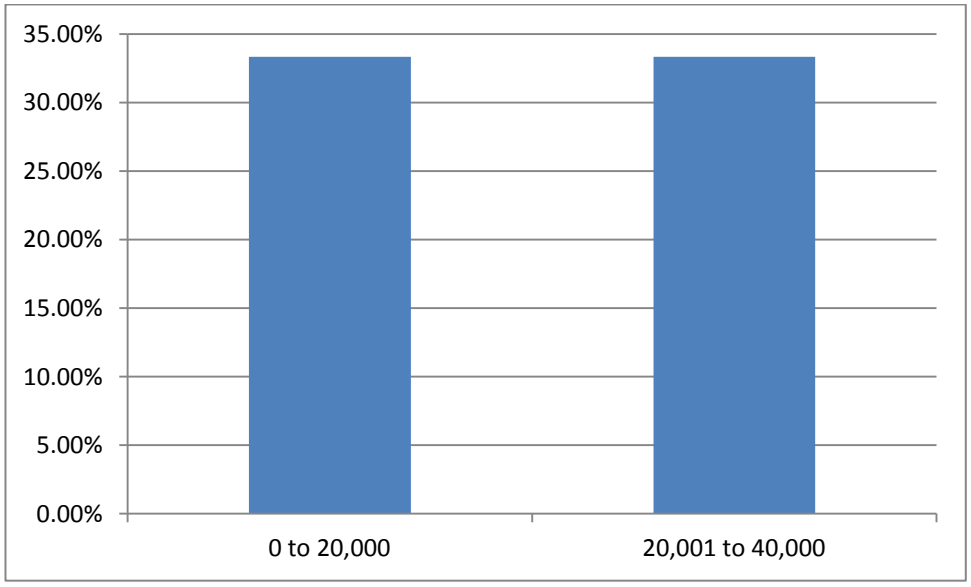
Following are the graphical representations of deviation according to Bed Category :



MULTI BED CATEGORY



TWIN SHARING CATEGORY



SINGLE BED CATEGORY

SUGGESTIONS :

- ICU stay can be increased in the package by one day i.e. 3 days from 2 days.
- Length of stay in package can be increased from 8 days to 10 days.

ETHICAL CONSIDERATIONS :

1. Research participants were not subjected to harm in any ways whatsoever.
2. Respect for the dignity of research participants were prioritised.
3. Full consent was obtained from the participants prior to the study.
4. The protection of the privacy of research participants was ensured.
5. Adequate level of confidentiality of the research data was ensured.
6. Anonymity of individuals and organisations participating in the research was ensured.
7. Any deception or exaggeration about the aims and objectives of the research was avoided.
8. Affiliations in any forms, sources of funding, as well as any possible conflicts of interests were declared.
9. Any type of communication in relation to the research was done with honesty and transparency.
10. Any type of misleading information, as well as representation of primary data findings in a biased way was avoided.

In order to address ethical considerations aspect of my dissertation in an effective manner, I will need to expand discussions of each of the following points to at least one paragraph:

a) Voluntary participation of respondents in the research is important

b) The use of offensive, discriminatory, or other unacceptable language needs to be avoided in the formulation of Questionnaire/Interview/Focus group questions.

c) Privacy and anonymity or respondents is of a paramount importance

d) Acknowledgement of works of other authors used in any part of the dissertation with the use of Harvard/APA/Vancouver referencing system according to the Dissertation Handbook

f) Maintenance of the highest level of objectivity in discussions and analyses throughout the research

REFERENCES :

- www.sciencedirect.com/ gap analysis of health checkup
- www.sciencedirect.com/ value stream mapping in time motion study
- www.gunston.com
- www.pubmed.com / process mapping
- www.wikipedia.com / business process mapping
- www.wockhardthospitals.com
- www.wockhardthospitalsnagpur.com
- www.fiction.com /coronary artery bypass surgery costing
- www.costingmethods.com / heart surgeries
- www.arteryworld.com
- www.oxfordbibliographies.com
- www.emeraldinsight.com