PROCESS MAPPING OF THE PREVENTIVE HEALTH CHECK-UPS IN A HOSPITAL-TIME AND MOTION STUDY

Internship Training
at
Fortis Escorts Heart Institute, Delhi

By
Pooja Mehta

Under the guidance of
Dr. Tanjul Saxena

MBA Hospital & Health Management
2013–15

Institute of Health Management Research
Jaipur
2015

Internship Training

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FORTIS ESCORTS HEART INSTITUTE

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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that Dr. Pooja Mehta student of MBA Hospital and Health Management from IIHMR University, Jaipur has undergone internship training at Fortis Escorts Hospital from 18/02/2015 to 07/05/2015.

The Candidate has successfully carried out the study designated 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.

Dean, Academics and Student Affairs
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May 07, 2015

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Pooja Mehta**, student of IIHMR Jaipur has successfully completed her dissertation at **Fortis Escorts Heart Institute, New Delhi,** during the period from February 18, 2015 to May 07, 2015, while being employed in **Patient Care Department.**

The topic covered by her during the dissertation is "**Process mapping of the Preventive Health check-ups in a hospital – Time & Motion Study**"

For **FORTIS ESCORTS HEART INSTITUTE**

AUTHORISED SIGNATORY

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled 'Process mapping of the preventive healh check-ups in a hospital- Time and Motion Study and submitted by Dr. Pooja Mehta Enrollment No 2013-15/1474 under the supervision of Dr .Tanjul Saxena for award of MBA Hospital and Health Management of the university carried out during the period from 2013 to 2015 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.

Pooja Mehta

Signature

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My heartfelt thanks to my guide Dr Tanjul Saxena, who had been a constant support and provided me guidance to steer my research and come out with conclusions, without her guidance, things would have not got directions and dissertation had not been successfully completed.

I want to pay my gratitude to the IIHMR University , Jaipur for providing me with the opportunity to work with such good organization.

By extension I'd like to offer my thanks to all the staff of the Fortis Escorts for their kind and polite behaviour that made work more fun and comfortable to cope up with.

With warm regards,

Dr. Pooja mehta

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Introduction:

The general medical examination is a common form of preventive medicine involving visits to a general practitioner by well feeling adults on a regular basis. This is generally yearly or less frequently. It is known under several other names, such as the periodic health evaluation, annual physical, comprehensive medical exam, general health check, or preventive health examination.

To cope up with a rising risk of the medical disorders, health monitors have become mandatory. After all, most health problems can be managed more effectively if detected early.

General and preventive health checks are a key feature of contemporary policies of anticipatory care. Ensuring high and equitable uptake of such general health checks is essential to ensuring health gain and preventing health inequalities.

The preventive health checks offered by the hospital are a comprehensive check-up that screens each organ closely to detect even the smallest symptom that could be an indication of a major disease. In addition, the check also identifies the reason for minor ailments, which are constant irritants. It also serves as a personal medical record for future reference. Once the check is completed, treatment can begin without delay.

The health check-up program aims to preserve and promote good health, to prevent disease and disability and to facilitate early diagnosis and treatment of illness.

It also can help find problems early, when chances for treatment and cure are better. By getting the right health services, screenings, and treatments, chances for living a longer, healthier life increases.

The importance of prevention is undeniable and need of the today's life style. In present time most people are aware about their health but some of them avoid going for health checks due to its too long and time consuming procedures or some inconvenience faced during health checks.

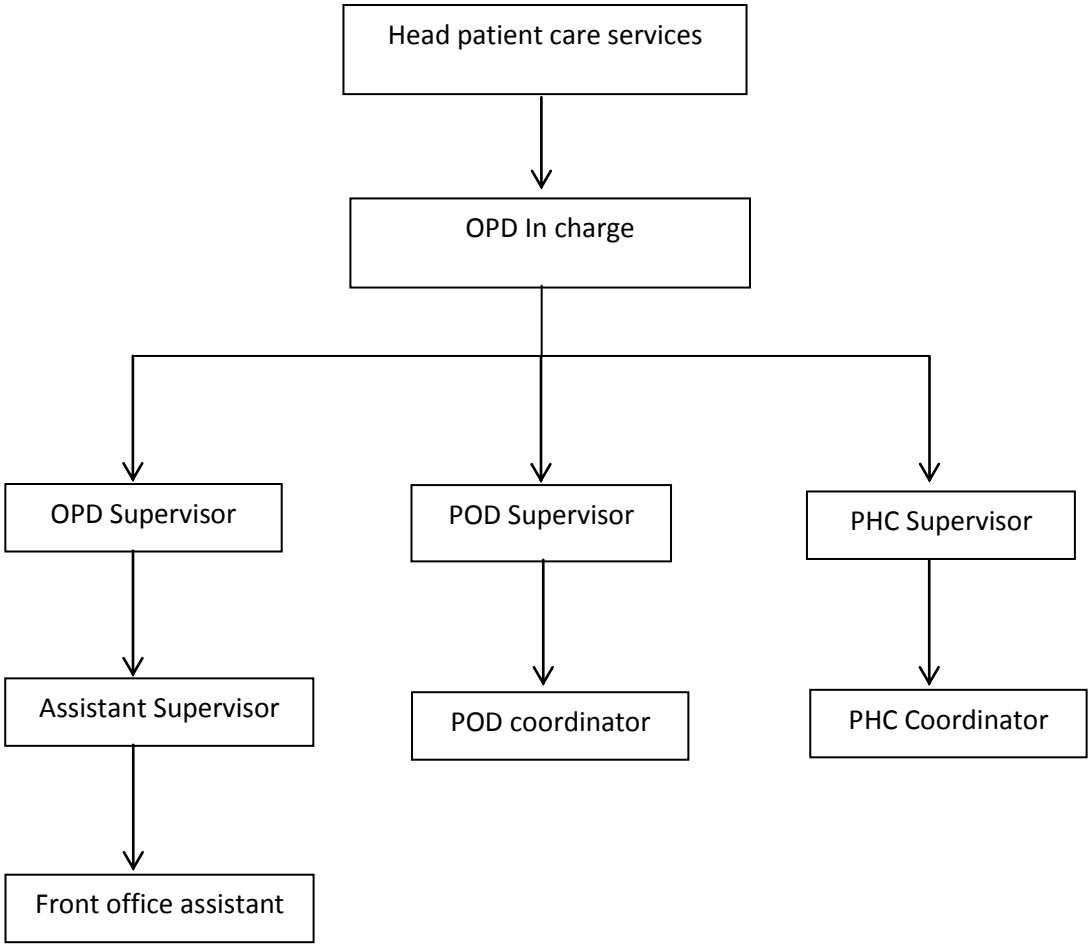
Process mapping helps to define the start and end points of a process. It is the single most important visual display that can represent "who does what" within a workplace. A process map helps to identify the smartest performance measures and the greatest opportunity for improvement.

After that it can be analysed from the perspective of people who are served. Three categories are used to describe types of value that a process step may have:

- Value added to people served: steps that directly impact the satisfaction of the people served.

- Value added to operations: steps that support the ability to deliver services to the people served.
- Non-value-added: steps that could be eliminated or changed without harming service levels of the organization.

Functional organizational structure:



Objectives and Role of Functions in PHC:

There are few objectives to be performed in PHC for f health check-up which are essential part of the process. As per SOPs of PHC department; Objectives and role of functions performed in PHC are as following:

Objective	Role in achieving objective	Classification of objective for function
Registration	To ensure that the patients are registered with their correct details and updated as and when required	Primary
Appointments	To ensure the patients are given accurate appointments which are rescheduled/cancelled as desired by the patients	Primary
Billing	To ensure the patients are accurately billed for the desired service availed at the facility	Primary
Chamber Allocation	To allocate desired slots to the consultants as per availability	Secondary
Coordination of IPD functions	To ensure the patient is coordinated through several processes as financial counselling, TPA pre authorizations, bed and OT booking	Primary
Scroll deposit	To ensure that the physical collections in hand matches the ones in HIS and are subsequently deposited in the Accounts department	Secondary
Query handling	To ensure that all the patient queries are either handled directly or through the concerned departments/s.	Primary
To act as an interface between the patient and the facility	To ensure patient is directed appropriately and provided with the appropriate assistance in the facility	Primary
Preventive health check	To ensure that the PHC for the patients is conducted in a smooth and efficient manner and within the set timelines	Primary

Involved personals:

Persons involved in the process of health check-up are assigned with a particular role. As per SOPs of the PHC department roles and criticality of role are as following:

S. No.	Role name/title	Belong to function	Role in process	Experience requirements	Criticality of role H=High M=Medium L=Low
1	PHC Coordinators	OPD	Informing all the [department like F&B, Diagnostics and lab about no of appointments	As per job specifications	H
2	PHC Coordinators	OPD	Informing PHC customers about precautions and other information related to their packages	As per job specifications	H
3	PHC Coordinators	OPD	Escorting customers to various departments like sample collection room, x-ray, ECG, USG etc.	As per job specifications	M

4	PHC Coordinators	OPD	Collecting and compiling all reports and fixing the doctor consultation .	As per job specifications	M
5	PHC Coordinators	OPD	Dispatching corporate package reports	As per job specifications	H
6	PHC Coordinators	OPD	Dispatching credit bills to corporate on monthly basis	As per job specifications	H

Base Requirements:

When a patient is coming to hospital for health check-up few basic requirements are there which need to be fulfilled before proceeding. As per SOPs of PHC department base requirements and reasons for those requirements are as following:

S.NO.	Requirement	Description	Reasons for being base requirement
1	UHID	Unique hospital identification	To be able to retrieve the customer details from the FO module
2	FO module	A module in the HIS/IT system which is used for all FO operations	To be able to register the customers and generate the UHID and bill the package to be availed
3	Tracking sheets	Process flow showing the package steps	To guide and keep the customers updated about the package steps

Inputs and outputs are defined for the process of health check-up in the SOPs of PHC department. These are as following:

Inputs:

As per SOPs of PHC department inputs for the health check-up process are:

S. No.	Input	From function	From process	From process SOP no.	Criticality of input H=High M=Medium L=Low
1	Telephone call	OPD(PHC)	Appointments	Intentionally left blank	H
2	Appointment scheduler	OPD(PHC)	Appointments	Intentionally left blank	H

Outputs:

As per SOPs of PHC department are as following:

S. No.	Output	To function	To process	To process SOP no.	Criticality of output H=High M=Medium L=Low
1	Booked slot	OPD(PHC)	Appointments	Intentionally left blank	H
2	Slot availability	OPD(PHC)	Appointments	Intentionally left blank	H

***Criticality of input/output process**: Importance of the process

Common Abbreviations:

S.NO.	Abbreviation	Full form	Explanatory text(If required)
1	OPD	Outpatient department	
2	FO	Front office	
3	PCS	Patient care services	
4	FOA/PCC	Front office assistant/Patient care coordinator	
5	HIS	Hospital information system	
6	PHC	Preventive health check	
7	ID Card	Identity card	
8	IT	Information technology	
9	ENT	Ear nose throat	
10	Hb	Haemoglobin	
11	ESR	Erythrocyte sedimentation rate	
12	PSA	Prostate specific antigen	For detection of prostate cancer
13	USG	Ultrasonography	
14	ECG	Electrolyte sedimentation rate	Test for cardiology
15	TMT	Trade mill test	Test for cardiology
16	ECHO	Electrocardiogram	Test for cardiology
17	PFT	Pulmonary function test	Toc heck lung functioning
18	TAT	Turnaround time	

Health check-up:

Health is a state of complete physical, mental and social wellbeing. Eating right, getting exercise and enough sleep is necessary, as is avoiding tobacco, alcohol, drugs, excess salt and sugar intake. In spite of taking all the necessary steps in ensuring our complete wellbeing, one can never be too sure. Uncertainties are always there. Critical illness may come knocking anytime.

Preventive Health Check-up:

One's health is very important and this is why one needs to take care of his/her body through good diet, proper exercise, and wholesome lifestyle. Maintaining one's health is a continuous process and involves personal effort to ensure healthy practices are put into action.

There are different reasons why people go to the doctor. While some individuals go to the doctor whenever they feel a symptom or problem, others go regularly for monitoring of a specific health condition.

An annual health check-up is a yearly visit to an individual's healthcare provider wherein the general condition of one's health is assessed. It is also known as a routine physical examination, preventive health check, or master health check-up. The benefits of undergoing an annual master health check-up have been under debate for quite some time, specifically in terms of its necessity when it comes to healthy individuals.

A Preventive Health Check-up aims to identify and minimize risk factors in addition to detecting illnesses at an early stage. Research all over the globe has proven that it is more economical, not to mention far less distressing, to invest in an annual Preventive Health Check-up rather than visiting a hospital only when an emergency strikes.

Benefits of Health Check-ups:

There are several advantages of regular health check-up with a doctor. One of the most important benefits is the prevention of disease. Preventive health checks are important especially for individuals with risk factors for different health conditions. A master health check-up can also aid in the early detection and treatment of a health problem, which is valuable especially in cases of cancer. The examinations and laboratory tests that will be done during a health check-up vary depending on an individual's age, sex, family history, and lifestyle. Health check-ups also promote better patient-doctor relationships and allow the doctor to promote healthy habits through patient education.

Need for Yearly Preventive Health Check for Healthy Individuals:

Although medical experts used to advocate undergoing an annual health exam for all individuals, a lot of medical professionals have moved away from conducting yearly health check-ups depending on the health condition of the individual.

According to studies, a lot of tests done in yearly health check-ups were inefficient in terms of cost and invasive tests, when done annually, could have negative effects on the health in the long-term. Instead of an annual check-up, several medical groups now advocate Periodic Health Assessments which is done every 5 years for adults over 18 years of age until he or she reaches the age of 40, after which the individual should have a check-up at every 1 to 3 years. For individuals taking prescription medications, there may be a need for more frequent health evaluations.

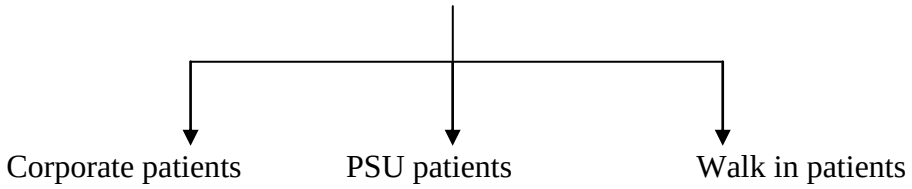
Things to Expect During a Periodic Health Assessment:

During a health check-up, there are several things you can expect that will be done. The doctor will ask about health history which includes family history, past immunizations, medical history, lifestyle, and habits. A physical examination will also be conducted, the extent of which depends on age, sex, and findings from the health history. Screening tests will also be done based on the Preventive Services guidelines.

A health check-up can be useful in detecting various health conditions so that these can be promptly treated. Annual check-ups are not actually a necessity for healthy individuals and tend to be inefficient in terms of cost. Each individual is different and a personalized approach to health check-ups can prove to be more valuable in health maintenance.

PHC Patients:

Patients coming for preventive health check-up are as following:



Corporate patients:

Patients who are coming for their health check-up sponsored by their organization they are working with.

Companies having tie-ups with Fortis are:

Titan Company, Blue Star Lmtd., Maruti Suzuki india Lmtd., Sriram Pistons & Rings Lmtd., Engineers India Lmtd.

Patients have to come with their reference letter and ID proof.

PSU Patients:

Public sector unit patients are patients who are working in any of the govt. Organizations. They also come to Fortis for their yearly check-ups.

Walk in patients:

Patients coming for their routine health check-ups are walk in patients. They have different options in health packages as follows:

Preventive Health Check Packages

Preventive health packages offered in PHC department in Fortis Escorts, Okhla are as following:

- Escorts health check
- Escorts executive health check
- Escorts comprehensive health Check
- Escorts Whole Body check
- Escorts heart check
- Escorts diabetic check
- Escorts Ortho check
- Escorts senior citizen
- Escorts women check

*Details of all the packages are attached in annexure.

Average TAT for PHC:

Metric	Definition	Calculation methodology	Data Source	Outliers
Average TAT for PHC without consults	Total time taken from the first investigation to last investigation	Calculation is done form the billing time till the time last investigation is over.	Records	Nil
Average TAT for PHC with consults	Total time taken in completing the package	Calculation is done form the billing time till the time final consult is over.	Records	Additonal packages; test taken by the patients over and above whole body and comprehensive; but basic packages to be included
PHC completed within defined TAT	% PHCs completed within 4:30 hrs (including final consultation). It starts from the billing time till the patients final consult is over	Calculation is done form the billing time rather than the time pt. reports in PHC and till the time his final consult is over.	Records	a) Additonal packages; test taken by the patients over and above whole body and comprehensive; but basic packages to be included b) Patients leaving in between the package for lunch c) Interpreter for International patients leaving in between/ accompanying more than 1 patient d) Couple/ family moving together e) Patient doesn't want to take consults on the same day For any of the above case scenarios, PHC form (circulated) to be filled by the patient and signed.

Literature review:

(a) Case Study: Reducing Turnaround Time of Lab Reports in the ICU

A 250-bed hospital had implemented total quality management (TQM) to improve customer delight in its diagnostic clinics. After that success, the management team of the hospital was ready to proceed with further process improvement. After completing a brainstorming and prioritization exercise, the team determined to next address the problem: delay in receiving test reports for patients in the intensive care unit (ICU).
A cross-functional group was chosen as the process improvement team; they went through two-day "quality mind-set" training and started meeting every two weeks to address the delays in turnaround time (TAT).

This case study is available for purchase on the iSixSigma Marketplace.

Process improvement efforts at the hospital followed the seven steps of problem solving:

1. Define the problem and measure it
2. Research root causes (using the 5 Whys)
3. Discuss and agree upon countermeasures
4. Test countermeasures
5. Check results
6. Standardize results
7. Compile quality improvement (QI) story

In addition to these seven steps, the team also incorporated just-in-time (JIT) manufacturing principles by cutting non-value added stages and activities in the process, speeding up and reducing work through automation, and improving workflow.

(b) Re-engineering the Hospital Discharge: An Example of a multifaceted Process Evaluation - David Anthony, VK Chetty, Anand Kartha, Kathleen McKenna, Maria Rizzo DePaoli, Brian Jack

The transfer of patient care from the hospital team to primary care and other providers in the community at the time of discharge is a high-risk process characterized by fragmented, non-standardized and haphazard care that leads to errors and adverse events.
The development of interventions to improve the discharge process requires a detailed evaluation of the process. To better understand the current hospital discharge process, the researchers have applied a battery of epidemiologic and quality control methods taken from industry. These include probabilistic risk assessment; process mapping, qualitative analyses, failure mode and effects analysis, and root cause analysis.
A detailed, multifaceted process analysis has been done with powerful insight into the many patient safety issues surrounding the discharge process. The generalized

methods have produced the re-engineering of the discharge process, allowing for the planning of a clinical trial and significant improvements in patient care.

(c) Patient Flows to Improve Hospital Performance - Senior Capstone Project Jacquelyn Parr

The purpose of this report is to discuss ways for Backus Hospital to improve patient flows, which will increase patient satisfaction and safety, increase revenue, and decrease costs.

Literature reviews on flow, process improvement, and innovation strategies, both within and outside of the healthcare industry were conducted.

The hospital is dedicated to process improvement, innovation and quality improvement, so methodologies based on the Toyota Production System is applied to patient flows from the emergency room to a hospital bed. The end goal is to improve patient satisfaction and reduce waiting time and movement of patients throughout the hospital system by decreasing the average length of time that patients stay in the emergency department.

This case study focuses on the segment of the process from when patients' admit orders are received to when they are discharged to specific floors.

Some of the major policy changes that resulted from the project include the development of a pull system, standardized processes and improved communication.

Research questions:

1. What are the managerial issues related to preventive health checks?
2. What improvements need to be done to improve the process of preventive health checks?

Objectives:

- To map the complete process of preventive health check-up.
- To identify managerial issues in the whole process of preventive health checks.
- To provide possible solutions to overcome issues.

Research Methodology:

- Type of study - Cross sectional study
- Sampling method - convenience sampling
- Area covered - Preventive health check-up department in OPD building
- Sample size - 60 Patients
- Duration of study - 34 days
- Process mapping of the current process in the hospital was done

Methods of data collection:

a) Process mapping
b) Observation
c) Informal interviews (Nurses, customer care in charge, Duty doctors and technician)

a) Process Mapping:

Process mapping is 'A pictorial representation of the sequence of actions that comprise a process.'

Purpose of Process Mapping:

The purpose of process mapping is for better understanding. It involves the gathering and organizing of facts about the work and displaying them so that they can be questioned and improved by knowledgeable people. Process maps aid in understanding by abstracting, using visual charting symbols consistently and masking unnecessary details.

Process Maps are used to:

a) Document processes.

– Provide a reference to discuss how things are done.

– Describe and understand the work which is done.

b) Analyse and improve on processes.

– Identify areas of complexity and re-work.

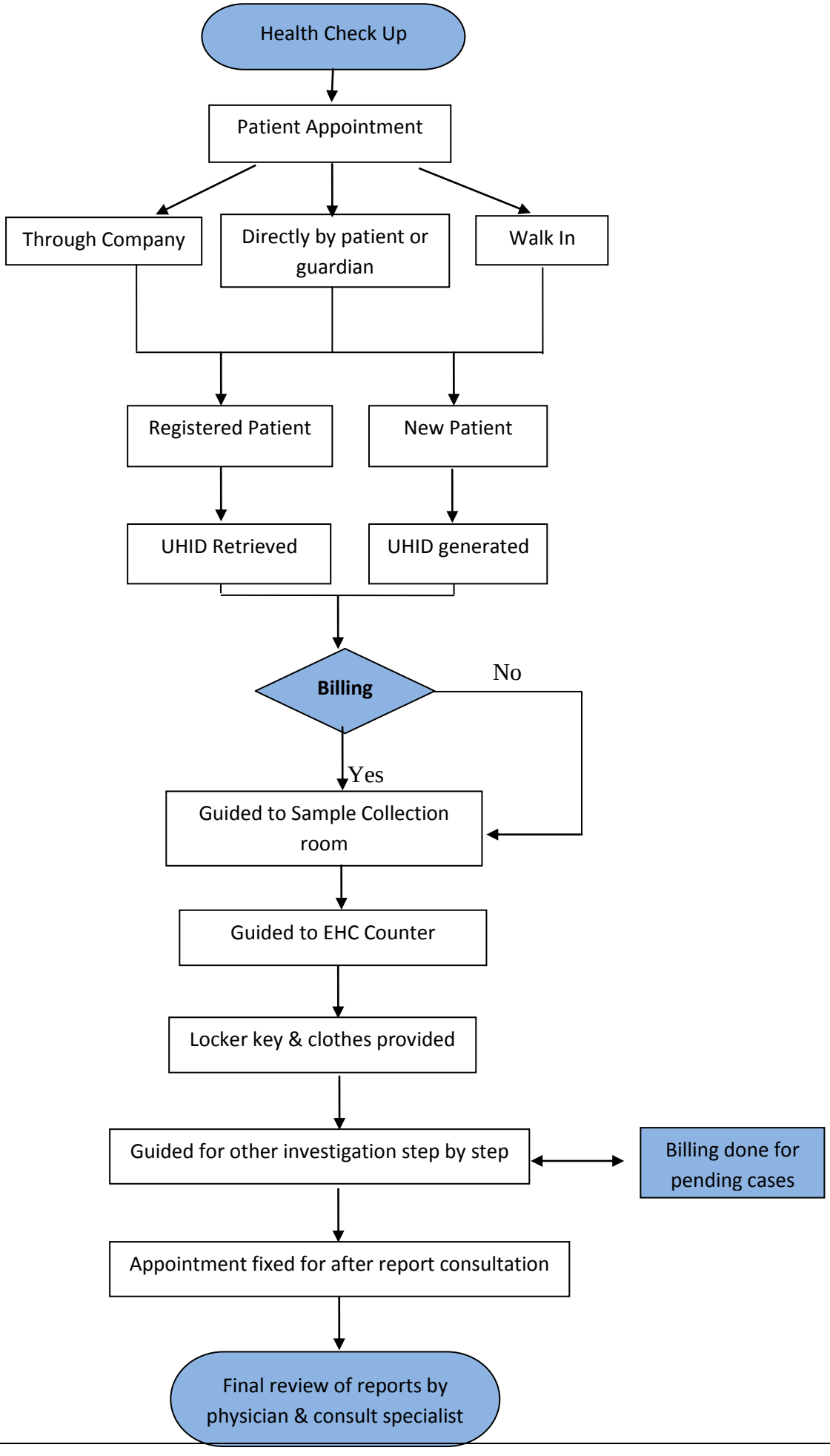
– Generate ideas for improvement.

– Illustrate process improvements.

Process mapping of the health check-up is as following:

Complete process of health check-up was observed to have better idea about who does what and how the process flows. The process mapping is depicted with the help of a work flow diagram to bring forth a clearer understanding of a process or series of parallel processes.

Process map/work flow diagram:



b) Observation:

Patients were observed during the process of health check is as follows:

No of days of observation - 34
Total no of patients observed - 60

Data was collected from 09th March to 11th April. In and out time was noted down for every patient to have better idea of total time taken in the whole process; as turnaround time for all health check packages with consultation is four and half hours.

c) Informal interviews:

Informal interviews were carried out with nurses, customer care in-charge, Duty doctors and technician**.**

Data collected was as following:

Date	PATIENT NAME	REGN NO.	IN TIME (24 hour format)	OUT TIME (24 hour format)	TAT
09-Mar-15	MR M.K. SAMUEL KUTTY	00117181	09:48	16:21	06:33
09-Mar-15	MR R K RATHI	00533571	10:16	14:11	03:55
10-Mar-15	MR AZAD SINGH	00486540	09:28	15:11	05:43
10-Mar-15	DR. VINOD SINGH TOMAR	00582446	11:02	14:51	03:49
11-Mar-15	MR JAGMANDER SINGH	00274754	09:12	13:51	04:39
11-Mar-15	MRS ASEEMA TREHAN	00502603	09:00	13:21	04:21
12-Mar-15	MR MANOJ KUMAR AGARWAL	00317002	08:52	11:11	02:19
12-Mar-15	MRS KATHLEEN DIANE ABELSOHN	00582662	09:48	13:31	03:43
13-Mar-15	MR SATISH SHARMA	00446950	09:08	13:51	04:43
13-Mar-15	MRS SURINDER JEET KAUR	00582794	09:39	15:01	05:22
14-Mar-15	MR BHUPINDER KUMAR	00535608	09:02	16:11	07:09
14-Mar-15	MRS SHWETA CHAUHAN	00543414	09:52	15:31	05:39
16-Mar-15	DR. ANU CHAWLA RAHEJA	00583052	08:53	15:11	06:18
16-Mar-15	MRS AMARJEET KAUR SALUJA	00583085	12:17	15:21	03:04
17-Mar-15	MR RAJ KUMAR	00168041	09:01	13:31	04:30
17-Mar-15	MR RAJENDRA PAUL	00583220	09:05	13:21	04:16
18-Mar-15	MR K RAMU	00497812	10:59	15:51	04:52
18-Mar-15	MS LABONI MITTRA	00506674	08:33	14:11	05:38
19-Mar-15	MR BRAJA KISHORE SINGH	00454723	08:13	13:11	04:58
19-Mar-15	MR ARVIND PANCHOLY	00431637	11:40	16:21	04:41
20-Mar-15	MR NIRAJ SETHI	00108032	08:19	13:31	05:12
20-Mar-15	MRS ALPANA SHUKLA RAO	00583595	08:21	14:51	06:30
21-Mar-	MR ANIL KUMAR	00322238	10:23	15:41	05:18

15					
21-Mar-15	MR MANOJ KUMAR MISHRA	00451328	09:12	14:51	05:39
23-Mar-15	MR HARBANS SINGH SAHNI	00537771	08:28	12:51	06:38
23-Mar-15	DR. SATYA JAIN	00574684	09:33	15:41	06:19
24-Mar-15	MR SURESH KUMAR ARORA	00194033	13:34	19:11	05:37
24-Mar-15	MR VIPIN CHOPRA	00323926	08:46	15:22	06:36
25-Mar-15	MRS USHA KATYAL	00110804	09:46	15:51	06:05
25-Mar-15	MRS ANURADHA DHAWAN	00584156	09:08	14:01	04:53
26-Mar-15	MR P.T SASI KUMAR NAIR	00384917	10:48	16:01	05:13
26-Mar-15	MR DEEPAK SINGH BOHRA	00415464	08:33	14:31	05:58
27-Mar-15	MR HARJINDER SINGH BHATIA	00326233	09:28	13:56	04:28
27-Mar-15	MR KANDIKUPPA SREEKANT	00536591	08:59	15:01	06:02
28-Mar-15	MR SANJIV BHALLA	00273771	09:43	16:21	06:38
28-Mar-15	MR S S GARBYAL	00289284	09:02	15:21	06:19
30-Mar-15	DR. RAMESH CHUGH	00017147	08:36	13:51	05:15
30-Mar-15	DR. S K PANDEY	00415531	09:39	15:21	05:42
31-Mar-15	MR D P SINGH	00445693	09:58	13:11	03:13
31-Mar-15	MR NIZAMUDIN	00266442	09:08	13:51	04:43
01-Apr-15	MR ALOK KUMAR	00149637	09:53	13:31	03:38
01-Apr-15	MR ASHOK K ARORA	00121918	08:54	15:42	06:48
02-Apr-15	MR JAIDEEP SINGH BAWA	00215711	12:11	15:01	02:50
02-Apr-15	MR BRIJ BIHARI MISHRA	00585061	10:20	14:41	04:21
03-Apr-15	MR PANKAJ KHANNA	00116090	09:13	13:41	04:28
03-Apr-15	MR JAGDISH CHANDRA DHOUNDIYAL	00116517	09:00	14:11	05:11
04-Apr-15	MRS SUNDARI NANDA	00370202	10:17	14:11	03:54
04-Apr-15	MR O.P RATHI	00454906	09:33	12:41	03:08
06-Apr-15	MR AMIT JAIN	00436558	09:01	15:00	05:59
06-Apr-15	MR MASOOD A KHAN	00432494	11:28	15:20	03:52

07-Apr-15	MRS INDIRA HOON	00217987	09:05	14:20	05:15
07-Apr-15	MR I CHINNAPANDI	00364095	09:39	14:30	04:51
08-Apr-15	MR SANJOY KUMAR BRNWAL	00496858	08:24	13:15	04:51
08-Apr-15	MR DHANURDHAR JENA	00586314	09:18	15:30	06:12

- Health check completed within TAT
- 26.6% of patients from the whole sample have completed their check-up within TAT

Managerial issues:

- All above patients were observed during their health check-up. Some issues were observed during the process of health check; which can be the reason for delay in the cases when the process in not completed within TAT.

- **Managerial issues observed :**

    a) Less number of staff at billing; even appointment patients have to wait for their turn or the health check-up is started without billing.
    b) As health package was started without billing so patient has to go for billing in between the process of health check.
    c) Printers not working many times.
    d) Packages were not updated in system and billing staff had to call IT department for the same to update the package in system.
    e) In sample collection room only one staff was there during tagging, collecting sample as well as instructing new patients to wait for their turn as one of the staff got infected from 'Swine Flu'
    f) Locker keys were missing most of the time, as staff were using lockers for their personal purpose.
    g) Long waiting for ultrasound as this test is done in fasting and only one machine was used for the same.
    h) One ultrasound machine was not in use because of unavailability of technician for the same.
    i) Visiting staff coming for very short time and all patients had to be made available for her to get their check-up done. So they can't be put in a process which takes too long.

Suggested Solutions:

- More number of staff required at billing counter especially on Saturdays or on holidays. As there are more number of appointments or walk in patients on those days.
- Final billing should be done at the time of registration only. So that patient should not come again and wait for billing during their health check.
- Logistics should be maintained timely and any change in packages need to be updated regularly.
- Infection control and Staff immunization should be done at particular intervals to avoid infection to the staff.
- More efficient use of bectorub and protective measures should be taken to avoid infection.
- Staff should be strictly instructed not to use lockers for their personal use.

- Technician is required on urgent basis as ultrasound is a big bottleneck in the whole process due to long waiting for the same moreover in fasting.
- Visiting staff should be available for a fix dedicated time so that patients should not suffer.
- Billing GDA should bring the patients file to the billing/discharge lounge before the staff comes so that the staff doesn't have to wait for the file.
- TQM (Total quality management should be endorsed in healthcare organizations. Quality should be first objective. It requires involvement and combined efforts of management, staff and suppliers in order to meet or exceed customer expectations.

Benefits of effective planning for PHC:

• **For the patient**

– Patient satisfaction increases.
– It reduces the wastage of time.

• **For the staff**

– Well-defined roles and objective.
– Can develop new skills and opportunities.
– Have opportunities to work in different settings and in different ways.

• **For organizations**

– Optimum utilization of resources.
– Staff feel valued which, in turn, leads to improved retention.
– Fewer complaints.

PROPOSAL FOR EXPRESS HEALTH CHECK

I. Rationale

- A Client may not have enough time during a weekday to plan for and come to a hospital for a health check
- A weekend is the only time that the client has to go for a health check
- The client would not have much time for a health check due to other commitments

II. Concept

- An express health check-up could be proposed
- This would be a no-waiting-time offering
- A Critical Path analysis could be done to find out the minimum time that would be required to conduct a limited number of health checks. Example:

a) Sample collection- 10 min.
b) Internal Medicine OPD consultation = 10min
c) Miscellaneous activities = 10min.
So this path takes 30 minutes.

- A variety of health checks could be proposed, which would have different service offerings.
- So, the patient would go from the consultation to the examination rooms, have the investigations done and then leave for the day.
- The reports with clinical prescriptions would be mailed to the patient the next working day.
- Therefore only a '**very quick health screening"'** is offered to the patient.

III. Proposal

- This health check could be offered only on the weekend.
- The patient has to book an appointment 1 week in advance and send the documents required for registration through email so that the patient can be pre-registered in the system.
- The feasibility of receiving payments from an online portal can be studied, else the patient would have to come and make the payment on the required day.
- Basic blood tests like, for example, CBC, LFT and RFT could be done for an internal medicine express health check.

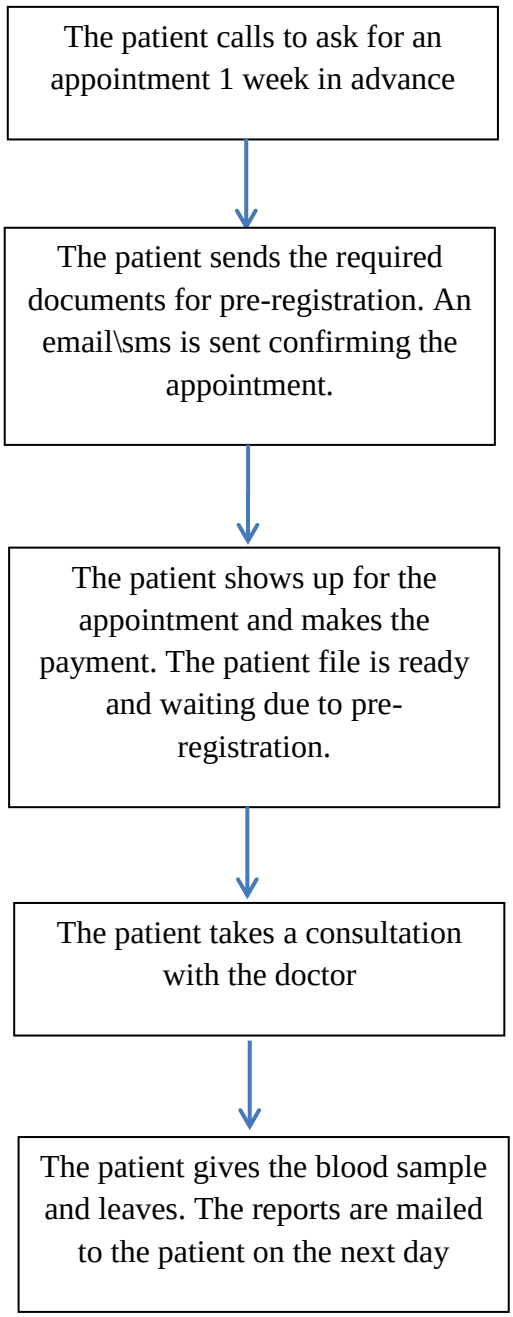
IV. Human Resources Required

- ‘X’ number of doctors
- 2’X’ number of OP Nurse for collecting the sample of the patient
- ‘X’ number of OP nurse to handle the patient file and help the doctor
- 2’X’ number of front office executives for the purpose of billing
- 2’X’ number of porters
- General Duty Assistants for miscellaneous duties
  X=3

V. Flow Estimation

- The patient would undergo basic screening from the physician
- An average consultation time could be 10minutes.
- Assuming a gap of 3min between 2 consultations, 1 doctor can see 4 patients in an hour and, therefore, 16 patients between 9am to 1pm and thus, 3 doctors can see 48 patients in a day.
- The doctor could then spend 2pm to 5pm writing the prescriptions on the basis of the blood investigations of the patient.

VI. Sample Process Flow



Implications of / Reasons for various constrains imposed:

S. No.	Constraint	Benefit
1	Appointments taken 1 week in advance	• A definite and confirmed patient list for each session of the express health check can be prepared
2	Creating separate path flows for (for example) Internal Medicine Express Check-up and Cardiac Express Check-Up	• A smaller number of diagnostic tasks can be performed for the patient that would help in offering a '30 minute express health check-up'. • Also, the consultation time would not stretch beyond a fixed time due to a fixed service offering. • This would also help maintain a constant level of complexity and help reduce the strain on the administrative and nursing staff assisting the doctor in the health check.
3	Asking for the required documents through email	• Patients are pre-registered so the inevitable waiting time is reduced.
4	Keeping a separate Sunday for such a health check up	• Lesser number of lab tests in queue means that each express-health-check-related lab test can be treated as a stat request. • Thus, the lab report can be made available to the doctor in the afternoon for generating the prescription.
5	Creating an offering of a '30 minute' health check	• It can be positioned as an alternative to waiting while the family enjoys some activity or while the car is being serviced. • Basically, we are offering a medical alternative that would be of greater value as compared to sitting in a chair in some waiting lounge
6	Keeping a limited number of slots (16) for the doctors	• Creating a false scarcity may help increase demand in the long run. • Patients will try to book appointments further in advance.

		• The doctors and associated staff would get enough time to generate the associated reports, which would be sent across to the patient on the next day as the second part of the service offering.
7	Limiting the service offering as compared to a lengthy comprehensive health check	• An experience of reduced waiting time will earn good brand equity for the hospital. • Word-of-mouth marketing can be generated • The number of new clients of the hospital can increase. • Internal referrals can be promoted

Ethical considerations:

This study being based on secondary/desk research derives data from publically available data sources so there are no associated ethical considerations for the study.

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Annexure 1:

Tests	Escorts health Check	Escorts executive health check	Escorts Comprehensive Health Check	Escorts Whole Body check	Escorts Heart check	Escorts Diabetics Check	Escorts Ortho Check	Escorts Senior Citizen Health Check	Escorts Women Check
	Above 18 years	Above 25 years	Above 40 years	Above 50 years	Adult with suspected or known heart problem	Adult with suspected or known diabetes	Suspected Orthopedic problem	Above 65 years	Above 40 years
Clinical Evaluation									
Physician / Cardiologist	•	•	•	•	•	•		•	•
Ophthalmologist	•	•	•	•	•	•		•	•
ENT			•	•				•	
Dentist	•	•	•	•	•	•		•	•
Gynaecologist		•	•	•				•	•
Digital rectal exam			•	•				•	
Psychologist	•	•	•	•	•	•		•	•
Clinical pathology									
Complete Hb with	•	•	•	•	•	•		•	•

blood grp									
ESR							•		
Urine test	•	•	•	•	•	•		•	•
Stool test	•	•	•	•				•	
Biochemistry									
Blood glucose (F)	•	•	•	•	•	•	•	•	•
Blood glucose (PP)	•					•			
Lipid profile	•	•	•	•	•	•		•	•
Blood Urea	•	•	•	•	•	•		•	•
Serum Creatinine	•	•	•	•	•	•	•	•	•
Serum Uric Acid									
Liver Function Test									
Glycosylated Hb	•	•	•	•	•	•		•	•
Thyroid profile			•	•	•				
Serum calcium		•	•	•	•	•		•	•
Australia antigen				•	•				

PSA for Males							•		
Plain Radiology			•	•					
Chest X-ray								•	
Special Imaging									
USG abdomen	•	•	•	•	•	•		•	•
Bone densitometry									
Mammography (female)			•	•				•	•
Cardiac Evaluation				•				•	•
ECG				•					•
TMT									
ECHO	•	•	•	•	•	•		•	•
Lung Function		•	•	•	•	•		•	
PFT					•				
Post Test Consultation									
Physician / Cardiologist			•	•	•				
Diabetologist									

Orthopedician	•	•	•	•	•	•		•	•
Physio						•			
Urologist				•			•	•	•
Dietician	•	•	•	•	•	•	•	•	•
			•	•				•	
	•	•	•	•	•	•		•	•