



MEDICA Synergie
Redefining healthcare

FINAL REPORT

SCB MEDICAL COLLEGE HOSPITAL, CUTTACK, ORISSA



MedicaSynergie Pvt Ltd.

C-163, Survey Park,

Kolkata- 700 075

Telephone-033

24168899/9200

Telefax-033-2416 8822

www.medicasynergie.in

CONTENTS

1 EXECUTIVE SUMMARY	3
2 INTRODUCTION	6
3 SCB MEDICAL COLLEGE HOSPITAL	7
3.1 AIM OF THE STUDY	7
3.2 SPECIFIC OBJECTIVES	7
3.3 METHODOLOGY	8
3.4 LIMITATIONS OF THE STUDY	11
3.5 OVERVIEW OF SCB MEDICAL COLLEGE HOSPITAL	13
3.5.1 CATCHMENT AREA OVERVIEW: SCB MEDICAL COLLEGE	15
3.5.2 FACILITIES AVAILABLE AT SCB MEDICAL COLLEGE & HOSPITAL	18
3.5.3 INDIVIDUAL DEPARTMENT ASSESSMENT	20
3.5.4 USER PERSPECTIVE STUDY OF SCB MEDICAL COLLEGE HOSPITAL	91
3.5.5 IPD USERS' SURVEY: KEY FINDINGS & ANALYSIS	105
3.5.6 PROVIDERS PERSPECTIVE STUDY OF SCB MEDICAL COLLEGE HOSPITAL	115
3.5.7 KEY FINDINGS	129
3.5.8 RECOMMENDATIONS	131
3.5.9 OVERALL RECOMMENDATIONS	163
4 AN OVERVIEW OF SARDAR VALLAB BHAI PATEL POST GRADUATE INSTITUTE OF PAEDIATRICS	166
4.1 CATCHMENT AREA SVBP	167
4.2 FACILITIES AVAILABLE	167
4.3 INDIVIDUAL FACILITIES ASSESSMENT	167
4.3.1 CLINICAL SERVICES	168
4.3.2 CLINICAL SUPPORT SERVICES	188
4.3.3 SUPPORT SERVICES	190
4.3.4 USER PERSPECTIVE STUDY OF SVBP HOSPITAL, CUTTACK	193
4.3.5 IPD USERS' SURVEY: KEY FINDINGS & ANALYSIS	202
4.3.6 PROVIDERS SUGGESTIONS	208
4.3.7 RECOMMENDATIONS	209
4.3.8 COMMON RECOMMENDATIONS	219
5 ANNEXURES	220

1 EXECUTIVE SUMMARY

Shri Ram Chandra Bhanja (SCB) Medical College, Cuttack is a premier undergraduate and postgraduate medical institution of Orissa. Attached with it is a tertiary care referral hospital having an inpatient capacity of 1261 beds offering medical treatment in all major specialties and super specialties. *The hospital caters to all the 30 districts of Orissa and also to the 2 Medical Colleges i.e., M.K.C.G. Medical College, Brahmapur and V.S.S. Medical College, Burla.*

The SCB Medical College Hospital forms the epicenter of referral healthcare delivery to a majority of the population of Orissa but at present is increasingly being confronted with challenges of high patient flow and severe resource crunch in terms of infrastructure, manpower and equipments. The Government of Orissa (GoO) has taken up the initiative to upgrade the infrastructure of these hospitals to fulfill the healthcare needs of the population. The aim of the current assignment is to develop appropriate master plans for a systematic scaling up of the infrastructure in each of the hospital.

This report talks about the infrastructure up gradation at SCB Medical College Hospital, Cuttack. There are four major components of the report: Part 1 deals with the aim, objective, methodology and limitations involved in the study while Part 2 concerns about key findings and subsequent recommendations for expansion of the SCB Medical College Hospital. Part 3 details the findings and necessary recommendations for the SVBPPGIP Pediatrics Hospital. All toolkits and questionnaires have been annexed in Part 4.

Part 1: The study was done in two major components - *hospital facilities assessment and architectural, engineering & structural assessment of existing buildings and upcoming plans.* Secondary research has supplemented primary research.

In order to ensure the development of an up gradation plan that is in line with patients and providers requirements, the hospital facility assessment included the collection of data from three sources:

Detailed assessment of the existing hospital infrastructure to assess the gaps and ascertain future needs. A series of toolkits were developed and used to assess the different functional areas of the hospital

- Understanding infrastructure related requirements from the patient's point of view through structured interviews of a sample of patients (User perspective study).

- Understanding infrastructure related requirements from the provider's point of view through structured interviews with all the clinical head of department's (Provider perspective study).

Part 2: SCB hospital is a complex conglomeration of buildings developed over a long period of time in response to the need as and when arose and not as per a master plan. The departments are scattered over a vast stretch of land. The detailed facility assessment revealed certain gaps in the current infrastructure. Each of the patient care and support service areas were assessed against structured toolkits to have a current situational assessment snapshot of the hospital. These were further analyzed and suitable recommendations made. Schematic layout of concept plans has then been prepared subsequently in accordance with the recommended expansion plan and space program. The present occupancy in S.C.B medical college hospital is 125 %. The ideal occupancy should not exceed 80% in an acute care hospital. In case the occupancy exceeds, there will be occasions when a deserving patient might have to be refused admission or two patients may have to be put in one bed. To meet the present hospitalization needs the population growth and increasing disease burden, SCB Medical College Hospital, will require a scaling up to a 2103 bedded facility. This projection has been made from conclusions derived after examining key critical factors affecting utilization of the hospital. Other recommendations include reorganization of all OT's and realigning the OPD Block to have a clutter free hospital for smooth functioning.

Part 3: Sardar Vallab Bhai Patel (SVBP) Post Graduate Institute of Paediatrics (Sishu Bhawan) is one of the largest pediatric institutes in the eastern region of the country in the government sector. The hospital came into being in the year 1961 as the Institute of Paediatrics and Child Health. In the year 1966 the State Government took over the hospital to start a National level institute for post graduate studies. Similar to what has been done with the SCB Medical College, a detailed facility assessment has been carried followed by infrastructure gap analysis. Appropriate recommendations have also been suggested.

This report also envisages a master plan that has factored in a projection of the bed needs in the next 20 years and the present utilization of the healthcare facilities. The design plans have been incorporated with the best practices in healthcare facility design including patient friendly infrastructure and internationally accepted safety protocols. For enhancement of skills within the department, training needs of engineers and architects have been assessed to come up with a comprehensive capacity development plan. This forms a separate section that

will include guidance on the application of advanced project management tools and software for monitoring construction works to ensure speedy and timely implementation. In addition a maintenance plan has not been developed which will aid in a systematic and timely maintenance of the present hospital buildings.

Every effort has been made to integrate the proposed renovations and scaling up plans in a way that does not become a hindrance to its functioning and also keeping accepted quality norms and cost in mind.

2 INTRODUCTION

The Government of Orissa (GoO) has developed a comprehensive Orissa Health Sector Plan (OHSP) 2005-2010. For this purpose resources have been pooled from the government of Orissa along with that of government of India and the developmental partners. The aim is to provide quality healthcare particularly to the vulnerable and marginal group of population. This provides a unique opportunity for the government to align its own, the Government of India's and developmental partners' resources to meet the state's priorities and address the major shortcomings in both public and private health provision. The aim of the OHSP is to achieve equity in health outcomes with a focus on access and utilization of services by vulnerable and marginal groups. The ultimate aim is to deliver accountable and responsive healthcare that would stabilize the health indicators of the state of Orissa.

Healthcare infrastructure development is one of the major mandates of the strategies adopted by OHSP to meet its objectives of enhancing the capacity of the health system. Thus GoO is in the process of upgrading the infrastructure at its three medical college hospitals located in Cuttack, Sambalpur & Brahmapur and the Capital Hospital in Bhubaneswar. These institutions have been developed over a considerable period of time and the present infrastructure is inadequate to meet present requirements of patients, their families and the healthcare providers.

To enable best use of resources for the hospital improvement, the GoO sought expert advice on appropriate design for facility expansion and reorganization of these medical college hospitals. These plans should essentially envisage patient friendly infrastructure and other special prerequisites for planning hospital buildings. Medica Synergie has been engaged as an external consultancy agency having experience in developing hospital projects to provide expert advice, technical assistance and high quality plans to GoO for upgrading the Infrastructure and facilities of all the four government hospitals.

3 SCB MEDICAL COLLEGE HOSPITAL

3.1 AIM OF THE STUDY

- To develop an infrastructural up gradation plan comprising of 20 year Master Plans with 5 year Executable Priority Plans for SCB Medical College Hospital, Cuttack To prepare Cost estimates for 5 year Priority Plans for approval of Government of Orissa.
- To prioritize the activities based on the need, fund availability and commitment for 5 years from GoO based on discussion with the task force.

3.2 SPECIFIC OBJECTIVES

- To assess the current status of the existing facilities with respect to infrastructure components such as architecture, engineering, structural stability and inter – relations between different areas of the hospital.
- To assess the existing design plans of the hospital buildings and elicit the strengths and weaknesses in the same.
- To do a Gap Analysis based on the assessment findings.
- Understanding patient perspectives for patient centered facilities through a *User Perspective Study* comprising of both inpatient and outpatient respondents
- Consultation with key clinical and support staff to understand provider perspectives on infrastructure requirements for safe and efficient functioning
- Suggest models of design plans which are aesthetically appropriate, patient friendly and systems oriented.
- To provide construction designs for easy maintenance of the premises.
- To provide inputs in Operation Theatre design, location and standards.

- To plan for future Telemedicine incorporation in the hospital campuses and the assessment of additional infrastructure needs in institutions where telemedicine is already functioning.
- To plan for Trauma Units in these facilities.
- Provide final architectural plans in line with the Master Plans for three medical colleges and the Capital Hospital after reviews and feedback
- Training needs assessment and capacity building plan for the government engineers involved in monitoring and supervision of construction work
- To prepare a budget summary for realizing the suggested scaling

3.3 METHODOLOGY

The methodology for executing this assignment comprised of the following stages.

STAGE	PHASE	ACTIVITIES
Stage I	Project Design Phase	<ul style="list-style-type: none"> • Project Micro Planning • Development of Toolkit • Sampling Methodology • Team Deployment • Secondary Literature Review
Stage II	Data Collection	<ul style="list-style-type: none"> • General Facility Description • Architectural Assessment • User Perspective Study • Key Providers' Consultation
Stage III	Data analysis	<ul style="list-style-type: none"> • Documentation of available data • Data Compilation • Gap Analysis
Stage IV	Architectural Plan	<ul style="list-style-type: none"> • Concept Plans Development

STAGE	PHASE	ACTIVITIES
	Preparation	<ul style="list-style-type: none"> • Master Plan Development • Preparation of five year priority plans
Stage V	Report Preparation	

Table No – 1

Stage I:

Project Design Phase: This phase consisted of preliminary activities of designing the methodology for project implementation. It helped in identifying the key steps to accomplish the goal. It helped in designing the assessment that was done in two components; the hospital facilities assessment based on some predetermined criteria and the architectural, engineering & structural assessment of existing buildings and upcoming plans. Secondary research will supplement primary research.

Project Micro Planning: This step comprised of identifying the micro activities and logistics for implementing the project. The time variable was attributed to each activity, persons completing the activities were identified and travel plans to each of the hospitals were prepared.

Development of Toolkit & Questionnaire: Based on components of project design, toolkit was developed in three parts. A checklist for facility assessment, a questionnaire for understanding the user's perspective and a questionnaire for understanding the provider's perspective.

Team Deployment: Teams comprised of experts from three fields of expertise; namely, hospital planning, hospital management and architecture and engineering. Hospital assessment team comprised of hospital planning and hospital management professionals. Structural assessment and design teams comprised of architects and engineers.

Stage II:

Data Collection: Data Collection has been done through hospital visits for general facility assessment and architectural assessment. Provider and user perspective have been elicited from the provider's interview and user perspective study.

Detailed floor plans were made in AutoCAD format by actual measurement of all facilities of the entire hospital by a team comprising architects and surveyors.

Stage III:

Data Analysis: This stage involved the analysis of the different sets of data with the help of experts to ensure correct processing. Through this, an understanding of the prevailing situation was made which then helped in designing the infrastructure up gradation plan.

Stage IV: Architectural Plan Preparation

The architectural plan essentially comprise of the following:

- Conceptual Line Plans of the Proposed Expansion and Reorganization Plans
- Executable Plans for the labour room

Stage V: Report Preparation

Preparation of the final report to document the activities of the entire assignment.

Data Source

- *Secondary data collection* based on the Census of India, Bureau of Indian Standards(**BIS**) standards for hospitals, Indian Public Health Standards (**IPHS**) guidelines for district hospitals, Medical Council of India (**MCI**) guidelines for Medical Colleges and other documents to project management.
- *Primary data collection* based on the toolkit prepared for data collection, questionnaires for patient feedback through observation and discussion with the key functionaries of the hospital to understand their expectations and develop common understanding of the existing scenario.

Data Collection Tools

- Facility assessment toolkit.
- Interviews with various Principal, Medical Superintendent, HODs of respective clinical specialties, Hospital Manager & other key functionaries and other administrative personnel at all levels of management hierarchy of the hospital were done to elicit the information regarding the present state of functioning and the problems faced by them in smooth execution of their roles and discharging their responsibilities.
- Secondary literature review. This was done in order to familiarizing with the local situation, geographic characteristics, demographic parameters, and previous such studies elsewhere.

USER AND PROVIDER PERSPECTIVE STUDY

In compliance with the objective of developing patient centric infrastructure master plans for SCB Medical College Hospital, a user and provider perspective study has been carried out to elicit their perceptions about the facility. A cross sectional study was conducted separately for the inpatients and outpatients using structured questionnaires comprising of separate set of questions for IPD and OPD respondents.

3.4 LIMITATIONS OF THE STUDY

Data collection through facility assessment has been the most challenging component of this assignment. The same has been carried out by two assessment teams one of which comprising of experts in hospital planning and management while the other comprised of architects and engineers. Major hurdles encountered during the study have been enlisted below:

- Non availability of vital and relevant data such as ward wise occupancy rates, ALOS, inpatient caseloads etc.
- Respondents of the user perspective study were reluctant to speak out anything against the hospital which affected the results of the study

- Cooperation of some hospital staff was not whole hearted which delayed the study
- Due to restricted work timings, some of the departmental HOD's could not be contacted for the provider perspective study.
- All relevant architectural inputs such as plans and drawings were difficult to access.

3.5 OVERVIEW OF SCB MEDICAL COLLEGE HOSPITAL

Shri Ram Chandra Bhanja Medical College is an undergraduate as well as a postgraduate medical institution with a tertiary care referral hospital. This Hospital was established in 1883 and is spread over an area of 134.3 acres of land. The hospital caters to all the 30 districts of Orissa and also to the 2 Medical Colleges i.e., M.K.C.G. Medical College, Brahmapur and V.S.S. Medical College, Burla. The Medical College is centrally located and easily accessible by all modes of transport, it has a total inpatient bed capacity of 1261.

Major specialties include General Medicine, General Surgery, Orthopedics, Skin & VD, ENT, Pediatrics, TB & Chest Medicine, Rheumatology, Hepatology, Endocrinology, Cardiology, Gastroenterology, Urology, Nephrology & Neurology. About 1250 OPD patients visit the hospital daily while daily average emergency caseload is 200. There are 23 Operation Theatres.

The hospital has two entrances with a service road which connects the main entrance to the rear entrance. The same service road acts as connecting link between one part of the city with the other which is used by the patients and general public. The main entrance is through the Manglabag side which has two gates for entry and exit. On the way to the main entrance from the market lie all the private pharmacies and diagnostic centers on both side of the road.

On entering the main gate to the left, is the Public Health department. On to the right side of the entry gate there is the parking for four and two wheeler vehicles and the General Engineering department. Infront of the parking there is the main OPD block behind which is the department of Maxillofacial Surgery.

All the major department blocks lie on the opposite sides of the main service road. The service road is under construction with cement concrete surfacing of some part of the road is already complete.

A number of new facilities are already coming up in the form of the Trauma center, the burn ward, the medicine extension block, the laboratory to name a few.

The hospital campus has three pharmacies that have been outsourced.



SCB is a huge campus with departments spread all across the area, the expansion plan will, therefore, have to focus on integrating these different departments and bringing related departments as close to each other as possible.

3.5.1 CATCHMENT AREA OVERVIEW: SCB MEDICAL COLLEGE

A catchment is a geographical area delineated around an institution or business that describes the population that utilizes its services. Normally catchments divide geographic space into contiguous regions, but in some contexts, they can overlap to reflect competition within an area between service providers. Differences in accessibility, priority of administrative boundaries, and supply and demand for services all impact the definition of service catchments.

SCB Medical College Hospital is located in the Cuttack district of Orissa. In absence of any scientific technique for determining the catchment area for the hospital, a cross section of the patients has been interviewed to arrive at a decision regarding the same. The patient respondents included both inpatients and outpatients across different clinical specialties to minimize the unintentional creeping in of bias involved in the method.

Data analysis from the patient cross section study revealed that the majority of patients come from the district of Cuttack. SCB Medical College is one of its kind tertiary level public hospital serving northern and coastal Orissa which is also reflected by this study.

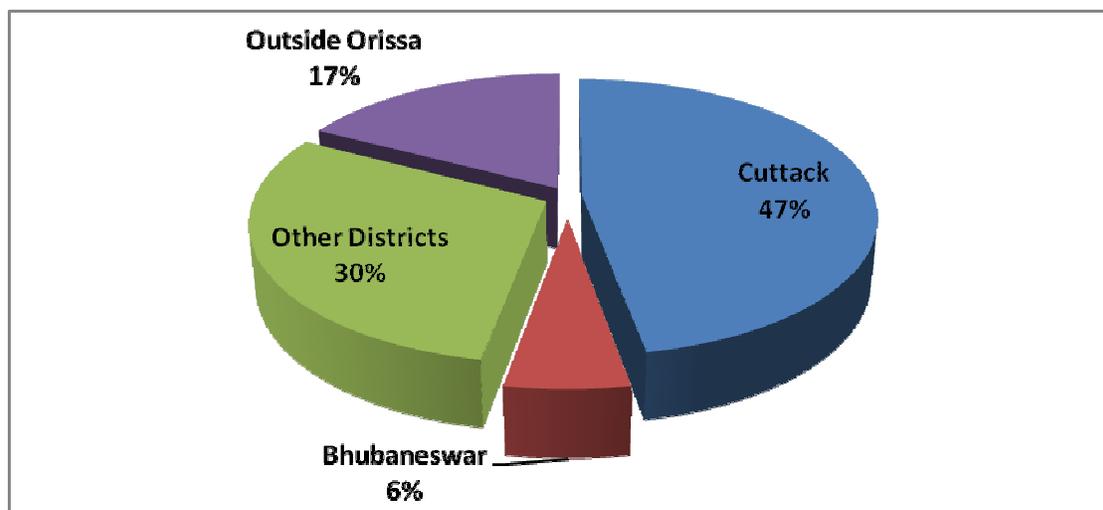


Chart No – 1

About 30% patients come from adjoining districts such as Angal, Bhadrak, Balasore, Dhenkanal, Puri, Jajpur, Jagatsingpur, and Kendrapara. Being one of the oldest medical college hospitals in the country SCB Medical College Hospital has earned immense trust from

people. Patients from neighbouring states such as West Bengal, Jharkhand & Chattisgarh also comprise a considerable proportion which is further validated by our study findings.

Definition of Catchment Area for SCB Medical College, Cuttack

Based on our study findings, the catchment area for the SCB Medical College Hospital has been defined in the following manner.

<p>Catchment Area</p>	<p>Districts of Orissa (Cuttack, Angal, Bhadrak, Balasore, Dhenkanal, Puri, Jajpur, Jagatsingpur, and Kendrapara). Border districts of West Bengal & Jharkhand</p>
------------------------------	---

Table No 2

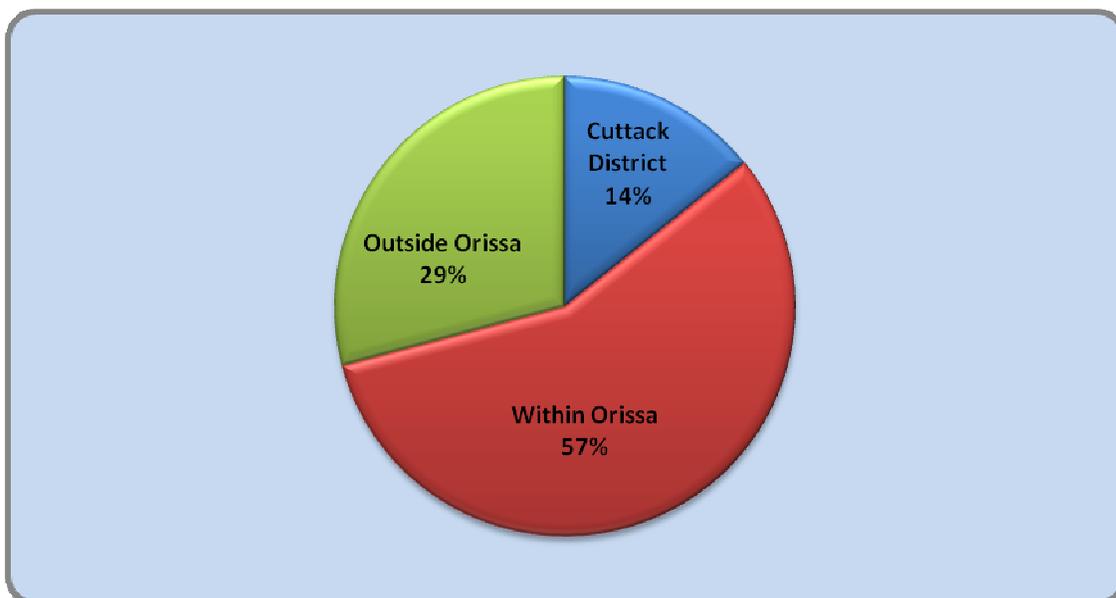


Chart No – 2

Catchment Area	Population
Cuttack District	2341094
Bhubaneswar	648000
Other Districts	11051284
Berhampur	360000
Sambalpur	230000
Outside Orissa	13039564

Table No – 3

3.5.2 FACILITIES AVAILABLE AT SCB MEDICAL COLLEGE & HOSPITAL CLINICAL SPECIALITIES

- 1 Cardiology
- 2 CTVS
- 3 Casualty
- 4 Dental
- 5 ENT
- 6 Endocrinology
- 7 Experimental Surgery
- 8 General Medicine
- 9 Gastroenterology
- 10 Gastro Surgery
- 11 General Surgery
- 12 Haematology
- 13 Mental Health
- 14 Nephrology
- 15 Neurology
- 16 Neuro Surgery
- 17 Ophthalmology
- 18 Obstetrics & Gynaecology
- 19 Orthopedic
- 20 Pediatric
- 21 Plastic Surgery
- 22 Skin & V.D
- 23 TB & Chest
- 24 Urology

CLINICAL SUPPORT SERVICES

- 1 Blood Bank
- 2 Radiology
- 3 Clinical laboratories
- 4 Physiotherapy
- 5 Central Sterile Stores Department (CSSD)

OTHER SUPPORT SERVICES

- 1 Medical Records Department (MRD)
- 2 Central Stores
- 3 Kitchen
- 5 Laundry
- 6 Biomedical Waste Department (BMW)
- 7 General Engineering Department (GED)
- 8 Public Health Department (PHD)

3.5.3 INDIVIDUAL DEPARTMENT ASSESSMENT

3.5.3.1 CLINICAL SERVICES:

OUTPATIENT DEPARTMENT

The Out Patient Department (OPD) at SCB Medical College & Hospital comprises of a centralized OPD for certain specialties and some decentralized OPDs located in respective specialty blocks.

Centralized OPD (Main OPD)

The centralized OPD is housed in a two storied building located near the main entrance of the hospital. This building has been recently constructed with an approximate floor area of 20,000 sq.ft. spread across both floors. Though it is supposed to be a dedicated OPD Block, yet currently only the ground floor has the OPD while the first floor is occupied by a 50 bedded ENT ward. Minor OT of ENT department is also located in the OPD area at ground floor. OPDs for General Medicine, General Surgery, Orthopedics, Skin & VD, ENT, Pediatrics, Pulmonary Medicine, Anti rabies vaccination clinic, Rheumatology, Hepatology, Endocrinology and Cytology are located in this OPD Block. The OPD consultation hours are from 8am to 1pm

Centralized OPD registration for all the above specialties is done through 8 computerized registration counters. The registration for Obstetrics & Gynecology OPD is also done from these counters although the services are delivered from the respective specialty block. An average queue length of 15 persons has been observed near each of the registration counters from 10:30 am to 11:30 am.

The central waiting area has seating arrangements (chairs) for 50 people; in addition the corridors are used as sub waiting area with a seating arrangement of 100 people. The waiting areas appeared to be very crowded. The average OPD attendance for this OPD is 900 patients excluding their relatives/attendants.

There are 22 consultation rooms equipped with necessary fixtures for patient care along with some ancillary facilities such as Injection Room, Treatment and dressing room, ECG and a Pathology section. The consultation room each of which is about 300 sq. ft. (approx) accommodates two consultants in some of the rooms.

The entire OPD has one urinal and two toilets but they are not earmarked for male and female patients. No special arrangements have been made for physically challenged patients. No proper drinking water facilities are available.

The pharmacy which is outsourced to a private party is located outside but in close proximity to the OPD block. A telephone booth and a canteen with a seating arrangement for 15 people exist near the same.

Auxiliary facilities for preventive and promotive healthcare, counseling services, Immunization Clinic, Anti Rabies Vaccine Clinic are also present in the OPD block.

Analysis:

The whole of the OPD block is not being utilized as consultation rooms for all the general specialties. **As part of the building i.e. the first floor is utilized by the ENT department the entire floor can be fully utilized as part of OPD.** Due to lack of proper arrangement of waiting area the department always remains very crowded. Moreover due to lack of other facilities the patients/visitors are not always able to find drinking water, toilet facility which in turn makes the patient/visitor disappointed.

Patients are often confused when locating consultation rooms as there is no form of directional guidance. Despite having eight windows the registration counters are always crowded creating chaos. The registration counter is also used for registration of patients for the decentralized OPDs specifically O&G OPD. There is no earmarked entry/exit gate marked, the flow of traffic is therefore bidirectional making all the three gates crowded. This kind of service creates an unnecessary task crowd handling at the peak hospital hours.

Decentralized OPD

Standalone OPDs are located in their respective departments for the following specialties.

- Ophthalmology OPD
- Super Specialty OPD
- Obstetrics/Gynecology OPD
- Dental Surgery OPD
- Mental Health (Psychiatry) OPD

There are separate registration counters for all of the OPDs except Obstetrics & Gynecology OPD where registration is done in the main OPD block registration counter.

Ophthalmology OPD

Located on the ground floor of the newly constructed Ophthalmology department opposite the pathology lab, this OPD has 22 consultation rooms. Apart from the general OP consultation, some rooms are dedicated for certain special clinics such as Retina, Glaucoma, Pediatric Ophthalmology, Squint Clinic, Laser Unit, Eye bank & cornea room. Approximate floor area for this OPD is around 5000 Sq ft. Seating arrangements are there for about 80 people. There is a minor Ophthalmology OT attached to the OPD. Daily average caseload is about 200 patients.

Super Specialty Medicine & Surgery OPD

This OPD situated at the rear end of the Department of Ophthalmology Block provides consultation services for the following specialties.

- Gastroenterology (Medical)
- Hematology
- Neurology
- Nephrology
- Endocrinology
- Cardiology (planned to be shifted to a new cardiology department near the rear gate of the hospital.)
- Surgical Gastroenterology
- Plastic Surgery
- Neurosurgery
- CTVS
- Urology

It has 11 rooms out of which 7 are used for consultation, 2 for registration and the remaining for store. Floor area occupied is about 2500 sq. ft. daily attendance is around 100 people. Waiting area has 90 chairs.

Analysis:

The super specialty OPD is at a place which patients find it difficult to locate due to lack of signage's/directional guidance information to patients. As a result patients end up going to the main OPD block first.

Obstetrics & Gynecology OPD

Obstetrics & Gynecology OPD is functional in the rear block of department of Obstetrics & Gynecology with a Consultant room, Antenatal room, PPTCT room and a sanitary annex Daily attendance is around 110 patients. Corridor outside the rooms has two benches having seating arrangements for about 10 patients.

Analysis:

As mentioned earlier, the OPD has its registration counter in the main OPD block. Many a times patient directly come to the O&G OPD first, from where they are guided to the main OPD block for registration, after the registration they then come back for consultation Even the waiting area has few seating arrangements requiring the patients/visitors to stand and wait for their turn. Another problem faced by the O&G patients is, having to go back to the main OPD block for blood investigation since the sample collection room is located at the OPD block.

Dental OPD

Dental OPD is spread in two areas, one located opposite to Family Welfare & Planning wing, adjacent to PG Hostel having a two storied building and the other adjacent to the main OPD block. The new Dental department is under renovation, only the ground floor is functional presently. In the Ground floor there is a Pediatric dental OPD & main dental OPD. The average patient attendance per day is 90.

Attached to Main OPD block is the Department of Oral & Maxillofacial surgery having two Consultant rooms with waiting area (6 chairs and 2 benches) for 16 people and an attached toilet, dental lab and a sub waiting area with 30 chairs outside the oral surgery room. Totally there are 10 dental chairs 2 in the minor OT and 8 in another room with sitting space for doctors and a registration counter. Adjacent to the room, main OT corridor of the department starts with separate entrances for patient and staff to the OT Complex. The staff entry door

opens to a scrub area which is attached to the doctors changing room and sterilization unit and adjacent to it is a door for the operating room. The patient entry is through the same corridor adjacent to the extraction room that directly opens into the Operating room.

Mental Health OPD

Located in an old building, this OPD has 11 rooms out of which 9 are used for consultation, the remaining as stores and Medical records. Floor area is about 3500 sq ft.

Analysis:

The main OPD block can be redesigned/ reorganized to accommodate all the general OPDs at one place under one roof of the main OPD block with a central reception/registration/enquiry and cash counter. The present facility can be replanned by converting the present OPD room into smaller rooms to accommodate more OPD chambers and to optimize the present space. The waiting space needs to be re-organized in order to facilitate more chairs for the patients/visitors. General OPDs under one roof will also ensure centralization of other facilities like registration counter, sample collection centre and so on. This will also be more convenient for the patients. The centralization will also result in utilizing the vacated used space of the decentralized OPDs in the concerned departments into various other facility rooms.

The main OPD block can have more signage showing directions that would make it much more convenient for patients/visitors to locate the respective department OPD and other areas.

IMAGING DEPARTMENT

This department is spread in two areas inside the campus premises, one at the imaging department and the other at the regional diagnostic centre. The imaging department has a separate area surrounded by a common boundary wall with the Casualty. This is a single storied old building, with all the services in one floor. The entrance to the department leads to the reception. The corridor that leads to the service area, functions as the waiting area. All the rooms are on both sides of the corridor, i.e. X-ray, CT scan and USG. At one end are the toilets and on the other end of the corridor is the patient waiting area with chairs. In front of the waiting area are the dark room and mobile dental X-ray room.

The regional diagnostic centre is located adjacent to O&G department, opposite to the proposed new trauma centre building. It is a two storied newly built set up having a reception cum registration and a billing counter. The imaging services like x-ray (3 rooms – 2 x-ray rooms and 1 dark room, ultrasonography (1 room) and CT scan (gantry and console rooms with waiting area) are situated on the ground floor. Rooms meant for TMT, ECG & EEG are also on ground floor but presently lying vacant as these diagnostic services are made available in the respective departments (Department of medicine – cardiology & neurology).



CT scan at SCB

Imaging Centre

Particulars	Availability
Reception and registration counter?	Yes
Waiting room with toilet	N.A
Radiography rooms	Yes
Attached dressing cubicle with	N.A

Toilet	
Film developing and dark room	Yes one room at the end of the corridor, adjacent to the waiting area
Film drying room	Yes
Office, record and computer room	N.A
Radiographic work room	N.A
Radiologist room	N.A
Stores	
Film stores	N.A
Chemical stores	N.A
Special packing material stores	N.A
Equipment stores	N.A
Radiologists' rooms	N.A
Injection and barium meal preparation room	N.A
Trolley bay	N.A
Observation room	N.A
Room for lying patients on stretcher	N.A
Ultrasonography	
Sub waiting room	N.A
USG room (black & white)	Yes

Colour Doppler room	N.A
Toilet	N.A
Mammography room	N.A
CT scan	
Trolley Bay	N.A
Patient Change Cubicle	N.A
Technician room	N.A
Gantry room (=>25 M ²)	Yes
Console room	Yes
Record room/computer room/reporting room	N.A
Toilets	N.A
Store room	N.A
Conformance to AERB norms for X-ray rooms	
Wall thickness > 35 cm thick brick	No
Shielding of doors and windows (equivalent of 1.7 mm lead)	No
Room size >=18 m ²	No
Not more than one unit of any type should be in one room	In few rooms there were more than one equipment
Openings for light and ventilation - above 2m from	The openings are not as per the standards

the finished floor level	
Waiting areas to be located outside the x-ray room	No

Table No 4

Regional Diagnostic Centre

Particulars	Availability
Reception and registration counter?	Yes
Waiting room with toilet	N.A
Radiography rooms	N.A
Attached dressing cubicle with Toilet	N.A
Film developing and dark room	Yes
Film drying room	Yes
Office, record and computer room	N.A
Radiographic work room	N.A
Radiologist room	N.A
Stores	
Film stores	N.A
Chemical stores	N.A
Special packing material stores	N.A
Equipment stores	N.A
Injection and barium meal preparation	N.A

room	
Trolley bay	N.A
Observation room	N.A
Room for lying patients on stretcher	N.A
Ultrasonography	
Sub waiting room	N.A
USG room (black & white)	Yes
Color Doppler room	N.A
Toilet	N.A
CT scan	
Trolley Bay	N.A
Patient Change Cubicle	N.A
Radiologist's room	N.A
Technician room	N.A
Gantry room (=>25 M ²)	Yes
Console room	Yes
Record room/computer room /reporting room	N.A
Dark room	N.A
Toilets	N.A
Store room	N.A
Sub-waiting for CT scan	Yes

Conformance to AERB norms for X-ray rooms	
Wall thickness > 35 cm thick brick	No
Shielding of doors and windows (equivalent of 1.7 mm lead)	No
Room size $\geq 18 \text{ m}^2$	Yes
Not more than one unit of any type should be in one room	In few rooms there were more than one equipment
All opening for light and ventilation to be located above 2m from the finished floor level	The openings are not as per the standards
Waiting areas to be located outside the x-ray room	Yes

Table No 5

Analysis:

The Imaging centre is located quite away from all the out-patient service areas causing a lot of inconvenience to the patients. Taking an example, OPD patients first consult a doctor in the OPD. On being advised imaging diagnostic, they are to move out in search for the imaging department. In the absence of any signages for directions and with no help available, it becomes difficult for the patients to quickly locate the department. When it comes to patients who are unable to walk, the difficulties are compounded. Following the procedure, they go back to the OPD for further advice. Thus a patient has to travel to and fro for getting the imaging procedure done.

The Imaging centre functions from 9am to 5pm, while the Regional Diagnostic centre functions from 5pm to 9am

CLINICAL LABORATORY

The clinical laboratory is located close to the rear gate of SCB Medical College Hospital and opposite to the ophthalmology department. The department is centralized and falls under the following functional subdivisions:

- Biochemistry
- Microbiology
- Clinical Pathology and Hematology
- Serology
- Virology (The only test done related to HIV is Elisa)
- Histopathology
- Cytology (located in main OPD block)

The laboratory is a two storied building. The whole building is divided into front and rear wings by a lawn in the middle and connected by corridors on each side of the building. At the entrance of the department there is a sample collection room on the left side and Orissa State AIDS Control Society (OSACS) counseling room on right side. In the middle there is a pathology museum. In the rear wing on the left side of the building is a chemical section used as stores and attached to the histopathology section; opposite to the histopathology section are the pathologist & microbiologist room. Adjacent to the microbiologist room there is a sterilization section. Biochemistry, microbiology, serology and virology sections of the department are situated on the left side of the rear building.

Near the sterilization section there is a staircase which connects the ground floor with the first floor. In the front wing of the first floor above the pathology museum there are two classrooms and in the rear wing there is a telemedicine Center.

Particulars	Laboratory
Location	Near the the back gate entrance
General	The Reception & registration area having sufficient space

	Waiting room with Toilet
	Pathologists' Office is present.
	Area is not sufficient for General items, Chemical, Packing materials & Acid
Histopathology Section	Histopathologist's room is present.
	Area is not sufficient for Histopathology Section
	Microphotography is not available.
	A single area is used for grossing and processing, section cutting and staining & Specimen storing.
	The FNAC room is in the OPD block
Hematology Section	Area is not sufficient for Hematology Section.
	Hematologist's room & Lab both are available but area is not sufficient
Biochemistry Section	Biochemist's room is not available.
	Lab area is not sufficient
Microbiology Section	Microbiologist's room is present.
	Bacteriology lab, Mycology lab & Media storage and plate pouring room is available.
	Media room, Media Kitchen & Cold storage is not available.
	Sterilizing Room & Incubator room is also available.

Immunology Section	This dept. present in medicine dept. ground floor.
Clinical Pathology Section	Only stool/urine examination provision.
Virology Section	Not available.
Equipment Cleaning Section	Not available.
Photography & Illustration, Pathology Museum and other facilities	Pathology Museum, Library, Class room & Common Room is available.
Ventilation	No provision of mechanical ventilation

Table No 6

EMERGENCY & CASUALTY DEPARTMENT

The department is easily accessible from the rear gate of the hospital as it is located at the back side of the imaging department sharing a common boundary wall. It has a parking space for 4 ambulances inside the boundary. The department is in a new 2 storied building with marble flooring. Only the ground floor is being utilized for services at present. A reception is present at the entrance but it is nonfunctional, there is a waiting area at the entrance which is being utilized as an observation ward. One of the existing observation wards opening directly into the waiting area is currently being reserved for heat stroke patients. Two other wards are located on the right side of corridor of the waiting area along with a procedure room. There is also one police room along with ambulance driver room near the waiting area. The entire department is under renovation and there are plans to utilize the first floor.

Particulars	Availability
Reception Desk	Yes
Triage	N.A

Resuscitation Area	N.A
Acute Treatment Area	N.A
Consultation Area	There are two consultation rooms of about 400 Sq ft each where two/three doctors sit.
Procedure room	Yes
Plaster room with storage for plaster, bandages, splint and crutch store	N.A
Treatment room	N.A
Administrative area	NA
Storage	Yes
Clean Utility	N.A
Dirty Utility	N.A
Cleaners' room	N.A
Diagnostic Area (Imaging / Laboratory)	N.A
Doctor's room	N.A
Nursing station	Yes
Security room	N.A
Room for police personnel	Yes
Disaster equipment store	N.A
PMGV supply	N.A
Relatives' waiting area with toilet	N.A

Nurse staff room with toilet facility	Yes
---------------------------------------	-----

Table No 7

Analysis:

This department is a new one, the first floor being still under construction. The entire department has enough rooms to accommodate many other dedicated areas.

The casualty department has been planned such that the consultation rooms and observation are totally separate making it difficult to monitor patients efficiently. No area has been demarcated for triage and resuscitation and the department itself is not fully equipped for the same.

The building is a new construction but the walls are already in a very bad condition due to poor maintenance and seepage of water. The consultation room, procedure room and heat stroke room have been provided with a 1.5 ton split AC each while the other rooms have to depend only on fans. In a place like Cuttack where temperatures can go very high, a casualty being a high stress area should ideally be fully air conditioned.

The casualty department does not have any space demarcated for installation of a lift when the first floor is made functional, shifting of patients will be a major problem.

NURSING UNIT/WARDS

The nursing unit of SCB hospital mainly comprises of 24 disciplines

Location		Name of the Department		No. Beds
Department of Surgery	Ground Floor	1st Surgery		20
		2nd Surgery		20
		Male Neuro Surgery		12
		Female Neuro Surgery		12

Location		Name of the Department	No. Beds	
	First Floor	Extra Surgery	45	
		3rd Surgery	20	
		Gastro Enterology Surgery	26	
		TB Surgery	9	
		CTVS	24	
	Second Floor	Urology	20	
		Baby Surgery	20	
		Burn Surgery	24	
		Cabins	6	
		Female Surgery	40	
	Third Floor	Plastic Surgery	20	
		Burn unit	12	
	Department of Obstetrics & Gynecology	Ground Floor	O & G 1st unit	36
			O & G 2nd unit	23
First Floor		High risk 1st maternity	23	
		Maternity Cabin	11	
		2nd Maternity	48	
Second Floor		3rd Maternity	60	

Location		Name of the Department	No. Beds
		Special Neonatal Paediatric unit	7
		Septic ward	9
Department of Orthopaedics	First Floor	Male Orthopaedic Unit - 1 & 2	24
		Female Orthopaedic	11
	Second Floor	Male Accident Unit 1,2,3	33
		Female Accident	9
Department of ENT	First Floor	Male Ward-ENT	24
		Female Ward-ENT	18
		Cabin-ENT	5
Department of Medicine	Ground Floor	4th Male medical ward(6th & 7th unit)	20
		1st Male medical ward(5th & 7th unit)	20
	First Floor	2nd Male medical ward	30
	Second Floor	3rd Male medical ward	30
		General ward Cardiology	32
	Third Floor	2nd Female medical ward (1st,2nd,6th & 7th unit)	30
		1st Female medical ward	30

Location		Name of the Department	No. Beds
Department of Paediatrics	Ground Floor	Paediatrics (1st & 2nd unit)	30
	First Floor	Paediatrics Extension ward	39
Department of Superspecialty Medicine	First Floor	Neurology ward	21
	Second Floor	Endocrinology & Nephrology ward	29
	Third Floor	Haematology & Gastroenterology ward	27
Department of Ophthalmology	First Floor	Ophthalmology ward	39
Department of Dermatology	Ground Floor	Skin & VD ward	22
Department of Chest Medicine	Ground Floor	Chest ward	18
Department of Pulmonology	Ground Floor	T.B ward	46
Department of Psychiatric	Ground Floor	Psychiatric Male & Female ward	90
Department of Medicine & Paediatrics	Ground Floor	Septic ward for diarrhoea, Tetanus, Diptheria, Chicken Pox & Rabies	44

Table No 8

Department of Surgery

The department is in a square shape building and the entire space of the mid portion of the building is utilized as a lawn. There is a corridor which connects two wings of the department. Front part of the building has ground + 2 floors and the back side of the building has ground + 3 floors. In between the corridor that connects the two wings of the department there is a new building constructed for proposed plastic surgery wing.

Surgery Ward 1, Surgery Ward 2, Laparoscopic Surgery unit & Emergency OT and proposed ICU complex is in the front wing. The Neuro Surgery department with wards, OT and ICU is in the back wing of ground floor. Similarly, extra surgery ward, 3rd surgery ward, Gastro surgery department with wards, OT and ICU/HDU is in the front wing and the department of anesthesia with 2 general surgery OT, TB surgery ward, CTVS department with ward, OT and ICU is in the back wing of first floor.

Urology department with wards and OT is located in the back wing and female surgery in the front wing of 2nd floor. On to the 3rd floor at the back wing there is the Plastic surgery department with wards and OT. The burn unit is spread across two floors. The burn ward is on the 2nd floor and the burn unit cabins on the 3rd floor.

The basic layout of the Surgery department is the same in all the wards and floor with rig pattern wards connected to sanitary annex through a corridor of 8ft width. Some parts of the building are already renovated while the remaining part is undergoing renovation. The vertical circulation is through a lift and staircase in the front wing and a ramp and staircase in the back wing of the department.

Department of Surgery				
Particulars	1st Surgery ward (20 beds)	2nd Surgery ward (40 beds)	Male Neuro Surgery ward (12 beds)	Female Neuro Surgery ward (12 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to obstetrics and gynaecology department			
Access to the department	A central corridor of approximately 8 ft leads to the wards. The wards can also be accessed through the nurses' duty station			
Ward Design	Rig pattern			
Distance between two beds	The beds are arranged at an approximate distance of 6 ft centre to centre.			
Sanitary Annexes	<input type="checkbox"/> 3 urinals and 3 water closet have been provided.			

Table No 9

Department of Surgery				
Particulars	Extra Surgery (45 beds)	3rd Surgery ward (20 beds)	Gastro Enterology Surgery (10M+16F)	TB Surgery (9 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to obstetrics and gynaecology department			
Access to the department	A central corridor of approximately 8 ft leading to the wards. The wards can also be accessed through the nurses' duty station			
Ward Design	Rig pattern		Nightingale pattern	
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.			
Sanitary Annexes	<input type="checkbox"/> 3 urinals and 3 water closet is being provided.		<input type="checkbox"/> 4 urinals and 4 water closet is being provided.	

Table No 10

Department of Surgery				
Particulars	CTVS (12M +12F)	Urology (20 beds)	Baby Surgery (20 beds)	Burn Surgery (8M+6F)
Relationship with other	Adjacent to orthopedic department and opposite to obstetrics and gynaecology department			



departments				
Access to the department	A central corridor of approximately 8 ft leading to the wards. The wards can also be accessed through the nurses' duty station			
Ward Design	Rig pattern			Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.			
Sanitary Annexes	4 Bath and 4 water closets are being provided.	3 Bath and 3 water closets are being provided.	3 Bath, 3 Urinal & 3 water closets is being provided.	3 Bath, 3 Urinal & 3 water closets is being provided.

Table No 11

Department of Surgery

Particulars	Cabins (13)	Female Surgery (40 beds)	Plastic Surgery (20 beds)	Burn unit (12 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to obstetric and gynaecology department			
Access to the	A central corridor of approximately 8 ft leads to the wards. The wards can			

department	also be accessed through the nurses' duty station			
Ward Design		Rig pattern	Nightingale pattern	
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.			
Sanitary Annexes	□ 4 Bath and 4 water closet is being provided.	□ 3 Bath and 3 water closet is being provided.	□ 3 Bath, 3 Urinal & 3 water closets is being provided.	□ 3 Bath, 3 Urinal & 3 water closets is being provided.

Table No 12

Department of Obstetrics & Gynecology

The Obstetrics & Gynecology department is located next to the administrative department in a three storied old building. It is a square shape building with the middle portion of it lying unutilized and being used for drying clothes by patient attendants. At the entrance of the department there is an HIV test room, medical records room, an old lift and staircases for vertical circulation of patients. The basic layout of the O&G department is the same in all the wards and floor with Nightingale pattern wards connected to sanitary annex through a corridor of 8ft width.

On the ground floor there are the O&G 1st, 2nd, septic wards, 11 cabins (10 Non AC & 1 AC), OPD block with PPTCT centre and an OT complex (with two operating rooms, Anesthetist room, recovery room unutilized and a scrub area). On the left side of the OT complex there is the O&G 1st ward and to the right is the endoscopic training centre.

On the first floor opposite to the staircases there is a Labour Complex having labour rooms with 14 tables, 7 bedded post operative rooms, 2 bedded Eclampsia rooms and an AC cabin

with 2 beds. On to the right of the labour room there is an ultrasound & color Doppler unit and on the left opposite to labour room there are high risk maternity wards 1 & 2 with baby cots and 7 O&G Non AC cabins.

On the 2nd floor there are Special Care Neonatal wards (7 Phototherapy units) and Maternity 3rd ward with sanitary annex at one end of the corridor for patient and staff.

Department of Obstetrics and Gynecology				
Particulars	High risk 1st maternity (23 beds)	Maternity Cabin (7 beds)	2nd Maternity (48 beds)	3rd Maternity (60 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to obstetric and gynaecology department			
Access to the department	A central corridor of approximately 6 ft wide leads to the wards. The wards can also be accessed through the nurses' duty station			
Ward Design	Nightingale pattern		Nightingale pattern	
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 4 ft centre to centre.			
Sanitary Annexes	· 3 Bath & 4 water closets are being provided.	· Attached with each room.	· 3 Bath & 4 water closets are being provided.	· 2 Bath & 2 water closets are being provided.

Table No 13

Department of Obstetrics and Gynaecology	
Particulars	Special Neonatal Paediatric unit (7 body warmers) Septic ward (9 beds) O & G 2nd unit (23 beds) O & G 1st unit (36 beds)
Relationship with other departments	Adjacent to administrative block and opposite to orthopedic block
Access to the department	A central corridor of approximately 6 ft wide leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate centre to centre distance of 4 ft.
Sanitary Annexes	<ul style="list-style-type: none"> • 4 Bath, 1 Urinal & 4 water closet is being provided. • 4 Bath, 1 Urinal & 4 water closet is being commonly provided.

Table No 14



Special Neonatal Unit for sick babies born at SCB

Department of Orthopedics

The Orthopedic department is located next to the department of surgery in an old building which is presently undergoing renovation. The department is a three storied building with Physiotherapy unit in one half and consultant rooms with a sanitary annex and plaster room on the other half of the ground floor.

On the first floor there are Male and Female Orthopedic wards with a sanitary annex at one corner of the floor. The second floor consists of Male and female accident wards with sanitary annex at one half of the floor and operation theatre complex having 2 OTs at the other half of the floor. All the floors are connected by a single staircase.

Department of Orthopaedics				
Particulars	Male Orthopaedic Unit - 1 & 2 (12 + 12 beds)	Female Orthopaedic (11 beds)	Male Accident Unit 1,2,3 (11 + 10 + 12 beds)	Female Accident (9 beds)
Relationship with other departments	Adjacent to surgery and medicine department			
Access to the department	A central corridor of approximately 8 ft leads to the wards. The wards can also be accessed through the nurses' duty station			
Ward Design	Nightingale pattern			
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 5ft centre to centre.			
Sanitary Annexes	· 3 Bath, 2 Urinal & 2 water closets is being provided.	· 3 Bath & 2 water closets are being provided.	· 3 Bath, 2 Urinal & 2 water closets is being provided.	· 3 Bath & 2 water closets are being provided.

Table No 15

Department of E.N.T

The department of ENT is located on the first floor of the main OPD building which is a double storied building. The ENT department has Male ward with sanitary annex, 5 cabins, an audiometry room on one side and the OT complex and the female ward with sanitary annex for patient and staffs on the other side.

Out of the total 50 beds located in the ENT department, 5 beds are allotted to the Dental department. The entire ENT department is in the new block

Department of ENT			
Particulars	Male Ward-ENT (28 beds)	Female Ward-ENT (18 beds)	Cabin-ENT (5)
Relationship with other departments	On the first floor of main OPD block and maxillofacial department		
Access to the department	A central corridor of approximately 8 ft leads to the wards. The wards can also be accessed through the nurses' duty station		
Ward Design	Nightingale pattern		Single room
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft centre to centre.		
Sanitary Annexes	· 2 Bath, 1 Urinal & 2 water closet is being provided.	· 2 Bath & 2 water closets are being provided.	· 1 Bath & 1 water closet is being provided.

Table No 16

Department of Medicine

The department is in a square shaped old building with corridors. There is a corridor which connects two wings of the department, the building has ground + 3 floors. The wards, offices and different rooms are placed in two sides of the corridor in all the floors.

The medicine ICU is very small with only 4 beds and is placed on the ground floor of the medicine wing just on the right side of the main entrance. The position of the ICU is not appropriate as everyone entering the medicine wing has an access to the ICU.

The basic layout of the Medicine department is the same in all the wards and floors with nightingale pattern wards. The sanitary annex is connected through a corridor of 8-10ft width. Some parts of the building needs renovation, wiring and electrical annexure needs immediate attention. The vertical circulation through lifts and staircase of the department needs immediate attention for repair and renovation.

Department of medicine				
Particulars	4th male medical ward (6th and 7th unit) (20 beds)	1st male medical ward (5th and 7th unit) (20 beds)	2nd male medical ward (30 beds)	3rd male medical ward (30 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to regional diagnostic centre			
Access to the department	A central corridor of approximately 10 ft leads to the wards.		A central corridor of approximately 8 ft leads to the wards.	
Ward Design	Nightingale pattern			
Distance between two beds	The beds are arranged very close to each other with an approximate.			
	distance of 4-5 ft centre to centre	distance of 4-5 ft centre to centre	distance of 3-4 ft centre to centre	distance of 4-5 ft centre to centre
Sanitary Annexes	· 1 Bath & 2 Urinal is being provided.	· 4 Bath & 4 Urinals are being provided.	· 1 Bath & 3 Urinal is being provided.	· 3 Bath & 3 Urinals are being provided.

Table No 17

Department of Medicine			
Particulars	General ward Cardiology (32 beds)	2nd Female medical ward (1st,2nd,6th & 7th unit) (30 beds)	1st Female medical ward (30 beds)
Relationship with other departments	Adjacent to orthopedic department and opposite to regional diagnostic centre		
Access to the department	A central corridor of approximately 10 ft leads to the wards.		
Ward Design	Nightingale pattern		
Distance between two beds	The beds are arranged very close to each other with an approximate.		
	distance of 5-6 ft centre to centre	distance of 4-5 ft centre to centre	
Sanitary Annexes	2 Bath & 2 Urinals are being provided.	2 Bath & 2 Urinals are being provided.	3 Bath & 3 Urinals are being provided.

Table No 18

Department of Cardiology

The department is on the second floor of the Medicine department and on the left side of the stairs. The department is in a square shaped old building with corridors. The wards, office and different rooms are placed on two sides of the corridor in all the floors.

The cardiology unit's ICCU is very small with only 8 beds and is placed adjacent to the cardiology ward. In between each bed there is a partition made up of glass and ply up to 8 feet height. There is no nurse's duty station inside the ICCU. In all cardiology wards there is no provision of nursing station.

Department of Paediatrics

There is no exclusive block for pediatrics. The pediatric general ward and pediatric ICU are placed on the ground floor of the super-specialty building and the pediatric extension ward is on the first floor through a very narrow staircase.

The ICU is located on the ground floor close to the entrance with the corridor in front of it always crowded with public traffic.

Department of Paediatrics		
Particulars	Paediatrics (1st & 2nd unit) (15 +15 beds)	Paediatrics Extension ward (28 Paediatric +6 newborn)
Relationship with other departments	Connected to department of super speciality medicine and opposite to regional diagnostic centre	
Access to the department	A central corridor of approximately 8 ft leads to the wards.	
Ward Design	Nightingale pattern	
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 4-5 ft centre to centre	
Sanitary Annexes	1 Bath & 1 Urinal is being provided.	Using other wards toilets.

Table No 19

Department of Superspeciality Medicine

Department of superspeciality medicine is located in a separate building, placed above the paediatric wards. Wards are next to the central corridor which is 10 feet wide (approx). Wards are of Nightingale pattern.

The dialysis department is on this block but the support services required for dialysis is separately in the general medicine ward. The dialysis stores are located in general medicine block.

Department of Superspecialty Medicine			
Particulars	Neurology ward (10M +11F beds)	Endocrinology (11 beds) & Nephrology ward (7M+4F)	Haematology (7beds) & Gastroenterology (10M+10F) ward
Relationship with other departments	Connected to department of medicine and pediatric		
Access to the department	A central corridor of approximately 10 ft leads to the wards. The wards can also be accessed through the nurses' duty station		
Ward Design	Nightingale pattern		
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 4-5 ft centre to centre		
Sanitary Annexes	· 2 Bath & 2 Urinals are provided for both Male & Female.	· 4 Bath & 4 Urinals are provided for both Male & Female.	· 4 Bath & 4 Urinals are being provided for both Male & Female.

Table No 20

Department of Ophthalmology

The ophthalmology dept is situated in a completely separate block with OPD, IPD and OT complex in three separate wings. Superspeciality OPD's are placed on the ground floor of the

ophthalmology IPD. Orientation of the OT and arrangement of wards need replanning. Electricity Maintenance requires maximum attention.

Department of Ophthalmology	
Particulars	Ophthalmology ward(13M+13F+13Septic)
Relationship with other departments	Opposite to the Ophthalmology OT complex
Access to the department	A central corridor of approximately 10 ft leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 4-5 ft centre to centre
Sanitary Annexes	· 6 Bath & 6 Urinal (2 Septic) is being provided for both Male & Female.

Table No 21

Department of Chest Medicine

The chest ward is placed in a very old building besides the skin ward. As the building is very old with asbestos roofing, the condition of the building is very gloomy and immediately needs attention. Nurse's station is located on one corner. Patients are also accommodated in the corridor which is not closed. The beds are very close to each other and the chances of cross infection are very high.

Department of Chest Medicine	
Particulars	Chest ward (12M +6F)
Relationship with other	Skin & VD ward

departments	
Access to the department	A central corridor of approximately 8 ft leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 3-4 ft centre to centre
Sanitary Annexes	· 2 Bath & 2 Urinals are provided for both Male & Female.

Table No 22

Department of Skin & VD

The skin and VD ward is placed in a very old building besides the chest ward. As the building is very old with asbestos roofing, the condition of the building is very gloomy and immediately needs attention. The nurse's station is on one corner. A portion of the ward is used as a dumping yard for all broken beds and old mattresses. The furniture needs immediate replacement. The beds are very close to each other and the chances of cross infection are very high.

Department of Dermatology	
Particulars	Skin & Venerable disease ward (11F + 11M)
Relationship with other departments	Chest ward
Access to the department	A central corridor of approximately 8 ft leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 3-4 ft centre to centre

Sanitary Annexes	· 2 Bath & 2 Urinals are being provided for both Male & Female.
-------------------------	---

Table No 23

Department of Pulmonology Medicine & Tuberculosis

These are newly built wards spread across two buildings. One block is G+1 and another is only ground. For all the floors and the separate block there is only one Nursing Station. The ward is totally isolated from all the departments. Renovation work was going on in one portion of the ward. Rearrangement of beds inwards is to be looked. There should be an

Particulars	TB ward (14 beds)
Relationship with other departments	Close to the pulmonology ward
Access to the department	A central corridor of approximately 10 ft leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 5-6 ft centre to centre
	· 2 Baths & 2 Urinals are being provided for both Male & Female.

interconnection between the separate blocks.

Table No 24

Department of Mental Health

The department of mental health is located in a separate block with 2 buildings – one building is the OPD and the other is the IPD. Both these buildings are separate with no inter-connection among them. The IPD block is spread lengthwise with male psychiatry ward on

one side and female ward on the other side. In between them is the Nursing station. There is no inter-connection between nurse's station and the female ward. They have to come through the corridors. There are no special arrangements for mental patients.

Department of Psychiatric	
Particulars	Psychiatric Male & Female ward (90 beds)
Relationship with other departments	Opposite to Central Store
Access to the department	A central corridor of approximately 10 ft wide leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 3 ft centre to centre
Sanitary Annexes	4 Bath & 6 Urinals are being provided for both Male & Female.

Table No 25

Septic Ward

This is in a completely separate block behind the casualty. All septic cases under the department of medicine and pediatrics are kept here in separate wards of diarrhoea, tetanus, diphtheria, chicken pox and rabies. The building is old and the arrangements of beds are haphazard. The nursing station is totally separate from all the wards.

Department of Medicine & Paediatrics	
Particulars	Septic ward for diarrhoea, tetanus, diphtheria, chicken pox & rabies (44 beds)
Relationship with other departments	Back side of casualty ward

Access to the department	A central corridor of approximately 10 ft wide leads to the wards. The wards can also be accessed through the nurses' duty station
Ward Design	Nightingale pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 3-4 ft centre to centre
Sanitary Annexes	· 3 Bath & 3 Urinals are provided for both Male & Female.

Table No 26

Common observation for all wards

Support Areas	· There is no nursing station inside the wards. The nurses' duty station is located in a separate room between 1st and 2nd ward. The wards can be accessed from the duty station as it has two entrances through it.	· There is no nursing station inside the wards. The nurses' duty station located in a separate room is in between male and female ward. The wards can be accessed from the duty station as it has two entrances through it.
	· No separate storage area for soiled linen and fresh linen provided.	
	· No trolley bay is there to station the trolleys.	
	· There is no MO's room provided for these wards.	
	· The staffs/visitor's lavatory is in very poor hygienic conditions, not maintained properly.	
Sanitary Annexes	· The sanitary annexure in the wards are not adequate & also not in good condition requiring renovation and expansion in terms of number of bathrooms & toilets.	

Table No 27

Analysis:

1. The department of surgery is in a separate building situated opposite to the O&G department. A central corridor of approximate width 8ft, runs through the entrance and the wards are located on one side of the corridor.
2. The beds are arranged in rig pattern in the maximum number of wards & remaining wards are of nightingale pattern, the inter-bed distance calculated from one centre of the bed to the other centre is approximately 6ft., the bed distance is thus found to be less as compared to the accepted norm of 8ft. While assessing the supporting areas, it was identified that some departments have the nurse's duty station & some have sisters' duty room with or without toilet. The nurse's duty stations are located in the middle of the wards in a separate room. The duty station has accessibility to the wards from two sides.
3. The present nurse's duty room is functioning as a nursing station as well as a doctors' discussion room which is not ideal for a ward to function. To enable round the clock supervision and monitoring of the patients, a nursing station can be planned in the respective wards.
4. Taking into consideration the ancillary services none of the wards has a clean and dirty utility room, they are provided with only one store room in the nurses' duty room where the dirty as well as clean linen, furniture, medicines and equipments are being kept. No separate pantry, janitor's closet, MO's duty room or trolley bay has been provided for these wards.
5. The sanitary annexure in the wards are not adequate and they are in a very dilapidated and unhygienic state. Renovation is a definite requirement along with addition of more number of bathrooms and toilets.
6. There are no signage's for directions in the ward areas
7. T.B ward is in a very bad condition giving the look of a condemned room; it does not even have any nursing station inside or outside the ward. No provision for infection control in this ward.

8. The relatively low inter bed distance in the wards has been due to the introduction of more beds to accommodate the increasing patient load.

OPERATION THEATRES

The SCB Medical College Hospital has 23 OTs for different clinical specialities spread across different departments of the hospital. There are separate block for each department along with inpatient beds and OTs. The OTs was built across separate floors in each of the buildings, as and when required, this has resulted in the creation of unplanned OTs. The list of OTs and their locations are as follows:

Sl No.	OT Type	Name of Department	Location
1	Labour Room	Department of O&G	First floor
2	Gynecology OT	Department of O&G	Ground floor
3	Emergency Gynaecology OT	Department of O&G	Ground floor
4	Plastic Surgery OT	Department of Surgery	Third floor
5	Neuro Surgery OT	Department of Surgery	Ground floor
6	General surgery OT	Department of Surgery	First floor
7	Gastro Surgery OT	Department of Surgery	First floor
8	Emergency OT	Department of Surgery	Ground floor
9	CTVS OT	Department of Surgery	First floor
10	Urology OT	Department of Surgery	Second floor
11	Laparoscopy OT	Department of Surgery	Ground floor
12	Orthopedic OT	Department of Orthopaedic	Second floor OPD block

			First floor
13	ENT OT	Department of ENT	OPD block First floor
14	Dental OT	Dental Department	Ground floor

Table No 28

Every department has a separate floor plan for the OTs. Each of the departments OT is under the jurisdiction of the respective specialty HOD. A detailed discussions pertaining to each of the O.T is given below





A typical OT and scrub station at SCB Hospital

Ground Floor (Obstetric & Gynaecology)

Room Type	No of OR	No of OT Tables	Ventilation	Circulation	Ancillary Services
Labour Room	1	14	Only through window A.C	Separate entry/exit for patient/staff, the same is used for supplies	Nursing station, scrub area, one common store, trolley bay in the corridor of the labour complex

Table No 29

The Labour room is on the first floor of the department and it has a dedicated entry which doubles as staff as well as patient entry. This unit contains

- 3 interconnected Labour Rooms accommodating 14 labour tables, 6 post operative beds and 2 eclampsia beds
- Nursing station
- Store room

- There is no space specially allocated for the resuscitation of the newborn

O.T Type	No of OTs	No of OT Tables	Ventilation	Circulation	Ancillary Services
Gynaecology	1	2	Only through window A.C	Common entry/exit for patient, staff, and supplies	Anaesthetists room, one nursing station, one common store, autoclave room, recovery room but not in use, scrub area, trolley bay, preoperative room outside the complex
Emergency Gynaecology	1	1			

Table No 30

The Operation Theatre of this department is on the ground floor adjacent to the pre operative ward. The OT complex has two separate operating rooms one main OT and one emergency OT adjacent to each other sharing a common sterilization unit in between them. The OT complex is newly constructed with the following facilities:

- Scrub room
- Sterilization room
- Nursing station
- Anaesthetist/Doctor room
- Recovery room

Surgery Department

O.T Type	No of	No of OT	Ventilation	Circulation	Ancillary Services
----------	-------	----------	-------------	-------------	--------------------

OTs		Tables			
Plastic Surgery	2	2	Through window A.C	Separate entry/exit for patient/staff, the same is used for supplies	Anaesthetists room, doctors room, nurse change room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area
Neurosurgery	2	2	Through window/split A.C	Same entry/exit for patient/staff, the same is used for supplies as well	Anaesthetists room, doctors room, nurse change room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area
General Surgery OT (General)	2	2+2	Through window/split A.C	Same entry/exit for patient/staff, the same is used for supplies as well	Anaesthetists room, doctors room, nurse change room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area
Gastro OT	1	1	Through	Same entry/exit for	Anaesthetists room, doctors room,

			split A.C	patient/staff, the same is used for supplies as well	nursing station one common store, scrub area
Emergency Major OT	1	1	Through window/split A.C	Same entry/exit for patient/staff, the same is used for supplies as well	Anaesthetists room, doctors room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area. (common for both OT)
Laparoscopy OT	1	1			
Urology OT	3	4	Through window A.C	Separate entry/exit for patient/staff, the same is used for supplies	Anaesthetists room, doctors room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area.
CTVS OT	2	2	Through window/split A.C	Separate entry/exit for patient/staff, the same is used for supplies	Anaesthetists room, doctors room, one common store, trolley bay in the corridor of the complex, autoclave room, nursing station, scrub area.

Table No 31

The Department of Surgery houses all the above OTs spread across different floors along with their concerned specialities/units and headed by the clinical HOD.

Orthopaedics Department

O.T Type	No of OTs	No of OT Tables	Ventilation	Circulation	Ancillary Services
Orthopaedics	2	2+2	Through window/split A.C	Same entry/exit for patient/staff, the same is used for supplies	Anaesthetist's room and a small boiler are being used for sterilization.

Table No 31

The OT Complex is located on the second floor of the department where the only access to the OT for patient is through staircases or the use of a hand stretcher. As far as civil maintenance is concerned, the walls are damp. The OT complex is adjacent to the Male Accident Ward.

Ophthalmology Department

O.T Type	No of OTs	No of OT Tables	Ventilation	Circulation	Ancillary Services
Ophthalmology	2	2+2	Through window/split air conditioning	Same entry/exit for patient/staff, the same is used for	

				supplies	
--	--	--	--	----------	--

Table No 32

The OT Complex is located in the ophthalmology department itself and is attached to the wards.

ENT Department

O.T Type	No of OTs	No of OT Tables	Ventilation	Circulation	Ancillary Services
ENT	2	2+2	Through split A.C	Separate entry/exit for patient/staff, the same is used for supplies	Trolley bay in the complex and autoclave room

Table No 33

It is a newly constructed department in the OPD Block with attached Male & Female wards. The OT complex is located close to the female ward with separate entry/exit point for patient, staff and materials. It also has a dedicated sterilization unit and a scrub zone shared by both the OTs.

Dental Department

O.T Type	No of OTs	No of OT Tables	Ventilation	Circulation	Ancillary Services
Oral & Maxill	1	1	Through window A.C	Separate entry/exit for	Reception, waiting room with

ofacial				patient/staff, but the same is used for supplies also.	toilet, change autoclave scrub area	doctor room, room,
---------	--	--	--	--	-------------------------------------	--------------------

Table No 34

The department OT is located on the ground floor near the extraction room which has a separate entry/exit point for patient/staff. Here also the scenario is the same with no concept zoning. It is a newly constructed block with space available for further expansion of the OT.



Dental & Maxillo facial OT

Common Observations for OTs

- No zoning is observed. There is no planned access and traffic flow in the OTs. The entry and exit of patients, staff, supplies and sterile and dirty linen is through one common gate.
- Air Conditioning is very poor in the OT's, only window type AC's are used
- Fungal growth is seen on all the walls in the OTs.
- Sitting arrangement for attendants and relatives outside the Operation Theatre not adequate.

- No post operative beds available for post surgery patients.
- No OT preparation room present.
- Central medical gas system is seen only in some of the Operation Theatres.
- Storage areas are not adequate in Operation Theatres.
- No UPS facility for life saving equipments in OT.
- There is no patient preparation/induction room. The same is done in the OTs
- Inadequate toilet facilities for staff/doctors in the entire OT
- Most of the operating rooms have more than one OT table which results in overcrowding of the OT. .
- No clean utility store. Presently clean items are stored in the Operating Rooms

Analysis for all OTs:

- The existing OTs should be re-planned to accommodate all the ancillary facilities and follow the zoning system which includes protective, clean, sterile and disposable zones for conforming to the standard of OT design
- In all the OTs, a standardized HVAC system needs to be planned to avoid surgical site infection and intra-OT contamination. Certain critical OTs like orthopaedic, CTVS and Neurosurgery OTs should have laminar airflow with HEPA filter capable of filtering particles of greater than 0.3 microns. For other OTs, filters of 5 micron capacity are acceptable.
- Flow of the patient, hospital staffs and materials in all the OTs is bidirectional. There is only one entry and exit for the patients, hospital staffs and materials in the OT. There is unrestricted traffic flow in the OT area leading to a lot of potential for cross infection and contamination. Man and material movement in and out of the OT will need to be replanned. For disposal of dirty, used and recyclable items, a dirty corridor needs to be provided.

- Surgeons' room and Scrub stations are haphazardly constructed in the OT complex. the traffic flow for all the OTs is from scrub to change room through OT, when it should ideally be from change room to OT through scrub
- OT plays a major role in the healthcare facility and caters to 50% of the needs of healthcare seekers (*Indian Journal of Anaesthesia 2007; 51(3)) so planning the OT is a major concern. There are a number of ancillary rooms In OT complex which have designated roles to play for effective patient treatment. These rooms are planned according to its criticality and placed in different zones. Zoning is done based on varying degrees of cleanliness, in which the bacteriological count progressively diminishes from the outer to the inner zones. No zoning and unrestricted traffic flow in the OT area of S.C.B Medical College and hospital are major concern for infection control. Absence of the ancillary room in the OT complex is decreasing the efficiency of the OT. So zoning has to be created by maintaining a differential decreasing positive pressure ventilation gradient from the inner operating area to the outer operational area.

1.8.7 INTENSIVE CARE UNIT

The hospital houses a CTVS ICU, a neuro ICU, a medicine ICU, a cardiology ICU and a paediatric ICU. The details of each ICU are as follows:

Particulars	CTVS ICU
Location	Near CTVS OT
No of beds	4
Space per bed	100sqft approximately
Ancillary space	• Area for waiting room with toilet is available
	• Area for doctor' duty room is available
	• Area for sister's duty room is available
	• Area for clinical test room is available

	<ul style="list-style-type: none"> Area for nursing station is available Store, clean utility, treatment room, dressing room, dirty utility and janitor's closet are not available.
PMGV System	<ul style="list-style-type: none"> PMGV system is present.
Ventilation	<ul style="list-style-type: none"> The ventilation system is through four split AC's (1.5TR).
Electrical outlets	<ul style="list-style-type: none"> It is good & sufficient for all equipments
Observations	The present CTVS ICU is very newly commissioned & having sufficient space for 4 beds.

Table No 35



The newly renovated CTVS ICU

Particulars		Neurosurgery ICU
Location	Near Neurology OT	

No of beds	4
Space per bed	80 sqft approximately
Ancillary space	<ul style="list-style-type: none"> Area for nursing station is available
	<ul style="list-style-type: none"> Waiting room with toilet, doctor's duty room, clinical test room, sister's duty room, store, clean utility, treatment room, dressing room, dirty utility & janitor's closet is not available.
PMGV System	<ul style="list-style-type: none"> PMGV system is present.
Ventilation	<ul style="list-style-type: none"> Proper ventilation is present.
Electrical outlets	<ul style="list-style-type: none"> Electrical outlets needs to be replaced
Observations	The present ICU has very limited facilities.

Table No 36

Particulars	MEDICINE ICU
Location	Department of medicine building - ground floor on the right side of the main entrance
No of beds	4
Space per bed	100 sqft approximately.
Ancillary space	<ul style="list-style-type: none"> Area for waiting room with toilet is not available
	<ul style="list-style-type: none"> Area for doctor' duty room is not available
	<ul style="list-style-type: none"> Area for sister's duty room is available
	<ul style="list-style-type: none"> Area for clinical test room is not available

Particulars		MEDICINE ICU
		<ul style="list-style-type: none"> Area for nursing station is available
		<ul style="list-style-type: none"> Waiting room with toilet, doctor's duty room, clinical test room, sister's duty room, store, clean utility, treatment room, dressing room, dirty utility & janitor's closet are not available
PMGV System		<ul style="list-style-type: none"> PMGV system is not present.
Ventilation		<ul style="list-style-type: none"> Proper ventilation is not there. Air-conditioning is only through split A.C.'s
Electrical outlets and accessories		<ul style="list-style-type: none"> It is good & sufficient for all equipments. Fans are there in ICU.
Observations		<p>The present medicine ICU is very small with very limited facilities. There are only four beds which is very less as compared to the total number of inpatient beds. The ICU is located on the ground floor; the corridor in front of it is crowded with public traffic. One side of the ICU faces the area where cars are parked which is very noisy as many patient attendants gather around. There are only 2 ventilators out of which one is not functional. There are 3 multiparameter monitors, 1 pulse-oxymeter, 1 defibrillator, 2 syringe pumps & 2 infusion pumps.</p>

Table No 37

Particulars		Cardiology ICU
Location		Department of medicine building - second floor, left side of main staircase

No of beds	8 beds in separate cubicles
Space per bed	50sqft approximately
Ancillary space	· Area for waiting room with toilet is not available
	· Area for doctor' duty room is not available
	· Area for sister's duty room is not available
	· Area for clinical test room is not available
	· Area for nursing station is available but not being used.
	· Waiting room with toilet, doctor's duty room, clinical test room, sister's duty room, store, Clean utility, treatment room, dressing room, dirty utility & janitor's closet are not available.
PMGV System	· PMGV system is present.
Ventilation	· Ventilation is through 4 split A.C.'s of 1.5 ton each.
Electrical outlets	· It is good & sufficient for all equipments
Observations	The location of the ICCU is adjacent to the general wards with no nursing station. There are 8 multipara monitors, 1 pulse-oxymeter, 4 defibrillators, 1 syringe pump & 1 infusion pump.

Table No 38

Particulars	Pediatric ICU
Location	Department of pediatric building - ground floor, right side of main entrance
No of beds	6 Beds & 2 NICU Basinets with only one warmer.
Space per bed	40 sqft approximately

Ancillary space	· Area for waiting room with toilet is not available
	· Area for doctor' duty room is not available
	· Area for sister's duty room is available but outside the ward.
	· Area for clinical test room is not available
	· Area for nursing station is available. Doctor's also sits there.
	· Waiting room with toilet, doctor's duty room, clinical test room, sister's duty room, store, Clean utility, treatment room, dressing room, dirty utility & janitor's closet are not available.
Toilets	Not there
PMGV System	· PMGV system is not present.
Ventilation	· Proper ventilation is not there.
Electrical outlets	· It is good & sufficient for all equipments present
Observations	The ICU is located on the ground floor close to the entrance; the corridor in front of it is crowded with public traffic. There are 2 pediatric ventilators both out of order, 5 pulse-oxymeters, 1 suction and 2 warmers.

Table No 39

Analysis:

- The ICU's at SCB hospital are scattered across the campus. The surgical ICU's have been accommodated close to the related OT. The medicine ICU is located on the ground floor of the medicine building, the corridor in front of it is always crowded and noisy, also one side of the ICU faces the parking area where a lot of patient's attendants are usually gathered.
- A four bed medical ICU is too inadequate for the kind of patient load the hospital caters to.

- At least one cubicle should be dedicated as an isolation bed with 2/3rd height glass walls between the rooms and the corridor to allow visibility of patient and minimum cross infection. As per standards one isolation bed should be provided for every ten Intensive care beds.
- The area per bed in the cardiology ICU is approximately 50Sqft while that in the paediatric ICU is 36Sqft, this is too less when compared to the accepted standards for an ICU which is 150Sqft per bed.
- The ICU's do not have a well planned HVAC system and an adequate noise control system
- The non-cubicle curtained area should have a clear space of at least 4 ft. 6 in. between beds, and 3 ft. 6 in. between the end bed & wall, there should be 3 ft. between head end of the bed and the wall and 4 ft. at the foot end to permit resuscitation procedures, endotracheal intubation, etc. Space between beds is essential not only to accommodate bulky equipment but also to allow easy access to the patient.
- In the ICCU and NICU there is only one point for entry and exit for man and material (dirty as well as clean). The hospital staffs enter the Intensive care units directly without washing their hands, changing their cloths or foot-wears. A replanning of these intensive care areas would allow inclusion of a proper circulation system as well as all necessary ancillary areas like clean utility, dirty utility, pantry, duty rooms, janitors' closet and toilets.
- The NICU has to be redesigned as per the standard to include areas like a reception, change area, clinical test room, feeding area, septic care area, hand wash area and all other ancillary areas mentioned above.
- There should be a separate medication area containing a refrigerator for pharmaceuticals, a double locking safe for controlled substances, and a table top for preparation of drugs and infusions.

3.5.3.2 OTHER CLINICAL SUPPORT SERVICES

Physiotherapy

The physiotherapy department is located on the ground floor of the orthopedic department. The department is fully functional, but most of the equipments are not functional. The department has three rooms (physiotherapy room, physiotherapist room and store room which were locked). The corridors are used as the waiting area for the patients/visitors. The civil and electric condition of the department is very poor. The department lacks male/female wash rooms for patients/relatives.

Particulars	Availability
Waiting room with toilet	N.A
Reception/office/records	Yes
Electrotherapy cubicles	Yes
Gymnasium	N.A
Store	Yes
Patient/visitor toilet	N.A

Table No 40

Analysis:

The poor aesthetic condition of the department can hurt the sensitivity of the patients. There are no toilet facilities for patients/visitors (male and female). The space constraint in the department prevents the provision of a complete physiotherapy care as many essential types of equipment cannot be accommodated. There is also no provision of proper ancillary areas.

Blood Bank

A part of the first floor (1600 sq ft approx) of the general surgery building (on the left side of the main entrance) is occupied by the blood bank. The blood bank has a common reception, registration and waiting area with 30 chairs. On to the left side of the entrance there is the rest room with one couch for donors to rest after donating blood and a common bathroom for donors/staff near the room. To the right side of the entrance there is a separate air conditioned room for blood collection with two couches and a separate storage area connected with it. The electrical fittings, accessories and cabling are in poor condition.

Particulars	Availability
Room for registration and medical examination	No separate room, done at the reception counter
Lab for blood group serology (A/C)	No separate room
Lab for blood transmissible diseases (syphilis, malaria, hiv-antibodies, hepatitis-antibodies) (A/C)	Common area shared for serology and transmissible diseases
Blood collection room (A/C)	Yes
Blood component preparation (shall be A/C) – 50 M ²	N.A
Sterilization cum washing	N.A
Blood storage Area	Yes
Area for quarantine of blood and reagents not suitable for use	N.A
Store cum records room	Yes
Staff room	N.A
Blood bank in charge room	N.A

Patient waiting area	No separate room, common space shared with the reception/registration
Patient refreshment/ rest room	Yes
ICTC counseling room	N.A
PPTCT counseling room	N.A

Table No 41

Analysis:

The blood bank is one of the departments for which there are very strict norms for setting up as well as running it as it forms one of the most vital departments of a hospital. The blood bank at SCB hospital will need to be re-planned so as to adhere to the accepted norms laid down for it.

CSSD

The CSSD is in a single room in the administration block with only one entrance. The floor area is of 500 sq ft approx, with 2 two horizontal steam sterilizers and a steel rack for segregating sterile and un-sterile linens and instruments. The wiring and fittings were renovated along with the ceiling and walls. It also has another room attached to it with an area of 150 sq ft which is lying vacant.

Particulars	Availability
Receiving area for soiled articles	N.A
Sorting	N.A
Cleaning	N.A
Packaging	N.A
Sterilizing and cooling area	Yes

Storage area for clean stocks (not sterile)	N.A
Storage area for sterile stocks	N.A
Dispatch area for the sterile packs	N.A
CSSD supervisor's room	N.A
Staff change room with toilets and lockers	N.A

Table No 42

Analysis:

The CSSD is the backbone of the operating theatres, for this reason it has to be planned keeping in mind a zoning system similar to the OT – materials enter the CSSD from a dirty area (sorting area) and leave it from a highly sterile area (the sterile store) with the washing, packing and sterilizing areas in between. The CSSD at SCB hospital does not have any particular zoning system; all the functional areas are in one room. The location of the CSSD has to be ideally in close proximity to the OT and ICUs. At present each OT has its own sterilization unit in addition to the CSSD, a better solution would be to completely centralize the CSSD with the provision of a flash sterilizer for each OT. To accommodate more rooms for the services and cater to the present load of the hospital, the department will need expansion



A sterilization unit within an OT complex

Dietary Department

Dietary Department is located opposite the super specialty OPD which is intersected by a service road. It is a newly built single storied building having reception counter on right of the entrance and a dietician's room on the left. Adjacent to the reception counter there is a room which is occupied by central stores. Adjacent to the dietician's room there is a space (100 sq.ft.) lying vacant and next to it is a dietary store and toilet on the right. Presently the hospital does not provide cooked food to the patients.

Particulars	Dietary Services
Location	Opposite the super speciality OPD building
Availability of kitchen	<ul style="list-style-type: none"> • Kitchen is available behind the central store
Condition of physical infrastructure	<ul style="list-style-type: none"> • The condition of physical infrastructure is satisfactory
Availability	<ul style="list-style-type: none"> • Area for reception of kitchen stores is available
	<ul style="list-style-type: none"> • Area for dietician's room is available
	<ul style="list-style-type: none"> • Area for preparation is available
	<ul style="list-style-type: none"> • Area for pot / utensil wash is available
	<ul style="list-style-type: none"> • Area for cooking is available
	<ul style="list-style-type: none"> • Area for pan wash is available
Storage facilities	<ul style="list-style-type: none"> • Storage facility for poultry, vegetables, dry items (rice, atta etc), fuel store (coal/wood/gas), dairy items & refrigeration facilities are not available.
Disposal of kitchen waste	<ul style="list-style-type: none"> • Area for kitchen waste disposal is not available.
Hand washing facility	<ul style="list-style-type: none"> • Hand washing facility is not available.

Ventilation	· Cross ventilation is there.
--------------------	-------------------------------

Table No 43

3.5.3.3 SUPPORT SERVICES

Linen & Laundry Unit

The linen and laundry section is in an old building located away from the main service area. The block has a floor area of 1700 sq ft approximately; it includes two rooms facing each other with a corridor in between. One of the rooms is used as a manager's office and the other as a store and delivery area of washed linens.

The corridor is the area where the actual laundry is, it has an out of order boiler occupying one side of the corridor. The other side has washing machines and hydro-extractors. The washing machines and the hydro-extractors are out of order.

The condition of the ceiling and walls are damp and the wiring and fittings are very old and in a poor condition.

Particulars	Availability
Reception/collection and sorting	Common area is shared for manager office and reception. Common room for sorting/collection is available.
Change room	N.A
Sluicing and autoclaving	N.A
Mending	N.A
Washing machine, driers, hydro extractors, calendaring and pressing	Only washing machine and driers available
Mattress sterilizing	N.A
Boiler House	No separate house, it is inside the laundry area itself

Stores	N.A
Janitor closet	Yes
Sanitary	N.A
Manager's office	Common area is shared for manager's office and reception.
Staff change room	N.A

Table No 44

Analysis:

The water supply to the laundry is through two taps. There is no proper sewerage system for waste water discharge. The laundry requires more space and addition of other equipments like calendar machines and press. The condition of the infrastructure is not conducive for the workers.

Medical Records Department

There is a centralized medical record department in the hospital. It is located adjacent to the forensic medicine department in a single storied block with asbestos roof and an approximate floor area of 600 sq ft. Management of records is done manually. Appropriate storage facilities such as racks and cabinets are also not adequate; the MRD was therefore found to be heaped with piles of medical records even on the floor. There is no separate room for the MRD in charge and other staff. An ideal medical record department should have the following desks none of which was found to be existent.

Particulars	Availability
Vital Statistic Desk	N.A
Admission Check Desk	N.A
Census Desk	N.A

Assembly and Deficiency Check desk	N.A
Incomplete Record Control Desk Discharge Analysis and Administrative Statistics desk	N.A
Coding and Indexing Desk	N.A
Complete Record Control Desk	N.A

Table No 45

Analysis:

The desks mentioned in the table above need to be incorporated since they are essential to scientific record management.

The ventilation and illumination of the room is very poor. There is also no pest control and fire fighting measures even though these are very much required for any record maintenance area. The department is located away from the main areas in a separate block, availability of data from all concerned department is always delayed causing a hindrance in maintaining updated records.

Fire protection facility:

The hospital does not have any smoke detectors, sprinkler system, fire alarm, fire shield doors as well as fire signage's and no fire training has been given to the hospital staffs. Fire extinguishers are present only in limited areas within the hospital building complex. In the absence of any designated fire escape route, there should be ramps which can be used for the same. There should be under ground fire water reservoirs as well.

Biomedical Waste Unit

The biomedical waste unit is next to the morgue opposite to the service road. The unit has a separate area surrounded by a boundary wall. The unit has one long hall type room where all the biomedical waste management equipment like incinerator, microwave and shredder are installed and one separate room for the Biomedical Medical Waste in charge.

There is a separate space for gathering all the disposables from the hospital collected by vans, from where the wastes are treated by respective equipments and then buried in the burial pit at the back side of the unit in the same boundary.

The hospital has a full fledged Bio Medical Waste Management Committee which is represented by all key hospital functionaries and health authorities of the region. Though generation, segregation, collection and temporary storage of the waste is done in house the disposal of waste is outsourced to a private party. All the equipments are owned by the hospital, only the services are outsourced. Color coded bins have been provided throughout the hospital as per statutory guidelines and segregation of waste is done at the point of generation.

Mortuary

Particulars	Availability
Body Store	Yes
Autopsy Room	Yes
Doctor's change room with toilet	Yes
Viewing room	Yes
Relatives waiting area	Yes , without any sitting arrangements
Janitor's closet	Yes
Mechanical Boiler	N.A

Table No 46

The mortuary is in a separate area with boundary wall and two entrances one for dead bodies and the other for the staff and doctors. The morgue is in a single storied old building. The only rooms utilized are the doctor's room which is on the left side of the building, the morgue attendants' room and the autopsy room where the post mortem is done. The same autopsy

room has a partition on the other side used for cold storage area with refrigeration cabinet (Blue star) for four dead bodies.

Analysis:

The mortuary department is under poor state of civil and electrical maintenance which needs immediate attention. Many rooms are lying vacant. The department has two gates one for doctors/staff and for dead bodies. There is no sitting arrangement in waiting area for the relatives of the patients. The mortuary should ideally have a grieving room next to it for the relatives

Central Stores

The central store is situated in a single storied old building at the backside of the dietary department. The condition of the building with asbestos ceiling is dilapidated and the walls have seepage and fungal growth.

The store has been divided into technical store (for pharmacy items) and a non technical store (for instruments, equipments, linen, and stationeries), each section occupies three rooms. . In between the two sections there is a store officer's room and an attached toilet used by staff. Inside the boundary wall of central stores all condemned equipments and furniture's are kept.

Central Store	
Particulars	Store house for Pharmacy & other Materials
Location	Backside of the dietary department
Approximate area	
Availability	Stores are divided into technical store & non technical store.
	Each store has 3 rooms.
State of maintenance	Renovation of Civil, Plumbing & Electrical outlets is required
Ventilation	All the rooms are provided with fans.

Table No 47



Technical Store

Parking

The parking facility of the hospital is scattered around the hospital in various areas. Though the space for parking is not earmarked except in front of the OPD and adjacent to the RDC building the vehicles were parked at the respective areas. There are eight areas where vehicles were parked out of which only two places were earmarked. The areas are

1. In front of the OPD
2. In front of the Dental OPD
3. In front of the Super specialty OPD
4. In front of the Administration office
5. In front of the Orthopedic department
6. Adjacent to the RDC building
7. In front of the Medicine department
8. In front of the O&G department

Apart from that vehicles were also parked where ever there is a vacant space available in front of any concerned department. Out of all the parking areas, management of only two areas were outsourced one in front of the OPD (for two wheelers and four wheelers) and other adjacent to the RDC building(for two wheelers). There is no separate space allotted for staffs/doctors vehicles around the hospital premises.

Particulars	Availability
Staff vehicle parking	Not designated
Visitor vehicle parking	Not designated
Separate four wheeler parking area	Yes in front of the main OPD
Separate two wheeler parking area	Yes adjacent to RDC building
Does this facility need expansion	No, but needs to be reorganized & earmarked

Table No 48

Ambulances

Ambulance Services	
Particulars	Ambulance Services
Location	. One small room provided in casualty.
Garage available	. There is no arrangement for covered garages.
Available number of ambulance	. There are 3 ambulances available.

Table No 49

Vertical circulation – Elevators/Ramps	
Particulars	Vertical circulation – Elevators
Location	Dept. of Medicine, Surgery, Obs. & Gynaecology. & Ortho
Available number of lifts	<ul style="list-style-type: none"> No of available lifts is not sufficient because half of them are not in working condition. Surgery building – one lift Medicine building – one lift O&G – one lift Orthopaedic building - nil
Suitable in emergency	<ul style="list-style-type: none"> The lifts are of very old model and not maintained properly, it works very slowly and sometimes stops on the way. Therefore the lifts are not suitable for use as a means of egress in emergency
Carry both people and goods	<ul style="list-style-type: none"> Yes mostly doctors, staff & patient.
Lift for disposal of waste	<ul style="list-style-type: none"> There is no dedicated lift available for disposal of waste.
Lift for food distribution	<ul style="list-style-type: none"> There is no dedicated lift available for food distribution.
Arrangement for catering to mechanical or electrical failures	<ul style="list-style-type: none"> There is no arrangement for catering to mechanical or electrical failures.

Table No 50

RAMPS	
1) Availability of ramps	Yes only in surgery department
2) Provision of level landing at each door opening in the direction of travel	Yes
3) A wheel chair bound patient can easily move up the ramp	Yes
4) Ramp is covered	Yes
5) The surface of the ramp is nonslippery	Yes

Table No 51

Number of elevators and provisioning of ramps are not adequate .Only few buildings have got elevators and only surgery department has got a ramp. Department of medicine has got 2 elevators, 1 for Patients (30 passengers) and the other one for doctors (8 passengers) which is not functional. Both the lifts are in bad shape and are more than 30 years old.

Dept of Neurosurgery has got 2 elevators, out of which one is not working.

Dept of Surgery and OBG has got 1 bed elevator each which are more than 40 years old.

Out of these 3 lifts are of JJ make and Rest of them are OTIS Make.

Signages:

A directory needs to be installed in local language which will give an overall view of the location of all major facilities in the hospital premises. A reference map with appropriate color contrast, size and clear definition of the entire hospital campus can help people locate departments easily. The present reference map requires repairing and renovation for better visualization. Presently there are signages depicting the departments and the main OPD. Presence of information signages across all areas of the hospital would help in sharing information with the patient/visitors. Safety, regulatory, prohibitory and advisory signages need to be installed at various crucial areas for better safety of the people. Numbering of all the concerned rooms to a directory board in each floor will help in locating them.

IT System:

Presently the hospital does not have any IT back up for its systems and processes. To implement the IT system, space is required for setting up the entire department. Preferably the IT department should be located away from the patient service area in the administration block so that it can be monitored and operated without the interference of any outsider.

Telemedicine department

Telemedicine department is located on the first floor of the Department of Pathology. Telemedicine Centre had a seminar hall with a seating capacity for fifty people. The centre has a connectivity of VSAT through ISRO and it mainly conducts CME and connects to centers like AIIMS, SGPGI Lucknow, and PGI Chandigarh along with other medical colleges and district hospitals of the State of Orissa to provide telemedicine consultation to the spoke centers. There was no support for projection of images in the telemedicine unit due to absence of projector.



The telemedicine at SCB

Analysis:

Due to lack of space for sitting arrangement the department cannot arrange seminars & workshop by connecting it to premier health care institutes of India (PGI, SGPGI, & AIIMS).

3.5.4 USER PERSPECTIVE STUDY OF SCB MEDICAL COLLEGE HOSPITAL, CUTTACK

The success of a hospital is generally measured by the quality of patient care it provides and the efficiency with which it operates. The healthcare facility planning should be conducive enough for both the users and the providers so as to ensure delivery of effective and efficient patient care. A user perspective study has been conducted for patients receiving treatment at SCB Medical College Hospital to envisage the patient's inputs in the expansion plan for the facility. The sole objective of the study was to feel the patients' pulse while determining the future needs of this hospital.

The user perspective study has been carried out through a structured questionnaire. Two different sets of questionnaire have been prepared for OPD and IPD respondents. The same is based on various criteria upon which patient's perception of a healthcare facility depends. Since OPD and IPD are the key patient care areas in a hospital, respondents of this study primarily comprises of people using this services.

A cross section of patients have been chosen consisting of about 100 outpatients and 100 inpatients. Among the outpatients, patients from all OPDs and specialty OPDs have been included. The inpatients also have been distributed into respondents of different specialty wards. The findings of the study have been detailed out as follows.

CRITERIA FOR SELECTING THE FACILITY

The most pertinent reasons for selection of SCB Medical College Hospital as a preferred healthcare facility can be attributed to its competent team of doctors, inexpensive treatment and good infrastructure. The above graphical representation is based upon the combined responses of the respondents in the OPD & IPD.

Since the majority population in the catchments area is of the lower economic strata, the criteria for selecting a healthcare facility is largely confined to fulfillment of some basic needs such as affordability and availability of doctors and services. Other factors such as accessibility, behavior of staff, cleanliness and drugs availability also feature on their wish list but ranks low in priority. Good infrastructure ranks high on the patient priority list, improvement and up gradation of the same can therefore lead to increase in the patient satisfaction.

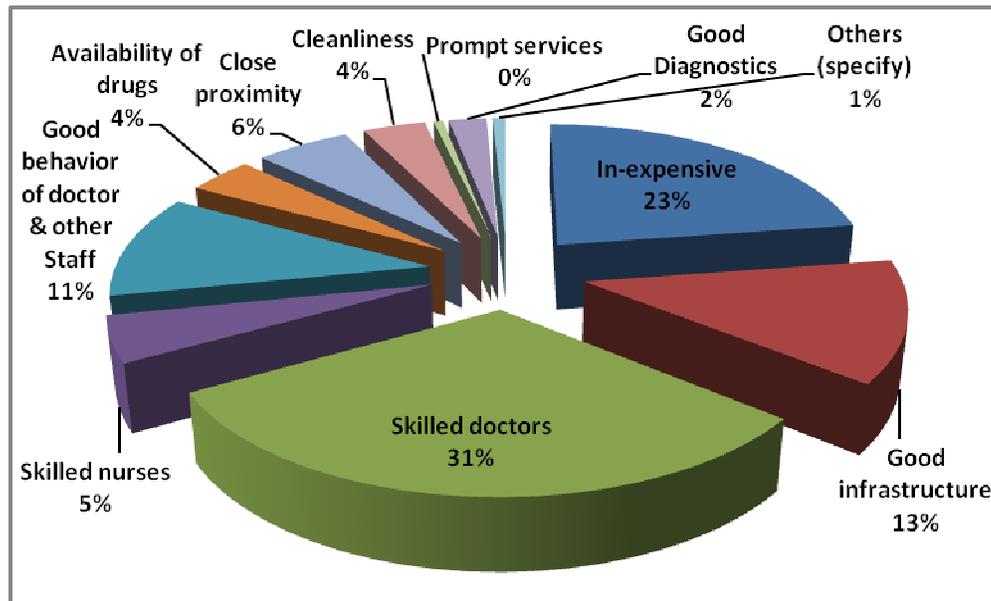


Chart 3

This graph shows that inexpensive service from skilled doctors and a good infrastructure is what the patients look for

OPD Users' Survey: Key Findings & Analysis

The outpatient department is a key patient care area in a hospital catering to the majority of ambulatory patient caseload. Though the span of stay for patients is less in the OPD rather than the inpatient wards, yet patient satisfaction is greatly influenced by the services and facilities provided in the OPD and other related ancillary areas. A cross section study has been conducted for OPD patients of SCB Medical College based on certain predetermined criteria to elicit patient perspective about the same. The criteria have been enlisted as follows:

- Criteria for selecting the facility
- Facilities, amenities & conveniences for patients in the OPD
- Availability & adequacy of service provision
- Feedback about general quality parameters
- Patient friendliness

A series of questions under each of the above heads were asked to the patient respondents to infer a holistic view of the patient perspective of the OPD at SCB Medical College, Cuttack.

The feedback thus received has been compiled and analyzed through statistical techniques. Key findings of the same have been illustrated below. These findings will be an essential ingredient in planning patient friendly reorganization and expansion plans for the hospital.

FEEDBACK ABOUT FACILITIES, AMENITIES & CONVENIENCES

Signages

A major point of concern for the patients as revealed by the survey is difficulty in finding service locations. Due to the vastness of the campus spreading about 120 acres, locating various service departments is a very daunting task for the patients. External signages are hardly present in the campus while the internal signages have faded in various prominent locations.

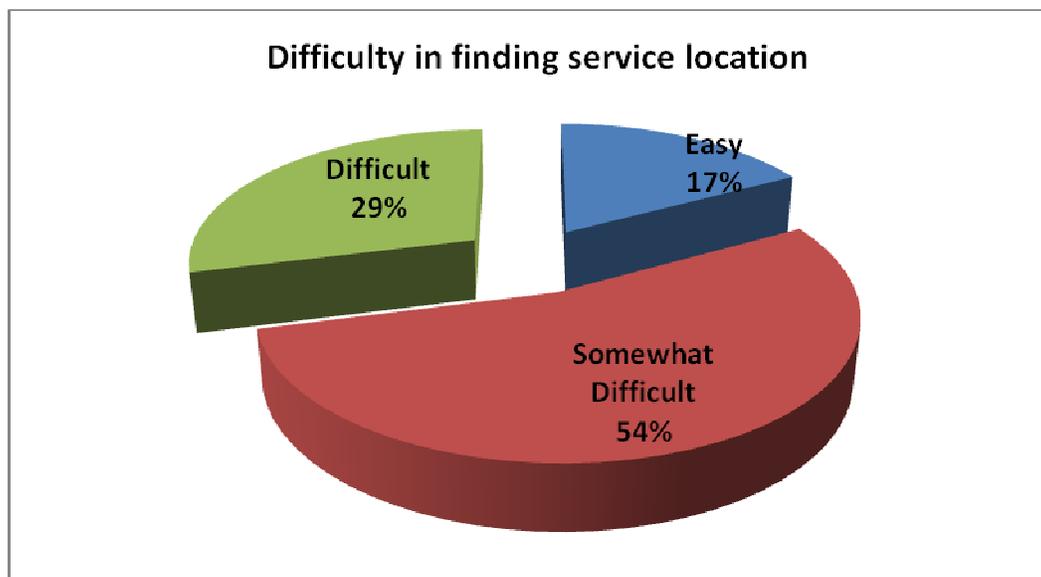


Chart No 4

Due to lack of prominent signages at appropriate locations patients generally tend to take help of the reception desk for way finding. The signage's in the OPD need to be refurbished. Local language should be essentially incorporated in all of the same.

Means of Locating a service

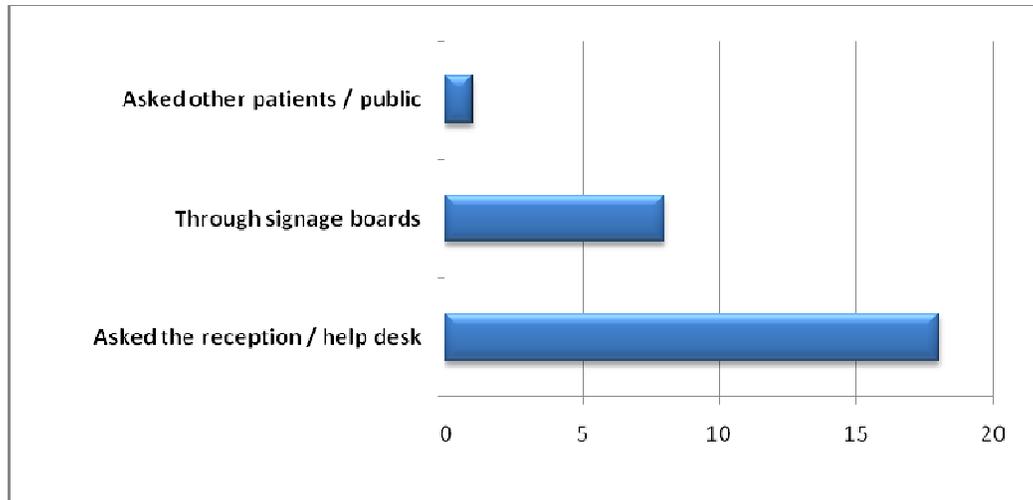


Chart No 5

Waiting Area / Amenities

Majority of the patients rated the public amenities in the OPD as inadequate due to the acute shortage of the same. Basic facilities such as waiting area, drinking water facilities, toilets are insufficient to cater to an enormous daily OPD caseload of about 1200 patients. Patients are forced to wait outside the OPD block because of such deficiencies.

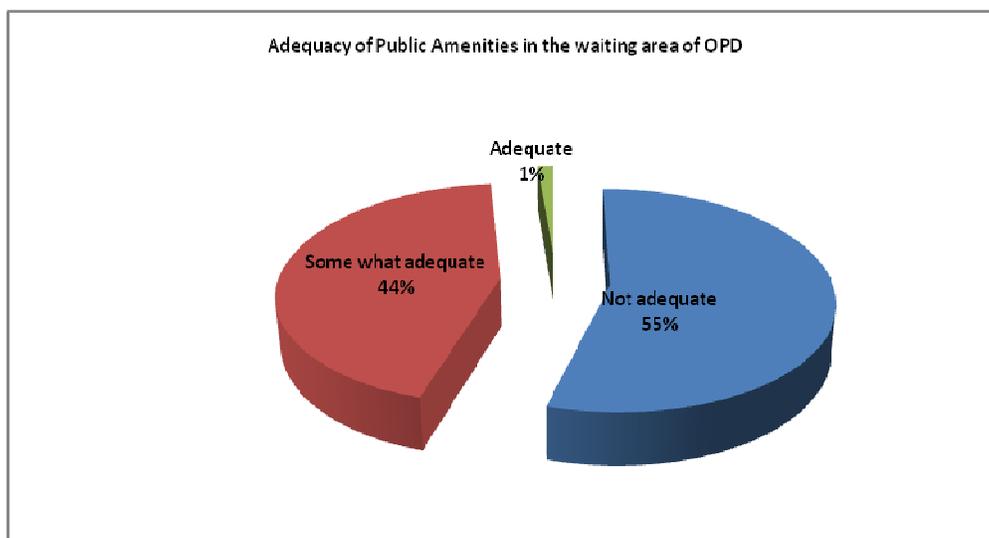


Chart No 6

User Perspective Requirement of Facilities / amenities

Seating chairs, toilets & drinking water dispensers are the most sought after facilities in the OPD premises. The OPD also should be well lit and properly ventilated to ensure maximum patient satisfaction.

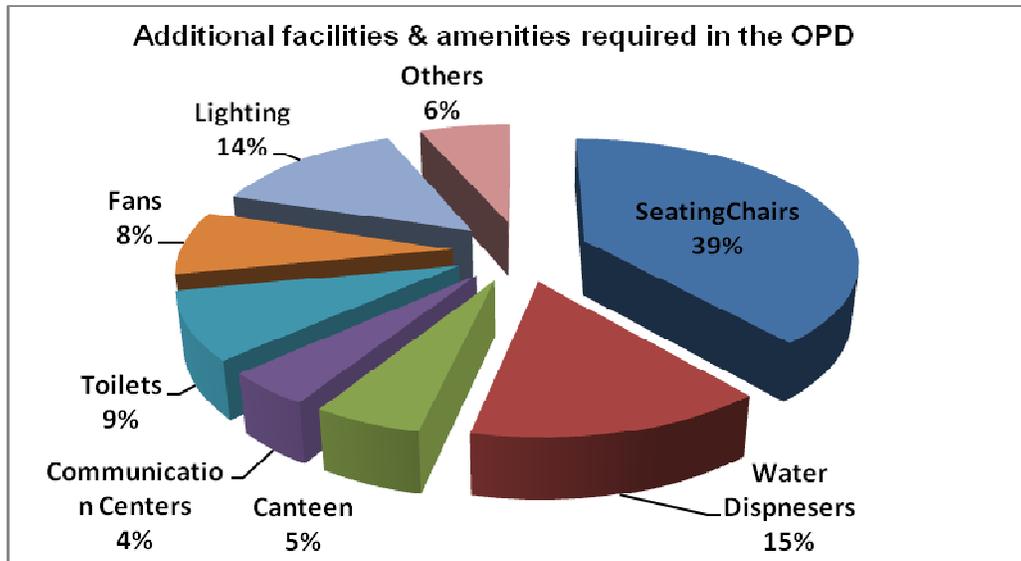


Chart No 7

Accessibility factors

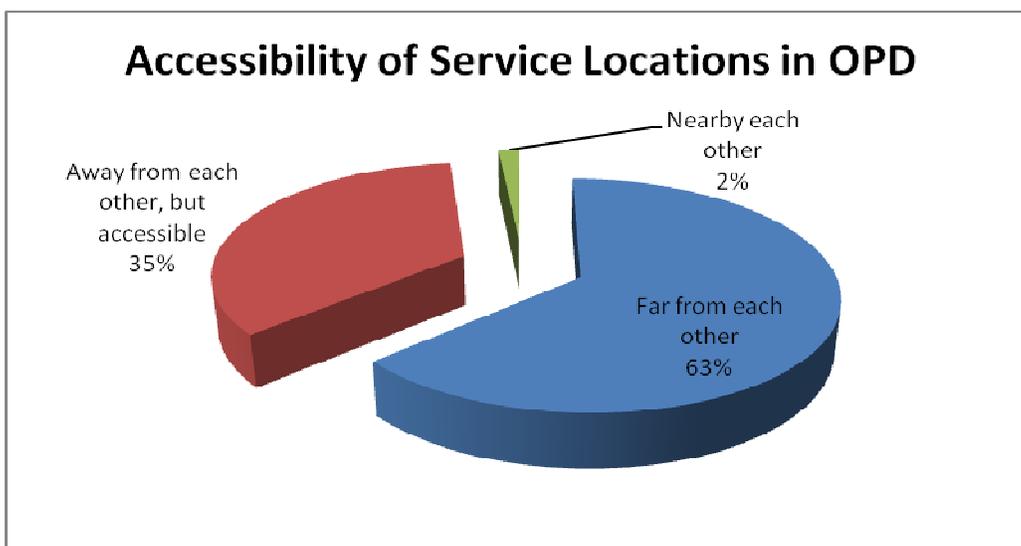


Chart No 8

Majority of the respondents felt that the services are located too far away from each other

Parking facilities

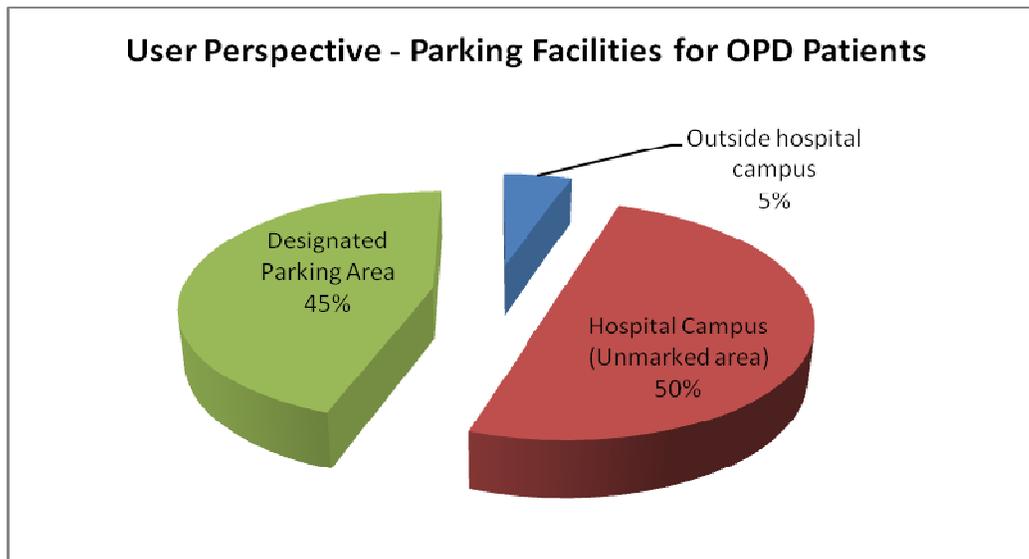


Chart No 9

According to 50% of the patients areas are not earmarked for car parking so they park in any vacant space

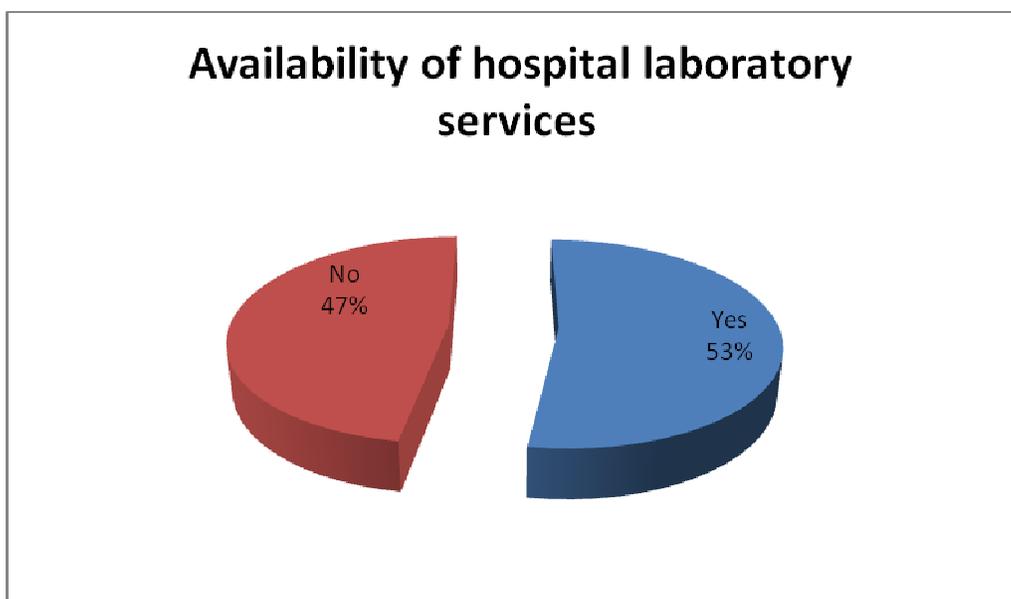


Chart No 10

For the graph below the respondents were asked if they had to get some laboratory from outside the hospital due to non availability in the hospital, 53% said yes. This indicates that there are some laboratory services that are not available in the hospital which will therefore mean we will need to incorporate them in the expansion plan

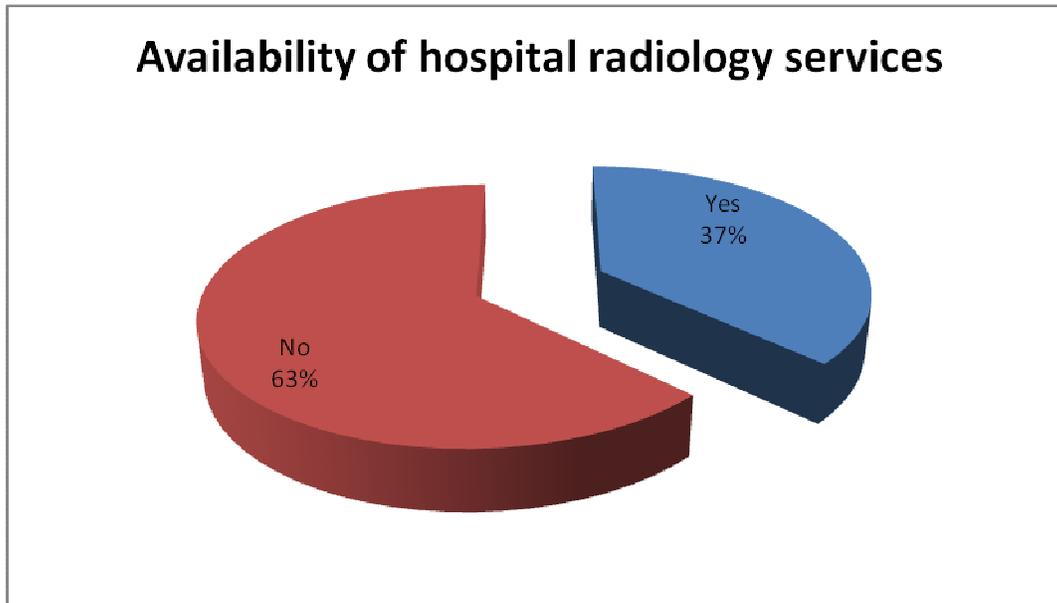


Chart No 11

Here the respondents were asked if they had to get some radiology diagnostic from outside the hospital due to non availability in the hospital, 37% said yes. Again the services not available will need to be incorporated in the expansion plan

GENERAL QUALITY PARAMETERS

The section on general quality parameters included an array of questions pertaining to the following issues of concern for the patients:

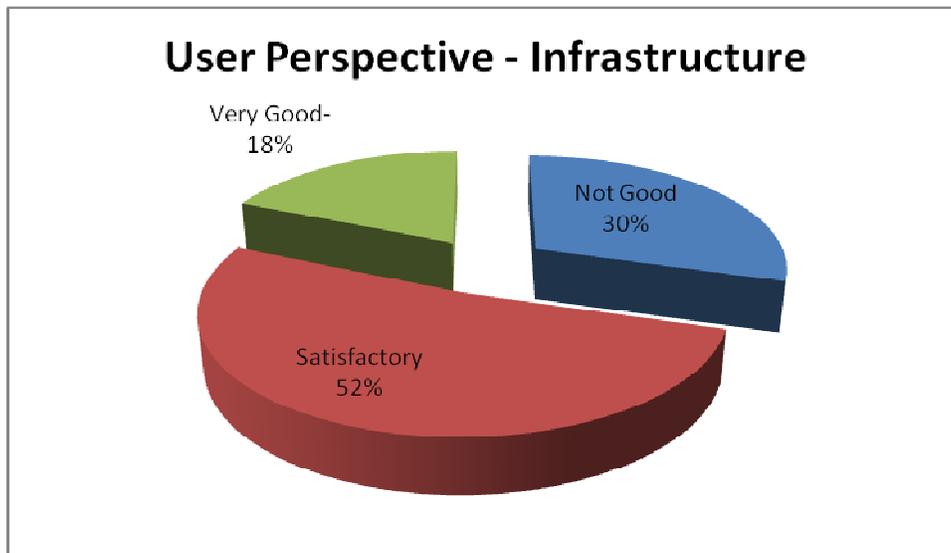


Chart No 12

More than half of the respondents were satisfied with the infrastructure

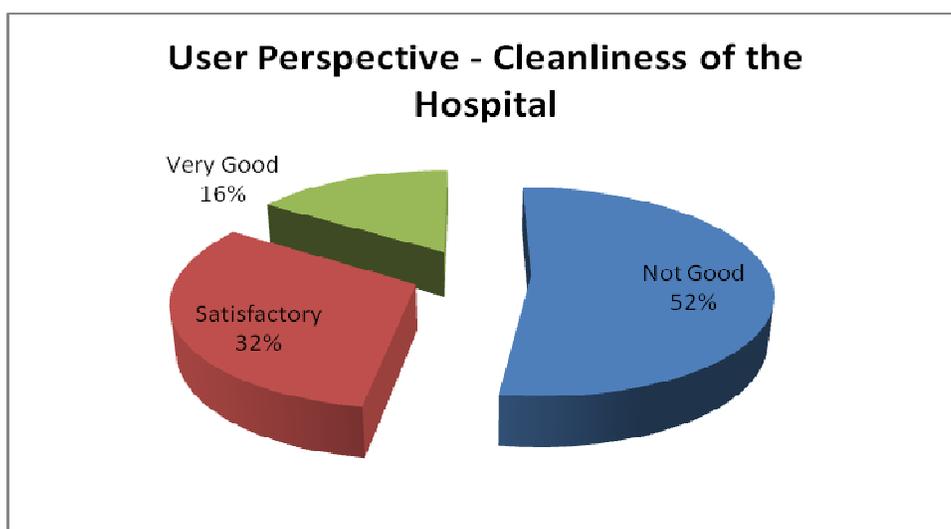


Chart No 13

Cleanliness was viewed as not good by 52% respondents

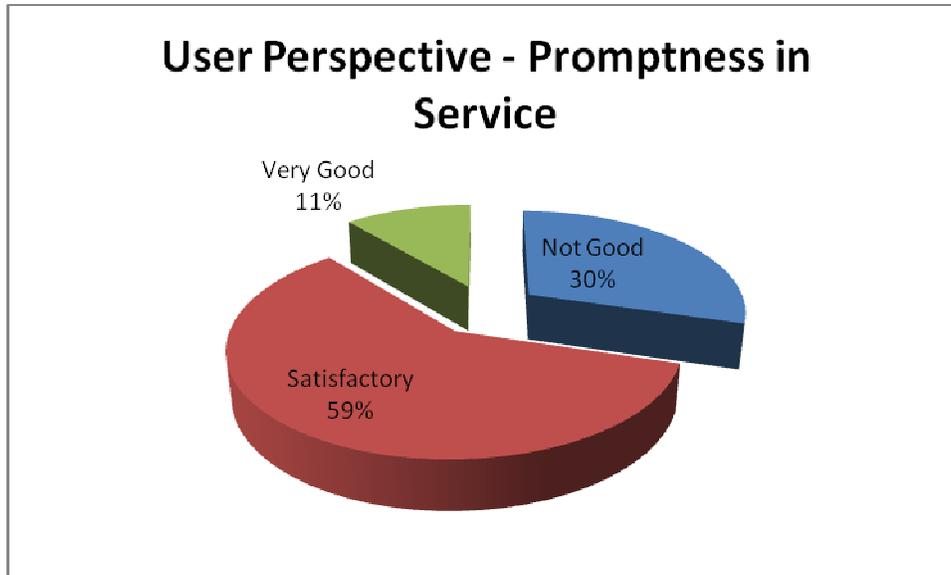


Chart No 14

The design and layout of the infrastructure is one of the important components contributing to promptness of service

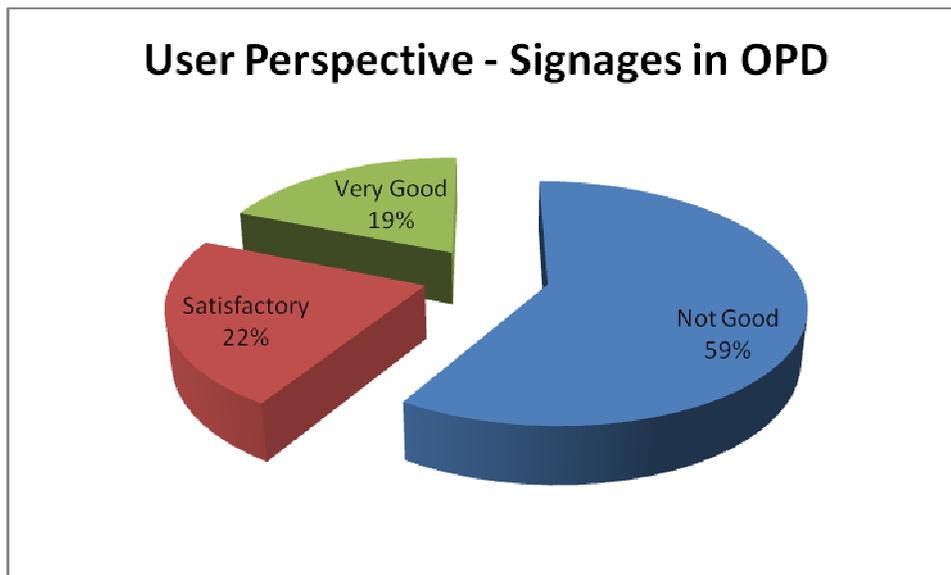


Chart No 15

The graph shows that more than half of the people interviewed were of the opinion that signages in the hospital were not adequately provided and the ones that were available were very old.

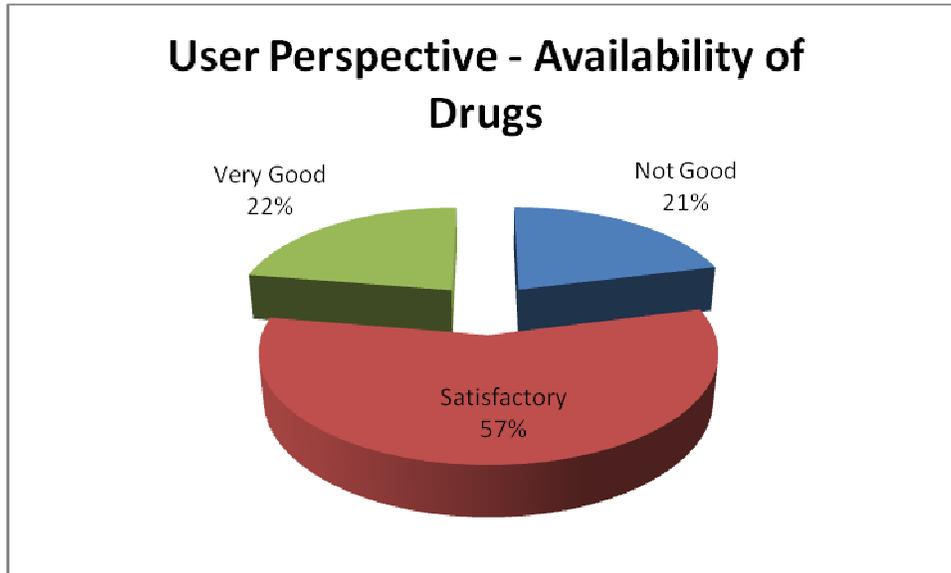


Chart No 16

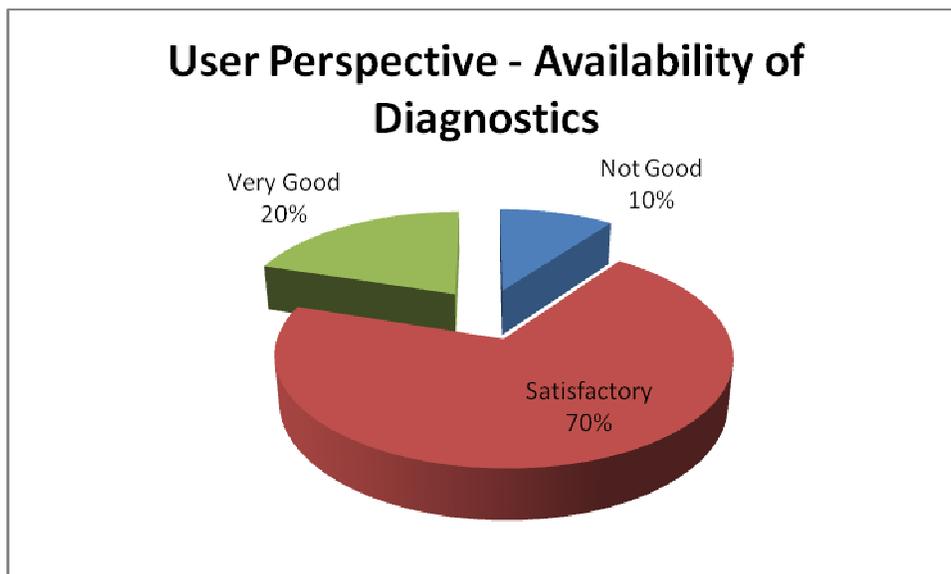


Chart No 17

Most respondents were satisfied with the availability of drugs and diagnostic services in the hospital, however a comment made by many is the distance one has to travel to avail them.

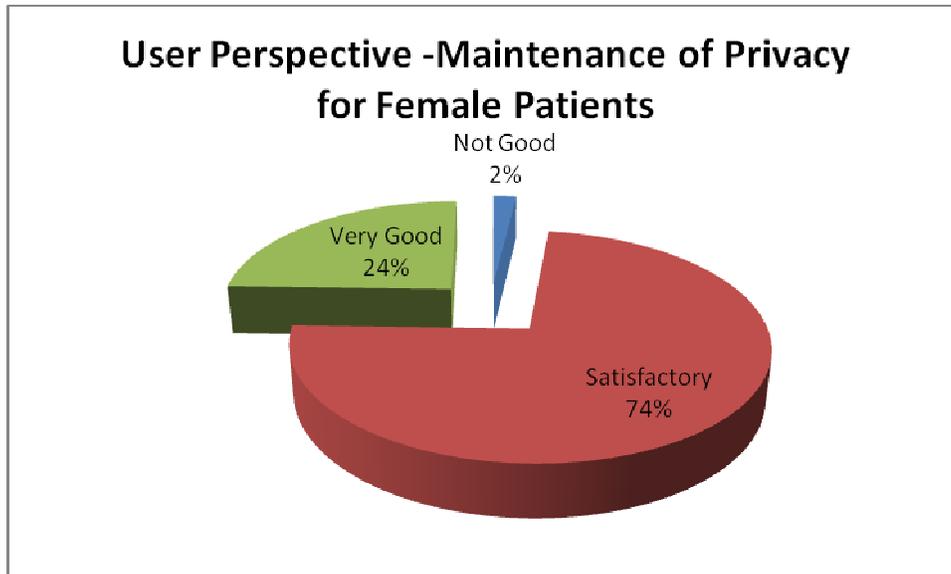


Chart No 18

Again the way the layout of an area has been planned will automatically allow or not allow privacy.

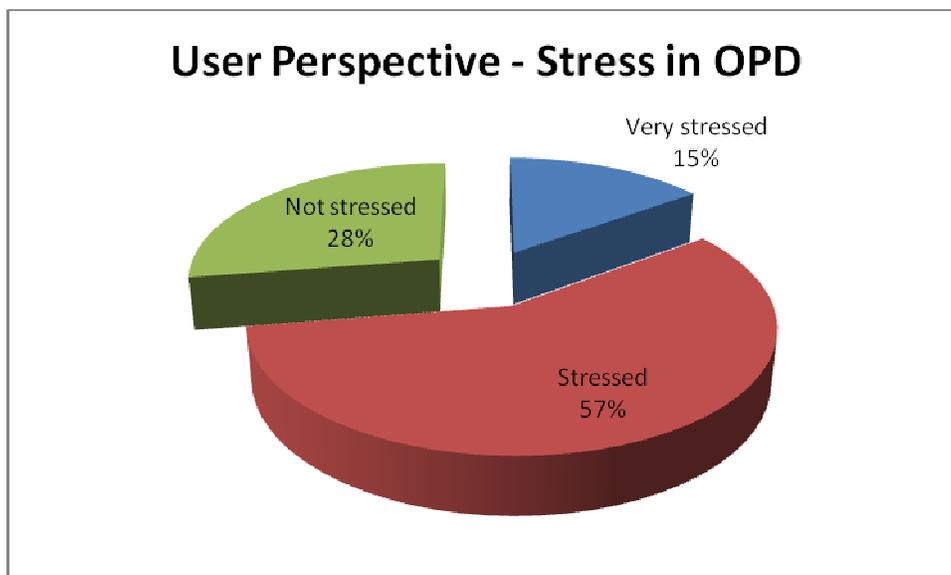


Chart No 19

57% of the respondents felt stressed out when availing the OPD services, the main reason given was having to travel a lot across the hospital to avail of services be it diagnostic or other OPD's. Another reason could be the fact that the waiting areas are very congested most of the time.

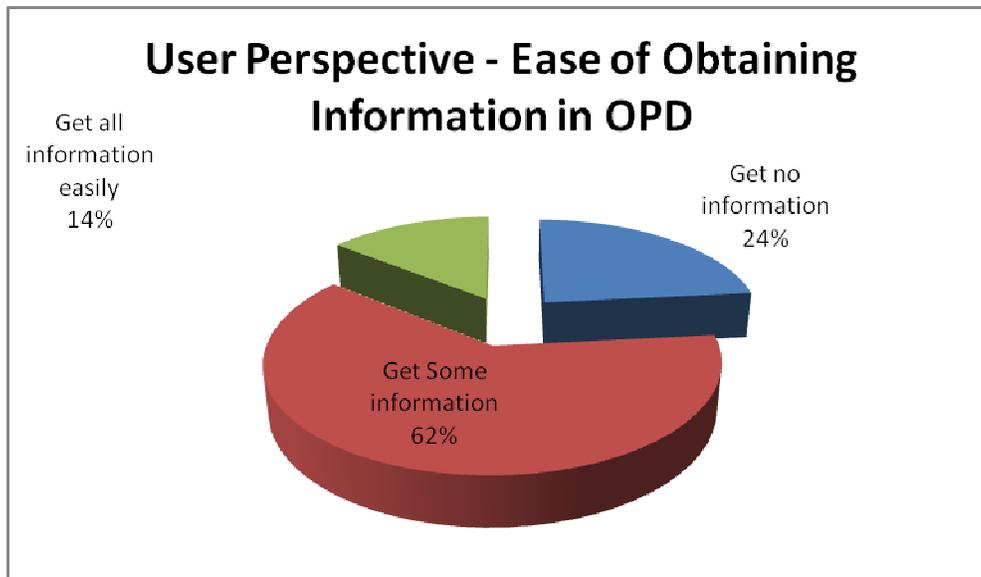


Chart No 20

The majority of respondents were not satisfied with the way they received information in the OPD, the infrastructure plan should therefore include not only signages but also visual representation of important information that is commonly required by patients coming to the OPD

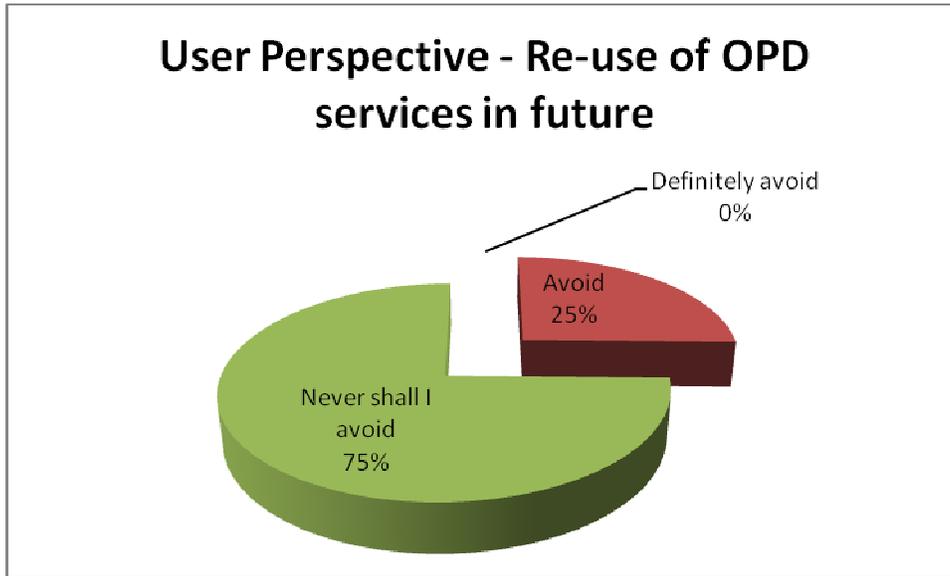


Chart No 21

PATIENT FRIENDLINESS

Apart from the service delivery and provision, the built environment of the hospital should be patient friendly to ensure effective healthcare delivery. Questions relating to various aspects of the following were asked to the respondents

- General environment in the OPD
- Ease of obtaining required information
- Patient/attendants education about their treatment modalities
- Waiting time in the OPDs
- Staff friendliness

Data analysis reveals that a majority of the respondents found the OPD to be a patient friendly service area. The response however contradicts the previous responses which show that many of the respondents are not satisfied with the facilities and services in the OPD.

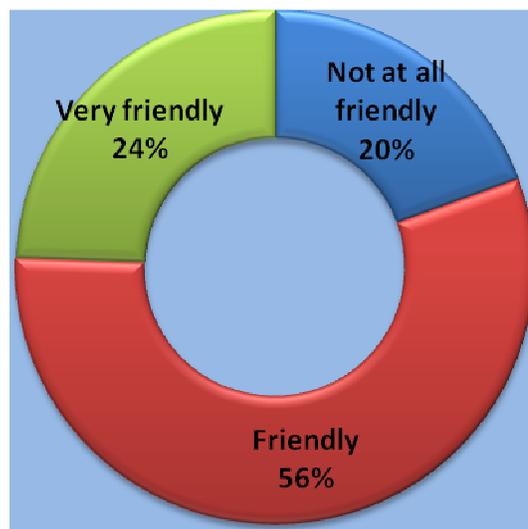


Chart No 22

3.5.5 IPD USERS' SURVEY: KEY FINDINGS & ANALYSIS

The inpatient unit of SCB Medical College consists of above **1200 beds** spreading across 24 departments. A cross-sectional study has been conducted for in patients of SCB Medical College based on certain predetermined criteria to elicit patient perspective about the same. Respondents for the same have been drawn from patients of different specialties. The criteria have been enlisted as follows:

- Criteria for selecting the facility
- Facilities, amenities & conveniences for patients in the OPD
- Availability & adequacy of service provision
- Feedback about general quality parameters
- Patient friendliness

A series of questions under each of the above heads were asked to the patient respondents to infer a holistic view of the patient perspective of the IPD at SCB Medical College, Cuttack. The feedback thus received has been compiled and analyzed through various statistical techniques. Key findings of the same have been illustrated below. These findings will be an essential ingredient in planning patient friendly reorganization and expansion plans for the hospital.

Facilities, Amenities & Conveniences

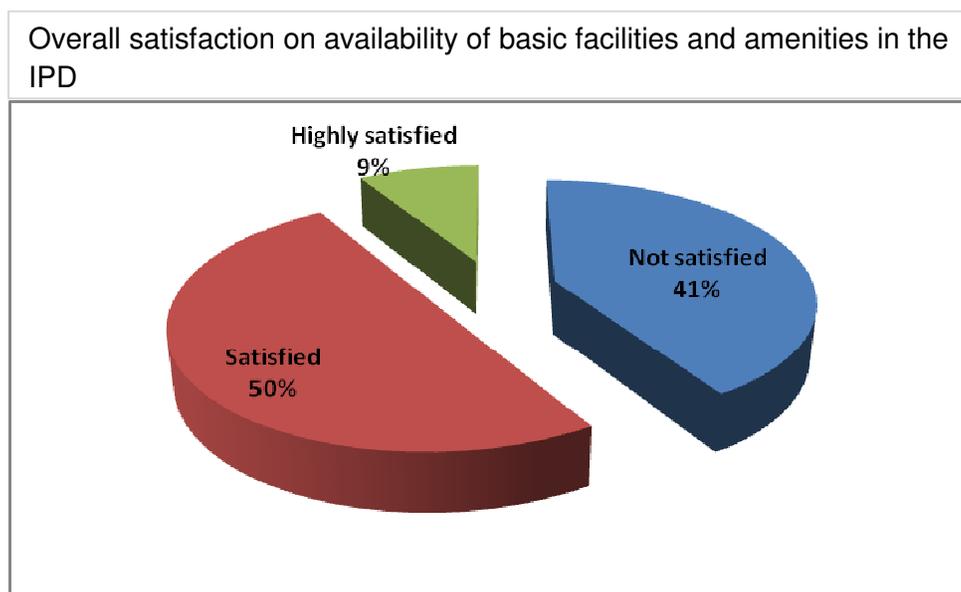


Chart No 23

Sanitary Annexes

Sanitary annexes such as drinking water facility, toilets, baths, and wash basins are one of the major components of the basic amenities that should be provisioned for. About 50 to 60% felt that the provision of sanitary annexes was inadequate and maintenance of the same was very poor. Physical observation also supports this fact that the wards seriously lack in these facilities.

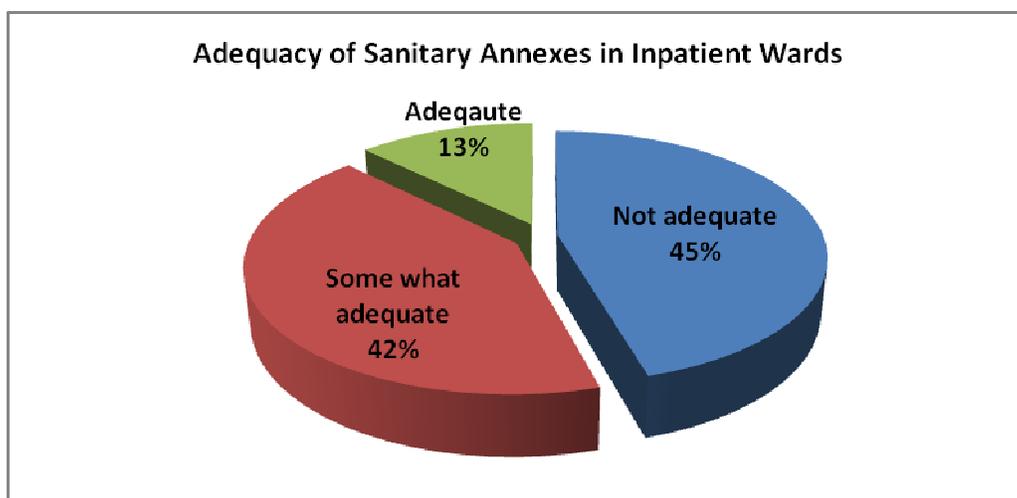


Chart No 24

Food / Diet Related Amenities

The quality and proper supply of diets to patients is of utmost importance to ensure optimum healthcare delivery. Dietary services of SCB Medical College Hospital is in a poor condition. Only bread, milk and eggs are supplied to the patient which is disliked by most as reflected by their responses. Many of them are therefore dependant on food delivered from home while there are no options for people from far off places.

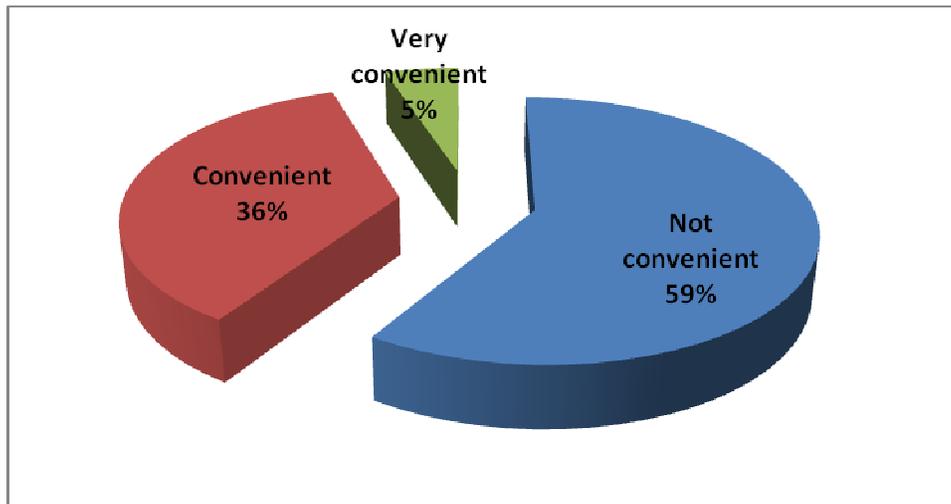


Chart No 25

Parking facilities

Ample vacant space is there in the campus which the patients perceive to be as parking areas as revealed by the survey. No dedicated parking area with proper shades exist .

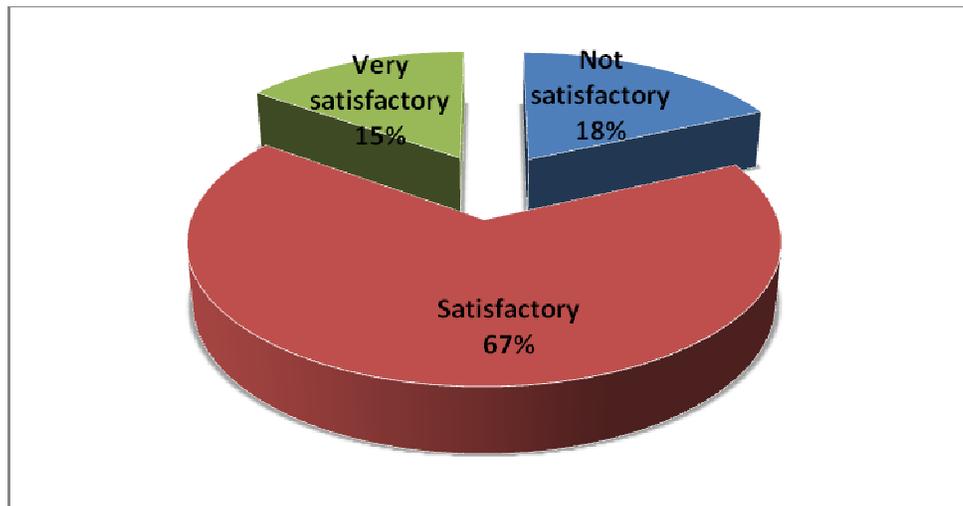


Chart No 26

GENERAL QUALITY PARAMETERS

The section on general quality parameters included an array of questions pertaining to the following issues of concern for the patients:

- Infrastructure
- Cleanliness
- Promptness in the services
- Signage/marketing system
- Availability of drugs
- Availability of diagnostic services
- Maintenance of privacy
- Availability of doctor

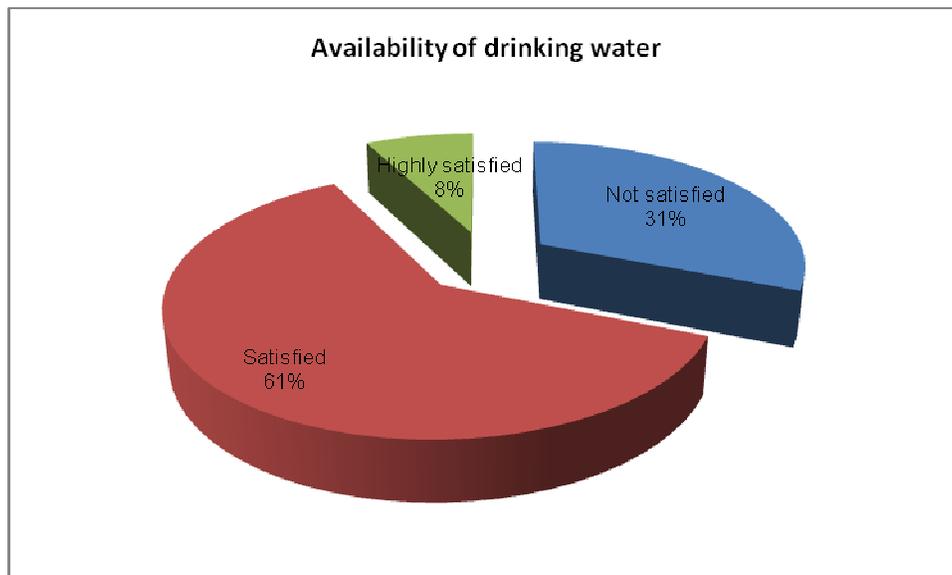


Chart No 27

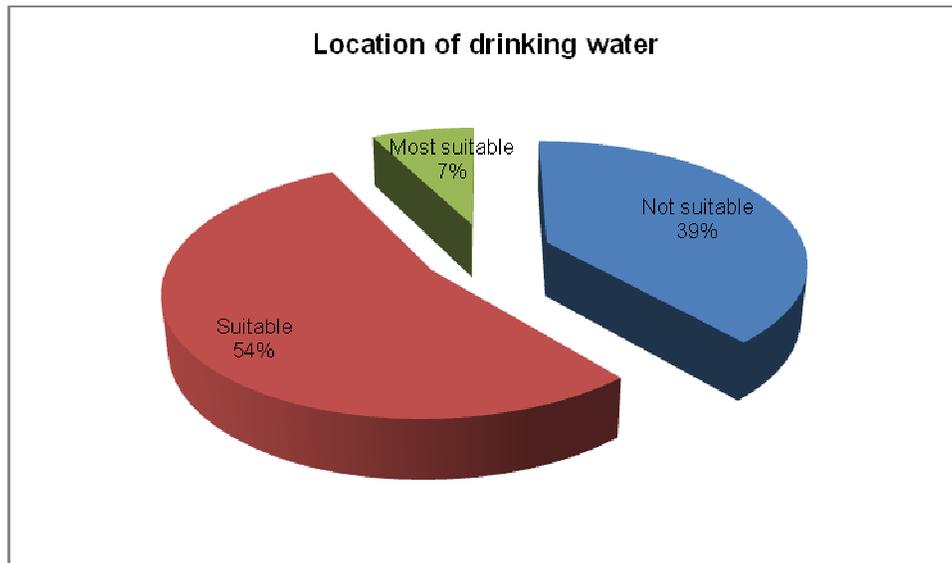


Chart No 28

Many of the patients were happy with the availability of drinking water in the hospital

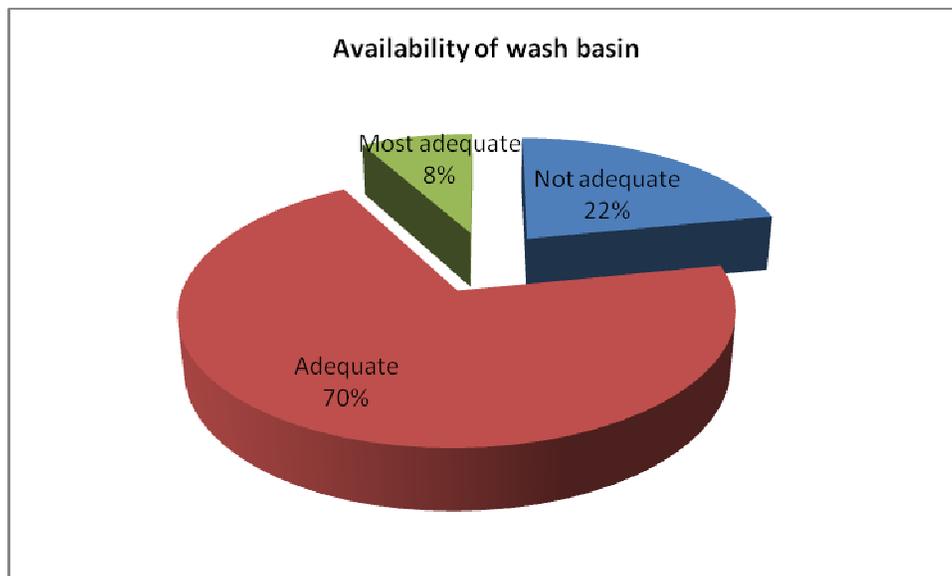


Chart No 29

As per 70% of respondents the provision of wash basins is adequate

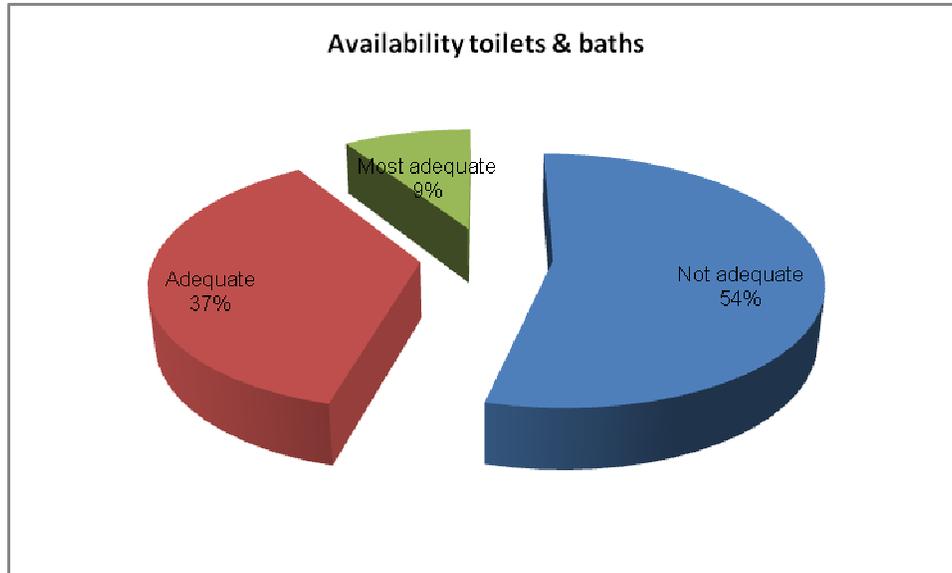


Chart No 30

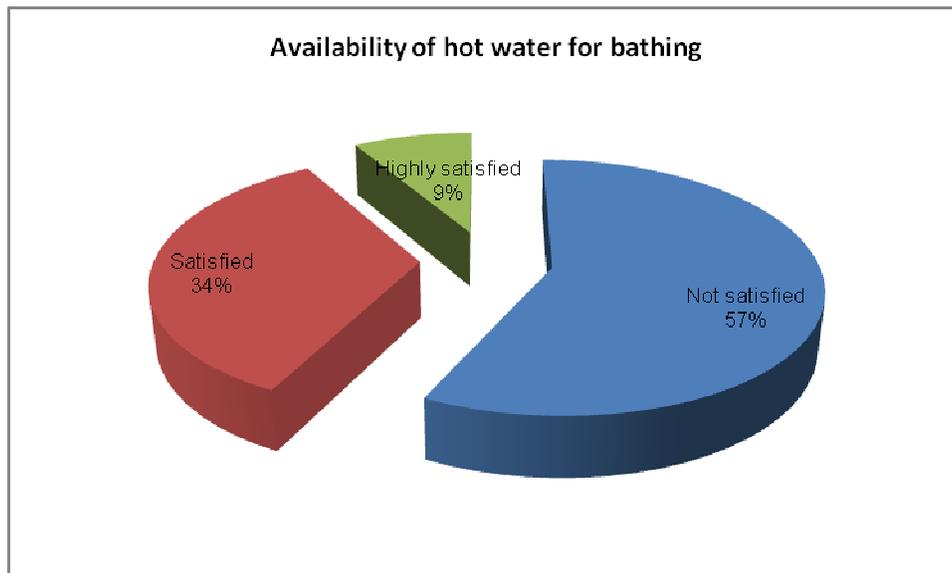


Chart No 31

Majority of the patients felt that sanitary and bathing facilities provision in the hospital was not adequate

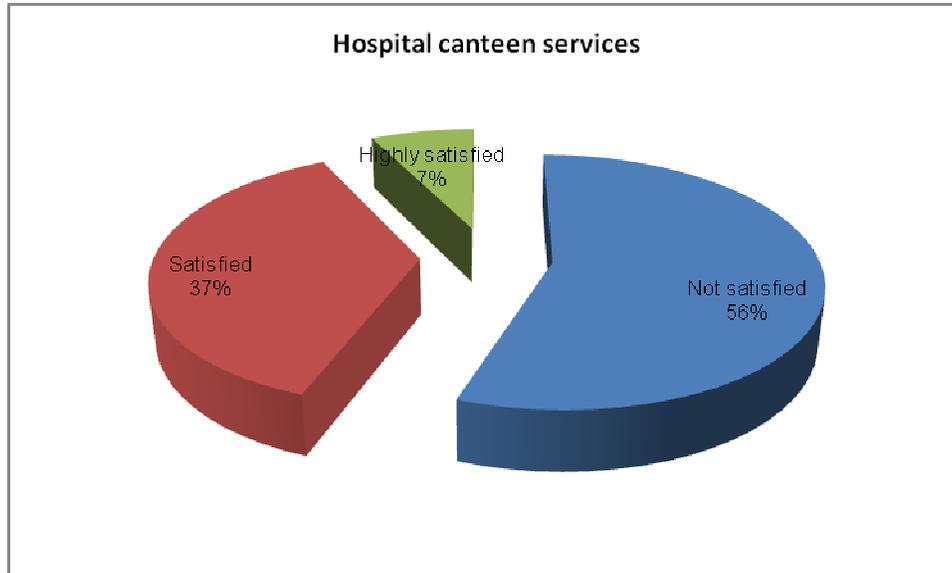


Chart No 32

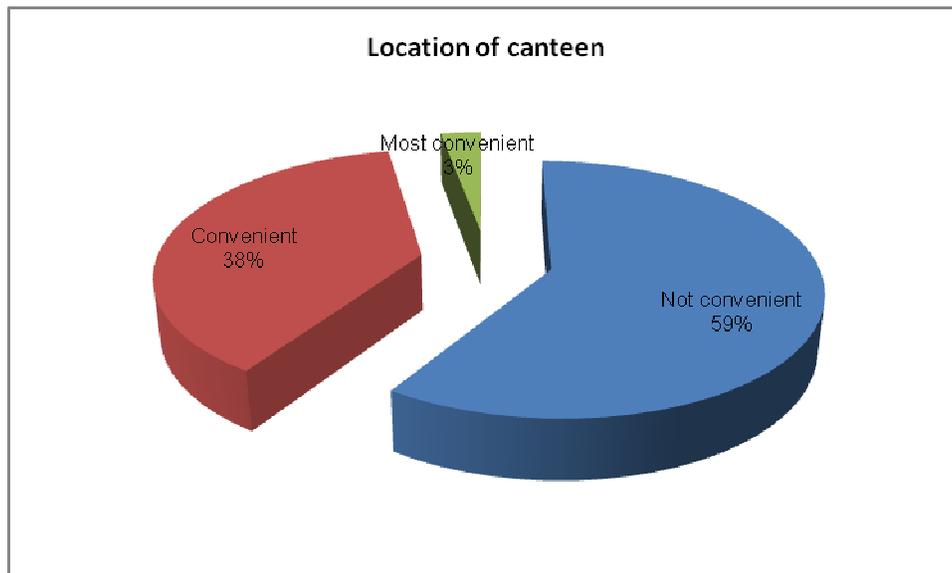


Chart No 33

Quite a number of respondents commented on the need of a good canteen within the hospital complex.

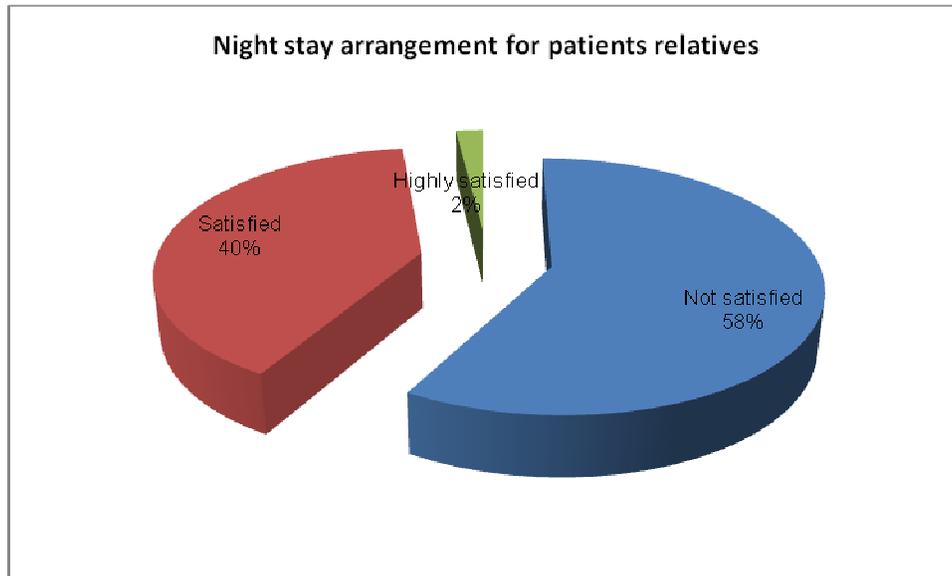


Chart No 34

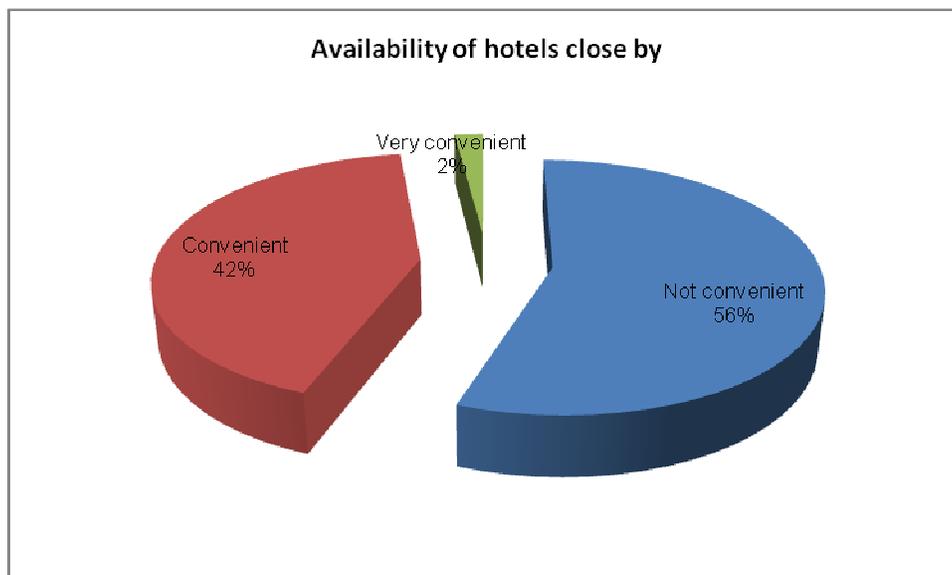


Chart No 35

The two graphs above indicate that provision of a night stay facility for relatives/attendants is a requirement

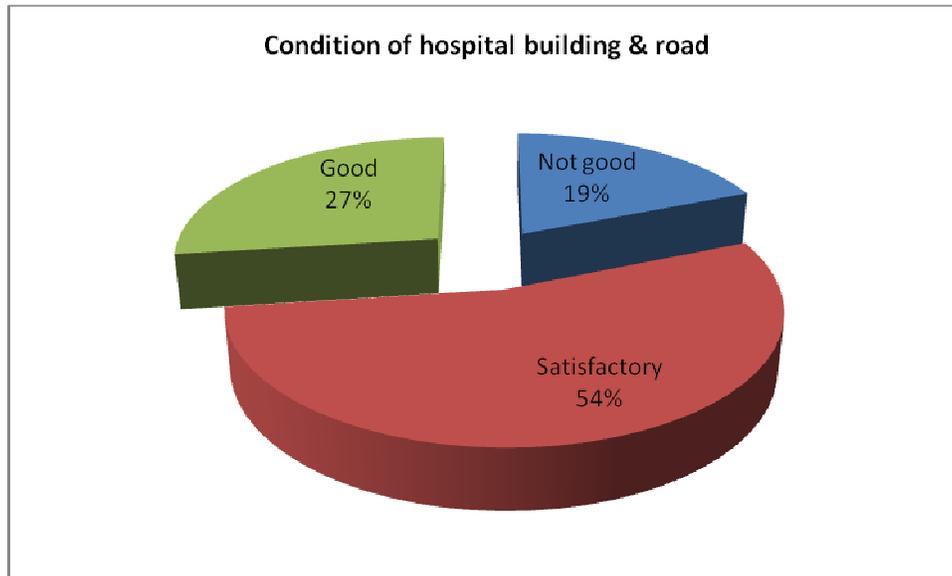


Chart No 36

Majority were satisfied with the condition of the road but felt that it should not be used as a public road

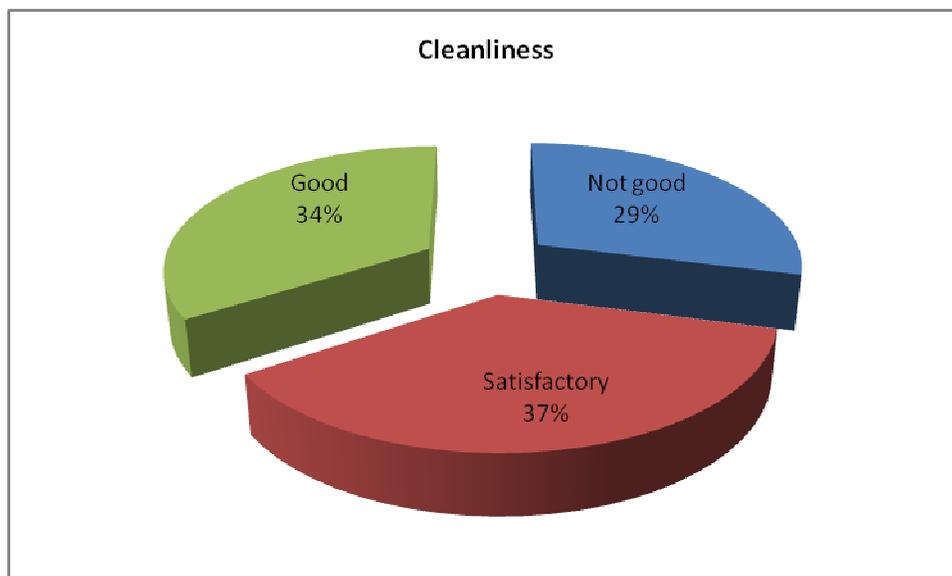


Chart No 37

Majority of patients are satisfied with the present infrastructure of the hospital but a large number of them have a negative perception about the clarity of the signage system present in the hospital. Service delivery and behavior of hospital staff are also well accepted by the patient fraternity. Data analysis of all responses combined have revealed that about 60% of the patients are satisfied with the services and facilities in the OPD while 13% feel that they were not good. We must however understand that these are inputs from patients who mainly belong to the lower socio economic strata

PATIENT FRIENDLINESS

Apart from the service delivery and provision, the built environment of the hospital should be patient friendly to ensure effective healthcare delivery. Questions relating to various aspects of the following were asked to the respondents

- General Environment in the IPD
- Ease of obtaining required information
- Admission/Discharge Procedures
- Patient/Attendants education about their treatment modalities
- Visiting Time for attendants/relatives
- Staff Friendliness

Data analysis reveals that a majority of the respondents found the IPD to be a patient friendly service. The response however contradicts the previous responses which show that many of the respondents are not satisfied with the facilities and services in the IPD.

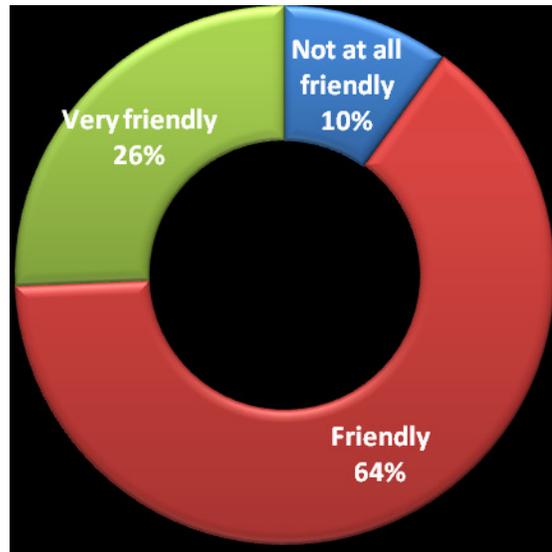


Chart No 38

3.5.6 PROVIDERS PERSPECTIVE STUDY OF SCB MEDICAL COLLEGE HOSPITAL, CUTTACK

Name of department	Name of H.O.D	Constrains	Suggestions/feedbacks
1.Oral & maxillofacial	Prof. Indu bhusan Kar	Separate OT not a part of OT complex.	<p>a. Creation of central OT complex (space identified behind neurosurgery department and the burn ward for construction of new OT complex) which can be connected to the department of surgery.</p> <p>b. Foot over bridge/pavement with roof to interconnect</p>

			<p>departments</p> <p>c. Instant power backup for all OTs and ICUs (Inverter)</p>
2. Emergency	Dr. P.K Behera & Dr. T.R Sarangi	<p>The casualty is divided into many small rooms making it difficult to monitor patients</p> <p>b. Radiology, Blood bank and Pathology department are far away from the casualty.</p> <p>c. Insufficient air conditioning</p> <p>d. Poor condition of the walls and ceiling (seepage and peeling of the plasters)</p> <p>e. Inadequate circulation space</p> <p>f. Critical equipments (crash cart, ECG, patient</p>	<p>a. Common hall including resuscitation area segregated with curtains/glass partition</p> <p>b. Required emergency OT</p>

		<p>monitor and other resuscitation equipments)</p> <p>g. Space not allotted for resuscitation/triage and observation area.</p> <p>h. Procedure room available but no OT</p> <p>i. ICU is located far away from the casualty</p> <p>j. Poor maintenance</p>	
3. Paediatrics	Dr. S.L Das	<p>a. Less number of beds in ICU as well as in wards</p> <p>b. Average 8 cases refused admission because of shortage of NICU beds</p> <p>c. Average 50 patients admitted in addition to available beds.</p>	<p>a. More beds in wards, NICU and PICU</p> <p>b. Seminar room and teaching room in the departments</p> <p>c. Space identified behind pediatric department for expansion</p>

		(100 beds and 150 IP patients)	
4. Neurosurgery	Dr. B.D Lenka	<p>a. Bad drainage system</p> <p>b. Shortage beds</p> <p>c. Improper location with no ventilation</p> <p>d. Circulation</p>	<p>a. Separate block for neurosurgery and neurology with waiting room for patients attendant which is close to casualty, radiology and orthopaedic</p> <p>b. Expansion of general and ICU beds.</p> <p>c. To shift the CTVS department to new cardiology building and shift the neurosurgery department to that place.</p> <p>d. Recovery room</p> <p>e. Seminar/classroom for 30-40 students</p> <p>f. Library/museum</p>
5. Cardiology	Dr. M Behera	<p>a. Shortage of beds</p> <p>b. Circulation</p>	<p>a. Expansion of general and CCU beds</p> <p>b. New Cathlab</p> <p>c. 2 treadmill, 1 holter</p>

			<p>machine</p> <p>d. Central air-conditioning</p> <p>e. Seminar/classroom</p> <p>f. EPS facility</p> <p>g. 1 Multi slice CT and 10 defibrillator</p> <p>h. Space: a new building is under construction</p>
6. Pathology	Dr. Madhunati Saswati	<p>a. Store room for condemn equipments</p> <p>b. Circulation space</p>	<p>a. Computer room</p> <p>b. Seminar room</p> <p>c. 1 lecture hall, 1 demonstration hall</p> <p>d. Hematology: Separate room for research purpose</p> <p>e. Cytogenetic equipments</p>
7. Biochemistry	Dr. Prakash chandra	<p>a. 25 % of present caseload referred outside due to lack of necessary equipments</p> <p>b. New MRI</p>	<p>a. Separate hospital and college wing</p> <p>b. 24 hrs service for all the hospital across the city</p> <p>c. Medical genetics, Cell</p>

		building coming up which will block the passage/road to biochemistry department.	shorting d. HPLC and cell surface marker e. Hormones and tumour marker
8. Physiotherapy	Dr. Pradhan	<p>a. Shortage of rooms</p> <p>b. Circulation space</p> <p>c. Lack of necessary equipments</p> <p>d. Space constraint led to sharing of rooms with orthopedic department</p>	<p>Proposed treatments</p> <p>a. Ultrasonic therapy</p> <p>b. Infra red</p> <p>c. Shortwave diathermy</p> <p>d. Muscle stimulator</p> <p>e. Cervical traction</p> <p>f. Tense machine</p> <p>g. CPM for knee</p> <p>Rooms required</p> <p>h. Office room</p> <p>i. Electrotherapy</p> <p>j. Suspension therapy</p> <p>k. Occupational therapy</p> <p>l. Exercise therapy</p>

<p>9. Medicine</p>	<p>Dr. Sidhant Das</p>	<p>a. No of beds (wards & ICU) too less for the patient load</p> <p>b. Laboratory does not work 24 hours, after 7pm lab investigations have to be sent outside the hospital. Specially difficult for patients referred from other towns and villages</p> <p>c. Medical ICU is on the ground floor where flow of patients and attendants is very high, also cars are parked right outside the ICU causing disturbance in terms of noise</p> <p>d. The department is huge but critical machines like ABG machines, ECG machines are not</p>	<p>a. No of inpatient beds to be increased to more than double</p> <p>b. At least 10% of the beds should be ICU + HDU beds</p> <p>c. Medicine department should have a ward dedicated to natural calamities</p> <p>d. Lecture theatre/teaching room/seminar room in the department</p> <p>e. Demonstration room</p> <p>f. Restriction of non hospital traffic in the road going across the campus</p> <p>g. Direct connecting corridor between the old and new medicine blocks</p> <p>h. Interconnecting corridor or air bridge between the hospital buildings/departments</p>
--------------------	------------------------	---	--

		<p>available</p> <p>e. Almost 70% of patients requiring ICU admission with ventricular support are referred to other facilities per day</p> <p>f. On an average about 15 patients are refused ICU admissions per day due to unavailability of beds</p>	
10. Radiology	Dr. Jyoti Mohanty	<p>a. The department is spread in two buildings making it difficult to function effectively specially with deficiency of manpower</p> <p>b. No waiting area for patients</p> <p>c. No proper parking space</p> <p>d. No proper</p>	<p>a. Housing the entire Radiology and imaging wing in one building. A new construction can come up at the site where the existing imaging centre is located</p> <p>b. MRI equipment required</p> <p>c. This building should have the MRI, one CT scan, one USG, one Doppler, 2 to 4 X ray</p>

		<p>transport system or transport way for patients</p> <p>e. A large no of patients are being referred outside for MRI</p>	<p>machines on the ground floor and the rest of the machines on the first floor</p> <p>d. The building should have its own dedicated reception with a common waiting plus sub waiting in front of each investigation room. It should also house rooms for faculty, retiring rooms for emergency doctors and emergency staff, toilets for patients and staff.</p> <p>e. Waiting area should also have an area earmarked for stretchers and trolleys</p> <p>f. The building should also house teaching facilities like classrooms and seminar halls. The seminar hall can also be used as a teaching room for PG students.</p> <p>g. Another classroom will be required for teaching UG students (75 to 100),</p>
--	--	---	---

			<p>this room will also be used to teach DMRT students (20 per batch)</p> <p>h. Parking space dedicated for faculty and patients</p> <p>i. Good landscaping in front of the department</p> <p>j. Centralized department, all the equipments can be shifted to the main department from the RDC block.</p>
11. Urology	Dr. Dateswar Hota	<p>a. Inadequate infrastructure</p> <p>b. High inpatient load</p> <p>c. Lack of waiting area</p> <p>d. Poor maintenance of department</p>	<p>a. Focus on super specialty development</p> <p>b. Required 20,000-22,000 sq ft which should include wards, OTs, urodynamic lab, lithotripsy, OPDs, waiting area, circulation space</p> <p>c. Needs 22 more beds</p>

12. Orthopedic	Dr. Pradhan	<ul style="list-style-type: none"> a. Circulation b. Beds c. Lift/ramp d. OPD in the main OPD block 	<ul style="list-style-type: none"> a. Separate ward for spinal injury and hand surgery b. Provision for more beds in the newly constructed department c. Total emergency setup in the old block for accident cases d. The physiotherapy part to be used as OPD with plaster room, x-ray unit and the opposite side of the ground floor which has more space can be used for physiotherapy.
13. Ophthalmology	Prof.Madhumati Mishra	<ul style="list-style-type: none"> a. Department scattered in the building 	<ul style="list-style-type: none"> a. Build more floors and shift the IP and OT to those floors b. Required 3 more rooms with OPD retina unit, low vision unit, eye bank c. 1 minor OT in the OPD d. Teaching/seminar

			room
14. Plastic surgery	Dr A K Choudhury	<ul style="list-style-type: none"> a. Space b. Maintenance 	<ul style="list-style-type: none"> a. More beds b. Trauma centre c. Zoning system in OTs
15. Obs & Gynae	Dr. Ashok Kumar	<ul style="list-style-type: none"> a. Circulation Space b. Beds c. Poor condition of the building d. Labour room e. Neonatal beds 	<ul style="list-style-type: none"> a. New labour room complex with waiting area and reception, 1 or 2 consultation rooms b. 2 post delivery room c. Foot over bridge or ramps to inter connect blocks d. Labour room to be renovated into a labour complex with consultation room where the patient can be guided further to labour room or to high risk

			labour room and delivery room. She also wants post delivery room one for normal delivery where they keep patient for 1-2 hrs and high risk ward where they keep patient for long duration
16. Anaesthesiology	Dr. Prafulla kumar	a. OTs scattered across the hospital. b. Zoning system in the OTs c. Pre and post operative rooms	a. A wing for ICU and wards before the entrance of the OT complex. Pre operative room on one side followed by the OTs and then the post operative rooms, all the ancillary facilities being at the back side of the complex connecting it.

Table No 52

Some of the common constraints faced by the HODs are:

- Lack of circulation space
- Lack of waiting area for patient attendants
- Shortage of beds
- OTs are scattered
- Buildings are not inter connected

- Improper maintenance of departments
- Hospital campus is used by the public to pass from one part of town to another

*A major constraint voiced out by all HOD's is improper manpower distribution and supervision and inadequate manpower.

Majority of the HODs interviewed gave the following common suggestions:

- Creation of a centralized OPD block close to all the diagnostic departments,
- Increase space to accommodate more beds,
- Creation of a modern OT complex which will help in optimum utilization of manpower and resources.
- Inclusion of CSSD in the OT complex
- Waiting area for patient attendant
- Foot over bridge or covered roof pavement for transferring patients from one block to the other.

From teaching point of view all the HODs require more rooms for library, seminar/teaching room and demonstration rooms as they have provision to increase more seats.

3.5.7 KEY FINDINGS

Based on our study findings and subsequent analysis, this section of the report includes analysis of certain areas of concern that needs immediate attention.

1. The hospital campus is spread around a vast land area of 134 acres comprising of 24 specialities located in various departments.
2. After arriving at the hospital campus, patients/relatives find themselves lost as they have no idea which way to go in search of the concerned department. Due to lack of proper **signage's/way finding systems**, locating the concerned departments is a major hassle for the patients.
3. Though there are some designated **parking areas**, they are not suitably located. Patients have to travel a long distance from one area to other to reach the necessary service departments. More over as the interdepartmental distance is more between departments, patients usually commute in their vehicles to reach the concerned department and park the vehicle in front of the department in an unorganized manner. This causes a lot of congestion in the campus.
4. There is a mix of centralized and decentralized OPDs. The decentralized OPD are spread across the hospital, creating inconvenience for certain patients.
5. The general OPD block has **five access** points which is not desirable and causes unrestricted patient flow.
6. The general OPD does not have provision of facilities like **drinking water**; there is shortage of **sanitary annex and fans**.
7. All the nursing units lack proper **sanitary annex**. There is an acute shortage of **supporting/ancillary rooms** for all the wards. Clean utility and other consumables are stored in cupboards placed in different locations. Non availability of a doctor's **duty room** forces the medical officer to use the nursing station during duty hours.
8. The room of the **T.B ward** is partly shared for storing condemned articles.

9. All the OTs lack proper **ventilation** system. The **circulation** flow is common for all without a zoning system, leading to unrestricted traffic flow and congestion at one point. The OT's do not have adequate support/ancillary facilities.
10. The **blood bank** is one of the most vital departments of a hospital where strict norms are applicable for its setting up, the existing blood bank will need to be replanned to adhere to these norms.
11. The **CSSD** is located away from the main surgical departments on the ground floor of administrative block. It is just one room where all functions are performed
12. Support areas mentioned above as well as Mortuary, Laundry and MRD require a complete renovation.
13. The **clinical and support service areas** are located far away from each other. There is no connection between the buildings. To add to this there is no proper transport system for patients having to travel from one department to another. This becomes a big problem in the peak summers and the rainy season.
14. In ICUs there is no noise control causing disturbance to the patients, some ICU's are located on the ground floor close to the main entrance and therefore the corridor in front of them is always crowded and noisy. The medicine ICU has one wall facing the parking lot. The ICUs have shortage of circulation space resulting in disturbance in the traffic flow.
15. The road crossing across the campus is used as a public road with people crossing through SCB to reach from one part of the town to the other. Both users and providers felt that one side of this gate should be closed.
16. The drain along the road mentioned above is always filled with stagnant water
17. Islands of sand or water puddles are seen across the entire campus
18. Construction of a lot of new buildings or expansion of existing ones is going on.

3.5.8 RECOMMENDATIONS

Based on our study findings and subsequent analysis, this section of the report includes detailed recommendations from Medica Synergie for the strengthening of SCB Medical College Hospital, Cuttack.

This will, essentially, include the scaling up plans of the hospital in terms of infrastructure. Rationalization for such expansion plans as well as a detailed explanation of extension in bed compliment and other relevant facilities are provided.

A hospital is supposed to be ideally planned so that it is functionally adequate for the next 20 years to ensure its viability in the long run. Physical infrastructure built to provide healthcare services should always have a scope for future expansion. The hospital bed planning & distribution must incorporate inputs from a variety of factors such as catchment area, presence of other healthcare delivery infrastructure in the vicinity, population growth & migration rate, demographic composition of the patient population etc. A lot of such intrinsic factors have been taken into consideration while framing an effective master plan for SCB Medical College Hospital, Cuttack. Though non-availability of relevant data was the major constraints yet the best possible projections and estimations has been attempted in the proposed plan.

3.5.8.1 CLINICAL SERVICES

Out Patient Department

Housing all OPD's in one complex will be ideal as it will save the patients the trouble of searching for them - on entry into the hospital campus; following registration; and following a referral. The OPD complex should be located such that it is in close proximity to the Radiology & imaging services, the laboratory/laboratory collection centre, the pharmacy and the registration counters. The existing main OPD complex can be utilised for this purpose by shifting the ENT ward to another location. This will however not ensure close proximity to the areas mentioned above; a complete relocation of the complex will be the solution. Some departments like psychiatry, oncology, gynaecology & obstetrics may have to be strategically located a little away from the other OPD's as these patients usually prefer more privacy.

In the existing scenario some of the changes required are as follows:

- Considering the load each OPD caters to, each requires more circulation space and waiting areas.
- Patient flow within the OPD will need to be guided with the help of proper signages. Signages across the hospital in at least two languages will prevent outpatients wandering into the ward/post operative areas and OT's.
- The obstetrics and gynaecology OPD should be provided with a separate reception /registration counter until these OPD's are also included in the main OPD complex. This counter once provided can continue to function as a reception for O&G cases (IP and emergency).
- The OPD complex requires a trolley & wheel chair bay and the layout will have to be restructured to cater to physically challenged individuals.
- Addition of more public facilities like drinking water and toilets to each OPD complex will be required.
- The OPD complex should be provided with a lab collection room with attached toilet.
- As revealed from the user perspective study the hospital will require a parking space earmarked for the OPD

Radiology Services

- A centralized radiology department housing all the radio diagnostic facilities will avoid the duplication of infrastructure and manpower and also be more convenient for patients.
- Adequate circulation space and waiting area also need to be planned. A main waiting area that will accommodate the peak patient load present at any time with two relatives per patient can be planned. The average patient load the department caters to per hour is 60 (this is excluding the cases done in the emergency hours), the peak hours are 9am to 12pm, therefore the main waiting area should be able to accommodate 180 to 200 people. Both the regional diagnostic centre and imaging centre do not have adequate waiting area

and waiting chairs. In the regional diagnostic centre the area being used as parking space for two wheelers should be cleared up and used as a waiting area.

- Currently, the system followed is that the imaging and radiology service is provided from the radiology building during the day and from the RDC during the off working hours. This is due to the fact that both these facilities are under one department; manpower is, therefore, a major constraint.
- Toilets need to be provided in both the diagnostic centers and imaging centre - separate for males and females

The following are key areas to be included when planning the centralized radiology department

Particulars
X – ray
a) Radiography rooms (No of rooms to be decided based on patient load)
Attached dressing cubicle with toilet
e) Film developing and dark room*
f) Film drying room
g) Radiographic work room
h) Mammography room (Optional)
*If digital radiography is planned then an additional room will be required for the same. In this case only a small dark room will be required for emergency purposes.
i) Injection and barium meal preparation room
Ultrasonography
a. USG rooms (No of rooms to be decided based on patient load) As per MCI guidelines for medical colleges with 150 admissions annually the total number of USG machines should not be less than 2+1(dedicated to

obstetrics and gynaecology
b. Color Doppler room
c. Toilet (each USG room should ideally have a toilet next to it)
CT scan
d. Patient Change Cubicle
e. Gantry room/CT imaging room
f. CT console room
g. CT computer room

Table No 53

The following facilities that can be common in the radiology and imaging department

- Reception and registration counter
- Waiting area with an area for patients on trolleys and stretchers. A sub-waiting area for each section would be preferable. The waiting area should have toilets close to it
- Report distribution counter with an office and record storage room, preferably, close to it
- Doctors room for the Head of department and other doctors
- Doctors duty room specially for doctors on night duty
- Reporting room with computer systems demarcated for X-ray, USG and CT scans

Stores

Film stores

Consumables store

Equipment stores

The following are certain designing norms laid down for radio diagnostic departments X-ray rooms

- The optimum size of an X-ray room should be 18m²
- The wall on which the primary beams fall should not be less than 35cm thick brick thickness should be more than 35cm

- Shielding of doors and windows should be done with 1.7mm lead
- Not more than one X-ray unit of any type should be in one room
- All openings for light & ventilation should be located above 2m from the finished floor level

CT scan room

- The size of the room should not be less than 38 to 42m²
- The CT computer room houses the computer and generator modules associated with the CT scan equipment, it should therefore be close to the CT scan room and console

Casualty & Emergency

- The casualty is located far away from the trauma centre, these need to be brought next to each other as they are closely related.

If this is not possible then the following changes can help in efficient functioning of the department

- There are two consultation rooms available - the first one closer to the entrance can be re-planned into a triage cum resuscitation area and the second can remain as a consultation room.
- The end of the same corridor where the procedure and consultation rooms are located can be partitioned to create a dirty utility area.
- The existing nursing change room can be utilised as a store and clean utility area and a new nurse changing room can be created on the first floor
- A trolley bay can be planned near the entrance staircase with a small shed for covering the area.
- The department is under construction, certain areas mentioned below will have to be accommodated by reorganising the available space both on the ground and the first floor. The following are the additional areas for which rooms are to be allotted.

Particulars
1. Triage & resuscitation Area
2. Procedure room
3. Emergency OT with post operative observation ward
4. Plaster room with storage for plaster, bandages, splint and crutch store
5. Stores
6. Clean utility
7. Dirty utility
8. Administrative area
9. Janitors room
10. Diagnostic Area (Imaging / Laboratory)
11. Doctor's room
12. Security room
13. Disaster equipment store
14. PMGV supply
15. Relatives' waiting area with toilet
16. Ramp at the entrance
17. Lifts

Table No 54

Nursing Units

- The inter bed (centre to centre) distance in the wards should be 8ft (MCI guidelines) centre to centre to avoid overcrowding and cross infection among the patients.
- As per the MCI guidelines, the nightingale pattern wards should not accommodate more than 30 beds in each.

- The nursing station should be planned in the wards itself to enable direct monitoring and supervision of the patients.
- Each ward requires the following facilities to be planned in each
 - Nurses' duty station
 - Doctors' Duty Room
 - Medical Officers' Room
 - Clean utility room
 - Dirty Utility Room
 - Janitor's Closet (optional)
 - Procedure Room
 - Trolley Bay
 - Pantry (optional)
- The sanitary annexure for the nursing units are inadequately provided. With increase in the bed strength of the wards there should be a proportionate increase in the sanitary annexes.

The required number of sanitary annexes that are to be provided for the wards can be calculated based on the format described below:

Particulars	Male	Female
Water Closet	1 for every 8 beds	1 for every 6 beds
Bath	1 bath for every 12 beds	1 bath for every 12 beds
Urinal	1 for every 12 beds	
Wash Basin	1 bath for every 12 beds	1 bath for every 12 beds

Table No 55

Department of Surgery						
Sl. No	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	Neuro male(12)	1.5	1	1	1	1
2	Neuro female (12)	2		1	1	1
3	CTVS male (12)	1.5	1	1	1	1
4	CTVS female (12)	2		1	1	1
5	TB surgery (9)	1	1	1	1	1
6	Extra surgery (45)	6	4	4	4	1
7	3rd surgery (20)	2.5	2	2	2	1
8	Gastro male (10)	1.25	1	1	1	1
9	Gastro female (16)	3		1	1	1
10	Burn ward (14)	2	1	1	1	1
11	Cabins (10)	10		10	10	1
12	Uro surgery (20)	2.5	2	2	2	1
13	1st surgery (20)	2.5	2	2	2	1
14	Female surgery (40)	7		4	4	1
15	Plastic surgery male (10)	1	1	1	1	1
16	Plastic surgery female (10)	2		1	1	1
17	Burn unit (12)	2	1	1	1	1
		49.75	17	35	35	17

Table No 56

Department of Orthopedic						
	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	Female ortho (11)	2	1	1	1	1

Department of Orthopedic						
2	Female accident (9)	2	1	1	1	1
3	Male accident (33)	4	3	3	3	1
4	Male ortho (24)	3	2	2	2	1
		11	7	7	7	4

Table No 57

Department of ENT						
	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	Cabin (5)	5		5	5	1
2	Female ward (18)	3		1	1	1
3	Male ward (28)	4	2	2	2	1
		12	2	8	8	3

Table No 58

Department of O&G						
	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	3rd maternity (60)	10		5	5	1
2	2nd maternity (48)	8		4	4	1
3	1st O&G (36)	6		3	3	1
4	2nd O&G (23)	4		2	2	1
5	Septic ward (9)	1		1	1	1
6	1st high risk (23)	4		2	2	1

7	cabin (7)	7		7	7	1
		40		24	24	7

Table No 59

Department of Medicine						
Sl. No	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	1st medical (20)	2.5	2	2	2	1
2	2nd medical (30)	4	3	3	3	1
3	3rd medical (30)	4	3	3	3	1
4	4th medical (20)	2.5	2	2	2	1
5	1st female (30)	4	3	3	3	1
6	2nd female (30)	4	3	3	3	1
7	1st paediatric (15)	2	1	1	1	1
8	2nd paediatric (15)	2	1	1	1	1
9	Paediatric extension (28)	4	2	2	2	1
10	Male neurology (10)	1	1	1	1	1
11	Female neurology (4)	1	1	1	1	1
12	Male nephrology (7)	1	1	1	1	1
13	Female nephrology (4)	1	1	1	1	1
14	Endocrinology (4)	1	1	1	1	1
15	Male gastro (10)	1	1	1	1	1
16	Female gastro (10)	1	1	1	1	1
17	Haematology (7)	1	1	1	1	1
		37	28	28	28	17

Table No 60

Department of Ophthalmology						
	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	Male (13)	2	1	1	1	1
2	Female (13)	2		1	1	1
3	Septic (13)	2	1	1	1	1
		6	2	3	3	3

Table No 61

Department of Skin VD, TB & Chest						
	Wards	Water closet	Urinals	Wash basin	Baths	Cleaner's sink
1	Male Skin (11)	1	1	1	1	1
2	Female Skin (11)	1		1	1	1
3	Male chest (11)	1	1	1	1	1
4	Female chest (11)	1		1	1	1
5	TB (14)	1	1	1	1	1
		5	3	5	5	5

Table No 62

The numbers suggested above are in an ideal situation, incorporation of 70 to 80% of the suggested numbers could be looked at to start with.

- The TB ward should be provided with nursing station inside the ward or at least a nursing station with direct vision with provision for positive pressure ventilation. A glass enclosed cabin inside the ward as a nursing station could be created.
- To enable easy identification of the respective departments and service areas the signages should be placed at convenient locations in bilingual format.

- The labour and delivery area is in a dilapidated condition and needs to be replanned to accommodate the following sections:

Area	Purpose
Reception & waiting	To receive patients & accommodate relatives & attendants
Normal labour monitoring room	To monitor patients expected to undergo a normal delivery
High risk labour monitoring room	To monitor high risk patients
Normal delivery room	For normal deliveries
High risk delivery room	For high risk patients (eclampsia, toxemia of pregnancy etc)
Post partum observation room for normal deliveries	To observe patients who have had a normal delivery for a few hours
High risk post partum observation room	To observe patients who have had a high risk pregnancy and delivery (eclampsia, post partum haemorrhage etc) till they are considered free of danger (This will not be used for post LSCS patients)
Baby resuscitation area	For resuscitating and cleaning the newborn
Nursery	This will be used mainly to accommodate the babies of mothers in the high risk observation room
Nursing station in each section	

Area	Purpose
Duty room with attached toilet	For doctors and nurses separately
Toilets for patients	Next to the labour observation rooms and the postpartum observation rooms
Clean utility, dirty utility, store, janitors closet	To support the smooth functioning of the labour and delivery area

Table No 63

The bed strength requirement in the wards is given below:

Requirement as per the hospitals case load in 2008

Present approved bed strength : 1261 beds

Inpatients admissions 2007-08 :126609 admissions

Required bed strength @ 80% occupancy : 2103

Sl. No	Department	Approved Bed Strength	BOR	Present Total Bed Need @ 80% bed occupancy	Minimum Bed need as per MCI guidelines	Additional beds required
1	Cardiology	44	187	103	-	59
2	Casualty	22	286	79	-	57
3	Dental	5	300	19	-	14
4	ENT	41	80	41	30	0
5	CTVS	40	12	6	-	0
6	Medicine	170	271	576	180	406
7	Nephrology	4	195	10	-	6
8	Neurosurgery	34	282	120	-	86
9	Neurology	21	80	21	-	0

10	Obs& Gynae	214	92	246	90	32
11	Ophthalmology	75	160	150	30	75
12	Orthopedic	60	111	83	90	23
13	Pediatric	58	150	109	90	51
14	Paying Bed	32	0	0	-	0
15	Plastic Surgery	20	92	23	-	3
16	Psychiatry	60	54	40	15	0
18	Skin & VD	51	90	57	15	6
19	Surgery	144	135	243	180	99
20	Gastro Surgery	26	50	16	-	-10
21	Experimental Surgery	12	73	11	-	-1
22	Endocrinology	7	64	6	-	-1
23	Gastro medicine	18	80	18	-	0
24	Haematology	5	82	5	-	0
25	TB& Chest	66	90	74	30	8
26	Burn Surgery	15	82	15	-	0
27	Urology	17	151	32	-	15
	TOTAL	1261	125	2103		893

Table No 64

The present occupancy in S.C.B medical college hospital is 125 %. The ideal occupancy should not exceed 80% in an acute care hospital. In case the occupancy exceeds, there will be occasions when a deserving patient might have to be refused admission or two patients may have to be put in one bed.

The number of cabins or paying beds should ideally be 10% of the total number of beds. However decision on this will also depend on the paying patient load the hospital receives.

To meet the present hospitalization needs the population growth and increasing disease burden, SCB Medical College Hospital, will require a scaling up to a 2103 bedded facility. This

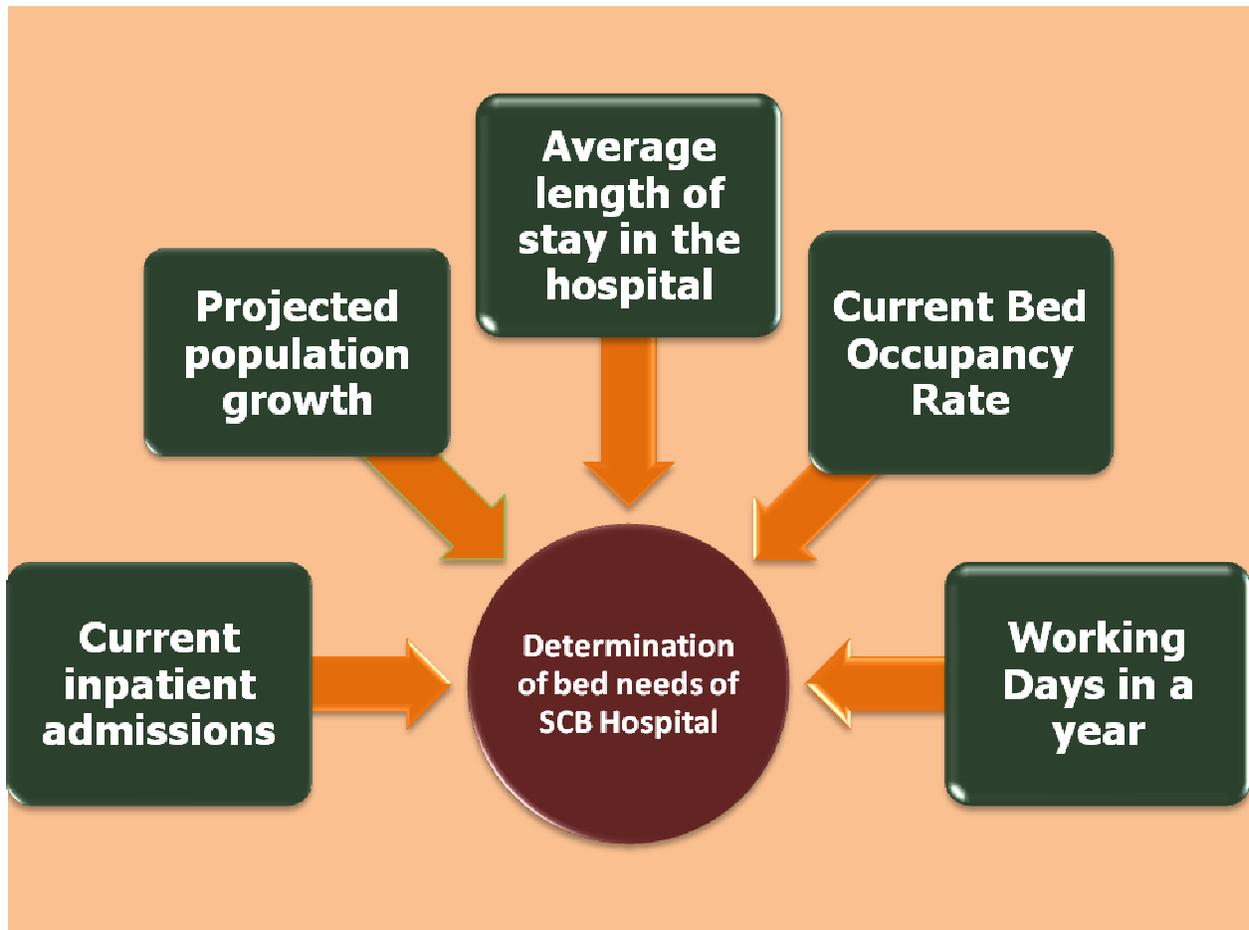
projection has been made from conclusions derived after examining key critical factors affecting utilization of the hospital. An explanation of each of them follows

Existing number of beds 1261

10% of beds as cabins = 126

Required number of beds at 80% occupancy 2103

10% of beds as cabin beds = 210



Intrinsic and extrinsic factors affecting bed needs in a hospital

Table No 65

Determination of Bed Needs based on Population Projection					
Year	% Growth Rate (** Census of India Projections)	Total Catchment Area Population (Lakhs)	Total Catchment Area Population	Admissions based on current hospitalization rate	Estimated bed needs at 80% occupancy
2001		65.79	6578800		
2002	1.19	66.57	6657270		
2003	1.14	67.33	6733417		
2004	1.10	68.08	6807597		
2005	1.06	68.80	6879989		
2006	1.03	69.51	6950952		
2007	1.00	70.20	7020485		
2008	0.96	70.88	7088230	126609	2168
2009	0.93	71.54	7154367	127790	2188
2010	0.91	72.19	7219431	128952	2208
2011	0.89	72.84	7283959	130105	2228
2012	0.87	73.47	7347414	131239	2247
2013	0.85	74.10	7409618	132350	2266
2014	0.83	74.71	7471107	133448	2285
2015	0.82	75.32	7532060	134537	2304
2016	0.81	75.93	7593013	135625	2322
2017	0.77	76.52	7651821	136676	2340

2018	0.76	77.10	7709735	137710	2358
2019	0.74	77.67	7766577	138726	2375
2020	0.72	78.22	7822346	139722	2392
2021	0.70	78.77	7877043	140699	2409
2022	0.64	79.27	7927271	141596	2425
2023	0.61	79.76	7975711	142461	2439
2024	0.57	80.21	8021471	143278	2453
2025	0.53	80.64	8063655	144032	2466
2026	0.47	81.02	8101550	144709	2478

The MCI has now recommended (July 2009) inter bed distance (from edge to edge) of about 5 feet considering the width of a standard hospital bed of approximately 3 feet. The earlier planning used to be based on inter bed distance of 3 feet. This would mean that the wards will now be able to accommodate approximately 19% less number of beds. These displaced beds have to be accommodated elsewhere.

At an occupancy rate of 80% the hospital will require around 2322 beds five years from 2010. The bed need calculation done on a linear progression method can not be taken on its face value. Many other compounding factors affect this calculation. Above will be true only under the following assumptions:

<u>Assumptions</u>
1. Growth in occupancy will continue consistently even when the present unmet need is satisfied
2. No other medical facility will develop in the catchment area of this hospital during this period
3. The effectiveness of preventive care will remain at the same level and the disease burden of the population will have the same pattern of increase
4. Population will grow at the same rate as of now
5. Epidemiological profile of the morbidity and mortality will remain unchanged

- | |
|--|
| 6. There will be no change in the Average Length of Stay of patients and no patients will be discharged prematurely. |
| 7. No deserving patient will be refused admission |

Obviously, none of the above assumptions can remain true over a long period of time with very fast changing medical technology, socioeconomic conditions, and medical care delivery with increasing efficiency and effectiveness. A balance needs to be struck between bed needs of these hospitals, creation of super specialty services along with its supporting facilities and availability of land.

Another factor also needs to be deliberated upon. That is to say that a hospital above 750 beds tends to become inefficient in its operation as well as loses patient-friendly characters. Therefore an administrative decision needs to be taken as to how big the present hospital will be.

O.T

The existing OTs need re-organization to ensure a clear zoning with graded degree of increasing sterility from periphery to inwards. Creating a centralized OT complex is of utmost importance at SCB Medical College Hospital and this should be given the highest priority in the phasing of the expansion plans. This complex should also house the CSSD and be directly connected to the surgical ICU's and surgical wards of all specialities. The O&G OT should however be housed in the O&G complex for the convenience of the patients and also because they have a high emergency utilization rate. Each floor of the complex will need to be divided into protective, clean, sterile and dirty/disposal zones with a circulation system that allows separate access to staff, patients and materials. The complex will require a well planned airflow system that will allow flow of clean air over the operating area first and then away from it. A central air conditioning system that maintains a temperature range of 21 to 24°C with about 16 air changes per hour, a relative humidity of about 50% and using 100% fresh air would be ideal. Each operating theatre should accommodate only one OT table. There are various areas that need to be incorporated into the OT complex; a list of the areas required in each zone is given below:

(a) Protective Zone

1. Reception
2. Waiting with Toilets
3. Trolley exchange bay
4. Anaesthetists' and Surgeons' examination room
5. Doctors change room with toilets
6. Nurses' change room with toilets
7. Other staff change room with toilets
8. Theatre Store
9. Linen store
10. Appliances and medical stores
11. Instruments and disposable store
12. Autoclave room
13. Gas store
14. Theatre work and preparation
15. Closed Circuit TV for operation viewing (optional)

(b) Clean Zone

1. Pre-operative room
2. Recovery room
3. Toilet
4. Nursing Station
5. Technicians room with toilet
6. Pump storage (for CTVS OT only)
7. Store for costly and sophisticated equipment
8. Blood storage and Frozen section

9. Seminar room with toilet
10. Pantry
11. OT Matron's room
12. Computer room

(c) Sterile Zone

1. Anesthesia induction room
2. Operating theatre
3. Scrub room/area
4. Clean utility store

(d) Disposal Zone

1. Dirty Wash-up room

2. Janitors' closet

In the existing situation the following are a few recommendations that can be incorporated on an earlier basis.

- An uninterrupted power supply to each OT to avoid untoward incidence that can occur in case of a power cut. The generator is available but it requires some time before it can provide backup.
- A proper zoning of each OT complex is required by reorganizing rooms to include the zones mentioned above as far as possible.

OT rooms requirement at SCB Medical College Hospital, Cuttack

Types of surgery	No of operating rooms required if working hours per day is 5 hours	No of operating rooms required if working hours per day is 8 hours
General surgery	10.5	6.6
CTVS	0.2	0.1
Neuro surgery	3.1	1.9
Plastic surgery	0.6	0.4
Urosurgery	1.2	0.8
Obstetrics	0.4	0.3
Gynaecology	3.4	2.1
ENT surgery	3.2	2.0

Maxillo Facial surgery	1.5	0.9
Ophthalmology	3.7	2.3
Orthopaedics	2.2	1.4

Table No 66

Depending on the number of working hours per day the requirement of number of OT's will vary.

*As per suggestions by the anaesthesiology HOD the OT complex can be planned such that superspeciality OT's requiring the same kind of ventilation system are located in one floor while the others in a separate floor.

ICU

- In line with the need for creating a single OT complex, the surgical ICU's should also ideally be located in one complex close to the OT.
- An intensive care unit caters to critical patients requiring continuous observation; the preferred ICU design should therefore be as far as possible one that allows a direct line of vision between the patient and the central nursing station.
- The CTVS ICU is newly constructed; the layout however will need to incorporate ancillary facilities like a store, clean utility, treatment room, dressing room, dirty utility and janitor's closet. The ICU should also have an area outside for changing shoes, gowning etc for other staffs as well as relatives who may have to enter the ICU; the area should also have provision for hand wash.
- The Medical ICU should be relocated as the present location does not ensure infection control, noise control and restriction to traffic. Also considering the total bed strength of the medicine ward and the inpatient load the department caters to, the number of ICU beds should be increased to 4% of bed complement.
- An expansion of the Cardiology and Paediatric ICU is required to bring the per bed area close to the accepted norm of 150Sqft per bed.
- Additional areas required in all ICU's is as follows:

(a)	Relative waiting room with toilet
(b)	Trolley Bay
(c)	Shoe change cum gowning and hand wash room
(d)	Doctor' change & duty room
(e)	Sister's change & duty room
(f)	Isolation beds
(g)	Treatment/procedure room
(h)	Clean Utility
(i)	Store
(j)	Equipment room
(k)	Dirty utility & Soiled linen room
(l)	Nursing Station
(m)	Toilets
(n)	Janitor's closet

Table No 67

- As per the interviews with the HODs the number of ICU beds specially in the medical ICU are too less, which is why they have to send critical patients to nursing homes having critical care support.

A hospital of this magnitude should have a minimum of 5% of its beds as ICU beds. The number of ICU beds required are calculated below:

Existing beds 1261

5% as ICU beds = 63beds

Required beds at 80% occupancy 2103

5% as ICU beds = 105

These beds will include the following ICU's

Medical ICU

Cardiology ICU

Paediatric ICU

Neonatal ICU

Surgical ICU

Neurosurgery ICU

Cardiothoracic ICU

Burns ICU

Sound proofing will have to be done for all the ICU's

Centralised air conditioning can be possible if ICUs are in one complex, in the current situation this may not be possible. A packaged ventilation system can be provided to each ICU which should ensure a temperature of around 20 to 25⁰C, relative humidity of around 50% +/- 5% and around 8 to 10 air changes per hour ideally. Positive air pressure should be maintained inside the ICU, except for the isolation rooms which should have separate ventilation with 100% exhaust - maybe positive or negative depending on the type of conditions the isolation room is meant for.

3.5.8.2 CLINICAL SUPPORT SERVICES

Physiotherapy

- The department needs replanning of the facility with provision of more space to accommodate both physiotherapy and occupational therapy areas. As per suggestions given by the department head the department should have provision for an electrotherapy room, an exercise therapy room, a suspension therapy room and an occupational therapy room. In addition the department should also have some rooms for administrative purposes and other ancillary facilities like store rooms, toilets etc.
- A change room can be planned inside the treatment room and similarly the room used for storing condemned items can be utilized as procedure room by creating small cubicles or arranging the treatment tables with curtain partitions.
- The waiting area should be after the entrance to the department and a space can be created for parking the wheelchair and trolley near the waiting area.
- As per suggestion by the HOD of Orthopaedics department, the physiotherapy section can be shifted to the opposite side of the ground floor which has more space.
- Facilities for which more space is required are:

Particulars
▪ Waiting area with sitting arrangement & toilet
▪ Parking space for wheel chair & trolley

▪ Dirty/Clean utility
▪ Ramp at the entrance of the orthopedic department
▪ Separate staff toilet
▪ Separate patient toilet with access to wheelchairs
▪ Space for wax bath
▪ Adequate circulation space

Table No 68

Blood Bank

- The blood bank needs to be planned in a separate building.
- It should be ideally planned to be located in close proximity to the ICU, emergency and major OTs.
- The minimum space requirements for a blood bank are 100m² for its operations and an additional area of 50m² for preparing blood components. This area does not include circulation space.
- A well controlled HVAC system is necessary though this is not a statutory requirement for all areas of the blood bank.
- The layout of the department can be divided into three major areas as follows

Room/Space
Public access areas
Reception
Waiting area
Counselling room
Medical examination room
Bleeding room

Refreshment room
Apheresis room
Kitchen/Pantry
Laboratory areas
Lab for blood group serology (A/C)
Lab for blood transmissible diseases (syphilis, malaria, HIV-antibodies, hepatitis-antibodies) (A/C)
Component separation room
Blood storage area
Area for quarantine of blood and reagents not suitable for use
Wash room including eye wash area
Sample receiving & blood/blood component Issue counter
Administrative areas
Blood bank in charge's room
Office cum record room
Stores
Technicians room (optional)
Training & seminar room (optional)
Staff toilets separate for male and female

Table No 69

Central Sterile Supply Department

The present CSSD is just a single room in which all the activities are performed, with no segregation into zones based on level of sterility. Ideally the CSSD should be planned in the same complex as the OT complex.

In the present situation the CSSD can be redesigned to accommodate the various zones. Inclusion of the unutilized store room behind the CSSD will allow space for dividing the CSSD into three major zones and thereby scientifically plan it.

The following are the various areas required in the CSSD listed out in order from unclean to sterile zone.

Particulars
Dirty zone
Receiving area for soiled articles
Sorting
Cleaning & washing area
Clean zone
Packaging
Sterilizing and cooling area
Storage area for clean stocks (not sterile)
Sterile zone
Storage area for sterile stocks
Dispatch area for the sterile packs through a dispatch window
Administrative
CSSD supervisor's room

Staff change room with toilets and lockers
--

Table No 70

Dietary Department

- Food service manager's office is required
- Secretarial, clerical office with space for file cabinets & other equipment, seating for visitors, vendors etc.
- Storage & refrigeration area with walk-in refrigerators, coolers & dry storage.
- Pre-production preparation area.
- Cooking or food production areas, separate for vegetarian & non- vegetarian foods.
- Special diet kitchen.
- Serving or tray assembly area.
- Trolley, cart & hand washing facilities in various places.
- Garbage disposal facilities.
- Storage with racks & cabinets for clean trays, dishes, cutlery etc.
- Storage with racks for clean pot, pans, vessels etc.
- Employee facilities like lockers.
- Janitor's closet.

3.5.8.3 OTHER SUPPORT SERVICES

Laundry

The total existing area for the laundry can be utilized to establish a fully functional department with all the necessary areas as listed in the table below.

Particulars
19. Reception/collection and sorting
20. Change room
21. Sluicing and autoclaving

22. Mending
23. Washing machine, driers, hydro extractors, calendaring and pressing
24. Mattress sterilizing
25. Boiler House
26. Stores
27. Janitor closet
28. Sanitary
29. Manager's office
30. Staff change room

Table No. 71

Medical Record Department

- The MRD needs a well constructed separate block with adequate rooms to store medical records of all the departments of the hospital.
- For better and smooth functioning, the entire department can be computerized.
- The space planning should include the following areas:

Particulars
1. Vital Statistic Desk
2. Admission Check Desk
3. Census Desk
4. Assembly and Deficiency Check desk
5. Incomplete Record Control Desk Discharge Analysis and Administrative Statistics desk
6. Coding and Indexing Desk

7. Complete Record Control Desk
8. Washrooms for staff

Table No. 72

Fire Protection Facility

- Designated emergency fire exit in all the concern blocks need to be planned out.
- The hospital should have smoke detectors, sprinkler system, fire alarm, and fire shield doors.
- An underground fire water reservoir will be required for which space planning is required.

Biomedical Waste Management Department

Separate space required for temporary storage of waste collected on a daily basis from the hospital.

An ideal Biomedical Waste Department would include the following areas within it:

Particulars
Staff/supervisor room
Changing room for staff
Untreated waste store
Autoclave/microwave room
Shredder room
Incinerator room
Treated waste room
Boiler room
Ash pit

Table No. 73

Mortuary

- Public amenities need to be added to the present facility.
- Adequate space is available to plan out new rooms for required equipments.
- Renovation of the existing facility is an immediate requirement.

Central stores

Central stores - Administrative area

- Reception & the clerk-typist's area are required for office functions including filing, communications & references.
- Office space for chief pharmacist, asst. chief pharmacist & clinical pharmacist is required.
- Waiting area for visitors, medical representatives & salesmen is required.
- Conference room & library is required.
- Staff facilities like lockers, toilets, lounge, duty room for on-call duty pharmacist is required.

Central stores - Storage area

- Bulk storage
- Active storage
- Refrigerated storage
- Volatile & alcohol storage
- Secured Storage for narcotics & controlled drugs

Parking

- **Designated parking space** needs to be plan out separate for two wheelers and four wheelers.
- **Space marked for parking** space to be planned outside every department block for patient to park their vehicles.

- Separate parking area for **doctors/staff vehicles** at OPD and in other departments.

Ambulance:

- Ambulances are not adequate for such a big Medical College. More no. of Ambulances should be provided with the provision of adequate no. of drivers in all the shifts.
- All ambulances should be well connected through wireless system with a proper controlling unit based inside the campus of SCB.
- At least one ambulance should be equipped with ICU and emergency facilities.
- Ambulance services should be well manned by trained emergency technicians.

Vertical circulation:

- All the elevators in the hospital are not patient transport elevators; these could be used for transport of materials, hospital staff and patient attendants. Each building should be provided with elevators for patient transport
- Facilities should be made for proper maintenance of elevators on regular basis.
- There should be a dedicated lift (or dumb waiters) available for disposal of waste.
- There should be a dedicated lift for diet distribution in all the departments.
- Ramps should be constructed in all the departments especially in O&G.
- The staircases in all the buildings need to be renovated and provided with hand rails for patient safety

Signage's:

- Signage and directions inside the hospital campus needs to be placed in appropriate locations in bilingual language to locate various departments in the campus.

- Signage's in front of all the concern department and buildings.
- Internal signage in OPD and IPD needs to be put at appropriate locations to locate wards, departments and to maintain unidirectional flow of patients.
- Information board in bilingual language should be placed in the OPD for sharing information regarding timing/availability of doctors.
- Same information board can be used for sharing information regarding any addition of new services or facilities.

3.5.9 OVERALL RECOMMENDATIONS

The following are a few recommendations pertaining to the entire hospital complex:

- Creation of a centralized OT and ICU complex was a suggestion very strongly emphasized by almost all the head of departments interviewed and also by the Medical Superintendent. The OT complex should be created with a proper zoning system, all ancillary facilities and also adequate pre operative and post operative observation areas.
- A suggestion given by many HODS' is closing one side of the road cutting across the campus and used as a public road currently. A small gate can be created for patient attendants who need to go out for medicines etc.
- On the whole all the buildings require a complete renovation with accommodation of all necessary ancillary facilities.

- Proper landscaping of the entire campus is required. The HODs of medicine, radiology and ophthalmology have specifically asked for a proper landscaping of the areas around each building with well planned drainage systems. The drain along the road cutting across the campus will need to be planned such that it does not accumulate stagnant water as seen presently.
- Parking spaces will have to be created to cater the OPD and casualty crowd, the inpatient crowd in each block and also for the hospital staff.

ditional recommendations following a review of the draft master plans with the Hospital Authorities and the Heads of Departments, SCB Medical College Hospital

- An effort has been made to restrict OPD activities only on one side of the campus so as to do away with OPD traffic across the road cutting across the hospital campus (Hospital road). This has been achieved by bringing all OPDs to the existing main OPD complex. This complex will also have sample collection rooms for the laboratory samples. In addition as suggested by some of the HODs and agreed upon the Radiology and imaging centre has been relocated to the family and welfare centre.
- It was suggested by one of the HODs that there is a need to bring the casualty and the trauma centre close to each other. This has been addressed by planning both the casualty (emergency) and the trauma in one building at the same area where the trauma centre exist presently.
- The trauma centre has been planned to be able to cater to all types of cases including cardiac and neuro trauma cases.
- Following an agreement that the cardiology department cannot be a standalone department and as suggested by many HODs the new cardiology block has been planned to include all superspeciality departments and OTs to cater to all cold surgical cases
- As pointed out by the hospital authorities the building housing the Biochemistry, Physiology and

Pathology departments has been retained as it is.

- With the superspeciality departments shifting to the new building the remaining areas have been utilized to accommodate the medicine wards as creating a new medicine block (as suggested in the concept plans) in the area where the existing radiology and imaging building is was strongly opposed by the medicine HOD.
- The ENT wards have been relocated to the main IPD block to create more space for all other OPDs in the centralized OPD complex
- The existing casualty has been converted to a ward that should be able to accommodate the infectious diseases cases which are currently housed in a very dilapidated building
- The area where the radiology and imaging currently exist has been replanned to a parking area, this being a requirement voiced out by all present in the review meeting
- Teaching facilities have been included for in the hospital as far as possible.

**SARDAR VALLAB BHAI PATEL POST
GRADUATE INSTITUTE OF PAEDIATRICS
(SISHU BHAWAN),CUTTACK - ORISSA
(An Extension of SCB, Medical College**



4 AN OVERVIEW OF SARDAR VALLAB BHAI PATEL POST GRADUATE INSTITUTE OF PAEDIATRICS

Sardar Vallab Bhai Patel (SVBP) Post Graduate Institute of Paediatrics (Sishu Bhawan) is located on the bank of river Kathjodi (a tributary of river Mahanadi) adjacent to Orissa High Court, Cuttack. This is one of the largest paediatric institutes in the eastern region of the country in the government sector. The total land area of the Institute is 23 acres which includes hospital buildings, staff colonies, garden and some vacant land.

The hospital came into being in the year 1961 as the Institute of Paediatrics and Child Health. In the year 1966 the State Government took over the hospital to start a National level institute for post graduate studies. The institute admits 8 post graduate students in paediatrics every year. It has also been offering MCH courses in Paediatric Surgery since the year 2007.

The hospital is spread across the campus with wards/beds in different blocks. The old blocks house the administration department along with a few support utility departments, paediatric medicine,

paediatric surgery wards and paediatric cabins. The new block which has been built in collaboration with the Japanese government houses all the clinical departments including ICU's, wards and OPD's.

The institute was started with an aim to provide qualitative tertiary paediatric health care services.

4.1 CATCHMENT AREA SVBP

The catchment population that SVBP post graduate institute of paediatrics caters to is largely the same as SCB Medical College Hospital.

4.2 FACILITIES AVAILABLE

Clinical services

Paediatrics

Paediatric Surgery

Paediatric and Neonatal intensive care

Radiology & imaging

Clinical laboratory

Paediatric emergency care

Support services

MRD

General engineering services

Stores

Services provided through outsourced agencies

Laundry

Housekeeping

Security

4.3 INDIVIDUAL FACILITIES ASSESSMENT

4.3.1 CLINICAL SERVICES

OPD:

The hospital has a centralized OPD complex located in a state of the art Advanced Care & Research Centre building with Diagnostic services in close proximity. The OPD entrance is the main entrance to the building with a single entry/exit point. It is a newly constructed building with all the amenities and facilities like drinking water, washroom for patients/relatives and shoe rack just adjacent to the main entrance gate. The sitting arrangement for patients and relatives is in the main waiting area with very few chairs, at the entrance in front of the registration counter. The consultation rooms are in the corridor adjacent to the registration counter. The same corridor is used as a sub waiting area for the consultation rooms. There is only one counter present for registration and reception cum billing for investigation in the OPD. The signages in the department were all in English in the respective places.



OPD waiting area

Analysis:

The building is a newly constructed one however certain facilities like fans in the waiting and sub waiting areas are not available, also the space for the sub waiting areas are not adequate.

The circulation space in the entire OPD area is not adequate for the kind of patient load catered to.

Facilities like drinking water and washrooms are available but are inadequate

Signages are available but only in English. In a place like Orissa, signage's in bilingual languages (English & the local language) are required. Proper signage system will also reduce the crowd at the reception/enquiry counter.

Radiology & Imaging

The Radiology services are centralized housing 2 X-ray machines, 3 ultrasound machines and also 2 ECG machines. The details of facilities in the department are as follows:

Particulars	Availability
Reception and Registration counter	Yes
Waiting room with toilet	N.A
Radiography rooms	Yes only one room
d) Attached dressing cubicle with toilet	N.A
Film developing and dark room	Yes
Film drying room	Yes
Office, Record and computer room	N.A
Radiographic work room	N.A
Stores	N.A
Radiologists' rooms	Yes
Injection and Barium meal preparation room	N.A
Trolley Bay	N.A
Observation room	N.A
Ultrasonography	
Sub waiting room	N.A
USG room (Black & White)	Yes
Color Doppler room	N.A (Machine has been kept in the USG room)

Toilet	N.A
Film library	N.A
Seminar room	N.A
CT scan	N.A
Conformance to AERB norms for X-ray rooms	Not completely
Wall thickness > 35 cm thick brick	Yes
Shielding of doors and windows (equivalent of 1.7 mm lead)	Yes
Room size $\geq 18 \text{ M}^2$	Yes
More than one machine placed in one diagnostic room	Yes
Openings for light and ventilation located above 2M from the finished floor level	The openings are not as per the standards
Waiting areas available outside the x-ray room	N.A

Table No. 74

Analysis:

The reception for radiology is shared with that for inpatients causing a lot of inconvenience to patients who end up standing in long queues all the time

No waiting areas were available for patients/visitors; they therefore end up flooding the corridor in front of the radiology department

Safety information signage's like radiation hazard symbols are not displayed in the department

No changing room was observed for patients

Dark room area is not sufficient for developing, fixing and drying of X-ray films.

The ultrasonography rooms have not been provided with toilets attached or close by

Laboratory Services:

The Laboratory services are centralized, located in the Advanced Care & Research centre having the following sections:

Biochemistry

Microbiology

Clinical Pathology and Haematology

The department is located in close proximity to the OPD just adjacent to the main waiting area. All the above sections have separate rooms but for specimen collection the biochemistry room is being utilized for biochemistry and Microbiology and the pathologist room for clinical pathology and haematology. There is no separate room for each of the department in charge. The various facilities in the lab are as follows:

Particulars	Availability
Reception & registration	Yes common for OPD and Lab
Specimen collection and distribution	Yes rooms shared, no dedicated rooms
Examination cum sample collection room	No separate room
Waiting Room with Toilet	N.A
Pathologists' Office	Yes but used for specimen collection
Stores	N.A
Stores-in-charge's room	N.A
Staff changing with toilets	N.A
LPG Bank	N.A
Histopathology Section	N.A
Haematology Section	
Haematologist's room with lab	N.A

Haematology Lab	Same Lab Used for both Haematology & Clinical Pathology
Biochemistry Section	
Biochemist's room	Yes
Biochemistry Laboratory	Yes
Microbiology Section	One room used for all activities
Microbiologist's room	
Bacteriology laboratory	
Mycology laboratory	
Media rooms	
Media Kitchen	
Media storage and plate pouring room	
Sterilizing Room	
Incubator room	
Cold storage	
Immunology Section	
Clinical Pathology Section	
Stool Urine Examination	Yes
Specimen cubicle	N.A
Photometry, Chromatography & Electrophoresis Room	N.A
Virology Section	N.A
Equipment Cleaning Section	
Wash up and preparation room	N.A
HP sterilizer room	N.A

Sterile storage	N.A
Janitor's closet	Yes

Table No. 75



Laboratory service

Analysis:

As mentioned in the Radiology and imaging services the billing for IPD and laboratory in the hospital is done at one location.

No waiting area, patients and visitors therefore crowd the corridor in front of the diagnostic rooms.

The laboratory rooms are being used for specimen collection causing a lot of congestion and many times disturbing the people working.

Nursing units

Department of Surgery	
Particulars	Surgical Ward
Relationship with other departments	In front of OT
Access to	A central corridor of approximately 8 ft leading to the wards.

the department	
Ward Design	Rig pattern
Distance between two beds	The beds are arranged with an approximate distance of 8 ft.
Sanitary Annexes	<input type="checkbox"/> The sanitary annexure in the wards are not adequate
	<input type="checkbox"/> 3 Bath & 3 Urinal is being provided for both Male & Female.
Electrical outlets	<input type="checkbox"/> It is good & sufficient for all equipments

Table No. 76



Surgical ward

Department of Medicine	
Particulars	Medical Ward – 1
Relationship with other departments	Near to Medical Ward – 2
Access to the department	A central corridor of approximately 9 ft leading to the wards.
Ward Design	Rig pattern
Distance between two beds	The beds are arranged with an approximate distance of 6 ft.
Sanitary Annexes	<input type="checkbox"/> The sanitary annexure in the wards are not adequate
	<input type="checkbox"/> 3 Bath & 3 Urinal is being provided for both Male & Female.
Electrical outlets	<input type="checkbox"/> It is good & sufficient for all equipments

Table No. 77

Department of Medicine	
Particulars	Medical Ward – 2
Relationship with other departments	Near to Medical Ward – 1
Access to the department	A central corridor of approximately 9 ft leading to the wards.
Ward Design	Rig pattern
Distance between two beds	The beds are arranged with an approximate distance of 6 ft.
Sanitary Annexes	<input type="checkbox"/> Lavatory which is present in Medical Ward -1 can be used by Medical Ward - 2 also
Electrical outlets	<input type="checkbox"/> It is good & sufficient for all equipments

Table No. 78

*All ancillary facilities like clean utility, dirty utility, janitor's closet etc are available in the wards of the new building.

Old Medical Ward	
Particulars	Old Medical Ward
Relationship with other	Near to Admin Office

departments	
Access to the department	No Corridor
Ward Design	Rig pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 5 ft.

Table No. 79



Old medical ward

Department of Paediatric Surgery

Particulars	Dept. of Paediatric Surgery
Relationship with other	Near to Admin Block

departments	
Access to the department	A central corridor of approximately 8 ft leading to the wards.
Ward Design	Rig pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.

Table No. 80

<i>Department of Paediatrics</i>	
Particulars	Paediatric Cabin
Relationship with other departments	Near to Pediatric Surgery Ward
Access to the department	A central corridor of approximately 8 ft leading to the wards.
Ward Design	Rig pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.

Table No. 81

Department of Paediatric	
Particulars	Paediatric Cabin
Relationship with other departments	Near to Pediatric Surgery Ward
Access to the department	A central corridor of approximately 8 ft leading to the wards.
Ward Design	Rig pattern
Distance between two beds	The beds are arranged very close to each other with an approximate distance of 6 ft.

Table No. 82

Common observations for all the wards

Support Areas	<input type="checkbox"/> There is no sisters' duty room but nurse duty station is there inside the ward
	<input type="checkbox"/> Ward store, Linen store & Treatment and clean utility are not present.
	<input type="checkbox"/> Trolley bay is there to park the trolleys.
	<input type="checkbox"/> There is no MO's room provided for these wards.
	<input type="checkbox"/> No Pantry & Soiled linen store is provided.
	<input type="checkbox"/> Staffs/Visitor's lavatory is not present in this ward.
Common observation for the old wards	
Sanitary Annexes	<input type="checkbox"/> The sanitary annex in the wards are not adequate
	<input type="checkbox"/> All rooms are having attached toilet
Electrical outlets	<input type="checkbox"/> Replacement of Electrical outlets is required

Table No 83

Observations and Analysis:

1. All these wards are spread over different blocks. Part of Surgery & Medical ward is situated in the new building & in individual blocks. A central corridor of approximate width 8-10 ft runs through the entrance and the wards are located on the both sides of the corridor of the new building.
2. The beds are arranged in a rig pattern with an inter-bed distance of approximately 6 ft calculated

from one centre of bed to the other. The bed distance is thus found to be less in comparison to the accepted figure of 8 ft.

3. The nursing station in the main building is located in one ward but caters to both.
4. The **nursing station** has been observed to be used as the doctors' discussion area, therefore always totally crowded and defeating its main purpose of acting as the hub of all control and monitoring activities in the ward for the patients round the clock.
5. The **auxiliary services** such as the doctor's room, nurses' room, stores, clean utility are not properly provisioned in the wards. Due to the absence of proper storage facility the soiled linens are either stored in the nurses' duty room or in buckets outside the toilets.
6. Old wards are not having **ancillary facilities** like the trolley bay; the trolleys are kept in the nurses' duty room or in the main corridor. Thus, there is unnecessary congestion and obstacles for smooth traffic flow.
7. The **sanitary annexes** in the old wards are very limited with insufficient number of baths, urinals, and water closets in comparison to the number of patients they are catering to. Moreover the same toilets are being utilized by the attendants also.
8. Lack of proper Signage's in bilingual format causes hardship for the patients & attendants to locate a specific facility or department. .

O.T:

The hospital has two Operation Theatres, one emergency OT in the old building which is not in use and one main OT in the new building with all modern facilities/amenities along with a post operative room.

Type of OT	Nos.	Remarks
Main OT	1	Located in Advanced Care & Research centre
Emergency OT	1	Occasionally used for Operation when Main OT is occupied.

Table No. 84

The main Operation Theatre are located in the new building close to the diagnostic centre and is connected to a 20 bedded surgical ward through a corridor common to the OT, the diagnostic centre and the ward. A proper zoning system is available in the new OT area. The ventilation system in the OT is through false ceiling mounted air conditioning ducts and exhaust ducts on the walls with packaged air conditioning unit being used. The entry and exit of patient, staff, supplies, and soiled linen is through separate doors in the Main OT. There is no sitting/waiting area for attendants and relatives outside the Operation Theatre.



O.T Type	No of OR	No of OT Tables	Ventilation	Circulation	Ancillary Services
Main OT	1	1	Through air condition ducts and exhaust ducts	Separate entry/exit for patient/staff/supplies	Available
Emergency	1	This OT is not in use presently			

Table No. 85

Analysis:

The main OT has been relatively well planned taking care that access to it is separate for staff, patients and materials. The main drawback seen was a common corridor being used for patient transfer from the OT to the ward, this corridor is often flooded with patients and attendants waiting for

radiology and imaging services.

NICU:

The Neonatal Intensive care unit is located on the first floor in the new building on the same floor and opposite to Paediatric Intensive care unit. The facilities available in the NICU are listed down below:

Location	First floor of main building
No of beds	12
Area per bed	16 sqft
1. PROTECTIVE ZONE	
(a) Trolley Bay	Yes, in the corridor
(b) Reception	N.A
(c) Waiting Room with toilet	N.A
(d) Shoe change room	No separate room, changed near the nursing station
(e) Change Room	Yes
(f) Counselling Room	Doctors chamber/nursing station used for the same
2. CLEAN ZONE	
(a) Doctor' duty room	Yes
(b) Sisters' duty room	N.A
(c) Linen Store	Common store room
(d) Clean Utility/treatment/dressing	N.A
(e) Store Room	Common store room

(f) Equipment room	N.A
(g) Pantry	N.A
(h) Feeding area	N.A
(i) Formula room	N.A
(j) Examination area	N.A
3. STERILE ZONE	
(a) Scrub up room	N.A
(b) Nursing Station	Yes
(c) Wash Hand Basins (No provided)	At the corridor
4. DIRTY ZONE	
(a) Dirty utility & Soiled linen room	One common store room
(b) Janitor's closet	Yes common for both NICU & PICU
(c) Toilets	Near the corridor common for both NICU & PICU
12. Ventilation	
(a) A.C split	Yes

Table No. 86

**PICU:**

The Paediatric Intensive care units is located on the first floor opposite the neonatal Intensive care unit. Facilities present in the PICU are as follows:

Location	First floor of main building
No of beds	12
Distance between two beds	8 ft
5. PROTECTIVE ZONE	
(a) Trolley Bay	Yes, in the corridor
(b) Reception	N.A
(c) Waiting Room with toilet	N.A
(d) Shoe change room	No separate room, changed near the nursing station
(e) Change Room	Yes

(f) Counselling Room	Doctors chamber/nursing station used for the same
6. CLEAN ZONE	
(a) Doctor' duty room	Yes
(b) Sisters' duty room	N.A
(c) Linen Store	Common store room
(d) Clean Utility/treatment/dressing	N.A
(e) Store Room	Common store room
(f) Equipment room	N.A
(g) Pantry	N.A
(h) Examination area	N.A
7. STERILE ZONE	
(a) Scrub up room	N.A
(b) Nursing Station	Yes
(c) Wash Hand Basins (No provided)	At the corridor
8. DIRTY ZONE	
(a) Dirty utility & Soiled linen room	One common store room
(b) Janitor's closet	Yes common for both NICU & PICU
(c) Toilets	Near the corridor common for both NICU & PICU
13. Ventilation	
(a) A.C split	Yes

Table No. 87



Observation & Analysis for NICU and PICU:

A proper zoning system has not been incorporated in the department however the NICU has been provided with the basic ancillary facilities

Patient relatives are not provided with a proper waiting area, they are instead allowed access into the NICU where they stay with the baby causing a lot of congestion and a higher possibility of cross infection.

Patient attendants have been asked to remove shoes outside the NICU but no shoe rack has been provided for the same.

The NICU and PICU share the store room, nurse change room and sanitary annexure for staffs.

The store room is being used commonly for both clean and dirty linen and materials

The doctor's duty room and nursing station is located inside the department (In the NICU as well as PICU)

Both the NICU and PICU have been planned quite well with provision of basic ancillary facilities; however they are not being utilized as per plans.

4.3.2 CLINICAL SUPPORT SERVICES

Dietary Services:

There is no dedicated area or room earmarked for kitchen in the hospital, the patients are however provided with 500 ml milk packets, 2 boiled eggs & 100 gm bread daily from 9:00 am to 10:00 am by the hospital authorities.

Analysis:

A kitchen and dietary department should form an integral part of a hospital; in a paediatric hospital this becomes even more necessary.

Medical Records:

The medical records department is located in an old building block near the steward office. The records are maintained in wooden racks kept across a small room. The medical records department in charge sits inside the same room. All the data are recorded and maintained manually. The ventilation and illumination system are very poor and no proper pest control measures are available in the department.

Particulars	Availability
1. Room for MRD In charge?	NA the MRD in charge sits in the same room
2. Space provided for all the sections of the MRD?	
(a) Vital Statistics desk	N.A
(b) Admission Check Desk	N.A
(c) Census Desk	N.A
(d) Assembly and Deficiency Check desk	N.A
(e) Incomplete Record Control Desk	N.A

Discharge Analysis and Administrative Statistics desk	
(f) Coding and Indexing Desk	N.A
(g) Complete Record Control Desk	N.A
3. Area/room for doctors to fill in the incomplete medical records?	N.A
4. Fire fighting system?	N.A
5. Computerization? Yes /No	No
6. Is there sufficient storage capacity in the MRD?	No
7. Does MRD include sufficient no. of Racks and Cabinets?	No
8. Does MRD need expansion?	Yes

Table No. 88

Analysis:

The space constraints in the MRD do not allow proper storage of files/records and leads to a lot of delay in locating a file when wanted. Improper storage and no system of pest control, many of the files have been damaged. Installation of Electronic Medical Record system may solve the space problem and also segmentation of the MRD into different sections may be obviated needing lesser number of manpower. It is, however, apprehended that its implementation and operationalization in a Government Hospital setting may be difficult. Though the younger generation of doctors may not be averse to it but the seniors may not like the idea at all.

4.3.3 SUPPORT SERVICES

Bio Medical Waste Management:

The Biomedical waste unit is near the old paediatric surgery block with a separate boundary. Biomedical waste management is outsourced to an agency called Medi Aid Marketing Pvt. Ltd. which is involved in, disposal of Bio-Medical waste. The segregation of waste is done at the point of collection by the in house staffs. The institute has its own Microwave and shredder but no incinerator.

Linen & Laundry:

The linen & laundry service of the hospital has been outsourced.

Parking

The parking area is scattered around the hospital in various locations. The only area earmarked for parking is in front of the old building where the steward office is located, in front of main OPD and in front of the administration department. Vehicles were, however, parked wherever a vacant space was found. There is no separate parking space allotted for staffs/doctors vehicles around the hospital premises.

Analysis:

The hospital has ample space for parking, only a reorganization is required to create proper areas for parking

Stores

The central store is located in the old heritage building with two rooms on the opposite side of the veranda. It is an old building where there is a store along with the IP beds. The store in charge has no separate office but has to sit in the same room. The store is overloaded with the medical and non medical materials. The circulation space is inadequate therefore leading to a lot of congestion. The store is located away from the main building. All the medical and non medical items are accommodated in the same stores.

CSSD:

The CSSD is located adjacent to and connected to the main OT. This CSSD supports the entire hospital. The department has two **Nat Steel** Washing Machines, one **Nat Steel** Drier and one **Nat**

Steel Steam Sterilizer all of 25 kg capacity each. All the functions of the CSSD are performed in one single room



Particulars	Availability
Receiving area for soiled articles	N.A
Sorting	N.A
Cleaning	N.A
Packaging	N.A
Sterilizing and cooling area	Yes
Storage area for clean stocks (not sterile)	N.A
Storage area for sterile stocks	N.A
Dispatch area for the sterile packs	N.A
CSSD supervisor's room	N.A
Staff change room with toilets and lockers	N.A

Table No. 89

Fire Protection Facility:

The hospital has Smoke detectors, Sprinkler system, Fire alarm, as well as Fire safety related Signage's. Fire extinguishers are present only in the new building complex. The hospital does not have any designated fire escape route.

The hospital has an underground water reservoir for fire control.

Vertical Circulation:

The hospital has two stair cases connecting the first and second floor. One elevator is present in front of the OT, for transporting patients form the ground floor to the first floor where the lift opens near the IP wards. All other buildings have only the ground floor operational.

IT:

Presently the hospital does not have any IT back up for its systems and processes.

Ambulance services

The ambulance services is located behind the MRD department. Presently one ambulance without critical life support system is available.

Covered garage is available only for ambulance but not for other vehicle.

Signage's

Directory signs need to be installed in local language which gives overall information about the location of all major facilities in the hospital premises. A reference map is located in front of the main OPD with appropriate colour contrast, size and clear definition of the new building plan. Presently there are signage's showing the different departments but only in English. Numbering of all the concerned rooms to a directory board in each floor will help in easy location of departments.

4.3.4 USER PERSPECTIVE STUDY OF SVBP HOSPITAL, CUTTACK

The success of a hospital is generally measured by the quality of care offered to the patients and the dedication with which it operates. The healthcare facility planning should be favourable enough for both the users and the providers so that effective and efficient delivery of patient care is ensured. A user perspective study has been conducted for patients receiving treatment at SVBP Hospital to incorporate the patient's inputs in the expansion plan for the facility. The sole objective of the study was to understand the patient's need while determining the future needs of this hospital.

The user perspective study has been carried out through a structured questionnaire. Two different sets of questionnaire have been prepared for OPD and IPD respondents. The same is based on various criteria upon which patient's perception of a healthcare facility depends. Since OPD and IPD are the main patient care area in hospital, respondents of this study primarily comprises of people using this services.

A cross-section of patients have been chosen consisting of 20 outpatients and 20 inpatients. Among the outpatients, patients from all OPDs have been included. The inpatients also have been distributed into respondents of different specialty wards. The findings of the study have been detailed out as follows.

OPD Users' Survey: Key Findings & Analysis

The Outpatient Department is a key patient care area in a hospital catering to the majority of ambulatory patient caseload. Though the span of stay for patients is less in the OPD rather than the inpatient wards, yet patient satisfaction is greatly influenced by the services and facilities provided in the OPD and other related ancillary areas. A cross section study has been conducted for OPD patients of SVBP Hospital based on certain predetermined criteria to elicit patient perspective about the same. The criteria have been enlisted as follows:

- Criteria for selecting the facility
- Facilities, Amenities & Conveniences for patients in the OPD
- Availability & Adequacy of service provision
- Feedback about general quality parameters

- Patient Friendliness

A series of questions under each of the above heads were asked to the patient respondents to infer a holistic view of the patient perspective of the OPD at SVBP Hospital, Cuttack. The feedback thus received has been compiled and analyzed through statistical techniques. Key findings of the same have been illustrated below. These findings will be an essential ingredient in planning patient friendly reorganization and expansion plans for the hospital.

CRITERIA FOR SELECTING THE FACILITY

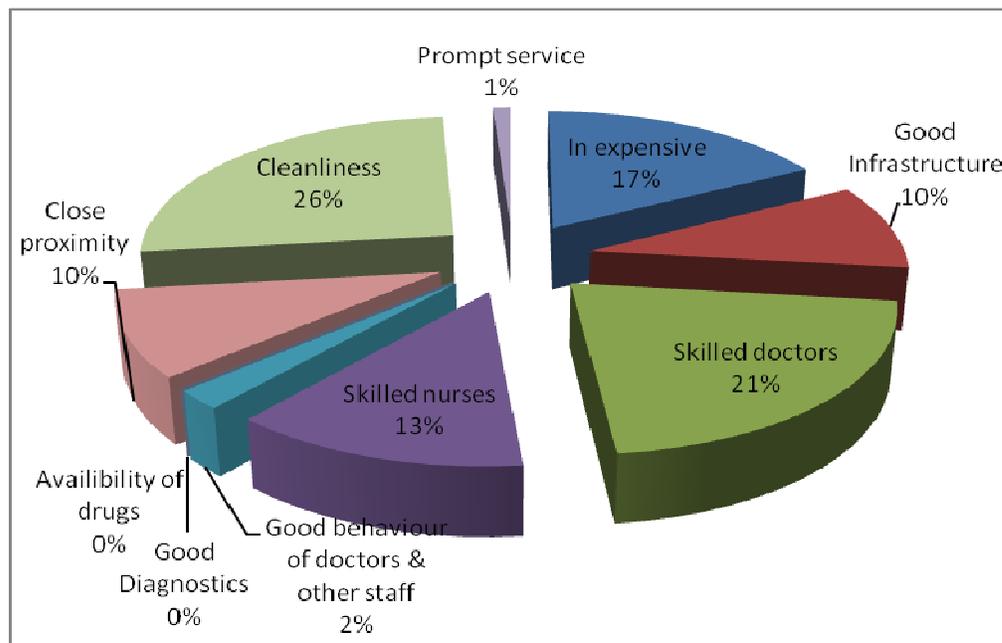


Chart No. 39

The most pertinent reasons for selection of SVBP Hospital as a preferred healthcare facility can be attributed to its cleanliness, competent team of doctors, inexpensive and good infrastructure. The above graphical representation is based upon the combined responses the respondents from the OPD & IPD.

Since a majority of the population in the catchments area is of the lower economic strata, the criteria for selecting a healthcare facility is largely confined to fulfillment of some basic needs such as affordability and availability of doctors and services. Other factors such as accessibility, behaviour of

staff, and drugs availability also feature on their wish list but ranks low in priority. Since service delivery is also high on the patient priority, improvement and up gradation of the same can lead to increase in the patient satisfaction.

FEEDBACK ABOUT FACILITIES, AMENITIES & CONVENIENCES IN THE OPD

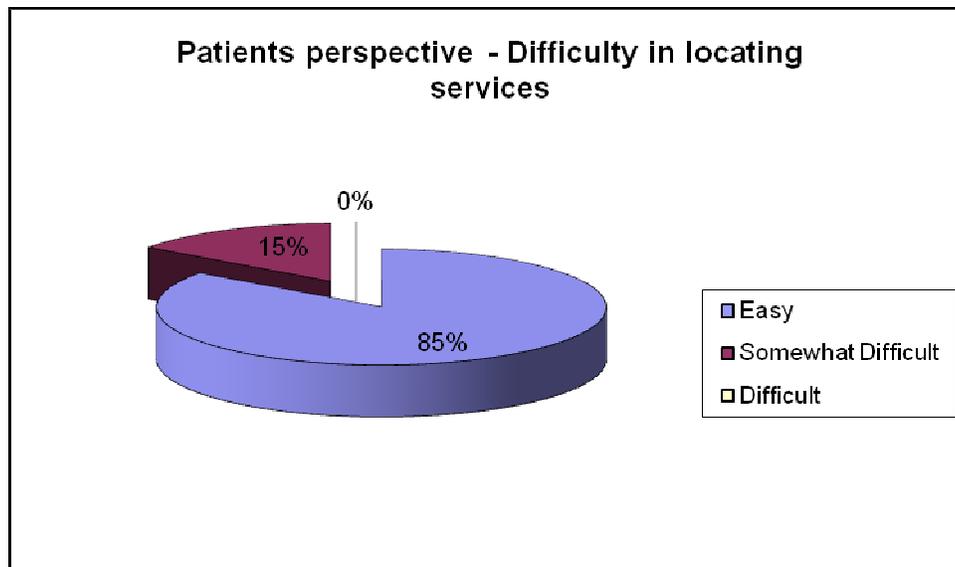


Chart No. 40

85% of the respondents found it very easy to locate the services in the hospital. A majority of them felt that the fact that all the OPD and diagnostic services are within one building makes access to them much easier.

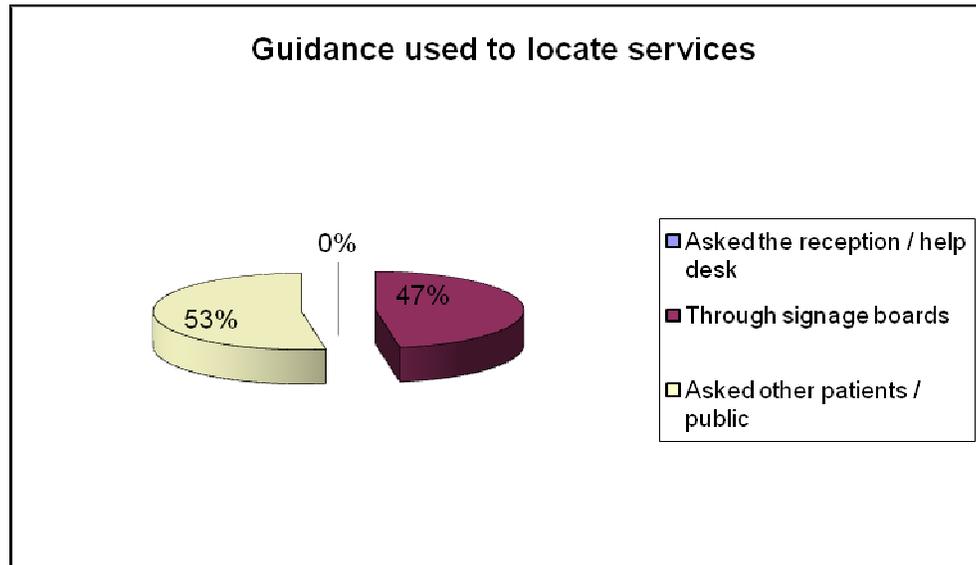


Chart No. 41

53% of respondents said they found their way around only by asking other patients.

Signage:

A major point of concern for the patients as revealed by the survey is ease in finding service locations. As per the respondents, finding their way in the newly constructed building is relatively easy but could have been better if signages in the local language were available. External signages are present in the campus but again only in English.

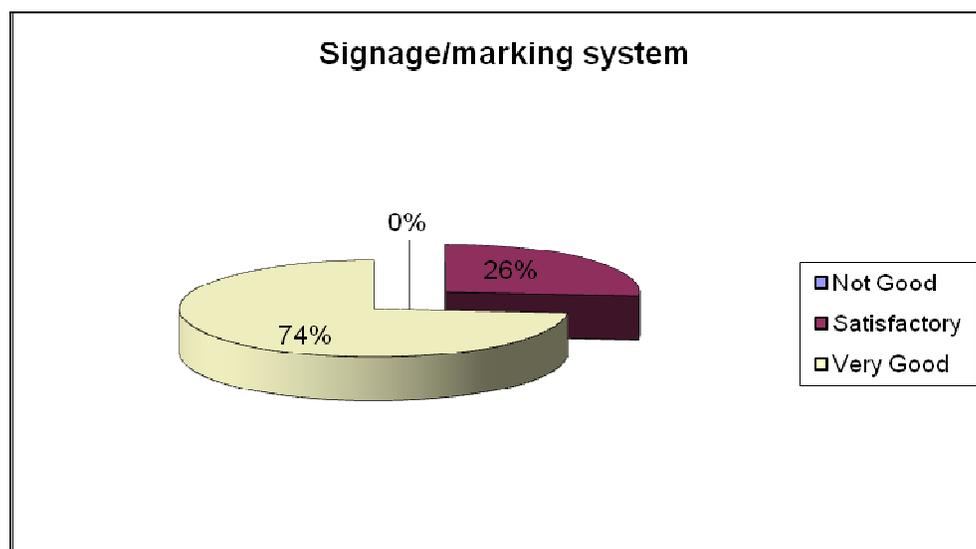


Chart No. 42

Waiting Area:

Majority of the patients were of the opinion that the waiting time in the OPD is very long.

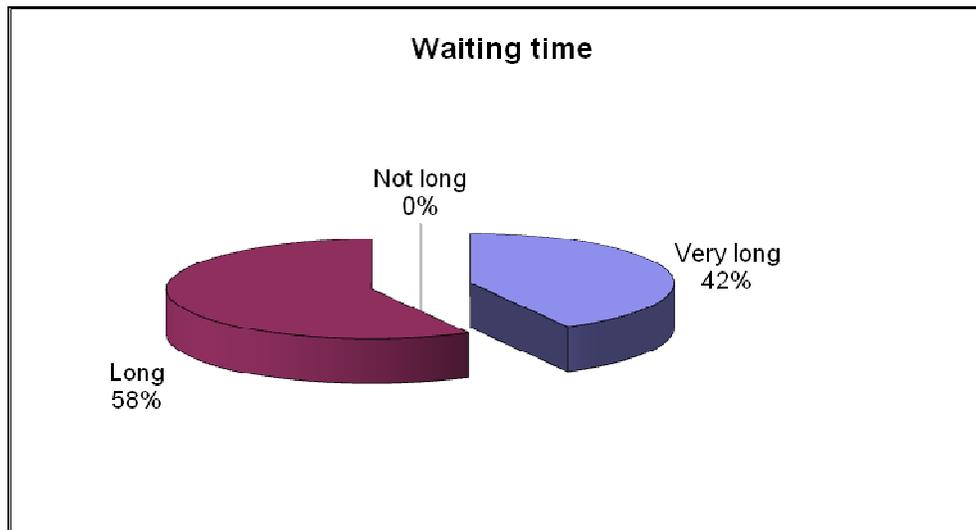


Chart No. 43

User Perspective Requirement of Facilities / amenities:

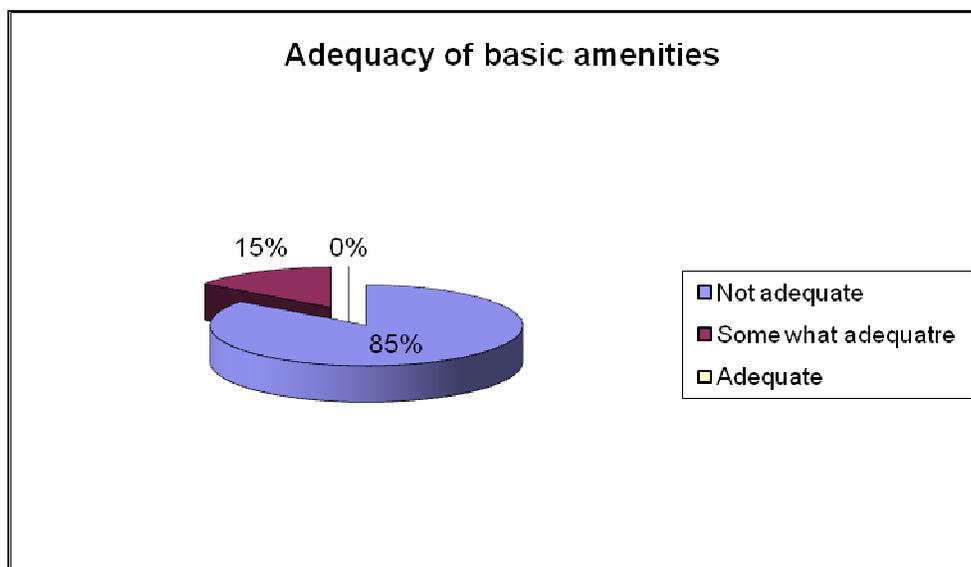


Chart No. 44

85% of the users interviewed felt that the facilities, amenities and conveniences were inadequate.

Seating chairs, fans, toilet & water dispenseries, are the most sought after facilities in the OPD premises. The graph also represent a need of a canteen for the patients/relatives.

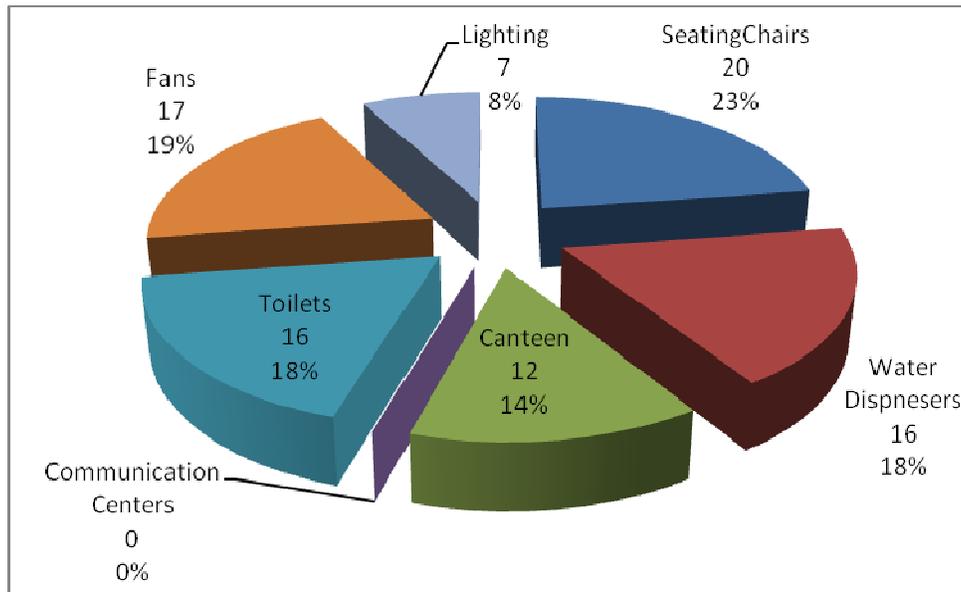


Chart No. 45

GENERAL QUALITY PARAMETERS

The section on general quality parameters included an array of questions pertaining to the following issues of concern for the patients:

- Infrastructure
- Cleanliness
- Promptness in the services
- Signage/marketing system
- Availability of drugs
- Availability of diagnostic services

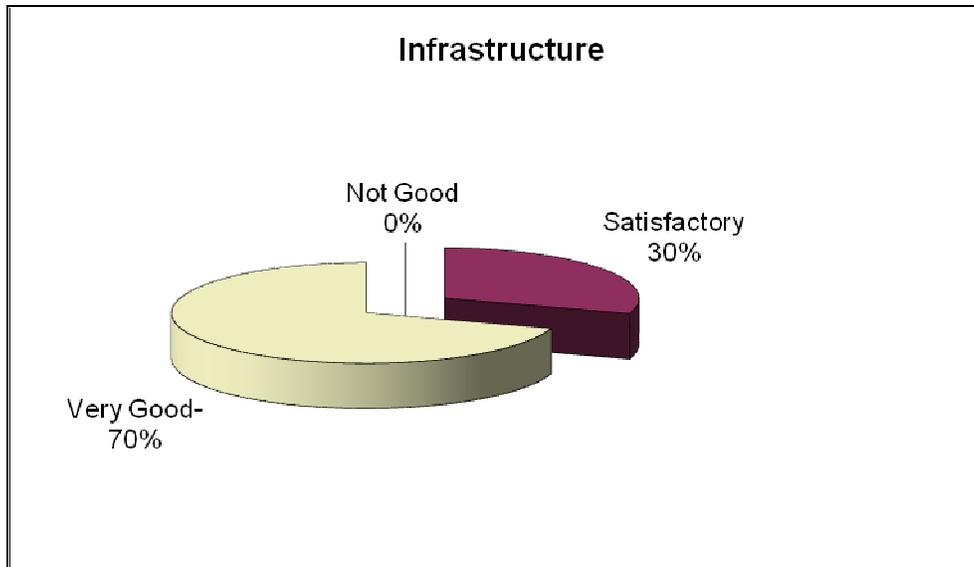


Chart No. 46

70% of the respondents found the infrastructure very good.

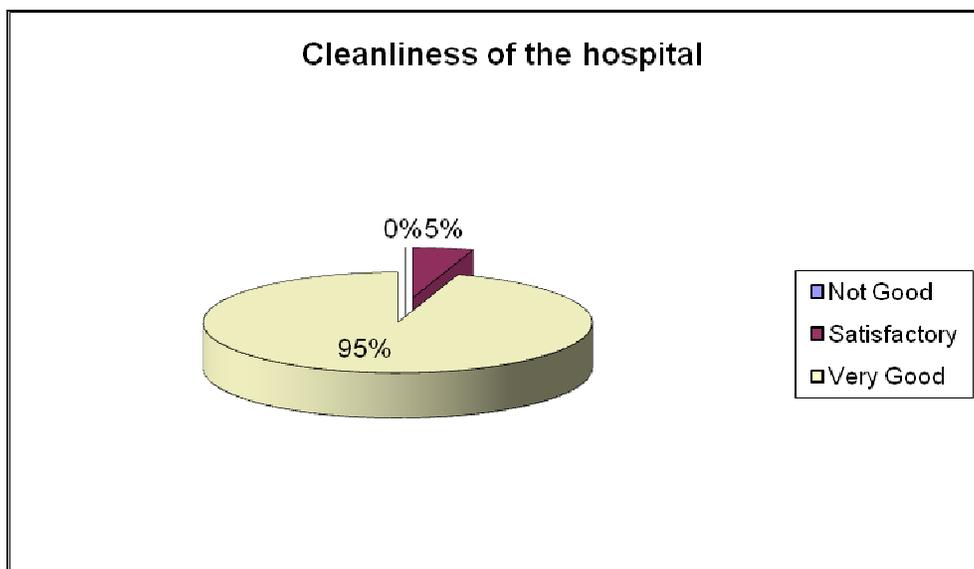


Chart No. 47

SVBP hospital is very clean as per a majority of respondents

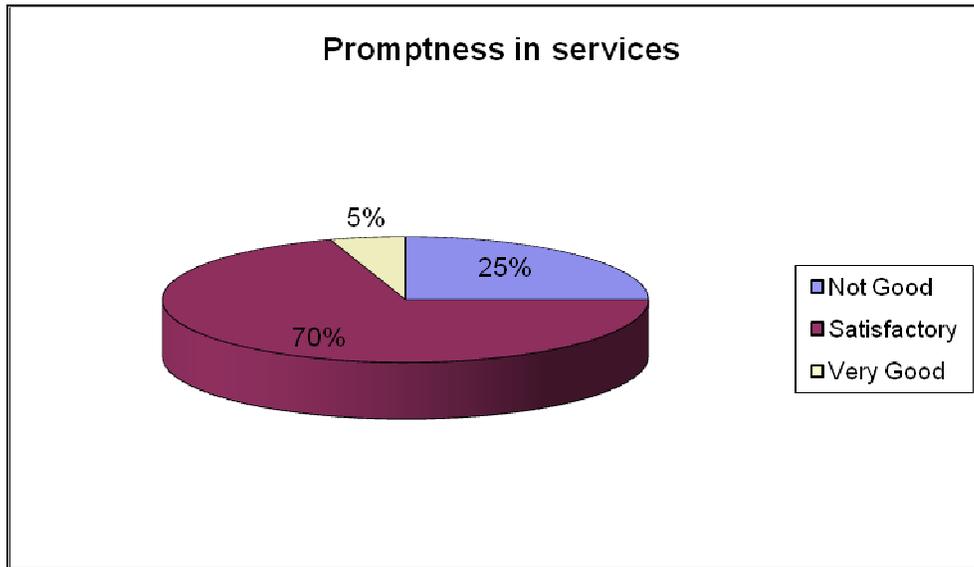


Chart No. 48

Promptness in service is dependent on the layout of the infrastructure to a certain extent. 70% of the respondents were very happy in this respect indirectly showing that the hospital has been planned well.

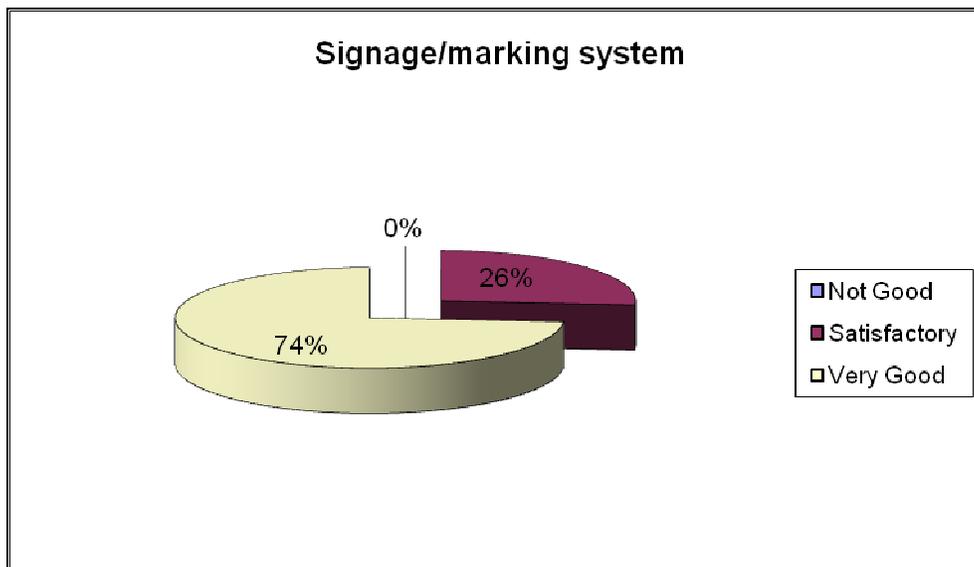


Chart No. 49

Most of the respondents were happy with the signages, however many of them felt they should also be in the local language.

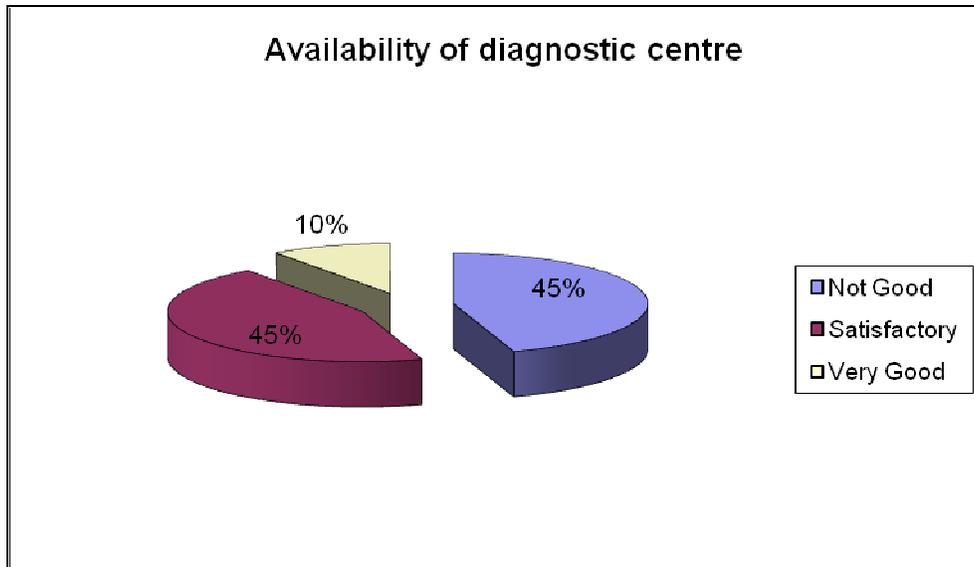


Chart No. 50

45% of respondents felt that the diagnostic services available were adequate, another 45% felt it is inadequate as they are many times sent outside the hospital for diagnostic services.

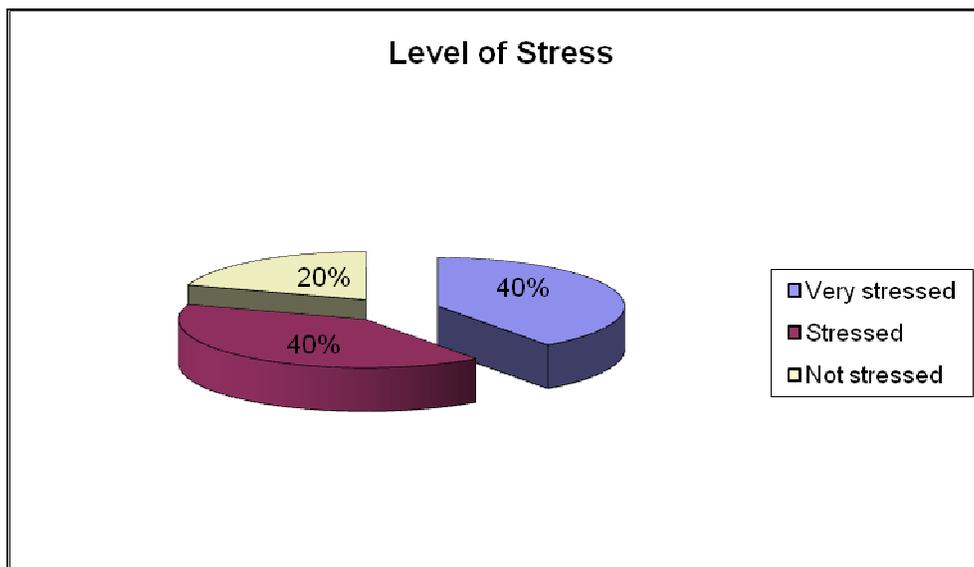


Chart No. 51

The design of the building, the way services are located, how long patients have to wait for services

can all contribute to stress in a person.

Majority of patients are satisfied with the present infrastructure of the hospital while a percentage of them have a negative perception about the present signage system especially the fact that they are not presented in the local language. Service delivery and behaviour of the hospital staff are also satisfactory as mentioned by the patient fraternity. Data analysis of all responses combined have revealed that about 45% of the patients are not satisfied with the diagnostic services and facilities in the OPD while another 45% feel that they were not good. Since the patients are generally from a lower economic status, their expectation is only restricted to the basic needs which is reflected by their responses.

PATIENT FRIENDLINESS

Majority of the patients response are of the opinion that the hospital is friendly, however about 50% of the respondents felt that its takes more time to get things done in the OPD.

4.3.5 IPD USERS' SURVEY: KEY FINDINGS & ANALYSIS

The inpatient unit of Sardar Vallab Bhai Patel Post Graduate Institute of Paediatrics (Sishu Bhawan) consists of above 220 beds. A cross section study has been conducted for in patients of Sardar Vallab Bhai Patel Post Graduate Institute of Paediatrics based on certain predetermined criteria to elicit patient perspective about the same. Respondents for the same have been drawn from patients of different specialties as mentioned in the sample collection methodology of SCB. The criteria have been enlisted as follows:

- Criteria for selecting the facility
- Facilities, Amenities & Conveniences for patients in the OPD
- Availability & Adequacy of service provision
- Feedback about general quality parameters
- Patient Friendliness

A series of questions under each of the above heads were asked to the patient respondents to infer a holistic view of the patient perspective of the IPD at Sardar Vallab Bhai Patel Post Graduate Institute of Paediatrics, Cuttack. The feedback thus received has been compiled and analyzed through various

statistical techniques. Key findings of the same have been illustrated below. These findings will be an essential ingredient in planning patient friendly reorganization and expansion plans for the hospital.

IPD Facilities, Amenities & Conveniences

Availability & Adequacy Of Services Provision

- **Food / Diet Related Amenities**

The quality and proper supply of diets to patients is of utmost importance to ensure optimum healthcare delivery. There is no Dietary department at SVBP Post Graduate Institute of Paediatrics; however bread, milk and eggs are supplied to the patients by the hospital. Only 1% of the total patient population interviewed gave a positive response to the dietary services.

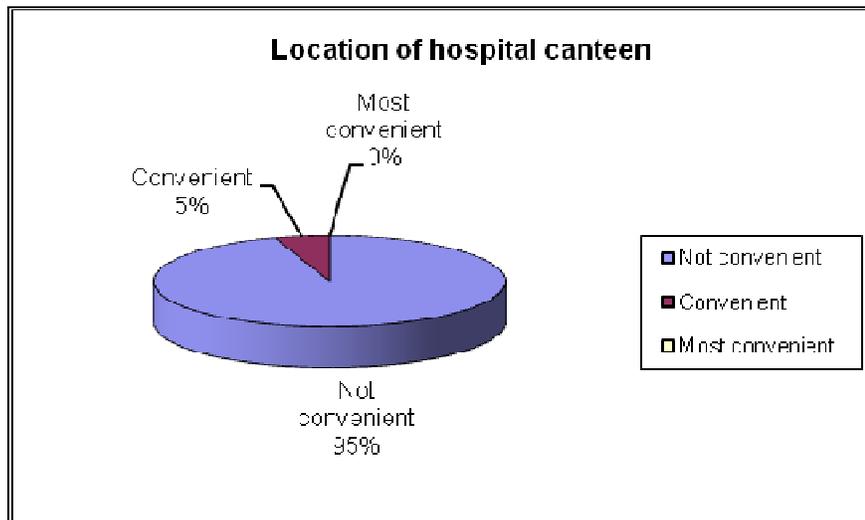


Chart No. 52

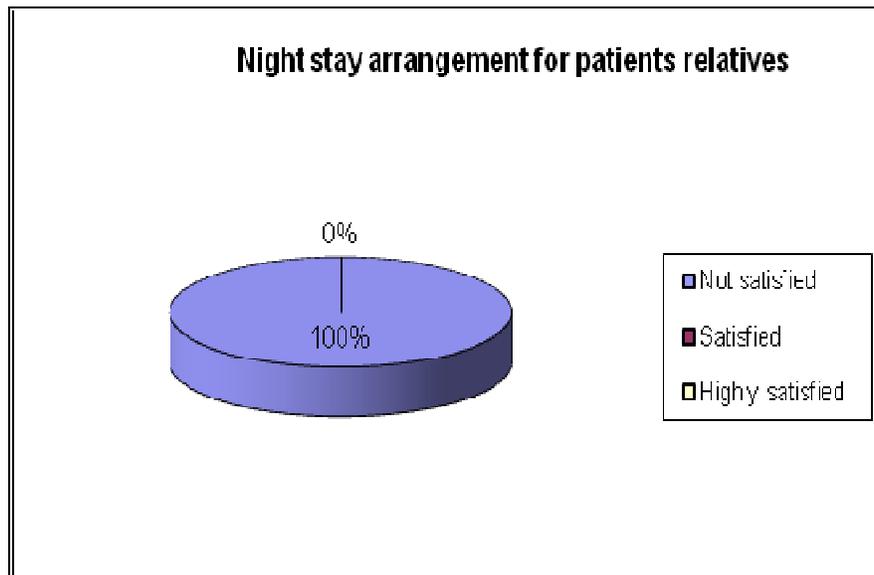


Chart No. 53

GENERAL QUALITY PARAMETERS

The section on general quality parameters included an array of questions pertaining to the following issues of concern for the patients:

- Infrastructure
- Cleanliness
- Promptness in the services
- Signage/marketing system
- Availability of drugs
- Availability of diagnostic services
- Time spent by the doctor
- Maintenance of privacy

Majority of patients are satisfied with the present infrastructure of the hospital while a majority of them have a negative perception about the clarity of the signage system present in the hospital.

Basic Amenities

Sanitary annexes such as drinking water, toilets, baths, and wash basins are one of the major components of the basic amenities that should be provisioned for. More than 60% patients were of the opinion that these services were not adequately provided.

Adequate Toilets

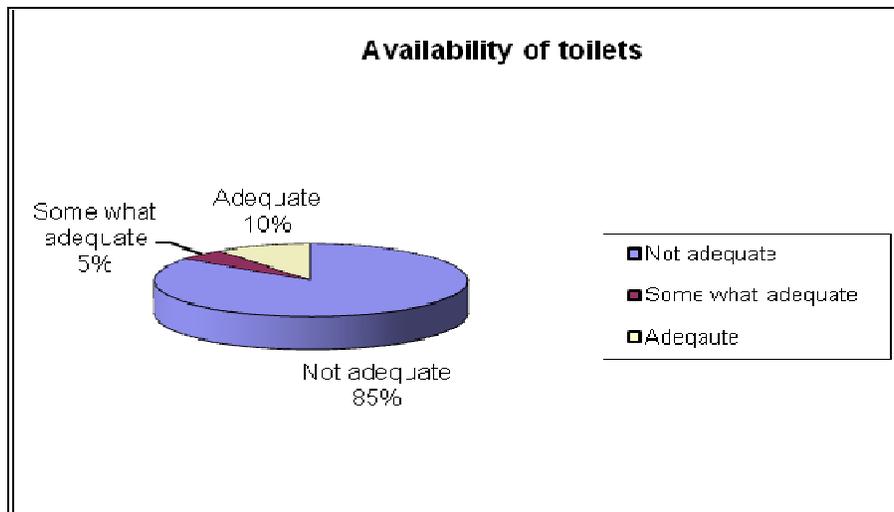


Chart No. 54

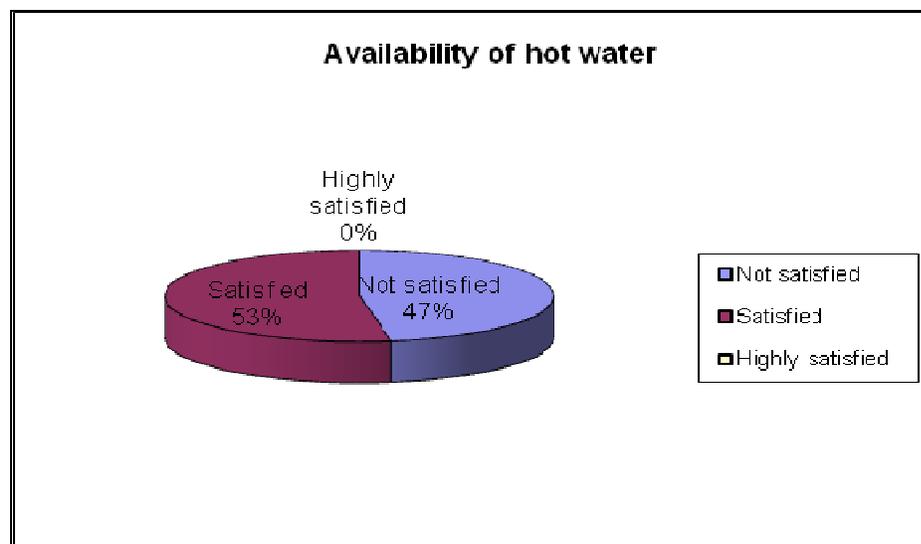


Chart No. 55

- **Drinking Water**

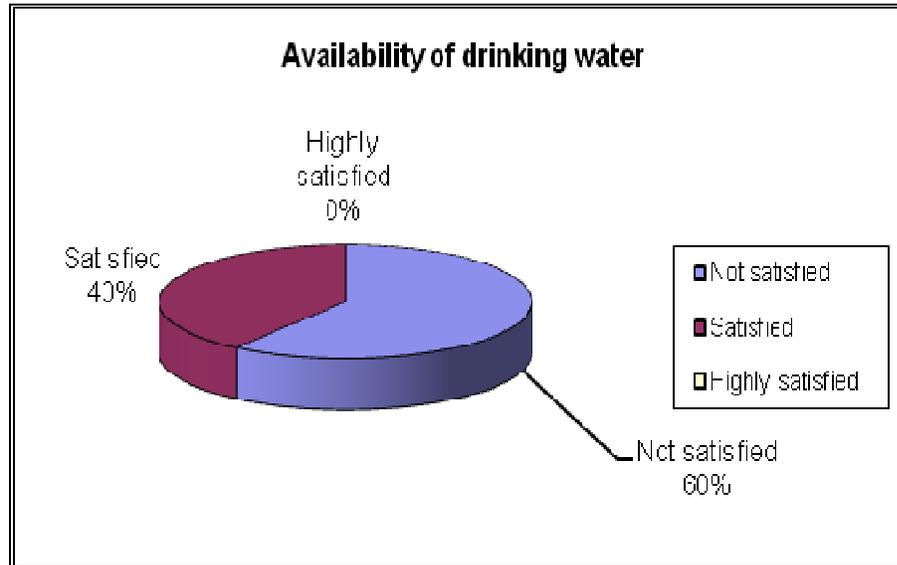


Chart No. 56

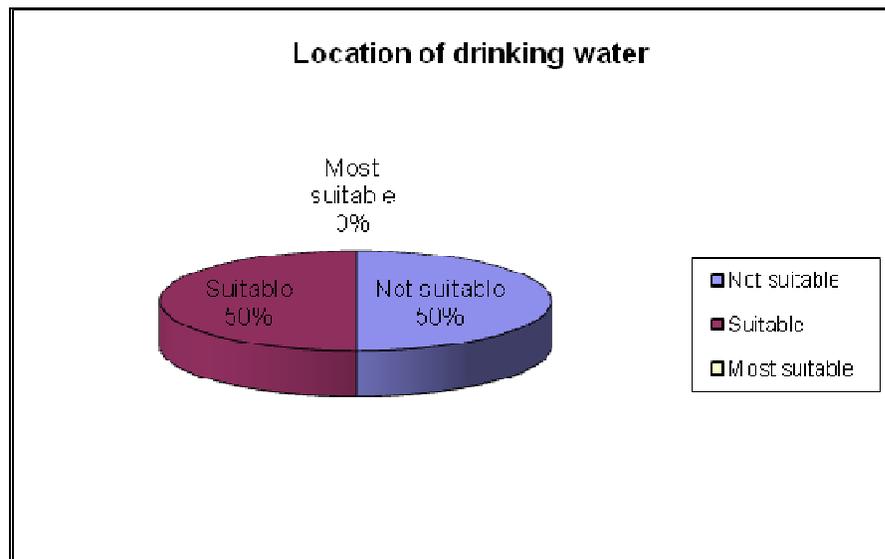


Chart No. 57

- **Wash Basins**

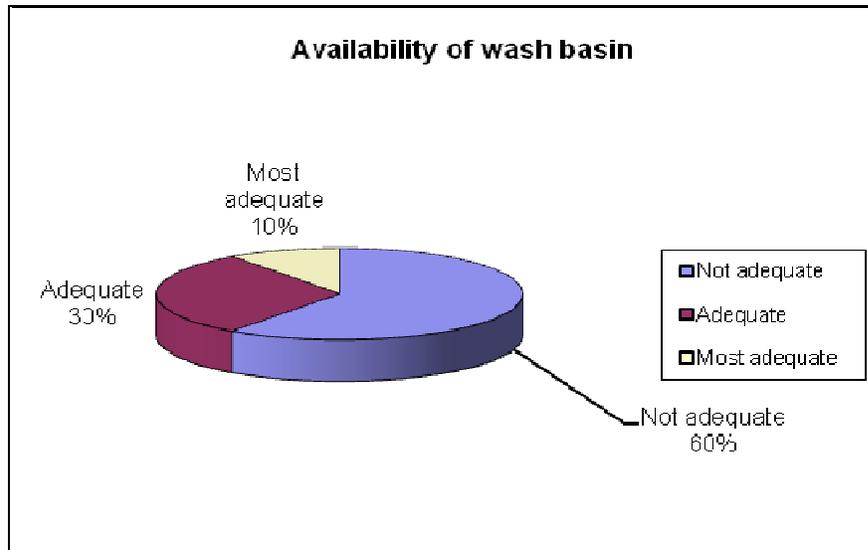


Chart No. 58

PATIENT FRIENDLINESS

Apart from the service delivery and provision, the built environment of the hospital should be patient friendly to ensure effective healthcare delivery. Questions relating to various aspects of the following were asked to the respondents

- General Environment in the IPD
- Ease of obtaining required information
- Admission/Discharge Procedures
- Patient/Attendants education about their treatment modalities
- Visiting Time for attendants/relatives
- Staff Friendliness

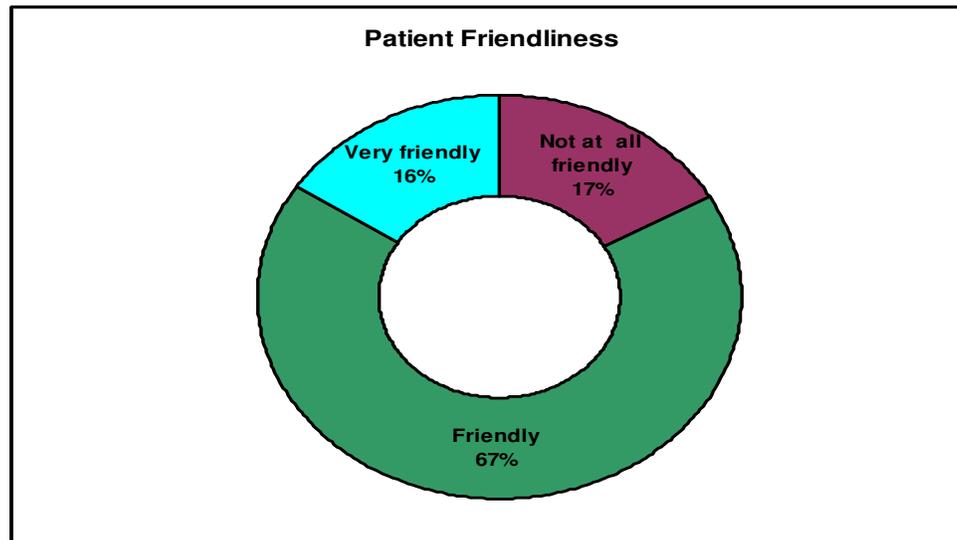


Chart No. 59

Data analysis reveals that a majority of the respondents found the IPD to be a patient friendly service area

4.3.6 PROVIDERS SUGGESTIONS

As per discussions with the Medical Superintendent and Deputy Medical Superintendent the following are the a few suggestions given by them:

- Development of a new administrative block
- With the construction of the new building which has been proposed to accommodate all the old wards, the infectious ward can be converted into a staff accommodation quarter
- The old medical ward is a heritage building which cannot be demolished; it can, therefore, be used as a patient attendant's waiting area or rest rooms.
- A new multi utility building can be planned behind the Advanced Care & Research Centre and can be connected to the main building.
- A new lecture hall and a hostel are required for students and residents.
- A new central store is required with adequate storage space.
- Space for laundry, kitchen, canteen, MRD and HMIS to be planned.

4.3.7 RECOMMENDATIONS

The following are a few recommendations for SVBP Hospital.

Nursing Unit:

The inpatient wards in this hospital should be housed in one building; the new building that is coming up should be planned for this.

The old wards need to be provided with the following facilities:

1. Sisters' Duty room with toilet
2. Supporting Areas
(a) Treatment/ procedure room
(b) Clean utility
(c) Store
(d) Dirty Utility
(e) Janitor's closet
(f) MO's duty room
(g) Trolley Bay
(h) Staff/Visitor's Toilet
13. Sanitary Annexure
(a) Bath
(b) Urinal
(c) Water Closet

Table No. 89

OT:

The OT has been very well planned; the only drawback is it is situated on the ground floor sharing a common corridor with radiology department. To restrict traffic flow the portion of the corridor in front of the OT and the surgery ward will need to be cordoned off with a partition, entry into this area will then need to be restricted with security manned doors.

NICU & PICU

Both the NICU and PICU are well planned with necessary facilities but they require a proper zoning system and additional facilities as follows

NICU

Particulars
1. PROTECTIVE ZONE
(a) Reception
(b) Waiting Room with toilet
(c) Shoe change room
(d) Counselling Room
2. CLEAN ZONE
(a) Sisters' duty room
(b) Clean Utility/treatment/dressing
(c) Store Room
(d) Equipment room
(e) Pantry
(f) Feeding area
(g) Formula room
(h) Examination area
3. STERILE ZONE
4. DIRTY ZONE
(a) Dirty utility & Soiled linen room

Table No. 90

PICU

Particulars
1. PROTECTIVE ZONE
(b) Reception
(c) Waiting Room with toilet
(d) Shoe change room
(e) Counselling Room
2. CLEAN ZONE
(f) Sisters' duty room
(g) Clean Utility/treatment/dressing

(h) Store Room
(i) Equipment room
(j) Pantry
(k) Examination area
3. STERILE ZONE
4. DIRTY ZONE
(l) Dirty utility & Soiled linen room

Table No. 91

Out Patient Department

- The main waiting area requires more space with the addition of more number of chairs
- Additional space is also required for the sub waiting areas as they are presently utilizing the corridor for the same
- Both the main waiting and sub waiting areas require the provision of fans
- A separate reception/help desk is required at the main entrance

Radiology Services

- A separate reception/billing counter should be provided that will cater to the laboratory and radiology departments.
- A dedicated waiting area for the radiology department.

The following is the list of dedicated areas:

Particulars
a) Waiting room with toilet
b) Fluoroscopy and radiography rooms
i) Attached dressing cubicle with toilet
c) Office, Record and computer room
d) Stores
i) Film stores
ii) Chemical Stores
iii) Special Packing material stores

iv) Equipment stores
2) Injection and Barium meal preparation room
3) Trolley Bay
4) Observation room
5) Ultrasonography
a) Sub waiting room
b) Color Doppler room
c) Toilet
6) Film Library
7) Seminar room
8) CT scan
a) Trolley Bay
b) Patient Change Cubicle
c) Radiologist's room
d) Technician room
e) Gantry room (=>25 M ²)
f) Console room
g) Record room/Computer room/Reporting room
h) Dark room
i) Toilets
j) Store room

Table No. 92

Casualty & Emergency

At present the casualty and emergency services are provided through a single consultation room. The old building which houses the steward office is very close to the entrance gate, this could be renovated to accommodate the casualty and emergency department. The facilities that need to be planned in the emergency department are as follows:

Particulars
a) Reception
b) Triage/ resuscitation area (1/15000 yearly attendances)
c) Acute Treatment Area (1/1100 yearly attendances) [For non-ambulant patient]
d) Consultation Area (For ambulant patient)
e) Procedure room/treatment room
f) Plaster room with storage for plaster, bandages, splint and crutch store
g) Observation room
h) Administrative area
i) Storage
j) Clean Utility
k) Dirty Utility
l) Janitor's room
m) Doctor's room
n) Nursing station
o) Security room
p) Room for police personnel
q) PMGV supply
r) Relatives' waiting area with toilet
s) Nurse staff room with toilet facility
t) Emergency OT

Table No. 93

Fire Protection Facility

The fire protection facility provided in the new building should also be made available in the other building. All buildings including the main building should have a designated fire escape route.

Central Sterile Supply Department

The location of the CSSD is perfect but it needs to be planned such that it is segregated into different zones as follows:

Particulars
1. Receiving area for soiled articles
2. Sorting area
3. Cleaning area
4. Packing area
5. Sterilizing and cooling area
6. Storage area for clean stocks (not sterile)
7. Storage area for sterile stocks
8. Dispatch area for the sterile packs
9. CSSD supervisor's room
10. Staff change room with toilets and lockers

Table No. 94

Ambulance Services

SVBP hospital being a tertiary care hospital should have at least one ambulance with proper critical care support. The hospital caters to a wide catchment area, additional number of ambulances are required.

Medical Record Department

An expansion of the MRD can be planned by utilizing the rooms adjacent to it which are currently not in use.

Particulars
9. Separate room for MRD In charge
(h) Vital statistics desk
(i) Admission check desk
(j) Census desk
(k) Assembly and deficiency check desk

(l) Incomplete record control desk, discharge analysis and administrative statistics desk
(m) Coding and indexing desk
(n) Complete record control desk
10. Is there separate area provided for doctors to fill in the incomplete medical records?
11. Separate fire fighting arrangement in MRD
12. Sufficient storage capacity in the MRD

Table No. 95

. Laundry

A linen & laundry department needs to be planned in the hospital. The various areas that need to be included are shown in the list below:

Particulars
(a) Reception/Collection and Sorting
(b) Change Room
(c) Sluicing and autoclaving
(d) Mending
(e) Washing machine /Driers/ Hydro extractors/ Calendering and pressing
(f) Mattress sterilizing
(g) Boiler House
(h) Stores
(i) Fuel
(ii) Soap and detergent

2. Janitor Closet
3. Sanitary
4. Manager's Office

Table No. 96

Mortuary

The hospital does not have a mortuary; the closest is at S.C.B hospital which is eight kilometers away. Therefore a mortuary is required within the hospital premises. The various facilities to be planned are given below:

(a) Body Store
(b) Autopsy Room
(c) Doctor's Change room with toilet
(d) Viewing room
(e) Relatives' waiting room
(f) Janitors' closet

Table No. 97

Laboratory

- Separate registration counter is required.
- Work counters requires more space
- A separate sample collection room with attached toilets (separate for male and female). Hatch windows can be provided through which the specimens can be passed through.
- Storage facilities for reagents, supplies, stained specimen microscopic slides, chemicals & flammable liquids.
- Separate room for department heads is required.

With the increase in patient load the size of the lab will also have to increase proportionately.

Vertical Circulation

One elevator is available in the main building, which is sufficient but it is not being utilized.

Fire escape stair cases/route need to be planned for all the buildings.

Central store

The central store is located in the old heritage building along with the wards. The department has limited space with both medical and non medical items stored in just two rooms. The old building still has space for the addition of another department the central store can therefore be relocated there.

(a) Storage room s
i) Textile Store (Gauze, Bandage)
ii) Storage for IV Fluids
iii) Bulk drug storage
iv) Retail dispensary
v) Cool and cold storage
vi) Packing Material Store
vii) Store for rubber goods
viii) Acid store
ix) Medical Gas store
x) Store for items awaiting Condemnation and disposal (Held till disposal)
(b) Administrative office
(c) Sanitary facility

Table No. 98

Dietary Department

The dietary department is an essential part of patient service from where patients are provided with special diet prescribed by their respective doctors. The dietary department could be close to the inpatient wards just behind the new building where a new multi utility building can be planned as suggested by the HOD. The important areas include:

(a) Dietician's room

(b) Kitchen Manager's office
(c) Staff Change Room
(d) Staff rest room
(e) Reception of kitchen stores
(f) Storage facilities
(i) Poultry
(ii) Vegetables
(iii) Dry items (Rice, Atta etc)
(iv) Fuel store (Coal/Wood/Gas)
(v) Store for dairy items
(vi) Storage for implements, machines, bowls, pans, utensils
(g) Refrigeration facilities
(h) Pot / utensil wash area
(i) Server
(j) Pan Wash
(k) Food Trolley and container wash
(l) Food trolley bay
(m) Electric supply
(n) Water supply (how many/duration of supply)
2. Disposal of kitchen waste

3. Hand washing facilities
4. Toilets
5. Lighting (natural)
6. Ventilation (exhaust chimneys)

Table No. 99

4.3.8 COMMON RECOMMENDATIONS

- The old building which houses the steward office and is connected to the advanced medical care & research centre can be converted into a casualty, central store and MRD.
- A new building (adjacent to the old block housing the steward office) has been proposed to accommodate all the old wards; the infectious ward can be converted into a staff accommodation quarter.
- The old medical ward is a heritage building which cannot be demolished; it can, therefore, be used as a patient attendant's waiting area or rest rooms.
- A new multi utility building can be planned behind the Advanced Care & Research Centre and can be connected to the main building.

5 ANNEXURES

CONTENT

<u>Tool Kit No</u>	<u>Topic</u>	<u>Page No</u>
1	Nursing Unit	1
2	Operation Theatre	3
3	Out-patients' Need Assessment	7
4	In-patients Need Assessment	13
5	Hospital Laboratory	19
6	Maternity and Delivery unit	23
7	Blood bank	26
8	Imaging department	28
9	CSSD	32
10	IT Department	34
11	Emergency and casualty unit	35
12	Pharmacy	38
13	Engineering Services	40
14	Fire Protection	42
15	Vertical Circulation	44
16	Ambulance Services	46
17	Medical Record Department	47
18	Linen and Laundry services	49
19	Dietary Services	51
20	Biomedical waste management	54
21	Mortuary	58
22	Physiotherapy	60
23	Parking facility	62
24	Outpatient Department	64
25	Telemedicine Unit	69
26	Maternity OPD	71

27 NICU

74

28 ICU

76

INFRASTRUCTURE ASSESSMENT CHECK LIST**NURSING UNITS (WARDS)****Name of the hospital**

Name of the department:

Ward Name (or Number)

Name of the respondent

Name of the interviewer

Date

Give a General description

3. Building	
4. Location (Floor etc)	
5. Relationship with neighbouring wards	
6. Access to the department (Corridor width)	
7. Type of ward design:	
(a) Rig pattern	
(b) Nightingale pattern	

8. No of beds	
9. No of private rooms	
10. No of semiprivate rooms	
11. Distance between two beds (centre to centre - in multi bed rooms)	
12. In Nightingale pattern ward, width of central corridor	
13. Sisters' Duty room with toilet	
14. Supporting Areas	
(a) Nurses Duty station	
(i) Location	
(b) Treatment and clean utility	
(c) Ward Store	
(d) Linen Store	
(e) Pantry	
(f) Dirty Utility	
(g) Soiled Linen store	
(h) Janitor's closet	
(i) MO's duty room	
(j) Trolley Bay	
(k) Staff/Visitor's Toilet	
14. For special care units, any other areas if provided	
15. Sanitary Annexures	Numbers provided
(a) Bath	
(b) Urinal	
(c) Water Closet	
16. Comment on the following	

(a) State of maintenance	
(i) Civil	
(1) Floor	
(2) Ceiling	
(3) Walls	
(4) Windows	
(5) Doors	
(ii) Plumbing	
(1) Wash Hand Basins	
(2) Water Closets	
(3) Water taps	
(iii) Electrical	
(1) Electrical outlets	
(2) Wiring	
(3) Other fixtures and fittings	

INFRASTRUCTURE ASSESSMENT CHCKLIST

OPERATION THEATRE

Name of the hospital

Name of the department:

Ward Name (or Number)

Name of the respondent

Name of the interviewer

Date

Give a General description

Hospital Name: _____

2. <u>OT</u>	
3. Department (if departmental)	
4. Building	
5. Location (Floor)	

(a) Comment on location (should be in quiet environment, freedom from noise and other disturbance, freedom from contamination and other possible cross infection, maximum protection from solar radiation and convenient relationship with acute surgical ward, ICU, Imaging department, laboratory and Blood bank)	
6. Zoning (with rooms in each zone)	
(a) Protective	
(b) Clean	
(c) Sterile	
(d) Disposal	
7. Entry/Exit	
(a) Staff	
(b) Patients	
(c) Supplies	
(i) Clean	
(ii) Sterile	
8. Ventilation System	
(a) Central	
(b) Packaged	
(c) Window	
(d) Others	
(e) Air Flow	
(i) Laminar Air Flow	
(ii) Turbulent Flow	
(iii) Positive Pressure Ventilation	
(f) Type of Air Filters Used	

(i) HEPA	
(ii) Others	
(iii) No specific air filters	
(g) Return Air System	
(h) Fresh Air 100 % outdoor air	
(Give Operating Room wise details)	
9. Operating Room No	
(a) Types of operations done	
(b) Size of the room	
(c) No of OT table placed in one room	
10. Ancillary rooms	
(a) PROTECTIVE ZONE	
(i) Reception	
(ii) Waiting with Toilets	
(iii) Anaesthetists' and Surgeons' examination room	
(iv) Doctors change room with toilets	
(v) Nurses' change room with toilets	
(vi) Other staff change room with toilets	
(vii) Theatre Store	
(1) Linen	
(2) Appliances and medical stores	
(3) Instruments and disposable store	
(viii) Trolley bay	
(ix) Autoclave room	
(x) Gas store	

(xi) Theatre work and preparation	
(xii) Closed Circuit TV for operation viewing	
(b) CLEAN ZONE	
(i) Pre-operative room	
(ii) Recovery room	
(iii) Toilet	
(iv) Janitors' closet	
(v) Nursing Station	
(vi) Technicians room with toilet	
(vii) Pump storage for CTVS OT	
(viii) Store for costly and sophisticated equipment	
(ix) Blood storage and Frozen section	
(x) X-ray unit with dark room	
(xi) Seminar room with toilet	
(xii) Pantry	
(xiii) OT Matron's room	
(xiv) Computer room	
(c) STERILE ZONE	
(i) Anaesthesia induction room	
(ii) Clean utility store	
(iii) Operating Room	
(iv) Scrub up	
(v) Trolley Laying	
(d) DISPOSAL ZONE	
(i) Dirty Wash-up room	

(ii) Janitors' closet	
11. Comment on the following	
(a) Dado height	
(b) Door width	
(c) Shape of the Operating Room	
(d) Availability of PMGV System	
(e) UPS availability	
(f) Standby Power Supply	
(g) State of maintenance	
(i) Civil	
(1) Floor	
(2) Ceiling	
(3) Walls	
(4) Windows	
(5) Doors	
(ii) Plumbing	
(1) Wash Hand Basins	
(2) Water Closets	
(3) Water taps	
(iii) Electrical	
(1) Electrical outlets	
(2) Wiring	
(3) Other fixtures and fittings	

Tool Kit No 3**Out-Patients' Need Assessment****PART A: BACKGROUND INFORMATION**

	Date of Interview	
	Name of the interviewer	

1.	Name of the Facility	
1.1.	Age of the patient (in years)	
1.2.	Location of Residence (Currently Living)	1. Bhubnsewar
		2. Cuttack
		3. Behrampur
		4. Sambalpur
		5. Other Districts of Orissa
		6. Out Side Orissa
		7. If Orissa (Other than Bhubneswar) then the name of the district
1.3.	Sex of the patient	1. Male
		2. Female
1.4.	Main Occupation of the patient	1. Agriculture
		2. Labour
		3. Service

		4. Business	
		5. Unemployed	
		6. House-wife	
		7. Others	
1.5.	For how long you or your family members are using the services of this hospital? <i>(for first visit, write "0", for less than 1 year write "1", and so on)</i>	1. First visit.	
		2. Less than one year	
		3. For 1-2 years	
		4. More than 2 years	
		5. If more than 2 years then for how many years?	
1.6.	Mode of transport used to reach the hospital	1. Public Transport	
		2. Cycle	
		3. Motor Cycles	
		4. Hired Four Wheelers	
		5. Own Four Wheelers	
		6. Ambulance	
		7. Others (specify	

SECTION 2: CRITERIA FOR SELECTING THE FACILITY

2. S N	Question	Options	
2.1.	What is the most important reason for selecting this particular hospital?	1. In-expensive 2. Good infrastructure 3. Skilled doctors 4. Skilled nurses 5. Good behavior of doctors & other Staff 6. Good Diagnostics 7. Availability of drugs 8. Close proximity 9. Cleanliness 10. Prompt services 11. Others (specify	
2.2.	For what problem you have visited this facility?		
2.3.	Location of the OP Service utilised (In which building of the hospital in the OP / Clinic/ Diagnostic used by the patient located)		

SECTION 3: FEEDBACK ABOUT FACILITIES, AMINITIES & CONVENIENCES

3. S N	Question	Options	
	Signage's		
3.1.	How difficult it was to locate the Doctor's Room / Radiology / Laboratory / Other services?	1. Easy	
		2. Somewhat Difficult	
		3. Difficult	
3.2.	In case it is difficult to locate, what are these areas		1. 2. 3.
3.3.	How did you locate the various service locations?	1. Asked the reception / help desk	
		2. Through signage boards	
		3. Asked other patients / public	
	Waiting Area / Amenities		
3.4.	How will you rate the Facilities (space, seating, water, toilets) provided in the waiting areas adequate?	1. Not adequate	
		2. Some what adequate	
		3. Adeqaute	
3.5.	What are the facilities / amenities you would like the hospital to additionally provide? (Tick the choices that the respondent expressess by himself....No prompting to be provided)	1. Seating / Chairs / Benches	
		2. Water Dispnesers / Coolers	
		3. Canteen / Cofee/ Tea Kiosks	
		4. Communication Centers / Internet Café /	
		4. Toilets	
		5. Fans	
		6. Lighting	

3. S N	Question	Options	
		7. Others (Speify, List options not covered above)	
	Accessibility Factors		
3.7.	Distances between various services (OPD – Labs, OPD – Pharmacy, OPD – X-ray)	1. Far from each other	
		2. Away from each other, but accessible	
		3. Nearby each other	
3.8.	Any specific facility / service you would suggest that may be located near to the OPD (List the name of the service)		
3.9.	Rate the crowding in the lifts provided? (In case the hospital has provision for them)	1. Not crowded	
		2. Moderate crowd	
		3. Very crowdwd	
	Parking facilities (To be asked to only patients / family who has own transport / hired transport)		
3.10.	Where did you park your cycle / two wheeler / four wheeler?	1. Outside hospital campus	
		2. Hospital Campus (Unmarked area)	
		3. Designated Parking Area	

SECTION 4: FEEDBACK ABOUT AVAILABILITY & ADEQUACY OF SERVICES

SN	Question	Options	
4.	Was the type of specialist / specialty you wanted to consult available?	1. Yes	
		2. No	
4.1.	Incase of No, Name the type of specialist / speciality not available		
4.2.	Did you have to rely on any of the outside hospitals / laboratory for any laboratory investigations?	1. Yes	
		2. No	
4.3.	If yes, Name of the investigation for which you had to go to other places		
4.4.	Did you have to rely on any of the outside hospitals / Scan Centers for any Imaging / Radiology investigations?	1. Yes	
		2. No	
4.5.	If yes, Name of the investigation you had to get done in other places?		

SECTION 5: FEEDBACK ABOUT GENERAL QUALITY PARAMETERS

Provide Ratings for the following parameters

5.	Infrastructure	1. Not Good	
		2. Satisfactory	
		3. Very Good-	
5.1.	Cleanliness	1. Not Good	
		2. Satisfactory	
		3. Very Good	
5.2.	Behavior of the Doctors	1. Not Good	
		2. Satisfactory	
		3. Very Good-	
5.3.	Behavior of the other staff	1. Not Good	
		2. Satisfactory-	
		3. Very Good	
5.4.	Promptness in the services	1. Not Good	
		2. Satisfactory	
		3. Very Good	
5.5.	Signage /marking system	1. Not Good	
		2. Satisfactory	
		3. Very Good	
5.6.	Availability of Drugs	1. Not Good	
		2. Satisfactory	
		3. Very Good	
5.7.	Availability of Diagnostics services	1. Not Good	
		2. Satisfactory	

		3. Very Good	
5.8.	Time spent by the doctor	1. Not Good	
		2. Satisfactory	
		3. Good	
5.9.	Maintenance of privacy (For female Pts only)	1. Not Good	
		2. Satisfactory	
		3. Very Good	
5.10.	Availability of doctors	1. Not Good	
		2. Satisfactory	
		3. Very Good	

Section 6: Patient Friendliness

6.	How stressed you feel in the OPD	1. Very stressed	
		2. Stressed	
		3. Not stressed	
6.1.	How easily you get all the information you need	1. Get no information	
		2. Get Some information	
		3. Get all information easily	
6.2.	How friendly the staff are	1. Not at all friendly	
		2. Friendly	
		3. Very friendly	
6.3.	How long do you have to wait in the OPD to get your job done	1. Very long	
		2. Long	
		3. Not long	
6.4.	Do the staff properly explain to you the reason for delay on their own	1. Do not explain at all	
		2. Explain in a hurry when asked	
		3. Explain properly without asking	
6.5.	Before any procedure, does the staff properly explain to you what you should expect?	1. Never explain	
		2. Explain when asked	
		3. Always explain properly without asking	
6.6.	If possible, would you avoid coming to this OPD in future, if required?	1. Definitely avoid	
		2. Avoid	
		3. Never shall I avoid	

IN-PATIENTS' NEED ASSESSMENT**SECTION 1: BACKGROUND INFORMATION**

1.	Date of Interview	
1.1.	Name of the interviewer	
1.2.	Name of the Facility	

1.3.	Age of the patient (in years)	
1.4.	Location of Residence (Currently Living)	Put a X (against the response)
	• Bhubnsewar	
	• Cuttack	
	• Behrampur	
	• Sambalpur	
	• Other Districts of Orissa	
	• If in Orissa (Other than Bhubneswar) then the name of the district	
	• Out Side Orissa (Name the state)	
1.5.	Sex of the patient	1. Male
		2. Female
1.6.	Main Occupation of the patient	1. Agriculture

	(Put a X against the appropriate occupation of the patient)	2. Labour	
		3. Service	
		4. Business	
		5. Unemployed	
		6. House-wife	
		7. Others	
		2.	For how long you or your family members are using the services of this hospital? <i>(for first visit, write "0", for less than 1 year write "1", and so on)</i>
		2. For less than one year	
		3. For 1-2 years	
		4. More than 2 years	
		Number of years	
2.1.	Mode of transport used to reach the hospital	1. Public Transport	
		2. Cycles	
		3. Motor Cycles	
		4. Hired Four Wheelers	
		5. Own Four Wheelers	
		6. Ambulance-	
		7. Others (specify	
2.2.	For what problem you have visited this facility?		
2.3.	How long you have been admitted in the hospital (No of days)		
2.4.	What is the most important reason for selecting this particular hospital? (Put a X against the appropriate answer)	1. In-expensive	
		2. Good infrastructure	
		3. Skilled doctors	

		4. Skilled nurses...	
		5. Good behavior of doctor & other Staff	
		6. Availability of drugs	
		7. Close proximity	
		8. Cleanliness	
		9. Prompt services	
		10. Good Diagnostics	
		11. Others (specify	
2.5.	Name of the ward where the patient is admitted?		
2.6.	Location of the Ward (In which building of the hospital is the ward located)		

SECTION 2: FEEDBACK ABOUT FACILITIES, AMINITIES & CONVINIENCES

	Question	Options	Circle, most appropriate		
	Basic Amenities				
2.1.	Are the numbers of toilets adequate?	1. Not adequate 2. Some what adequate 3. Adeqaute	1	2	3
2.2.	To what extent are you satisfied with availability of drinking water	1. Not satisfied 2. Satisfied 3. Highly satisfied	1	2	3
2.3.	Is location of drinking water point suitable to you	1. Not suitable 2. Suitable 3. Most suitable	1	2	3
2.4.	Are availability of wash basins adequate for your need	1. Not adequate 2. Adequate 3. Most adequate	1	2	3
2.5.	Are numbers of toilets and baths adequate	1. Not adequate 2. Adequate 3. Most adequate	1	2	3
2.6.	Are you satisfied with availability of hot water for bathing etc	1. Not satisfied 2. Satisfied 3. Highly satisfied	1	2	3
<u>SECTION 3: Food / Diet Related Amenities</u>					
3.3.	Is hospital diet provided to you	1. Not provided 2. Occassionally provided 3. Always provided	1	2	3
3.4.	In case patient diet is not provided, are you satisfied with hospital canteen supply	1. Not satisfied 2. Satisfied 3. Highly satisfied	1	2	3
3.5.	Are you satisfied with the food supply arrangement to your attendants staying with you?	1. Not satisfied 2. Satisfied 3. Highly satisfied	1	2	3
3.6.	Is the location of hospital canteen convenient?	1. Not convenient 2. Convenient 3. Most convenient	1	2	3
3.7.	Are you satisfied with hospital night stay arrangement, if	1. Not satisfied 2. Satisfied 3. Highly satisfied	1	2	3

	Question	Options	Circle, most appropriate		
	required, for your relatives				
3.8.	If your relatives have to make their own night stay arrangements, are these conveniently located	1. Not convenient 2. Convenient 3. Very convenient	1	2	3
3.9.	Parking facilities (To be asked to only patients / family who has own transport / hired transport)				
3.10.	Is the parking facilities provided for your vehicle satisfactory	1. Not satisfactory 2. Satisfactory 3. Very satisfactory	1	2	3

SECTION 4: FEEDBACK ABOUT AVAILABILITY & ADEQUACY OF SERVICES

SN	Question	Options			
4.	Is the doctor you wanted to see always available	1. Not available 2. Sometimes available 3. Always available	1	2	3
4.1.	Could all your tests and investigations be done in the hospital itself	1. None Could be done 2. Some could be done 3. All could be done	1	2	3
4.2.	Could all your x-ray, if needed, be done in the hospital itself	1. Never 2. Sometimes 3. Always	1	2	3
4.3.	Could all Ultrasound examination, if needed, be done in the hospital itself?	1. Never 2. Sometimes 3. Always	1	2	3
4.4.	Could all your CT, if needed, be done in the hospital itself	1. Never 2. Sometimes 3. Always	1	2	3
4.5.	Could all your MRI examination, if needed, be done in the hospital itself	1. Never 2. Sometimes 3. Always	1	2	3

SECTION 5: FEEDBACK ABOUT GENERAL QUALITY PARAMETERS

Provide Ratings for the following parameters

5.	How do you find hospital buildings, roads	1. Not good 2. Satisfactory 3. Good	1	2	3
5.1.	How well Cleanliness is maintained in the hospital	1. Not good 2. Satisfactory 3. Good	1	2	3
5.2.	Do you find doctors are always friendly and approachable	1. Not at all 2. Sometimes 3. Always	1	2	3
5.3.	How do you find nurses' behavior towards you and your relatives	1. Not good 2. Satisfactory 3. Good	1	2	3
5.4.	How do you find other staffs' behavior towards you and your relatives	1. Not good 2. Satisfactory 3. Good	1	2	3
5.5.	How promptly your needs are attended to	1. Not promptly 2. Promptly 3. Very promptly	1	2	3
5.6.	Can you find your way and direction in the hospital easily with the help of displayed signage and markings	1. Not easily 2. Easily 3. Very easily	1	2	3
5.7.	How adequately the drugs prescribed to you were available	1. Not available at all 2. Partially available 3. Fully available	1	2	3
5.8.	Do you feel the doctor has given you enough time to answer all your queries	1. Not given any time 2. Has given some time 3. Has given full time	1	2	3
5.9.	Do you think the doctor and other staff were considerate for your privacy	1. Not considerate 2. Considerate 3. Very considerate	1	2	3
5.10.	Were the doctors available readily when needed	1. Not available 2. Available with delay 3. Available quickly	1	2	3

Section 06: Data on Patient Friendliness

6.	How well anyone explained to you about how a procedure on you will be carried out	<ol style="list-style-type: none"> 1. Not explained at all 2. Very little explained 3. Fully explained 	1	2	3
6.1.	If you were waiting for a procedure, how much you were told about the reason for delay	<ol style="list-style-type: none"> 1. Not told at all 2. Told somewhat in the passing 3. Explained fully 	1	2	3
6.2.	How well have you been explained on how to get redressal for your problem, if any	<ol style="list-style-type: none"> 1. Not explained 2. Explained a little 3. Fully explained 	1	2	3
6.3.	How well the visiting hours suit your relatives	<ol style="list-style-type: none"> 1. Does not suit 2. Somewhat suits 3. Suits well 	1	2	3
6.4.	Was the admission procedure simple	<ol style="list-style-type: none"> 1. Not simple 2. Simple 3. Very simple 	1	2	3
6.5.	If alternatives are available to you, would you come here again, if required	<ol style="list-style-type: none"> 1. Never 2. Yes, but reluctantly 3. Always 	1	2	3
6.6.	What you liked best in this hospital				
6.7.	What you liked worst in this hospital				

Thank you for sparing some time to respond to this survey. This will help us to serve you better

INFRASTRUCTURE ASSESSMENT CHECKLIST
HOSPITAL LABORATORY

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

(1)	(2)			
Check Availability of the Following	(Put a \checkmark in the relevant column)			
	Available		Area sufficient, if available?	
1) <u>General</u>	Yes	No	Yes	No
2) Reception & registration				
a) Specimen collection and distribution				
b) Examination cum sample collection room				
3) Waiting Room with Toilet				
4) Pathologists' Office				
5) Stores				
a) Chemical				

b) General items				
c) Packing materials				
d) Acid				
6) Stores-in-charge's room				
7) Staff changing with toilets				
8) LPG Bank				
9)				
10) <u>Histopathology Section</u>				
a) Histopathologist's room				
b) Grossing and Processing				
c) Section cutting and staining				
d) Specimen store				
e) Microphotography room				
f) FNAC room				
11) <u>Hematology Section</u>				
a) Hematologist's room with his lab				
b) Hematology Lab				
12) <u>Biochemistry Section</u>				
a) Biochemist's room				
b) Biochemistry Laboratory				
13) <u>Microbiology Section</u>				
a) Microbiologist's room				
b) Bacteriology laboratory				
c) Mycology laboratory				
d) Media rooms				

i) Media Kitchen				
ii) Media storage and plate pouring room				
iii) Sterilizing Room				
e) Incubator room				
f) Cold storage				
14) <u>Immunology Section</u>				
a) STS laboratory				
b) Laboratory for other serology work				
15) <u>Clinical Pathology Section</u>				
a) Stool Urine Examination				
b) Specimen cubicle				
c) Photometry, Chromatography & Electrophoresis Room				
16) <u>Virology Section</u>				
a) Virologist with his laboratory				
b) Virus Serology laboratory				
i) Egg Inoculation Cubicle				
ii) Animal inoculation cubicle				
c) Tissue Culture Room				
d) Animal Room				
17) <u>Equipment Cleaning Section</u>				
a) Wash up and preparation room				
b) HP sterilizer room				
c) Sterile storage				
d) Janitor's closet				
18) <u>Photography & Illustration, Pathology Museum and other facilities</u>				

a) Photography & Illustration				
b) Pathology Museum				
c) Library				
d) Class room				
e) Common Room				
19) <u>Computer and reporting room.</u>				
20) Comment on the following				
21) a) State of maintenance				
i) Civil				
(1) Floor				
(2) Ceiling				
(3) Plastering				
(4) Walls				
(5) Windows				
(6) Doors				
ii) Plumbing				
(1) Wash Hand Basins				
(2) Water taps				
iii) Electrical				
(1) Electrical outlets				
(2) Wiring				
(3) Other fixtures and fittings				
22) b) Illumination				
23) c) Ventilation				

INFRASTRUCTURE ASSESSMENT CHECKLIST
MATERNITY & DELIVERY UNIT

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Put a \checkmark in relevant column			
	Available		Is Area sufficient?	
1) Reception cum waiting area				
2) Admission/Examination/Triage				
3) Nurses Locker/Change/Rest room				
4) Doctors' Locker/ Change/ Rest area				
5) First stage labour cubicles with numbers				
a) If yes, how many?				
6) Delivery Rooms				
a) How many rooms?				
b) How many delivery tables				
c) Baby resuscitation room				
d) Recovery room				

e) Septic delivery room?				
7) Are the following present:				
8) Instrument Sterilizing room				
9) Sterile store room				
10) Scrubbing room				
11) Dirty utility room				
12) Operating Delivery Room				
a) OT recovery room				
13) Eclampsia room?				
14) Comment on the following				
15) a) State of maintenance				
16) Civil				
(1) Floor				
(2) Ceiling				
(3) Plastering				
(4) Walls				
(5) Windows				
(6) Doors				
17) Plumbing				
(1) Wash Hand Basins				
(2) (10) Water taps				
18) Electrical				
(1) Electrical outlets				
(2) Wiring				
(3) Other fixtures and fittings				

19) Illumination	
20) Ventilation	
21) Condition of the building generally	

INFRASTRUCTURE ASSESSMENT CHECKLIST
BLOOD BANK

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response	
1. Condition of the building		
2. Area of the unit (Minimum 100 M ² for whole blood and additional 50 M ² for components)		
3. Location (mention the departments in close proximity)		
4. Is the following available:	Place a \surd appropriately	
	Yes	No
(a) Room for registration and Medical Examination		
(b) Lab for blood group serology (A/C)		
(c) Lab for blood transmissible diseases (Syphilis, Malaria, HIV-antibodies, Hepatitis-antibodies) (A/C)		
(d) Blood collection room (A/C)		
(e) Blood component Preparation (Shall be A/C) – 50 M ²		

(f) Sterilization cum washing		
(g) Blood storage Area		
(h) Area for quarantine of blood and reagents not suitable for use		
5. Store cum Records Room		
6. Staff Room		
7. Blood Bank In charge room		
8. Patient waiting area		
9. Patient refreshment/ rest room		
10. ICTC Counseling Room		
11. PPTCT Counseling Room		

INFRASTRUCTURE ASSESSMENT CHECKLIST
IMAGING DEPARTMENT

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response				Remarks
9) Condition of the building					
10) Approximate area					
11) Location (mention the departments in close proximity)					
12) Check the availability of the following	Put a \checkmark appropriately				
	Available		Is space sufficient		
	Yes	No	Yes	No	
a) Reception and Registration counter?					
b) Waiting room with toilet					
c) Fluoroscopy and radiography rooms					

i) 800/1000 mA machine					
ii) 500 mA machine					
iii) 200 mA machine					
iv) 100 mA machine					
v) Attached dressing cubicle with toilet					
d) Film developing and dark room					
e) Film drying room					
f) Office, Record and computer room					
g) Radiographic work room					
h) Stores					
i) Film stores					
ii) Chemical Stores					
iii) Special Packing material stores					
iv) Equipment stores					
13) Radiologists' rooms					
14) Injection and Barium meal preparation room					
15) Trolley Bay					
16) Observation room					
17) Room for lying patients on stretcher					
18) Ultrasonography					
a) Sub waiting room					
b) USG room (Black & White)					
c) Color Doppler room					
d) Toilet					
19) Mammography room					

a) Change room					
20) Film Library					
21) Seminar room					
22) CT scan					
a) Trolley Bay					
b) Patient Change Cubicle					
c) Radiologist's room					
d) Technician room					
e) Gantry room (=>25 M ²)					
f) Console room					
g) Record room/Computer room/Reporting room					
h) Dark room					
i) Toilets					
j) Store room					
23) MRI					
a) Reception & sub-registration					
b) Sub-waiting					
c) Changing cubicle					
d) Control console					
e) MRI Chamber					
f) Radiologist's room with toilet					
g) Technicians' room					
h) Cooling chamber					
i) Store					
j) Computer / reporting room					

k) Office				
l) Toilets				
24) Check conformance to AERB norms for X-ray rooms				
25) Wall thickness > 35 cm thick brick				
a) Shielding of doors and windows (equivalent of 1.7 mm lead)				
b) Room size $\geq 18 \text{ M}^2$				
c) Not more than one unit of any type should be in one room				
d) All opening for light and ventilation to be located above 2M from the finished floor level				
e) Waiting areas to be located outside the x-ray room				
26) Comment on the following:				
a) State of maintenance				
i) Civil				
(1) Floor				
(2) Ceiling				
(3) Plastering				
(4) Walls				
(5) Windows				
(6) Doors				
ii) Plumbing				
(1) Wash Hand Basins				
(2) Water taps				
b) Electrical				
i) Electrical outlets				
ii) Wiring				
iii) Other fixtures and fittings				

27) Illumination			
28) Ventilation (A/C)			

INFRASTRUCTURE ASSESSMENT CHECKLIST**CSSD**

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response			
11. Approximate area				
12. Location (mention the departments present in close proximity)				
13. Check availability of	Put a \checkmark appropriately			
	Available		Is space sufficient?	
	Yes	No	Yes	No
14. Receiving area for soiled articles				
15. Sorting area				
16. Cleaning area				
17. Packing area				
18. Sterilizing and cooling area				
19. Storage area for clean stocks (not sterile)				
20. Storage area for sterile stocks				
21. Dispatch area for the sterile packs				

22. CSSD supervisor's room				
23. Staff change room with toilets and lockers				
24. Is ventilation, humidity, temperature controlled in the storage area of sterile stocks				
25. State of maintenance of:				
26. Civil				
(a) Floor				
(b) Ceiling				
(c) Plastering				
(d) Walls				
(e) Windows				
(f) Doors				
27. Plumbing				
(a) Wash Hand Basins				
(b) Water taps				
28. Electrical				
(a) Electrical outlets				
(b) Wiring				
(c) Other fixtures and fittings				
29. Illumination				
30. Ventilation				

Tool Kit No: 10

INFRASTRUCTURE ASSESSMENT CHECKLIST
IT DEPARTMENT

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response		Remarks
	Yes	No	
1. Check availability of the following:	Put a \checkmark appropriately		
(a) Room for Senior Systems Analyst cum I/C			
(b) Programmers' room with Computer Lab			
(c) Technicians room			
(d) Computer Workshop			
(e) Store			
2. Server room			
3. Toilets			

INFRASTRUCTURE ASSESSMENT CHECKLIST
EMERGENCY AND CASUALTY UNIT

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response				Remarks
2) Location (mention the departments in close proximity)					
3) Approximate area (50 M ² /1000 yearly attendances)					
4) Location of the entrance					
5) Separate entrance for ambulance and ambulatory patients					
6) Yearly patient attendances for the last three years					
7) Total number of observation beds present					
8) Check availability of the following: 9)	Put a √ appropriately				
	Available		Is space sufficient?		
	Yes	No	Yes	No	
a) Reception					

b) Triage					
c) Resuscitation Area (1/15000 yearly attendances)					
d) Acute Treatment Area (1/1100 yearly attendances) [For non-ambulant patient]					
e) Consultation Area (For ambulant patient)					
f) Procedure room					
g) Plaster room with storage for plaster, bandages, splint and crutch store					
h) Pharmacy/drug preparation					
i) Psychiatry room					
j) Isolation room(s) – for infected, for privacy, and for patients who are a source of visual, olfactory and auditory distress to others					
k) Decontamination room (contaminated with toxic substances)					
l) Treatment room					
m) Administrative area					
n) Storage					
o) Clean Utility					
p) Dirty Utility					
q) Cleaners' room					
r) Diagnostic Area (Imaging / Laboratory)					
s) Doctor's room					
t) Nursing station					
u) Security room					
v) Room for police personnel					
w) Disaster equipment store					
x) PMGV supply					

y) Relatives' waiting area with toilet		
z) Nurse staff room with toilet facility		
aa) Immediate access to OT		
10) State of maintenance of:		
a) Civil		
i) Floor		
ii) Ceiling		
iii) Plastering		
iv) Walls		
v) Windows		
vi) Doors		
b) <u>Plumbing</u>		
i) Wash Hand Basins (1 for every resuscitation / procedure/ treatment/ consultation room)		
ii) Water taps		
c) Electrical		
i) Electrical outlets		
ii) Wiring		
iii) Other fixtures and fittings		
iv) Emergency Power		
11) Illumination		
12) Ventilation		

INFRASTRUCTURE ASSESSMENT CHECKLIST
PHARMACY

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

2. Particulars	Response				Remarks
	Available		Is area available sufficient?		
3. Location (mention the departments in close proximity)					
4. Approximate area					
5. Check availability of the following:	Put a \checkmark appropriately				
	Available		Is area available sufficient?		
6.	Yes	No	Yes	No	
(a) Cash counter					
(b) Storage room s					
i) Textile Store (Gauze, Bandage)					
ii) Storage for IV Fluids					

iii) Bulk drug storage					
iv) Retail dispensary					
v) Cool and cold storage					
vi) Packing Material Store					
vii) Store for rubber goods					
viii) Acid store					
ix) Medical Gas store					
x) Store for items awaiting Condemnation and disposal (Held till disposal)					
(c) Administrative office					
(d) Proper circulation space					
(e) Patient waiting area					
(f) Sanitary facility					
13) State of maintenance of:					
a) Civil					
i) Floor					
ii) Ceiling					
iii) Plastering					
iv) Walls					
v) Windows					
vi) Doors					
b) <u>Plumbing</u>					
i) Wash Hand Basins					
ii) Water taps					
c) Electrical					

i) Electrical outlets					
ii) Wiring					
iii) Other fixtures and fittings					
iv) Emergency Power					
14) Illumination					
15) Ventilation					

INFRASTRUCTURE ASSESSMENT CHECKLIST
ENGINEERING SERVICES

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response
1. Electric Engineering	
(a) How many sources of supply?	
(b) Connected Load of each	
(c) Transformer Capacity of each	
2. Generation room with generator	
(a) How many generators	
(b) Capacity of each	
3. Lighting of the campus	
4. HVAC System	
(a) Which areas are under Central A/C	

i)	
ii)	
(b) Capacity of Chillers	
i)	
ii)	
5. Water Supply	
(a) Sources of supply	
(b) If from bore well, how many?	
(c) Capacity of water tanks	
6. PMGV System	
(a) Which areas (wards/departments) have piped medical gases and vacuum (O ² , NO ₂ , Compressed Air, Vacuum)	
(b) Which gases are supplied in these areas	
(c) How many Manifold Rooms	
i) Location of these manifolds	
ii) Capacity of cylinder banks manifold wise	
iii) How many outlets for each gases manifold wise	
7. Public Health Engineering	
(a) Any en campus Sewage Treatment Plant	
i) Is the capacity sufficient at present	
ii) How much more load it can take	
(b) Storm water drainage system	

INFRASTRUCTURE ASSESSMENT CHECKLIST
FIRE PROTECTION

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response
1. Is fire/smoke detectors have been installed?	
2. Is automatic sprinkler system installed?	
3. If detectors are installed, are they connected with an alarm system?	
4. Is it strategically located in a place which is always manned? (please specify the location)	
5. Is there escape routes during emergency?	
6. If yes, how far apart these escape routes are located	
7. If yes, what kind of egress method has been provided?(ramp, stair, fire lifts)	
8. What are the types, numbers, locations of portable fire extinguishers placed in different departments?	
9. What is the average distance of the extinguishers from one point to	

another?	
10. Are the basic instructions regarding the safety measures displayed for the general public?	
11. Do all employees know the method of using the extinguishers?	
12. Is there any underground water storage for firefighting?	
13. If yes, what is the capacity?	
14. Is there any wet riser and down comer?	
15. Standby power for water pumps?	
16. Standby power to any lift designated as fire lift	
17. Any arrangement for compartmentalization to contain fire	
18. If any fire door provided, what is their ratings (hour)	
19. How many emergency exits are there?	
20. Fire drill practiced regularly?	

Tool Kit No: 15

INFRASTRUCTURE ASSESSMENT CHECKLIST
VERTICAL CIRCULATION – ELEVATORS/RAMPS

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

ELEVATORS				
Particulars				
1) Location (Building wise)	Type (Bed / Passenger)	Capacity	Standby Power	Present Condition
2) 1.				
3) 2.				
4) 3.				
5) 4.				
6) Are the available number of lifts sufficient				
7) Is the lift suitable for use as a means of egress in emergency				
8) Is it meant to carry both people and goods				
9) Any dedicated lift available for disposal of waste				
10) Any lift earmarked for food distribution				

11) Is safety arrangement provided for catering to mechanical or electrical failures				
--	--	--	--	--

RAMPS	
6) Building No (or Name)	
7) Is ramp available (Yes/No)	
8) What is the slope? (8% is preferred)	
9) Is level landing provided at each door opening in the direction of travel (Yes/No)	
10) Can a wheel chair bound patient easily move up the ramp (Yes/No)	
11) Is the ramp covered for giving protection during rainy seasons (Yes/No)	
12) Is the surface of the ramp nonslip (Yes/No)	

INFRASTRUCTURE ASSESSMENT CHECKLIST:**AMBULANCE SERVICES**

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

	Response
1. Covered garages available?	
2. If yes then:	
(a) For ambulances	
(b) For other vehicles	
(c) Condition of the Garage	
(d) Location of the garage	
(e) How many more covered garages are required?	

Tool Kit No 17**INFRASTRUCTURE ASSESSMENT CHECKLIST:****MEDICAL RECORD DEPARTMENT**

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

	Response
13. Is there any Medical record Department present in the hospital? Yes/ No	
14. Location of the department	
15. Approximate area of MRD?	
16. Is there any Separate room for MRD In charge?	
17. Sufficient space provided for all the sections of the MRD?	
(o) Vital Statistics desk	
(p) Admission Check Desk	
(q) Census Desk	
(r) Assembly and Deficiency Check desk	

(s) Incomplete Record Control Desk Discharge Analysis and Administrative Statistics desk	
(t) Coding and Indexing Desk	
(u) Complete Record Control Desk	
18. Is there separate area provided for doctors to fill in the incomplete medical records?	
19. Is there separate fire fighting arrangement in MRD?	
20. Is MRD computerized? Yes /No	
21. Is there sufficient storage capacity in the MRD?	
22. Does MRD include sufficient no. of Racks and Cabinets?	
23. Does MRD need expansion?	

Tool Kit No: 18**INFRASTRUCTURE ASSESSMENT CHECKLIST:****LINEN & LAUNDRY SERVICES**

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

	Response				Remarks
5. Approximate area of laundry					
6. Location					
7. Condition					
8. Check Availability of the following areas/rooms	Place a \checkmark appropriately				
	Available		Is area sufficient?		
	Yes	No	Yes	No	
(a) Reception/Collection and Sorting					
(b) Change Room					
(c) Sluicing and autoclaving					
(d) Mending					

(e) Washing machine /Driers/ Hydro extractors/ Calendering and pressing					
(f) Mattress sterilizing					
(g) Boiler House					
(h) Stores					
(i) Fuel					
(ii) Soap and detergent					
9. Janitor Closet					
10. Sanitary					
11. Manager's Office					
12. State of Maintenance					
(a) Civil (Floor, Walls, Ceiling, Doors, Windows)					
(b) Electrical (Wiring, outlets, fixtures)					
(c) Mechanical (Boiler)					
(d) PHE (water supply, drainage, plumbing, fittings)					
13. Lighting					
14. Ventilation					

Tool Kit No: 19**INFRASTRUCTURE ASSESSMENT CHECKLIST****DIETARY SERVICES**

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

	Response				Remarks
5. Availability of Kitchen(yes/no)					
6. Location					
7. Condition of physical infrastructure					
Check availability	Available		Is it sufficient		
	Yes	No	Yes	No	
(a) Reception of kitchen stores					
(b) Dietician's room					
(c) Kitchen Manager's office					
(d) Staff Change Room					
(e) Staff rest room					

(f) Preparation area					
(g) Cooking Area					
(h) Therapeutic Diet Preparation and Cooking Area					
(i) Pan Wash					
(j) Food Trolley and container wash					
(k) Food trolley bay					
(l) Server					
(m) Pot / utensil wash area					
(n) Lighting (natural)					
(o) Ventilation (exhaust chimneys)					
(p) Electric supply					
(q) Water supply (how many/duration of supply)					
(r) Storage facilities					
(i) Poultry					
(ii) Vegetables					
(iii) Dry items (Rice, Atta etc)					
(iv) Fuel store (Coal/Wood/Gas)					

(v) Store for dairy items					
(vi) Storage for implements, machines, bowls, pans, utensils					
(s) Refrigeration facilities					
8. Disposal of kitchen waste					
9. Toilets					
10. Hand washing facilities					
15. State of Maintenance					
(a) Civil (Floor, Walls, Ceiling, Doors, Windows)					
(b) PHE (water supply, drainage, plumbing, fittings)					
16. Lighting					
17. Ventilation					

Tool Kit No: 20**CHECKLIST****BIOMEDICAL WASTE MANAGEMENT**

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Items	Yes	No	Remarks
1. Is a Biomedical Waste Management Committee in place to guide and monitor all aspects of BMW Management			
2. Has any officer been made responsible for hospital waste management?			
3. Has license for generation, segregation, transportation, temporary storage and disposal of biomedical waste been obtained from the State Pollution Control Board?			
4. Any superior authority monitors all the processes pertaining to biomedical waste management on			

a day to day basis?			
5. Is required documentation for biomedical waste done regularly?			
6. Are periodical reports and returns submitted to prescribed authorities?			
7. What is the quantity of BMW generated in the hospital per bed per day			
8. Segregation and Collection			
(a) Is segregation of waste done at point of generation?			
(b) Are color coded bins / plastic bags used for waste segregation and collection?			
(c) Has needle destroyer and hub cutter provided and used?			
(d) Has puncture proof container for sharps provided and used			
9. Has covered wheel burrows/trolleys been provided for intra-hospital transport of waste to the temporary storage facility			
10. Temporary Storage			
(a) Secure hard standing Temporary Storage facilities for the BMW available			
11. Is Waste disposed off within the maximum permissible period of			

24/48 hours in summer/winter		
12. Shredder for recyclable plastic material available and used		
13. Has Sodium Hypochlorite solution been provided for treating liquid waste and used?		
14. Is autoclaving of culture media done before disposal?		
15. Has protective clothing provided to sanitary workers		
16. Are the workers trained to handle all types of waste like cytotoxic drugs, date expired drugs, heavy metals, liquid waste etc		
17. Is disposal done in-house or outsourced?		
18. What is the mode of disposal (Incineration, autoclaving, burning, burial pits)?		
19. Is there any in house incinerator?		
20. If yes, what type of incinerator present? <ul style="list-style-type: none"> • Single chamber • Double chamber 		
21. What is the capacity (Kg/hour)?		
22. Is there any change room available for the staffs?		

23. Is washing facilities for the wheel burrows available		
24. How the incinerator ash is disposed?		
25. Any waste disposal manual prepared?		
26. Do all workers know how to deal with emergencies/injuries pertaining to waste disposal (like needle stick injuries, spillages)		

INFRASTRUCTURE ASSESSMENT CHECKLIST

MORTUARY

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Items	Response				
Location (should be concealed from public view)					
18. Check the availability of the following:	Place a √ appropriately				
	Yes	No	Yes	No	
(a) Body Store					
(b) Autopsy Room					
(c) Doctor's Change room with toilet					
(d) Viewing room					
(e) Relatives' waiting room					
(f) Janitors' closet					

19. State of Maintenance					
(a) Civil (Floor, Walls, Ceiling, Doors, Windows)					
(b) Electrical (Wiring, outlets, fixtures)					
(c) Mechanical (Boiler)					
(d) PHE (water supply, drainage, plumbing, fittings)					
20. Lighting					
21. Ventilation					

Tool Kit No: 22**INFRASTRUCTURE ASSESSMENT CHECKLIST****PHYSIOTHERAPY**

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

	Response			
1. Is there any physiotherapy unit present in the hospital?				
2. Location of the department				
3. Condition of the department				
4. Approximate area of the department				
5. Check if following spaces have been provided:	Place a ✓ appropriately		Is available space sufficient	
	Yes	No	Yes	No
6. Waiting rooms with toilets				
7. Reception / Office / Records				
8. Electrotherapy cubicles				

(a) Infrared cubicle				
(b) Ultraviolet room				
(c) Combined treatment				
9. Gymnasium				
(a) Changing cubicles				
10. Any other equipment provided?				
(a) Cubicles available for these?				
(b) If No, how many more cubicles required				
(c) What will be their sizes				
11. Stores				
12. Sanitary (Separately for male and female)				
13. What is the state of maintenance of the department				
(a) Civil (Floor, Walls, Ceiling, Windows, Doors)				
(b) Electrical (Wiring, Outlets, Fixtures)				
(c) Public Health Engineering (Plumbing, Wash Hand Basins, Water closets, Taps)				

INFRASTRUCTURE ASSESSMENT CHECKLIST**Parking**

Name of the hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Item	Response	
1. Is there any parking space inside the hospital premise present?(yes/ no)		
2. If yes, location of the parking areas	1	
	2	
	3	
	4	
3. Is there separate provision for: (a) Staffs' vehicle parking (b) Visitor's vehicle parking		
4. Is there separate parking for :	Yes (If yes, No of places)	No

(a) Four wheeler vehicle				
(b) Two wheeler (motor bikes, scooters & bicycles)				
5. As per the Municipal Bye Laws how many parking spaces are to be provided?	Car	Scooter	Cycles	Others
6. During the peak working hours, is it possible for a patient/visitor to park his 4-wheeler vehicle easily?	Yes		No	
7. Is the present facility adequate?	Yes		No	
(a) If No, does this facility need expansion?				
(b) If yes, then is space available?				
8. Is the management of the parking lots outsourced	Yes		No	
9. Is the security satisfactory				
10. Observe, if vehicles are parked in places other than parking lots when space is available there				
(a) If yes, then number of such vehicles and types	Car	Scooter	Cycle	Others

INFRASTRUCTURE ASSESSMENT CHECKLIST

OUTPATIENT DEPARTMENT

(A) Name of the hospital: _____

(B) Please give a brief description of the OPD: _____

(C) Location: _____

(D) Accessibility: _____

(E) Name of respondents: _____

(F) Name of Surveyor _____

<u>ITEM</u>	<u>RESPONSE</u>
1. Is the OPD centralized or decentralized? (i.e. for the departments separately)	
2. If decentralized, how many different OPDs are functioning	
(a) What are the departments which are conducting own OPDs	
(i)	
(ii)	
(iii)	
(iv)	

(v)				
(vi)				
3. Is the Registration centralized				
4. If not, at how many places registration is done?				
5. Give total yearly attendance of OPD				
6. Give discipline wise breakdown of yearly attendances	New	Old	New	Old
	OPD (i)		OPD (ii)	
	OPD (iii)		OPD (iv)	
		OPD (v)		OPD (vi)
7. Give discipline wise no of consultants attending OPD daily				
<u>Discipline</u>	<u>Number</u>			
(a)				
(b)				
(c)				
(d)				
(e)				
8. No of consultation room earmarked for each discipline				
9. How many consultation rooms are used by more than one consultants of the same discipline simultaneously				
10. Do the Resident doctors attend to OPD patients independently?				

11. If yes, give the number of such residents discipline wise		
12. Does the hospital prefer independent consultation rooms for the Resident Doctors as well?		
13. What is the size of a typical consultation room?		
14. Are the consultation rooms provided with attached toilets		
15. If not, what is the sanitary arrangement?		
16. Are the consultation rooms air conditioned?		
17. Are the discipline-wise OPDs having sub-waiting areas?		
18. If yes, how much sitting arrangement has been provided		
19. What is the approximate size of the OPD? (Length and Breadth)		
20. Please indicate if the following spaces have been provided? (Zone wise)		
(a) Public Areas:		
(i) Entrance: Is it easily accessible		
(ii) Reception and information		
(iii) Registration and Records area		
(iv) Waiting areas		
(1) If provided, its size (Ideal is: 0.1 M ² per patient)		
(2) Public toilets and washrooms (For each OPD)	Male	Female
	WHBs Urinals WCs	WHBs WCs

(a)					
(b)					
(c)					
(d)					
(e)					
(f)					
(g)					
(h)					
(3) Fans provided?					
(a) Are the numbers sufficient?					
(4) Drinking water?					
(5) Any snacks bar?					
(6) Telephone Booth?					
(b) Clinical Areas					
(i) Discipline					
(1) Sub Waiting Area available?					
(a) Seating arrangement for how many					
(2) Consultation rooms					
(a) All fixtures available? (Table, Chair, WHB, Exam Couch, equipment for exam)					
(3) Special Consultation room for the department which needs special equipment					

(c) Ancillary Facilities	
(i) Injection room	
(ii) Treatment and dressing room	
(iii) Pharmacy	
(1) Waiting area (No of seats)	
(2) Approx. Size	
(iv) Immunization clinic	
(d) Auxiliary Facilities (may be common for both IP and OP)	
(i) Laboratory	
(ii) Radiology	
(iii) Blood Bank	
(iv) Health Education facility	
(v) Medical Social Service	
(vi) Play area for children (For paediatrics OPD)	
(e) Preventive and Social Health Facilities (for counseling	
(i) Well Baby Clinic	
(ii) Well women clinic	
(iii) Nutrition clinic	
21. For each service points give:	
(a) Registration:	
(i) No of counters	
(ii) "Q" length every 30 minutes for say 3 hours	

(iii) Service time in each counter	
(b) Pharmacy	
(i) No of counters	
(ii) "Q" length every 30 minutes for say 3 hours	
(iii) Service time in each counter	
(c) Injection room	
(i) No of service points	
(ii) "Q" length every 30 minutes for say 3 hours	
(iii) Service time in each counter	
(d) Dressing room	
(e) Consultation rooms (At least for 25 % of consultation rooms)	
(i) Consultation room	
(ii) "Q" length every 30 minutes for say 3 hours	
(iii) Service time in each counter	
24) a) State of maintenance	
i) Civil	
(1) Floor	
(2) Ceiling	
(3) Plastering	
(4) Walls	
(5) Windows	
(6) Doors	

ii) Plumbing	
(1) Wash Hand Basins	
(2) Water taps	
iii) Electrical	
(1) Electrical outlets	
(2) Wiring	
(3) Other fixtures and fittings	
25) b) Illumination	
26) c) Ventilation	

INFRASTRUCTURE ASSESSMENT CHECKLIST
TELEMEDICINE UNIT

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response
1. Comment on the following:	
(a) Objective of TM Services	
(i)	
(ii)	
(iii)	
(b) Scope of TM Services	
(i)	
(ii)	
(iii)	
(c) Mention the location desired by the hospital authority for the set up, in case of a new service	
(d) In case of existing services, is the present site suitable?	
(e) If no, what site is desired?	
(f) Mention what is desired:	

(i) 24x7 hours working facility or	
(ii) Fixed hours	
(iii) Conference room facility	
(g) Connectivity	
(i) One to one or one too many	
(ii) Projection facility	
2. Do you consult with higher centers?	
(a) If yes, is it live?	
(i) If yes then	
(1) Arrangement for examination of patient	
(2) Arrangement for Procedures (like endoscopy)	
(3) Toilet	
(4) Wash Hand Basin	
(5) Waiting room for relatives	
(6) Room for staging of patients	
3. Do you provide consultation to lower centers	
(a) If yes is it round the clock	
4. Comment on the following:	
(a) Location desired	
(b) Does it function on the basis of: (1) Real time (2) Store and forward	
(c) Is it working for (i) 24x7	
5. Is there a seminar room available? (a) If yes, how many people can sit? (b) Is it adequate?	
6. Is Projection facility available? (a) If no, is it required?	
5. Comment on the following:	
(a) Arrangement for glare prevention	
(b) Acoustic treatment of the TM room	

(c) Whether color rendering of the artificial light has been taken into account (i.e. should be like natural light)	
---	--

INFRASTRUCTURE ASSESSMENT CHECKLIST**OPD – Maternity****Name of the Hospital:**

(A) Please give a brief description of the Maternity OPD:

(B) Location:

(C) Accessibility:

Particulars	Response
1. Is there any separate entrance for the maternity OPD?	
2. Mention the OPD attendance for the last three years	
3. How many registration counters are there?	
4. What is the average waiting time for the following?	
(a) Registration	
(b) Consultation	
(c) Pharmacy	
(d) Injection	
(e) Laboratory	

5. How many consultation rooms are earmarked for this discipline?	
6. Is the size of a typical consultation room adequate (as per the consultant)	
7. Are the consultation rooms provided with attached toilets	
8. If not, what is the sanitary arrangement?	
9. Are the consultation rooms air conditioned?	
10. Is there rooms allocated for: (specify the approximate areas also) (a) Ante natal check up (b) Education Room for prospective mothers (c) Injection room (d) Ultrasonography (e) A set up to support any emergency case	
11. Is there provision for the following ancillary facilities: (a) Drinking water (b) Sitting arrangement (c) Toilet facilities(if yes, mention how many) (d) Telephone booth (e) Tea/Snacks Bar (f) Signage	
12. Any children play zone is available?	
13. Comment on the following:	
(a) State of maintenance	
(i) Civil	
(1) Floor	
(2) Ceiling	
(3) Plastering	

(4) Walls	
(5) Windows	
(6) Doors	
(ii) Plumbing	
(1) Wash Hand Basins	
(2) Water taps	
(3) Water Closets	
(iii) Electrical	
(1) Electrical outlets	
(2) Wiring	
(3) Other fixtures and fittings	
b) Illumination	
c) Ventilation	
12. AC (mention the capacity)	
13. Non-AC	

INFRASTRUCTURE ASSESSMENT CHECKLIST
NEONATAL INTENSIVE CARE UNIT

Name of the Hospital:

Location of the facility in the hospital:

Accessibility:

Date:

Respondent:

Interviewer:

Particulars	Response
5. Is there any separate entrance for the unit?	
6. No of beds	
7. Space per bed (Approx.)	
8. Level of Care of this NICU?	
9. PROTECTIVE ZONE	
(a) Trolley Bay	
(b) Reception	
(c) Waiting Room with toilet	
(d) Shoe change room	
(e) Change Room	
(i) Male	
(ii) Female	
(f) Counselling Room	

10. CLEAN ZONE	
(a) Doctor' duty room	
(b) Sisters' duty room	
(c) Linen Store	
(d) Clean Utility/treatment/dressing	
(e) Store Room	
(f) Equipment room	
(g) X-ray room	
(h) Pantry	
(i) Clinical Test Room	
(j) Feeding area	
(k) Formula room	
(l) Examination area	
(m) Breast Milk Bank	
11. STERILE ZONE	
(a) Scrub up room	
(b) Intensive Care Area (No of beds)	
(c) Intermediate Care Area (No of beds)	
(d) Septic Care Area (No of beds)	
(e) Nursing Station	
(f) Wash Hand Basins (No provided)	
12. DIRTY ZONE	
(a) Dirty utility & Soiled linen room	
(b) Janitor's closet	
(c) Toilets	

10. PMGV System(yes/No)	
11. Comment on the following	
(a) State of maintenance	
(i) Civil	
(1) Floor	
(2) Ceiling	
(3) Plastering	
(4) Walls	
(5) Windows	
(6) Doors	
(ii) Plumbing	
(1) Wash Hand Basins	
(1) Water taps	
(2) Water Closets	
(ii) Electrical	
(1) Electrical outlets	
(2) Wiring	
(3) Other fixtures and fittings	
14. Illumination	
15. Ventilation	
(a) AC	
(b) Non-AC	
(c) Heating	

INFRASTRUCTURE ASSESSMENT CHECK LIST

INTENSIVE CARE UNIT

Hospital Name: _____

Department: _____

ICU Type (Specialty): _____

Location: _____

Name of respondent _____

Name of interviewer: _____

Date: _____

2. No of beds	
3. Space per bed (Approx.)	
4. Ancillary space	
(a) Waiting Room with toilet	
(b) Trolley Bay	
(c) Shoe change room	
(d) Doctor' duty room	
(e) Sister's duty room	
(f) Clean Utility/treatment/dressing	
(g) Store	
(h) Equipment room	
(i) Pantry	
(j) Clinical Test Room	
(k) Dirty utility & Soiled linen room	
(l) Nursing Station	
(m) Toilets	

(n) Janitor's closet	
5. Ventilation	
(a) AC	
(b) Non AC	
6. Wash Hand Basins (No provided)	
7. PMGV System	
8. Comment on the following:	
(a) State of Maintenance:	
(i) <u>Civil</u>	
(1) Wall	
(2) Ceiling	
(3) Doors	
(4) Windows	
(ii) Plumbing	
(1) Taps	
(2) Wash hand basins	
(3) Water Closets	
(iii) Electrical	
(1) Outlets (condition and sufficiency)	
(2) Wiring	
(3) UPS	
(4) Standby power	