Business Process Re-Engineering At Cardiology Department

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ABSTRACT: Healthcare sector is the world's third largest industry and is facing several problems like excessive waiting times for patients, lack of access to information, high costs of delivery and medical errors. Healthcare Managers seek the help of process reengineering methods to discover the best processes for performing work, and that processes are reengineered to optimize productivity without compromising on quality. Business Process Reengineering refers to the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality and speed. The present study is carried out at tertiary care corporate hospital with 1,000-plus-bed facility. A descriptive study and case study method is used with intensive, careful, complete observation of patient flow, delays, short comings in the patient movement and workflow. Data is collected through observations, informal interviews and analyzed by Matrix Analysis. Flowcharts were drawn for the various work activities of cardiology department including Workflow of the admission process, Workflow in ward & ICCU, Work flow of the patient for catheterization laboratory procedure & Billing and Discharge Process. The Problems of the existing system were studied and necessary suggestions were recommended to cardiology department module with illustrated Flow chart.

Key words: Business Process Reengineering, Cardiology Department, Healthcare, Flow Chart

INTRODUCTION

Healthcare sector is the world's third largest industry and it is growing rapidly both in developing countries and developed nations. Healthcare all across the globe are facing several problems. The most publicized symptoms are excessive waiting times for patients, lack of access to providers and information, high costs of delivery and medical errors. As healthcare costs increases, there is a need for healthcare service providers and healthcare managers to contain costs and to achieve a higher efficiency at their operating facilities without scarifying quality. (Romanow, R.J. 2002). Healthcare Managers seek the help of process reengineering methods to discover the best processes for performing work, and that processes are reengineered to optimize productivity without compromising on quality (Weicher et al. 1995). According to Hammer and Champy (1993) BPR refers to the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality and speed. BPR is increasingly recognized as a form of organizational change characterized by strategic transformation of interrelated organizational subsystems producing varied levels of impact. This organizational change perspective recognizes that business process reengineering is not a monolithic concept but rather a continuum of approaches to process change (Kettinger et al. 1997).Despite the significant growth of the BPR concept, not all organizations embarking on BPR projects achieve their intended result (Hammer and Champy 1993) .It is in Estimate that as many as 70 percent of organizations do not achieve the dramatic results they seek. Having BPR repeatedly at the top of the list of management issues in annual surveys of critical information systems reflects executives' failure to either implement properly or acquire the benefits of BPR (Alter, 1994). This mixture of results makes the issue of BPR implementation very important. It is believed that BPR has great potential for increasing productivity through reduced process time and cost, improved quality, and greater customer satisfaction, but it often requires a fundamental organizational change. As a result, the implementation process is complex, and needs to be checked against several success/failure factors to ensure successful implementation, as well as to avoid implementation pitfalls. The analyses of BPR implementation process by reviewing the relevant literature on both soft and hard factors that cause success and failure of BPR efforts. The factors listed below are distilled from various articles .They was then categorized into a number of subgroups representing various dimensions of change related to BPR implementation. These dimensions are: Change management, Management competency and support, Organizational structure, Project planning and management and IT infrastructure (C. S. Ramanigopal et al 2011)

Methods

The present study was conducted at a tertiary care corporate hospital of Hyderabad which is in operation from 1989 with 1,000-plus-bed facility. The hospital is serving the healthcare need of people of Hyderabad .The research method used is descriptive study and case study method. The objective of the study is to locate the factors that account behavioral pattern of the given unit in an integrated totality. In the Cardiology department, scheduled and unscheduled operations often have to coexist and be managed; ways to minimize patient inconvenience need to be studied. The study business process reengineering for Cardiology department involves intensive, careful and complete observation of patient flow, delays and short comings in the patient movement and workflow. It is an in-depth study in minute details. Primary data is collected through observations, informal interviews and face to face interaction with Department in charge, Secondary data is collected through records of the hospital .The data is analyzed by Matrix Analysis which is in the form of flow charts, diagrams and pictorially representation with written descriptions.

Discussions

In this study the BPR was useful for the cardiology department to smoothen the workflow and reduce the time taken in various processes in the department. The aim of this study is to suggest a better process and reduce the time constraints. A complete process & workflow ware studied in detail considering all the sub processes and then dividing them so that the time taken up for each sub process can be studied .The process which is taking much time or which is not smoothing the workflow can be re-engineered.

The workflow of the cardiology department is done for the…

1. Present process
2. Proposed or re-engineered process

The process is first given in a written form and then it is explained in the help of flow charts. Flow charts help to prevent the various processes with the help of different symbols. The charts are very helpful so that the process could be understood very easily. Business process re-engineering tools are used for improvements and understanding black holes where changes can be done to improve the existing process, with radical re-thinking, re-designing and re-tooling of the business process to achieve drastic changes

Organizational re-structuring

This restructures the organization for BPR

a) Reduce or re-structure the organizational layers.
b) Realigning functions/ work groups around the customer.
c) Driving accountability to frontline.

Work re-designing

While re-designing work in the organization

a) Conduct “customer value added” process analysis of job task.
b) Expand job scope and ownership.
c) Build cross-functional teams.

Technological re- tooling

Technological re-tooling requires the organization to consider

a) Increasing the emphasis on process task that happen in parallel.
b) Gathering and communication customer related data.
c) Expending access to information and data for all the employees.

Starting with the admission process in the cardiology department, every process has been descried step by step below.

WORKFLOW OF THE ADMISSION PROCESS IN THE CARDIOLOGY DEPARTMENT AS PATIENTS ARE ADVISED FOR ADMISSION AND/ OR CATHLAB PROCEDURE

I. When the patient is advised for admission and /or cathlab process by the doctor.

II. When patient comes directly from other hospital or referred patient

III. Patient/ patient’s relatives goes to admission desk with prescription

IV. Admission officer calls PRE of cardiac dept and asks for availability of bed

V. According to availability admission officer allots bed to the patient and prepares case-sheet

VI. Asks patient to deposit the advance to the cash counter, directly sends if Arogyashri patient, or insurance holder or patient under empanelment

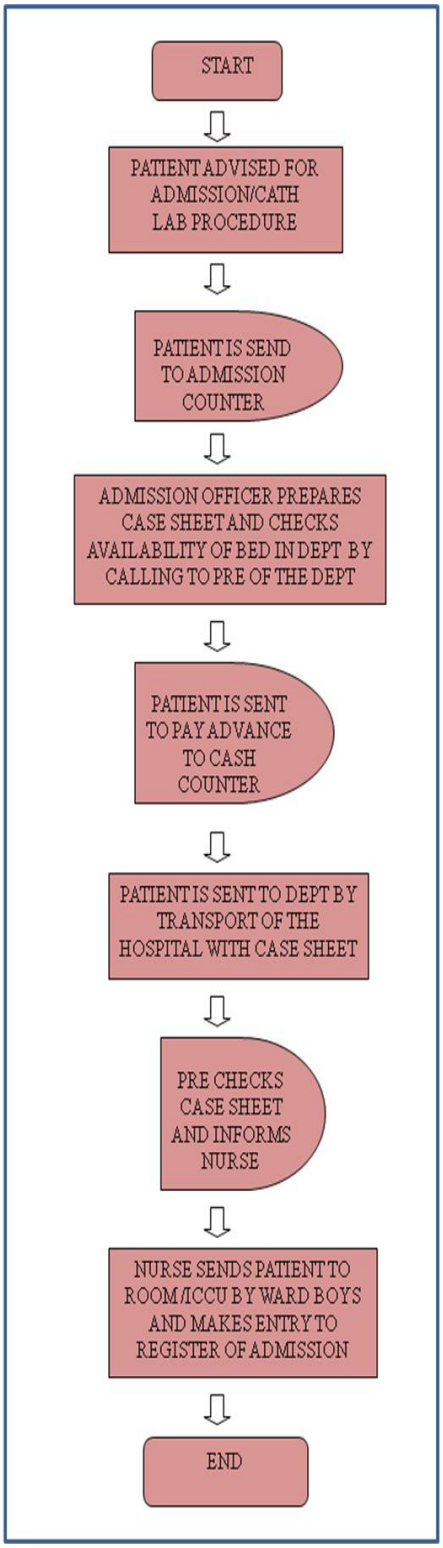
VII. PRE informs the housekeeping staff about admission and asks to clean and prepare the room

VIII. Patient is taken to the department by transport

IX. PRE in the dept informs nurse about the admission

X. Nurse in the dept checks the case-sheet and sends the patient to the room allotted

FIG1.0 FLOW CHART FOR EXISTING PROCESS FOR THE ADMISSION IN CARDIOLOGY DEPARTMENT



WORKFLOW IN WARD/ICCU CAN BE DESCRIBED STEP BY STEP AS FOLLOWS

I. Case sheet of the patient is checked by DMO

II. DMO checks the patient and orders treatment (emergency , if needed) to nurse

III. Nurse orders medicine to pharmacy by system connected by LAN

IV. Nurse sends courier and receives medicines from pharmacy

V. Nurse starts treatment to patient

VI. Nurse collects blood sample and other samples for investigations as ordered by doctor

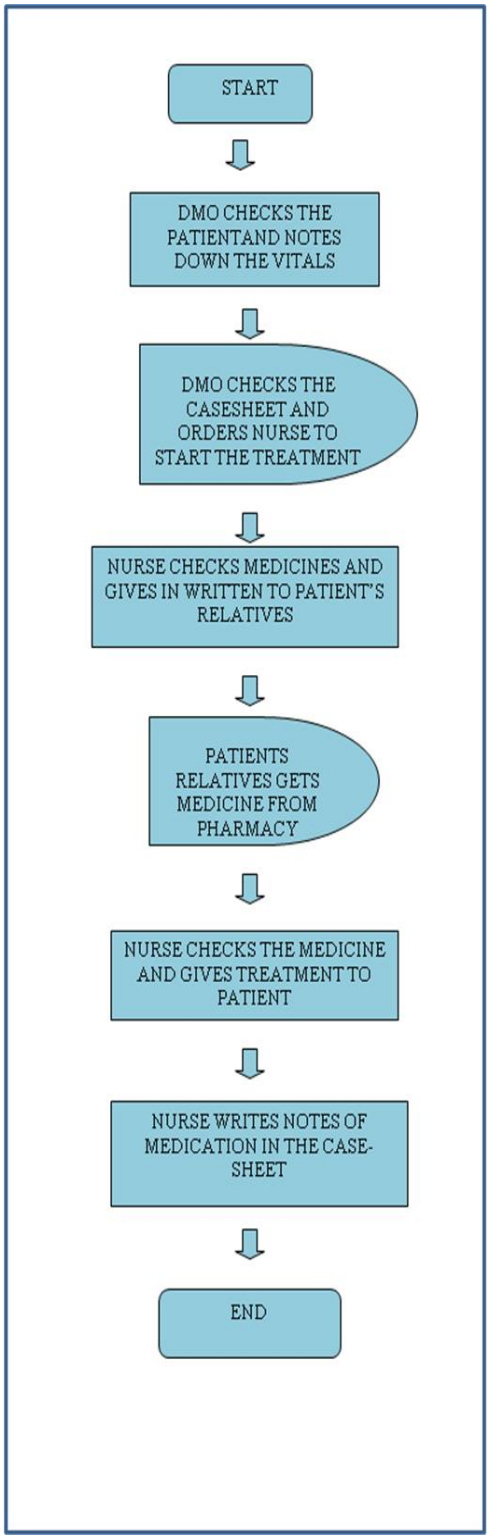
VII. Nurse calls courier and send the investigation sample to the LAB

VIII. Investigation report is collected by courier and brought to the dept

IX. DMO collects report and informs consultant cardiologist/surgeon

X. Changes in treatment are noted as per cardiologist/surgeons by DMO

FIG1.1 FLOW CHART FOR WORKFLOW IN WARD/ ICCU



WORK FLOW OF THE PATIENT FOR CATHETERIZATION LABORATORY PROCEDURE

I. When patient is advised for catheterization procedures like PTCA, PDA closure, balloon angioplasty and stenting, pacemaker by the doctor

II. Patient gets admitted in the hospital or in emergency directly taken to procedure after routine investigations

III. For Arogyashree patients procedure will be performed after the approval of the case

IV. Investigation of the patient are done after patient gets admitted in ward(all routine investigations, ECG, 2D echo)

V. Sample collected in ward itself and sent to laboratory for investigation

VI. Report sent to the ward after investigation from laboratory

VII. A catheterization lab check list is checked by the PRE or nurse

VIII. On the day of the procedure consent form is signed by the patient and patient attendees

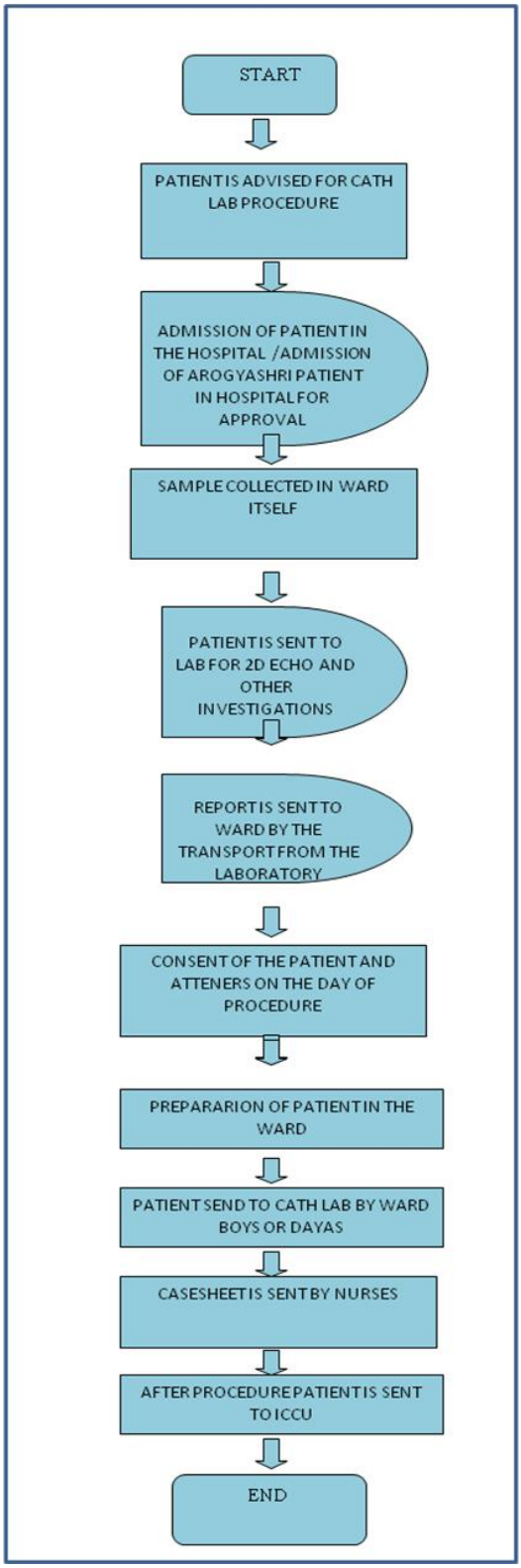
IX. Patient is kept NBM for at least 6hours before procedure

X. Preparation of the patient in ward

XI. Patient is sent to catheterization lab or procedure

XII. After procedure patient is shifted to ICCU

FIG1.2 FLOW CHART OF PATIENT FOR CATHETERIZATION LABORATORY PROCEDURE



BILLING AND DISCHARGE PROCESS FOR CARDIOLOGY DEPARTMENT

I. When patient is advised for discharge by doctor

II. DMO prepares discharge summery

III. Discharge summery is send to consultant for checking

IV. After checking discharge summery corrections are made by DMO and set to typing

V. Case sheet of the patient is sent to billing dept by transport

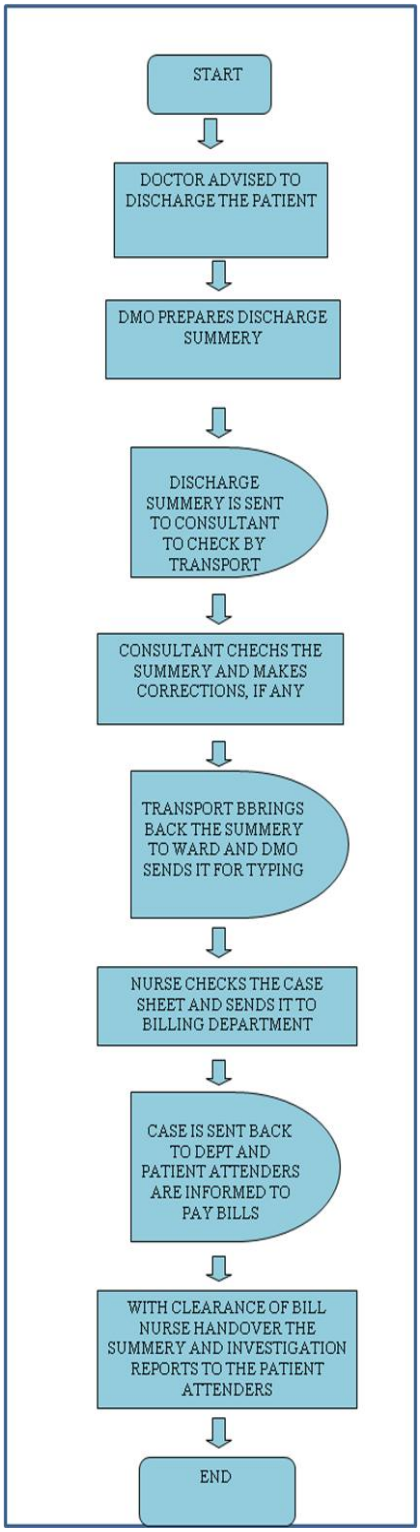
VI. After completion of billing case sheet is sent back to cardiac dept by transport

VII. PRE informs relatives of patient to go to billing counter to pay the bill

VIII. A feedback form is filled up by patient relatives about the services of the hospital

IX. After clearance of bill discharge summery with investigation reports is handed over to Patient attainders by PRE

FIG1.3 FLOW CHART FOR BILLING AND DISCHARGE PROCESS



PROBLEMS IN THE EXISTING SYSTEM AND POSSIBLE ALTERNATIVES

The identification of problem and solutions for these problems of the patient process can be sub-divided as follows

A) There is delay in admission process in morning as well as when emergency cases come to the hospital as the use of LAN is not properly done to check the availability of the beds: A LAN should be introduced in admission desk with every department which can be useful to see the availability of beds in departments. The staff should be trained to use LAN as it can save time as well as money.

B) Sometimes Transportation of patient is delayed due transport personnel: Transportation personnel should be always there to receive and carry the patient for every department one or two transport persons should be posted.

C) Investigations samples are sent to labs through couriers who delay the process and sometimes due to more investigations from OPD: A separate section for emergency and IPD investigations should be started.

D) Delay in diagnostic tests carried before cath lab procedures because of common 2D Echo and other machines for both OPD and IPD: A separate set investigations should made available for Emergency cases and IPD cases that are undergoing cath lab procedures.

E) DMO's are less in number as compared to consultants which makes a reverse pyramid in human resources of department: Number of DMO's should be in ratio with consultants and they should be given work of only one department, otherwise they will be confused and there may be chances of occurring mistakes.

F) For emergency cases there is no availability of costly life saving cardiac drugs like streptokinase, urokinese: ICCU of cardiology department should contain life saving drugs for emergency cases though accountable for high cost.

G) After preparing discharge summery, sent to consultant and again DMO makes corrections suggested by consultant and then again sent for typing: Discharge summery should be prepared on system connected with LAN and consultants should be provided with systems who can by checking summaries directly send to discharge summery department.

Cardiology Department Module

The process can be re-engineered by introducing LAN connection and creating a cardiology department module. The module will help in timely processes and less time taken for the same work if cardiology module is prepared and it should all the major departments, OPD's, labs, admission desk, administration department which can prepare online requisitions and send as needed. The salient features are as follows:

Item Master Details: the module stores list of all the patients and procedures to be done on that particular day.

Container Master Details: This master module stores list of all the containers exchanged between cath lab, ward and ICCU.

Dispatch details from ward and ICCU to cath lab: Record details of all the patients which are coming from front office after admission and patients which come under the Arogyashree scheme and other patients having empanelment.

Pharmacy details: this module records the medicines ordered and collected from pharmacy for Arogyashree patients and patients under empanelment.

Stock status: it records details of all the medicines, IV fluids, instruments present in the department.

Proposed changes in existing system

A LAN system with a cardiology department should be implemented and it should be connected with all the other modules of the hospital.

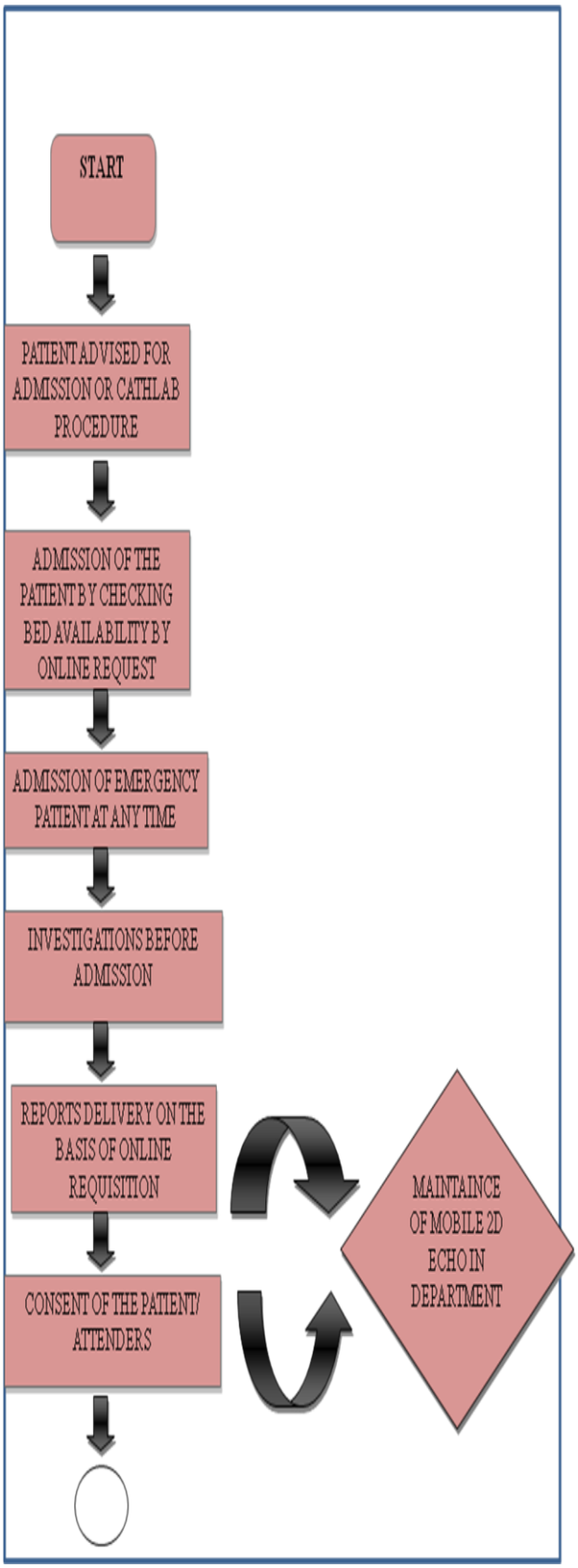
Restructuring

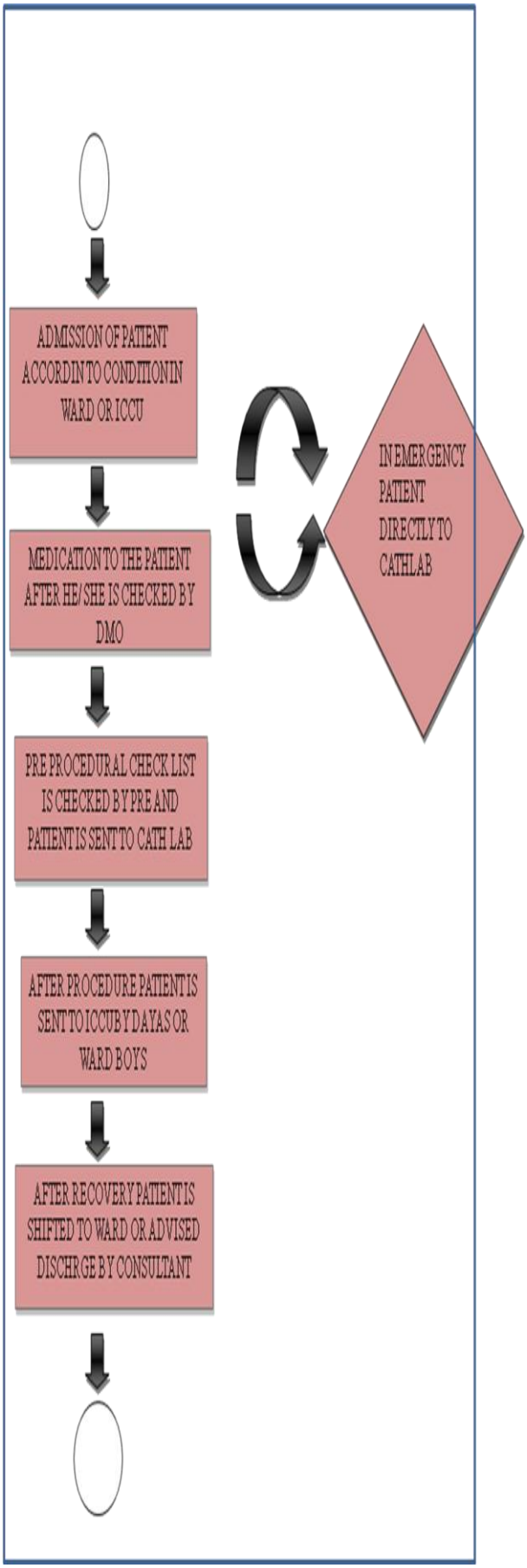
The cardiology department is lacking a manager as PRE o the department is shifted to other department as per needs and hence while re-structuring the departmental hierarchy, a permanent PRE is needed and training should be imparted to PRE and some nurse to use the system, as well as to DMO's to prepare discharge summery.

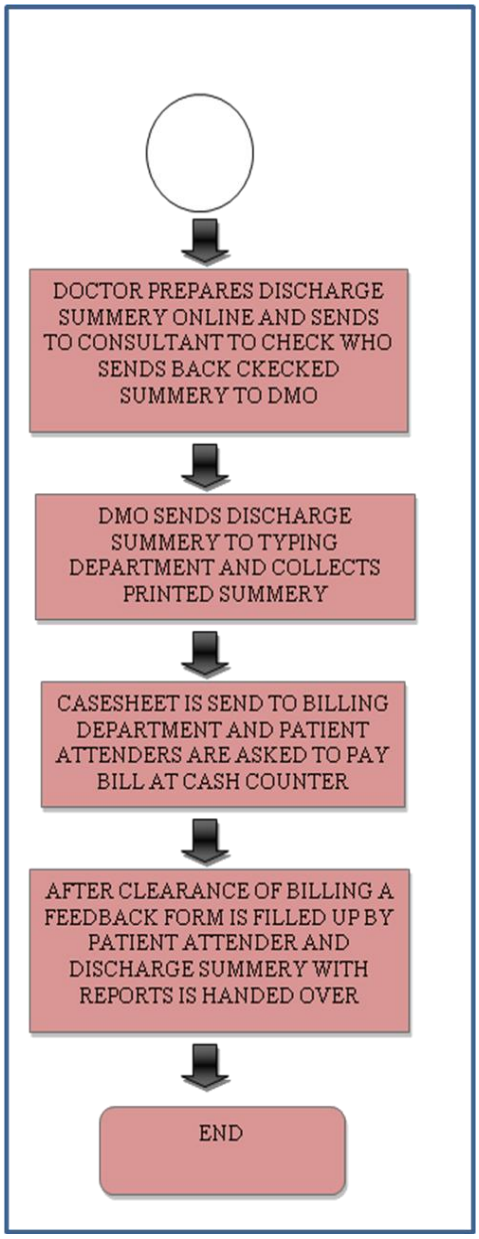
Redesigning: The work can be expanded and cross functional team can be made.

Re-tooling: Retooling of the system is needed in ICCU as well as in ward and should be connected with billing, pharmacy, administration, lab where software should be implemented.

FIG1.4 FLOW CHART OF THE RE-ENGINEERING PROCESS







Conclusions

BPR has great potential for increasing productivity through reduced process time and cost, improved quality, and greater customer satisfaction. As Healthcare all across the globe are facing several problems like excessive waiting times, access to important information, high costs of delivery and medical errors. Healthcare Managers seek the help of process reengineering methods to discover the best processes for performing work, and that processes are reengineered to optimize productivity without compromising on quality. Business process re-engineering tools are used for improvements and understanding black holes where changes can be done to improve the existing process, with radical re-thinking, re-designing and re-tooling of the business process to achieve drastic changes. In the Cardiology department, scheduled and unscheduled operations often have to coexist and be managed; ways to minimize patient inconvenience need to be studied. The study business process reengineering for Cardiology department involves intensive, careful and complete

observation of patient flow, delays and short comings in the patient movement and workflow

List of Abbreviations

BPR - Business process reengineering

DMO - Duty Medical Officer

ECG - electrocardiogram

IPD – inpatient department

LAB - laboratory

LAN – local area network

NBM - nil by mouth

OPD – outpatient department

PDA - Patent ductus arteriosus

PRE- patient relationship executive

PTCA - Percutaneous transluminal coronary angioplasty

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