

**Modifications in the updated Sub Divisional Hospital (SDH) 51-100
bedded document
(Major changes have been highlighted in yellow colour)**

- A. The revised IPHS (SDH) has considered the services, infrastructure, manpower, equipments and drugs in two categories of **Essential** (minimum assured services) and **Desirable** (the ideal level services which the states and UT shall try to achieve).
Services: Following services were included
- i. Accidents and emergency services including poisoning and Trauma Care
 - ii. FP services like IUCD, NSV, Minilap, and lap sterilization
 - iii. Neonatology and Immunization
 - iv. Psychiatry
 - v. Geriatric Services
 - vi. DOT centre; Designated Microscopy centre
 - vii. Integrated Counselling and Testing Centre
 - viii. Disability Certification (as per guidelines notified by state Government)
- Desirable**
- i. Tobacco Cessation Services
 - ii. Physical Medicine and Rehabilitation services
 - iii. Public Health Management
- B. **Infrastructure:** following were added.
- i. Signage.
 - ii. Barrier free access.
 - iii. disaster prevention measures (desirable for new upcoming facilities),
 - iv. Functions and space requirements are updated.
 - v. New born stabilization unit added.
 - vi. Blood storage facility in place of Blood Bank
- C. **Manpower:** the new manpower proposed
- i. Dietician (Desirable)
 - ii. Two Dental Technician/Hygienist (one essential and one desirable)
 - iii. Two Dental Assistant (one essential and one desirable)
 - iv. Two Multi Rehabilitation workers.
 - v. Cold Chain & Vaccine Logistics Assistant
- D. List of drugs and equipments updated: the drug list for obstetric care and sick newborn & child care (for FRU / SDH) incorporated in these guidelines
- E. Annexure added.
- i. New born care corner and new born stabilization unit.
 - ii. Seismic safety guidelines.
 - iii. National guidelines on hospital waste management.
 - iv. Guidelines to reduce environmental pollution due to mercury waste.
- F. Annexure deleted
- i. Central scheme for biomedical waste management (as it has been dropped in the eleventh five year plan.)

DRAFT

**Indian Public Health Standards (IPHS)
For
51 to 100 Bedded
Sub-District/Sub-Divisional Hospitals**

**GUIDELINES
(Revised 2010)**



**Directorate General of Health Services
Ministry of Health & Family Welfare
Government of India**

Executive Summary

Sub-district (Sub-divisional) hospitals are below the district and above the block level (CHC) hospitals and act as First Referral Units for the Tehsil /Taluk /block population in which they are geographically located. They have an important role to play as First Referral Units in providing emergency obstetrics care and neonatal care and help in bringing down the Maternal Mortality and Infant Mortality. They form an important link between SC, PHC and CHC on one end and District Hospitals on other end. It also saves the travel time for the cases needing emergency care and reduces the workload of the district hospital. A subdivision hospital caters to about 5-6 lakh people.

Service Delivery

Specialist services are provided through these sub-district hospitals and they receive referred cases from neighboring CHCs and also PHCs and SCs. In this IPHS document, Services that a Sub-District Hospital is expected to provide have been grouped as Essential (Minimum Assured Services) and Desirable (which we should aspire to achieve). Besides the basic specialty Services, due importance has been given to Newborn Care (New Born Care Corner and New Born Stabilization Unit), Family Planning, Psychiatric services, Physical Medicine and Rehabilitation services, Geriatric Services, Accident and Trauma Services and Integrated Counseling and Testing Centre

Requirement for Delivery of the Above-mentioned Services

The requirements have been projected the basis of estimated case load for hospital of this strength. The guidelines of hospital building, planning and layout, signage, disaster prevention measures for new facilities, barrier free access and environmental friendly features have been included. Manpower has been rationalized and new manpower has been provided for Physical medicine and Rehabilitation Services, Dental and Immunization services. National guidelines on hospital waste management, Guidelines to reduce environmental pollution due to mercury waste, and Seismic safety guidelines have been included.

A Charter of Patients' Rights for appropriate information to the beneficiaries, grievance redressal and constitution of Hospital Management Committee for better management and improvement of hospital services with involvement of Panchayati Raj Institutions (PRI) and NGOs has also been made as a part of the Indian Public Health Standards. The monitoring process and quality assurance mechanism is also included.

Standards are the main driver for continuous improvements in quality. The performance of District Hospital can be assessed against the set standards. This would help monitor and improve the functioning of the District Hospitals in the country.

1. Introduction

Sub-district (Sub-divisional) hospitals are below the district and above the block level (CHC) hospitals and act as First Referral Units for the Tehsil /Taluk /block population in which they are geographically located. Specialist services are provided through these sub-district hospitals and they receive referred cases from neighboring CHCs and also PHCs and SCs. They have an important role to play as First Referral Units in providing emergency obstetrics care and neonatal care and help in bringing down the Maternal Mortality and Infant Mortality. They form an important link between SC, PHC and CHC on one end and District Hospitals on other end. It also saves the travel time for the cases needing emergency care and reduces the workload of the district hospital. In some of the states, each district is subdivided in to two or three sub divisions. A subdivision hospital caters to about 5-6 lakhs people. In bigger districts the sub-district hospitals fills the gap between the block level hospitals and the district hospitals. There are about 1200 such hospitals in the country with a varying strength of number of beds ranging from 50 to 100 beds or more.

The Government of India is strongly committed to strengthen the health sector for improving the availability, accessibility of affordable quality health services to the people. In order to improve the quality and accountability of health services a set of standards need to be there for all health service institutions including sub-district hospitals.

Standards are a means of describing the level of quality that health care organizations are expected to meet or aspire to. The key aim of standard is to underpin the delivery of quality services which are fair and responsive to client's needs, which should be provided equitably and which deliver improvements in health and well being of the population. Standards are the main driver for continuous improvements in quality. The performance of Sub-district hospitals can be assessed against a set of standards.

The Bureau of Indian standards(BIS) has developed standards for hospitals services for 30 bedded and 100 bedded hospitals. However, these standards are considered very resource intensive and lack the processes to ensure community involvement, accountability, the hospital management, and citizens' charter etc peculiar to the public hospitals.

Setting standards is a dynamic process. This document contains the standards to bring the Sub-district/ Sub-divisional hospitals to a minimum acceptable functional grade (indicated as **Essential**) with scope for further improvement (indicated as **Desirable**) in it.

Most of the existing hospitals below district level (31-50 Bed category) are located in older buildings in urbanized areas / towns as compared to most Primary Health Centres / Sub-centres. The expansions already done have resulted in construction

touching the boundaries walls with no scope of further expansions. As far as possible, States should not dislocate the said hospitals to a new location (in case of dislocating to a new location, the original client group will not be able to have same access to the desired health facilities)

2. Objectives of Indian Public Health Standards (IPHS) for Sub-District Hospitals:

The overall objective of IPHS is to provide health care that is quality oriented and sensitive to the needs of the people of the district. The specific objectives of IPHS for Sub District Hospitals are:

- i. To provide comprehensive secondary health care (specialist and referral services) to the community through the Sub District Hospital.
- ii. To achieve and maintain an acceptable standard of quality of care.
- iii. To make the services more responsive and sensitive to the needs of the people of the district and act as the First Referral Unit (FRU) for the hospitals/centers from which the cases are referred to the Sub District hospitals

3. Definition of Sub District hospitals

The term Sub District / Sub Divisional Hospital is used here to mean a hospital at the secondary referral level responsible for the Sub District / Sub Division of a defined geographical area containing a defined population.

4. Categorizing of Sub District hospitals

The size of a sub district hospital is a function of the hospital bed requirement, which in turn is a function of the size of the population it serves. In India the population size of a sub district varies from 1, 00,000 to 5, 00,000. Based on the assumptions of the annual rate of admission as 1 per 50 populations and average length of stay in a hospital as 5 days, the number of beds required for a sub district having a population of 5 lakhs will be around 100-150 beds. However, as the population of the sub district varies a lot, it would be prudent to prescribe norms by categorizing the size of the hospitals as per the number of beds. For the purpose of classification, we have arbitrarily leveled Sub-district Hospitals as Category-I (31-50) and Category II (51-100). We presume that above 100 beds strength, health care facility will constitute District Hospital Group.

Category I: Sub District hospitals norms for 51-100 beds.

Category II: Sub District hospitals norms for 31 to 50 beds.

The minimum functional requirement of sub district hospitals (31-50 bedded) is given as under.

5. Functions

A sub district hospital has the following functions:

- i. It provides effective, affordable healthcare services (curative including specialist services, preventive and promotive) for a defined population, with their full participation and in co-operation with agencies in the district that have similar concern. It covers both urban population (sub divisional headquarter town) and the rural population of the sub division.
- ii. Function as a referral centre for the public health institutions below the tehsel / taluka level such as Community Health Centres, Primary Health Centres and Sub-centres.
- iii. Provide education and training for primary health care staff.

6. Services

Services include OPD, indoor and emergency services. **Secondary level health care services, to be provided as given below.** These can be grouped as **Essential Services (Minimum Assured Services) and Desirable Services**

Essential

General Medicine

General Surgery

Accidents and emergency services **including poisoning and Trauma Care**

General Orthopaedic.

Obstetrics & Gynaecology

FP services like IUCD, NSV, Minilap, and lap sterilization

Paediatrics **including Neonatology and Immunization**

Anaesthesia

Critical care / Intensive Care (ICU)

Ophthalmology

ENT

Dermatology & Venerology including RTI/STI,

Psychiatry

Geriatric Services

Imaging services

Dental care

DOT centre

Designated Microscopy centre

AYUSH

Integrated Counseling and Testing Centre

Disability Certification (as per guidelines notified by state Government)

Services provided under other National Health Programmes including lifestyle disorders

Diagnostic and other Para clinical services:

Laboratory services, X-ray, Ultrasound, ECG, Blood transfusion and storage¹, and
Therapy and appliances

Desirable

Tobacco Cessation Services
Physical Medicine and Rehabilitation services
Public Health Management

Support Services: Following ancillary services shall be ensured:

Essential

- ◆ Finance*
- ◆ Medico legal/postmortem
- ◆ Ambulance services
- ◆ Dietary services
- ◆ Laundry services
- ◆ Central sterile supply department
- ◆ Engineering and maintenance cell
- ◆ Security services including fire safety services
- ◆ Housekeeping and Sanitation
- ◆ Medical store and Inventory Management
- ◆ Waste management
- ◆ Medical record department including MIS
- ◆ Stand by Power back-up facility
- ◆ Office Management (Provision should be made for computerized medical records with anti-virus facilities whereas alternate records should also be maintained)

Desirable

- ◆ Counseling services for domestic violence, gender violence, adolescents, etc.
Gender and socially sensitive service delivery be assured.

* Financial accounting and auditing be carried out as per the rules along with timely submission of SOEs/UCs.

Financial powers of Head of the Institution

¹ Blood storage units should have atleast number of units equal to double of the average daily requirement/consumption.

Medical Superintendent to be authorized to incur and expenditure up to Rs.15.00 lakhs for repair/upgrading of impaired equipments/instruments with the approval of executive committee of RKS.

All the equipment/instruments should be under comprehensive Annual Maintenance Contract after regular warranty period. No equipment/instrument should remain non-functional for more than 30 days in a year. It will amount to suspension of status of IPHS of the concerned institutions.

Outsourcing of services like laundry, ambulance, dietary, housekeeping and sanitation, security, waste disposal etc. to be arranged by hospital itself. Manpower and outsourcing work could be done through local tender mechanism.

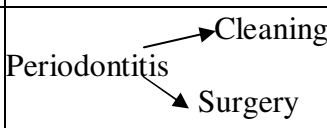
Following services mix of procedures in medical and surgical specialties would be available:

SERVICE MIX OF PROCEDURES IN MEDICAL AND SURGICAL SPECIALITIES

MEDICAL	
1	Pleural Aspiration
2	Skin scraping for fungus / AFB
3	Skin Biopsies
4	Abdominal tapping
OPD Procedures (Including IPD)	
1	Dressing (Small, Medium and Large)
2	Injection (I/M & I/V)
3	Catheterisation
4	Steam Inhalation
5	Cut down (Adult)
	FNAC
6	Enema
7	Stomach Wash
8	Douche
9	Sitz bath
11	Blood Transfusion
12	Hydrotherapy
13	Bowel Wash
Skin Procedures	
1	Chemical Cautery
2	Electro Cautery
3	Intra Lesional Injection
4	Biopsy

Paediatric Procedures	
1	Immunization as per National Immunization Schedule /ORT corner
2	Services related to new borne care
2.1	- only cradle
2.2	- Incubator, Nebulisation equipment
2.3	- Radiant Heat Warmer
2.4	- Phototherapy
2.5	- Gases (oxygen)
2.10	- Cut down
2.12	- Ventilator
Cardiology Procedures and Diagnostic Tests	
1	ECG
2	Defibrillator Shock
3	Laprosopy (Diagnostic and Therapeutic)
Physical Medicine and Rehabilitation (PMR) Services	
1	With Electrical Equipments
1.1	- Short wave diathermy
1.2	- Electrical Stimulator
1.3	- Ultra Sonic Therapy
1.4	- Infra Red Lamp (Therapy)
1.5	- Electric Vibrator
2	With Mechanical Gadgets/Exercises
2.1	- Mechanical Traction (Lumber & Cervical), wax bath
2.2	- Exercycle
2.3	- Shoulder Wheel
2.4	- Walking Bars
2.5	- Post Polio Exercise
Eye Specialist Services (Ophthalmology)	
1	OPD Procedures
1.1	- Refraction (by using snellen's chart) - Prescription for glasses using Trial frame.
1.2	- Syringing and Probing
1.3	- Foreign Body Removal (conjunctival)
1.4	- Foreign Body Removal (Corneal)
1.5	- Epilation
1.6	- Suture Removal
1.7	- Subconj Injection
1.8	- Retrobulbar Injection (Alcohol etc.)
1.9	- Tonometry
1.10	- Pterygium Excision
1.11	- Syringing & Probing

1.12	- I & C of chalazion
1.13	- Wart Excision
1.14	- Styte
1.15	- Cauterization (Thermal)
1.16	- Conjunctival Resuturing
1.17	- Corneal Scarping
1.18	- I & D Lid Abscess
1.19	- Uncomplicated Lid Tear
1.20	- Indirect Ophthalmoscopy
1.21	- Retinoscopy
2	IPD Procedures
2.1	- Cataract Extraction
2.2	- Glaucoma (Trabeculectomy)
2.3	- Small Lid Turnour Excision
2.4	- Conjunctival Cyst
ENT Services	
1	OPD Procedures
1.1	- Foreign Body Removal (Ear and Nose)
1.2	- Syringing of Ear
1.3	- Chemical Cauterization (Nose & Ear)
1.4	- Eustachian Tube Function Test
1.5	- Vestibular Function Test/Caloric Test
2	Minor Procedures
2.1	- Therapeutic Removal of Granulations (Nasal, Aural, Oropharynx)
2.2	- Cautrization (Oral, Oropharynx, Aural & nasal)
3	Nose Surgery
3.1	- Packing (Anterior & Posterior Nasal)
3.2	- Antral Punchure (Unilateral & Bilateral)
3.3	- I & D Septal Abscess (Unilateral & Bilateral)
3.4	- S M R
3.5	- Septoplasty
3.6	- Fracture Reduction Nose
3.7	- Fracture Reduction Nose with Septal Correction
4	Ear Surgery
4.1	- Ear Piercing
4.2	- Hearing Aid Analysis and Selection
5	Throat Surgery
5.1	- Adenoidectomy
5.2	- Tonsillectomy
5.3	- Adenoidectomy + Tonsillectomy
5.4	- Tongue Tie excision
6	Endoscopic ENT Procedures

6.1	- Direct Laryngoscopy
6.2	- Hypopharyngoscopy
6.3	- Broncoscopic Diagnostic
6.4	- Broncoscopic & F B Removal
7	General ENT Surgery
7.1	- Sticking of LCW (Nose & Ear)
7.2	- Preauricular Sinus Excision
7.3	- Tracheostomy
8	Audiometry
8.1	- Audiogram (Pure tone and Impedence)
Obstetric & Gynecology Specialist Services	
1.	Episiotomy
2.	Forceps delivery, VECC
3.	Craniotomy-Dead Fetus/Hydrocephalus
4.	Caeserean section, Caeserean Hysterectomy
5.	Female Sterilisation (Mini Laparotomy & Laparoscopic)
6.	D&C
7.	MTP / MVA
8.	IUCD services/PPIUCD
9.	Bartholin Cyst Excision
10.	Suturing Perimeal Tears
11.	Assisted Breech Delivery
12.	Cervical Cautery
13.	Nomal Delivery
14.	Cassarian
15.	E U A
16.	Midtrimestor Abortion
17.	Ectopic Pregnancy Ruptured
18.	Retain Placenta
19.	Suturing Cervical Tear
20.	Assisted Twin Delivery
Dental Services	
1	Dental Caries/Dental Abcess/Gingivitis
2	Periodontitis  <pre> graph TD A[Periodontitis] --> B[Cleaning] A --> C[Surgery] </pre>
3	Minor Surgeries, Impaction, Flap
4	Trauma including Vehicular Accidents

5	Sub Mucus Fibrosis (SMF)
6	Scaling and Polishing
7	Root Canal Treatment
8	Extractions
9	Light Cure
10	Amalgum Filling (Silver)
11	Sub Luxation and Arthritis of Temporomandibular Joints
12	Pre Cancerous Lesions and Leukoplakias
13	Intra oral X-ray
14	Complicated Extractions (including suturing of gums)
SURGICAL	
1	Abcess drainage including breast & perianal
2	Wound Debridement
3	Appendicectomy
4	Fissurotomy or fistulectomy
5	Hemorrhoidectomy
6	Circumcision
7	Hydrocele surgery
8	Herniorraphy
9	Suprapubic Cystostomy
10	Diagnostic Laparoscopy
11	Cysts and Benign Tumour of the Palate
12	Excision Submucous Cysts
Breast	
1	Excision fibroadenoma – Lump
Hernia	
1	Ingunial Hernia repair reinforcement
2	Ingunial Hernia repair with mesh
3	Femoral Hernia repair
4	Recurrent Ingunial Hernia repair
5	Strangulated Ventral or Incisional Hernia/Ingunial
Abdomen	
1	Exploratory Laparotomy
2	Gastrostomy or Jejuncstomy
3	Simple Closure of Perforated Ulcer
4	Burst Abdomen Repair
Appendix	

1	Emergency Appendisectomy
2	Interval Appendisectomy
3	Appendicular Abscess Drainage
Small Intestine	
1	Resection and Anastomosis
2	Multiple Resection and Anaestomosis
3	Intestinal Performation
Liver	
1	Open Drainage of liver abscess
2	Drainage of Subdia, Abscess/Perigastric Abscess
Biliary System	
1	Cholecystostomy
2	Cholecystectomy
3	Cholecystectomy and Choledocholithotomy
Colon, Rectum and Anus	
1	Fistula in ano low level
2	Fistula in ano high level
2	Catheters
3	IV Sets
4	Colostomy Bags
3	Perianal Abscess
4	Ischiorectal Abscess
5	Ileostomy or colostomy alone
6	Haemorrhoidectomy
7	Anal Sphincter Repair after injury
8	Resection anastomosis
Penis, Testes, Scrotum	
1	Circumcision
2	Partial amputation of Penis
3	Total amputation of Penis
4	Orchidopexy (Unilateral & Bilateral)
5	Orchidectomy (Unilateral & Bilateral)
6	Hydrocele (Unilateral & Bilateral)
7	Excision of Multiple sebaceous cyst of scrotal skin
8	Reduction of Paraphimosis
Other Procedures	

1	Suture of large laceration
2	Suturing of small wounds
3	Excision of sebaceous cyst
4	Small superficial tumour
5	Repair torn ear lobule each
6	Incision and drainage of abscess
7	Injection Haemorrhoids/Ganglion/Keloids
8	Removal of foreign body (superficial)
9	Removal of foreign body (deep)
10	Excision Multiple Cysts
11	Tongue Tie
12	Debridment of wounds
13	Excision carbuncle
14	Ingrowing Toe Nail
15	Diabetic Foot Asnd carbuncle
Urology*	
1	Pyelolithotomy
2	Nephrolithotomy
3	Simple Nephrostomy
4	Uretrolithotomy
5	Open Prostectomy
6	Cystolithotomy Superopubic
7	Dialatition of stricture urethra under GA
8	Dialation of stricture urethra without anaesthesia
9	Meatotomy
10	Trocar Cystostomy
Plastic Surgery#	
1	Burn Dressing Small, medium (10% to 30%), large 30% to 60%, extensive > 60%
2	Ear lobules repair one side (bilateral)
3	Simple wound
4	Complicated wound
5	Simple injury fingers
6	Multiple finger injury (Desirable)
7	Crush injury hand (Desirable))
8	Polio Surgery (Desirable))

9	Surgery concerning disability with Leprosy
10	Surgery concerning with TB
Paediatric Surgery#	
1	Minor Surgery, I & D, Prepuceal Dilatation, Meatotomy
Orthopaedic Surgery	
1	Hip Surgery (optional)
2	Femoral Neck nailing with or without plating replacement prosthesis / Upper Femoral Osteotomy; Innominate Osteotomy/Open Reduction of Hip dislocation; DHS/Richard Screw Plate
3	Synovial or bone biopsy from HIP
4	Girdle stone Arthroplasty
5	Fractures
6	Open reduction internal fixation of femur, tibia, B. Bone, Forarm Humerus inter-condylar fracture of humerus and femur and open reduction and int. Fixation bimaleolar fracture and fracture dislocation of ankle montaggia fracture dislocation
7	Medial condyle of humerus fracture lateral condyle of humerus Olecranen fracture, head of radius lower end of radius, medial malleolus patella fracture and fracture of calcaneum talus single forearm, bone fracture
8	Ext. fixation of hand & foot bones
9	Tarsals, Metatarsals, Phalanges carpals, Metacarples, excision head fibula, lower and of Inia
10	Interlocking nailing of long bones
11	Debridement & Secondary closure
12	Percutaneous Fixation (small and long bones)
13	Closed Reduction
14	Hand, Foot bone and cervical
15	Forearm or Arm, Leg, Thigh, Wrist, Ankle
16	Dislocation elbow, shoulder, Hip, Knee
17	Closed Fixation of hand / foot bone
18	In growing toe-nail

- **To be provided by General Surgeon**

To be provided by specially trained General Surgeon

RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS) FOR DIFFERENT ILLNESSES CONCERNING DIFFERENT SPECIALITIES:

Obstetric & Gynecology

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Bleeding during first trimester	Treat
2	Bleeding during second trimester	Treat
3	Bleeding during third trimester	Treat
4	Normal Delivery	Yes
5	Abnormal labour (Mal presentation ,prolonged labour ,PROM,Obstructed labour)	Treat
6	PPH	Treat
7	Puerperal Spesis	Treat and refer if necessary
8	Ectopic Pregnancy	Diagnose & refer if necessary
9	Hypertensive disorders	Conservative management and follow - up services
10	Septic abortion	Treat and refer if necessary
11	Medical disorders complicating pregnancy (heart disease ,diabetes ,hepatitis)	Diagnose and refer
12	Bronchial asthma	Diagnose , first aid and delivery
Gynecology		
1	RTI / STI	Treat
2	DUB	Treat
3	Benign disorders (fibroid, prolapse , ovarian masses) Initial investigation at PHC / Gr III level	Diagnose and treatment, refer if necessary
4	Breast Tumors	Refer
5	Cancer Cervix screening Initial investigation at PHC / Grade III level	Collection of PAP SMEAR and biopsy
6	Cancer cervix /ovarian Initial investigation at PHC / Gr III level	Diagnose and refer

7	Infertility	Investigate and refer
8	Prevention of MTCT	Refer
9	MTP / MVA services	Treat
10	Tubectomy	Yes

GENERAL MEDICINE

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Fever -a) Short duration (<1 week)	Basic investigation and Treatment
	Fever -b) Long duration (>1 week)	Investigation and treatment Refer if necessary
	c) Typhoid	Treat
	d) Malaria / Filariasis	Treat
	e) Pulmonary Tuberculosis.	Treat
	f) Viral Hepatitis	Treat
	g) Leptospirosis / Meningitis and Haemorrhagic fever	Refer
	h) Malignancy	Refer
2	COMMON RESP. ILLNESSES :	
	Bronchial Asthma / Pleural effusion / Pneumonia / Allergic Bronchitis/COPD	Diagnose and Treat
3	COMMON CARDIAC PROBLEMS	
	a) Chest pain (IHD)	Treat and decide further management
	b) Giddiness (HT)	Diagnose and treat
4	G I TRACT	
a)	G I Bleed / Portal hypertension / Gallbladder disorder	Emergencies - Refer
b)	AGE / Dysentery / Diarrhoeas	Treat
5	NEUROLOGY	
a)	Chronic Headache	Refer
b)	Chronic Vertigo/ CVA/TIA/Hemiplegia/ Paraplegia	Refer
6	HAEMATOLOGY	
a)	Anaemia	Basic investigation and Treatment
b)	Bleeding disorder	Stabilise Refer to tertiary
c)	Malignancy	Refer
7	Communicable Diseases	

	Cholera Measles Mumps Chickenpox	Treat
8	Psychological Disorders	
	Acute psychosis / Obsession / Anxiety neurosis	Screening, emergency care and referral

PAEDIATRICS

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	ARI/ Bronchitis Asthmatic	Investigate Diagnose, Nebulizator Treat Refer if no improvement
2	Diarrohoeal Diseases	Diagnose Treat (ORS, IVF), ORT Corner Refer if no improvement
3	Protein Energy Malnutrition and Vitamin Deficiencies	Diagnose, Treat, & Refer
4	Pyrexia of unknown origin	Investigate, diagnose, treat, refer if no improvement
5	Bleeding Disorders	Treat
6	Diseases of Bones and Joints	Treat
7	Childhood Malignancies	Early Diagnosis and Refer
8	Liver Disorders	Diagnose and Refer
9	Paediatric Surgical Emergencies	Early Diagnosis and Refer
10	Poisoning, Sting, Bites	First Aid, treat, Refer if necessary

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
NEONATOLOGY		
1	Attention at birth (to prevent illness)	SBA
2	Hypothermia	Warm chain
3	Birth asphyxia	Resuscitation And Treatment
4	Hypoglycemia	Treat
5	Meconium aspiration syndrome	Treat
6	Convulsions (seizures)	Treat
7	Neonatal Sepsis	Treat
8	LBW	1800-1500 gms treat with kangaroo care.
9	Neonatal Jaundice	Treat
10	Preterm	Warm chain, feeding, kangaroo care
11	Congenital malformations	Examine and refer
12	R.D.S,ARI	Manage and Refer
13	Dangerously ill baby	Identify, manage and refer
14	Feeding Problems	Identify and manage
15	Neonatal Diarrhoea	Diagnosis and manage
16	Birth injury	Minor -manage; major -refer
17	Neonatal Meningitis	Manage and Refer
18	Renal problems/Congenital heart disease/Surgical emergencies	Refer
19	HIV/AIDS	Follow up and refer to ART Center
20	Hypocalcemia	Manage

21	Metabolic Disorders	Identify & Refer
22	Hyaline Membrane diseases	diagnose and refer
23	Neonatal Malaria	Manage
24	Blood disorders	Manage
25	Developmental Delays	CBR
26	UTIs	Manage
27	Failure to Thrive	Manage and refer

DERMATOLOGY

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Infections a) Viral - HIV - Verruca Molluscum Contagiosa	Treat
	Pityriasis Rosea, LGV, HIV	Treat
	b) Bacteria Pyoderma Chancroid	Treat
	Gonorrhea, Leprosy & Tuberculosis	Treat
	c) Fungal Sup.Mycosis Subcut - Mycetoma	Identify / Treat
	d) Parasitic Infestation Scabies / Pediculosis/Larva Migrans	Treat
	e) Spirochaetes Syphilis	Diagnosis and Treat
2	Papulosquamous Psoriasis (classical)- uncomplicated/Lichen Planus	Treat
3	Pigmentary Disorder Vitiligo	Treat / Refer
4	Keratinisation Disorder Ichthyosis/Traumatic Fissures	Refer / Treat
5	Autoimmune Collagen Vascular DLE, Morphea	Treat / Refer
6	Skin Tumors, Seb.Keratoses, Soft	Treat

	Fibroma, Benign Surface, Tumors / Cysts, Appendageal Tumors	
7	Miscellaneous a.) Acne Vulgaris, Miliaria, Alopecia, Nail disorder, Toxin induced	Treat
	b) Leprosy - Resistant/ Complications / reaction Allergy - EMF / SJS / TENPsoriasis/Collagen Vascular/Auto immune Disorders	Treat / Refer
	c) Deep Mycosis, STD Complications	Treat / Refer
	d) Genetically Determined Disorders	Refer

CHEST DISEASES

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Fever	Investigation and Treatment
2	Cough with Expectoration / Blood Stained	Treatment
3	Hemoptysis	Investigation and Treatment
4	Chest Pain	ECG, X ray treatment
5	Wheezing	Treatment, PFT
6	Breathlessness	Treatment PFT, X-ray

PSYCHIATRY

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Schizophrenia	Follow up
2	Depression	Follow up
3	Mania	Follow up
4	Anxiety Disorders	Follow up
5	Mental Retardation	Follow up
6	Other Childhood Disorders	Follow up
7	Alcohol and Drug Abuse	Follow up
8	Dementia	Follow up

DIABETOLOGY*

Sl. No	Name of the Illness	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Screening for Diabetes	Diagnose and Treat
2	Gestational Diabetes/DM with Pregnancy	Diagnose, Treat and refer if necessary
3	DM with HT	Diagnose and Treat
4	Nephropathy/Retinopathy	Diagnose and Refer
5	Neuropathy with Foot Care	Diagnose & Treat
6	Emergency :- i) Hypoglycemia ii) Ketosis iii) Coma	Diagnose and Treat

* To be provided by General Physician

NEPHROLOGY*

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Uncomplicated UTI	Treat
2	Nephrotic Syndrome - Children/ Acute Nephritis	Treat
3	Nephrotic Syndrome - Adults	Refer to tertiary
4	HT, DM	Treat
5	Asymptomatic Urinary Abnormalities	Refer to the District
6	Nephrolithiasis	Refer to District Hospital
7	Acute Renal Failure/ Chronic Renal Failure	Suspect / Refer to District level
8	Tumors	Refer to Tertiary

* To be provided by General Physician

NEURO MEDICINE AND NEURO SURGERY*

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Epilepsy	First Aid, Referral for investigation, Follow-up
2	C.V.A.	First Aid, Referral for investigation, Follow-up
3	Infections	Investigations and Treatment complicated Refer
4	Trauma	Treat simple injuries Refer complicated cases
5	Chronic headache	Referral
6	Chronic Progressive Neurological disorder	Referral

* To be provided by General Physician and General Surgeon

GENERAL SURGERY

S. No	Major Classification	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Basic Techniques	a. Minor Cases under LA Abscess I&D/Suturing, Biopsy / Excision of Lipoma / Ganglion / Lymph Node, Seb-Cyst / Dermoid / Ear Lobe Repair / Circumcision	Treat
		b. FNAC Thyroid, Breast Lumps, Lymphnodes, Swelling	Diagnosis / Treatment
2	Elective Surgeries	a. Genitourinary tract Hydrocele, Hernia, Circumcision, Suprapubic cystostomy,	Treat
		b. Gastrointestinal disorder Appendicitis/Anorectal abscesses/Rectal prolapse/Liver abscess/Haemorrhoids/Fistula	Treat
3	Emergency surgeries	Assault injuries/Bowel injuries/Head injuries/Stab injuries/Multiple injuries/Perforation/Intestinal obstruction	Treat
4	Benign/ Malignant Diseases	Breast/Oral/GI tract/Genitourinary (Penis, Prostate, Testis)	Diagnose & refer
5	Others	Thyroid, Varicose veins	Treat
6	Burns	Burns	Treat
7	Medico legal	a) Assault / RTA, b) Poisonings, c) Rape	AR Entry ?? / Treat
		d) Postmortem	Done

OPHTHALMOLOGY

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Superficial Infection	Treatment with drugs
2	Deep Infections	Treat
3	Refractive Error	Treat
4	Glaucoma	Treat
5	Eye problems following systemic disorders	Treat
6	Cataract	Treat
7	Foreign Body and Injuries	Treat
8	Squint and Amblyopia/Corneal Blindness(INF,INJ,Leucoma)/ Oculoplasty	Refer
9	Malignancy/Retina Disease	Refer
10	Paediatric Ophthalmology	Refer

EAR, NOSE, THROAT

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
EAR		
1	ASOM/SOM/CSOM	Treat
2	Otitis External / Wax Ears	Treat
3	Polyps	Diagnose and Refer
4	Mastoiditis	Treatment (Medical)
5	Unsafe Ear	Diagnose and Refer
THROAT		
1	Tonsillitis/Pharyngitis/Laryngitis	Treat
2	Quinsy	Diagnose and Refer
3	Malignancy Larynx	Diagnose and Refer
4	Foreign Body Esophagus	Diagnose and Refer

S. No	Name of the Illness	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
NOSE		
1	Epistaxis	treat
2	Foreign Body	Treat (Removal) and refer if needed
3	Polyps	Treat and refer if necessary
4	Sinusitis	Treat (Medical)
5	Septal Deviation	Treat (Symptomatic)

ORTHOPADICS

S. No	Name of the Illness	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Osteomyelitis	Treat
2	Rickets /Nutritional Defeciencies	Detection Manage, Nutritional rehabilitation centre
3	Poliomyelitis with residual Deformities/JRA/RA	Corrective Surgery / Physiotherapy
4	RTA/Polytrauma	Manage

UROLOGY

S. No.	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
CHILDREN		
1	Hydronephrosis	Diagnose and refer
2	Urinary Tract Injuries	Diagnose and refer
3	PUV/ Posterior Urethral Valve	Diagnose and refer
4	Cystic Kidney	Diagnose and refer
5	Urinary Obstruction	Urethral Catheter Insertion Referral
6	Undesended Testis	Diagnose and refer
7	Hypospadias and Epispadias	Diagnose and refer
8	Mega Ureter	Diagnose and refer
9	Extrophy	Diagnose and refer
10	Tumours - Urinary Tact	Diagnose and refer

S. No.	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
ADULT		
	All above and	
1	Stricture Urethra	Diagnose and refer
2	Stone Diseases	Diagnose and refer
3	Cancer - Urinary and Genital Tract	Diagnose and refer
4	Trauma Urinary Tact	Diagnose and refer
5	GUTB	Diagnose and refer
OLD AGE		
1	Prostate Enlargement and Urinary Retention	Urethral Catheter Insertion Referral
2	Stricture Urethra	Diagnose and refer
3	Stone	Diagnose and refer
4	Cancer (Kidney, Bladder, Prostate, Testis, Penis and Urethra)	Diagnose and refer
5	Trauma Urinary Tract	Diagnose and refer

DENTAL SURGERY

S. No	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Dental Caries/Dental Abcess/Gingivitis	Treat
2	Cleaning: - Periodontitis - Surgery	Treat
3	Minor Surgeries, Impaction, Flap	Cleaning Treat Surgery if necessary and refer
4	Malocclusion	Refer
5	Prosthodontia (Prosthetic Treatment)	Treat with appliances
6	Trauma	Treat
7	Maxillo Facial Surgeries	Refer
8	Neoplasms	Refer

HEALTH PROMOTION & COUNSELLING

S. No.	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	CHD / M.I.	Counseling / Diet advice Safe Style changes
2	Diabetes	Safe Style Changes / Physiotherapy
3	Substance Abuse	Vocational Rehabilitation Safe Style
4	HIV / AIDS	HIV Counseling

COMMUNITY HEALTH SERVICES:

S. No.	NAME OF THE ILLNESS	RECOMMENDED SERVICE MIX (SUGGESTED ACTIONS)
1	Communicable & Vaccine Preventable Diseases	Health Promotional Activities like ORT Canon, Immunization Camps
2	Non-communicable Diseases	Epidemic Health Investigation, Promotion & Counseling Activities
3	Adolescent & School Health	Adolescent & school health promotional activities
4	Family Planning	Counseling services, camps, follow up of contraceptive users
5	HIV / AIDS	HIV Counseling and Testing; STI testing; Blood safety; STI syndromic treatment

7. Physical infrastructure

7.1. **Size of the hospital:** the size of a district hospital is a function of the hospital bed requirement which in turn is a function of the size of the population served. In India the population size of a district varies from 50,000 to 15,00,000. For the purpose of convenience the average size of the district is taken in this document as one million populations. Based on the assumptions of the annual rate of admission as 1 per 50 populations. And average length of stay in a hospital as 5 days. The number of beds required for a district having a population of 10 lakhs will be as follows:

The total number of admissions per year = $10,00,000 \times 1/50 = 20,000$

Bed days per year = $20,000 \times 5 = 100,000$

Total number of beds required when occupancy is 100% = $100000/365 = 275$

Total number of beds required when occupancy is 80% = $100000/365 \times 80/100$

7.2. **Area of the hospital:** An area of 65-85 m² per bed has been considered to be reasonable. The area will include the service areas such as waiting space, entrance hall, registration counter, etc. **In addition, Hospital Service buildings like Generators, HVAC plant, Manifold Rooms, Boilers, Laundry, Kitchen and essential staff residences are required in the Hospital premises.** In case of specific requirement of a hospital, flexibility in altering the area be kept.

7.3. **Site information:** Physical description of the area which should include bearings, boundaries, topography, surface area, land used in adjoining areas, limitation of the site that would affect planning, maps of vicinity and landmarks or centers, existing utilities, nearest city, port, airport, railway station, major bus stand, rain fall and data on weather and climate. Hospital Management Policy should emphasize on quake proof, fire proof, protected, flood proof buildings and should be away from high tension wires. Infrastructure should be eco-friendly and disabled (physically and visually handicapped) friendly. Provision should be made for water harvesting, generating back-up, solar energy / power back-up, and horticulture services including herbal garden. Local agency Guidelines and By-laws should strictly be followed. A room for horticulture to store garden implements, seeds etc will be made available.

7.4. Factors to be considered in locating a district hospital

- ◆ The location may be near the residential area.
- ◆ Too old building may be demolished and new construction done in its place.
- ◆ It should be free from dangers of flooding; it must not, therefore, be sited at the lowest point of the district.
- ◆ It should be in an area free of pollution of any kind, including air, noise, water and land pollution.
- ◆ It must be serviced by public utilities: water, sewage and storm-water disposal, electricity, gas and telephone. In areas where such utilities are not available, substitutes must be found, such as a deep well for water, generators for electricity and radio communication for telephone.
- ◆ Necessary environmental clearance will be taken.

- ◆ Disability Act will be followed. Barrier free access environment for easy access to non-ambulant(wheel- chair, stretcher), semi-ambulant, visually disabled and elderly persons as per “Guidelines and Space Standards for barrier-free built environment for Disabled and Elderly Persons” of CPWD/Min of Social Welfare, GOI. This will ensure safety and utilization of space by disabled and elderly people fully and full integration into the society

7.5. Site selection criteria

A rational, step-by-step process of site selection occurs only in ideal circumstances. In some cases, the availability of a site outweighs other rational reasons for its selection, and planners and architects are confronted with the job of assessing whether a piece of land is suitable for building a hospital. In the case of either site selection or evaluation of adaptability, the following items must be considered: size, topography, drainage, soil conditions, utilities available, natural features and limitations.

7.6 In the already existing structures of a district hospital

- ◆ It should be examined whether they fit into the design of the recommended structure and if the existing parts can be converted into functional spaces to fit in to the recommended standards.
- ◆ If the existing structures are too old to become part of the new hospital, could they be converted to a motor pool, laundry, store or workshop or for any other use of the district hospital.
- ◆ If they are too old and dilapidated then they must be demolished. And new construction should be put in place.

7.7. Building and Space Requirements

Signage: The building should have a prominent board displaying the name of the Centre in the local language at the gate and on the building. Colour coded guidelines and signages indicating access to various facilities at strategic points in the Hospital for guidance of the public should be provided.

- **Disaster Prevention Measures:** (For all new upcoming facilities in seismic zone 5 or other disaster prone areas)

Desirable

For prevention of

Earthquake,
Flood
and Fire

Building structure and the internal structure of Hospital should be made disaster proof especially earthquake proof, flood proof and equipped with fire protection measures.

Quake proof measures – structural and non-structural should be built in to withstand quake as per geographical/ state govt. guidelines. Non-structural features like fastening the shelves, almirahs, equipments etc are even more essential than structural changes in the buildings. Since it is likely to increase the cost substantially, these measures may especially be taken on priority in known earthquake prone areas. (For more details refer to ‘Annexure VI: Seismic safety of non-structural elements of Hospitals/Health facility’)

Hospital should not be located in low lying area to prevent flooding.

Fire fighting equipments – fire extinguishers, sand buckets, etc. should be available and maintained to be readily available when there is a problem. There should be regular drill of the staff for use of these equipments

All health staff should be trained and well conversant with disaster prevention and management aspects

Environmental friendly features

The Hospital should be, as far as possible, environment friendly and energy efficient. Rain-Water harvesting, solar energy use and use of energy-efficient bulbs/equipments should be encouraged.

Administrative Block:

Administrative block attached to main hospital along with provision of MS Office and other staff will be provided.

Circulation Areas

Circulation areas like corridors, toilets, lifts, ramps, staircase and other common spaces etc. in the hospital should not be more than 55% of the total floor area of the building.

Floor Height

The room height should not be less than approximately 3.6 m measured at any point from floor to floor height.

Entrance Area

Physical Facilities: Barrier free access environment for easy access to non-ambulant(wheel- chair, stretcher), semi-ambulant, visually disabled and elderly persons as per “Guidelines and Space Standards for barrier-free built environment for Disabled and Elderly Persons” of CPWD/ Min of Social Welfare, GOI.

Ramp as per specification, Hand- railing, proper lightning etc. must be provided in all health facilities and retrofitted in older one which lack the same.

Ambulatory Care Area (OPD)

Waiting Spaces

Registration, assistance and enquiry counter facility be made available in all the clinics along with proper sitting arrangement, drinking water, ceiling fans and toilet facility separate for male and female. Main entrance, general waiting and subsidiary waiting spaces are required adjacent to each consultation and treatment room in all the clinics.

Clinics

The clinics should include general, medical, surgical, ophthalmic, ENT, dental, obstetric and gynaecology, paediatrics, dermatology and venereology, psychiatry, neonatology, orthopaedic and social service department. The clinics for infectious and communicable diseases should be located in isolation, preferably, in remote corner, provided with independent access. For National Health Programme, adequate space be made available. Immunization Clinic with waiting Room having an Area of 3m x 4m in PP centre/Maternity centre/Pediatric Clinic should be provided. One room for HIV/STI Counseling is to be provided.

Nursing Services

Various clinics under Ambulatory Care Area require nursing facilities in common which include dressing room, side laboratory, injection room, social service and treatment rooms, etc.

Nursing Station: Need based space required for Nursing Station in OPD for dispensing nursing services. (Based on OPD load of patient)

Diagnostic Services:

Provision for following Space be made

- Separate room for doctors/consultants
- rooms for reporting
- space for technicians
- storage /records areas
- sufficient waiting areas

Imaging

Role of imaging department should be radio-diagnosis and ultrasound along with hire facilities depending on the bed strength. The department should be located at a place which is accessible to both OPD and wards and also to operation theatre department. The size of the room should depend on the type of instrument installed. The room should have a sub-waiting area with toilet facility and a change room facility, if required. Film developing and processing (dark room) shall be provided in the department for loading, unloading, developing and processing of X-ray films. Separate Reporting Room for doctors should be there.

Clinical Laboratory

For quick diagnosis of blood, urine, etc., a small sample collection room facility shall be provided.
Separate Reporting Room for doctors should be there.

Blood Storage Unit (annexure VII)

The area required for setting up the facility is only 10 square meters, well-lighted, clean and preferably air-conditioned.

Intermediate Care Area (Inpatient Nursing Units)

General

Nursing care should fall under following categories:

- General Wards: Male / Female
- Private Wards
- Wards for Specialities

Depending upon the requirement of the hospital and catchment area, appropriate beds may be allowed for private facility. 10% of the total bed strength is recommended as private wards beds.

Location

Location of the ward should be such to ensure quietness and to control number of visitors.

Ward Unit

The basic aim in planning a ward unit should be to minimize the work of the nursing staff and provide basic amenities to the patients within the unit. The distances to be traveled by a nurse from bed areas to treatment room, pantry etc. should be kept to the minimum. Ward unit will include nursing station, doctors' duty room, pantry, isolation room, treatment room, nursing store along with wards and toilets as per the norms. On an average one nursing station per ward will be provided. It should be ensure that nursing station caters to **around** 40-45 beds, out of which half will be for acute patients and rest for chronic patients.

Private ward: Depending upon the requirement of the hospital and catchment area appropriate beds may be allocated for private facilities. However, 10% of the total bed strength is recommended as private wards beds.

Patient Conveniences: It is to be as per local byelaws.

Pharmacy (Dispensary)

The pharmacy should be located in an area conveniently accessible from all clinics. The size should be adequate to contain 5 percent of the total clinical visits to the OPD in one session.

Pharmacy should have component of medical store facility for indoor patients and separate pharmacy with accessibility for OPD patients.

Intensive Care Unit and High Dependency Wards

General

In this unit, critically ill patients requiring highly skilled life saving medical aid and nursing care are concentrated. These should include major surgical and medical cases, head injuries, severe haemorrhage, acute coronary occlusion, kidney and respiratory catastrophe, poisoning etc. It should be the ultimate medicare the hospital can provide with highly specialized staff and equipment.

The number of patients requiring intensive care may be about 2 to 5 percent total medical and surgical patients in a hospital. The unit shall not have less than 4 beds nor more than 12 beds. Number of beds will be restricted to 5% of the total bed strength. Out of these, they can be equally divided among ICU and High Dependency Wards. For example, in a 500-bedded hospital, total of 25 beds will be for Critical Care. Out of these, 13 may be ICU beds and 12 will be allocated for High Dependency Wards. Changing room should be provided for. There should be clearcut admission, discharge and referral policy.

Location

This unit should be located close to operation theatre department and other essential departments, such as, X-ray and pathology so that the staff and ancillaries could be shared. Easy and convenient access from emergency and accident department is also essential. This unit will also need all the specialized services, such as, piped suction and medical gases, uninterrupted electric supply, heating, ventilation, central air conditioning and efficient life services. A good natural light and pleasant environment would also be of great help to the patients and staff as well.

Number of beds for both the units will be restricted to 10% of the total bed strength. Out of these, they can be equally divided among ICU and High Dependency Wards. For example, in a 100 bedded hospital, total of 10 beds will be for critical care. Out of these 4 may be ICU beds and 6 will be allocated for high dependency wards.

Facilities

Nurses Station
Clean Utility Area
Equipment Room

Accidents and emergency services

It should preferably have a distinct entry independent of OPD main entry so that a very minimum time is lost in giving immediate treatment to casualties arriving in the hospital. There should be an easy ambulance approach with adequate space for free passage of vehicles and covered area for alighting patients.

Emergency should have separate mobile X-ray/ laboratory, side labs/plaster room/and minor OT facilities. Separate emergency beds may be provided. Duty rooms for Doctors/ nurses/paramedical staff and medico legal cases. Sufficient waiting area for relatives and located in such a way which does not disturb functioning of emergency services.

Therapeutic Services

Operation Theatre

Operation theatre usually have a team of surgeons anesthetists, nurses and sometime pathologist and radiologist operate upon or care for the patients. The location of Operation theatre should be in a quite environment, free from noise and other disturbances, free from contamination and possible cross infection, maximum protection from solar radiation and convenient relationship with surgical ward, intensive care unit, radiology, pathology, blood bank and CSSD. This unit also need constant specialized services, such as, piped suction and medical gases, electric supply, heating, air-conditioning, ventilation and efficient life service, if the theatres are located on upper floors. Zoning should be done to keep the theatres free from micro organisms. There may be four well defined zones of varying degree of cleanliness namely, Protective Zone, Clean Zone, Aseptic or Sterile Zone and Disposal or Dirty Zone. Normally there are three types of traffic flow, namely, patients, staff and supplies. All these should be properly channelized. An Operation Theatre should also have Preparation Room, Pre-operative Room and Post Operative Resting Room. Operating room should be made dust-proof and moisture proof. There should also be a Scrub-up room where operating team washes and scrub-up their hands and arms, put on their sterile gown, gloves and other covers before entering the operation theatre. The theatre should have sink / photo sensors for water facility. Laminar flow of air be maintained in operation theatre. It should have a central air conditioning facility. It should have a single leaf door with self closing device and viewing window to communicate with the operation theatre. A pair of surgeon's sinks and elbow or knee operated taps are essential. Operation Theatre should also have a Sub-Sterilizing unit attached to the operation theatre limiting its role to operating instruments on an emergency basis only.

Theatre refuse, such as, dirty linen, used instruments and other disposable / non disposable items should be removed to a room after each operation. Non-disposable instruments after initial wash are given back to instrument sterilization and rest of the disposable items are disposed off and destroyed. Dirty linen is sent to laundry through a separate exit. The room should be provided with sink, slop sink, work bench and draining boards.

Delivery Suite Unit

The delivery suit unit be located near to operation theatre.
The delivery Suit Unit should include the facilities of accommodation for various facilities as given below:

Reception and admission
Examination and Preparation Room
Labour Room (clean and a septic room)
Neo-natal Room
Sterilizing Rooms
Sterile Store Room
Scrubbing Room
Dirty Utility
Newborn care corner in Labour room. (Annexure V)
Newborn care Stabilization Unit: Details at Annexure V A

Physical Medicine and Rehabilitation (PMR)

The PMR department provides treatment facilities to patients suffering from crippling diseases and disabilities. The department is more frequently visited by out-patients but should be located at a place which may be at convenient access to both outdoor and indoor patients with privacy. It should also have a physical and electro-therapy rooms, gymnasium, office, store and toilets separate for male and female. Normative standards will be followed.

Hospital Services

Management Information System (MIS)

Computer with Internet connection is to be provided for MIS purpose. Provision of flow of Information from PHC/CHC to district hospital and from there to district and state health organization should be established. Relevant information with regards to emergency, outdoor and indoor patients be recorded and maintained for a sufficient duration of time as per state health policy.

Hospital Kitchen (Dietary Service)

The dietary service of a hospital is an important therapeutic tool. It should easily be accessible from outside along with vehicular accessibility and separate room for dietician and special diet. It should be located such that the noise and cooking odours emanating from the department do not cause any inconvenience to

the other departments. At the same time location should involve the shortest possible time in delivering food to the wards.

Central Sterile and Supply Department (CSSD)

As the operation theatre department is the major consumer of this service, it is recommended to locate the department at a position of easy access to operation theatre department. It should have a provision of hot water supply and steam. efficiency of sterilization process would be tested periodically.

Hospital Laundry

It should be provided with necessary facilities for segregated collection, drying, pressing and storage of soiled and cleaned linens.

Medical and General Stores

The medical and general store should have vehicular accessibility and ventilation, security and fire fighting arrangements, inventory analysis (ABC/VED) should be undertaken periodically.

For Storage of Vaccines and other logistics

Cold Chain Room: 3.5m x 3m in size. Every efforts will be undertaken to ensure that proper cold chain is maintained till point of delivery.

Vaccine & Logistics Room: 3.5m x 3m in size

Minimum and maximum Stock (0.5 and 1.25 month respectively). Indent order and receipt of vaccines and logistics should be monthly. CC & VL Assistant will be responsible for timely receipt of required vaccines and Logistics from the District Stores

Mortuary

It provides facilities for keeping of dead bodies and conducting autopsy. Facilities for proper illumination and hand washing should be available. Atleast cold chamber for preservation of two dead bodies could be installed. It should be so located that the dead bodies can be transported unnoticed by the general public and patients.

Engineering Services

Electric Engineering

Sub Station and Generation

Electric sub station and standby generator to cater for the full load of the hospital should be provided.

Illumination

The illumination and lightning in the hospital should be done as per the prescribed standards.

Emergency Lighting

Shadow less light in operation theatre and delivery rooms should be provided. Emergency portable light units should be provided in the wards and departments.

Call Bells (Desirable)

Call bells with switches for all beds should be provided in all types of wards with indicator lights and location indicator situated in the nurses duty room of the wards.

Ventilation

The ventilation in the hospital may be achieved by either natural supply or by mechanical exhaust of air.

Mechanical Engineering

All OTs, ICUs and NICUs, (heat stroke room, if required) will be air conditioned. Room Heating in operation theatre and neo-natal units may also be provided depending upon weather condition. Air coolers or hot air convectors may be provided for the comfort of patients, relatives and staff depending on the local needs.

Hospital should be provided with water coolers and refrigerator in wards and departments depending upon the local needs.

Desirable – telephone booth, cable TV, cafeteria / tea shop

Public Health Engineering

Water Supply

Arrangement should be made for round the clock piped water supply along with an overhead water storage tank with a provision to store atleast 3 days water requirement. It should have pumping and boosting arrangements. Approximately 10000 litres of potable water per day is required for a 100 bedded hospital. Separate provision for fire fighting and water softening plants be made available.

Drainage and Sanitation

The construction and maintenance of drainage and sanitation system for waste water, surface water, sub-soil water and sewerage shall be in accordance with the prescribed standards. Prescribed standards and local guidelines shall be followed.

Other Amenities

Disabled friendly, WC with basins wash basins as specified by Guidelines for disabled friendly environment should be provided.

Waste Disposal System

National guidelines on Bio-Medical Waste Management and a Notification of Environment and Forests are at Annexure – II
Guidelines for management of Mercury waste are at Annexure -III

Trauma Centre

Guidelines to be followed

Fire Protection

- a. regular training, demonstation and awareness , drill
- b. placement of fire appliances and their periodical servicing
- c. signage plan – escaping

Telephone and Intercom

Medical Gas

Cooking Gas: Liquefied petroleum gas (LPG)

Laboratory Gas: Liquefied petroleum gas (LPG) and other specified gases.

Building Maintenance: Provision for building maintenance staff and an office-cum store will be provided to handle day to day maintenance work

Annual Maintenance Contract (AMC)

AMC should be taken for all equipments which need special care and preventive maintenance done to avoid break down and reduce down time of all essential and other equipments.

Parking: Sufficient parking place as per the norms will be provided

Administrative Services: Two sections (i) General section to deal with overall upkeep of the hospital and welfare of its staff and patients (ii) Medical Records section.

Committee Room: A meeting or a committee room for conferences, trainings with associated furniture.

Residential Quarters

All the essential medical and para-medical staff will be provided with residential accommodation. If the accommodation can not be provided due to any reason, then the staff may be paid house rent allowance, but in that case they should be staying in near vicinity, so that essential staff is available 24x7 in case of need.

8. MANPOWER

8.1. MAN POWER – DOCTORS

S. No	Staff	51-100 bedded Sub District Hospital	
		Essential	Desirable
1	Hospital Superintendent	1	
2	Medical Specialist	2	+1
3	Surgery Specialists	2	
4	O&G specialist	2	+1
5	Dermatologist / Venereologist	1	
6	Paediatrician	2	
7	Anesthetist (Regular / trained)	2	
8	ENT Surgeon	1	
9	Ophthalmologist	1	
10	Orthopedician	1	
11	Radiologist	1	
12	Casualty Doctors / General Duty Doctors	9 (at least 4 female doctors from allopathy)	
13	Dental Surgeon	1	2
14	Public Health Manager ¹	1	
15	Forensic Expert	1	
16	AYUSH Physician ²	2	
17	Pathologist with DCP / MD (Micro) / MD (Patho) / MD (Biochemistry)	1	
18	Psychiatrist		1
	Total	31	36 (including essential)

¹ May be a Public Health Specialist or management specialist trained in public health

² Provided there is no AYUSH hospital / dispensary in the district headquarter

8.2. MAN POWER – PARA MEDICAL

S. No	Staff	51-100 bedded Sub District Hospital	
		Essential	Desirable
1	Staff Nurse	45	
2	Sister Incharge	5	
3	General Duty Attendant/ hospital workers (including Cold Chain Handler*)	11	
4	Ophthalmic Assistant / Refractionist	1	+1
5	ECG Technician	1	
6	Audiometry Technician	1	
7	Laboratory Technician (Lab + Blood storage)	5	
8	Laboratory Attendant (Hospital Worker)	3	
9	Radiographer	3	
10	Pharmacist	5	
11	Dietician		1
12	Dental Assistant	1	+1
14	Dental Technician/Dental Hygienist	1	+1
15	Matron /ANS)	1	+1
16	Physiotherapist/ occupational therapist/ rehabilitation therapist.	1	
17	Family welfare counselor	1 (Female)	1 (male)
18	Multi Rehabilitation worker	2	
19	Statistical Assistant	1	
20	Medical Records Officer / Technician	1	
21	Electrician	1	
22	Plumber	1	
23	Cold Chain & Vaccine Logistics Assistant	1	
	Total	81	87

* One may be identified (& trained) from the existing staff for assisting cold chain and vaccine logistic assistant.

Note **General HR and Bed norms for Obstetric Cases**

No of Deliveries in a month	Requirement of Bed	Requirement of Labour table	HR requirement Staff Nurses
100 deliveries	20 beds	2 Labour tables	4 for Labour Rooms 5 for ANC/PNC Wards

8.3. Manpower- Administrative Staff

S. No.	Item	Sub District Hospital
		51-100 bedded
1	Junior Administrative Officer	1
2	Accountant	2
3	Computer Operator	6
4	Driver	2
5	Peon	2
6	Security Staff*	2
	Total	15

Note : Drivers post will be in the ratio of 1 Driver per 1 vehicle. Driver will not be required if outsourced

* The number would vary as per requirement and to be outsourced.

8.4. Man Power – Operation Theatre

S I. No	Staff	Sub District Headquarters Hospital	
		51-100 Bedded	
		Emergency / FW OT	General OT
1	Staff Nurse	4	1
2	OT Assistant	4	2
3	Safai	2+1	1+1

	Karamchari		
	Total	10+ 1	4+1

8.5. Man Power – Blood Storage Unit

S. No.	Item	Blood Storage
1	Staff Nurse	1
2	MNA / FNA	1
3	Blood Bank/Storage Technician	5
4	Safai Karamchari	3-1
5	Attendant	2

9. Equipment

I Imaging Equipment		
Sl. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	500 M.A. X-ray machine*	
2	300 M.A. X-ray machine	1
3	100 M.A. X-ray machine	1
4	60 M.A. X-ray machine (Mobile)	1
5	C arm with accessories *	1 (Desirable)
6	Dental X ray machine	1
7	Ultra Sonogram (Obs & Gyne. department should be having a separate ultra-sound machine of its own)	1 + 1
9	Mammography Unit *	1 (Desirable)
10	Echocardiogram*	1 (Desirable)
*These items will be provided depending upon the need and availability of skilled personnel		

II X Ray Room Accessories		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	X.ray developing tank	1
2	Safe light X.ray dark room	2
3	Cassettes X.ray	10
4	X.ray lobby single	4
5	X.ray lobby Multiple	
6	Lead Apron	1
7	Intensifying screen X-ray	1

III Cardiac Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	ECG machine computerized	
2	ECG machine ordinary	1
3	12 Channel stress ECG test equipments Tread Mill *	
4	Cardiac Monitor	2+1
5	Cardiac Monitor with defibrillator	2
6	Ventilators (Adult)	1
7	Ventilators (Paediatrics)	1
8	Pulse Oximeter	2+1
9	Pulse Oximeter with NIB.P*	
10	Infusion pump	1
11	B.P.apparatus table model	8+4
12	B.P.apparatus stand model	5
13	Stethoscope	5+10

* To be provided as per need.

IV Labour ward & Neo Natal Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Baby Incubators	1
2	Phototherapy Unit	1
3	Emergency Resuscitation Kit-Baby*	2
4	Standard weighing scale	1 each for the labor room & OT
5	Newborn Care Equipments	1 set each for labor room & OT
6	Double-outlet Oxygen Concentrator	1 each for the labor room & OT
7	Radiant Warmer	1+1 (desirable)

8	Room Warmer	2
9	Foetal Doppler	1+1(desirable)
10	CTG Monitor	1
11	Delivery Kit	2+3
12	Episiotomy kit	2
13	Forceps Delivery Kit	1
14	Crainotomy	1
15		
16	Silastic vacuum extractor	1
17	Pulse Oximeter baby & adult	1
18	Cardiac monitor baby	1
19	Nebulizer baby	1
20	Weighing machine adult	2
21	Weighing machine infant	2

Equipments for Newborn care corner and new born care Stabilization Unit: Details at Annexure V & V A respectively.

V Immunization Equipments

ILR & DF with Stabilizer	ILR(L)-1, & DF(L)-1 for immunization at hospital purpose
Spare ice pack box	one from each equipment
Room Heater/Cooler for immunization clinic with electrical fittings	As per need
Waste disposal twin bucket, hypochlorite solution/bleach	2 per ILR bimonthly
Freeze Tag	Need Based
Thermometers Alcohol (stem)	2
Almirah for Vaccine logistics	2
Almirah for vaccine logistics	1
Immunization table	5
Chair for new staff proposed	3
Stools for immunization room	2
Bench for waiting area	1
Dustbin with lid	one from each equipment
Water container	1
Hub cutters	2
5 KVA Generator with POL for immunization purpose	1 (If hospital has other Generator for general purpose this is not needed.)

For Monitoring and Effective programme management for immunization following are to be used

Registers	Immunization register
	Vaccine stock & issue register
	AD syringes, Reconstitution syringes, other logistic stock & issue register
	Equipment, furniture & other accessories register
	Geneset Logbook
Monitoring Tools	Tracking Bag and Tickler Box
	Tally sheets
	Immunization cards
	Temperature Logbook
Reports	Microplans
	Monthly UIP reports
	Weekly surveillance reports (AFP, Measles)
	Serious AEFI reports
	Outbreak reports

VI Ear Nose Throat Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1.	Indigenous Digital Audiometer	1
2.	Impedance Audiometer	1
3.	Operating Microscope (ENT)*	
4.	Head light (ordinary) (Boyle Davis)	1
5.	ENT Operation set including headlight, Tonsils	1
6.	Ear Surgery Instruments	2 sets
7.	Mastoid Set	1
8.	Micro Ear Set myringoplasty*	1
9.	Micro drill System	2 sets
10.	Stapedotomy Set*	1
11.	Stapeidoplasty*	1
12.	ENT Nasal Set (SMR, Septoplasty, Polypetcomy, DNS, Rhinoplasty)*	
13.	Laryngoscope fibreoptic ENT *	
14.	Laryngoscope indirect	1
15.	Otoscope	1
16.	Oesophagoscope Adult*	
17.	Oesophagoscope Child *	
18.	Head Light (cold light)	1
19.	Tracheostomy Set	1
20.	Tuning fork	1
21.	OAE Analyzer	1
22.	Sound Proof room	1

* To be provided as per need.

VII Eye Equipments

Sl. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Cryo Surgery Unit	
2	Ophthalmoscope - Direct	1
3	Slit Lamp	1
4	Retino scope	
5	Perimeter	1
6	Binomags	
7	Distant Vision Charts	
8	Foreign Body spud and needle	
9	Lacrimal cannula and probes	
10	Lid retractors (Desmarres)	
11	Near Vision charts	
12	Punctum Dilator	
13	Rotating Visual acuity drum	
14	Torch	
15	Trial Frame Adult/Children	
16	Trial Lens Set	
17	IOL Operation set	2
18	Laser Photocoagulometer*	
19	Operating Microscope	1
20	A-Scan Biometer	1
21	Keratometer	1
22	Auto Refractometer	1
23	Flash Autoclave	1
24	Applanation Tonometer	1

* - to be supplied by Blindness Control Society

VIII Dental Equipments

Sl. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Air Rotor	1
2	Dental Unit with motor for dental OP	1
3	Dental Chair	1
4	Dental Lab	
5	Dental Kit	1

IX Operation Theatre Equipment		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Auto Clave HP Horizontal	
2	Auto Clave HP Vertical (2 bin)	2
3	Operation Table Ordinary Paediatric*	
4	Operation Table Hydraulic Major	1
5	Operation table Hydraulic Minor	2
6	Operating table non-hydraulic field type	1
7	Operating table Orthopedic *	
8	Autoclave with Burners 2 bin*	
9	Autoclave vertical single bin	1
10	Shadowless lamp ceiling type major*	1
11	Shadowless lamp ceiling type minor*	1
12	Shadowless Lamp stand model	1
13	Focus lamp Ordinary	2
14	Sterilizer big (Instrument)	2
15	Sterilizer Medium (Instrument)	3
16	Steriliser Small (Instruments)	3
17	Bowl Steriliser - big*	1
18	Bowl steriliser - Medium*	1
19	Diathermy Machine (Electric Cautery)	
20	Suction Apparatus - Electrical	3
21	Suction Apparatus - Foot operated	2
22	Dehumidifier*	
23	Ultra violet lamp philips model 4 feet	2
24	Ethylene Oxide sterilizer*	
25	Microwave sterilizer*	

* To be provided as per need.

X Laboratory Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1.	Binocular Microscope	4
2.	Balance (Electrical Monopan)	1
3.	Simple balance	1
4.	Electric Colorimeter	1
5.	Auto analyser *	1
6.	Semi auto analyser	1
7.	Micro pipettes of different volume range	4

X Laboratory Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
8.	Water bath	1
9.	Hot Air oven*	1
10.	Lab Incubator*	1
11.	Distilled water plant	2
12.	Electric centrifuge Table Top	2
13.	Cell Counter Electronic*	1
14.	Hot plates	2
15.	Rotor / Shaker	1
16.	Counting chamber	2
17.	PH meter	1
18.	Paediatric Glucometer / Bilirubinometer*	
19.	Glucometer	1
20.	Haemoglobinometer	1
21.	TCDC count apparatus	1
22.	ESR stand with tubes	3
23.	Test tube stands *	5
24.	Test tube rack *	5
25.	Test tube holders*	5
26.	Spirit lamp*	6
27.	Timer stop watch	2
28.	Alarm clock	1
29.	Lab Autoclaves	2
30.	Refrigerators	2
31.	Bio-safety Cabinet (Class-I)	1
32.	Automatic Blood Gas Analyzer	1
33.	2000 Nos Whole Blood Finger Prick HIV Rapid Test and STI Screening Test each	

* To be provided as per need

XI Surgical Equipment Sets		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	P. S. Set	1+9
2	MTP Set	1+2
3	Biopsy Cervical Set*	1
4	D & C Set	1+2
5	I.U.C.D. Kit	1+4

XI Surgical Equipment Sets		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
6	LSCS set	1+1
7	MVA Kit	2
8	Vaginal Hysterectomy	1
9	Proctoscopy Set*	1+1
10	P.V. Tray*	1+1
11	Abdominal Hysterectomy set	1
12	Laparotomy Set	1+1
13	Formaline dispenser	2+1
14	Kick Bucket	6
15	General Surgical Instrument Set Piles, Fistula, Fissure*	1
16	Knee hammer	2
17	Hernia, Hydrocele*	1
18	Varicosevein etc*	1
19	Gynaec Electric Cautery	1
20	Vaginal Examination set*	4
21	Suturing Set*	3
22	MTP suction apparatus	1
23	Thoracotomy set	1 (Desirable)
24	Neuro Surgery Craniotomy Set	1 (Desirable)
25	I M Nailing Kit	1(Desirable)
26	SP Nailing	1(Desirable)
27	Compression Plating Kit*	1(Desirable)
28	AM Prosthesis*	1(Desirable)
29	Dislocation Hip Screw Fixation*	1 (Desirable)
30	Fixation Fracture Hip	1(Desirable)
31	Spinal Column Back Operation Set	1(Desirable)
32	Thomas Splint	5
33	Paediatric Surgery Set	1 (Desirable)
34	Mini Surgery Set*	1(Desirable)
35	Urology Kit	1(Desirable)
36	Surgical Package for Cholecystectomy*	1(Desirable)
37	Surgical package for Thyroid	1(Desirable)
38	GI Operation Set*	2
39	Appendicectomy set *	2
40	L.P.Tray*	3
41	Urethral Dilator Set	2
42	TURP resectoscope *	1(Desirable)
43	Haemodialysis Machine *	
44	Amputation set	1
45	Universal Bone Drill	1 (Desirable)
46	Crammer wire splints	8

XI Surgical Equipment Sets		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
47	Colposcope	1 (Desirable)
48	Cryoprobe	1(Desirable)

* To be provided as per need.

XII PMR Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Skeleton traction set	1
2	Interferential therapy unit	1
3	Short Wave Diathermy	1
4	Hot packs & Hydro collator	
5	Exercise Table	
6	Static Cycle	
7	Medicine ball	
8	Quadricaps Exerciser	
9	Coordination Board	
10	Hand grip strength measurement Board	
11	Kit for Neuro-development assessment.	
12	CBR Manual	
13	ADL Kit & hand exerciser	
14	Multi Gym Exerciser	
15	Self Help devices	
16	Wheel chair	
17	Crutches / Mobility device sets	
18	Hot air oven	
19	Hot air gun	
20	Grinder	
21	Sander	
22	Router	
23	Power Drill	
24	Band saw	
25	Vacuun forming apparatus	
26	Lathe	
27	Welding machine	
28	Buffing & polishing machine	
29	Work table – 2 nos	
30	Tools and raw material	

XIII Endoscopy Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Endoscope fibre Optic (OGD) *	
2	Arthroscope	
3	Laparoscope operating major with accessories *	
4	Laparoscope diagnostic and for sterilisation *	1
5	Colonoscope and sigmoidoscope*	
6	Hysteroscope *	1
7	Colposcope *	1

* - to be provided as per need

XIV Anaesthesia Equipments		
Sl. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Anaesthetic - laryngoscope magills with four blades	2
2	Endo tracheal tubes sets	1
3	Magills forceps (two sizes)	5
4	Connector set of six for E.T.T	5
5	Tubes connecting for ETT	4
6	Air way female*	4
7	Air way male*	10
8	Mouth prop*	6
9	Tongue depressors*	8
11	O2 cylinder for Boyles	8
12	N2O Cylinder for Boyles	8
13	CO2 cylinder for laparoscope*	
14	PFT machine	1
15	Boyles Apparatus with Fluotec and circle absorber	1
16	Exchange Transfusion Sets*	

* - to be provided as per need

XV Furniture & Hospital Accessories (As per need)		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Doctor's chair for OP Ward, Blood Bank,	20

XV Furniture & Hospital Accessories (As per need)		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
	Lab etc.	
2	Doctor's Table	6
3	Duty Table for Nurses	5
4	Table for Sterilisation use (medium)	6
5	Long Benches(6 1/2' x 1 1/2')	20
6	Stool Wooden	15
7	Stools Revolving	8
8	Steel Cup-board	15
9	Wooden Cup Board	6
10	Racks -Steel – Wooden	7
11	Patients Waiting Chairs (Moulded) *	10
12	Attendants Cots *	4
13	Office Chairs	4
14	Office Table	4
15	Foot Stools *	12
16	Filing Cabinets (for records) *	6
17	M.R.D.Requirements (record room use) *	1
18	Paediatric cots with railings	5
19	Cradle*	3
20	Fowler's cot	0
21	Ortho Fracture Table*	0
22	Hospital Cots (ISI Model)	100
23	Hospital Cots Paediatric (ISI Model)	10
24	Wooden Blocks (Set)*	2
25	Back rest*	4
26	Dressing Trolley (SS)	4
27	Medicine Almairah	2
28	Bin racks (wooden or steel)*	5
29	ICCU Cots	4
30	Bed Side Screen (SS-Godrej Model)	4
31	Medicine Trolley(SS)	4
32	Case Sheet Holders with clip(S.S.)*	60
33	Bed Side Lockers (SS)*	0
34	Examination Couch (SS)	2
35	Instrument Trolley (SS)	6
36	Instrument Trolley Mayos (SS)	4
37	Surgical Bin Assorted	25
38	Wheel Chair (SS)	4
39	Stretcher / Patience Trolley (SS)	3 each
40	Instrument Tray (SS) Assorted	30
41	Kidney Tray (SS) - Assorted	30

XV Furniture & Hospital Accessories (As per need)		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
42	Basin Assorted (SS)	30
43	Basin Stand Assorted (SS)	
	(2 basin type)	4
	(1 basin type)	8
44	Delivery Table (SS Full)	6
45	Blood Donar Table*	1
46	O2 Cylinder Trolley(SS)	8
47	Saline Stand (SS)	15
48	Waste Bucket (SS)*	25
49	Dispensing Table Wooden	1
50	Bed Pan (SS)*	20
51	Urinal Male and Female	20
52	Name Board for cubicals*	1
53	Kitchen Utensils*	
54	Containers for kitchen*	
55	Plate, Tumblers*	
56	Waste Disposal - Bin / drums	8
57	Waste Disposal - Trolley (SS)	1
58	Linen Almirah	3
59	Stores Almirah	3
60	Arm Board Adult*	10
61	Arm Board Child*	10
62	SS Bucket with Lid	6
63	Bucket Plastic*	8
64	Ambu bags	5
65	O2 Cylinder with spanner ward type	12
66	Diet trolley - stainless steel	1
67	Needle cutter and melter	15
68	Thermometer clinical *	20
69	Thermometer Rectal*	3
70	Torch light*	10
71	Cheatles forceps assorted*	8
72	Stomach wash equipment*	2
73	Infra Red lamp*	3
74	Wax bath*	1
75	Emergency Resuscitation Kit-Adult*	2
76	Enema Set*	6
77	Ceiling Fan\$	As per requirement
78	Bed Side Screen (SS-Godrej Model)^	As per requirement

XV Furniture & Hospital Accessories (As per need)		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital

* - to be provided as per need
 \$ - One fan per four beds in the ward.
 ^ - At least one screen per five beds except female wards.

XVI Post M equipments		
S. No.	Name of the Equipment	100 bedded Sub District Hospital
1	Mortuary table (Stainless steel) *	2
2	P.M.equipments (list)	3
3	Weighing machines (Organs)	1
4	Measuring glasses(liquids)	2
5	Aprons*	10
6	PM gloves (Pairs)*	10
7	Rubber sheets*	
8	Lens	1
9	Spot lights	2
10	Cold box for preserving dead bodies	2

* - to be provided as per need

XVII Linen		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Bed sheets	400 +200 (desirable)
2	Bedspreads	600
3	Blankets Red and blue	30
4	Patna towels	150
5	Table cloth	50
6	Draw sheet	75
7	Doctor's overcoat	30
8	Hospital worker OT coat	200
9	Patients house coat (for female)	300
10	Patients Pyjama (for male) Shirt	200
11	Over shoes pairs	60
12	Pillows	150
13	Pillows covers	300
14	Mattress (foam) Adult	100

15	Paediatric Mattress	16
16	Abdominal sheets for OT	50
17	Pereneal sheets for OT	50
18	Leggings	80
19	Curtain cloth windows and doors	
20	Uniform / Apron	
21	Mortuary sheet	30
22	Mats (Nylon)	50
23	Mackin tosh sheet (in meters)	150
24	Apron for cook	

XVIII Teaching Equipments		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	O.H.P	1
2	Screen	1
3	White / colour boards	1
4	Television colour	1
5	Tape Recorder* (2 in 1)	1
6	VCD Player	1
7	Radio	1
8	LCD Projectors with laptop	1+1
9	1.Desk top computer(with color monitor, CPU, UPS, laser printer & computer table)	1
10	Resuscitation Training Mannequins	1
11	Library with Books, Training CD and Potocols	

* - to be provided as per need

XIX Administration		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Computer with Modem with UPS, Printer with Internet Connection	1
2	Xerox Machine	
3	Typewriter (Electronic)*	1
4	Intercom (15 lines)*	1
5	Intercom (40 lines)*	
6	Fax Machine	1
7	Telephone	1
8	Common User Group (Mobile)	
9	Public Address System*	1
10	Library facility*	

* - to be provided as per need

XX Refrigeration & AC		
S. No.	Name of the Equipment	100 bedded Sub District Hospital
1	Refrigerator 165 litres	3+1
2	Blood Bank Refrigerator	1
3	ILR	1
4	Deep Freezer	1
5	Spare ice pack box	one from each equipment
6	Room Heater/Cooler for immunization clinic with electrical fittings	As per need
7	Waste disposal twin bucket, hypochlorite solution/bleach	2 per ILR bimonthly
8	Freeze Tag	Need Based
9	Thermometers Alcohol (stem)	2
10	Almirah for Vaccine logistics	2
11		
12	Immunization table	5
13	Chair for new staff proposed	3
14	Stools for immunization room	2
15	Bench for waiting area	1
16	Dustbin with lid	one from each equipment
17	Water container	1
18	Hub cutters	2
19	5 KVA Generator with POL for	

	immunization purpose	
20	Coolers*	As per requirement
21	Air conditioners	4
22	Central A/C for OT	

* One cooler per 8 beds in the wards.

XXI Hospital Plants		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Generator 40 / 50 KV	
2	Generator 75 KV	1
3	Generator 125 KV	
4	Portable 2.5 KV	1
5	Solar Water heater *	
6	Incinerator*	
7	Central supply of O ₂ , N ₂ O, Vacuum *	
8	Cold storage for mortuary *	

* - to be provided as per need

XXII Hospital Fittings & Necessities		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Ceiling Fans*	30
2	Exhaust Fan*	8
3	Pedestal Fan*	1
4	Wall Fan*	2
5	Hotwater geiser*	1
6	Fire extinguishers*	
7	Sewing Machine*	1
8	Lawn Mover*	2
9	Vaccum cleaner*	1
10	Aqua guard*	
11	Solar water heater *	
12	Neon sign for hospital*	
13	Garden equipment*	
14	Borewell motor OHT *	
15	Water dispenser / Water cooler*	
16	Laundry (steam) *	
17	Emergency lamp	
18	Emergency trauma set*	1
19	Tube lights*	50
20	Drinking Water Fountain*	2

* - to be provided as per need

XXIII Transport		
S. No.	Name of the Equipment	51-100 bedded Sub District Hospital
1	Ambulance	2
2	Van (Family Welfare)	
3	Pickup vehicles Maruti (Omni)	
4	Mortuary Van	1
5	Administrative vehicle (Car)	
6	Minidor 3 wheeler	
7	Bicycle	
8	Camp Bus	
9	Progamme vehicle	
10	Motorcycle	

Management of biomedical waste

	Essential	Desirable
Oil fired small capacity incinerator	1 (if common waste treatment facility not available)	
Plastic shedder		1
Autoclave	1	
Needle and syringe cutter	As per need + 10% reserved	
Colour coded buckets and containers	As per need + 10% reserved	
Large containers	As per need + 10% reserved	
Colour coded Liners	As per need + 10% reserved	
Puncture proof containers (SHARP collection)	As per need + 10% reserved	
Sodium Hypochlorite solution	As per need + 10% reserved	
Protective clothing – mask, PVC gloves, cap, goggles, aprom shields and gum boots	As per need + 10% reserved	

10. Laboratory Services: Following services will be ensured, for advanced diagnostic tests, a list of National Reference Laboratories has been provided as Annexure IV.

S. No.	Speciality	Diagnostic Services / Tests
I.	CLINICAL PATHOLOGY	
	a. Haematology	Haemoglobin estimation
		Total Leucocyte count
		Differential Leucocyte count
		Absolute Eosinophil count
		Reticulocyte count
		Total RBC count
		E.S.R.
		Bleeding time
		Clotting time
		Prothrombin time
		Peripheral Blood Smear
		Malaria/Filaria Parasite
		Platelet count
		Packed Cell volume
		Blood grouping
		Rh typing
		Blood Cross matching

S. No.	Speciality	Diagnostic Services / Tests
	b. Urine Analysis	Urine for Albumin, Sugar, Deposits, bile salts, bile pigments, acetone, specific gravity, Reaction (pH)
	c. Stool Analysis	Stool for Ovacyst (Eh)
		Hanging drop for V.Cholera
		Occultblood
	d. Semen Analysis	Morphology, count
	e. CSF Analysis	Analysis, Cell count etc
	f. Aspirated fluids	Cell count cytology
II.	PATHOLOGY	
	b. Sputum	Sputum cytology

S. No.	Speciality	Diagnostic Services / Tests
III.	MICROBIOLOGY	Smear for AFB (Acid Fast Bacilli), KLB (Diphtheria Bacilli)
		Grams Stain for Meningococci
		KOH study for fungus
		Grams Stain for Throat swab, sputum etc.
IV.	SEROLOGY	RPR Card Test for Syphilis
		Pregnancy test (Urine gravindex)
		WIDAL test
		Rapid test for HIV, HBs Ag, HCV Stocking of rapid H₂S based test for bacteriological examination of water

S. No.	Speciality	Diagnostic Services / Tests
V.	BIOCHEMISTRY	Blood Sugar
		Blood urea, blood cholesterol
		Liver function tests
		Kidney function tests
		Stocking of OT test for residual chlorine in water.
		CSF for protein, sugar

S. No.	Speciality	Diagnostic Services / Tests
VI.	CARDIAC INVESTIGATIONS	a) ECG
VII.	OPHTHALMOLOGY	a) Refraction by using Snellen's chart
		Retinoscopy
		Tonometry
		Biometry

		Ophthalmoscopy
VIII.	ENT	Audiometry
IX.	RADIOLOGY	a) X-ray for Chest, Skull, Spine, Abdomen, bones
		e) Dental X-ray
		f) Ultrasonography with colour doppler

Sl. No.	Speciality	Diagnostic Services / Tests
X	ENDOSCOPY	
		Laparoscopy (Diagnostic)
XI.	RESPIRATORY	Pulmonary function tests

11. RECOMMENDED ALLOCATION OF BED STRENGTH AT VARIOUS LEVELS

Sl. No	Item	Type	Sub District Hospital
			51-100 bedded
1	General Medicine	Beds (M+F)	8+8
2	New born ward	Beds	3
3	Mothers room with dining and toilets	Beds	5
4	Paediatrics ward	Beds	6
5	Critical care ward – IMCU	Beds	5
6	Isolation Ward	Beds	4
7	Dialysis unit (as per specifications)	Beds	
8	Thoracic medicine ward with room for pulmonary function test	Beds (M+F)	
9	Blood bank		Yes
10	General surgery ward (incl. Urology, ENT)	Beds (M+F)	8+8
11	Post – Operative Ward	Beds (M+F)	10*+8
12	Accident and Trauma ward	Beds	
13	Labour room	Boards	3
14	Labour room (Eclampsia)	Beds	
15	Septic Labour room	Boards	
16	Ante-natal ward	Beds	6
17	Post-natal ward	Beds	6
18	Postpartum ward	Beds	10
19	Post operative ward	Beds	
20	Ophthalmology ward	Beds	
21	Burns Ward	Beds	-

REQUIREMENTS FOR OPERATION THEATRE

Sl. No	Item	Sub District Hospital
		51-100 bedded
1	Elective OT-Major	1
2	AE OT*	
3	Emergency OT/FW OT	1
4	Ophthalmology /ENT OT*	

* To be provided as per need.

12. LIST OF MEDICINES / INSTRUMENTS / EQUIPMENTS /LAB REAGENTS / OTHER CONSUMABLES AND DISPOSABLES FOR DISTRICT HOSPITALS

Sr. No	Name of the Drugs
A)	Analgesics/Antipyretics/Anti Inflammatory
1	Tab.Aspirin 300mg
2	Tab.Paracetamol 500mg
3	Inj.Diclofenac sodium
4	Tab.Diclofenac sod
5	Tab.Dolonex DT 20mg
6	Tab.Ibuprofen
B)	Chemotherapeutics
7	Inj.Crystalline penicillin 5 lac unit
8	Inj.Fortified procaine pen 4 lac
9	Inj.Ampicillin 500mg
10	Inj. Cloxacillin
11	Inj.Gentamycin 40mg/2ml vial
12	Inj.crystalline penicillin 10 lac unit
13	Cap.Ampicillin 250mg
14	Cap.Tetracycline 250mg
15	Tab.Trimethoprim+Sulphamethazol ss
16	Tab.Ciprofloxacin 250mg
17	Tab.Ciprofloxacin 500mg
18	Inj.Ciprofloxacin 100ml
19	Tab.Erythromycin 250mg
20	Tab.Erythromycin 500mg
21	Syrup Cotrimoxazole 50ml
22	Syrup Ampicillin 125mg/5ml 60ml
23	Inj.Cefoperazone 1Gm
24	Inj.cefotaxime 500mg
25	Tab.Norfloxacin 200mg
26	Inj Ceftriaxone
27	Diazepam Inj. IP
28	Inj. Cefotaxime
29	Inj. Cloxacillin
30	Dexamethasone Sodium Phosphate inj. IP
31	Aminophylline Inj. BP
32	Adrenaline Bitartrate Inj. IP
33	Ringer Lactate

34	Doxycycline Hydrochloride
35	Vit. K3 (Menadione Inj.) IP
36	Phenytoin
37	Inj. Gentamycin
38	Water for injection
39	Inj. Lasix
40	Inj. Phenobarbitone
41	Inj. Quinine
42	Inj. Ampicillin
43	Inj. Chloramphenicol
44	Inj. Calcium Gluconate
45	Ciprofloxacin
46	Nebulisable Salbutamol nebusol solution (to be used with nebuliser)
47	Inj. Dopamine
48	Tab.Norfloxacin 400mg
49	Tab.Ofloxacin 200mg
50	Inj.Vionocef(Ceffixime)250mg
51	Inj.Amikacin sulphate 500mg
52	Inj.Amikacin sulphate 100mg
53	Cap.Cefodroxyl 250mg
54	Inj.Amoxyicillin 500mg
C)	Anti Diarrhoeal
55	Tab.Metronidazole 200mg
56	Tab.Metronidazole 400mg
57	Syrup.Metronidazole
58	Tab.Furazolidone 100mg
59	Tab.Diolaxanide Fuzate
60	Tab.Tinidazole 300mg
D)	Dressing Material/Antiseptic lotion
61	Povidone Iodine solution 500ml
62	Phenyl 5litr jar(Black Phenyl)
63	Benzalkonium chloride 500ml bottle
64	Rolled Bandage a)6cm
65	b)10cm
66	c)15cm
67	Bandage cloth(100cmx20mm) in Than
68	Surgical Guaze(50cmx18m) in Than
69	Adhesive plaster 7.5cm x 5mtr
70	Absorbent cotton I.P 500gm Net
71	P.O.P Bandage a) 10cm
72	b)15cm

73	Framycetin skin oint 100 G tube
74	Silver Sulphadiazene Oint 500gm jar
75	Antiseptic lotion containing :
76	a)Dichlorometxylenol 100ml bot
77	b)Haffkinol 5litre jar
78	Sterilium lotion
79	Bacillocid lotion
	Infusion fluids
80	Inj.dextrose 5% 500ml
81	Inj.Dextrose 10% 500ml bottle
82	Inj.Dextrose in Normal saline 500ml bt
83	Inj.Normal saline (Sod chloride) 500ml
84	Inj.Ringer lactate 500ml
85	Inj.Mannitol 20% 300ml
86	Inj.Water for 5ml amp
87	Inj.Water for 10ml amp
88	Inj.Dextrose 25%100ml bot
89	I.V.Metronidazole 100ml
90	Inj.Plasma Substitute 500ml bot
91	Inj.Lomodex
F)	Other Drugs & Material
92	All Glass Syringes 2ml
	5ml
	10ml
	20ml
93	Hypodermic Needle (Pkt of 10 needle)
	a)No.19
	b)No.20
	c)No.21
	d)No.22
	e)No.23
	f)No.24
	g)No.25
	h)No.26
94	Scalp vein sets no a)19
	b)20
	c)21
	d)22
	e)23
	f)24
	g)25

	h)26
95	Gelco all numbers
96	Tab.B.Complex NFI Therapeutic
97	Tab.Polyvitamin NFI Therapeutic
98	Inj.Dexamethasone 2mg/ml vial
99	Inj.Vitamin B Complex 10ml
100	Inj.B12 Folic acid
101	Surgical Gloves a)6 "
	b)6.1/2"
	c)7"
	d)7.5"
102	Catgut Chromic a)1 No.
	b)2 No.
	c)1-0 No
	d)2-0 N0
	e)8-0
103	Vicryl No.1
104	Sutupak 1,1/0,2,2/0
105	Prolene
106	X Ray film 50 film packet(in Pkt) size
	a)6.1/2x8.1/2"
	b)8"x10"
	c)10"x12'
	d)12"x15"
107	Fixer
108	Developer
109	CT Scan film
110	Ultrasound scan film
111	Dental film
112	Oral Rehydration powder 27.5g
113	Ether Anaesthetic 500ml
114	Halothane
G)	Eye and ENT Drops
115	Sulphacetamide eye drops 10% 5ml
116	Framycetin with steroid eye drops 5ml
117	Framycetin eye drops 5ml
118	Ciprofloxacin eye/ear drops
119	Gentamycin eye drops
120	Local antibiotic steroid drops
121	Pilocarpine Nitrate 2%
122	Timolol 0.5%

123	Homatropine 2%
124	Tropicamide 1%
125	Cyclomide 1%
126	Wax dissolving ear drops
127	Antifungal (Clotrimazole) ear drops
128	Antiallergic+ Decongestant combination eg. Chlorphenarmine +Pseudoephedrine /Phenylephrine
129	Oxmetazoline/Xylometazoline nasal drops
H)	Other Material
130	Rubber Mackintosh Sheet in mtr
131	Sterile Infusion sets(Plastic)
132	Antisera I) A 5ml
	II)B 5ml
	III)D 5ml
	IV)AB 5ml
134	Inj.MethylErgometrine 0.2mg/amp
135	Inj.Streptokinase 7.5lac vial
136	Inj.Streptokinase 15lac vial
137	Inj.PAM
138	Tab.Antacid
139	ARS
140	Syp.Antacid
141	Inj.Rabipur
142	Inj.Ranitidine 2ML
143	Tab.Ranitidine
144	Tab.Omeprazole
145	Cough syrup 5litre Jar
146	Cough syrup with Noscapine 100ml
147	Coir Mattress
148	Inj.Lignocaine 1%
149	Inj.lignocaine 2%
150	Inj.Lignocaine 5%
151	Inj. Hylase (Hyaluronidase)
152	Inj.Marcaine
153	Inj.Diazepam
154	Inj.Salbactum+Cefoperazone2Gm
155	Inj.Amoxycillin with clavutanite acid 600mg
156	Cap.Amoxycillin250+cloxacillin 250
157	Inj.Cefuroxime 250/750
158	Tab.Pefloxacin 400mg
159	Tab.Gattifloxacin 400mg

160	Tab.Valdecoxib 20mg	(Desirable)
161	Tab.Atrovastatin 10mg	
162	Sy.Himalt-X	(Desirable)
163	Sy.Protein(Provita)	(Desirable)

I)	Antibiotics and Chemotherapeutics	
1	Tab.Chloroquine phosphate 250mg	
2	Inj.Chloroquine phosphate	
3	Inj.Quinine	
4	Tab.Erythromycine Estearate 250mg	
5	Syp.Erythromycine	
6	Tab.Phenoxymethyl Penicillin125mg	
7	Cap.Rifampicin	
8	Tab.Isoniazid 100mg	
9	Tab.Ethambutol 400mg	
10	Tab.Isoniazid+Thiacetazone	
11	Cap.Neomycin	
12	Inj.Benzathine penicillin 12lac	
13	Cap. Amoxicilline 500 mg	
14	Cap. Amoxicilline 250 mg	
J)	Antihistaminics/anti-allergic	
15	Inj.Pheniramine maleate	
16	Tab.Diphenhydramine (eqv.Benadryl)	
17	Tab.Cetirizine	
18	Tab.Chlorpheniramine maleate 4mg	
19	Tab.Diethylcarbamazin	
20	Tab. Beta-histidine 8 mg	
21	Tab. Cinnarazine 25 mg	
K)	Drugs acting on Digestive system	
22	Tab.Cyclopam	
23	Inj.Cyclopam	
24	Tab.Bisacodyl	
25	Tab.Perinorm	
26	Inj.Perinorm	
27	syrup.Furazolidone	
28	Inj.Prochlorperazine(Stemetil)	
29	Tab.Piperazine citrate	
30	Tab.Mebendazole 100mg	
31	Syp.Mebendazole	
32	Sy.Piperazine Citrate	

33	Sy.Pyrantel Pamoate
34	Tab.Belladona
L)	Drugs related to Hoemopoetic system
35	Tab.Ferrous sulphate200mg
36	Inj.Iron Dextran/Iron sorbitol
M)	Eye oint
37	Chloramphenicol eye oint & applicaps
38	Chloramphenicol + Dexamethsone oint
39	Gentamycin eye/ear drops
40	Dexamethasone eye drops
41	Drosyn eye drops
42	Atropine eye oint
N)	Drugs acting on Cardiac vascular system
43	Inj.adrenaline
44	Inj.atropine sulphate
45	Inj.Digoxine
46	Tab.Digoxine
47	Inj.Mephentine
48	Tab.Atenolol
49	Tab.Isoxuprine
50	Inj.Duvadilan
51	Tab.Methylidopa
52	Tab.Isosorbide Dinitrate(Sorbitrate)
53	Tab.Propranolol
54	Tab.Verapamil(Isoptin)
55	tab.Enalepril2.5/5mg
56	Tab.Metoprolol
57	Hydrochlorthiazide 12.5, 25 mg
58	Tab Captopril
59	Tab Clopidogrel
60	Glyceryl Trinitrate Inj
61	Carbamazepine tabs, syrup
O)	Drugs acting on Central/peripheral Nervous system
62	Inj.Pentazocine (Fortwin)
63	Inj.Pavlon 2ml amp
64	Inj.Chlorpromazine 25mg(like Largactil)
65	Inj.Promethazine Hcl Phenergan
66	inj.Pethidine
67	Inj.Diazepam 5mg
68	Tab.Haloperidol

69	Inj.Haloperidol
70	Tab.Diazepam 5mg
71	Tab.Phenobarbitone 30mg
72	Tab.Phenobarbitone 60mg
73	Tab.Largactil 25mg
74	Tab.Pacitane
75	Tab.Surmontil
76	Tab. Chlorpromazine 100 mg
77	Tab. Risperidone 2 mg
78	Inj. Promethazine 50 mg
79	Tab. Imipramine 75 mg
80	Inj. Fluphenazine 25 mg
81	Tab. Lorazepam 2 mg
82	Tab. Diphenylhydantoin 100 mg
83	Tab. Lithium Carbonate 300 mg
84	Cap. Fluoxetine 20 mg
85	Tab. Olanzapine 5 mg (Desirable)
86	Syrup.Phenergan
87	Syrup Paracetamol
88	Ethyl chloride spray
89	Lignocaine oint
90	Gentamycin eye/ear drops
91	Betnesol-N/Efcorlin Nasal drops
P)	Drugs acting on Respiratory system
92	Inj.Aminophylline
93	Tab.Aminophylline
94	Inj.Deriphylline
95	Tab.Deriphylline
96	Tab.Salbutamol 2mg
97	Syrup Tedral
98	Syrup.Salbutamol
Q)	Antiseptic Ointment
99	Furacin skin oint
100	Framycetin skin oint
R)	Drugs acting on UroGenital system
101	Tab.Frusemide 40mg
102	Inj.KCL
103	Liquid KCL
104	Tab.Pyridicil
105	Inj.Frusemide

S)	Drugs acting on Uterus and Female Genital Tracts	
106	Inj.Pitocin	
107	Inj.Prostodin	
108	Tab.Duvadilan	
109	Tab.Methyl Ergometrine	
110	Tab. Mesoprostol	
111	Tab.Primolut-N	
112	Haymycin vaginal tab	
113	Inj Magnesium Sulphate	
114	Inj.Ethacredin lact(Emcredyl)	
T)	Hormonal Preparation	
115	Inj.Insulin Rapid	
116	Insulin lente Besal	
117	Inj.Cry Insulin	
118	Inj.Mixtard	(Desirable)
119	Inj.Testosterone plain 25mg	(Desirable)
120	Testosterone Depot 50mg	(Desirable)
121	Tab.Biguanide	
122	Tab.Chlorpropamide 100mg	
123	Tab.Prednisolone 5mg	
124	Tab.Tolbutamide 500mg	
125	Tab.Glibenclamide	
126	Tab.Betamethasone	
U)	Vitamins	
127	Inj.Vit "A"	
128	Inj.Cholcalciferol16lac	
129	Inj.Ascorbic acid	
130	Inj.Pyridoxin 50mg	
131	Inj. Vit K	
132	Tab. Vit "A" & "D"	
133	Tab.Ascorbic acid 100mg	
V)	Other drugs	
134	Inj.Antirabies vaccine	
135	Inj.Antisnake venom	
136	Inj.AntiDiphtheria Serum	(Desirable)
137	Inj.Cyclophosphamide	
138	Inj.Sodabcarb	
139	Inj.Calcium Gluconate	
140	Tab.Calcium lactate	
141	Tr.Iodine	

142	Tr.Benzoin	
143	Glacial acetic acid	
144	Benedict solution	
145	Caster oil	
146	Liquid paraffin	
147	Glycerine	
148	Glycerine Suppositories	
149	Turpentine oil	
150	Potassium Permanganate	
151	Formaldehyde	
152	Dextrose Powder	
153	Methylated spirit	
154	Cotrimazole lotion	
155	Cotrimazole cream	
156	Tab.Theophylline	
157	ECG Roll	
158	Burnion Oint	
159	Flemigel APC Ointment	
160	Syp.Himobin	
161	APDYL Cough & Noscopin	
162	Tab. Septilin	
163	Tab. Cystone	
164	Tab. Gasex	
165	Syp. Mentat	
166	Oint. Pilex	
167	Rumalaya Gel	
168	Pinku Pedratic Cough Syp.	
	Vaccines Drugs and Logistics	
169	Vaccines	BCG, DPT, OPV, Measles, TT, Hep B*, JE* and other vaccines if any as per GOI guidelines
170	AD syringes	AD syringes (0.5 ml & 0.1 ml) - need based
171	Reconstitution syringes	Reconstitution syringes(5ml) - need based
172	Red Bags	Red Bags for waste management
173	Black bags	
174	Vial Oppener	Need Based
175	Vitamin A	Vitamin A Syrup
176	Paracetamol	Paracetamol Syrup
177	Emergency Drug Kit	Inj. Adrenaline, Inj. Hydrocortisone, Inj. Dexamethasone, Ambu bag (Paediatric), Disposable 2ml and 5ml syringes, Needles(Size 24, 22, 20)
	* Hep B wherever implemented under UIP and JE in select districts Others	

(W)	
1	Tab.Liv52
2	Syrup Liv52
3	Cap.Doxycycline 100mg
4	Inj.Heparin sod.1000IU
5	Tab.Dipyridamol(Like Persentine)
6	Inj.Dopamine
7	Tab.Glyceryl Trinitrate
8	Tab.Amitryptilline
9	Tab.trifluoperazine(1mg)
10	Tab.Nitrofurantine
11	Inj.Valethemide Bromide(Epidosyn)
12	Inj.Isolyte-M
13	Inj.Isolyte-P
14	Inj.Isolyte-G
15	Cap.Cephalexin 250mg
16	Tab.Taxim
17	Inj.Metacloramide
18	Tab.Folic acid
19	Inj.Lignocaine Hcl 2%
20	Inj.Nor adrenaline
21	Betadine lotion
22	Tab.stilboesteral
23	Inj.Pyridoxine
24	Hydrogen peroxide
25	Inj.magnesium sulphate
26	Benzyl Benzoate
27	GammaBenzene Hexachloride
28	Gum Paint
29	Inj.Tetglobe
30	Inj.Paracetamol
31	Pilocarpine eye drops 1%
32	Sy.Orciprenaline
33	Suturing needles (RB,Cutting)
34	Inj.Calcium pantothenate
35	Inj.Xylocaine 4% 30 ml
36	Halothane
37	Mixture Alkaline
38	Inj. Phenobarbitone 200mg
39	Inj. B12 (Cynacobalamine)
40	Neosporin, Nebasuef , Soframycin Pow

41	Magnasium Sulphate Powder
42	Furacin Cream
43	Xylocaine jelly
44	Formaldehyde Lotion
45	Cetrimide 100ml bott 3.5%, 1.5% 1
46	Bacitrium powder 10mg botts
47	Bleaching Powder 5 Kg Pkts(ISI Mark)
48	Ether Solvent
49	Sodium Hypochloride Sod. 5 ltrs/1 ltrs
50	Inj. Diphthoria antition ADS)10000I.U
51	Inj. Gas gangrene Antitoxin(AGGS)10000
52	Inj. Hydroxy Progesterone500mg/2ml
53	Inj. Methyl Prednisolon 500mg vial
54	Inj.Multivitamin I.V
55	Inj.Potassium chloride
56	Inj.Quinine Dihydrochloride
57	Tetanus Antitoxin 10000 I.U (Dersirable)
58	Inj.Tetanus Toxoid 5ml vial
59	Inj.Theophylline Etophylline
60	Inj.Vitamin A
61	Tab.Ferrous sulphate200mg+Folic acid
62	Tab.Ferrous sulphate 300mg
63	Tab.Griseofulvin125mg
64	Tab.Phenobarbitone 30mg
65	Tab.Phenobarbitone 60mg
66	Tab.Pyridoxin 10mg
67	Tab.Thyroxine sod 0.1mg
68	Warfarin sod 5mg
69	Tab.Alprazolam 0.25mg
70	Tab.Amlodipine 5mg
71	Tab.Amlodipine 10mg
72	Tab.Nefidipine 20mg
73	Tab.Nefidipine 30mg
74	Tab.Riboflavin 10mg
75	Syp.Ferrous Gluconate 100ml bottle
76	Cream Fluconozole 15gm tube
77	Sus.Furazolidone
78	Oint.Hydrocortisone acetate
79	Syp.isoniazid 100mg/5ml 100ml bot
80	Liquid paraffin
81	Linctus codein 500ml bot

82	Cream Miconazole 2% 15gm tube
83	Syp.Nalidixic acid
84	syp.Norfloxacin
85	Phenylepinephrine eye drops
86	Pilocarpine eye drops 2%
87	Syp.Pottassium chloride 400ml bot
88	Syp.Primaquine
89	Suspension Pyrantel pamoate
90	Sus Rifampicin
91	Syp.Salbutamol 100ml bot
92	Syp.Theophylline 100ml
93	Syp.Vitamin B.Complex
94	Vit D-3 Granules
95	Ophthalmic & ear drops
96	Glycerine Mag sulphate ear drops
97	Pilocarpine eye drops 4%
98	Oint Acyclovir 3% 5gm tube
99	Benzyl Benzoate emulsion 50ml bot
100	Oint.Betamethasone
101	Cream Clotrimazole skin 1% 15gm
102	Oint Dexamethasone 1%+ Framycetin
103	oint contain clotrimazole+Genta+Flucon
104	Oint Flucanazole 10 mg
105	Cream Framyctin 1% 20gm tube/100gm
106	Lot.Gamabenzene hexachloride 1% bt
107	Glycerine Suppository USP 3gm bott/10
108	Cream Nitrofurazone 0.2% jar of 500g
109	Oint Silversulpadiazene 1% 25g
110	AIDS Protective kit
111	STI syndromic drug kit
112	Chemotherapy Drugs
113	Hearing Aids (Behind the Ear Type) 200 per district per year under NPPCD
114	Surgical Accessories for Eye
115	Green Shades
116	Blades (Carbon Steel)
117	Opsite surgical gauze (10x14 cm.) 8-0 & 10-0 double needle suture Visco elastics from reputed firms Spectacles For operated Cataract Cases (after refraction) For Poor school age children with refractive errors

DRUG KIT FOR SICK NEW BORN & CHILD CARE - FRU/CHC

1.	Diazepam Inj. IP	5 mg per ml	Inj. 2 ml Ampoule	60 Ampoules For per rectally use only.
2.	Inj. Cefotaxime	1 gm	Vial	100 Vial
3.	Inj. Cloxacillin	1 gm	Vial	100 Vial
4.	Dexamethasone Sodium Phosphate inj. IP	4 mg per ml	Inj. 2 ml ampoule	300 Ampoules
5.	Aminophylline Inj. BP	25 mg per ml	Inj. 10 ml Ampoule	60 Ampoules
6.	Adrenaline Bitartrate Inj. IP	1 mg per ml (1:1000 dilution)	Inj. 1 ml Ampoule	60mpoules
7.	Ringer Lactate	500 ml	500 ml plastic pouch	300 Pouches
8.	Doxycycline Hydrochloride	dispersible	Tablets	300 Tablets
9.	Vit. K3 (Menadione Inj.) IP	Inj. 10 mg per ml	Inj. 1 ml ampoule	100Ampoules
10.	Phenytoin	50 mg per ml	Inj. 2 ml Ampoule	60 Ampoules
11.	Dextrose Inj. IP I.V. Solution	5%	Inj. 500 ml plastic pouch	60 Plastic pouches
12.	Inj. Gentamycin	10 mg/ml	Ampoule	150Ampoules
13.	Water for injection	2 ml/ 5 ml	Ampoule	300Ampoules
14.	Inj. Lasix	20 mg/2ml	2 ml Ampoule	300Ampoule
15.	Inj. Phenobarbitone	100mg/ml	2 ml Ampoule	60Ampoule
16.	Inj. Quinine	150 mg/ml	2 ml Ampoule	60 Ampoule
17.	Normal Saline	500 ml	500 mg Plastic pouch	60 Plastic pouches
18.	Inj. Ampicillin	500mg/ 5ml	Vial	150 Vial
19.	Inj. Chloramphenicol	1 gm/10 ml	Vial	150 Vial
20.	Inj. Calcium Gluconate	10%	10 ml Ampoule	60 Ampoules
21	Ciprofloxacin	100mg dispersible	Tablet	500 tablets
22	Nebulisable Salbutamol nebusol solution		15 ml	100 Nebuliser equipment to be provided with

	(to be used with nebuliser)			Nubulisable Salbutamol
23.	Inj. Dopamine	200 mg/5 ml	Ampoule	20 Ampoule
24.	Needles	23G		750
25.	Disposable Syringe	1ml/2ml/5 ml		1ml-200 2ml-500 5ml-500

13. Capacity Building

Training of all cadres of workers at periodic intervals is an essential component of the IPHS for sub district hospitals. Both medical and paramedical staff should undergo continuing medical education (CME) at intervals.

Sub District hospitals also should provide the opportunity for the training of medical and paramedical staff working in the institutions below sub district level such as skill birth attendant training and other skill development / management training.

14. Quality Assurance in Service Delivery

Quality of service should be maintained at all levels. Standard treatment protocols for locally common diseases and diseases covered under all national programmes should be made available at all sub district hospitals. All the efforts that are being made to improve hardware i.e. infrastructure and software i.e. human resources are necessary but not sufficient. These need to be guided by standard treatment protocols and Quality Assurance in Service Delivery

Quality Control

Internal Monitoring

Social audit through Rogi Kalyan Samities / Panchayati Raj Institutions

Medical Audit, Technical Audit, Financial Audit, Disaster Preparedness Audit, Monitoring of Accessibility and equity issues, information exchange.

External Monitoring

Monitoring by PRI / Rogi Kalyan Samities

Service / performance evaluation by independent agencies

District Monitoring Committees formed under NRHM shall monitor the upgradation of Hospitals to IPHS. Annual Jansamvad may also be held as a mechanism of monitoring.

Monitoring of laboratory

Internal Quality Assessment Scheme
External Quality Assessment Scheme

Record Maintenance

Computers have to be used for accurate record maintenance and with connectivity to the District Health Systems, State and National Level.

15. Rogi Kalyan Samities (RKS) / Hospital Management Committee (HMC)

Each sub district hospital should have a Rogi Kalyan Samiti / Hospital Management Committee with involvement of PRIs and other stakeholders as per the guidelines issued by the Government of India. These RKS should be registered bodies with an account for itself in the local bank. The RKS / HMC will have authority to raise their own resources by charging user fees and by any other means and utilized the same for the improvement of service rendered by the Sub District Hospital.

16. Citizen's Charter

Each Sub District hospital should display a citizen's charter for the sub district hospital indicating the services available, user fees charged, if any, and a grievance redressal system. A modal citizen's charter is given in Annexure I

OUR MOTTO - SERVICE WITH SMILE

CITIZENS CHARTER

This charter seeks to provide a framework which enables our users to know:

- What services are available in this hospital;
- The quality of services they are entitled to;
- The means through which complaints regarding denial or poor quality of services will be redressed.

Standards of Service:

- This is a District, Sub-district/divisional hospital;
- It provides medical care to all patients who come to the hospital;
- Standards are influenced by patients load and availability of resources;
- Yet we insist that all our users receive courteous and prompt attention.

Locations:

It is located on road in front of

This hospital has-

Doctors: (including residents).

Nurses: (including supervisory staff).

Beds:

Doctors wear white aprons and nurses are in uniform.

All Staff member wear identity cards.

General Information

Enquiry, Reception and Registration Services:

This counter is functioning round the clock.

Location guide maps have been put up at various places in this hospital.

Colour coded guidelines and directional signboards are fixed at strategic points for guidance.

Telephone enquiries can be made over telephone numbers:

....., &, Fax:

Casualty & Emergency Services:

All Casualty Services are available round the clock.

- Duty Doctor is available round the clock.
- Specialist doctors are available on call from resident doctors.
- Emergency services are available for all specialities as listed in the OPD Services.
- Emergency Operations are done in-

OT located on floor of building.

Maternity OT
Orthopaedic Emergency OT
Burns and plastic OT
Main OT for Neurosurgery cases

Emergency Operation Theatre is functioned round the clock.

In serious cases, treatment/management gets priority over paper work like registration and medico-legal requirements. The decision rests with the treating doctor.

OPD Services:

Various outpatient services available in the hospital are detailed below (as available):

OPD	Place	Time of Registration	Time of OPD
General Medicine			
Paediatrics			
General Surgery			
Paediatric Surgery			
Neuro Surgery			
Cardiac Surgery			
Obstetric & Gynec.			
Eye			
ENT			
Skin			

Urology

Cardiology

Psychiatry

Radiotherapy

Neurology

Orthopaedics

Burns & plastics

Dental OPD

ISM Services:

Homeopathic

Ayurvedic

Any other

In OPDs specialists are available for consultation.

OPD services are available on all working days excluding Sundays and Gazetted Holidays.

On Saturdays, the hospital functions from AM to PM.

Medical Facilities Not Available:

Organ Transplantation

.....

.....

.....

Some specialities do not have indoor patients services:

Psychiatry

D-addiction

Dental

Nuclear Medicine

Genetic Counselling

Endochronology

Geriatrics

Laboratory Services:

Routine: Laboratory Services are provided in the field of (as available):

- Bio-chemistry
- Microbiology
- Haematology
- Cytology
- Histopathology including FNAC
- Clinical Pathology

There is a Central Collection Centre for receiving and collecting various specimens for testing. The timings for receiving specimens are 9:00 AM to 11:30 AM.

Emergency: Emergency Laboratory Services are available 24 hours for limited tests relating to clinical pathology and bio-chemistry.

Radio Diagnostic Services:

Routine: These services include:

X-Rays

Ultrasound and

CAT Scan

Routine X-Rays are done from 9:00 AM to 1:00 PM. Registration is done from 9:00 AM to 11:30 AM.

Ultrasound examination is done from 9:00 AM to 4:00 PM.

Emergency: Emergency X-Ray services are also available round the clock. CAT Scan services are also available round the clock.

Indoor Patient Services:

There are total of Wards providing free indoor patient care.

Emergency ward A admits emergency cases for medical problems.

Emergency ward B admits emergency cases for surgical problems.

There is a ----- bedded Intensive Care Unit for care of seriously ill patients.

A ----- bedded Intensive Coronary Care Unit takes care of heart patients requiring intensive treatment.

In the Burns Department, there are ----- bedded Intensive Care Unit to treat seriously injured burns patients.

There are ----- labour rooms for conducting deliveries round the clock.

----- nurseries provide necessary care to the newborns – normal as well those born with disease.

All indoor patients receive treatment under the guidance and supervision during office hours i.e. 9:00 AM to 4:00 PM.

Outside office hours, treatment is given by doctor on duty and specialists are available on call.

Free diet is provided to all patients in the General Wards.

Every patient is given one attendant pass.

Visitors are allowed only between 5:00 PM to 7:00 PM.

Investigations like CAT Scan, Ultra Sound, Barium-meal, ECHO, TMT etc. are charged for as per Government approved rates.

For poor patients, these charges can be waived partially or fully on the recommendation of the H.O.D. by the Additional Medical Superintendent. In case of emergency CMO (on duty) may waive off these charges.

A Staff Nurse is on duty round the clock in the ward.

Admitted patients should contact the Staff Nurse for any medical assistance they need.

Other Facilities:

Other facilities available include:

Cold Drinking Water

Wheel chairs and trolleys are available in the OPD and casualty.

----- Ambulances are available to pick up patients from their places (on payment of nominal charges) and also for discharged patients.

Mortuary Van is available on payment between 9:00 AM to 4:00 PM.

Public Telephone Booths are provided at various locations.

Stand-by Electricity Generators have been provided. Chemist Shops are available outside the hospital. Canteen for patients and their attendants is available.

Lifts are available for access to higher floors.

Adequate toilet Facilities for use of patients and their attendants are available.

Complaints & Grievances:

There will be occasions when our services will not be upto your expectations.

Please do not hesitate to register your complaints. It will only help us serve you better.

Every grievance will be duly acknowledged.

We aim to settle your genuine complaints within 10 working days of its receipt.

Suggestions/Complaint boxes are also provided at various locations in the hospital.

If we cannot, we will explain the reasons and the time we will take to resolve.

Name, designation and telephone number of the nodal officer concerned is duly displayed at the Reception.

Dr.
Designation.....
Tele (O)..... (R)..... (M).....

Meeting Hours..... to

Responsibilities of the Users:

The success of this charter depends on the support we receive from our users.

Please try to appreciate the various constraints under which the hospital is functioning.

On an average more than ----- lacs patients attend the OPD annually and more than ---
----- lacs patients are attended annually in the casualty and emergency wards.

Please do not inconvenience other patients.

Please help us in keeping the hospital and its surroundings neat and clean.

Please use the facilities of this hospital with care. Beware of Touts.

The Hospital is a “No Smoking Zone” and smoking is a Punishable Offence.

Please refrain from demanding undue favours from the staff and officials as it encourages corruption.

Please provide useful feedback & constructed suggestions. These may be addressed to the Medical Superintendent of the Hospital.

- ◆ “No Smoking Please”
- ◆ Don’t split here & there
- ◆ Use Dustbin
- ◆ Keep Hospital Clean
- ◆ Give regards to Ladies and Senior Citizens

**NATIONAL GUIDELINES ON HOSPITAL WASTE MANAGEMENT BASED
UPON THE BIO-MEDICAL WASTE (MANAGEMENT & HANDLING) RULES,
1998**

The Bio-Medical Waste (Management & Handling) Rules, 1998 were notified under the Environment Protection Act, 1986 (29 of 1986) by the Ministry of Environment and Forest, Govt. Of India on 20th July, 1998. The guidelines have been prepared to enable each hospital to implement the said Rules, by developing comprehensive plan for hospital waste management, in term of segregation, collection, treatment, transportation and disposal of the hospital waste.

1. POLICY ON HOSPITAL WASTE MANAGEMENT

The policy statement aims “to provide for a system for management of all potentially infectious and hazardous waste in accordance with the Bio-Medical Waste (Management & Handling) Rules, 1998 (BMW, 1998).

2. DEFINITION OF BIO-MEDICAL WASTE

Bio-Medical waste means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animal or in research activities pertaining thereto or in the production or testing of biological, including categories mentioned in the Schedule of the Bio-Medical Waste (Management & Handling) Rules, 1998.

3. CATEGORIES OF BIO-MEDICAL WASTE

Hazardous, toxic and Bio-Medical waste has been separated into following categories for the purpose of its safe transportation to a specific site for specific treatment. Certain categories of infectious waste require specific treatment (disinfection/decontamination) before transportation for disposal. These categories of bio-medical waste are mentioned as below:-

Category No.1- Human Anatomical Waste

This includes human tissues, organs, and body parts.

Category No.2- Animal Waste

This includes animal tissues, organs, body parts, carcasses, bleeding parts, fluid, blood and experimental animal used in research; waste generated by veterinary hospitals and colleges: discharge from hospital and animal houses.

Category No.3- Microbiology & Biotechnology Waste

This includes waste from laboratory cultures, stocks or specimens of microorganism live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological, toxins, dishes and devices used for transfer of cultures.

Category No.4- Waste sharps

This comprises of needles, syringes, scalpels, blades, glass, etc, that may cause puncture and cuts. This includes both used and unusable sharps.

Category No.5- Discarded Medicines and Cytotoxic drugs

This includes wastes comprising of outdated, contaminated and discarded medicines.

Category No.6- Soiled Waste

It comprises of item contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, linens, beddings, other material contaminated with blood.

Category No.7- Solid Waste

This includes wastes generated from disposable items, other than the waste sharps, such as tunings, catheters, intravenous sets, etc.

Category No.8- Liquid Waste

This includes waste generated from laboratory and washing, cleaning, housekeeping and disinfecting activities.

Category No.9- Incineration Ash

This consists of ash from incineration of any bio-medical waste.

Category No.10- Chemical Waste

This contains chemical used in production of biological and chemical used in disinfection, insecticides, etc.

4.1 SEGREGATION OF WASTE

4.1 It should be done at the site of generation of bio-medical waste, e.g. all patient care activity areas, diagnostic services areas, operation theatre labour rooms, treatment rooms etc.

4.2 The responsibility of segregation should be with the generator of bio-medical waste i.e. Doctors, Nurses, Technicians, etc.

4.3 The Bio-medical waste should be segregated as per categories applicable.

5. COLLECTION OF BIO-MEDICAL WASTE:

Collection of Bio-Medical Waste should be done as per Bio-Medical Waste (Management & Handling) Rules, 1999 (Rule 6-Schedule II). The collection bags and the containers should be labelled as per guidelines of Schedule III, i.e., symbols for bio-hazard and cytotoxic. A separate container shall be placed at every point of generation for general waste to be disposed of through Municipal Authority.

The trolleys which are used to collect hospital waste should be designed in such a way that there should be no leakage or spillage of bio-medical waste while transporting to designated site.

5.1 Type of container and colour for collection of Bio-medical waste:

<u>Category</u>	<u>Type of container</u>	<u>Colour Coding</u>
1. Human Anatomical Waste	Plastic Bag	Yellow
2. Animal Waste	Plastic Bag	Yellow
3. Microbiology & Bio-Technology Waste	Plastic Bag	Yellow/Red
4. Waste sharp	plastic bag, Puncture Proof Container	Blue/White/Translucent
5. Discarded Medicines & Cytotoxic Waste	Plastic Bag	Black
6. Solid waste (plastic)	Plastic Bag	Yellow/Red
7. Solid Waste(Plastic)	plastic Bag	Blue/White
8. Liquid waste	-----	-----
9. Incineration ash	Plastic Bag	Black
10. Chemical waste(solid)	Plastic Bag	Black

- Those plastics bags which contain liquid like blood, urine, pus, etc., should be put into red colour bag for microwaving and autoclaving and other items should be put into blue or white bag after chemical treatment and mutilation/shredding.

5.2 All the items sent to incinerator/deep burial (Cat. 1, 2, 3, 6) should be placed in Yellow coloured bags.

5.3 All the Bio-medical waste to be sent for Microwave/Autoclave treatment should be placed in Red coloured bags. (Cat. 3, 6 & &)

5.4 Any waste which is sent to shredder after Autoclaving/Microwaving/Chemical treatment is to be packed in Blue/White translucent bag.

5.5 Location of Containers:

All containers having different coloured plastic bags should be located at the point of generation waste, i.e., near OT tables, injection rooms, diagnostic service areas, dressing trolleys, injection trolleys, etc.

5.6 Labelling: All the bags/containers must be labelled bio-hazard or cytotoxic with symbols according to the rules (Schedule III of Bio-Medical Waste Rules, 1998)

5.7 Bags: It should be ensured that waste bags are filled up to three-fourth capacity, tied securely and removed from the site of the generation to the storage area regularly and timely.

5.8 The categories of waste (Cat. 4, 7, 8, & 10) which require pre-treatment (decontamination/disinfection) at the site of generation such as plastic and sharp materials, etc.. should be removed from the site of generation only after pre-treatment.

5.9 The quantity of collection should be documented in a register. The colour plastic bags should be replaced and the garbage bin should be cleaned with disinfectant regularly.

6. STORAGE OF WASTE

Storage refers to the holding of Bio-medical waste for a certain period of time at the site of generation till its transit for treatment and final disposal.

6.1 No untreated bio-medical waste shall be kept stored beyond a period of 48 hours.

6.2 The authorised person must take the permission of the prescribed authority, if for any reason it becomes necessary to store the waste beyond 48 hours.

- 6.3 The authorised person should take measures to ensure that the waste does not adversely affect human health and the environment in case it is kept beyond the prescribed limit.

7. TRANSPORTATION

7.1 TRANSPORTATION OF WASTE WITHIN THE HOSPITALS:

- 7.1.1 Within the hospital, waste routed must be designated to avoid the passage of waste through patient care areas as far as possible.
- 7.1.2 Separate time schedules are prepared for transportation of Bio-medical waste and general waste. It will reduce chances of their mix up.
- 7.1.3 Dedicated wheeled containers, trolleys or carts with proper label (as per Schedule IV of Rule 6) should be used to transport the waste from the site of storage to the site of treatment.
- 7.1.4 Trolleys or carts should be thoroughly cleansed and disinfected in the event of any spillage.
- 7.1.5 The wheeled containers should be designed in such a manner that the waste can be easily loaded, remains secured during transportation, does not have any sharp edges and easy to cleanse and disinfect.

7.2 TRANSPORTATION OF WASTE FOR DISPOSAL OUTSIDE THE HOSPITAL.

- 7.2.1 Notwithstanding anything contained in the Motor Vehicles Act, 1988 or rules there under. Bio-medical waste shall be transported only in such vehicles as may be authorised for the purpose by the Competent Authority.
- 7.2.2 The containers for transportation must be labelled as given in Schedule III and IV of BMW, 1998.

8. TREATMENT OF HOSPITAL WASTE (Please see Rule 5. Schedule V & VI)

8.1 **General waste** (Non-hazardous, non-toxic, non-infectious). The safe disposal of this waste should be ensured by the occupier through Local Municipal Authority.

8.2 Bio-Medical Waste

Monitoring of incinerator/autoclave/microwave shall be carried out once in a month to check the performance of the equipment. One should ensure:

- i) The proper operation & Maintenance of the incinerators/autoclave/microwave.
- ii) Attainment of prescribed temperatures in both the chambers of incineration while incinerating the waste.
- iii) Not to incinerate PVC plastic materials.
- iv) Only skilled persons operate the equipment.
- v) Proper record book shall be maintained for the incinerator/autoclave/microwave/shredder. Such record book shall have the entries of period of operation, temperature/pressure attained while treating the waste quantity for waste treated etc.
- vi) The scavengers shall not be allowed to sort out the waste.
- vii) Proper hygiene shall be maintained at, both, the waste treatment plant site as well as the waste storage area.
- viii) Categories 4,7,8 & 10 should be treated with chemical disinfectant like 1% hypochlorite solution or any other equivalent chemical reagent to ensure disinfection.

8.2.1 **Incineration:** The incinerator should be installed and made operational as per specifications under the BMW Rules, 1998 (schedule V) and an authorization shall be taken from the prescribed authority for the management and handling of bio-medical waste including installation and operation of treatment facility as per Rule 8 of Bio-Medical Waste (Management & Handling) Rules 1998. Specific requirement regarding the incinerator and norms of combustion efficiency and emission levels etc. have been defined in the Bio-Medical Waste (Management & Handling) Rules 1998. In case of small hospitals, Joint facilities for incineration can be developed depending upon the local policies of the Hospital and feasibility. The plastic Bags made of Chlorinated plastics should not be incinerated.

8.2.2 Deep burial: Standard for deep burial are also mentioned in the Bio-medical waste (Management & handling) Rules 1998 (Schedule V). The cities having less than 5 lakhs population can opt for deep burial for wastes under categories 1 &2.

8.2.3 Autoclave and Microwave Treatment: Standards for the autoclaving and Microwaving are also mentioned in the Bio-medical Waste (Management & Handling) Rules 1998 (Schedule-V). All equipments installed/ shared should meet these specifications. The waste under category 3,4,6 & 7 can be treated by these techniques.

8.2.4 Shredding: The plastics (IV bottle IV sets syringes, catheters, etc.) sharps (needles, blades, glass, etc.) should be shredded but only after chemical treatment/Microwaving/Autoclaving, ensuring disinfection.

8.2.5 Needles destroyers can be used for disposal of needles directly without chemical treatment.

8.2.6 Secured landfill: The incinerator ash, discarded medicines, cytotoxic substances and solid chemical waste should be treated by this option (cat. 5,9 & 10).

8.2.7 It may be noted there are multiple options available for disposal of certain category of waste. The individual hospital can choose the best option depending upon treatment facilities available.

8.2.8 Radioactive Waste: The management of the radioactive waste should be undertaken as per the guidelines of BARC.

8.2.9 Liquid (Cat.8)& Chemical Waste (Cat.10):

- i) Chemical waste & liquid waste from Laboratory: Suitable treatment, dilution or 1% hypochlorite solution as required shall be given before disposal.
- ii) The affluent generated from the hospital should conform to limits as laid down in the Bio-medical Waste (Management & Handling) Rules, 1998 (Schedule V).
- iii) The liquid and chemical waste should not be used for any other purpose.

- iv) For discharge into public sewers with terminal facilities the prescribed standard limits should be ensured.

9. SAFETY MEASURES

9.1 Personal Protection:

Hospital and health care authorities have to ensure that the following personal protective equipment are provided.

- i) Gloves
 - a) Disposable gloves
 - b) Latex surgical gloves
 - c) Heavy duty rubber gloves (uptil elbows) for cleaners.
- ii) Masks: Simple and cheap mask to prevent health care workers against: aerosols splashes and dust.
- iii) Protective glasses.
- iv) Plastic Aprons.
- v) Special Foot wear, e.g., gum boots for Hospital waste Handler.

9.2 Immunization against Hepatitis B and Tetanus shall be given to all hospital staff.

9.3 All the generators of bio-medical waste should adopt universal precautions and appropriate safety measures while doing therapeutic and diagnostic activities and also while handling the Bio-Medical waste.

9.4 All the sanitation workers engaged in the handling and transporting should be made aware of the risks involved in handling the bio-medical waste.

9.5 Any worker reporting with an accident/injury due to handling of biomedical waste should be given prompt first aid. Necessary investigations and follow up action as per requirement may be carried out.

9.2 Reporting Accident & Spillages

The procedure for reporting accidents (as per Form III of BMW Rules. 1998) should be followed and the records should be kept. The report should include the nature of accidents, when and where it occurred and which staffs were directly involved. It should also show type of waste involved and emergency measures taken.

10 TRAINING

- 10.1** All the medical professional must be made aware of Bio-medical waste (Management & Handling) Rules, 1998.
- 10.2** Each and every hospital must have well planned awareness and training programme for all categories of personnel including administrators to make them aware about safe hospital waste management practices.
- 10.3** Training should be conducted category wise and more emphasis should be given in training modules as per category of personnel.
- 10.4** Training should be conducted in appropriate language/medium and in an acceptable manner.
- 10.5** Wherever possible audio-visual material and experienced trainers should be used. Hand on training about colour coded bags, categorization and chemical disinfections can be given to concerned employees.
- 10.6** Training should be interactive and should include, demonstration sessions, Behavioural science approach should be adopted with emphasis on establishing proper practices. Training is a continuous process and will need constant reinforcement.

11. MANAGEMENT & ADMINISTRATION

- 11.1** The Head of the Hospital shall form a waste Management Committee under his Chairmanship. The Waste Management Committee shall meet regularly to review the performance of the waste disposal. This Committee should be responsible for making hospital specific action plan for hospital waste management and for its supervision, monitoring implementation and looking after the safety of the bio-medical waste handlers.
- 11.2** The Heads of each hospital will have to take authorization for generation of waste from appropriate authorities well in time as notified by the concerned State/U.T. Government and get it renewed as per time schedule laid in the rules. The application is to be made as per format given in form I for grant of authorization. (Please See page 18 of notifies BMW Rules)
- 11.3** The annual reports accident reporting, as required under BMW rules should be submitted to the concerned authorities as per BMW rules format (Form II and Form III respectively) (Please see pages 19 & 20 of BMW Rules).

Guidelines to Reduce Environmental Pollution due to Mercury waste

1. following guidelines will be used for management of Mercury waste
 - a. As mercury waste is a hazardous waste, the storage, handling, treatment and disposal practices should be in line with the requirements of Government of India's Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules 2008, which may be seen at website www.cpcb.nic.in.
 - b. Mercury-contaminated waste should not be mixed with other biomedical waste or with general waste. It should not be swept down the drain and wherever possible, it should be disposed off at a hazardous waste facility or given to a mercury-based equipment manufacturer.
 - c. Precaution should be taken not to handle mercury with bare hands and as far as possible; jewellery should be removed at the time of handling mercury. After handling mercury, hands must be carefully washed before eating or drinking. Appropriate personal protective equipment (rubber gloves, goggles / face shields and clothing) should be used while handling mercury.
 - d. Mercury-containing thermometers should be kept in a container that does not have a hard bottom. Prefer a plastic container to a glass container, as the possibility of breakage will be less.
 - e. In case of breakage, cardboard sheets should be used to push the spilled beads of mercury together. A syringe should be used to suck the beads of mercury. Mercury should be placed carefully in a container with some water. Any remaining beads of mercury will be picked up with a sticky tape and placed in a plastic bag, properly labeled.
2. Reporting formats must be used to report and register any mercury spills / leakages.
3. Hospitals and health centres should work to create awareness among health workers and other stakeholders regarding the health and safety hazards of mercury.

REFERRAL LABORATORY NETWORKS

Referral Laboratory Network for Advanced diagnostic facilities

	IDSP Level - 4 Labs					IDSP Level - 5 Labs
	Central Zone	South Zone	North Zone	East Zone	South Zone	

Advance Diagnostic Facilities

Bacterial diagnosis						
Enteric bacteria: <i>Vibrio cholerae</i> , <i>Shigella</i> , <i>Salmonella</i>		CMC Vellore Trivandrum Medical College	PGIMER Chandigarh AIIMS Delhi CRI Kasauli	RMRC Dibrugarh, Cuttack Medical College	KEM Mumbai, AFMC Pune	NICED & NICD
<i>Streptococcus pyogenes</i> and <i>S pneumoniae</i>	Indore Medical College	St. John Medical College, Bangalore	VP. Chest University of Delhi	-	BJ MC	CMC Vellore
<i>C.diphtheriae</i>	BHU	CMC, Vellore	NICD, Delhi	STM, Kolkata	AFMC, Pune	VP Chest Institute, Delhi
<i>Neisseria meningitidis</i> and <i>N. gonorrhoeae</i>	SN Medical College, Agra	State PH Lab Trivandrum	PGIMER Chandigarh	-	Surat Medical College	CMC Vellore & PGIMER Chandigarh
<i>Staphylococcus</i>	BHU	MGR Medical University	Maulana Azad Medical College, Delhi	STM, Kolkata	AFMC, Pune	NICD, Delhi

Tuberculosis	State TB Demonstration & Training Centre (for all zones) ICGEB, Delhi					NTI, TRC
Leptospirosis	DRDE	Virology Institute, Allepey Tamil Nadu University, Chennai VCRC, Pondicherry	AIIMS IVRI	RMRC, Bubaneswar & Dibrugarh	BJMC	RMRC Port Blair

Viral Diagnosis

Enteric viruses	DRDE	CMC, Vellore	AIIMS & Villupuram Chest Institute	NICED Kolkata	-	EVRC, Mumbai, NIV & NICD
Arboviruses	DRDE	CMC, Vellore	AIIMS & NICD Delhi Chest Institute	NICED Kolkata	-	NIV
Myxoviruses	DRDE	CMC, Vellore	AIIMS & NICD Delhi Chest Institute	NICED Kolkata	-	NIV, HSADL Bhopal
Hepatitis viruses	DRDE	CMC, Vellore	AIIMS ICGEB, Delhi	NICED Kolkata	-	NIV
Neurotropic viruses	DRDE	CMC, Vellore	AIIMS & NICD Delhi	-	-	NIV NIMHANS
HIV	DRDE	CMC, Vellore	AIIMS	-	-	NARI, NICD & NACO ICGEB, Delhi

Parasitic Diagnosis

Malaria	All State Public Health Laboratories	MRC, Delhi ICGEB, Delhi
Filaria	All State Public Health Laboratories	NVBDCP, Delhi VCRC Pondicherry

Zoonoses

Dengue	DRDE	VCRC, Pondicherry Institute of Virology, Aleppey	AIIMS	NICED	NIV	NIV ICGEB, Delhi
JE	DRDE	CRME, Madurai & NIMHANS VCRC, Pondicherry	AIIMS	NICED	NIV	NIV /NICD
Plague	DRDE	NICD Bangalore	NICD, Delhi	-	Haffikins Institute	NICD, Delhi
Rickettsial diseases	DRDE	CMC, Vellore	-	-	AFMC	NICD IVRI

Others of Public Health Importance

Anthrax	DRDE	CMC, Vellore	IGIB	NICED, Calcutta	BJMC	NICD IVRI
Microbial water quality monitoring	NEERI, Nagpur	CMC Vellore, Trivandrum Medical College	PGIMER Chandigarh AIIMS Delhi CRI Kasauli	RMRC, Dibrugarh, Cuttack Medical College	KEM Mumbai, HAFFKIN's, Mumbai AFMC Pune	NICED & NICD

Unknown pathogens	Other laboratories to perform support functions	NIV, NICD, HSADL
Outbreak investigation support	Medical Colleges and state public health laboratories as L3/ L4	NICD, NIV, NICED, VCRC
Laboratory data management	Medical Colleges, state public health laboratories and all the L4 & L5 laboratories (in their area of expertise)	NIV, NICD
Capacity building	All the L4 & L5 laboratories (in their area of expertise)	NIV, NICD
Quality assurance	All the L4 & L5 laboratories (in their area of expertise)	CMC, TRC, NTI, AFMC, NARI, RMRC, Port Blair NIV, NICD
Quality control of reagents & kits evaluation	All the L4 & L5 laboratories (in their area of expertise)	CMC, TRC, NARI, RMRC, Port Blair NIV, NICD, BJMC, NICED

Production & supply of reagents/ kits/ biological/ standard reference materials	-	DRDE, NIV, IVRI, NICED, NICD, MRC, Delhi AFMC, Pune NARI TRC, Chennai RMRC, Port Blair
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Biosafety & bio-containment	Other laboratories to perform support function	HSADL, NIV/MCC, DRDE, NICD
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New Born Care Facilities at SDH

Newborn Corner in OT/ Labour Room

Delivery rooms in Operation Theatres (OT) and in Labour rooms are required to have separate resuscitation space and outlets for newborns. Some term infants and most preterm infants are at greater thermal risk and often require additional personnel, equipment and time to optimize resuscitation. An appropriate resuscitation/stabilization environment should be provided as provision of appropriate temperature for delivery room resuscitation of high-risk preterm infants is vital to their stabilization.

Services at the Corner

This space provides an acceptable environment for most uncomplicated term infants, but may not support the optimal management of newborns who may require referral to SNCU. Services provided in the Newborn Care Corner are;

- Care at birth
- Resuscitation
- Provision of warmth
- Early initiation of breastfeeding
- Weighing the neonate

Configuration of the corner

- Clear floor area shall be provided for in the room for newborn corner. It is a space within the labour room, 20-30 sq ft in size, where a radiant warmer will be kept.
- Oxygen, suction machine and simultaneously-accessible electrical outlets shall be provided for the newborn infant in addition to the facilities required for the mother. Clinical procedures: administration of oxygen, airway suctioning.
- Resuscitation kit should be placed in the radiant warmer.
- Provision of hand washing and containment of infection control if it is not a part of the delivery room
- The area should be away from draught of air, and should have power connection for plugging in the radiant warmer.

Equipments and Renewable required for the Corner

Item No	Item Description	Essential	Desirable	Quantity	Installation	Training	Civil	Mechanical	Electrical
1.	Open care system: radiant warmer, fixed height, with trolley, drawers, O2-bottles	E		1	X	X	X	X	X
2.	Resuscitator (silicone resuscitation bag and mask with reservoir) hand-operated, neonate, 500ml	E		1		X			
3.	Weighing Scale, spring	E		1		X			
4.	Pump suction, foot operated	E		1		X			
5.	Thermometer, clinical, digital, 32-34 °C	E		2					
6.	Light examination, mobile, 220-12 V	E		1	X				X
7.	Hub Cutter, syringe	E		1		X			
Renewable consumables									
8.	I / V Cannula 24 G, 26 G	E							
9.	Extractor, mucus, 20ml, ster, disp Dee Lee	E							
10	Tube, feeding, CH07, L40cm, ster, disp	E							
11	Oxygen catheter 8 F, Oxygen Cylinder	E							
12	Sterile Gloves	E							

NEWBORN CARE STABILIZATION UNIT

Setting of Stabilization Unit at First Referral Units

Every first referral unit, whether or not care of sick babies is undertaken, must have clearly established arrangements for the prompt, safe and effective resuscitation of babies and for the care of babies till stabilized, either in the maternity ward or by safe transfer elsewhere.

Services at the Stabilization Unit

FRUs are not intended to provide any intensive care, a newborn that has problems identified immediately after birth, or who becomes ill subsequently, may have a requirement for one or more of the following services. These should therefore be available to ensure safe care of the baby prior to appropriate transfer:

- Provision of warmth
- Resuscitation
- Supportive care including oxygen, drugs, IV fluids
- Monitoring of vital signs, including blood pressure
- Breast feeding/ feeding support
- Referral Services

Configuration of the Stabilization Unit

- Stabilization unit should be located within or in close proximity of the emergency ward where sick and low birth weight newborns and children can be cared .
- Space of approximately 40-50 sq ft per bed is needed, where 4 radiant warmers will be kept.
- Provision of hand washing and containment of infection control

Equipments and Renewable required for the Stabilization Unit

Item No	Item Description	Essential	Desirable	Quantity	Installation	Training	Civil	Mechanical	Electrical
1.	Open care system: radiant warmer, fixed height, with trolley, drawers, O2-bottles	E		4	X	X	X	X	X
2.	Resuscitator, hand-operated, neonate and child, 500ml	E		2		X			
3.	Laryngoscope set	E		2		X			
4.	Scale, baby, electronic, 10 kg <5kg>	E		1		X			
5.	Pump suction, foot operated	E		1		X			
6.	Thermometer, clinical, digital, 32-34C	E		4					
7.	Light examination, mobile, 220-12 V	E		4	X				X
8.	Hub Cutter, syringe	E		1		X			
Renewable consumables									
9.	I / V Cannula 24 G, 26 G	E							
10	Extractor,mucus,20ml,ster,disp Dee Lee	E							
11	Tube,feeding,CH07,L40cm,ster,disp	E							
12	Oxygen cylinder 8 F	E							
13	Sterile Gloves	E							
14	Tube, suction, CH 10, L50 cm, ster, disp	E							
15	Cotton wool, 500g, roll, non-ster	E							
16	Disinfectant, chlorhexidine, 20%	E							

Human Resource:

Staffing:

ONE STAFF NURSE SHOULD PROVIDE COVER FOR NEONATES AND CHILDREN ROUND THE CLOCK Additional nursing staff may be required for newborn care at the Stabilization Unit. Pediatrician posted at FRU will be in charge of the Stabilization Unit.

Training:

Doctors and Nurses posted at Stabilization Unit will undergo Facility based care training.

Referral Services

Each Unit accepting neonatal and sick child referrals should have, or have access to, an appropriately staffed and equipped transport service.

Seismic safety of non-structural elements of Hospitals/Health facility.

- Health Facility/Hospital should remain intact and functional after an earthquake to carry on routine and emergency medical care.
- There may be increased demand for its services after an earthquake.
- Hospital accommodates large number of patients who cannot be evacuated in the event of earthquake.
- Hospitals have complex network of equipment specialised furniture, ducting, wiring, electrical, mechanical fittings which are vulnerable due to earthquake.
- The Non-structural element may value very high from 80% to 90% incase of Hospital unlike office buildings due to specialized medical equipments.
- Even if building remains intact, it may be rendered non-functional due to damage to equipments, pipelines, fall of partitions and store material, etc.
- While the safety of building structure is the duty of PWD and designers of the building, the risk of non-structural component has to be dealt by staff and authorities of the health facility.
- This non-structural Mitigation & reduction of risk can be achieved through series of steps:
 - i) Sensitization (understanding earthquakes and safety requirements)
 - ii) Earthquake Hazard Identification in the hospital
 - iii) Hazard survey and prioritization.
 - iv) Reducing non-structural hazards.

Step I : Understanding Earthquakes and Safety requirements

- Awareness and sensitization about safety
- The structural elements of a building carry the weight of the building like columns, beams, slabs, walls, etc.
- The Non-structural elements do not carry weight of the building, but include windows, doors, stairs, partition and the building contents: furniture, water tank, hospital equipment, medical equipment, pharmacy items and basic installation like water tanks, medical gases, pipelines, air conditioning, telecommunications, electricity etc.

Step II : Earthquakes hazard identification in the hospital

- Tall, narrow furniture like cupboards can fall on people, block doors/passages/exits
- Items on wheels or smooth surfaces can roll and crash
- Large and small things on shelves, etc. can knock, fall, crash and damage severely.
- Hangings objects can fall

- Shelves/almirahs, storage cabinets can topple and block exits and obstruct evacuation.
- Pipes can break and disrupt water supply

Step III : Reducing non-structural hazard

- a) To relocate furniture and other contents
- b) To secure non-structural building elements with the help of structural engineers
- c) To secure the furnishings and equipments to the walls, columns or the floors with help of engineers and technicians.

Step IV: Hazard Survey and Prioritization

All the non-structural hazard should be identified systematically and prioritise for as high, medium or low priority and action taken immediately or in due course. This involves systematic survey and categorisation of all hazards in each area of the hospital and action thereof. Hospital/health facility should have a Committee dedicated to undertake this task and monitor on continuous ongoing basis.

Extracts from National Guidelines on Blood Storage Facilities at FRUs

1. Requirements

Space: The area required for setting up the facility is only 10 square meters, well-lighted, clean and preferably air-conditioned.

Manpower: One of the existing doctors and technicians should be designated for this purpose. They should be trained in the operation of blood storage centers and other basic procedures like storage, grouping, cross- matching and release of blood.

The medical officer designated for this purpose will be responsible for overall working of the storage center.

Electricity: 24 hours supply is essential. Provision of back-up generator is required.

Equipment: Each FRU should have the following:

1. Blood bag refrigerators having a storage capacity of 50 units of blood.
1. Deep freezers for freezing ice packs required for transportation. The deep freezers available in the FRUs under the Immunization Programme can be utilized for this purpose.
2. Insulated carrier boxes with ice packs for maintaining the cold chain during transportation of blood bags.
3. Microscope and centrifuge: since these are an integral part of any existing laboratory, these would already be available at the FRUs. These should be supplied only if they are not already available.

Consumables: There should be adequate provision for consumables and blood grouping reagents. The following quantities would suffice the annual requirement of an FRU with up to 50 beds.

Consumables Quantity:

Pasteur pipette 12 dozens / year
Glass tubes 7.5 to 10 mm - 100 dozens / year
Glass slides 1" x 2" boxes of 20 or 25 each / year
Test tube racks 6 racks, each for 24 tables
Rubber teats 6 dozens / year
Gloves Disposable rubber gloves 500 pairs per year

Blotting tissue paper As required
Marker pencil (alcohol based) As required
Tooth picks As required

Reagents: All the reagents should come from the Mother Blood Bank.

Anti-A 2-vials each per month
Anti-B 2-vials each per month
Anti-AB 2-vials each per month
Anti-D (Blend of IgM & IgG) 2 vials each per month
Antihuman Globulin 1 vial per month
(Polyclonal IgG & Complement)

Since quality of the reagents is an important issue, the supplies of these should be made from the same blood bank/center from where blood is obtained. For this purpose, State Governments/Union Territories should provide the additional budgetary requirements to the mother blood bank/center.

Disinfectants: Bleach & Hypochlorite Solution - As required

2. Suggested quantities of Whole Blood Units to be available at a Blood Storage Unit

5 units each of A, B, O (Positive)
2 units of AB (Positive)
1 units each of A, B & O (Negative)

This can be modified according to the actual requirement, and minimum should be 2 times the average daily consumption of Blood

3. Storage & transportation

Cold chain: It is necessary to maintain the cold chain at all levels i.e. from the mother center to the blood storage center to the issue of blood. This can be achieved by using insulated carrier boxes. During transportation, the blood should be properly packed into cold boxes surrounded by the ice packs. Ice, if used should be clean and should not come in direct contact with the blood bags. The blood should be kept in blood bank refrigerator at $4^{\circ}\text{-}6^{\circ}\text{c} \pm 2^{\circ}\text{c}$. The temperature of the blood should be monitored continuously.

Storage: The storage center should check the condition of blood on receipt from the mother center and also during the period of storage. The responsibility of any problem arising from storage, cross matching, issue and transfusion will be of the storage center. Any unit of blood showing hemolysis, turbidity or change in colour should not be taken on stock for transfusion. Due care should be taken to maintain sterility of blood by keeping all storage areas clean. The

expiry of the blood is normally 35/42 days depending on the type of blood bags used. The Medical Officer in-charge should ensure that unused blood bags should be returned to the mother center at least 10 days before the expiry of the blood and fresh blood obtained in its place. The blood storage centers are designed to ensure rapid and safe delivery of whole blood in an emergency. The detail of storage of packed cells, fresh frozen plasma and platelets concentrate are therefore not given in these guidelines. In case, however, these are required to be stored, the storage procedures of the mother blood bank should be followed.

4. Issue of blood s

Patients blood grouping and cross matching should invariably be carried out before issue of blood. A proper record of this should be kept.

First In and First Out (FIFO) policy, whereby blood closer to expiry date is used first, should be followed.

5. Disposal

Since all the blood bags will already be tested by the mother center, disposal of empty blood bags should be done by landfill. Gloves should be cut and put in bleach for at least one hour and then disposed as normal waste.

6. Documentation & records

The center should maintain proper records for procurement, cross matching and issue of blood and blood components. These records should be kept for at least 5 years.

7. Training

Training of doctors and technicians, who will be responsible for the Blood Storage Center, should be carried out for 3 days in an identified center as per the guidelines.

Training will include:

- Pre-transfusion checking. i.e. patient identity and grouping
- Cross matching
- Compatibility
- Problems in grouping and cross matching
- Troubleshooting
- Issue of blood
- Transfusion reactions and its management
- Disposal of blood bags

The states will have to identify the institutions where training of the staff responsible for running the blood bank is to be held. These could be the blood banks at Medical Colleges, Regional Blood Banks, Indian Red Cross Blood Banks, or any other well setup, licensed Blood Bank, provided they have the necessary infrastructure for undertaking training.

The training will be for three-days duration during which the Medical Officer and the technician from the identified FRUs will be posted at the training institution.

A "Standard Operating Procedures Manual" (SOPM) has been developed and is part of these guidelines. This SOPM will be used as the training material. A copy of this SOPM will be made available to the Medical Officer for use in his Blood Storage Center for undertaking storage, grouping, cross matching and transfusion.

In addition to the training of the above Medical Staff, it is considered necessary that the clinicians who will be responsible for prescribing the use of blood are also sensitized on the various parameters of blood transfusion. For this the "Clinician's Guide to Appropriate Use of Blood" has been developed. It is suggested that one-day sensitization programme for the clinicians may be organized at the District Hospital/Medical College.

Government of India will make the expenditure for the above-mentioned trainings, available as per the norms of training under the RCH Programme. This training will, however, be coordinated by the Training Division of Department of Family Welfare. The states are required to include training as part of the overall State Action Plan for establishing Blood Storage Centers.

Equipments for Laboratory Tests & Blood Transfusion

Rod, flint-glass, 1000 x 10 mm dia, set of two 2
Cylinder, measuring, graduated W/pouring lip, glass, 50 ml 2
Bottle, wash, polyethylene W/angled delivery tube, 250 ml 1
Timer, clock, interval, spring wound, 60 minutes x 1 minute 1
Rack, slide drying nickel/silver, 30 slide capacity 1
Tray, staining, stainless steel 450 x 350 x 25 mm 1
Chamber, counting, glass, double neubauer ruling 2
Pipette, serological glass, 0.05 ml x 0.0125 ml 6
Pipette, serological glass, 1.0 ml x 0.10 ml 6
Counter, differential, blood cells, 6 unit 1
Centrifuge, micro-hematocrit, 6 tubes, 240v 1
Cover glass for counting chamber (item 7), Box of 12 1
Tube, capillary, heparinized, 75 mm x 1.5 mm, vial of 100 10

Lamp, spirit W/screw cap. Metal 60 ml 1
Lancet, blood (Hagedorn needle) 75 mm pack of 10 ss 10
Benedict's reagent qualitative dry components for soln 1
Pipette measuring glass, set of two sizes 10 ml, 20 ml 2
Test tube, w/o rim, heat resistant glass, 100 x 13 mm 24
Clamp, test-tube, nickel plated spring wire, standard type 3
Beaker, HRG glass, low form, set of two sizes, 50 ml, 150 ml 2
Rack, test-tube wooden with 12 x 22 mm dia holes 1

LIST OF ABBREVIATIONS

BJMC	BJ Medical College
CHC	Community Health Centre
CME	Continuing Medical Education
CSSD	Central Sterile and Supply Department
CRI	Central Research Institute
CRME	Centre for Research in Medical Entomology
DRDE	Defense Research and Development Establishment
ICGEB	International Centre for Genetic Engineering and Bio-technology
EVRC	Enterovirus Research Centre
FRU	First Referral Unit
HSADL	High Security Animal Diseases Laboratory
IGIB	Institute of Genomics and Integrative Biology
IPHS	Indian Public Health Standards
IVRI	Indian Veterinary Research Institute
KEM	King Edmund Memorial Hospital
MRC	Malaria Research Centre
NARI	National AIDS Research Institute
NEERI	National Environmental Engineering Institute
NICED	National Institute of Cholera and Endemic Diseases
NIV	National Institute of Virology
NRHM	National Rural Health Mission
PRI	Panchayati Raj Institution
RKS/HMC	Rogi Kalyan Samiti / Hospital Management Committee
RMRC	Regional Medical Research Centre
STM	School of Tropical Medicines
VCRC	Vector Control Research Centre

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