Accident and Emergency Services of Sardar Patel District Hospital, Bilaspur. - Key Issues and Challenges

A dissertation submitted in partial fulfillment of the requirements

for the award of

Post-Graduate Diploma in Health and Hospital Management

By

Dr Neha Vyas

Roll no. PG/08/033



International Institute of Health Management Research

New Delhi -110075

May, 2010

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Certificate of Internship Completion

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TO WHOM IT MAY CONCERN

This is to certify that Dr. Neha Vyas has successfully completed his 3 months internship in our organization from February 1, 2010 to April 30, 2010. During this intern she has worked on ……As-is-Analysis…….(task performed) under the guidance of me and my team at …….(organisation). …….(any positive/negative comment)

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The following dissertation titled "**Accident and Emergency Services of Sardar Patel District Hospital , Bilaspur-Key issues and Challenges.** " is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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This is to certify that **Dr Neha Vyas**, a participant of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. He/She is submitting this dissertation titled " **Accident and Emergency Services of Sardar Patel District Hospital , Bilaspur- Key issues and Challenges.**" in partial fulfillment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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ABSTRACT

Accident and Emergency Services of Sardar Patel District Hospital, Bilaspur.- Key Issues and Challenges.

The accident and emergency department of the hospital constitute to be the most important pillar in provision of care to those patients who have met with an untimely displeasure and require immediate and intensive treatment for prevention of life and limb. Sardar Patel district hospital Bilaspur stands as a inevitable part to the provision of care to these patients and all the medico legal cases has to be brought to the hospital so that formalities can be done and patients can be saved from the mishappening.

The study was mainly conducted to identify the level of efficiency of accident and emergency services in the hospital as it was observed that the quality of care and the level of efficiency was not ascertained in any of the previous study.The hospital does not have defined triage area and the basic equipments like pulse oximeter and cardio pulmonary resuscitator . the study mainly focuses to identify the work flow of accident and emergency services to analyze and identify the reaction time in case of any casualty arriving at the main gate of the hospital. The study was done and observation were made regarding the preparation , accessibilty , transport equipment ,develop efficiency of consultant and paramedical staff and the loopholes in the existing system so that a hospital which is preparing itself to achieve a quality standard as a efficient and effective accident and emergency department with the reaction time of a minimal duration and waiting time of a patient reduced to minimal. A systematic time motion study of a total of 60 patients visiting the accident and emergency department were conducted over a period of 15 days (1st april to 15 th april).The total response time for a patient to avail accident and emergency services12 minutes and waiting time is 22 minutes after receiving the initial emergency treatment.

Thus from the above study conducted from 1st April,2010-15h April,2010 with an aim of estimation of total waiting time for patients at the Accident and Emergency services we can conclude that the system of provision of care at the A and E department is effective and can be further improvised if the process of management of the A and E is more organized. The increase in response time is different because the accident and emergency services do not work in co-ordination with the other supporting departments like radiology,pathology and patient transportation.

ACKNOWLEDGEMENT

IT is truly said that the pathway to success cannot be reached until someone is there to guide you so is right for my study which would not have been possible without my guide and mentor Dr Sajal Sen who has always guided, encouraged and extended his helping hand for successful completion of my study.

I extend my sincere gratitude towards the ICRA Management Consultancy services limited for providing an opportunity to work with Government of Chhattisgarh.

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DR.NEHA.V.VYAS

TABLE OF CONTENTS

Abstract....7
ACKNOWLEDGEMENT....8
LIST OF FIGURES....12
LIST OF TABLES....13
LIST OF ABBREVIATIONS....14
PART I- INTERNSHIP REPORT....15
NHSRC MANDATE....19
APPROACH AND METHODOLOGY....20
HOSPITAL FACT SHEET....21
CHHATTISGARH STATE: AN INTRODUCTION....22
OOVERIVEW OF HEALTH SYSTEM IN CHHATTISGARH....24
CHHATTISGARH HEALTH INFRASTRUCTURE....26
HEALTH INDICATORS OF THE STATE OF CHHATTISGARH....29
BILASPUR....30
POPULATION PROFILE OF BILASPUR....31
HEALTH FACILITIES/ STATUS IN BILASPUR DISTRICT....32
SARDAR PATEL DISTRICT HOSPITAL – AN INTRODUCTION....35
PATIENT VOLUME AND PROFILE....37
DISTRICT HOSPITAL - LAYOUT....39
MAIN BUILDING....39
SERVICES AVAILABLE AT THE HOSPITAL....41
OPERATIONAL STATISTICS OF DISTRICT HOSPITAL....44
CLINICAL SERVICES DETAILS....51
OUTPATIENT DEPARTMENT....51
IN-PATIENT SERVICES....59
EMERGENCY SERVICES....68

SURGICAL SERVICES....73
INTEGRATED COUNSELLING AND TESTING CENTRE....76
SUPPORT SERVICES....78
LABORATORY SERVICES....78
RADIOLOGY....80
MEDICAL STORES AND SUPPLY DEPARTMENT....81
UTILITY SERVICES....84
LAUNDRY SERVICES....84
HOUSEKEEPING SERVICES....85
FUND MANAGEMENT....88
HUMAN RESOURCE MANAGEMENT....88
SWOT ANALYSIS....90
PART II DISSERTATION PERORT....92
CHAPTER 1- INTRODUCTION :....93
1.1ACCIDENT AND EMERGENCY SERVICES:....94
1.1.1PATIENT CONSULTATION:....94
1.1.2 PATIENT ADMISSION THROUGH EMERGENCY:....96
1.1.3 SAMPLE COLLECTION....97
1.1.4 TRANSFUSION IN EMERGENCY /CASUALTY WARD:....98
1.1.5 INTENSIVE CARE UNIT/DIALYSIS ROOM:....100
CHAPTER 2 – INTRODUCTION....100
2.1PROBLEM DEFINITION:....100
2.2SIGNIFICANCE OF STUDY....101
2.3 OBJECTIVE:....101
2.4 LITERATURE REVIEW:....102
2.4.1 Definition of accident and emergency services :....102
2.4.2 Definition of trauma:.... **Error! Bookmark not defined.**

2.4.3Definition of Triage: ..... **Error! Bookmark not defined.**
CHAPTER 2 : RESEARCH METHODOLOGY 104
2.1 STUDY DESIGN.....104
2.2 STUDY SETTING :.....106
2.3 TARGET POPULATION:.....106
2.4 SAMPLE SIZE:.....106
2.5 SAMPLING TECHINQUE.....107
2.6 STUDY PERIOD. 107
2.7 DATA COLLECTION:.....107
2.8 DATA ANALYSIS::.....107
chapter 3 -RESULT:.....108
chapter 4- .CONCLUSION and recommendation 110
4.1Discussion: ..... **Error! Bookmark not defined.**
4.2.LIMITATIONS:.....112
4.3. RECOMMENDATIONS: 112
REFRENCES :.....113

LIST OF FIGURES

FIGURE	DESCRIPTION
1	State of Chhattisgarh
2	Structure of Health system in Chhattisgarh
3	Three- tier public health in Chhattisgarh
4	Bilaspur District Map
5	Structure layout of the hospital
6	OPD
7	IPD
8	Surgeries
9	Radiological investigations
10	Bed Occupancy rate
11	Sardar patel District hospital
12	Emergency department

LIST OF TABLES

TABLE	DESCRIPTION
1	Hospital fact sheet
2	Demographic profile of Chhattisgarh
3	Details of Health Infrastucture
4	Health indicators of Chhattisgarh
5	Statistics of Bilaspur
6	Health related parameters in Bilaspur
7	Distribution of beds in the hospital
8	National health Programmes
9	Ground Floor
10	First Floor
11	Second Floor
12	Diagnostic services
13	Operational statistics
14	Jeevan deep Samhiti
15	Human Resource
16	SWOT

LIST OF ABBREVIATIONS

	ABBREVIATIONS
CS	Civil Surgeon
IIHMR	International Institute of Health Management Research
NABH	National Accreditation Board of Hospitals
HMIS	Hospital Management Information System
NRHM	National Rural Health Mission
DPC	District Programme Coordinator
WHO	World Health Organization
OPD	Out Patient Department
CD	Comprehensive
DOTS	Directly Observed
IPD	Indoor Patient Department
MRD	Medical Record Department
REG.	Registration
BPL	Below Poverty Line
IV	Intra Venous
BP	Blood Pressure
MCI	Medical Council Of India
CH	Children
MRI	Magnetic Resonance Imaging
CT	Computerized Tomography
BMD	Bone Mineral Density
USG	Ultra Sonography
CD	Compact Disc
ENT	Ear, Nose and Throat
ICTC	Integrated Counseling and Testing Centre
MLC	Medico Legal Cases
CMO	Chief Medical Officer

PART I- INTERNSHIP REPORT

SARDAR PATEL DISTRICT HOSPITAL, BILASPUR

DRAFT
AS-IS ANALYSIS
REPORT



Submitted to

National Health Systems Resource Centre

By

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NHSRC MANDATE

The National Rural Health Mission (NRHM) is a National effort aimed at ensuring effective healthcare delivery through a range of interventions at individual, household, community, and most critically at the healthcare delivery system levels. Despite the considerable gains in health status over the past few decades in terms of increased life expectancy, reductions in mortality and morbidity, serious challenges still remain unaddressed. These challenges vary significantly from State to State and even within states.

Operational integration in policy and programme between various vertical programmes within the health sector, and between health and other related sectors such as drinking water, sanitation, and nutrition has been limited, resulting in a lack of holistic approaches to healthcare delivery. A number of States particularly in North, East and North Eastern parts of the country have stagnant health indicators and continue to grapple with significant morbidity and mortality. The causes for this basically lie in socio-economic factors, underperforming health systems and weak institutional framework.

The National Common Minimum Programmer spells out the commitment of the Government to enhance Budgetary Outlays for Public Health and to improve the capacity of the health system to absorb the increased outlay so as to bring all round improvement in public health services. This Mission seeks to provide effective health care to the rural population, especially the disadvantaged groups including women and children, by improving access, enabling community ownership and demand for services, strengthening public health systems for efficient service delivery, enhancing equity and accountability and promoting decentralization.

As a part of National Rural Health Mission (NRHM) the MoHFW has established National Health Systems Resource Centre (NHSRC) to:

- Principally coordinate and provide technical assistance to MOHFW Public Health Systems across the Indian States,
- Take initiatives for improving the health systems encompassing various facets of the health system – capacity building, robust and responsive health information system, PPP, community monitoring & empowerment, immunization, quality assurance, among others.

The current mandate targets the capacity building of select health care facilities in 8 states, Chhattisgarh, being one of them. The agenda includes:

- Mapping the As-Is Process
- Identifying the resource and process gaps
- Developing documents in line with the ISO requirements
- Developing systems for continuous evaluation, monitoring and control
- Undertaking requisite training to manage the change
- Incorporate learning and best practices from the facilities that are best in the industry
- Achieving ISO as a milestone

APPROACH AND METHODOLOGY

The As-Is Analysis has used Donabedian's Framework of assessment and has evaluated the current facilities/processes against the standards of IPHS, ISO 9001-2000 guidelines.

The method of as-is mapping at the District Hospital, Bilaspur includes the following:

- Observation of the processes and the facility
- Study of the documents available at the departments
- Data collection from the hospital records, patients & staff (survey)
- Participative brainstorming with department heads/in-charges of hospital areas

All the data collected by the above tools, has been collated and analysed to offer a comparative format for efficient gap identification. Details of the data sources are annexed in Annexure 1, 2, and 3.

HOSPITAL FACT SHEET

Name of the Institution	Sardar Patel District Hospital
Date of inception	15th August 2008
Beds in the hospital	100 bedded
Scope of services	General hospital
Name of owner entity	Government of Chhattisgarh
State of owner entity	State government
Civil Surgeon	Dr Amar Singh Thakur.
Registered Office	District Hospital, Bus stand ,Bilaspur.
Other associated hospital.	City dispensaries (Bilaspur, Bandhvapara,Chuchiyapara,Sakri,Talapara,Mungeli,Chingrajpara, Gandhi Chowk)
Fututre Plans	• Expansion of the hospital to 200 beds. • Upcoming 12 bedded SNCU and Blood Bank unit • Construction of a Dharamshala for the relatives of patients. • Construction of a Rehabilitation centre. • Construction of a Mortuary. • Merging of the Sarkhanda eye hospital. • Developmnent of a JSY Helpline centre. • A medical store in the vicinity of the hospital by Red Cross Society.

TABLE 1: Hospital fact Sheet

CHHATTISGARH STATE: AN INTRODUCTION

Chhattisgarh is the newly carved out state from Madhya Pradesh which came into existence on 1st November 2000 and the 26th state of the country. The state of Chhattisgarh is spread over the area of 135191 sq km with 18 districts,146 blocks and 20308 villages. Uttar Pradesh and Bihar bind the State in north, in the east it is bound by Orissa, in the south by Andhra Pradesh and in the west by Madhya Pradesh and Maharashtra. Mahanadi and Narmada are the principal rivers of the state. The main crop of the state is paddy which is cultivated only once in a year due to dependency on rain.

The state of Chhattisgarh



FIGURE 1:STATE OF CHHATTISGARH

Chhattisgarh has got the population of 20.8 millions and a population density of 154 sq kms., one of less densely populated states of India. This is because a large portion of the state (44%) is covered with lush green forests sheltering large number of tribal populations (32% of overall state populations) and 12% of

Scheduled caste populations. Other Backward Caste (OBC) population totals to 45%. Therefore, overall 89 % population of the state is disadvantaged in different ways, drawing special attention from the centre for their upliftment based on Social Justice.

TABLE 2:The demographic profile of the state of Chhattisgarh

GENERAL INFORMATION	
GEOGRPAHICAL LOCATION	
Geographical area	**135 000 sq km**
Forest area	**59 000 sq km**
ADMINISTRATIVE SET UP	
Revenue Division	**3**
Revenue Districts	**16**
Tehsils	**96**
POPULATION(millions)	
Total	**20.79**
Male	**10.45**
Female	**10.34**
Rural	**16.62**
Urban	**4.17**
LITERACY DATA	
Literate population (millions)	**11.28**
Rural literacy rate	**60.93**
Urban literacy rate	**81.08**
POPULATION CHARACTERISTICS	
Density	**154 per sq kms**
Sex ratio	**990**
BIRTH ,DEATH AND IMR	
Birth rate	**26.9**
Death rate	**9.6**
Infant mortality rate	**78**

(Source: Chhattisgarh-Report, www.cghealth.nic.in)

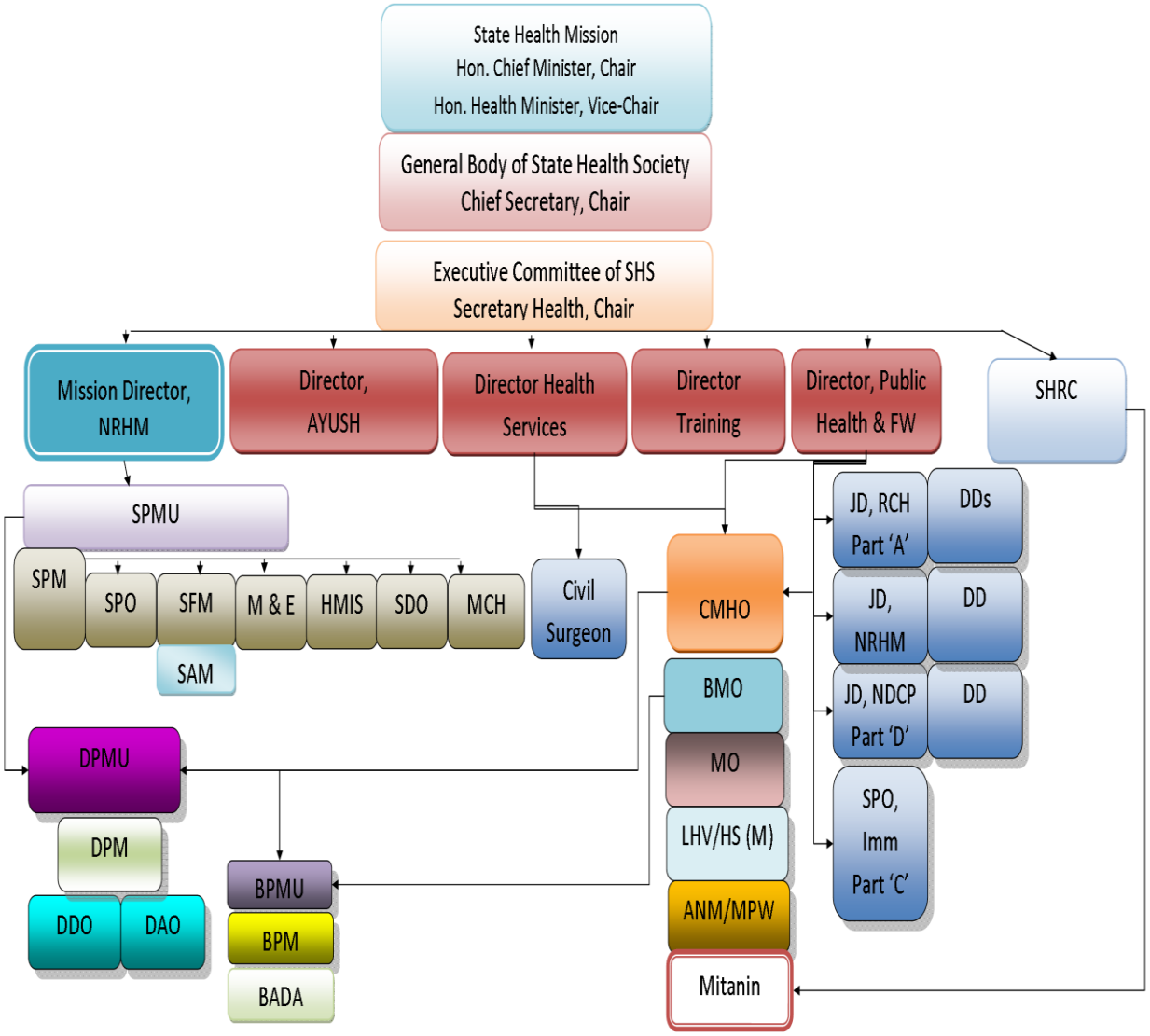
OVERIVEW OF HEALTH SYSTEM IN CHHATTISGARH

India has a vast health care infrastructure that is broadly divided into the public and private (including non-governmental trust hospitals) sectors, depending upon their ownership. The public healthcare service delivery consists of the 'step-up referral' network of sub-centres, primary health centres, community health centres, district hospitals, and medical college hospitals. Private sector includes individual run clinics/poly clinics, nursing homes, general hospitals, and single and multi-specialty hospitals.

The **Hon'ble Chief Minister** is the premier for the overall public health system of Chhattisgarh Health System. The Department of Health & Family Welfare is under the portfolio for the State Health Minister. However, the executive decisions pass through the chain of Chief Secretary and Secretary Health.

There are five main directors under the direct control of the Health Secretary. The Director, SHRC in his additional technical support to the Department of Health and Family Welfare. Mission Director, NRHM is the principal authority for the tasks related to the mission. The Director undertakes the PIP formulation and subsequent execution of the plans with well-concerted and coordinated support from several other departments besides health. The State Programme Management Unit, District Programme Management Units, Block Programme Management Units are the executive chain for successful implementation of the PIP plans.

Director AYUSH looks after the activities, including planning, implementation, monitoring and evaluation of the programmes related to Indian systems of medicine such as Ayurveda Yoga, Unani, Siddha and Homeopathy. Director Health & Family Welfare is concerned with the state health and family welfare programmes. Director Medical Education and Training is concerned with the medical education and training activities across the state. Director SHRC provides additional technical inputs for planning, policy formation, strategy execution, monitoring, and evaluation of the plans. Moreover, SHRC is involved in the nurturing and development of 60000 cadres Mitanin (Community Health Volunteers) Programme.



(Source: Chhattisgarh-Report, www.cghealth.nic.in

FIGURE 2:Structure of the Health System in Chhattisgarh

The Directors are supported by several Joint Directors and Deputy Directors in effective and smooth functioning of the overall health systems.

The Chief Medical & Health Officers are in charge of the District Health Systems, while the Civil Surgeons are responsible for proper functioning of the district hospitals. The DPMU supports the

functioning of the CMHOs while the BPMUs support the activities of the Block Medical Officers in implementation of NRHM activities.

CHHATTISGARH HEALTH INFRASTRUCTURE

The department provides three tier healthcare services to the people of the state with an objective to provide healthcare to all. At the first level, health services are provided in urban areas. Health services at the second and third level are provided in rural areas.

District Hospitals

At the district level, District Hospitals provide First level (Tier I) Health Services in Urban areas. District hospitals are mandated to offer comprehensive preventive, promotive and curative care in broad specialties and select sub-specialties through a range of core and support services. The specialties offered depend on the requirements of the community.

Community Health Centres (CHCs)

Second level (Tier II) medical services are provided by the CHCs. As per norms a CHC is manned by four specialists i.e. Surgeon, Physician, Gynecologist and pediatrician and supported by 21 paramedical and other staff, a CHC has 30 indoor beds with one OT, X ray facility, a labour room and laboratory facility. It serves as a referral centre for 4 PHCs.

Primary Health Centres (PHCs)

PHC is the first contact point between village community and the Medical Officer. PHC provides the third level (Tier III) medical services manned by a Medical Officer and 14 other staff; it acts as a referral unit for 6 Sub-Centres and has 4-6 beds for patients. It performs curative, preventive, promotive and family welfare services. These are established and maintained by the State Governments.

Sub-Centres

Sub center along with the PHC form part of the Third level (Tier III) of healthcare services provision in the state of Chhattisgarh. Sub Centre is the first peripheral contact point between community and health care delivery system. A Sub Centre is manned by one Female Health Worker (ANM) and one Male Health Worker (MPW). One Lady Health Visitor (LHV) for six sub-centres is provided for supervision at the PHC level.

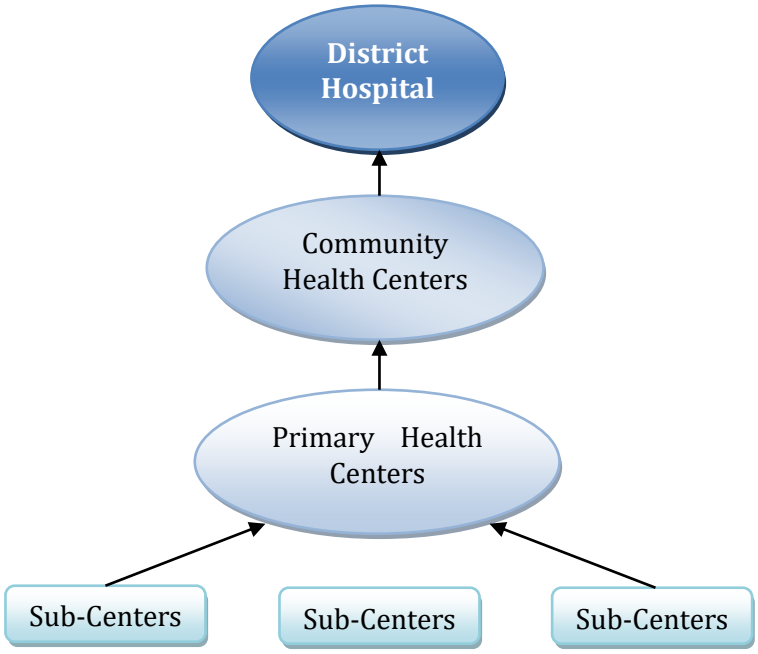


FIGURE 3:Three-Tier Public Health Infrastructure in Chhattisgarh

(Source: Chhattisgarh-Report, www.cghealth.nic.in

Currently MoHFW, Chhattisgarh provides the Medical, Health and Family welfare services through the infrastructure and staff shown in the table below. The Gap analysis in the table below shows that there is a shortfall in both the infrastructure and the staffing required for healthcare delivery in the state of Chhattisgarh.

The health infrastructure in the state of Chhatisgarh is as follows.

INSTITUTION	NO.
Medical college	3
District hospital	16
Ayurvedic hospital	8
Ayurvedic dispensary	634
Unani hospital	1
Unani dispensary	6
Homepathic hospital	3

TABLE 3:Details of Health Infrastructure in Chhattisgarh

The other healthcare facilities in the state of Chhatisgarh are as follows:

Name of facility	No.
Sub centre	4741
Primary health centre	721
Community health centre	136
Multi purpose worker	4850
Health worker –male	2514
Health assistant –female	749
Health assistant-male	114
Doctors at PHC	862
Obstretrian/gynaecologist at CHC	35
Physician at CHC	6
Paediatrician at CHC	33
Total specialist	107
Radiographer	108
Pharmacist	791
Lab technician	474
Nurses/midwife	639

Source: RHS Bulletin, march 2008,MoHFW, GoI

Healthcare Staffing and other infrastructure in Chhattisgarh

HEALTH INDICATORS OF THE STATE OF CHHATTISGARH

Due to the presence of the public and private health facilities in the state the health indicators have significantly improved thereby showing a more positive picture of the health status of the state.

The Total Fertility Rate of the State is 3.1. The Infant Mortality Rate is 59 and Maternal Mortality Ratio is 335 (SRS 2004- 06) which are higher than the National average. The Sex Ratio in the State is 989 (as compared to 933 for the country). Comparative figures of major health and demographic indicators are as follows:

Health indicator	Chhattisgarh	India
Total population	20.83	1028.61
Decadal growth	NA	21.54
Crude birth rate	26.5	23.1
Crude death rate	8.1	7.4

TABLE 4:Healthcare Indicators of Chhattisgarh

BILASPUR

The district of Bilaspur is one of the largest city of the State with a geographical spread of 6376.76 Sq. Km. The city lies at the latitude of 21deg 37" to North 23 deg 07" and a longitude of 81.12" to East 83.40 ". Bilaspur is 262 metres above the sea level.

Bilaspur district is not only famous in Chhattisgarh but in India due to its unique characteristics like rice quality, Kosa industry and its cultural background. Bilaspur district has a major contribution in the naming "Dhan Ka Katora" (Rice Bowl) for the entire Chhattisgarh region.

The Bilaspur city is approximately 400 years old and the name "Bilaspur" has been originated from the Fisher-woman named "Bilasa". Over the years Bilaspur has developed a lot, despite several natural calamities.



FIGURE 4:Bilaspur District in the State of Chhattisgarh

The district is bounded by Korea on the north, Anuppur District and Dindori District of Madhya Pradesh state on the West, Kawardha on the southwest, Durg and Raipur on the south and Korba and Janjgir-Champa on the East. The area of the district is 6377 sq. k.m. The total population of the district is approx 1,993,042. The map above gives the location of the district Bilaspur in the state of Chhattisgarh.

Bilaspur district consists of 11 tehsils. These tehsils are Bilaspur, Pendra, Pendra road, Lormi, Kota, Mungeli, Patharia, Takhatpur, Bilha, Marwahi and Masturi. There are 10 blocks and the total number of villages in the district is 1635.

No. of Tehsils	11
No. of Gram Panchayats	858
No. of Blocks	10
Revenue Inspector Board	16
Patwari Halkas	219
Total Villages	1635
Populated Villages	1626

Bilaspur District in the State of Chhattisgarh

The headquarters of the district is Bilaspur. It is the second largest city in the state and the seat of the High Court of Chhattisgarh. It is called Nyaydhani (legal capital) of Chhattisgarh. Bilaspur is famous for Kanan Pendari Zoo Park. Arpa is a river passing through the district, it is very shallow in depth.

POPULATION PROFILE OF BILASPUR

As of 2001 India Census, Bilaspur had a population of 1,998,355. Males constitute 50.7 % of the population and females 49.3 %. Bilaspur has an average literacy rate of 52.77 %, male literacy is 65.12 % and female literacy is 40.06 %. The district has a sex ratio of 971 female per 1000 male. The key population statistics of the distict of Bilaspur is highlighted in the following table:

The statistics of the district of Bilaspur is as follows:

Statistics	Number
Total population	1998355l
Total rural population	1511661

Total urban population	486694
Total male population	1013875
Total female population	984480
Total male literates	660239
Total female literates	394419
% low standard of living	72%
% of maariage of girls before 18 years	31.3%

(Source : www.bilaspur.nic.in)

TABLE 5: STATISTICS OF BILASPUR DISTRICT

HEALTH FACILITIES/ STATUS IN BILASPUR DISTRICT

Government is the major healthcare service provider in Bilaspur District with a very minimal and restricted penetration of private players in the healthcare service provision. The district has 1 district hospital, providing secondary level heathcare services, 10 CHCs and 72 PHCs. The following table gives the details of the healthcare infrastructure available in the district.

TABLE 6 :Health Services in Bilaspur District

Medical College	1
District Hospital	1
Community Health Centres	10
Primary Health Centres	75
Sub Health Centres	357
Training Centre	1
Private Hospitals	65

Bilaspur is under-served in terms of health care and community health services which is reflected in the poor health indicators of the district.

The following table details some of the health related parameters for the district of Bilaspur.

ANM staying in sub centre	2
PHC having separate labour room	10
CHC with 24 hour delivery services	11
Institutional deliveries	13.6%
Full vaccination	92.8%
Contraceptive use	44 %

TABLE 7: HEALTH RELATED PARAMETRES IN BILASPUR

The Maternal Mortality Rate is 4 per 1000 live births and the under- five mortality is 20/1000 population. The crude birth rate is 20.8/1000 and death rate is 11.5 / 1000. The Infant Mortality Rate in rural areas is a high 110/1000 live births (NFHS,1992). Fifty-seven percent of children under five year of age are malnourished, with severe malnutrition being present in 22%. Only 29% of the infants are fully vaccinated, and 34% are not vaccinated at all (NFHS, 1992). Falciparum malaria (with periodic epidemics), water borne diseases, tuberculosis and leprosy are important public health problems along with common childhood illnesses. The following table details the child related health indicators for the district:

Maternal Mortality Rate (per 1000)	4
Under 5 Mortalit Rate (per 1000)	20
Crude Birth Rate (poer 1000)	20.8
Deat Rate (per 1000)	11.5
Full vaccination (infants)	29%
No vaccination (infants)	34 %

The heatcare infrastructure in Bilaspur is spread scross the district, the same is evenly distributed across the rural and urban area in the district. The following figure gives the pictoral spread of the healthcare infrastructure in the district.

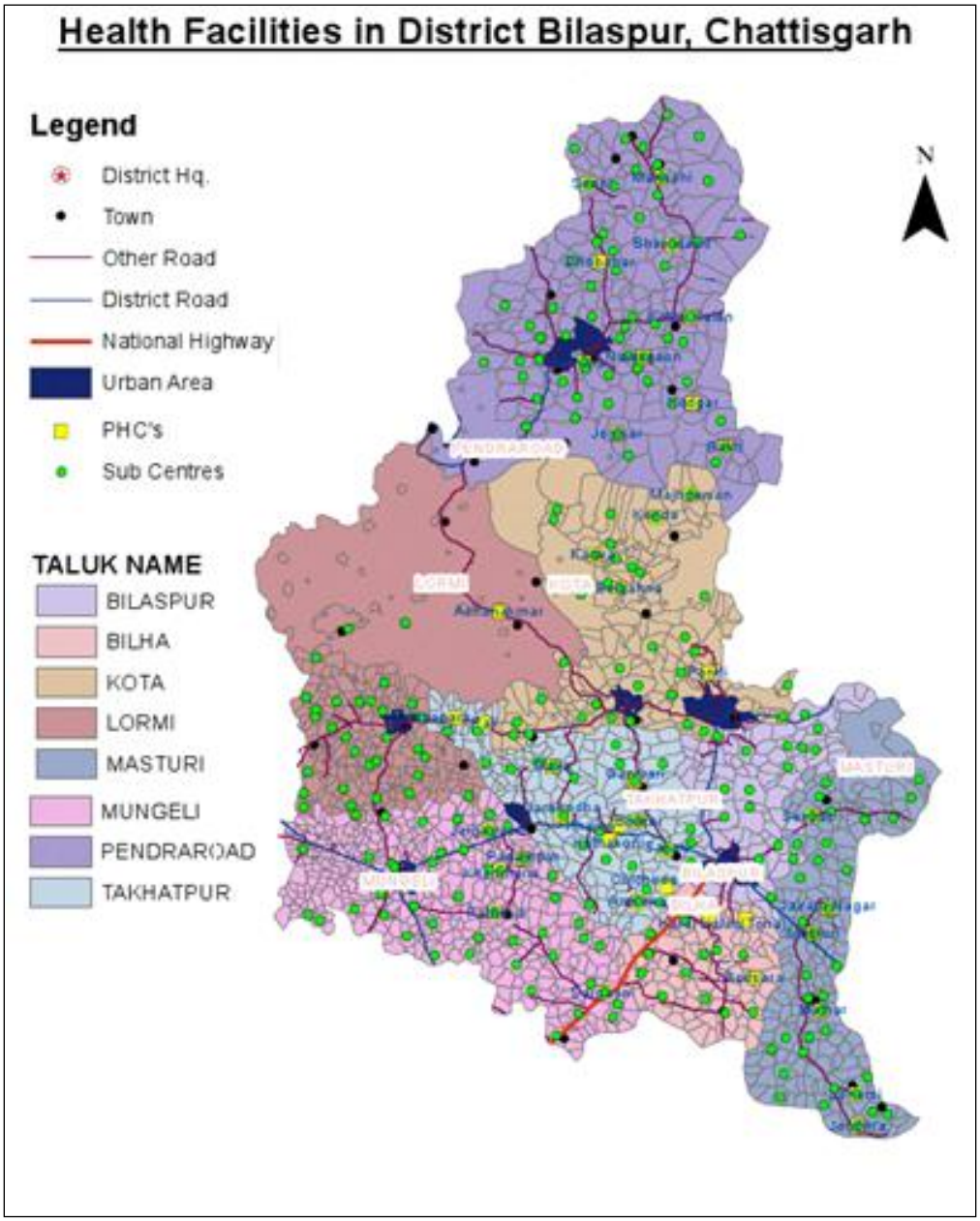


FIGURE 5: HEALTH FACILITIES OF BILASPUR DISTRICT

(Source: Chhattisgarh-Report, www.cghealth.nic.in

SARDAR PATEL DISTRICT HOSPITAL – AN INTRODUCTION

Sardar Patel District Hospital is the district hospital of Bilaspur situated near the central bus stand of Bilaspur. The hospital is a 100 bedded which provides all the essential preventive, curative and promotive and emergency services to the people of Bilaspur district.

The year 1956 marked the foundation of the Sardar Patel District Hospital of Bilaspur. The hospital was merged with the CIMS hospital of the city in the year 2001. In 2005 the hospital was re- established as a separate unit at Sarkhanda. The hospital was then running in the premises of the eye hospital of Sarkhanda. The new building for the hospital was inaugurated on 15th August 2008.

The hospital is independently functional with one main building and one Dharmasala which is under construction for the relatives of the patient.

The major catchment area of the hospital is the main city of Bilaspur and the district of Bilaspur. The hospital caters to a population of 23.4 lakhs. Being a government hospital the cost of treatment in the hospital is low which attracts a huge number of patients from the weaker section of the society. The hospital having all the facilities except for super specialiity services is able to take care and fulfill the health care needs of a large population of the area.

The hospital has sanctioned 100 bedded; the number of operational beds in the hospital is 141. With the introduction of 12 beds of Special Neo-Natal Care Unit (SNCU) and 30 beds of Sarkhanda Hospital the bed availability of the hospital would reach 183.

The distribution of the beds available in the hospital currently is as follows:

DEPARTMENT	NO. OF BEDS
Paying ward	20
Medicine	22
Surgery	19
Orthopaedics	19
Paediatrics	9
Casualty	6
ICU	2
HDU	2
Obstretics and gynaecology	14

Preoperative	16
ANC	4
Isolation	8
Total number of beds	141

TABLE: DISTRIBUTION OF BEDS IN THE HOSPITAL

The district hospital also caters to the population of the CHCs, PHCs and various health centre of adjoining districts of Chhattisgarh. The Various National Programs which are addressed in the hospital are as follows:

National Health Programme and Schemes	Services Provided
National Immunization Programme	The hospital participates in the National Immunization Program for infants and children and vaccinates the children with the vaccines of DPT, TT, DT, Measles etc.
Pulse Polio Programme	In the Pulse Polio Program it extends manpower support to operate special OPD for polio immunization.
TB Control Programme	The TB patients from the hospital are referred to the nearby TB clinic for DOTS therapy. The TB clinic in-turn refers the patients to the hospital for requisite investigations, such as X-Ray and inpatient care of the patients requiring in-patient care, as there are no in-patient beds in the TB clinic.
AIDS Control Programme	The hospital operates 'Integrated Counseling & Testing' Center. At the center, HIV patients are identified and counseled about modifications in their social and personal behavior to ensure reduced risk of transmission of AIDS from mother to the child.
Maternal & Child Health Programme	The hospital also participates in Maternal and Child Health Programme. Under the 'Janani Suraksha Yojana' financial assistance is provided to the family upon the institutionalized delivery of the child. As per the program, mothers are given bank cheques for an absolute assured sum, from the state government (Rs. 1000 for urban areas and Rs. 1400 for rural areas) for a successful institutional delivery.

Family Planning Programme	Under the Family Planning Program, the hospital supports family planning surgeries like Tubectomy, Vasectomy, and Copper-T insertion. The patients are also offered health education about the various contraceptive methods.
Blindness control program	The hospital participates in the Blindness control program. Under the program, Cataract and Glaucoma operations are being undertaken in the hospital.
Bal Hriday Yojna	Under this Scheme, the hospital provides free-of-cost cardiac surgery for children between the age of one to 15 suffering from Congenital Heart Disease (CHD) who cannot afford medical care
Rashtriya Swasthya Bima Yojana (RSBY)	Under this Scheme, the hospital provides health insurance coverage for Below Poverty Line (BPL) families. Beneficiaries under RSBY are entitled to hospitalization coverage up to Rs. 30,000/- for most of the diseases that require hospitalization. Coverage extends to five members of the family which includes the head of household, spouse and up to three dependents. Beneficiaries need to pay only Rs. 30/- as registration fee

TABLE 9: National Health Programmes

In addition to participation in various National Health Programmes, the hospital also participates in various other community service activities.

- School health programmes are organized in schools where the doctors conduct lectures on health education to the students.
- Medical camps like LTT camps are organized regularly in the hospital.

PATIENT VOLUME AND PROFILE

Sardar Patel District Hospital, Bilaspur serves the entire population of the district of Bilaspur, which has a population of around 19,98,355. The hospital caters to the patient of 10 CHCs, 72 PHC and 357 Sub-Centre.

The hospital catered to 73955 out-patients, 9825 in-patients and had bed occupancy of 73.8 % in the calendar year 2009.

DISTRICT HOSPITAL - LAYOUT

MAIN BUILDING

The main building of the hospital is built over an area of 2180 sq.mts. The building has got 3 floors + a ground floor with a ramp at the centre of the building for the easy transport of the patient. The Layout is shown below:

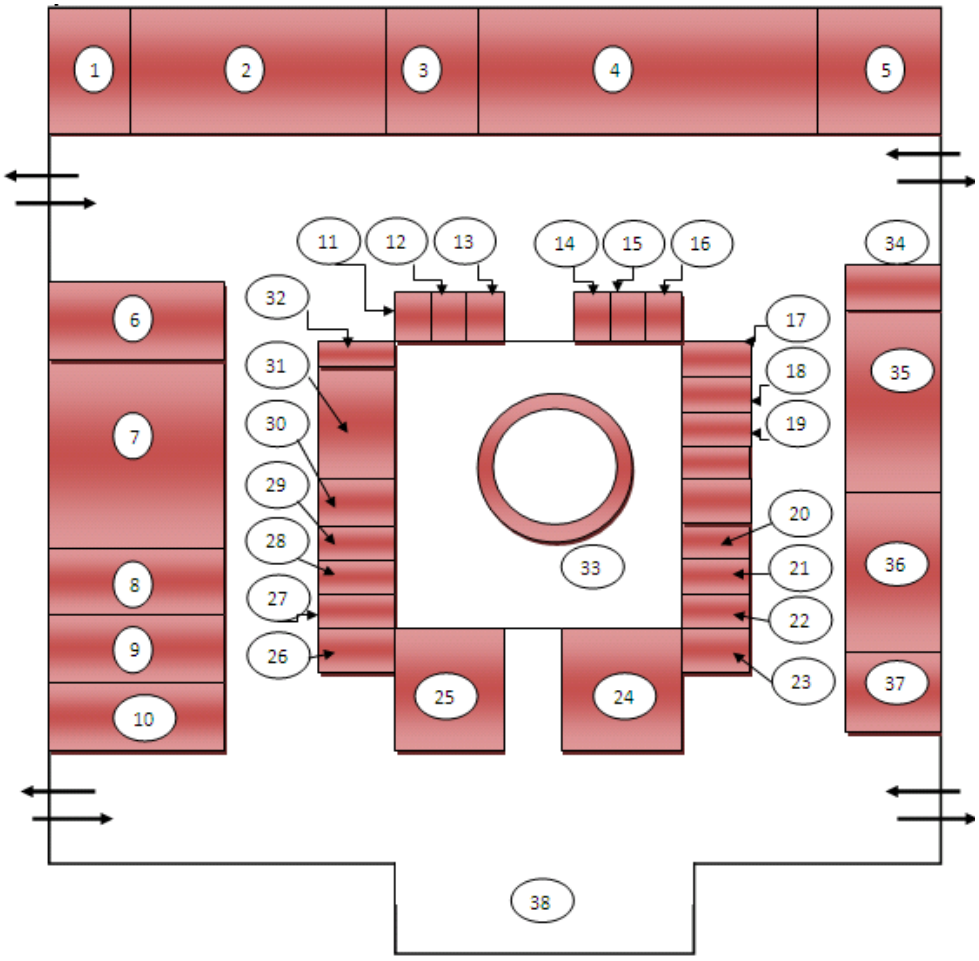


Figure 5:Schematic Layout of the Hospital

The different areas are numerically marked in the layout. Rooms assigned for individual floor is given in the floor-wise details below:

1. **Ground floor:**

The layout for the groiund floors is shown below. The details of the ground floor of the schematic layout of the hospital given in above figure are as follows:

Details of the Ground Floor of the Schematic Layout

1	X-Ray Room	16	Kitchen
2	X-Ray Room	17	HOD Pathology
3	Parking	18	Gyanecology OPD
4	Pathology Lab	19	ENT OPD
5	Pathology Lab	20	Plaster Room
6	Manifold Room	21	Ortho O.P.D
7	ICU AND DIALYSIS	25	Registration/C.S.office
8	CASUALTY	26	Store/Sister Duty Room
9	MINOR O.T	27	Doctor Duty Room
10	Bathroom	28	Nursing Station Casualty
11	Central Store	29	E.C.G.Room
12	Central Store	30	USG room
13	Central Store	31	Electrical room
14	Kitchen	32	Mamography Room
15	Kitchen	33	Ramp

2. First floor:

The first floor comprises of the wards, the administrative department and OT complex for the surgery. The medicine and the surgery combined with the orthopaedics ward is located on this floor. There are 10 private paying wards on the floor. Along with the ward, is the nursing station and the matron's office. The details of the first floor of the schematic layout of the hospital given in above figure are as follows:

Table 10 Details of the First Floor of the Schematic Layout

1	Male surgical ward	16	Paying ward	31	Doctor Duty room
2	Male surgical ward	17	Paying Ward	32	Sister Duty Room
3	Nursing station	18	Paying Ward	33	Ramp
4	Female surgical ward	19	Sister Duty Room	34	Male Medicine ward
5	Female surgical ward	20	Waiting area	35	Male Medicine Ward
6	Pre operative room	21	Paying ward	36	Female Medicine Ward
7	O.T.1	22	Paying ward	37	Female Medicine Ward
8	O.T.2	23	Paying ward	38	Civil Surgeon Room
9	Bathroom	24	Administration Department		
10	Bathroom	25	Jeevan deep Samiti Room		
11	Paying ward	26	Store		
12	Paying ward	27	O.T.4		
13	Paying ward	28	O.T.3		
14	Paying ward	29	Scrub Area		
15	Paying ward	30	C.S.S.D.		

3. Second floor:

The second floor comprises of the gynaecology ward and pediatrics ward along with the isolation ward and a labour OT. The floor has also an enclosed central lobby which is used for the stores department and a training room. The details of the second floor schematic layout of the hospital given in above figure are as follows:

Table 11.Details of the Second Floor of the Schematic Layout

1	Gynaec ward	16	Paying ward	31	Doctor Duty room
2	Gynaec ward	17	MRD	32	Electric Room
3	Nursing Station	18	Stores	33	Ramp
4	Gynaec ward	19	Audiometry	34	Children ward
5	Gynaec ward	20	Nursing Station	35	Children ward
6	Bathroom	21	Paying ward	36	Isolation ward
7	ANC	22	Paying ward	37	Isolation ward
8	Eclampsia Room	23	Paying ward	38	Dead Space
9	Labour OT	24	Stores		
10	Bathroom	25	Paramedics Training Hall		
11	Paying ward	26	Sister Duty Room		
12	Paying ward	27	Stores		
13	Paying ward	28	Sterilizer Room		
14	Paying ward	29	Nursing Station		
15	Paying ward	30	Nursery ward		

4. Third floor:

The third floor comprises of school of Nursing along with the hostel for the nursing students.

SERVICES AVAILABLE AT THE HOSPITAL

Sardar Patel District Hospital, Bilaspur is a combined hospital offering preventive, preventive and curative services to the community. The hospital is a general hospital and currently provides OPD services in General Medicine, Ob&G, Orthopedic, Pediatric, E.N.T., Ophthalmic and Dental. The hospital provides In-Patient (IP) services through a sanctioned bed-strength of 100 beds. The hospital provides

surgical services also and has General, Eye, ENT, and Gynecological surgical wards to take care of the patients undergoing minor and major surgeries.

The hospital delivers patient care through its clinical, supportive and utility service areas. As shown below, both core services and support services are in-house, whereas utility services are both in-house and outsourced. Dietary, security, housekeeping and laundry services are outsourced by the hospital.

<table>
<tr><th colspan="4">Core Services</th></tr>
<tr><td>Out Patient Services</td><td>In Patient Services</td><td>Emergency Services</td><td>Intensive Care Unit</td></tr>
<tr><td colspan="4">General Medicine, Paediatiric, Obstetrics and Gyneacology, Orthopedic, Opthalmic, ENT, Dental, Tb and Chest ,psychiatry.</td></tr>
<tr><td colspan="4">Surgical Services:- Minor and Major procedures in General Surgical, Orthopedic, Eye, ENT</td></tr>
<tr><th colspan="4">Support Services</th></tr>
<tr><td rowspan="7">Laboratory Services:- Clinical Pathology Pathology Histopathology Serology Microbiology BioChemistry</td><td colspan="3">Radiology</td></tr>
<tr><td colspan="3">Immunization</td></tr>
<tr><td colspan="3">ICTC</td></tr>
<tr><td colspan="3">Family Planning</td></tr>
<tr><td colspan="3">Central Medical Stores</td></tr>
<tr><td colspan="3">Physiotherapy</td></tr>
<tr><td colspan="3">CSSD</td></tr>
<tr><th colspan="4">Utility Services</th></tr>
<tr><th>In House</th><th colspan="3">Outsourced</th></tr>
<tr><td rowspan="2">Medical Gases</td><td>Laundry Services</td><td rowspan="2">Medical Record keeing and Statistics</td><td>Security Services</td></tr>
<tr><td>Housekeeping services / BMW</td><td>Dietary Services</td></tr>
</table>

Following are the available facilities at different areas in the hospital.

A. <u>OUT PATIENT DEPARTMENT:</u>

The out-patient department of the hospital includes an

1. A MLC/General OPD for Patient Consultation
2. A Medicine Unit
3. A Surgery/Minor OT for injection and dressing
4. An Orthopaedics & physiotherapy
5. A Gynaecology room for Maternity consultation.

6. Paediatrics room
7. A Dental Clinic
8. An Opthalmic centre.
9. A TB and chest
10. A Psychiatry unit

B. INPATIENT DEPARTMENT:

The IPD of the hospital renders the following services to the patients:

1. Surgery which includes Surgical Wards and Operation Theatre.
2. Orthopaedics
3. Medicine
4. Gynaecology and Obstretics
5. Pediatrics
6. Isolation wards
7. Swine flu ward

C. NATIONAL HEALTH PROGRAMMES:

Several programmes as a part of initiatives from the central government are carried out in the Hospital. Some of them are as follows

1. A DOTS centre for Tubercolosis
2. NLEP programme for leprosy eradication.
3. An ICTC centre for counselling and testing for HIV patients.
4. Janani Suraksha Yojana as a part of NRHM to encourage institutional deliveries.
5. A Rasthriya Swasthya Bima Yojana centre for promotion and coverage of health insurance among the needy patients.

D. OTHER FACILITIES:

Other facilities available at the Hospital are given below:

1. Intensive Care Unit
2. A Dialysis unit
3. Audiometry
4. Physiotherapy
5. SNCU

6. Vaccination room
7. Plaster room

E. DIAGNOSTICS SERVICES:

The table shown below explains the diagonistic services in the Hospital. The hospital provides laboratory, radiology and other diagonisitic services. Laboratory services include Bio-chemical tests like Haemetology, Microbiology, Serology and Bio-chemistry along with Stool examination, semen examination and Urine analysis. X-ray, USG, Mammography and BMD are available as a part of radiology services. Other than the above ECG, TMT, Long Function Test and Spirometry are included in the diagonistic service facilities in the hospital.

Table 13 Diagnostics Services

LABORATORY	RADIOLOGY	OTHERS
Haematology	X-ray	ECG
Microbiology	USG	TMT
Serology	Mammography	Lung Function test
Biochemistry	BMD	Spirometry
Stool examination		
Semen examination		
Urine analysis		

OPERATIONAL STATISTICS OF DISTRICT HOSPITAL

Sardar Patel District Hospital presently has facilities ranging from Out Patient Services, In-Patient Services and Emergency Services. The service delivery structure takes care of all the vital services essential in provision of care to the patients.

The hospital has a referral process in place to the medical college, which ensures the continuity of care is maintained under all circumstances.Complex Cases are referred to CIMS Medical College.

The total number of out patients availing services at the Sardar Patel District Hospital has increased during the period 2006 to 2009. The hospital witnessd a marginal fall in the total number of O.P.D in 2008, the primary reason for the same was shifting of hospital to its new Premises. However the

outpatient arrivals jumped by 23.7% in 2009. The OPD of the hospital has grown at a Compounded Annual Growth Rate of 11.46% to reach 73955 in 2009 from the figure of 47921 in 2006. The following figure highlights the total OPD patient load of the hospital during the period 2006 to 2009.

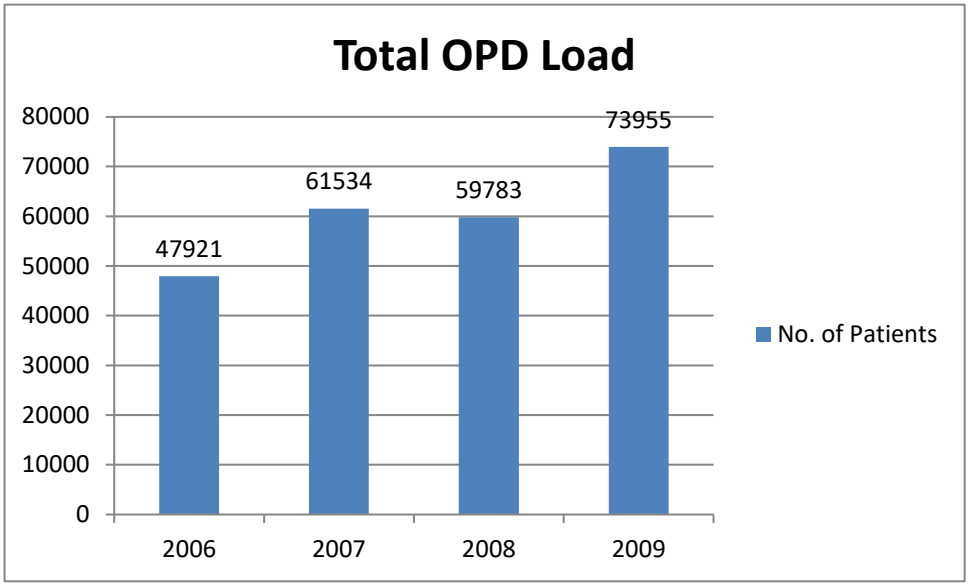


FIGURE 6:TOTAL OPD LOAD OF THE HOSPITAL

The total In-Patient load of the hospital has shown a very heavy uptreand during the period of 2006 to 2009. The same has increased by a CAGR of 84% diring the four-year period, to reach a figure of 9825 in 2009 as compared to only 855 in 2006. The rise in the In-Patient load has been huge during 2008, witnessing an annual increase of around 350%, this is because of the new services offerings by the hospital added during this period.

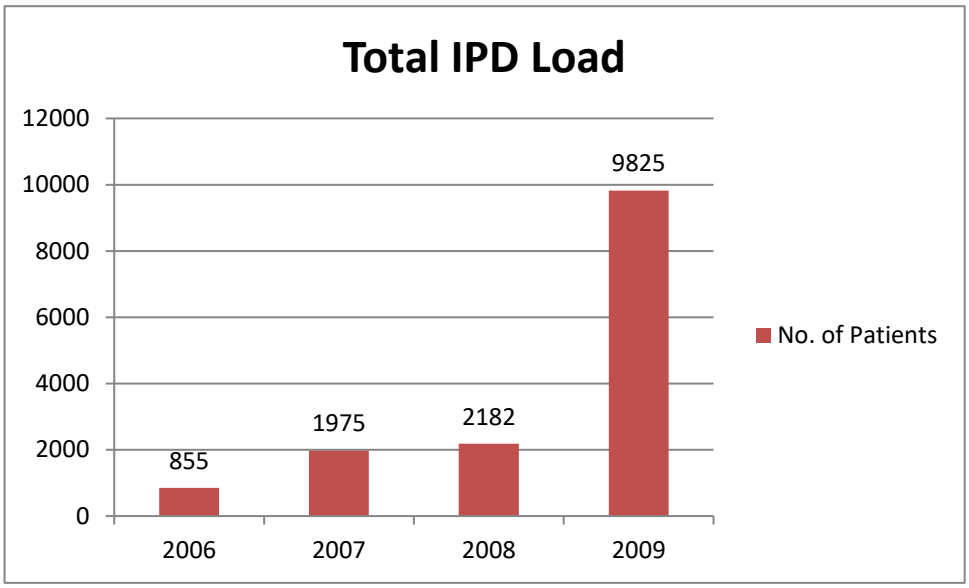
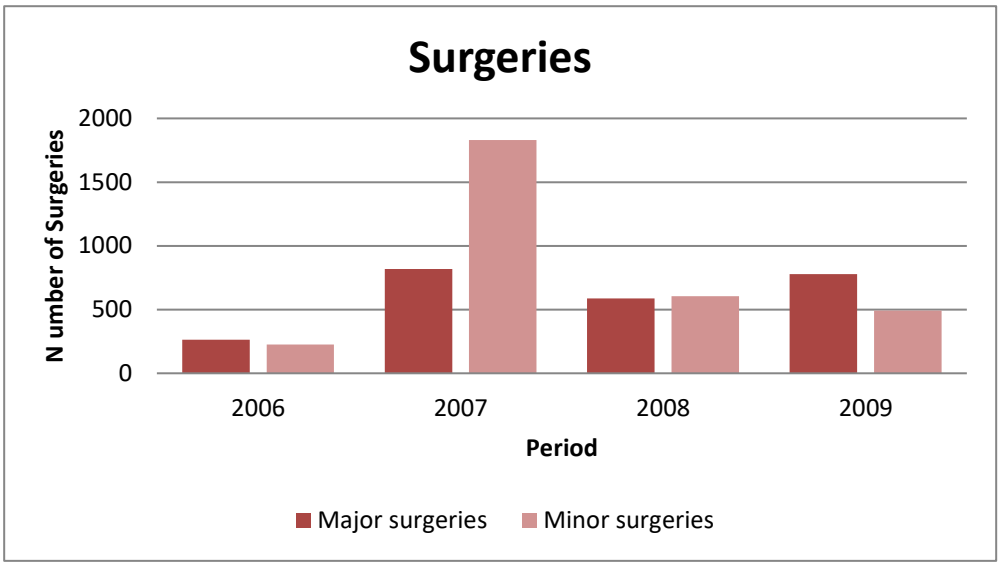


FIGURE 7 TOTAL IPD LOAD OF THE HOSPITAL

Total number of surgeries (both major & minor) done in the hospital has witnessed a mixed trend during the period 2006 to 2009. Both the major and minor surgeries witnessed a sudden increase in 2007, after which the same falls. Major and Minor Surgeries have grew at a CAGR of 21.5% and 31% respectively during the between 2006 and 2009. The following figure highlights the total number of major and minor surgeries undertaken at the hospital annually from 2006 to 2009.



MAJOR AND MINOR SURGERIES AT THE HOSPITAL

The total number of radiological investigation in the hospital has maintained a continuous growth with the introduction of the new and faster methods of radiological investigation, for ex. introduction of various new service offerings like ultrasound. The total number of radiological investigations, which stood at 3980 in 2006, reached a figure of 11929 in 2009, i.e. a CAGR of 31.6 %. The year 2009 indicates a year of tremendous growth in the number of radiological investigations, with a rise of 92%.

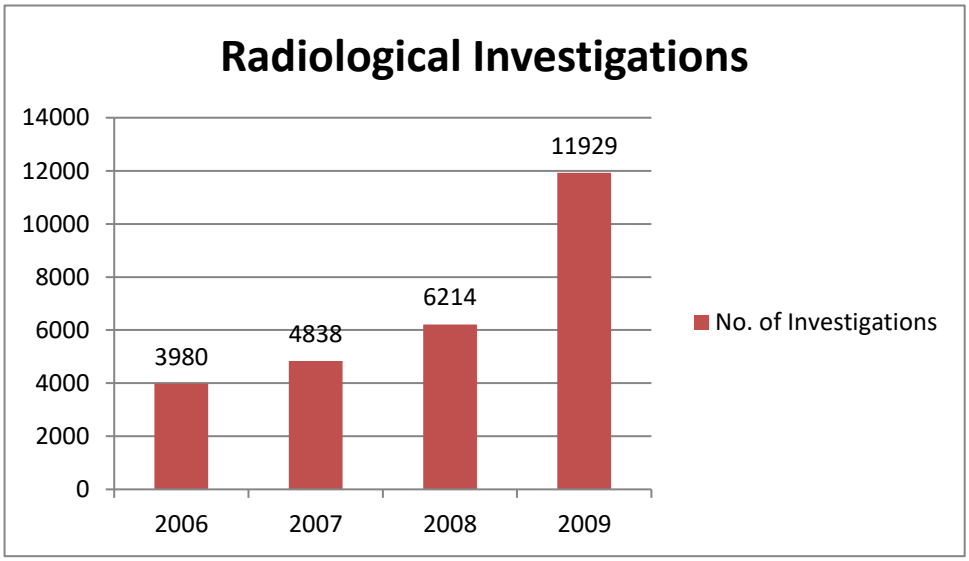


FIGURE 9 RADIOLOGICAL INVESTIGATIONS AT THE HOSPITAL

There has been a continuous growth pattern in the total number of lab investigation performed in the hospital. The same has increased steadily from the figure of 12,116 in 2006 to 34,057 in 2009. i.e. a CAGR of 29.5 %. There has been a sharp increase of 65% in the number of investigations in the year 2009 as compared to the year 2008. The following table reflects the total number of laboratory investigations undertaken at the hospital during the period between 2006 and 2009.

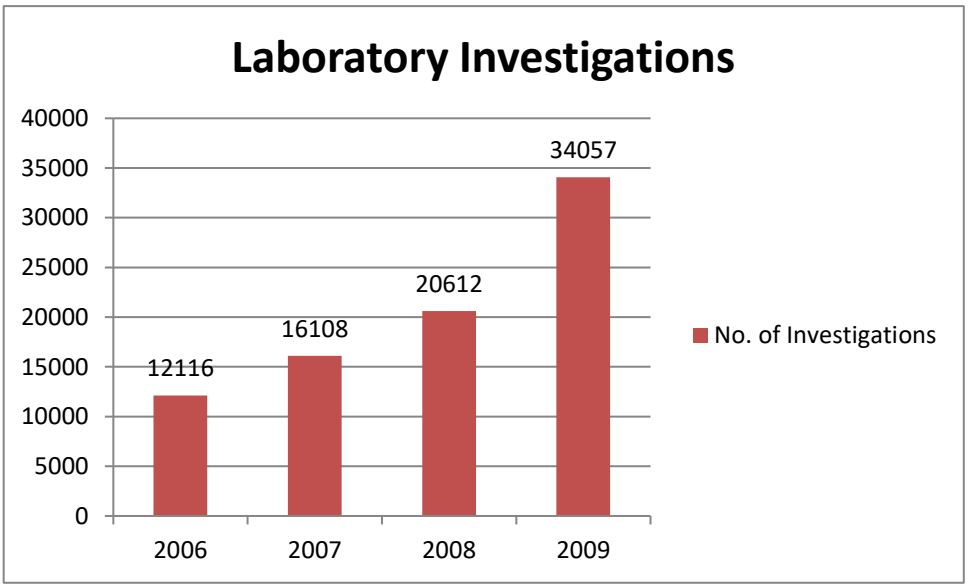


FIGURE 9:LABORATORY INVESTIGATIONS AT THE HOSPITAL

The bed occupany of the hospital has shown a continuous up-trend during the period. The Bed Occupancy which stood at 24.3% in 2006 has reached 73.8% in 2009, i.e. an increased utilization of approximately 12.5% annually. The bed utilization is, however still lower than prescribed optimal range of 80 to 90%. The improvement in the bed occupancy could be attributed to higher patient arrivals to the hospital, along with the increase in the service offerings of the hospital. The following figure highlights the Bed Occupancy Rate of the hospital for the years 2006 to 2009

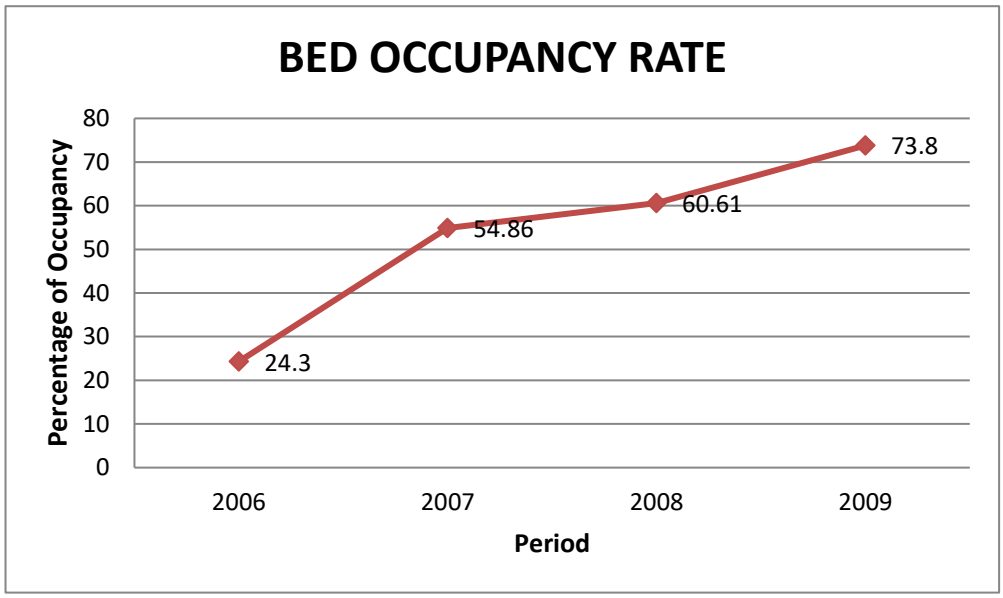


FIGURE 10BED OCCUPANCY RATE AT THE HOSPITAL

Monthly Statistics: The following table gives the details of the monthly hoslitic data of the hospital. The figures in the table are pertaining to January 2010 to show the average monthly statistics.

OPERATIONAL STATISTICS	NO.
Total OPD	8045
Total Lpd	368
Total no. of operation	481
Major	93
Minor	99
Cataract	180
Caserian	19
F.P.	90
Total no. of delivery	65
Total no. of X-ray	686
Total no .USG	0
Total no . ECG	189
Total malaria positive case	0
Total T.B. new cases detected	8
Total HIV new cases detected	4

Total sickling case positive: (Sickle cell anaemia is a common inherited haemolytic disorder of Sahu and kurmi community in the state)	0
Total anemia cases detected	12
Total no. of dog bite cases	30
Total no .of deaths	10

TABLE 14 :MONTHLY HOLISTIC DATA OF THE HOSPITAL – JANUARY 2010

CLINICAL SERVICES DETAILS

Following are the details of the various clinical serv ices and related processes being undertaken/ offered in the hospital.

OUTPATIENT DEPARTMENT

The patients coming to the Out-Patient department of the hospital goes to the registration counter, which generally works as the first contact point for the patients coming to the hospital. Registration of the patients seeking services from the hospital (both OPD and I.P.D.) is outsourced to National computers, Bilaspur. The hospital follows the timings regulated by the state for the O.P.D. services, the timings of the O.P.D. clinics of the hospital are as follows:

- Morning: 8:00 – 1:00 P.M.
- Evening: 5:00 – 6:00 P.M.

The O.P.D. load of the hospital is around 150-200 Patients on an average per day. These patients avail both the O.P.D. and the I.P.D. services available at the hospital. The Patient registration desk is located on the Ground floor. The hospital has a demarcated patient waiting area which lies adjacent to the registration desk. The patient waiting area provides adequate seating space for the patients and their attendants visiting the hospital.

The O.P.D. complex of the hospital constitutes of the following:

- Patient registration desk
- Consultation Rooms for Physicians – 9 in No.
- Vaccination room
- Plaster Room
- Pathological investigation department
- Laboratory and
- Drug dispensing counter

Drug Dispensing Counter located in the O.P.D. dispenses medication free of cost to the patients seeking treatment in the hospital.The patient receives free medication on production of the physicians prescription of essential drugs.

Following are the different processes currently being undertaken at the Out-Patient Department of the hospital.

1. PATIENT REGISTRATION:

Process Group	Out patient services	**Sub Process**	Patient registration
Process Location	Registration Counter	**Process Owner**	Operators
Inputs	Walk in patients, Emergency patients, Referred patients	**Output**	Registered patient
Process Flow:			
• Patient reaches the Patient Registration Counter. • The operator enquires about the demographic details of the patient. • The data obtained is entered into the hospital record. • Depending upon the complaint of the patient department to be visited is assigned in the case sheet. • An O.P.D. Slip is generated • A registration Fee of Rs.5 is collected from the Patient/Relative. • Patients presenting with B.P.L.card are waived off from the registration fee. • O.P.D Slip is provided to the patient. • The patient is guided to the respective O.P.D. • After obtaining the O.P.D. slip patient waits in the waiting area till the time his turn comes for consulting the physician of the concerned department.			
Process Records	✓ Register for maintaining Accounts ✓ Register for maintaining total money collected. ✓ OPD slip ✓ IPD slip		

2. PATIENT CONSULTATION/EXAMINATION:

Process Group	Outpatient Services	**Sub Process**	General/ specialist OP clinics
Process Location	Specialist consultation chambers	**Process Owner**	Specialists

Inputs	Sick Patient with OPD registration slip	**Output**	Patient's consultation done with the specialist and treatment advised accordingly.

Process Flow:

- Patient waits in the waiting area for consultation with physician of concerned department.
- The O.P.D.Attendent calls in the patient for consultation in an order of patient coming first for consultation.
- The consultant examines the patient of the presenting complaint and prescribes for investigation i.e pathological or radiological investigation.
- If no investigation is require or medication can be started even before the presentation of report the patient prescribes medication on the O.P.D,registration slip and mentions the patient for next follow up visits.
- If prior to prescribing medication investigation is required physicians prescribes medication on production of findings from the investigation lab.
- Following this the patient is guided either to the investigation lab or to the hospital drug dispensing counter as per the prescription of the consulting physician.

Process Records	✓ Record of patient treated.

3. DISPENSING OF MEDICATION:

Process Group	Out patient services	**Sub Process**	Dispensing of medicines
Process Location	Drug dispensing counter	**Process Owner**	Pharmacist in charge
Inputs	OPD slip with medications prescribed.	**Output**	Dispensing of medicines available in the hospital.

Process Flow:

- Patient visits the drug dispensing counter with the medication prescribed by the consulting physician on the O.P.D.registration slip.
- Pharmacist present in the counter check for the medications prescribed in the stocks available and dispense the medication in the dosage prescribed by the consulting physician.
- If any medications prescribed is not available in the stocks pharmacist informs the patient about the same. The medication not available in hospital drug dispensing counter can be purchased by patient from the Private drug store outside the hospital.
- Pharmacist explains the patients about the how the medicine has to be consumed.

• Pharmacist explains about the dosage and the possible complication of the medicine prescribed. • The medications dispensed to the patient are entered into pharmacy record book by the drug dispensing pharmacist.	
Process Records	✓ OPD medicine slip ✓ Expenditure register ✓ Stock register ✓ Indent register.

4. INJECTION ROOM:

Process Group	Out patient services	**Sub Process**	Injection room
Process Location	Casualty room – room no. 27	**Process Owner**	Sister in charge
Inputs	Patient, Sister in charge Injections Cotton/swabs	**Output**	Prescribed injections are administered to the patient
Process Flow:			
• If the patient is advised for any injectable patient visits the Injection Room. • The patients presents to the sister in charge with the injectable prescribed. • If the injectable is available in the stock it is administered by the sister in charge of the injection room. • In case of non availability of injectable patient is advised to get the same from the private drug store. • Before administration of the injectable the precautions are taken into consideration by the concerned sister in charge. • Following administration the patient is advised about the precautions to be followed and if any further injectable has to be administered and when it should be done..			
Process Records	✓ Medicine book.		

5. OP STAFF REGISTER:

Process Group	Outpatient services	**Sub Process**	OP Staff Register
Process Location	OPD	**Process Owner**	Civil Surgeon
Inputs	In charges and Specialists	**Output**	A roster specifying the availability and times of various incharges/specialists are prepared and displayed accordingly
Process Flow:			
• Scheduling of the duty for O.P.D is done by the incharge of the O.P.D. • The duty Roster is prepared one month in advance and the consulting physicians are informed seven days before. • The doctors have to follow the schedule mentioned in the duty roster.			
Process Records	✓ Duty Rooster Register		

6. DIAGNOSTICS:

Process Group	Outpatient services	**Sub Process**	Diagnosis
Process Location	X Ray	**Process Owner**	Technicians
Inputs	Diagnostic Equipments, Tests prescribed by the consultant, Patient	**Output**	Diagnostic reports
Process Flow:			

- If the consulting physician prescribes for x-ray imaging the patient visits the department of radiology.
- Patient presents with the O.P.D.slip in which the part of the body for which X-ray image has to be taken is prescribed by the consulting physician to the technician in charge of X-ray imaging.
- The technician in charge determines for the size and the number of plates that will be required.
- This is mentioned by the technician on the patients registration slip.
- Patient has to make payment for the same and the registration counter issues a payment slip.
- On production of the registration slip to the technician he makes an entry into his records and identifies the patient and the part of the body for which image has to be taken.
- After image has been taken the x-ray plate is sent either to the radiologist for reporting or is sent to the prescribing physician for making the diagnosis on the same day or next working day of the O.P.D.
- X-ray plate along with the report is returned to the technician in charge of x-ray services.
- X-ray plate and the report can be collected by the patient/relatives on production of the payment slip.

Process Records	✓ MLC Register ✓ OPD Register ✓ X-ray film stock register ✓ Articles stock register ✓ Mammography Register ✓ BMD+ X- Ray + USG Register.

7. INVESTIGATION:

Process Group	Outpatient services	**Sub Process**	Diagnosis
Process Location	Lab	**Process Owner**	Lab technician
Inputs	Sample Collected, Lab technician, Chemicals, Equipments	**Output**	Diagnostic reports
Process Flow:			

• The consultant prescribes the required investigation to the patient on the OPD slip. • The patient takes the slip to the pathology lab where he/she is instructed to get a receipt of payment from the registration counter. • The patient pays the amount for the tests to be performed and gets a receipt. • The patient takes this receipt to the laboratory where the sample is collected by the students of paramedics. • Sample collection starts from 8 am to 12: 30 pm • The testing is done by the technicians and report is formed. • The report is sent within 2- 3 hours to the concerned department in case of an emergency The patient then has to collect the report in the OPD timings (8 -1pm or 5-6 pm)	
Process Records	✓ Haematology register ✓ Sickling register ✓ HbS Ag register ✓ Stool Test register ✓ Widal test ✓ Pregnancy color test ✓ Biochemistry register ✓ Urine register.

8. VACCINATION ROOM:

Process Group	Outpatient services	**Sub Process**	Vaccination
Process Location	Vaccination room	**Process Owner**	Sister in charge
Inputs	Vaccines, Sister, Patient.	**Output**	Vaccinated patient.
Process Flow:			
• Patients prescribed for vaccination visit the vaccination room. • Sister in charge identifies the vaccine to b administered from the O.P.D.slip. • Sister in charge administers the medication to the concerned patient. • Makes an entry into the records of the patient details and the vaccine administered. • The patient is informed about the next due date of vaccination.			

• If patient is a new born or paediatric Jaccha Baccha Suraksha card is provided to the mother which explains about the schedule of vaccination for the new born. • On further visit for vaccination this card has to be produced.entry of the vaccine administered is done by the sister in charge of the vaacination room...	
Process Records	✓ Refrigerator temperature record form ✓ Deep freezer temperature charting ✓ ANC register ✓ Immunization register ✓ Daily Reporting.

9. PLASTER ROOM

Process Group	Outpatient services	**Sub Process**	Plaster
Process Location	Plaster room	**Process Owner**	Technician
Inputs	Plasters, Paramedics In-charge Patient.	**Output**	Vaccinated patient.
Process Flow:			
• Patients who have undergone trauma and require immobilization of the part of the body visit the plaster room. • The consulting physician prescribes on the O.P.D. slip the part of the part of the body that has to be immobilized. • Patient presents with the O.P.D.to the sister in charge, who identifies the patient and the part to be immobilized and the cast is applied on the affected body part. • The data of the procedure performed is entered by the sister in charge into the hospital records. • The patient is directed to the consulting physician for conforming the conforming the appropritaness of the plaster cast applied.			
Process Records	✓ Slab plaster register ✓ Indent register ✓ Consumables register		

10. DRESSING

Process Group	Outpatient services	**Sub Process**	Dressing
Process Location	Minor OT/ Dressing	**Process Owner**	OT Incharge
Inputs	Doctors, OT In-charge, Dressing Material, Patient	**Output**	Dressed patient.
Process Flow:			
• If the patient presents with any open wound that needs to be covered with antsiseptic measures patients visit the Minor OT or dressing area. • Patient coming to the minor OT /dressing are present to the OT incharge the OPD slip in which the consulting physician prescribes for the type of the dressing to be performed. • The Incharge of the Minor OT Consults the notes of the consulting Physician and does the dressing of the wound as advised. • If any medication that is required and is not available in minor OT patient has to bring the same from the private drug store. • The recording of the procedure performed are done by the incharge of the minor OT register. • If the patient requires a redressing of the wound he is informed about the same and information regarding the care of the wound is provided to the patient..			
Process Records	✓ Minor OT Register ✓ NSVT Register ✓ Dressing Register ✓ Condemnation Register ✓ Linen Register ✓ Article Register ✓ Miscellaneous Register ✓ Indent Register ✓ Soap/ Consumable Register.		

IN-PATIENT SERVICES

The Indoor Patient Department is located on First and the Second floor of the Hospital Building. While on the second floor, Gynaecology, Pediatric and Labor Room are located, on the first floor, apart from the O.T., following in-patient wards are established:

- Surgical ward- Male and Female .

- Orthopedics ward –Male and Female.
- Medicine Ward- Male and Female.

There are two categories of beds available, General beds and Private beds:

1. General.Beds.- The general beds are present in the wards which are allotted for Rs 30 per day. The BPL patients get the bed for no charge.
2. Private Beds- The private room patients pay a sum amount of Rs 200 per day and avail the facilities of the hospital. The consumables are then used from the hospital.

The total number of sanctioned bed in the hospital is 100. But the total number of functional beds is 141.The distribution of the beds in the wards is as follows:

Departments	Number of Beds
Paying wards	**20**
Medicine	**22**
Surgery	**19**
Orthopedics	**19**
Pediatrics	**9**
Casualty	**6**
ICU	**2**
HDU	**2**
Obstretics and Gynaecology	**14**
Pre operative	**16**
ANC	**4**
Isolation	**8**

Total number of beds	**141**

During the regular examination, if the consulting physician identifies that patient requires continuous monitoring and care patients are advised to get admitted in the indoor patient department. The ward in which the patient should be admitted is identified by the consulting physician and is mentioned in the O.P.D slip. The patient vists the I.P.D registration desk and after the process of admission in the registration desk the patient is shifted to the wards along with the required documents for admission. The patient visits the ward and gets admitted in the ward under the care of the consulting physician. The sister in Charge of the ward designates the hospital bed to the patient in the ward as per the choice made i:e paying Bed or General Bed.

The requisite details of the patient are entered into the Nursing Records and patient is monitored and provided care as advised by the consulting physician. The medication that are available in the stores of the wards is provided without any charge to the patient, if any medication prescribed is not available the same has to be purchased by patient/Relative from private drug store.

11. PATIENT ADMISSION IN WARDS

Process Group	Inpatient services	**Sub Process**	Patient admission in ward
Process Location	OPD/wards	**Process Owner**	Nurses in charge
Inputs	Patient Doctor's instructions	**Output**	Admitted patients.
Process Flow:			

- If the consulting physicians identifies that patient requires continuous monitoring and care patients are advised to get admitted in the indoor patient department.
- The ward in which the patient should be admitted is identified by the consulting physician and is mentioned in the O.P.D slip.
- The patient visits the I.P.D registration desk .Registration desk consults the physician notes and admits the patients into the respective ward advised.
- Patient/relatives have to pay Rs.100 for admission into inpatient services.
- At the registration desk the patient is informed about the name and location of the ward he is being admitted.

• After the process of admission in the registration desk the patient is shifted to the wards along with the required documents for admission. • The patient visits the ward and gets admitted in the ward under the care of the consulting physician. • The sister in Charge of the ward designates the hospital bed to the patient in the ward as per the choice made i:e paying Bed or General Bed. • The requisite details of the patients is entered into the Nursing Records and patients is monitored and provided care as advised by the consulting physician. • The medication that are available in the stores of the wards is provided without any charge,if any medication prescribed is not available the same has to be purchased by patient/Relative from private drug store	
Process Records	✓ Admission register ✓ Private ward admission register ✓ Report register ✓ Diet register ✓ Daily report register ✓ Dak book (discharge book) ✓ Daily expenditure ✓ Death register ✓ Ayushmati register ✓ RSBY register ✓ Complaint register ✓ Oxygen book ✓ Local purchase register ✓ Call book ✓ Laundry book ✓ Indent register.

12. SAMPLE COLLECTION IN WARD

Process Group	Inpatient services	**Sub Process**	Sample collection
Process Location	Wards	**Process Owner**	Nursing staff ,nursing student,Lab staff
Inputs	Patient , IPD slip, Sample collection slip, Investigation slip	**Output**	Patient's collected sample.
Process Flow:			

- The specialist writes down the investigation required in the case paper.
- The specialist hands it over to the sister who in turn hands over to patient's relatives.
- The relatives goes to the registration counter, pays accordingly and receipt is received.
- Patient's relatives take the receipt to the laboratory.
- The laboratory staff comes to the ward.
- They collect the sample and prepare the report.
- The relatives are told to collect the report or else the ward boy brings in the report.
- The report is submitted to the sister who files it along with the rest of the case sheet.
- The doctor views it the next round he takes.

Process Records	✓ Lab investigation slip.

13. DRUG ADMINISTRATION.

Process Group	Inpatient services	**Sub Process**	Drug administration
Process Location	Wards	**Process Owner**	Nursing staff ,nursing student
Inputs	Patient , IPD case paper.	**Output**	Successful drug administration

Process Flow:

- For the administration of the drug to the patients the following procees is followed :
- Following admission in the ward the medication prescribed by the physician is entered into the treatment order book.
- The nursing staff checks for the availability of medications in the stocks and if the same is not available patient/relative is intimated to purchase the same from the private drug store.
- For patients below poverty line, the drugs that are not available in the hospital stores are purchased locally from the Jeevan Deep Samhiti on approval from the civil surgeon.
- During the physicians rounds if any changes in the medication for the patients is done the same is entered into records by the nursing in charge.
- The medication is provided to the patients by the sister at the time they have to consume the same.
- The data of the medication provided is maintained by the sister in charge in the treatment order book.

• If the consulting physician has advised for any process such as nebulization or enema sister in charge performs them as per the order scheduled. • If the patient is posted for O.T. sister in charge follows the instruction and prepares the patient accordingly for the same. • All important instructions to be followed by patient are provided to the patients as per the physician's instruction by the sister in charge.	
Process Records	✓ Report register ✓ IPD case paper. ✓ Daily expenditure. ✓ Ayushmati register ✓ RSBY register ✓ Complaint register ✓ Oxygen book

14. PREPARATION OF PATIENT:

Process Group	Inpatient services	**Sub Process**	Drug administration
Process Location	Wards	**Process Owner**	Nursing staff ,nursing student
Inputs	Patient , IPD case paper.	**Output**	Preparation of patient
Process Flow:			
• The doctor advises/orders for a surgery or a procedure to be carried out. • The order is written down in the case paper. • The sister on duty follows the order. • The sister with the help of a dresser prepares the patient for the procedure to be done. • Preparing of patient may be keeping him nil by mouth overnight, or shaving of the operating site, or any such kind of procedure.			
Process Records	✓ IPD case paper.		

15. BLOOD TRANSFUSION:

Process Group	Inpatient services	**Sub Process**	Blood Tranfusion

Process Location	Wards	**Process Owner**	Nursing staff ,Doctor
Inputs	Patient, IPD case paper.	**Output**	Transfusion of blood or its products to the patient.

Process Flow:

- If the patient is suffering from any disorder regarding blood loss the consulting physician identifies the same and orders for replenishment of the same with blood from an outside source of blood.
- Total units of blood required is identified by the physician and he/she informs the sister in charge the number of units to be arranged.
- Patient/relatives are informed about the requisition of the total units of blood required.
- A sample of blood is drawn by the sister from the patient body and is sent to the lab for blood grouping.
- On receiving the patient blood group report sister in charge duly fills up the patients blood requisition form and provides to the patient/relatives.
- As the hospital does not provide blood bank facility the blood requisition slip along with the sample of blood drawn is blood bank at CIMS or Bilasa.
- The patient has to pay the requisite charges for the blood which is purchased from either of the two blood banks.
- The blood or blood components after they are received are sent to the doctor on duty.
- The doctor notes down the number and writes blood transfusion notes after checking for the cross matching.
- The doctor sends the blood along with the blood transfusion notes to the sister in charge of the ward.
- The sister in charge after receiving the blood and making entry into records starts the process of blood transfusion for the patient.
- Following this the patient are monitored for any anaphylactic reaction following transfusion of blood.

Process Records	✓ IPD case paper. ✓ Report book.

16. TRANSFER OF THE PATIENT :

Process Group	Emergency / wards	**Sub Process**	Transfer of patient.
Process Location	Wards/OT/ labour room	**Process Owner**	Nursing staff ,Doctor

Inputs	Patient, IPD case paper.	**Output**	Successful transfer of patient.
Process Flow:			
• Consultation of the Patients after the O.P.D.working hours is done in the dept.of emergency. • These patients if after consultation are advised to be admitted in the in patient department they are shifted to the respective ward as ordered by the consulting physician, those patient who do not require admission in the IPD are discharged after provision of palliative and preventive care. • Patients coming to the O.P.D. after consultation with the consulting physician, if advised to get admitted in inpatient department are transferred to the same after admission by the patient relatives or ward attendants. • Patients admitted in the in patients services if they are posted for Surgery/labor they are transferred to the O.T./Labor room after preparation by the Nursing in Charge .After completion of the Surgery /Labor patients are shifted back to their respective ward after their condition is stable and care can be provided in the wards. • Patients who require any kind of diagnostic procedure are transferred to the respective department by the sister in charge and after completion of the process they are shifted back to their respective wards for the provision of care.			
Process Records	✓ IPD case paper. ✓ Admission Register ✓ OT Register.		

17. INDENTING PROCEDURE IN WARDS:

Process Group	Indenting procedure	**Sub Process**	Indenting procedure in wards
Process Location	Wards	**Process Owner**	Sister in charge
Inputs	Indent request	**Output**	Receipt of desired material.
Process Flow:			
• The supplies of the medication and the various goods like stationeries, surgical goods and other goods are issued by the centralized medicine and general store. • The ward/department in charge identifies the requirements of the the medication and other goods. • The ward/department in charge are provided with indent book • The requirement of medication and various consumables is recorded by the ward/department in charge and is sent to the General store or Medicine store.			

• When recording the indent by the ward/department they have to prepare two copies of the same, one copy is maintained by the ward /department incharge and second copy is maintained for the purpose of record by the incharge of Medicine and General store. • The items issued to the ward/department are recorded by the incharge of medicine and general store in their recording register. • The various items are issued which are carried to the wards where they are used for providing care to the patients of the various departments. • The time taken to supply depends on the urgency of the requirement placed. • The requirements that are not available with the stores are forwarded to the Jeevan Deep Samiti. • The JDS supplies the requirements as the things are available with them.	
Process Records	✓ Indent register ✓ Expenditure register ✓ Injection Stock register ✓ Tablet Stock Register ✓ Daily Issue Register ✓ Permanent Article Register. ✓ Consumables from JDS Register ✓ Local Register

18. DISCHARGE OF PATIENT :

Process Group	Inpatient Services	**Sub Process**	Patient Discharge
Process Location	Wards	**Process Owner**	On Duty Sister
Inputs	Doctor's order to discharge IPD Case Sheet Discharge Ticket	**Output**	Discharge of the patient.
Process Flow:			
• On consultation if the consulting physician identifies that the patient receiving care does not require any further indoor care the consulting physician informs the patient that he may get discharged from the hospital and can visit the hospital for preventive check up. • The discharge ticket contains a brief summary of the case history of the patient, treatment offered, and investigations done [includes the X-ray films and pathology test reports] in the hospital during the stay of the patient in the hospital. It also contains advice on further treatment, follow-up and any specific precautions that are desired to prevent a relapse. • The discharge ticket is prepared and signed by the consulting physician.			

• The sister in charge prepares the necessary documents for discharge and the case sheet is sent to the registration counter for the purpose of billing. • The bill is prepared by the registration counter taking into consideration the various facilities availed by the patient. • The total billed amount is paid by the patient/relative at the registration counter and receives a receipt of the payment made for availing services in the hospital. • The receipt obtained has to be submitted to te sister in charge . • Sister in charge after making entry into her records of the receipt of the payment made issues discharge ticket to the patients. • This discharge ticket acts as a gate pass and patient can be taken to their respective home. • The number of admission, discharge and deaths are summarized in the Discharge Register or Death Register for the ward on a daily basis by the wards sister in-charge.	
Process Records	✓ Dak Book (Discharge Register) ✓ Death Register.

EMERGENCY SERVICES

The emergency / casualty department of the Sardar Patel District Hospital is situated on the ground of the hospital. The department offers emergency care to the patient round the clock and throughout the year. The hospital has two ambulances available in the hospital premises; these are generally used by the emergency patients. One of the ambulances is equipped whereas the other one is only a transport ambulance.

In emergency, the relatives of the patient have to get the patient registered at the common registration counter. The patient is then taken to the casualty ward if required, where doctor on duty treats the patient. Once the patient is stable after few hours of observation the patient is shifted to the respective ward if he/she requires further treatment or else medicine is prescribed and they are sent home with the next date for follow up. Following are the details of emergency department:

19. PATIENT CONSULTATION:

Process Group	Emergency OPD	**Sub Process**	Patient Consultation
Process Location	Emergency	**Process Owner**	Doctor on duty.
Inputs	Patient, doctor, emergency kit	**Output**	Patient treated .

Process Flow:	
• If the patient arriving in the hospital is received in a state that immediate treatment has to be provided by the Doctor to save the life and limb of the patient, the patient is treated in the Department of Casualty/Emergency. • If such patients are accompanied by any attendant they are directed by the casualty medical officer to get the patient registered in the registration counter. • If the patient is not accompanied by any attendant, then the ward boy present in the casualty collects the information regarding the concerned patient and provides he information at the registration counter, who make an entry into their records and generate a registration slip. • Depending upon the severity of condition of patient treatment is provided to the patient. • If the patient requires immediate resuscitations the same is provided and the patient is shifted to the intensive care unit for further care. • If the patient is traumatized and requires early surgery patient is shifted to the minor/major O.T as per the facilities required by the consulting surgeon. • If the patient is in a state that after provision of first aid patient can be discharged the same is followed. • If after the provision of first that patient requires monitoring and provision of care he/she is admitted on payment of Rs.100 at the registration counter. • The entey of treatment provided and medication issued is maintained in the records of emergency/casualty. • If the patient is brought under suspected condition and succumbs in the emergency/casualty patient is sent for an early post mortem. • If the patient is a medico legal case entry is made into the medicolegal register regarding all the information of the patients. • In case of any suspected poisoning the vomitus are preserved for medicolegal examination. .	
Process Records	✓ Computerized OPD slip ✓ Admission Register. ✓ MLC Register ✓ Medicine Daily Record ✓ Sister Duty Register ✓ MLC Dak Book ✓ Report Book

20. PATIENT ADMISSION THROUGH EMERGENCY:

Process Group	Emergency Services	**Sub Process**	Patient Admission

Process Location	Emergency	**Process Owner**	Sister on duty.
Inputs	Patient, Doctor, Emergency kit	**Output**	Admission of the patient .

Process Flow:

- The consultant advises the admission of the patient on the severity of the condition.
- The patient pays Rs 100 for the admission charge at the registration counter and is issued an IPD case sheet.
- Entry of the patient is done in the admission register maintained at the ward.
- The patient is shifted to the ward/labour room/ OT depending about the criticality of the patient along with the bed head ticket.
- The sister in charge enters the details of the patient in various registers and starts the treatment as advised.

Process Records	✓ IPD Slip ✓ MLC Register ✓ Admission Register ✓ Report Register ✓ Medicine daily Register ✓ MLC Dak Book (goes to police) ✓ Call Register ✓ Sister duty register ✓ Dhobi register ✓ Ml C Dak Register (goes to the MRD) ✓ Death register ✓ Oxygen indent register ✓ Indent register ✓ IV Stock Register ✓ Injection stock register ✓ Medicine stock register ✓ Consumables register ✓ Linen register ✓ Permanent articles register

21. SAMPLE COLLECTION

Process Group	Emergency Services	**Sub Process**	Sample collection
Process Location	Emergency / wards	**Process Owner**	Sister on duty.

Inputs	Patient, doctor, sample collection kit, paramedics students, lab technician	**Output**	Sample of patient collected
Process Flow:			
• The doctor advises the pathology tests to be carried out and writes the same in the emergency case sheet. • The ward boy/relatives are send with the case sheet to the registration counter. • At the counter on payment of the requisite amount the receipt is received which is submitted at the laboratory. • The technician /para medics come to the patient in the casualty and collect the sample. • The sample is given an identification number and the details of the patient are noted down in the register. • Depending on the type of test to be performed the entry of the patient information is maintained in the respective registers maintained by the lab technician. • The reporting is done and the report is sent to the casualty within one- two hours.			
Process Records	✓ Haematology register ✓ Sickling register ✓ HbS Ag register ✓ Stool Test register ✓ Widal test ✓ Pregnancy color test ✓ Biochemistry register ✓ Urine register		

22. TRANSFUSION IN EMERGENCY /CASUALTY WARD:

Process Group	Emergency/casualty wards.	**Sub Process**	Blood Transfusion
Process Location	Casualty Ward	**Process Owner**	Nursing staff ,Doctor
Inputs	Patient, IPD case paper.	**Output**	Transfusion of blood or its products to the patient.
Process Flow:			
• If the patient is suffering from any disorder regarding blood loss the consulting physician identifies the same and orders for replenishment of the same with blood from an outside source of			

blood.

- Total units of blood required are identified by the physician and he/she informs the sister in charge the number of units to be arranged.
- Patient/relatives are informed about the requisition of the total units of blood required.
- A sample of blood is drawn by the sister from the patient body and is sent to the lab for blood grouping.
- On receiving the patient blood group report sister in charge duly fills up the patients blood requisition form and provides to the patient/relatives.
- As the hospital does not provide blood bank facility the blood requisition slip along with the sample of blood drawn is blood bank at CIMS or Bilasa
- The blood or blood components after they are received are sent to the doctor on duty.
- The doctor notes down the number and writes blood transfusion notes after checking for the cross matching.
- The doctor sends the blood along with the blood transfusion notes to the sister in charge of the ward.
- The sister in charge after receiving the blood and making entry into records starts the process of blood transfusion for the patient.
- Following this the patient are monitored for any anaphylactic reaction following transfusion of blood.

Process Records	✓ IPD case paper. ✓ Report book.

23. INTENSIVE CARE UNIT/DIALYSIS ROOM:

Process Group	ICU /Dialysis unit	**Sub Process**	Dialysis/ Intensive care of patient
Process Location	ICU	**Process Owner**	Technician
Inputs	Patient , Doctor, Dialysis unit	**Output**	Dialysis of patient and treating patient who require intensive care.

Process Flow:

- The patient whos requires intensive care generally is an emergency patient.
- The patient is shifted to the ICU for further treatment from the casualty.
- The ICU unit /dialysis unit is 4 bedded with 2 beds for dialysis.

• The patient is taken for dialysis on basis of doctor's advice.	
Process Records	✓ Dialysis Register

SURGICAL SERVICES

The hospital caters to the surgical requirements of the patients through the department of surgery. Various surgeries (both Minor and Major) are performed in the hospital depending upon the needs of the patient. The main O.T.complex is located on the first floor of the main building. The O.T.complex is near medical and surgical ward, the patients can be conveniently shifted from the same to the O.T. The minor Operation theatre is located near the Department of Casualty. Labor room is located on the second floor .location of the labor room is in close approximation to the gyanecology ward.

The OT complex comprises of four operating rooms, out of these three are functional and one is used as a store room. The labour room is attached to a Minor O.T .for handling complication arising in cases of labor. The labour room has an eclampsia unit along with a pre-operative area for preparation of patient for the procedure.

24. PATIENT SURGERY- MAJOR

Process Group	Surgical Services	**Sub Process**	Major surgeries of patient
Process Location	Operating theatre	**Process Owner**	OT staff, Surgeon
Inputs	Patient,Doctor, Instruments & Equipments.	**Output**	Operated Patient.
Process Flow:			
• The consulting surgeon identifies that the patient consulting requires surgery of the body part to cure the patient from the disease or deformity .			

- Consulting surgeon explains the patient the surgical procedure the patient has to undergo and what will be the possible outcome of the surgery.
- If the patient gives his consent for the same the consulting surgeon fixes the date and time of the surgery and writes Pre-operative orders in the patients case sheet to be followed by the sister in charge.
- The sister in charge have to inform the following people about the pre-operative orders;
    - ✓ Consultant Anesthesiologist.
    - ✓ Sister-in-charge- Operation Theatre-For booking the operation theatre for the concerned patients surgery
    - ✓ Pathological Laboratory- If any pathological investigation has to be undertaken.
    - ✓ Any other concerned department Such as Medical/General store if any prosthesis has to be arranged for the patient.
- The consultant anesthesia receives the order and identifies the patient for which the patient is refered .Pre –anasthesia check up is done and if the patient is found satisfactory on the health check up consent for surgery is given by the anesthesiologist of the hospital.
- Prior to the date of the surgery all the necessary investigations are performed and the reports of the same are attached in the patient's case sheet.
- Following this informed consent is obtained from the patient/relative.
- After receiving the consent from the patient is advised to remain Nil Per Oral on the date of surgery.
- After the patient is prepare for the surgery by the nursing staff He/She is shifted to the Operation theatre by the ward boy.Sister in charge of the O.T.recieves the Patient and shifts the Patient to the pre-operative area.
- The staff nurse and the OT technicians prepare the OT Procedure Tray/Trolley according to the operation.
- The concerned surgeon after scrubbing gets ready for the surgery and performs the surgery.
- Post surgery Patient is retained in the Post Operative Area and is observed for changes in the vital. Depending upon the condition the patient is either shifted to surgical ward or to the intensive care unit for close monitoring of patient.
- The ward boys and the technicians shift the patient to the surgical ward.

Process Records	✓ Gynaecology operation register ✓ Anesthesia register ✓ Surgery register ✓ Orthopedics register ✓ Daily medicine register ✓ Family planning ✓ Ent operation register. ✓ Ward duty register ✓ Oxygen indent register ✓ Nurses Duty Register.

25. PATIENT SURGERY – MINOR

Process Group	Surgical Services	**Sub Process**	Minor surgery of patient.
Process Location	Operating theatre	**Process Owner**	Surgeon ,Nursing Staff.
Inputs	Patient, Doctor, Instruments & Equipments.	**Output**	Operated Patient.
Process Flow:			
• If the consulting surgeon in the O.P.D or Casualty identifies that the patient requires to undergo a minor surgery the patient is shifted to the Minor O.T. • The patient preparation is done and the essential details are entered into the patients records. • Post surgery if the consulting surgeon thinks that patients need to be monitored the patient is transferred to the wards or else the patient can be discharged after the procedure is completed. • The patient is advised on the precautions to be followed and medications are prescribed. • If required patient is informed about the next date of consultation. • The patient details are registered in the OT register maintained by the minor OT staff..			
Process Records	✓ Gynaecology operation register ✓ Anesthesia register ✓ Surgery register ✓ Orthopedics register ✓ Daily medicine register ✓ Family planning ✓ Ent operation register. ✓ Ward duty register ✓ Oxygen indent register ✓ Nurses Duty Register.		

26. TRANSFER OF PATIENT TO WARDS:

Process Group	Surgical Services	**Sub Process**	Transfer of patient to ward.

Process Location	Operating theatre	**Process Owner**	Nursing Staff.
Inputs	Patient, Doctor, OT Register	**Output**	Operated Patient.
Process Flow:			
• The surgeon on completion of the operation advises the sister to transfer the patient in the ward/ICU or in the post operative room. • The sister instructs the ward boy to transfer the patient accordingly. . • The OT notes are send along the patient to the sister in charge of the ward and she attaches it with the rest of the case sheet of the patient.			
Process Records	✓ OT Register ✓ IPD Slip ✓ Admission Register.		

INTEGRATED COUNSELLING AND TESTING CENTRE

The hospital participates in the National Aids Control Programme and has got a ICTC centre in the premises of the hospital. The counselor at the centre counsels the patient regarding HIV and AIDS and makes them understand the various stages of the disease as well as the other important aspects of the disease. All pregnant females and other patient who are referred to the centre are counseled for pre and post test counseling. Regardless of the result both the positive and the negative results patient are counseled before handing them their reports.

27. PATIENT COUNSELLING AND TESTING CENTRE;

Process Group	Integrated Counseling and testing centre.	**Sub Process**	Patient counseling & HIV Testing.
Process Location	ICTC Room	**Process Owner**	ICTC Counselor
Inputs	Patient, Counselor, technician	**Output**	HIV Report, Well educated Patient.
Process Flow: • The patient whose blood is to be tested for is told about the conducting of the test well in advance.			

• The patient is lead to a counselor before the test where the counselor does a pre- counseling test for the patient explaining him in detail the symptoms, the stages and the precaution regarding the disease. • During the pre-counselling phase a pre-consent of the patient is taken to perform the test. • Once the consent is given an ID No. is generated by the counselor. • The patient is then sent to the technician for testing of the blood where the technician writes the unique ID of the patient. • The sample is taken and tested. • The report is then sent to the counselor. • The counselor once again counsels the patient regarding the report irrespective of it being positive or negative. • Finally the report is issued to the patient.	
Process Records	✓ Lab register ✓ Stock register ✓ Inspection register.

SUPPORT SERVICES

The clinical services detailed above are supported by the support services of the hospital. These support services include laboratory services and diagnostics services.

The support services are located on the rear end of the hospital building on either wings of the hospital. The laboratory services are located on the one side and the X-ray services on the other side. The laboratory services are along with the OPD of the hospital whereas the diagnostics services are located in continuation with the casualty department.

The blood bank is not present in the hospital but the plans and the draft on paper is ready for the construction of the blood bank which will be replacing the dietary department of the hospital. Presently the blood requirement of the hospital is being fulfilled by the CIMS Medical College and the Bilasa Blood Bank .The presence of blood bank in the premises will make the efforts to save the patient in emergency more fruitful.

LABORATORY SERVICES

The hospital has got semi-automated laboratory services which provide lab facilities to both the OPD and the IPD patients visiting the hospital. The services are provided at very minimal charges to the patients. The testing is done free of cost for patients who fall below poverty line or who have a yellow card, blue cards or RSBY card.

The laboratory offers services in Clinical pathology, serology, biochemistry and microbiology. The following tests are performed in the laboratory of the hospital.

CLINICAL PATHOLOGY	**BLOOD WIDAL TEST**
Haematology	BLOOD VDRL TEST
Haemoglobin	SEMEN TEST
Total RBC Count	STOOL TEST
Total WBC Count	**BIO CHEMISTRY**
Differential WBC Count	FBS
ESR	PP2BS

Platelet Count	Urea
Bleeding Time	Creatinine
Clotting Time	Bilirubin Total
Sickling Test	Bilirubin Direct
Blood Group	SGOT
Rh Typing	SGPT
Malaria Parasite	Alkaline Phosphatase
Urine examination	Cholestrol
Quantity,Colour,Reaction,SP gravity,Albumin, Sugar ,Bile Salt, Bile Pigment, Ketone Bodies	Triglyceride
Microscopy	HDL (Direct)
Epithelial cells,pus cells, RBC, Casts, Crystal,Others, Pregnancy Test.	LDL (Direct)
	Total protein
	Uric acid

TABLE 15:DIAGNOSTIC SERVICES

28. TESTING IN A LABORATORY.

Process Group	Laboratory services	**Sub Process**	Testing of patient sample.
Process Location	Laboratory	**Process Owner**	Pathologist.
Inputs	Patient sample, Lab technician, Equipments	**Output**	Test results.
Process Flow:			
• Patient visits the laboratory with the OPD slip with the prescribed tests. • For IPD the sample are collected by nursing in-charge or by the paramedics students of pathology department and send through ward attendant to the laboratory for the test prescribed by the treating doctor. • Laboratory staff gives a test-slip to the patient specifying the tests to be done and the amount to be paid for the same.			

• Patient/his relative take the test-slip and goes to the registration counter. • Patient pays the specified fees to the clerk at the registration. The clerk hands over the cash receipt to the patient and specifies the number of the cash receipt on the investigation-slip. • Patient goes back to the laboratory. • Laboratory technician takes the investigation slip and makes the necessary entry in the pathology laboratory register. • Technician takes the samples for the required test from the patient and writes the name of the patient on the sample for identification. • Samples are tested and the results for the same are prepared. • The OPD reports are handed over to the patient on the same day from the lab itself. The IPD reports are sent to the concerned doctor/ward in-charge and the same is handed over to the patients by the doctor/ward in-charge.	
Process Records	✓ Haematology register ✓ Sickling register ✓ HbS Ag register ✓ Stool register ✓ Widal register ✓ Pregnancy color register ✓ Bio chemistry register ✓ Urine register ✓ Semen register ✓ Stock register ✓ Permanent article register ✓ Indent register

RADIOLOGY

The radiology department is located on the ground floor on the left wing of the hospital. It has got facilities for X-ray, Mammography, USG, ECG, TMT, Color Doppler and BMD. The radiology department charges a nominal amount for the diagnostic services and the amount collected goes to the Jeevan Deep Samhiti of the hospital.

The department consists of a 300 mA X-ray machine, one 500 mA and 100 mA each, USG machine, one mammography unit, the department has several other diagnostic equipment also. Following are the details of the radiology department:

29. DIAGNOSTIC SERVICE OF RADIOLOGY:

Process Group	Radiology Department	**Sub Process**	Imaging

<table>
<tr><td>Process Location</td><td>Radiology department</td><td>Process Owner</td><td>Radiologist/radiographer</td></tr>
<tr><td>Inputs</td><td>Patient ,
Radiology equipment</td><td>Output</td><td>Test results.</td></tr>
<tr><td colspan="4">Process Flow:</td></tr>
<tr><td colspan="4">• The consultant prescribes the required investigation to the patient on the OPD slip.
• The patient takes this OPD slip to the X – ray technician. The technician writes down the size of x-ray film required on this slip.
• The patient takes the slip to the registration counter where the patient gets the receipt for the amount payable for that test.
• The patient shows this slip to the X-ray technician who enters the details.
• The patient is then taken into the X-ray room where his X-ray is taken.
• The X-ray film according to the necessity is sent for reporting either immediately or on the same day to the concerned specialist or on the next OPD day of the specialist.
• The reporting is done by the specialist and the report and the film is returned to the X-ray technician.
• The patient then has to collect the report from the X-ray technician in the evening or on the next working day.
• The same process flow is followed for all the other services provided by the hospital.</td></tr>
<tr><td>Process Records</td><td colspan="3">✓ MLC Register
✓ OPD Register
✓ X-ray film stock register
✓ Articles stock register
✓ Mammography Register
✓ BMD+ X- Ray + USG Register</td></tr>
</table>

MEDICAL STORES AND SUPPLY DEPARTMENT

The medical stores and supply department is situated at the rear end of the hospital opposite to the dietary department. The stores receive medicine from the DHS and from the local purchase done by the Civil Surgeon.

The hospital stores officer responsible for handling the stores indents the requirement when the need arises. No scientific method is being followed for the inventory management. This leads to stock outs for

the fast moving drugs and over stockings of the slow moving drugs thereby increasing the cost of inventory. Following is the details of the processes related with the hospital Stores.

30. SUPPLY OF DRUGS TO IPD:

Process Group	Pharmacy department	**Sub Process**	Medicine supply
Process Location	IPD, Emergency, OPD.	**Process Owner**	Store incharge
Inputs	Indent from the wards, IPD ,OPD, Emergency ,OT.	**Output**	Medicine supplied to respective areas.
Process Flow:			
• The indent is received from the various department of the hospital. The indents are received only when required and not on a regular basis. • On the basis of indent and on the availability of drugs the indent is fulfilled by the store officer. • The store officer then prepares a triplicate voucher. The first one is sent along with indent duly signed by the store officer. The other voucher is retained by the store officer and retained in his register. • The supply indented is recorded in the expenditure register. • Along with it the stock register is also updated. • If the indented medication/consumable is not available with the store in that case the sister in charge contacts the JDS for the fulfillment of the same. • The JDS provides it from the stock and if not available with it also then it will ask for a local purchase with the approval of the civil surgeon.			
Process Records	✓ Stock book ✓ Expenditure book ✓ Daily distribution book ✓ Oxygen book.		

31. MEDICAL GAS SUPPLY:

Process Group	Medical gases	**Sub Process**	Medical gas supply to OT and emergency wards,ICU.
Process Location	Stores	**Process Owner**	Store Incharge.
Inputs	Indent from the wards,	**Output**	Providing medical gases

	IPD, Emergency , OT.		in area required.
Process Flow:			
• The medical gases are received from a dealer named Salasar Air Products. The medical gas supplied is oxygen and nitrous oxide. • The indent is received from the various department of the hospital. The indents are received only when required and not on a regular basis. • The store send the cylinder as and when required according to the indent sent by the ward/OT/emergency. • The store indents the cylinder only when required and not on a regular basis.			
Process Records	✓ Oxygen book		

UTILITY SERVICES

The utility services of the hospital comprises of those services which are essential for the smooth functioning of the hospital. The various services are the house keeping, laundry, dietary. The following are the details of the various utility services of the hospital.

LAUNDRY SERVICES

The laundry services of the hospital are outsourced to a local dhobi. The dhobi comes every alternate day to collect and to provide the clean linen back to the hospital. The dhobi takes the linen to its outside place and does all the washing, drying and ironing and brings it back to the hospital on the alternate day.

32. LAUNDRY AND LINEN CLEANING :

Process Group	Laundry services	**Sub Process**	Washing of the hospital linen.
Process Location	Outsourced	**Process Owner**	Sister on duty
Inputs	Dirty Linen.	**Output**	Clean Linen.
Process Flow:			
• The dhobi comes every alternate day at around 9 am- 12 pm to collect the dirty linen. • He collects the linen from all the departments of the hospital and documents it in a register maintained by him and one by the sister on duty .present in the ward. • The process of washing and cleaning of the linen is done outside the hospital premises. • For all infected and non infected linen he uses the boiling water along with surf and caustic soda to clean the linen. • He returns the linen on the second day when he comes back again to collect the linen. • He gets his register signed by the civil surgeon. • The dhobi is paid according to the rate list at the end of the month.			
Process Records	✓ Male surgical ward register ✓ Female surgical ward register ✓ Children ward register ✓ Labour OT ✓ Medical ward register ✓ One Big register including other wards i.e. casualty, OT.		

The house keeping services are outsourced to an agency responsible for maintaining the cleanliness of the hospital. The agency has allotted staff of around 21 sweepers for the cleaning of the entire hospital who work in three shifts. One supervisor is appointed who oversees the working of the sweepers.

The schedule and the allotment of the staff are as follows:

Shift	Timing	No of people appointed
Morning	8 – 2 pm	11
Afternoon	2-8 pm	5
Night	8pm -8 am	5

Along with the outsourced staff, the hospital has got 26 ward boys, 7 ayabens and 1 sweeper. The staff of the hospital works in coordination with the contracted staff. The duties of the ward boys and ayabens are decided. The following are details of the different process involved in housekeeping.

33. HOSPITAL CLEANING:

Process Group	Housekeeping services	**Sub Process**	.housekeeping in different department.
Process Location	Hospital premises	**Process Owner**	Supervisior
Inputs	Housekeeping staff, Chemicals, Cleaning agents	**Output**	Clean and hyigiencity of the hospital premises maintained.
Process Flow:			
• The housekeeping staff according to their duty cleans the area allotted to them. • The personnel deployed are responsible for maintaining the hyigiencity of the area provide to them. • Their work includes the cleaning of the toilets, the wards, changing of bed sheets and doing other errands. • The staff is also engaged in some of the activities such as preparing the patient before surgery, giving enema and catheter insertion. • The staff cleans the area thrice in the morning and twice in evening and as and when required. • The housekeeping has got two machines which are rented by the hospital for the cleaning of the hospital at Rs 7000 each. • The rent of the machine is paid by the Jeevan Deep Samhiti.			

• The cleaning is done by plain water, phenyl and detergents	
Process Records	✓ Duty register ✓ Attendance register ✓ Stock register

34. BIOMEDICAL WASTE MANAGEMENT:

Process Group	Biomedical waste	**Sub Process**	.BMW management.
Process Location	Wards, OT, waste generating areas.	**Process Owner**	Supervisor
Inputs	Bins.	**Output**	Biomedical waste is collected and disposed off.
Process Flow:			
• The housekeeping staff according to their duty cleans the area allotted to them and collects the waste in the bins. • The staff then collects the entire waste in an area allocated for collection. • Waste is not segregated as it should have been • The waste is then disposed off to a near by area from where the municipal corporation van comes and collects it.			
Process Records	✓ Duty register ✓ Attendance register ✓ Stock register		

35. DIETARY SERVICES:

Process Group	Dietary services	**Sub Process**	Preparation of food
Process Location	Kitchen	**Process Owner**	Supervisor
Inputs	Food ingredients, Cook	**Output**	Prepared food served to the patient
Process Flow:			
• The dietary department receives the number of patient whose food has to be prepared in advance at 4 pm of the previous day.			

• The food is prepared according to the need. • The food is served thrice a day which includes morning breakfast of bread, biscuit, poha, upma etc. • The lunch includes dal, vegetable and rice. Chapattis are provided to the patient suffering from diabetes. • The dinner consists of dal, vegetable and rice. • The breakfast is served at 8 in the morning, the lunch at 11 and the dinner at 7 pm in the evening. • The food which remains is sold amongst the class IV employee who pays a minimum amount. • The food is brought in uncovered utensils on the respective floor and served to the patients who are supposed to bring in their plates to get the same. •	
Process Records	✓ Indent diet paper.

FUND MANAGEMENT

The fund/budget for the hospital is provided by the state government. The budget is received as a single line budget and expenditure on different heads, as per the approval of the Medical Superintendent.. For capital expenditures beyond one lakh the hospital makes a detail proposal to the government and the grants are released for the same after due deliberation.

The hospital also has certain grants and funds generated under "Rogi Kalyan Samhiti" named "Jeevan Deep Samhiti". The Jeevandeep Samhiti generates fund mainly from cycle stand and registration counter which charges for the registration, investigation performed in the hospital. The Samhiti also receives donation from various organization and from Government budgets.

The JDS uses the fund for various unplanned and or small low budget intensive projects such as hospital infrastructure/ equipment maintenance and for salaries to contract labourer. However the JDS has its constitution as per government norm and thus has system of accountability and responsibility built into the system. The JDS has got two bodies, a governing body and executive bodies, the details of both are as follows:

	Governing Body	**Executive Body**
Chairman:	Commissioner Health	District Collector
Member Secretary:	Chief Medical and Health Officer	Medical Superintendent
Members:	Representative of DG Health	2 Senior Medical Specialist
	Representative of Local MLA	Accounts Officer
	Representative of Member of Parliament	2 Social worker
	Accounts Officer (Nominated by DC)	Representative of Chairman, Municipal Board
	Social worker	
	Special invitee with permission of chairman	

TABLE 16: JEEVAN DEEP SAMHITI

HUMAN RESOURCE MANAGEMENT

The District Hospital, Bilaspur is headed by the Civil Surgeon. The hospital is looking after seven city dispensaries located in various areas of the city, the staff at these dispensaries report to the District hospital. The civil surgeon is both the administrative and clinical head of the hospital. He is also the sectary for the Jeevandeep Samhiti. The specialist and the medical officers report to the civil surgeon. The nursing in charge is the matron, to whom the nursing staff of the hospital reports. The RMO of the hospital is responsible for the supervision of the class IV employees and the dhobhi and cook etc though these utility services are outsourced.

The hospital has got staff on pay roll as well contractual, which is adequate for the smooth functioning of the hospital. The human resource for housekeeping constitutes 22 staff members including 1 supervisor. 6 security guards are appointed from the Jeevan Deep Samhiti. Total staff employed in the hospital is 102.

The details of the human resource of the hospital are as follows:

No.	Name of post	sanctioned	Functional	Vacant	Surplus
Doctors					
1	Civil surgeon	1	1	0	0
2	Gynaecologist	1	3	0	2
3	Pathologist	1		1	0
4	Physician	1	3	0	2
5	Pediatrician	1	1	0	1
6	Orthopaedician	1	2	0	2
7	Surgeon	1	3	0	1
8	Radiologist	1	2	0	0
9	Anaesthetist	1	1	0	0
10	Ophthalmologist	1	1	0	0
11	ENT Specialist	1	1	0	0
12	Psychiatric	1	0	1	0
13	Tb and chest physician	0	1	0	1
14	Medical officer	15	15	0	0
15	Dentist	1	1	0	0
Nursing staff					

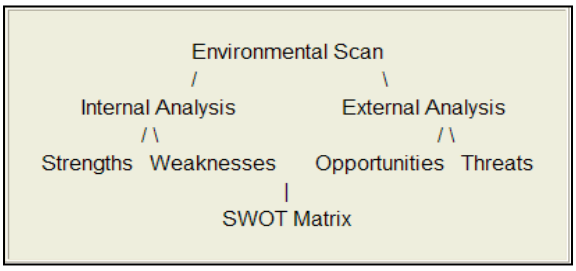
16	Matron	1	0	1	0
17	Head clerk	1	1	0	00
18	Accountant	1	1	0	0
19	Nursing sister	1	3	0	0
20	Staff nurse	18	23	0	00
21	Lab technician	2	2	0	0
22	Radiographer	2	2	0	0
23	Pharmacist grade II	2	2	0	0
24	Dresser	3	2	1	0
25	Darkroom assistant	1	1	0	0
26	Lab assistant	1	1	0	0
27	Cashier- grade II	1	1	0	0
28	Steward- grade II	1	1	0	0
29	Typist/data operator- grade III	2	2	0	0
30	Peon	4	4	0	0
31	Ward boy	10	10	0	0
32	Ward aya	3	3	0	0
33	Driver- ambulance	1	1	0	0
34	Driver- grade II-	3	2	1	0
35	Cook	2	1	1	0
36	Guard	2	0	2	0
37	Mess servant	2	2	0	0
38	OT attendant	4	2	2	0

TABLE 17 : HUMAN RESOURCE

SWOT ANALYSIS

The SWOT analysis of the District Hospital of Bilaspur clearly brings out the fact that the hospital. The required resources to accomplish the goal are also available with the hospital.

The SWOT analysis has scanned both the internal and the external environment to scrutinize the strengths, weakness opportunities and threats of the hospital. The following standard framework has been used for the SWOT Analysis:



STRENGTHS	WEAKNESS
• Availability of new hospital building located at heart of the city. • Availability of experienced specialist in all basic disciplines. • Well equipped operation theatre and imaging facility. • Availability of Information Technology (IT) assets	• Absence of dedicated engineering support for upkeep of building and equipment. • Absence of a road map for future growth and development. • Limitation of land availability will prevent future expansion.
OPPORTUNITY • Can undertake variety of day care services due to its location and compact design. • Can develop a telemedicine hub for all dependent CHCs and PHCs. • Synergise in education and training with the local medical college.	**THREATS** • Restriction in resource allocation due to presence of local medical college which is larger consumer of budgetary support. • May get low priority for growth, development and diversification. • May suffer unpopularity due to excess demand owing to urban central location.

TABLE 18 : SWOT ANALYSIS

PART II- DISSERTATION REPORT

CHAPTER 1- INTRODUCTION :

Sardar Patel District Hospital is the district hospital of Bilaspur situated near the central bus stand of Bilaspur. The hospital is a 100 bedded which provides all the essential preventive, curative and promotive and emergency services to the people of Bilaspur district.

The year 1956 marked the foundation of the Sardar Patel District Hospital of Bilaspur. The hospital was merged with the CIMS hospital of the city in the year 2001. In 2005 the hospital was re- established as a separate unit at Sarkhanda. The hospital was then running in the premises of the eye hospital of Sarkhanda. The new building for the hospital was inaugurated on 15th August 2008.

The hospital is independently functional with one main building and one Dharmasala which is under construction for the relatives of the patient.

The major catchment area of the hospital is the main city of Bilaspur and the district of Bilaspur. The hospital caters to a population of 23.4 lakhs. Being a government hospital the cost of treatment in the hospital is low which attracts a huge number of patients from the weaker section of the society. The hospital having all the facilities except for super specialiity services is able to take care and fulfill the health care needs of a large population of the area.

The hospital has sanctioned 100 bedded; the number of operational beds in the hospital is 141. With the introduction of 12 beds of Special Neo-Natal Care Unit (SNCU) and 30 beds of Sarkhanda Hospital the bed availability of the hospital would reach 183.



FIGURE11: SARDAR PATEL DISTRICT HOSPITAL

1.1ACCIDENT AND EMERGENCY SERVICES:

The emergency / casualty department of the Sardar Patel District Hospital is situated on the ground of the hospital. The department offers emergency care to the patient round the clock and throughout the year. The hospital has two ambulances available in the hospital premises; these are generally used by the emergency patients. One of the ambulances is equipped whereas the other one is only a transport ambulance.

In emergency, the relatives of the patient have to get the patient registered at the common registration counter. The patient is then taken to the casualty ward if required, where doctor on duty treats the patient. Once the patient is stable after few hours of observation the patient is shifted to the respective ward if he/she requires further treatment or else medicine is prescribed and they are sent home with the next date for follow up. Following are the details of emergency department:

1.1.1PATIENT CONSULTATION:

Process Group	Emergency OPD	**Sub Process**	Patient Consultation
Process Location	Emergency	**Process Owner**	Doctor on duty.
Inputs	Patient, doctor, emergency kit	**Output**	Patient treated .

Process Flow:

If the patient arriving in the hospital is received in a state that immediate treatment has to be provided by the Doctor to save the life and limb of the patient, the patient is treated in the Department of Casualty/Emergency.

If such patients are accompanied by any attendant they are directed by the casualty medical officer to get the patient registered in the registration counter.

If the patient is not accompanied by any attendant, then the ward boy present in the casualty collects the information regarding the concerned patient and provides he information at the registration counter, who make an entry into their records and generate a registration slip.

Depending upon the severity of condition of patient treatment is provided to the patient.

If the patient requires immediate resuscitations the same is provided and the patient is shifted to the intensive care unit for further care.

If the patient is traumatized and requires early surgery patient is shifted to the minor/major O.T as per the facilities required by the consulting surgeon.

If the patient is in a state that after provision of first aid patient can be discharged the same is followed.

If after the provision of first that patient requires monitoring and provision of care he/she is admitted on payment of Rs.100 at the registration counter.

The entey of treatment provided and medication issued is maintained in the records of emergency/casualty.

If the patient is brought under suspected condition and succumbs in the emergency/casualty patient is sent for an early post mortem.

If the patient is a medico legal case entry is made into the medicolegal register regarding all the information of the patients.

In case of any suspected poisoning the vomitus are preserved for medicolegal examination.

.

Process Records	✓ Computerized OPD slip ✓ Admission Register. MLC Register Medicine Daily Record

	Sister Duty Register MLC Dak Book Report Book

1.1.2 PATIENT ADMISSION THROUGH EMERGENCY:

Process Group	Emergency Services	**Sub Process**	Patient Admission
Process Location	Emergency	**Process Owner**	Sister on duty.
Inputs	Patient, Doctor, Emergency kit	**Output**	Admission of the patient .
Process Flow:			
The consultant advises the admission of the patient on the severity of the condition. The patient pays Rs 100 for the admission charge at the registration counter and is issued an IPD case sheet. Entry of the patient is done in the admission register maintained at the ward. The patient is shifted to the ward/labour room/ OT depending about the criticality of the patient along with the bed head ticket. The sister in charge enters the details of the patient in various registers and starts the treatment as advised.			
Process Records	✓ IPD Slip ✓ MLC Register Admission Register Report Register Medicine daily Register MLC Dak Book (goes to police) Call Register		

	Sister duty register Dhobi register Ml C Dak Register (goes to the MRD) Death register Oxygen indent register Indent register IV Stock Register Injection stock register Medicine stock register Consumables register Linen register Permanent articles register



FIGURE 12: EMERGENCY DEPARTMENT

1.1.3 SAMPLE COLLECTION

Process Group	Emergency Services	**Sub Process**	Sample collection

Process Location	Emergency / wards	**Process Owner**	Sister on duty.
Inputs	Patient, doctor, sample collection kit, paramedics students, lab technician	**Output**	Sample of patient collected

Process Flow:

- The doctor advises the pathology tests to be carried out and writes the same in the emergency case sheet.
- The ward boy/relatives are send with the case sheet to the registration counter.
- At the counter on payment of the requisite amount the receipt is received which is submitted at the laboratory.
- The technician /para medics come to the patient in the casualty and collect the sample.
- The sample is given an identification number and the details of the patient are noted down in the register.
- Depending on the type of test to be performed the entry of the patient information is maintained in the respective registers maintained by the lab technician.
- The reporting is done and the report is sent to the casualty within one- two hours.

Process Records	✓ Haematology register ✓ Sickling register ✓ HbS Ag register ✓ Stool Test register ✓ Widal test ✓ Pregnancy color test ✓ Biochemistry register ✓ Urine register

1.1.4 TRANSFUSION IN EMERGENCY /CASUALTY WARD:

Process Group	Emergency/casualty wards.	**Sub Process**	Blood Transfusion
Process Location	Casualty Ward	**Process Owner**	Nursing staff ,Doctor
Inputs	Patient, IPD case paper.	**Output**	Transfusion of blood or its products to the patient.

Process Flow:

- If the patient is suffering from any disorder regarding blood loss the consulting physician identifies the same and orders for replenishment of the same with blood from an outside source of blood.
- Total units of blood required are identified by the physician and he/she informs the sister in charge the number of units to be arranged.
- Patient/relatives are informed about the requisition of the total units of blood required.
- A sample of blood is drawn by the sister from the patient body and is sent to the lab for blood grouping.
- On receiving the patient blood group report sister in charge duly fills up the patients blood requisition form and provides to the patient/relatives.
- As the hospital does not provide blood bank facility the blood requisition slip along with the sample of blood drawn is blood bank at CIMS or Bilasa
- The blood or blood components after they are received are sent to the doctor on duty.
- The doctor notes down the number and writes blood transfusion notes after checking for the cross matching.
- The doctor sends the blood along with the blood transfusion notes to the sister in charge of the ward.
- The sister in charge after receiving the blood and making entry into records starts the process of blood transfusion for the patient.
- Following this the patient are monitored for any anaphylactic reaction following transfusion of blood.

Process Records	✓ IPD case paper. ✓ Report book.

1.1.5 INTENSIVE CARE UNIT/DIALYSIS ROOM:

Process Group	ICU /Dialysis unit	**Sub Process**	Dialysis/ Intensive care of patient
Process Location	ICU	**Process Owner**	Technician
Inputs	Patient , Doctor, Dialysis unit	**Output**	Dialysis of patient and treating patient who require intensive care.
Process Flow:			
• The patient whos requires intensive care generally is an emergency patient. • The patient is shifted to the ICU for further treatment from the casualty. • The ICU unit /dialysis unit is 4 bedded with 2 beds for dialysis. • The patient is taken for dialysis on basis of doctor's advice.			
Process Records	✓ Dialysis Register		

CHAPTER 2 - INTRODUCTION

2.1PROBLEM DEFINITION:

Accident an emergency services constitute to be the most important part of the hospital facilities because of the increasing population and fast changing life disaster in day to day are inevitable.Bilaspur being major town of the state ,the statistical analysis shows an enormous number of cases of accident and emergency situation are being reported.The hospital's close proximity to the bus stand makes it a destination of choice to bring patients who have met with uncertain calamity , it was reported and observed that accident and emergency services of the Sardar Patel District Hospital Bilaspur were not organized and managed in the most efficient way so that the response time is minimal in provision of care to the patients arriving at accident and emergency services. It was observed that the accident and emergency services do not have a defined triage area to segregate the patient on basis of urgency of medical care required. It was observed that there was an inefficient mechanism of communication between the accident and emergency services and its supporting departments so that response time and

waiting time is reduced to minimal. The hospital administration wanted to assess the entire process and identify the loop holes in the existing system and develop a efficient accident and emergency services department on the basis of the study done and proposal made by the outcome of the study and benefit of saving life and limb can be passed on the patients.

2.2SIGNIFICANCE OF STUDY

Response time at the accident and emergency service means the time spend by the patient for getting treatment at the accident and emergency service.

Waiting time can be calculated at the accident and emergency service by, calculating the time difference between patient receives the treatment and is then either discharged or referred or transferred.

Thus, the study will mainly focus on estimation of response time and waiting time, will brief on the causes of this increased waiting time and suggestions, taking into consideration the observations made during the period of study which will reduce the waiting time of a patient at the accident and emergency service.

The Study conducted will be a direct benefit to the patient as they will not have to wait for a long time duration after the effective implementation of suggestions made by the observer and will also reduce the workload on the staff at the accident and emergency service, thus contributing to the effective services provided to the patient by Sardar Patel Hospital.

2.3OBJECTIVE:

Main objective of the study will be to calculate the approximate waitng time a patient has to spend to avail the services provided by the department of accident and emergency services and its associated process in Sardar patel District Hospital Bilaspur.

2.4 LITERATURE REVIEW:

2.4.1 DEFINITION OF ACCIDENT AND EMERGENCY SERVICES :

An **accident** is a specific, unidentifiable, unexpected, unusual and unintended external action which occurs in a particular time and place, with no apparent and deliberate cause but with marked effects. It implies a generally negative probabilistic outcome which may have been avoided or prevented had circumstances leading up to the accident been recognized, and acted upon, prior to its occurrence(1).

Emergency medical services (abbreviated to the initialism "EMS" in some countries) are a branch of emergency services dedicated to providing out-of-hospital acute medical care and/or transport to definitive care, to patients with illnesses and injuries which the patient, or the medical practitioner, believes constitutes a medical emergency(2)

Trauma:Any serious injury to the body, often resulting from violence or an accident(3).

Triage is a process of prioritizing patients based on the severity of their condition. This rations patient treatment efficiently when resources are insufficient for all to be treated immediately. The term comes from the French verb *trier*, meaning to separate, sort, sift or select. Two types of triage exist: simple and advanced. The outcome may result in determining the order and priority of emergency treatment, the order and priority of emergency transport, or the transport destination for the patient, based upon the special needs of the patient or the balancing of patient (4).

TRENDS IN THE STUDY CONDUCTED SO FAR::

5. PATIENT'S PERCEPTION OF QUALITY OF EMERGENCY CARE IN A NIGERIAN TEACHING HOSPITAL – THE INFLUENCE OF PATIENT PROVIDER INTERACTIONS.

The study mainly focuses to assess the quality of care for those patients who survive after life threatening or emergency conditions.the study was mainly conducted on adult patient of who had received care at OU teaching hospital. A total of 1129 respondents participated in the study and on analysis of the data it was revealed that quality of care was sub optimal . The people were displeased with the interaction with care providers. Thus from the study it was revealed to increase patient satisfaction , interpersonal relationship should be improved between the patient and the providers.

6. WHAT IS WAIT..? CONTRASTING MANAGEMENT SIGNS AN ECONOMIC PERSPECTIVE ON WAITING FOR EMERGENCY CARE

The paper reviews and contrast a management signs view of waiting for health care .From the study it was demonstrated that management signs reviews provide inside into response time and waiting time performance

7.WAITING AND INTERACTION TIMES FOR PATIENTS IN A DEVELOPING COUNTRY – ACCIDENT AND EMERGENCY DEPARTMENT

A study was conducted by K. Banerjea and co-workers. The study mainly focuses to determine the interaction time and waiting time and identify their determinants and compare them to the international benchmarks. Trained research assistants monitored the patients arriving at the Accident and Emergency Department for seven days. The observation made from the study was that there were huge variations in the waiting time for patients with a main focus on concern for median wait time. The study revealed the long waiting time before is seen by a doctor. The study also showed that the A and E services was not able to provide services to the patient in relation to the international benchmark.

8.WHICH PATIENT SPENT MORE THAN FOUR HOURS IN ACCIDENT AND EMERGENCY DEPARTMENT.

A study has been conducted by A Downing and co- workers which aims to segregate the patients on the basis of time duration spent in the A and E department i.e is more than 4 hours or less four hours. The patients visiting were compared in terms of their attendance characteristics that is demography , temporal patterns , arrival mode and disposal. The result that maximum patient visiting spent less than four hours in A and E department and only less than one-third who require critical care stay for more than in A and E department. The study also reveal that some of the sub processes such as admission such as admission and services provision increases the waiting time of the patient.

9 WAITING TIME IN AN URBAN ACCIDENT AND EMERGENCY DEPARTMENT – A WAY TO IMPROVE IT.

A study has been conducted by F Lau and co- workers in Hongkong in A and E department of United Christian Hospital. The study mainly tries to analyze that how an introduction of a new small team consultation system will reduce the waiting time of patient in an over-crowded A and E department. The data was collected for the average daily attendance, the admission rate , the number of complains and

patient's re attendance rate .The waiting time for these patients visiting were also categorized on the category of triage. A comparative analysis was done between the time period when the new system of small team consultation was not introduced and after it was introduced. The study revealed that there was almost the reduction by 43 % in the waiting time of patient. However there was no significant change in quality of service provided. Thus the study revealed that a small team consultation can reduce the waiting time by a significant period.

10 . TIME STUDIES IN A AND E –A USEFUL TOOL FOR MANAGEMENT.

A study has been done by Daniel –Aharason and co-worker in Hongkong in A and E department of a government hospital. The study mainly focuses on analyzing the pattern of services provided in the A and E department and suggest solution to solve the severe queuing problem. In the study the following parameters like time of arrival and time at which service is provided to the patient where taken as variables. A simulation model was developed taking into consideration the data collected and problem was analyzed statistically. The analysis drawn from the study was implemented in the A and E department which solved the problem of queuing. Thus the study reveals that the statistically analyzed model can be practically implemented in hospital to solve the operational problems.

CHAPTER 2 : RESEARCH METHODOLOGY

2.1 STUDY DESIGN

Sampling is the study of parameter(s) of a concerned population by drawing random and statistically significant observations from the population. The sample size depends on the following things:

1. Size of Population
2. Population. variance

3. Confidence Level

4. Interval Specified

1.Population variance : Described as the spread of the concerned parameter of the population under study. For eg. Income levels of the population which can be from Rs. 100 per day to Rs. 10000 per day.

2.Confidence Level is a Statistical measure of the number of times out of 100 that test results can be expected to be within a specified range. For example, a confidence level of 95% means that the result of an action will probably meet expectations 95% of the time.

The estimates from the sample about the population are not exact and may lie in an interval. **Interval Specified** depends on that analyst's judgment on the interval range that is acceptable. Higher the interval range smaller will be the sample, however the precision reduces for correction.

Estimation for Sample Size for Survey based statistics is:

$$SS = \frac{Z^2 p(1-p)}{c^2}$$

Where,

Z is the normal probability constant with mean 0 and Standard dev=1 at 95% Confidence i.e. Z=1.96.

p is the percentage picking a choice. Since we are not sure about the percentage, we use 50% for our sample calculations.

C is the interval specified. We take it is as 10% to 15%.

Note that the above formula is only for infinite population. Now for adjustment with Finite population, the following formula should be used:

$$SS_{new} = \frac{SS}{1 + \frac{SS - 1}{POP}}$$

Where POP is the population size.

Location	Initial	Final	No. of Years	CAGR	projected this yr	Quarterly Patient Arrivals	Sample Size
Bilaspur	**61534**	**73955**	**2**	**0.10**	**81076**	**20269**	**60**

2.2 STUDY SETTING :

The study was conducted in the accident and emergency department of A and E Bilaspur District Hospital . the accident and emergency services is located left side of the OPD in the building of the hospital.

The study was based on observer method and the observer followed the patient from the main entrance of the hospital to which generally patients for A and E services are brought in the patient transportation vehicles. The time was noted from the point patient arrived at the hospital. The patient are followed by the observer from the main entrance to the A and E services to the point patient gets the hospital bed in the wards.

2.3 TARGET POPULATION:

As it was not possible to select a particular time interval as in the case of randomized control study the observer selected the patient on the basis of after completion of the whole cycle next patient who arrived at the main entrance of the emergency. Those populations were excluded from the study who were discharged from the A and E services after provision of first aid.

2.4 SAMPLE SIZE:

Estimation for Sample Size for Survey based statistics is:

$$SS = \frac{Z^2 p(1-p)}{c^2}$$

Where,

Z is the normal probability constant with mean 0 and Standard dev=1 at 95% Confidence i.e. Z=1.96.

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$$SS_{new} = \frac{SS}{1 + \frac{SS - 1}{POP}}$$

Where POP is the population size.

2.5 SAMPLING TECHINQUE

A total number of 60 patients were included in the study. The study period was from 1st April 2010 to 20th april. The study period was scheduled for a long duration of 20 days as it was observed during the pilot study conducted on 27 th and 28 th of March that there were huge variations in total waiting time of patients who came to avail the A and E services.

2.6 STUDY PERIOD.

A total number of 60 patients were included in the study. The study period was from 1st April 2010 to 15th april. The study period was scheduled for a long duration of 15 days as it was observed during the pilot study conducted on 27 th and 28 th of March that there were huge variations in total of patients who came to avail the A and E services.

2.7 DATA COLLECTION:

Since the method of data collection was by observer's method the demographic data was collected from the patient which included name , age, sex and a purpose of visit of A and E services. Any further data was not taken as this would have affected the authenticity of the study.

2.8 DATA ANALYSIS::

The time taken into consideration for the study is as follow:

1. Time at which patient the hospital – stage 1.
2. Time at which patient is which the patient is first seen by the medical or paramedical staff .- stage 2
3. Time at which the patient is either referred to, discharged or hospitalized- stage 3

RESPONSE TIME:

The response time was calculated in the following manner

Presuming ;

A= Patient entering the hospital

B= Patient getting medical attention

The total response time was calculated by:

Total waiting time C= B-A

The mean of waiting time was calculated for 60 persons

The result was verified through SPSS software

The same procedure was followed to calculate the waiting time for the patient after getting the initial treatment

CHAPTER 3 –RESULTS AND FINDING

Average response time for a patient is twelve minutes.

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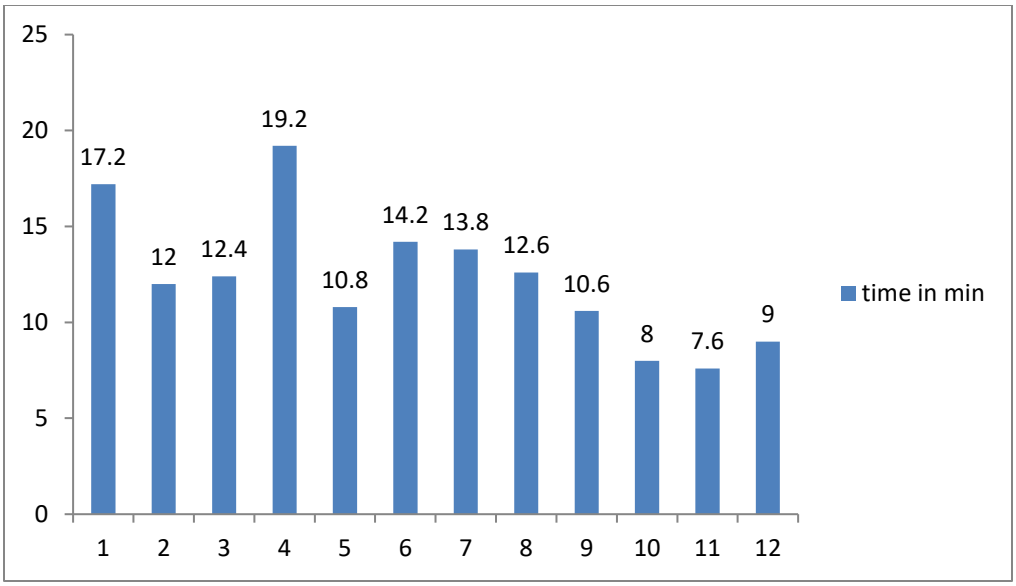


FIGURE 2: RESPONSE TIME IN MINUTES

The above figure represents the total response time in minutes over a period of 12 days.On interpretation of the above graph it was observed that the response time varies from 19.2 minutes to 7.6 minutes .

This variation is subjected to patients visiting the hospital on a particular day of the week when the OPD is overcrowded and the human resource has to be diverted fot the management of the same.

The variation in the response time is also subjected to lack of co-ordination between the paramedical staff and the clinician of the Accident and Emergency Department.

Waiting time after the patient receives the initial treatment is 22 minutes

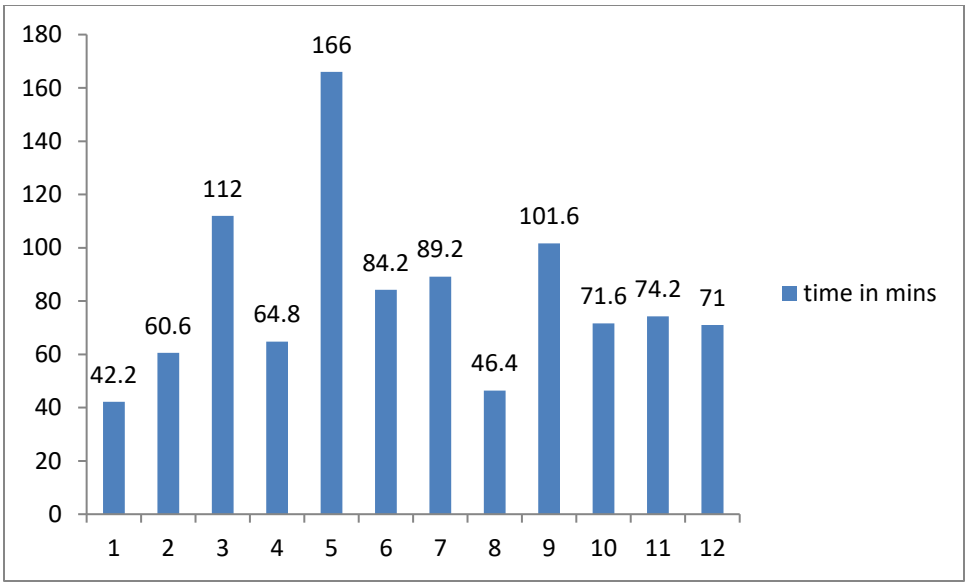


FIGURE 3: WAITING TIME

The above figure represents the waiting time in minutes of those patients and their time duration to the shifting of either to the wards or to be discharged or to be referred. The above graph represents a huge variation of 166 minutes to 44 minutes.

The variation can also be observed as many patients are brought in the hospital ambulance and they are well aware of the processes to be followed. Some patients are brought in critical condition and then their movement outside the accident and emergency service is difficult and is inevitable till the time their condition is stable patient needs to be kept in emergency.

In some critical cases some investigations radiology have to be done with mobile radiology unit and patient have to held back.

In medicolegal cases the documentation process and other formalities are dependant upon the judicial system and this further increases the waiting time.

CHAPTER 4- .CONCLUSION AND RECOMMENDATION

Thus from the above study conducted from 1st April,2010-15th April,2010 with an aim of estimation of total waiting time for patients at the Accident and Emergency services we can conclude that.

The system of provision of care at the A and E department is effective and can be further improvised if the Process of management of the A and E.is more organized. The increase in the response time is due to the reason that accident and emergency services do not work in co-ordination with the other supporting departments like radiology , pathology and patient transportation.

The A and E department being essential service of hospital and if this service is made more effective this will lead to saving of lives and limb of patients who visit in case of casualty. If the A and E department work in close co-ordination with patient transportation department and diagnostic department the time difference of 12 minutes coud be easily waived off which is crucial in case of patients visiting in case of accident and emergency.

On an average 1to 2 patient visit A and E services who require critical care and development of services through A and E department will improvised the effective of the services provided.

The outcome of this study can be taken as a source of reference and data may be interpretated to identify those areas in which the gap is existing and the whole process is delayed.

In the study conducted above the main focus of the study was to estimate the total waiting time in the Accident and Emergency Department. Out of the eight time period taken the most important variable constitutes to be the total time spent by a patient in the department of Radiology services. This is because of over crowding in the department of radiology and if a patient from A and E visits the department has to take the radiograph by adjusting the existing crowd .

Thus we can say that on a report estimation it was identified that the hospital is having a mobile X-ray unit which can be utilized in department of A and E service which will reduce the waiting time and A and E services will be more effective.

The other observation made was that patient are usually confused at the main entrance because of the absence of proper signages which increases the waiting time.

The other observation made was the A and E department is located not in entrance gate of the hospital therefore the consultants and the paramedics are usually unaware that the patient has arrived.therefore a system of alarm needs to be designed so that the consultants and the paramedics are aware of the patients arrival and can make necessary arrangements.

Other observation that was made was the a and E department does not have a defined triage area therefore cases cannot be segregated in case of mass casualties into the defined color codes.

The other observation made was inadequate number of paramedical staff who shifts the patients from one department to another department.

4.2.LIMITATIONS:

The observer in most of the cases had to wait for a long duration as there is no activity mechanism that the patient has arrived for A and E services.

Many of the cases most of the patient use to leave the hospital campus after first aid provided to them.

The non – availability of the adequate number of stretchers usually delayed the process of shifting the patient from one department to another.

Many patients because of their critical conditions had to be shifted to intensive care unit and thus the study was interrupted.

4.3. RECOMMENDATIONS:

1. Ambulance Driver should have a direct telephone access to A& E Department or a hot Line Number Should be present So that A& E Services could be made aware of the type and number of casualty brought in.

2. The main entrance should have a defined trolley for A& E services and should only be used to transfer patients from main entrance to the A& E department.

3.The registration department as it is located in the main entrance should have an activating mechanism to inform Medical and Paramedical About a patient in Emergency.

4. The patients are usually confused about the location of the A& E services so adequate number of Signages need to be Developed so the patient can be easily shifted to these departments.

5. The A&E Department needs to develop a defined triage area so that Patients can be segregated on the urgency of care they require.

6. The A&E department should utilize more of mobile x-ray so that patients could be relived of trouble of being transferred to various areas in the hospital.

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