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IS 12433-2 (2001): Basic Requirements for Hospital Planning, Part 2: UP to 100 Bedded Hospital [MHD 18: Imaging and Radiotherapy Equipment]



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भारतीय मानक

अस्पताल आयोजना हेतु आधारभूत अपेक्षाएँ

भाग 2 100 बिस्तरों तक का अस्पताल

*Indian Standard*

**BASIC REQUIREMENTS FOR HOSPITAL PLANNING**

**PART 2 UP TO 100 BEDDED HOSPITAL**

ICS 11.020

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## FOREWORD

This Indian Standard ( Part 2 ) was adopted by the Bureau of Indian Standards, after the draft finalized by Hospital Planning Sectional Committee had been approved by the Medical Equipment and Hospital Planning Division Council.

The Government of India is a signatory to the Alma Ata declaration to achieve the objective of 'Health for all by the Year 2000 A.D'. The country at present has over 13 000 hospitals with over 8 00 000 beds with a bed population ratio of 0.8 bed per 1 000 population. This bed complement is inadequate and inequitably distributed. National Health Policy (1983) has laid guidelines towards comprehensive and integrated approach to development and strengthening of national health care infrastructure. Primary health care has been adopted as the principal instrument of action.

In order to accomplish the above objective, therefore, it will be necessary to strengthen the existing health care infrastructure and make it more efficient and responsive to the health needs and priorities of our country.

Any planning exercise must commence with evaluation of the regional health care needs and priorities, socio-economic and cultural background of the community, climate and logistics, local architecture and life style, and other geotopographic and site considerations. This exercise must follow chronologically from objective formulation and programme development, through functional planning, design development, equipment and manpower planning, to systems development and implementation. This planning process must also combine with an appropriate building programme, acquisition and installation of equipment and supplies, selection and recruitment of staff, and development and implementation of operating systems and procedures.

In this process availability of adequate technical information during planning and execution of hospital projects is fundamental to their successful completion and commissioning. Inadequacy of technical information (ITI Factor) is perhaps the single most significant variable which influences time and cost over-runs in hospital projects. Selection of appropriate technology for the defined objectives is also fundamental to successful implementation of hospital projects. Balancing of technology (Factor B) within and between departments also assumes great significance for efficient and economical hospital development and operation.

Since the objective and programme of each hospital will vary between regions within the country and between communities within regions, it is neither desirable nor practicable to suggest a standard which will meet the requirements of all hospitals fully. It is, however, necessary to establish some norms to serve development to influence investment in hospitals and development of health care infrastructure in the country which is appropriate current and efficient and at the same time is feasible to develop and maintain within our resources.

An attempt has been made in this standard to rationalize hospital planning and development in the country by laying down standards for hospitals with different bed complements and levels of patient care. These standards will need suitable modifications to meet specific characteristics and requirements of the community likely to use the facility. Many factors, such as, health and socio-economic profile of the community, availability of health care infrastructure in the region, local architecture and site considerations, methods of organization, sources of financing and choice of technology, etc, will influence such modifications.

There is no ISO/IEC standard on the subject. This standard has been prepared based on practices prevalent in the field in India.

This standard comprises of the following sections describing five fundamental aspects of hospital planning, namely:

- Section 1 Medical programme
- Section 2 Functional programme
- Section 3 Area requirements
- Section 4 Work flow
- Section 5 Manpower requirements

( Continued on third cover )

*Indian Standard***BASIC REQUIREMENTS FOR HOSPITAL PLANNING****PART 2 UP TO 100 BEDDED HOSPITAL****1 SCOPE**

1.1 This standard (Part 2) covers basic requirements for planning 100 bedded general hospital in respect of medical programme, functional programme, area requirements, manpower requirements, instruments, equipment and furniture requirements and work flow. Certain essential requirements for building, services and environment have also been covered.

1.2 It is envisaged that no single standard can meet the requirements of different regions in our country representing plains, islands and hilly terrains with diverse geo-climatic variations. However, attempt has been made in this standard to cover basic needs of 100 bedded hospital which could be suitably adjusted to meet specific needs and priorities of a particular region or a community. Suitable reduction and increase needs to be carried out for hospitals with varied bed complements than 100 beds.

**2 REFERENCES**

2.1 The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
SP 30 : 1985	National electrical code
732 : 1989	Code of practice for electrical wiring installations ( <i>third revision</i> )
1474 : 1959	Commercial refrigerators
1475 : 1978	Self-contained drinking water coolers ( <i>second revision</i> )
1742 : 1983	Code of practice for building drainage ( <i>second revision</i> )
2064 : 1993	Selection, installation and maintenance of sanitary appliances — Code of practice ( <i>second revision</i> )
2065 : 1983	Code of practice for water supply in buildings ( <i>second revision</i> )
2189 : 1988	Code of practice for selection,

installation and maintenance of automatic fire detection and alarm system (*second revision*)

2190 : 1992 Selection, installation and maintenance of first-aid fire extinguishers — Code of practice (*second revision*)

2268 : 1988 Electric call bells and buzzers for indoor use (*second revision*)

2309 : 1989 Protection of buildings and allied structures against lightning — Code of practice (*second revision*)

2440 : 1975 Code of practice for day lighting of buildings (*second revision*)

3362 : 1977 Code of practice for natural ventilation of residential buildings (*first revision*)

4347 : 1967 Code of practice for hospital lighting

5329 : 1983 Code of practice for sanitary pipe work above ground for buildings (*first revision*)

7662 (Part 1) : 1974 Recommendations for orientation of buildings: Part 1 Non-industrial buildings

8030 : 1976 Luminaires for hospitals

10905 (Part 1) : 1984 Recommendations for basic requirements of general hospital buildings: Part 1 Administrative and hospital services department buildings

**SECTION 1 MEDICAL PROGRAMME****3 MEDICAL PROGRAMME**

3.1 Hospital should have the following facilities grouped as under:

**Group 1: Medical and Allied Disciplines**

<i>Code</i>	<i>Nomenclature</i>	<i>Including</i>
1.01	Anaesthesiology	
1.08	Blood Transfusion	
1.08.1	Blood Bank	

<i>Code</i>	<i>Nomenclature</i>	<i>Including</i>	<i>Code</i>	<i>Nomenclature</i>	<i>Including</i>
1.13	Community Medicine	Preventive and Social Medicine	3.40	Laundry Technology	
1.14	Critical Care Medicine (optional)		3.45	Medical Record Technology	
1.14.1	Emergency Medicine		3.47	Medical Social Work	
1.15	Dentistry		3.50	Nursing Services	
1.16	Dermatology and Venereology ( optional )	Skin and VD	3.55	Operating Theatre Technology	Anaesthesia Technology
1.29	General Medicine	Internal Medicine	3.60	Ophthalmic Technology	
1.30	General Surgery		3.70	Physiotherapy (optional)	
1.37	Hospital Administration	Health Administration	3.90	Sterilization and Disinfection	CSSD Technology
1.55	Neonatology (optional)		<b>Group 4: Engineering and Allied Services</b>		
1.64	Obstetrics and Gynaecology		4.05	Building Maintenance	
1.67	Ophthalmology	Eye	4.10	Electric Supply	Power Generation and Stabilization
1.68	Orthopaedics		4.15*	Fire Protection	Alarm System
1.69	Oto-Rhino-Laryngology (optional)	ENT	4.20	Heating, Ventilation, and Airconditioning (optional)	
1.72	Paediatrics		4.25	Horticulture	Landscaping
1.74	Pathology		4.30*	Hot Water and Steam Supply (optional)	
1.77	Physical Medicine (optional)	Rehabilitation	4.33	Lifts and Vertical Transport	
1.82	Psychiatry (optional)		4.35	L P G Supply	
1.85	Pulmonary Medicine (optional)	Chest Disease/ TB	4.40	Mechanical Transport	Ambulance Service
1.86	Radio Diagnosis	Radiology	4.45	Medical Gas Supply and Vacuum	G a s Scavenging
<b>Group 2: Health and Allied Services</b>			4.47	Refrigeration	
2.20	Family Welfare		4.50	Sewage Treatment and Disposal	Sanitation and Drainage
2.25	Health Education		4.52	Solar Energy (optional)	
2.40	Maternal and Child Health		4.55	Solid Waste Disposal	Incineration
2.50	Nutrition		4.60	Telephone and Communication	
2.70	School Health		4.65	Water Supply	Plumbing
<b>Group 3: Nursing, Paramedical, Technical and Allied Services</b>			4.70	Workshop	
3.05	Dental Technology	Dental Hygiene	<b>Group 5: Administrative and Ancillary Services</b>		
3.10	Dietetics and Therapeutics	Catering	5.05	Audio-Visual Service	Field Publicity
3.15	Drugs and Pharmacy		5.20	Education and Training (optional)	Continuing Education
3.20	E C G Technology		5.30	Financial Management (optional)	Accounts
3.25	E E G Technology (optional)		5.35	General Administration	
3.30	Imaging Technology				
3.30.1	X-Ray Imaging				
3.30.2	Ultrasound Imaging				
3.35	Laboratory Technology				

\* This activity will depend on climatic conditions.

<i>Code</i>	<i>Nomenclature</i>	<i>Including</i>
5.40	House Keeping	
5.50	Management Information (optional)	
5.55	Materials Management	
5.60	Medical Social Work	
5.65	Personnel Management (optional)	
5.70	Public Relations (optional)	
5.75	Security	
5.95	Library	

NOTE — Some of the services can be out-sourced depending upon the situation.

## SECTION 2 FUNCTIONAL PROGRAMME

### 4 FUNCTIONAL PROGRAMME

#### 4.1 Functional Planning

4.1.1 Functional planning is an analytical process in hospital planning and development which includes definition of functional requirements, area requirements and work flow to meet the needs and priorities of the medical programme.

4.1.2 In consideration of the medical programme outlined in Section 1, the hospital is to have a balanced combination of the following functional areas and services:

- Entrance area,
- Ambulatory care area,
- Diagnostic services,
- Intermediate care area,
- Intensive care area,
- Critical care area,
- Therapeutic services,
- Hospital services,
- Engineering services, and
- Administrative/Ancillary services.

#### 4.2 Functional Analysis

4.2.1 Entrance area will comprise three independent entrance zones, namely:

- Main entrance for ambulatory care, diagnostic services and therapeutic services as well as to include accommodation for pharmacy services.
- IPD (In-patient department)/Emergency entrance for intermediate care, intensive care and critical care (emergency services) as well as to include accommodation for arcade.
- Service/Staff entrance for hospital and

engineering services, hospital supplies, medical, para-medical and administrative as well as ancillary staff.

4.2.2 The ambulatory care area will comprise of:

- General and speciality clinics for examination, consultation and treatment of out-patients.
- Ancillary accommodation for nursing services.

4.2.3 Diagnostic services of the hospital will provide facilities for modern modalities essential for practice of contemporary medicine and will comprise imaging, clinical laboratories and blood bank.

4.2.4 Intermediate care area will consist of general wards, private ward (AC and Non AC), dedicated wards, like, maternity and paediatrics with the following bed distribution:

<i>Category of Wards</i>	<i>No. of Beds</i>
General ward 1 (Medical) including allied speciality	30
General ward 2 (Surgical) including allied speciality	30
Private ward (AC and Non AC) (optional)	9
Maternity ward	15
Paediatrics ward	6
<b>Total</b>	<b>90</b>

NOTE — The number of beds given may be suitably adjusted by hospital administration depending upon local requirements.

4.2.5 The intensive care services of the hospital will provide facilities for medical and surgical intensive care with bed complement of 4 beds (4 percent of bed strength).

4.2.6 The critical care services will comprise facilities for medical and surgical emergencies with bed complement of 6 beds (about 6 percent of bed strength).

4.2.7 The therapeutic services of the hospital will provide facilities for operating care, delivery suite and physiotherapy. Operation theatre suite will conform to the principles of environmental zoning, viz, protective, clean, sterile and disposal for asepsis in surgical practice.

4.2.8 The hospital services will comprise of hospital kitchen, central sterile supply, hospital laundry, central medical cum general stores and hospital mortuary.

4.2.9 The engineering services of the hospital will comprise the electrical, mechanical, public health, fire protection, communication, medical gases and vacuum and workshop needs of the hospital.



**4.2.10** The administrative/ancillary services of the hospital will comprise of hospital administration, nursing administration, general transport, house keeping, library/conference and medical records services.

**4.2.11** The above functional analysis is a brief description of various areas and services that collectively will constitute basic requirements for the hospital. Detailed functional programme for the hospital to highlight area-wise and function-wise requirement of facilities is given in Annex A. Summary of area requirement per bed is given in Annex B.

**4.2.12** Area and function wise requirements of facilities as given in Annex A are based on basic space module of 7 m<sup>2</sup>. This has been stipulated in order to rationalize the requirements for various facilities in the hospital. Basic module so chosen is considered a viable space planning unit of 14 m<sup>2</sup>.

### SECTION 3 AREA REQUIREMENTS

#### 5 AREA REQUIREMENTS

**5.1** Area requirement for hospital is to be derived from carpet area of various services and functions as outlined in functional programme by applying conversion factor for circulation space. The circulation space will include corridors, stairs, fire escapes, walls, ramps and lifts, etc.

**5.2** While applying 40 percent conversion factor over carpet area of 66 m<sup>2</sup> per bed, the covered area of the hospital works out to 92.5 m<sup>2</sup> per bed.

**5.3** Land requirement depends on factors, like, horizontal or vertical development, FAR (floor area ratio) regulations and ground coverage regulated by local self government/municipal regulations correlated to availability of land. Area requirement can thus be calculated with the above parameters assumed as under:

Total hospital beds	100
Number of storeys	3
By placing 40 percent of area on ground floor and remaining in 2 upper floors.	

#### Municipal regulations

F. A. R	100
Ground coverage permitted	25 percent
Covered area per bed	92.5 m <sup>2</sup>
Total covered area	92.5 × 100 = 9 250 m <sup>2</sup>
40 percent of covered area	3 700 m <sup>2</sup>

Since ground coverage allowed is 25 percent, plot

area will be 4 times of 3 700 m<sup>2</sup>, that is, 14 800 m<sup>2</sup> or 1.48, say, 1.5 hectare.

Land requirement can be reduced or increased if the hospital is intended to be high or low rise building contrary to above parameters.

### 6 SITE PLANNING

**6.1** Hospital sites with high degree of sensitivity to outside noise should be avoided, but may be compatible with other considerations, such as, accessibility and availability of services. The buildings should be so planned that sensitive areas, like, wards, consulting and treatment rooms and operation theatres are placed away from the outdoor source of noise. While planning the hospital building, the importance of landscape elements, such as, open areas, horticulture to increase the comfort conditions within the recommendations contained in IS 7662 (Part 1), may be kept in view.

### 7 RESIDENTIAL ACCOMMODATION

**7.1** If adequate land is not available, residential accommodation for the essential staff only which includes resident medical officer, nurses and class IV staff should be provided.

**7.2** For the relatives of patients some accommodation, like, shelter home may be provided.

**7.3** Residential accommodation for a major portion of nursing staff should be provided close to the hospital building in the form of a hostel.

### SECTION 4 WORK FLOW

#### 8 GENERAL

A typical work flow analysis is given in Fig. 1.

### SECTION 5 MANPOWER REQUIREMENTS

#### 9 MANPOWER REQUIREMENTS

**9.1** In the beginning when the hospital starts working, it is recommended that the total strength should be based on 1.5 persons per bed but should increase to 2 persons per bed when the hospital is working to its full load capacity. Given below is the recommended strength:

<i>Medical Staff</i>	<i>Minimum Strength</i>
Hospital administrator	1
General medical specialists	3
General surgeons	4
Obstetrician and gynaecologist	2
Ophthalmologist	2

<i>Medical Staff</i>	<i>Minimum Strength</i>	<i>Medical Staff</i>	<i>Minimum Strength</i>
Otorhino-laryngologist	2	Engineering aides	4 + 2
Paediatrician	2	<i>Other Staff</i>	
Dentist	2	Drivers, ambulance van	2
Anaesthetist	2	Cleaners ambulance van	2
Orthopaedic surgeon	1	(One driver and one cleaner per ambulance)	
Dermatologist (optional)	1	Carpenter	1
Neonatologist (optional)	1	Tinsmith-cum-plumber	1
Psychiatrist (optional)	1	Tailors	2
Pulmonary medicine specialist (optional)	1	Gardeners	2
Pathologist	1	Cooks	2
Radiologist	1	Cook mates	3
General duty medical officers	8 + 3	Class IV, including chowkidars and Messengers	55
Community medicine specialist	1	Barber	1
<i>Nursing Staff</i>		<i>Administrative Staff</i>	
(See Annex C)		Office superintendent/Lady secretary (non-medical, non-gazetted)	1
<i>Health Staff</i>		Head clerk	1
Female health assistant	1	Cashier	1
Extension educator	1	Stenographer	1
Nutritionist	1	UDC	2
Public health nurse	1	LDC (including registration)	4
<i>Paramedical Staff</i>		Nursing orderly/Messengers	2*
Lab technicians/Blood bank			
Technicians	4		
ECG technician	1		
Pharmacists	4		
Linen-keeper	1		
Steward	1		
Senior radiographer	1		
Physiotherapist/Occupational therapist	2		
Medical records	1		
Dental technologist	1		
Ophthalmology technologist	1		
CSSD	2		
Technical assistants	5		
<i>Engineering Staff</i>			
Civil engineering technologist	2		
Mech engineering technologist	2		
Electrical engineering technologist	2		

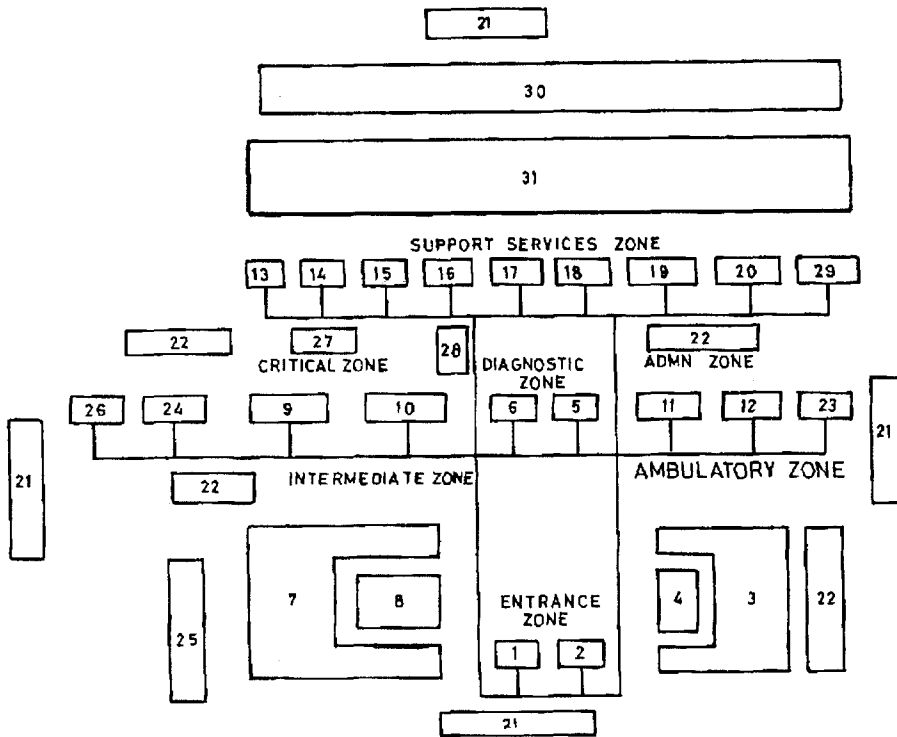
NOTE — Additional staff shown with + sign, means that it should be added depending upon the work load. If optional facilities are provided proportionate increase in staff may be required.

## SECTION 6 INSTRUMENTS, EQUIPMENT AND FURNITURE REQUIREMENTS

### 10 INSTRUMENTS, EQUIPMENT AND FURNITURE REQUIREMENTS

10.1 The instruments, equipment and furniture required by various departments are as follows. These may conform to the relevant Indian Standards indicated against each item. However, the number of these shall be governed by the actual local conditions.

\*Included in the total strength of class IV staff.



- |   |                               |
|---|-------------------------------|
| 1. Reception/Registration                   | 17. Sub-station               |
| 2. Pharmacy                                 | 18. Workshop                  |
| 3. Examination/Consultation                 | 19. Mortuary                  |
| 4. Nursing station                          | 20. Incinerator               |
| 5. Clinical laboratory                      | 21. Entrance                  |
| 6. Imaging                                  | 22. Parking                   |
| 7. Patient area                             | 23. Library/Conf              |
| 8. Nursing station                          | 24. Intensive Care            |
| 9. Operating theatre                        | 25. Shopping arcade           |
| 10. Labour room                             | 26. Casualty                  |
| 11. General administration                  | 27. Blood bank                |
| 12. Medical-cum-general store               | 28. Physiotherapy             |
| 13. Manifold                                | 29. Fire-protection           |
| 14. Central sterilization and supply deptt. | 30. Residential accommodation |
| 15. Laundry                                 | 31. Park                      |
| 16. Kitchen                                 |                               |

NOTE — The work flow analysis gives only the broader services to be provided. Actual layout may be decided by hospital administration depending upon the local needs.

FIG. 1 WORK FLOW ANALYSIS, 100-BEDDED HOSPITAL

**A ENTRANCE AREA****A-1 RECEPTION**

Chair, metal, office type	IS 3499 (Part 1) : 1985
Chairs, plastic moulded	IS 13713 : 1993
Fire fighting equipment	As per statutory requirements
Graphics and signature systems	—
Audio visual display	
Janitor's Equipment	
— Floor scrubbers	IS 3015 : 1985
— Brooms	—
— Dusters	IS 859 : 1978
Notice board	IS 10405 : 1982
Reception-registration desk/counter	—
Table, metal, office/counter	IS 3498 : 1993
Trolley, patients	IS 4036 : 1967
Water cooler with 3/4 spouts	IS 1475 : 1978
Wheel chairs	IS 6571 : 1991, IS 7454 : 1991, IS 8086 : 1991

**A-2 DISPENSARY**

Chairs, metal, office type	IS 3499 (Part 1) : 1985
Jugs for water, tumblers	IS 3424 : 1985
Refrigerator	IS 1474 : 1959 IS 1476 : 1979
Sink unit with desk top work area	IS 2556 (Part 5) : 1994
Storage Racks	IS 1883 : 1983, IS 7070 : 1988
Table, metal, office type	IS 3498 : 1993
Wash, hand basin	IS 2556 (Part 4) : 1994

**B AMBULATORY CARE AREA****B-1 EXAMINATION/CONSULTATION**

Bedsheet	IS 175 : 1989
Bowls	IS 3994 : 1993
Chair, metal, office type	IS 3499 (Part 1) : 1985
Chairs, plastic moulded	IS 13713 : 1993
Doctor's towel	IS 854 : 1991
Dusters	IS 859 : 1978 IS 3777 : 1994

Diagnostic set ( As per the clinics requirements )

a) Ophthalmoscope	IS 8257 : 1976
b) ENT speculum	IS 3788 : 1966 IS 5377 : 1969
c) Torch	IS 2083 : 1991
d) Laryngoscope and auroscope	IS 4113 : 1986
e) Tongue depressor	IS 7756 : 1975
Examination table/stretchers with mattress	IS 4787 : 1968 IS 4035 : 1967 IS 4037 : 1967
Kidney trays	IS 3992 : 1982
Screen stands	IS 4458 : 1967
Step stool	—
Stretcher and stretcher carrier	IS 4037 : 1967
Sphygmomanometer	IS 3390 : 1988 IS 7652 : 1988
Stethoscope	IS 3391 : 1965
Stool, revolving	IS 7081 : 1973
Wash hand basin with liquid soap dispenser and towel rail	IS 2556 (Part 4) : 1994
X-ray viewers	—

**B-2 NURSING SERVICES**

Chair, metal, office type	IS 3499 (Part 1) : 1985
Dressing drum	IS 3831 : 1979
Fire fighting equipment	As per statutory requirements
Hot plates	IS 365 : 1983
Nurses station counter/desk	—
Notice boards	IS 10405 : 1982
Refrigerator	IS 1476 : 1979 IS 1474 : 1959
Screen stands	IS 4458 : 1967
Sink unit with instrument work area	IS 2556 (Part 5) : 1994
Stool, revolving	IS 7081 : 1973
Storage units - storage racks	IS 1883 : 1983 IS 7070 : 1988
Table, metal, office type	IS 3498 : 1993 IS 8126 : 1993
Trolley, dressing/instrument/medicine	IS 4769 : 1968 IS 5631 : 1970 IS 7083 : 1973
Trolley, patients	IS 4036 : 1967
Wall clocks	IS 5160 : 1969

Waste receptacles	IS 6904 : 1973	Scalers, ultrasonic	—
Wash hand basin with liquid soap dispenser and towel rail	IS 2556 (Part 4) : 1994	Sterilizers	IS 3829 (Part 1) : 1978 IS 3829 (Part 2) : 1978 IS 3829 (Part 3) : 1985
Water cooler	IS 1475 : 1978	Suction apparatus	IS 4533 : 1995
Washing machines	IS 6390 : 1983	Table, office	IS 3498 : 1993
Wheel chairs	IS 6571 : 1991 IS 7454 : 1991 IS 8086 : 1991	Tray, complete sets for edentulous and dentulous jaws (perforated)	IS 9717 : 1980
X-ray viewers	—	Trolley, patients	IS 4036 : 1967
<b>B-3 DENTAL</b>		Wall clock	IS 5160 : 1969
Air motor	—	Wheel chair	IS 6571 : 1991 IS 7454 : 1991 IS 8086 : 1991
Air rotor with compression	IS 6846 : 1972	Wiring set for jaw fractures	—
Air viva	—		
Biopsy kit	—	<b>C DIAGNOSTIC SERVICES</b>	
Chair, dental	IS 6116 : 1992	<b>C-1 IMAGING</b>	
Chair, metal, office use	IS 3499 (Part 1) : 1985	Aprons, lead-rubber	IS 7352 : 1974
Chair, revolving	IS 3499 (Part 2) : 1985	Chemical mixing plunger	—
Dental unit, complete	IS 5023 : 1969	Cassettes with intensifying screens	IS 6991 : 1985, IS 10554 : 1983
Dental X-ray unit and developing facilities	IS 13709 : 1993	Chair, office type	IS 3499 (Part 1) : 1985
Desk for reception counter	—	Chair, plastic moulded	IS 13713 : 1993
Dressing drum	IS 3831 : 1979	Diagnostic X-ray unit, 200/300 mA, with automatic device	IS 7620 (Part 1) : 1986
Excavators	IS 4715 : 1968	Diagnostic, 60 mA X-ray machine (portable type)	IS 7620 (Part 1) : 1986
Extraction forceps, assorted	(See Annex D)	Dark room safe light	—
Filling instrument set	—	Dark room timer	—
Handpiece, straight and contra angle	—	Dark room adaption goggles	—
Minor surgery instruments	—	Film clips	—
Oxygen cylinder, trolley, gas	IS 309 : 1992 IS 6207 : 1971 IS 8198 (Part 12) : 1982	Film hanger and wall brackets	—
Perio-surgical instruments	—	Hanger for X-ray film	—
Plastic filling instruments	IS 3890 (Part 1) : 1986 IS 3890 (Part 2) : 1967	Gloves, lead-rubber	IS 4148 : 1989
Prosthetic laboratory and denture processing instruments	IS 10866 : 1984 IS 11044 : 1984 IS 11045 : 1984 IS 11317 : 1985	Lead numbers for marking	—
Pulp tester	—	X-ray film	
Scalers, assorted	IS 4714 : 1985	Lead sheets	IS 8164 : 1976 IS 4135 : 1974
Scalers set, sub-gingival	—	Magnifying glass	IS 5148 : 1969

Multi purpose ultra sound scanner	—	Centrifuge tubes (glass)	IS 3740 : 1966
Multi probe ultra sound equipment on trolley	—	Filter papers	—
Rack, steel	IS 1883 : 1983	Haemocytometer with WBC and RBC pipettes	IS 10269 : 1982
Step stools	—	Incubator	IS 3118 : 1978
Stool, revolving	IS 7081 : 1973	Haemoglobinometer, sahli, complete	—
Tank thermometer	IS 2480 : 1983	Laboratory electric ovens	IS 6365 : 1971
Trolley, patients	IS 4036 : 1967	Monocular microscope	IS 4328 : 1967
Wash hand basins with towel rail and liquid soap dispenser	IS 2556 (Part 4) : 1994	Needle, hypodermic, all sizes	IS 3317 : 1983
X-ray view box	—	Needle, hypodermic, single use	IS 10654 : 1991
X-ray protection screen	IS 10554 : 1983	Petri dishes	IS 2626 : 1972
X-ray film processing tank	—	Slides boxes	IS 7850 : 1975
X-ray film corner	—	Nessler's tube	—
Ultrasound	—	Sterilizer, steam	IS 3829 (Parts 1 and 2) 1978 IS 3829 (Part 3) : 1985
<b>C-2 CLINICAL LABORATORY</b>		Sterilizer, steam, portable type	IS 8462 : 1977
Tubes, glass, for pathological work	IS 3740 : 1966	Spectroscope with adjustable slit	—
Tubes, sedimentation	IS 3741 (Parts 1 and 2) : 1990	Spirit lamp	IS 9557 : 1980
Pipette, dilution for haemocytometers	IS 3742 : 1990	Stop watch	IS 10996 : 1984
Pipette for haemoglobinometers and blood pipette for biochemical work	IS 4087 : 1980	Syringes, all glass, all sizes	IS 3236 : 1992 IS 11400 : 1985
Pipettes, serological	IS 4364 : 1967	Syringes for single use	IS 10258 : 1995
Albuminometer (Esbach's) with stopper, stand and case	IS 6606 : 1972	Suitable strips (as substitute for various tests)	—
Cover, glass, haemocytometer	IS 6943 : 1990	Trough, staining	IS 4754 : 1968
Tube, culture, screw cap	IS 7039 : 1973	Water bath, serological	IS 6593 : 1972
Tube, haemometer	IS 9430 : 1980	Wire gauze	IS 14253 : 1995
Burettes	IS 1997 : 1982	Sink unit with worktop area	IS 2556 (Part 5) : 1994
Blood sedimentation rate stand for 6/12 tubes	—	Wash hand basin with liquid soap dispenser and towel rail.	IS 2556 (Part 4) : 1994
Test tubes, pyrex type (glass)	IS 2618 : 1989	<b>C-3 BLOOD BANK</b>	
Volumetric flasks	IS 915 : 1975	The instruments, equipment and other accessories for blood bank shall be as specified in the <i>Drugs and Cosmetics Act</i> .	
Beaker	IS 2619 : 1993	<b>D INTERMEDIATE CARE AREA</b>	
Urine collection jar	IS 4708 : 1968	<b>D-1 NURSING STATON</b>	
Glass slides	IS 3099 (Parts 1 and 2) : 1992	Chair, metal, office type	IS 3499 (Part 1) : 1985
Colorimeter	IS 9571 : 1980	Dressing drum	IS 3831 : 1979
Centrifuge, AC/DC, 200 W with 8 buckets	IS 4092 (Part 1) : 1992		

Fire fighting equipment	As per statutory requirements	Diagnostic set:	
Hot plates	IS 365 : 1983	a) Ophthalmoscope	IS 8257 : 1976
Nurses station counter/desk	—	b) ENT speculum	IS 3788 : 1966, IS 5377 : 1969
Notice boards	IS 10405 : 1982	c) Audiometer	IS 10565 : 1983
Refrigerator	IS 1476 : 1979 IS 1474 : 1959	d) Torch	IS 2083 : 1991
Screen stands	IS 4458 : 1967	e) Percussion hammer	—
Sink unit with instrument work area	IS 2556 ( Part 5 ) : 1994	f) Laryngoscope and auroscope	IS 4113 : 1986
Stool, revolving	IS 7081 : 1973	g) Tongue depressor	IS 7756 : 1975
Storage units - storage racks	IS 1883 : 1983 IS 7070 : 1988	Dressing drum	IS 3831 : 1979
Table, metal, office type	IS 3498 : 1993 IS 8126 : 1993	Enema can sets	—
Trolley, dressing/instruments/medicine	IS 4769 : 1968 IS 5631 : 1970 IS 7083 : 1973	Feeding cups with spout	—
Trolley, patients	IS 4036 : 1967	Forceps, cheattles	IS 4094 : 1967
Wall clocks	IS 5160 : 1969	Flit pumps	IS 3897 : 1978
Waste receptacles	IS 6904 : 1973	Fly swatters	—
Wash hand basin with liquid soap dispenser and towel rail	IS 2556 ( Part 4 ) : 1994	Fire fighting equipment	As per statutory requirements
Water cooler	IS 1475 : 1978	Hurricane lantern, wick lamp	IS 1238 : 1985, IS 9557 : 1980
Washing machines	IS 6390 : 1983	Hammer, percussion	—
Wheel chairs	IS 8086 : 1991 IS 6571 : 1991 IS 7454 : 1991	Hot plates	IS 365 : 1983
X-ray viewers	—	Hot water bottles	IS 1867 : 1975
<b>D-2 PATIENT AREA</b>		Holder, case, sheet	—
Bedsteads (including 5 with railing)	IS 5029 : 1979	Ice box	IS 1869 : 1971
Bed side lockers	IS 4266 : 1967	Ice bags	IS 3867 : 1966
Back rests	IS 5336 : 1969	Jugs, enamel	—
Bed, Fowler's	IS 7378 : 1974	Kidney trays	IS 3992 : 1982
Bed pans	—	Kettles	IS 367 : 1993
Buckets, stainless steel	IS 4768 : 1981	Medicine cups	IS 3998 : 1982
Basins	—	Medicine trolleys	IS 7083 : 1973
Screen stands	IS 4458 : 1967	Mugs	IS 3995 : 1980
Chairs, metal, office type	IS 3499 ( Part 1 ) : 1985	Mattresses for bedsteads	IS 7933 : 1975
Chairs, plastic moulded	IS 13713 : 1993	Notice boards	IS 10405 : 1982
Chairs, easy	IS 5974 : 1986	Oxygen cylinders with trollies and flowmeters	IS 309 : 1992, IS 6207 : 1971
Chamber pots	—	Oxygen masks	IS 6190 : 1971
Chart holder	—	Phototherapy Equipment	—
		Refrigerators	IS 1476 : 1979
		Rack, storage	IS 1883 : 1983, IS 7070 : 1988
		Racks, test tube	—
		Room heaters	IS 369 : 1992
		Screen stands	IS 4458 : 1967
		Step stool	—
		Stool, revolving	IS 7081 : 1973

Spoons	IS 990 : 1982
Suction apparatus	IS 4533 : 1995
Sphygmomanometers	IS 3390 : 1988 IS 7652 : 1988
Stethoscope	IS 3391 : 1965
Sterilizer, instruments	IS 5022 : 1989
Scissors, general purpose	IS 989 : 1982
Spirit lamps	IS 9557 : 1980
Splints, arm	IS 6626 : 1972
Splints, thomas	—
Table, metal, office type	IS 3498 : 1993, IS 8126 : 1993
Trolleys, linen and dirty linen	IS 4455 : 1967
Table, examination	IS 4787 : 1968
Tray, food (stainless steel)	IS 3257 : 1980, IS 3424 : 1985
Tumblers (stainless steel)	IS 3424 : 1985
Trolley, dressing	IS 4769 : 1968
Trolley, patients	IS 4036 : 1967
Thermometers, clinical	IS 3055 (Part 1) : 1994
Thermometers, rectal	IS 3055 (Part 1) : 1994
Waste receptacle	IS 6904 : 1973
Wall clocks	IS 5160 : 1969
Water coolers with 3/4 spouts	IS 1475 : 1978
Weighing machines	IS 2489 : 1963 IS 1853 : 1961
X-ray view boxes	—

**D-3 LINEN FURNISHINGS**

Bedsheets	IS 175 : 1989 IS 745 : 1990 IS 3776 : 1994
Blankets	IS 1681 : 1998 IS 746 : 1987
Curtains	IS 1246 : 1978
Draw sheets	—
Dusters	IS 859 : 1978
Doctor's cots	IS 5029 : 1979
Doctor towels	IS 854 : 1991
Face sponges	IS 860 : 1987
Mortuary sheets	IS 175 : 1989 IS 745 : 1990
Mattresses	IS 7933 : 1975
Mattress covers	—
Pillow cases	—

Patient coats or jackets	—
Patient pajama	IS 1245 : 1990
Pillows	—

**E CRITICAL CARE AREA****E-1 SERVICES**

Table, metal, office type	IS 3498 : 1993, IS 8126 : 1993
Chairs, metal, office type	IS 3499 (Part 1) : 1985
Chairs, plastic moulded	IS 13713 : 1993
Stool, revolving	IS 7081 : 1973
Table, examination/stretcher	IS 4035 : 1967 IS 4037 : 1967 IS 4787 : 1968
Foot steps	—
Trolley, dressing	IS 4769 : 1968
Folding screen	IS 4458 : 1967
Bucket	IS 726 : 1982
Bowl	IS 3994 : 1993
Diagnostic set (as per the clinics requirements)	
a) Ophthalmoscope	IS 8257 : 1976
b) ENT speculum	IS 3788 : 1966 IS 5377 : 1969
c) Torch (flashlight)	IS 2083 : 1991
d) Laryngoscope and auroscope	IS 4113 : 1986
e) Tongue depressor	IS 7756 : 1975
f) Knee hammer	IS 5585 : 1970 IS 7819 : 1975
g) Stethoscope	IS 3391 : 1965
h) Thermometer	IS 3055 (Part 1) : 1994
j) Tape measure, steel	IS 1269 (Part 2) : 1997
Jugs	—
Kidney tray	IS 5992 : 1982
Tray with cover	IS 3257 : 1980, IS 3424 : 1985
Sterilizer, instrument	IS 5022 : 1989
Stove	IS 1342 : 1988 IS 4246 : 1992
Saw, plaster	IS 10338 : 1982
Cabinet, instruments	IS 6877 : 1977
Wheel chair	IS 6571 : 1991 IS 7454 : 1991 IS 8086 : 1991



Trolley stretcher with mattress	IS 4035 : 1967
Wall clock	IS 5160 : 1969
Emergency light	—
Refrigerator	IS 1476 : 1979
Room heater	IS 369 : 1992
Room cooler	IS 3315 : 1994
Bed sheets	IS 175 : 1989, IS 745 : 1990, IS 3776 : 1994
Blankets	IS 1681 : 1998
Pillows	—
Towels	IS 854 : 1991
Pillow covers	—
Flit pump	IS 3897 : 1978

**F THERAPLITIC SERVICES****F-1 OPERATION SUIT**

Bowls, stainless steel	IS 3994 : 1993
Basin, stainless steel	—
Brush, nail	IS 5080 : 1969
Buckets, stainless steel	IS 4768 : 1981
Bucket with lid	IS 726 : 1982, IS 3730 : 1988, IS 4768 : 1981
Catheter, rubber	IS 7523 : 1974
Diathermy machine	IS 7583 : 1991
Dressing drum, all sizes, stainless steel	IS 3831 : 1979
Lamp, shadowless	
a) Ceiling lamp	—
b) Portable type	—
Sink unit with work top area	IS 2556 (Part 5) : 1994
Sterilizer:	
a) Pressure, hot and cold water	IS 7455 : 1974
b) Bowls and utensils	IS 5035 : 1969
Suction apparatus	IS 4533 : 1995
Stand, I. V.	IS 5880 : 1970
Stool, revolving, stainless steel	IS 7081 : 1973
Stand with wheel for single basin	IS 4267 : 1967
Slippers	IS 10702 : 1992
Table, operation, hydraulic:	
a) Major	IS 5291 : 1969
b) Minor	IS 6328 : 1971

Table, instruments	IS 6905 : 1973
Trolley, dressing drum	IS 7099 : 1973
Trolley, patients	IS 4036 : 1967
Trolley, instruments	IS 5631 : 1970
Tube, ryles	—
Urinals (male and female)	IS 2556 (Part 6) : 1995
X-ray view box	—
Wheelchairs	IS 6571 : 1991 IS 7454 : 1991 IS 8086 : 1991

**F-2 DELIVERY SUITE**

Aprons, rubber	IS 4501 : 1981
Basin, stainless steel	—
Bowl for placenta, stainless steel	—
Bed pans, stainless steel	—
Bowls, stainless steel	IS 3994 : 1993
Can, douche	—
Catheter, rubber and metal	IS 11497 : 1985
Cradles, baby	IS 5630 : 1994
Chair, wheel	IS 7454 : 1991 IS 6571 : 1991 IS 8086 : 1991
Cabinet, steel, instruments	IS 6877 : 1977
Craniotomy set	—
Dressing drum	IS 3831 : 1979
Forceps:	
a) Artery	IS 3644 : 1992
b) Obstetric, wringles	—
c) Obstetric, ferguson	—
d) Ovum	IS 6578 : 1992
e) Sponge holder	IS 7735 : 1992
f) Dissecting	IS 3643 : 1992
g) Cheatle's	IS 4094 : 1967
Feeding cups	—
Foetoscope	IS 6565 : 1972
Hot water bottles	IS 1867 : 1975
Handle for surgical blades, Bard Parker type	IS 3319 : 1995
Ice bags	IS 3867 : 1966
Jug, stainless steel	IS 3424 : 1985
Jar with cover	IS 3997 : 1982
Kidney tray, stainless steel	IS 3992 : 1982
Laparoscope, single puncture	—

Mackintoshes	—	Tubs, baby bath	IS 4120 : 1994
Mouth gag	IS 7625 : 1975	Urinals	IS 2556 (Part 6) : 1995
Needle holder	IS 7994 : 1976	Vaccum extractor	—
Needle, lumbar puncture	IS 7350 : 1974	Weighing machine, baby	IS 2489 : 1963
Ophthalmoscope	IS 8257 : 1976	Wheelchairs	IS 6571 : 1991, IS 7454 : 1991, IS 8086 : 1991
Probe, uterine	IS 7981 (Parts 4 and 5) : 1976	X-ray view box	—
Pint measures	—	<b>F-3 ANAESTHESIA EQUIPMENT AND APPLIANCES</b>	
Pelvic meter	—	Airways, anaesthetic	IS 3392 : 1965
Shadowless lamp	—	Airways, guedal, rubber	—
Sinks with liquid soap dispensers	IS 2556 (Part 5) : 1994	Boyle's apparatus	—
Suction apparatus	IS 4533 : 1995	Cylinders:	
Sound, uterine	IS 5829 : 1982	a) Oxygen	IS 309 : 1992
Stand :		b) Nitrous oxide	—
a) Basin	IS 4267 : 1967	Catheter, oral, endotracheal	—
b) I.V.	IS 5880 : 1970	Catheter, endotracheal, nasal	—
c) Towel	—	Forceps, endotracheal for introducing endotracheal tube	IS 8312 : 1977
d) Test tube	—	Face masks	IS 6190 : 1971
Stethoscope	IS 3391 : 1965	Laryngoscope	IS 4113 (Part 1 and 2) : 1986
Syringes, single use and reusable type	IS 3236 : 1992 IS 10258 : 1995 IS 11400 : 1985	Mouth gag (Mason)	IS 7627 : 1975
Slippers	IS 10702 : 1992	Spray, laryngeal ( MacIntoch type )	IS 7885 : 1985
Scissors:		Tube, endotracheal	IS 6581 : 1972
a) Bandage, Lister's	IS 6252 : 1971	<b>F-4 PHYSIO-THERAPY AND ELECTROTHERAPY</b>	
b) Stitch cutting	IS 4513 : 1968	Short wave diathermy	—
c) Episiotomy	IS 7103 : 1973	Microwave diathermy	—
d) Curved and straight	IS 9146 : 1979	Ultrasonic apparatus (sonostat)	IS 13020 (Part 1) : 1991
Speculum, sim's	IS 6112 : 1971	Electro-stimulating machine	IS 11331 : 1985
Step stool	—	Paraffin wax lamp	—
Table:		Ultra violet lamp Kromeyer lamp Infra red rays lamp	} IS 10550 : 1983
a) Obstetric, labour	IS 6083 : 1971	Hydrocollator	
b) Examination	IS 4787 : 1968	Suspension therapy apparatus with accessories — 1 set	—
Trolley:		Shoulder wheel	IS 5665 : 1982
a) Patients	IS 4036 : 1967	Static cycle (child and adult)	IS 6205 : 1982
b) Dressing	IS 4769 : 1968	Hubbard tank	—
Torch	IS 2083 : 1991	Parallel bar ( height and width adjustable )	IS 2462 : 1981
Trays	IS 3992 : 1982 IS 3993 : 1993		
Tubes:			
a) Ryles	—		
b) Foetus	—		
Thermometer, rectal	IS 3055 (Part 1) : 1994		

Skate exercised board	IS 10833 : 1984
Mat crutches	IS 5143 : 1988
Quadriceps table	
a) Children's walker	IS 6099 : 1991
b) Folding walker	—
c) Rollator height weight walkers	IS 13017 : 1991
d) Adult size light weight walker aid made of aluminium tubing	IS 13017 : 1991
Grip exercise board of hard wood	IS 10833 : 1984
Forearm stabilizers	—
Pedo cycle of paraplegics	—
Lumber traction apparatus (Scot traction frame) complete with accessories	—
Crutches:	
a) Adjustable elbow crutches	IS 5143 : 1988
b) Adjustable guardrumped walking aid	—
c) Adjustable walking sticks	IS 5145 : 1969
d) Adjustable elbow and shoulder crutches	IS 5143 : 1988
e) Adjustable traugh crutches	—
Postural training mirror	—
Adjustable iron weights for cervical traction	IS 5796 : 1970
Duplen chest and floor pulley, weight adjustable	—
Sliding seat for exercise of lower limbs with 6 springs, adjustable	—
Quadricep board reneft for knee bending exercise	—
Push up block made of one piece teak wood	IS 8492 : 1985
Iron dumb-bells weight 1/2 kg, 2 kg, 5 kg, 10 kg	—
Post knee guard splint with four cuffs and knee streps made of iron strips	—
Post knee guard splint with four cuffs and knee streps made of iron strips, adult size	—

Wheel chairs (folding)	IS 8086 : 1991
Neck sling canvas	—
Wheel chair	IS 6571 : 1991
Ankle stirrup canvas	—

## G HOSPITAL SUPPORT SERVICES

### G-1 KITCHEN

Bowl, wash	IS 3994 : 1993
Chair, steel, office type (Part 1) :	IS 3499 : 1985
Cans, 100 litre	—
Clock	IS 5160 : 1969
Cooking range with oven	IS 4760 : 1992
Fryer (deep fat)	IS 10263 : 1982
Gas burners (domestic)	IS 4246 : 1992
Kitchen knife	IS 3546 : 1966
Plates for serving	IS 3258 : 1980
Platform scales	IS 1435 : 1991
Potato peeler	IS 13836 : 1993
Rack for utensils	IS 1883 : 1983
Refrigerator	IS 1476 : 1979, IS 1474 : 1959
Sink units with work top (Part 5) :	IS 2556 : 1994
Spoons, stainless steel	IS 990 : 1982
Strainers	IS 1516 : 1972
Table with marble top	—
Table, office type	IS 3498 : 1993 IS 8126 : 1993
Trolley for hot food	IS 10264 : 1982
Table cloth	IS 858 : 1981
Tableware	IS 1961 : 1968, IS 9220 : 1979
Towels	IS 854 : 1991
Tumblers	IS 3424 : 1985
Trays, food	IS 3258 : 1980

### G-2 CENTRAL STERILE SUPPLY

Buckets, stainless steel	IS 4768 : 1981
Basin, wash (Part 4) :	IS 2556 : 1994
Bowls, wash	IS 3994 : 1993
Bottles, wide mouth	IS 1106 : 1986
Brush, nail	IS 5080 : 1969
Chairs, office type (Part 1) :	IS 3499 : 1985

Catheter, rubber, all sizes	IS 7523 : 1974	Proctoscopes	—
Catheterization sets	—	Pint measure	—
Cans	IS 7394 : 1984	Sink units with work area tops	IS 2556 ( Part 5 ) : 1994
Cabinet, steel	IS 3312 : 1984	Stitch removing sets:	
Cabinet instruments	IS 6877 : 1977	a) Forceps	—
Dressing sets:		b) Scissors	IS 4513 : 1968
a) Suture needles	IS 9165 : 1992	Sterilizer, steam (autoclave)	IS 3829 ( Part 1 ) : 1999, IS 3829 ( Part 2 ) : 1978, IS 3829 ( Part 3 ) : 1985
b) Artery forceps	IS 3644 : 1992, IS 3645 : 1992	Sterilizer, hot air	IS 3119 : 1978
c) Scalpel blades	IS 3319 : 1995	Scissors:	
Funnel	IS 1541 : 1978	a) General type	IS 989 : 1982
Forceps:	IS 10231 : 1982	b) Mayo's	IS 9146 : 1979
a) Artery	IS 3644 : 1992, IS 3645 : 1992	Sponge, nylon	—
b) Dissecting	IS 3643 : 1992	Screws clamp	—
c) Allis	IS 7388 : 1992	Speculum	IS 3788 : 1966, IS 5377 : 1969, IS 5906 : 1970, IS 6112 : 1971
Gloves	IS 4148 : 1989	Suction apparatus	IS 4533 : 1995
Gloves box	—	Stop cock, three-way	IS 1996 : 1962
Handle for B.P. blade	IS 3319 : 1995	Rack, steel	IS 1883 : 1983
Hypodermic needle:		Tubes:	
a) Single use, all sizes	IS 10654 : 1991	a) Foetus tube	—
b) Reusable type, all sizes	IS 3317 : 1983	b) Stomach tubes	—
Hand towel	IS 854 : 1991	c) Ryles tubes	—
Hypodermic syringes:		d) Tracheostomy	IS 8432 : 1977
a) Single use, all sizes	IS 10258 : 1995	Trays	IS 3992 : 1982, IS 3993 : 1993
b) Reusable type, all sizes	IS 3236 : 1992, IS 11400 : 1985	Towel clip	IS 4066 : 1967
I.V. sets ( preferably single use type )	IS 9824 ( Part 2 ) : 1995, IS 9824 ( Part 3 ) : 1996	Trocar cannula	IS 12271 : 1988
Irrigation sets:		Trace dilators	—
a) Syringe	IS 3237 ( Part 6 ) : 1986	Trolley, closed and ordinary	IS 9133 : 1979
b) Catheter	IS 7523 : 1974	Table, office type	IS 3498 : 1993, IS 8126 : 1993
Kidney tray	IS 3992 : 1982	Tracheostomy sets	—
Medicine glass	IS 3998 : 1982	Venesection sets	—
Lumber puncture sets	—	Wrapper	—
Needle:		Waste paper baskets	IS 3762 : 1979
a) Spinal	IS 7350 : 1974		
b) Sternal, puncture	—	<b>G-2.1 Episotomy Tray</b>	
c) Liver, biopsy	IS 7387 : 1974	Bowl, stainless steel	IS 3994 : 1993
d) Aspirating	—	Forceps, dissecting	IS 3643 : 1992
e) Aneurysm	IS 8340 : 1977		
f) Sharpener	—		
g) Holder	IS 7994 : 1976, IS 10599 : 1992, IS 10615 : 1983		

Scissors, episiotomy	IS 7103 : 1973	Catheter, rubber, plain	IS 5680 : 1969
Sponge holder	IS 10638 : 1983	Forceps:	
Syringes and needles	IS 3236 : 1992, IS 3317 : 1983, IS 10258 : 1995, IS 10654 : 1991, IS 11400 : 1985	a) Artery	IS 3644 : 1992
		b) Bowel	—
		Gynae sheet	IS 4135 : 1974
		Kidney tray	IS 3992 : 1982
		Scissors, ordinary	IS 4513 : 1968, IS 9146 : 1979
<b>G-2.2 Suture Tray</b>		Sponge holder	IS 10638 : 1983
Forceps:		Table, obstetric, labour	IS 6083 : 1971
a) Dissecting	IS 3643 : 1992	Tray with wrapper	IS 3993 : 1993
b) Artery, mosquito type	IS 3644 : 1992		
Needle, suture	IS 9165 : 1992	<b>G-2.6 Forceps Tray</b>	
Needle holder	IS 12841 ( Part 1 to 4 ) : 1989	Bowl, wash	IS 3994 : 1993
		Brain crusher	—
Syringe, single use and reusable type	IS 3236 : 1992, IS 10258 : 1995, IS 11400 : 1985	Forceps:	
Scalpel with blade	IS 3319 : 1995	a) High with weight	—
Scissors, suture	—	b) Low	—
Spinal sheet with hole	—	c) Vacuum	—
Tray with wrapper	IS 3992 : 1982, IS 3993 : 1993	d) Artery	IS 3644 : 1992, IS 3645 : 1992
Towel	IS 854 : 1991	Gynae sheet	IS 4135 : 1974
<b>G-2.3 Baby Tray</b>		Kidney tray	IS 3992 : 1982
Bowl, stainless steel	IS 3994 : 1993	Sponge holder	IS 10638 : 1983
Forceps:		Scissors	IS 4513 : 1968, IS 9146 : 1979, IS 10414 : 1982, IS 10984 : 1984
a) Dissecting	IS 3643 : 1992		
b) Artery	IS 3644 : 1992	<b>G-2.6 Craniotomy Set</b>	
Kidney tray	IS 3992 : 1982	Cannula, dreus smith	—
Mucus suction with catheter	IS 6373 : 1971	Catheter, metal	IS 6960 : 1973
Scissors:		Forceps, high	—
a) Ordinary	IS 4513 : 1968, IS 9146 : 1979	Hook, embryotomy	—
b) Cord cutting	IS 7117 : 1973	Perforator skull	IS 10172 : 1982
Thread for cord tying	—	Scissors, craniotomy	—
<b>G-2.4 Resuscitation Tray for New Born Babies</b>		<b>G-2.7 General Instruments Sets</b>	
Mucus suckers	IS 6373 : 1971	Forceps:	
Ambu bag	IS 5602 : 1970	a) Artery, mosquito, straight and curved	IS 3644 : 1992
Oxygen mask	IS 6190 : 1971	b) Kocher's pattern	IS 8040 : 1992
Endotracheal tubes	IS 6581 : 1972	c) Allis, tissue	IS 7388 : 1992
Laryngoscope	IS 4113 ( Parts 1 and 2 ) : 1986	d) Babcock's pattern	IS 8584 : 1992
		e) Hernia ring	—
Suction catheters	IS 5680 : 1969	f) Dennis browne	IS 7579 : 1992
<b>G-2.5 Delivery Tray</b>		g) Dissecting	IS 3643 : 1992
Bowl for placenta	—	Handle for B.P. Blade	IS 3319 : 1995

Handle for B.P. Blade	IS 3319 : 1995	Desargen gallstone scoop	—
Needle holder	IS 7994 : 1976, IS 10599 : 1992, IS 10615 : 1983, IS 12841 (Parts 1 to 4) : 1989	flexible set	—
		<b>G-2.9 Gastrectomy Set</b>	
		Twins gastrectomy clamp	—
		<b>G-2.10 Kidney Set</b>	
Needle, aneurism	IS 8340 : 1977	Bandales kidney clamp (different sizes)	—
Retractors:		Double angle pedicals clamp	—
a) Langenback's pattern	IS 8855 : 1978	Kidney pedicle clamp	—
b) Czemy's pattern	IS 8854 : 1978	Kaheys stone holding forceps	—
c) Morison's pattern	—	Peristeam elevator (curved and straight)	—
d) Durham's pattern	—	Bone holding forceps	IS 6371 : 1971
e) Volkman's pattern	IS 11640 (Part 6) : 1987	Bone cutter (single/double action)	IS 6233 : 1977
f) Deaver's pattern	IS 8965 : 1978	Bone nibbler	IS 6484 : 1972
Suction nozzle, for suction appartus	—	<b>G-2.11 Burr Hole Set</b>	
Sponge holder	IS 10638 : 1983	Hudson brace with rerjators and burrs	—
Scissors:		Gigli saw guide	—
a) Mayo's pattern, straight and curved	IS 9146 : 1979	Gigli saw	IS 6187 : 1971
b) Sharp and blunt	—	Bone nibbler, curved right and left	IS 6501 : 1972, IS 6485 : 1972
c) Wire cutting	—	Double action bone nibbler	IS 6484 : 1972, IS 6486 : 1972
d) Metzenbourn's pattern	IS 7972 : 1987	Periosteal elevator, curved and straight	IS 9041 : 1979
Towel clips	IS 4066 : 1967	Duraeylestor	—
<b>G-2.7 Leparatomy Set</b>		Fine suction nozzle	—
Clamp:		Fine rubber catheter	IS 7523 : 1974
a) Payer's, crushing	IS 7665 : 1975	20 ml syringes	IS 3236 : 1992
b) Intestinal, non-crushing	IS 7502 : 1974	Dural hook, sharp and blunt	IS 9904 : 1981
Forceps:		Dural scissor	—
a) Right angle	—	Ventricular needle	—
b) Allis pattern	IS 7388 : 1992	Bayonet forceps, plain	IS 8695 : 1978
c) Artery	IS 3644 : 1992	Bayonet forceps, toothed	IS 10765 : 1983
d) Babcock's	IS 8584 : 1992	Self retaining retractor	IS 9408 : 1986
e) Dissecting (Mc Indoe's)	IS 4282 : 1992	Scalp curved artery forceps	IS 8175 : 1994
f) Dissecting (Gillie's)	IS 4282 : 1992	<b>G-2.12 Chest Instruments Set</b>	
<b>G-2.8 Gall Bladder Set</b>		Allisons lung retractor	—
Gall bladder forceps	IS 7507 : 1974	Scapula retractor	IS 7434 : 1987
Choleystectomy clamps	—	Duval's lung holding forceps	IS 6778 : 1989
Bakes dilators	IS 8583 : 1991	Lung dissecting forceps, tooth and non-tooth	IS 6777 : 1989
Bladder sound	IS 9416 : 1980	Rib spreader	IS 6436 : 1989, IS 7355 : 1987
Desjardin gallstone forceps	IS 7561 : 1992		
Movos common bile duct, graduated	—		

Doin's rib raspatory, angled to right and left	—	stores	—
<b>G-2.13 Bladder Set</b>		Waste receptacle	IS 6904 : 1973
Thomson walker retractor with two blades	—	Weighing scales	IS 1853 : 1961
Millson's retractor with 6 blades	—	<b>G-4 HOUSE KEEPING EQUIPMENT</b>	
Capsule holding forceps	—	Brooms, mops, etc	—
Bladder syringes	—	Cabinet, steel	IS 3312 : 1984
Bladder sound	IS 9416 : 1980	Chairs, metal, office type	IS 3499 (Part 1) : 1985
<b>G-2.14 Endoscopy Set</b>		Meat chopper	IS 3545 : 1982
Cystoscope, examining, child and adult	IS 5738 : 1970	Meat block	—
Cystoscope, operating (catheterizing), child and adult	IS 5738 : 1970	Mop ringer with water tank	—
Ureteric catheter	IS 7523 : 1974	Table, metal, office type	IS 3498 : 1993 IS 8126 : 1993
Oesophagoscope, child and adult	IS 11319 : 1985	Trolley linen/house keeping	IS 4455 : 1967
Sigmoidoscope, child and adult	IS 5750 : 1970	Washing machine for floor cleaning	—
Bronchoscope, child and adult	IS 11318 : 1985	<b>G-5 HOSPITAL WORKSHOP</b>	
Urethral dilators	IS 6584 : 1972	Blacksmith tools	See Annex E
Rectal dilators	IS 9145 : 1979	Carpentry tools	See Annex E
Oesophageal bougies	IS 8585 : 1977	Chairs, metal, office type	IS 3499 (Part 1) : 1985
Catheters:		Common spares for repairs of trollies, wheel chairs and other traction equipment	—
Metal catheter	IS 6960 : 1973	Spray machine for painting	—
Foley's catheter	IS 11497 : 1985	Table, metal, office type	IS 3498 : 1993 IS 8126 : 1993
Rubber catheter	IS 7523 : 1974	Trolley for general medical store	IS 9133 : 1979
Malacot catheter	—	<b>G-6 HOSPITAL MORTUARY</b>	
Catheter introducer	IS 9649 : 1980	Facilities for keeping dead body cool	—
Catheter gum elastic	—	Postmortem table	IS 7036 : 1982
<b>G-3 CENTRAL STORES (MEDICAL AND GENERAL)</b>		Set of instruments for postmortem	—
Chairs, metal, office type	IS 3499 (Part 1) : 1985	Trollies	—
Instruments cabinets	IS 7760 : 1985, IS 6877 : 1977	Office equipment	—
Step stools	—	Racks	—
Steel cabinets	IS 3312 : 1984	<b>H ADMINISTRATIVE SERVICES</b>	
Storage racks	IS 1883 : 1983, IS 7070 : 1988	<b>H-1 HOSPITAL, NURSING AND GENERAL ADMINISTRATION</b>	
Table, metal, office type	IS 3498 : 1993	Audio-visual equipment (Optional)	—
Trolley for general medical	IS 9133 : 1979	Chairs, metal, office type	IS 3499 (Part 1) : 1985

Chairs, plastic moulded	IS 13713 : 1993
File cabinets	IS 3313 : 1983
Jugs for water	IS 3424 : 1985
Office equipment:	
Paper weight	—
Pen stands	—
Racks	IS 1883 : 1983, IS 7070 : 1988
Personal computer and printer (Optional)	—
Stationary items	—
Steel cabinets	IS 3312 : 1984, IS 4116 : 1988, IS 7760 : 1985
Tumblers	IS 3424 : 1985
Typewriter	—
Waste receptacles	IS 6904 : 1973

## SECTION 7 BUILDING REQUIREMENTS

### 11 BUILDING REQUIREMENTS (GENERAL)

#### 11.1 Circulation Areas

Circulation areas, such as, corridors, staircases, etc. in the hospital buildings should not be more than 40 percent of the total floor area of the building.

#### 11.2 Floor Height

The height of all the rooms in the hospital should not be less than 3.00 m measured at any point from the surface of the floor to the lowest point of the ceiling. The minimum head-room, such as, under the bottom of beams, fans and lights shall be 2.50 m measured vertical under such beam, fan or light.

**11.3** Rooms shall have, for the admission of light and air, one or more apertures, such as, windows and fan lights, opening directly to the external air or into an open verandah. The minimum aggregate areas ( *see Note* ) of such openings excluding doors, inclusive of frames, shall be not less than 20 percent of the floor area, in case such apertures are located in one wall and not less than 15 percent of the floor area, in case such apertures are located in two opposite walls at the same sill level.

NOTE — If a window is partly fixed, the openable area shall be counted.

**11.4** The architectural finishes in hospitals shall be of such quality which will help in maintenance of better hygienic conditions.

**11.5** The design of building shall ensure control of noise due to walking, movement of trollies and banging of doors, etc. Expansion joint should have a non-metallic beading finish. The doors should be openable

on both sides in operation theatre while inside at other places.

#### 11.6 Sanitary Fitments

The requirements of the sanitary fitments shall be in accordance with 17.1 of IS 10905 ( Part 1 ).

### 12 ENTRANCE AREA

#### 12.1 Physical Facilities

The hospital should have entrances as shown in the work flow analysis

#### 12.2 Pharmacy (Dispensary)

The dispensary 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 at the rate of 0.8 m<sup>2</sup> per patient. The dispensary and compounding room should have multiple dispensing windows, compounding counters and shelves. The pattern of arranging the counters and shelves shall depend on the size of the room. The medicines which require cold storage and blood required for operations and emergencies may be kept in refrigerators.

### 13 AMBULATORY CARE AREA (OPD)

#### 13.1 Waiting Spaces

Apart from the main entrance, general waiting, subsidiary waiting spaces are required adjacent to each consultation and treatment room in all the clinics. Waiting space for eye clinic should not be subjected to direct-sunlight or glare. Waiting space in the paediatric clinic should provide for minor recreation and play facilities for children.

#### 13.2 Clinics

These clinics include general, medical, surgical, ophthalmic, ENT, dental, obstetric and gynaecology, paediatrics, dermatology and venereology (optional), psychiatry (optional), neonatology (optional) and orthopaedic. The cubicles for consultation and examination in all clinics should provide for doctor's table, chair, patient's stool, follower's seat, wash basin, examination couch and equipment for examination. The clinics for infectious and communicable diseases should be located in isolation, preferably, in remote corner, provided with independent access and completely cut off from the rest of the hospital. The treatment and dressing room should be spacious enough to accommodate a medicine chest, a work counter for preparing dressings, medicines, sinks, dressing tables with screen in between and a pedal operated bin to hold soiled material.

##### 13.2.1 Medical Clinic



The clinic should have a consultation-cum-examination room depending upon the load of out-patients. The clinic should also have facilities for cardiographic examination.

#### 13.2.2 *Surgical Clinic*

The clinic should have facilities for treatment-cum-dressings. For convenience, this should be placed next to consultation-cum-examination room with adequate waiting space.

#### 13.2.3 *Eye Clinic*

The clinic should include consultation-cum-refraction and minor surgery-cum-treatment room. For testing the state of refractive power of the eye, room length not less than 6m is essential. However by use of mirror length can be reduced. Dark room should be placed close to consultation, preferably, with an inter-communicating door.

#### 13.2.4 *ENT Clinic*

The clinic should have facilities for an examination-cum-treatment sound-proof audiometry room and speech therapy. For testing the state of hearing power of ear, room length of 6 m is advisable.

#### 13.2.5 *Dental Clinic*

The dental clinic may have facilities for dental hygiene and room for patient's recovery. Consultation-cum-examination room should serve as combined purpose room for consultation, examination, dental surgery and treatment.

#### 13.2.6 *Obstetric and Gynaecological Clinic*

The clinic should include a separate reception and registration, consulting-cum-examination, treatment and clinical laboratory. The clinic should be planned close to in-patient ward units to enable them to make use of the clinics at times for ante and postnatal care. The clinic should also be at a convenient distance from other clinics in the OPD. Antenatal patients have to undergo certain formalities prior to examination by the doctors, clinical laboratory for the purpose is essential. A toilet-cum-changing room close to treatment should also be provided.

#### 13.2.7 *Paediatric Clinic*

The clinic should provide medical care for children upto the age of 12 years. Owing to risk of infection it is essential to isolate the clinic from other clinics. The clinic shall be provided with a separate treatment room for immunisation.

#### 13.2.8 *Family Welfare Clinic*

The clinic should provide educative, preventive, diagnostic and curative facilities for maternal, child

health, school health and health education. Importance of health education is being increasingly recognized as an effective tool of preventive treatment. People visiting hospital should be informed of environmental hygiene, clean habits, need for taking preventive measures against epidemics, family planning, etc. Treatment room in this clinic should act as operating room for IUCD insertion and investigation, etc.

#### 13.2.9 *Dermatology and Venereology Clinic (Optional)*

The clinic should provide diagnostic and curative facilities for dermatology, sexually transmitted disease and leprosy. The treatment rooms for dermatology and venereology may be combined, but treatment for leprosy should always be segregated. The clinic may also have facilities for superficial therapy and a skin laboratory.

#### 13.2.10 *Psychiatric Clinic (Optional)*

The facilities required for the clinic should include consultation-cum-examination room, ECT treatment room, recovery, psychologist and a social worker room. The clinic should preferably be located on ground floor to reduce the risk of suicide and accident. All rooms of the clinic shall have dado one metre high and all electrical fittings shall be protected. In ECT room the patient is subjected to electroconvulsive therapy (shock). A resuscitation (recovery) room is needed close to this room.

13.2.11 *Neonatology Clinic (Optional)* — The clinic should include a consultation-cum-examination, counselling room and waiting facilities.

#### 13.2.12 *Orthopaedic Clinic*

The clinic should include arrangements for plaster preparation, fracture treatment, besides consultation-cum-examination. For X-ray facilities the clinic should be in close proximity of radiology department, emergency and accident, in order to make the maximum use of equipment and to reduce the circulation. Plaster and splint storage room is necessary for storing plaster materials, splints and other therapeutic aids and for preparing plaster, bandages, etc. Fracture and treatment should be spacious enough to accommodate a dressing couch and a mobile X-ray unit. A recovery room adjacent to the fracture and treatment room is essential.

### 13.3 *Nursing Services*

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

#### 13.3.1 *Nursing Station for Ambulatory Care Area*

The nursing station shall be centered, such that, it serves to all the clinics from that place. The nursing

station should be spacious enough to accommodate a medicine chest, a work counter for preparing dressings, medicines, sinks, dress tables with screen in between and a pedal operated bin to hold soiled material.

### 13.3.2 *Side Laboratory*

For quick diagnosis of blood, urine, etc, a side laboratory is required.

### 13.3.3 *Injection Room*

For administering injection to patients a central injection room should be provided in conjunction with the dispensary.

### 13.3.4 *Social Service*

A social worker room to render service to the patients may be provided.

## 14 DIAGNOSTIC SERVICES

### 14.1 *Imaging*

#### 14.1.1 *General*

The role of imaging department should be radio-diagnosis and ultrasound. Radiology is a fast developing technique and the department should be designed keeping in view the future scope for expansion. The department should be located at a place which is easily accessible to both OPD and wards and also to operation theatre department.

14.1.2 As the department deals with high voltage, presence of moisture in the area should be avoided. Radiography is a device of making pictorial records by means of X-ray at sensitized film whereas fluoroscopy is direct visualization through medium of X-ray.

#### 14.1.3 *Radiography and Fluoroscopy Room*

The size of the room shall depend upon the type of equipment installed. The room should have a sub-waiting area with toilet facility and a change room facility, if required. Fluoroscopy room shall be completely cut off from direct light through provisions of air-locks. The radiography units should be operated from separate control room or behind a lead mobile protection screen of 1.5 mm lead equivalent wherever necessary.

#### 14.1.4 *Film Developing and Processing Room (Dark Room)*

Film developing and processing (dark room) shall be provided in the department for loading, unloading, developing and processing of X-ray films. The room should be provided between a pair of radiography rooms so that new and exposed X-ray films may be easily passed through the cassette pan with 2.0 mm lead backing installed in the wall in between. The

room should be completely cut off from direct light through provision of airlock. For ventilation, exhaust fans shall be provided. The room shall have a loading bench (with acid and alkali resistant top), processing tank, washing tank and a sink. Flooring for the room shall be acid and alkali proof.

#### 14.1.5 *Film Drying and Storing*

There shall be some space available for film drying and storing near the room for film developing.

#### 14.1.6 *Treatment Room*

Treatment room of the department shall include space for the infra X-ray and contact therapy apparatus which is of simple character, occupies little space and may not need elaborate structural requirements. Gynaecology and ophthalmology clinic make use of this apparatus.

#### 14.1.7 *Ultrasound*

Ultrasound, a scanning device of imaging department, also requires a small room for use mainly by gynaecology and obstetric clinic.

### 14.2 *Clinical Laboratory*

The clinical laboratory should be provided with 600 mm wide and 900 mm high bench of length about 2 m per technician and to full width of room for pathologist incharge of the laboratory. Each laboratory bench shall have laboratory sink with swan neck fittings, reagent shelving, gas and power point and under-counter cabinet. Top of the laboratory bench shall be of acid, alkali proof material.

#### 14.2.1 *Sample Collection Room*

For quick diagnosis of blood, urine, etc, a small sample collection room facility shall be provided.

### 14.3 *Blood Bank*

The function of blood bank is to maintain current blood groupings, to collect, store and issue blood. Blood bank shall be in close proximity to pathology department and at an accessible distance to operation-theatre department, intensive care units and emergency and accident department. The units shall include a reception-cum-waiting room, bleeding room, laboratory for groupings, recovery room and a room for storage of blood.

#### 14.3.1 *Bleeding Room*

Blood taking also requires a comfortable reception with toilet. Bleeding room should be quiet and not a thoroughfare and should be divided into cubicles for privacy. A rest room shall also be provided for donors to rest and take light refreshment before returning home.

## 15 INTERMEDIATE CARE AREA (INPATIENT NURSING UNITS)

### 15.1 General

Inpatient nursing units, that is, ward concept is fast changing due to policy of early ambulation and infact only a few patients really need to be in the bed. The basic considerations in placement wards is to ensure sufficient nursing care, locating them according to the needs of treatment, in respective medical discipline and checking cross infection. Nursing care should fall under the following categories:

- a) *General Wards* — Wards of traditional type for patients who are not critically ill but need continuous care or observation and have to be in bed. These include wards for medical, surgical, ENT and eye disciplines, etc.
- b) *Private Wards (Optional)* — Wards for patients who are in a position to pay high towards medicare. These may be air conditioned or non-air conditioned.
- c) *Wards for Specialities* — Wards for patients who are suffering and need hospitalization in particular specialities, like, paediatric, obstetric, gynaecology, dermatology, venereology, psychiatry, etc.

### 15.2 Location

Wards should be relegated at the back to ensure quietness and freedom from unwanted visitors. General ward units are of repetitive nature and hence they may be conveniently piled up vertically one above the other which will result in efficiency, easy circulation and service economy. Wards for particular specialities, however, should be located closer to their respective department to act as self-contained centres. In such case, post-operative ward may be placed horizontal to operation theatre and maternity ward to the delivery rooms.

### 15.3 Ward Unit

In planning a ward, the aim should be to minimize the work of the nursing staff and provide basic amenities to the patients within the unit. The distances to be travelled by a nurse from bed areas to treatment room, pantry, etc, should be kept to the minimum. The ward unit may be made of desired number of beds at the rate of 7 m<sup>2</sup> per bed and should be arranged with a minimum distance of 2.25 m between centre of two beds and a clearance of 200 mm between the bed and wall. In wards, the width of doors shall not be less than 1.2 m and all wards should have dado to a height of 1.2 m. Isolation unit in the form of one single bedded room per ward unit should be provided to cater for certain cases requiring isolation from other patients. An area

of 14 m<sup>2</sup> for such rooms to contain a bed, bedside locker, easy chair for patient, a chair for the visitor and a built in cupboard for storing clothes is recommended. This isolation unit should have separate toilet facilities.

### 15.4 Type of Wards

Wards may be either nightingale or rigs type. In the former, beds are arranged at right angle to the wall with the feet towards the central corridor and in the latter 4 to 6 beds are arranged parallel to the longitudinal walls and facing each other. A rig type ward is recommended from socio-environment's stand point.

### 15.5 General Ward Facilities

Each ward unit should have a set of ward ancillaries as given below:

- a) Nursing station (Nurses desk and clean utility),
- b) Ward pantry,
- c) Ward store,
- d) Treatment room,
- e) Sluice room/dirty utility,
- f) Day space, and
- g) Patient conveniences.

#### 15.5.1 Nursing Station

It should be positioned in such a way that the nurse can keep a continuous watch over the patients. The room shall contain a cupboard to hold materials which might otherwise, be placed in clean utility room, a drug cupboard, sink, chair, small table and space for call system points and records. Separate toilet facilities for nurses shall be provided.

#### 15.5.2 Ward Pantry

For collection and distribution of meals and preparation of beverages, a ward pantry shall be provided. It should be fitted with a hot-water supply geyser, refrigerator and a hot case and should have the facilities for storing cutlery, etc.

#### 15.5.3 Ward Store

A store shall be provided for storing the weekly requirements of clothes, bed sheets, and other ward equipment.

#### 15.5.4 Treatment Room

Major dressing and complicated treatments should be carried out in the treatment room to avoid the risk of cross-infection.

#### 15.5.5 Sluice Room

A room shall be provided for emptying and cleaning bed pans, urine bottles, and sputum mugs, disposing

of used dressing and similar material, storage of stool and urine specimen, etc.

#### 15.5.6 Day Space

For those patients who are allowed to sit and relax, a room shall be provided in the ward unit itself. It should afford an easy access to patients and supervision by the nursing staff and should be provided with easy chairs, book shelves and small tables. It may also serve as dining space.

#### 15.5.7 Patient Conveniences (Sanitary requirements)

Toilet for an individual room (single or two bedded) in a ward unit shall be 3.5 m<sup>2</sup> comprising a bath, a wash basin and WC. Toilet common to serve two such rooms shall be 5.25 m<sup>2</sup> to comprise a bath, a WC in separate cubicle and a wash basin. For multiple beds of a ward unit, requirement of fitments are given below:

Item	Numbers Required
Water closets	1 for every 8 beds or part thereof (male)
	1 for every 6 beds or part thereof (female)
Ablution taps	1 for each water closet plus
	1 water tap with drainage arrangement in the vicinity of water closet
Urinals	1 for every 12 beds or part thereof (for male only)
Wash basins	1 for every 12 beds or part thereof
Baths	1 bath with shower for every 12 beds or part thereof
Bed pan washing sinks	1 for each ward in dirty utility and sluice room
Cleaner's sinks and sinks/ slab for cleaning mackintosh	1 for each ward in dirty utility and sluice room
Kitchen sinks and	1 for each ward in ward dishwashers pantry

#### 15.6 Ward Unit for Particular Specialities

The provisions recommended for general ward unit shall apply with additional requirements as described below.

##### 15.6.1 Obstetric Ward

Maternity service includes antenatal care, delivery and postnatal care. Before and after child birth, the patient

should be attended to in the out-patient clinic and during labour the patient is confined to bed in the nursing unit. The out-patient clinic should also provide diagnostic facilities for gynaecology patients. Since these services are cyclic, it is recommended to place the in-patient unit close to the out-patient clinic making it easily accessible to the child bearing women. The in-patient unit shall comprise (a) delivery suite unit, (b) nursing unit, and (c) neonatal unit, and they should be placed on the same floor.

##### 15.6.2 Nursing Unit

Nursing unit for the department shall include antenatal, postnatal, eclampsia, post operative, and gynaecological units.

##### 15.6.3 Prenatal Beds

The female patients admitted for treatment during the period of their pregnancy should be housed in a ward separate from those who have undergone the labour. The ward would need the same facilities as recommended for general ward in 15.5. The ward should also have provision for a fully equipped laboratory. The treatment room should also be bigger in such ward unit.

##### 15.6.4 Toxemia Beds

These patients fall under prenatal and postnatal category. The ward should either form part of antenatal nursing unit or placed close to delivery suite unit. Number of beds shall be one in every 20 postnatal beds. Single and two-bedded rooms with attached toilet should be provided.

##### 15.6.5 Postnatal beds

Patients who have had normal deliveries and do not suffer any complication, calling for medical care are admitted to this ward. The size of the ward depends upon whether the babies are kept with the mothers or all babies are kept in the central nursery. It is recommended that in case of normal deliveries, the healthy babies may be kept with the mothers in the baby cradle attached to the bed side of the patients. The unit should be close to maternity ward. Area per bed for such cases may be suitably increased.

##### 15.6.6 Post-operative Bed

The post-operative bed for the patients who have undergone operation shall be able to accommodate two beds per delivery room including operating delivery room. Area per bed may be 8.75 m<sup>2</sup>.

##### 15.6.7 Gynaecological Beds

The proportion of gynaecological beds should be 40 percent of the maternity beds.

#### 15.7 Neonatal Unit

Well being of the new born becomes the responsibility

of the paediatrician. A separate neonatal unit for premature, high risk babies, and sick new borns should be established as independent unit. Facilities like nurseries, nurses station, formula-cum-breast feeding room, store, photo therapy and a sluice room should be provided. Since the number of maternity beds for 100 bedded hospital do not afford a separate neonatal unit, these facilities are recommended to be clubbed into paediatric ward.

#### 15.7.1 *Premature Nursery*

Premature babies in individual heated bassinets or incubators with temperature and humidity control should be accommodated and oxygen outlet installed. Floor space per bassinet may be 3.5 m<sup>2</sup>.

#### 15.7.2 *Septic Nursery*

Babies known to be or suspected of being infected shall be kept in an isolated room with cubicles. They should be segregated from normal and premature nurseries. Floor space per bassinet should be 3.5 m<sup>2</sup>.

#### 15.7.3 *Normal Nursery*

An independent nursery for normal and healthy babies is not considered essential. However, a nursery with 2 to 4 bassinets may be provided. Floor space per bassinet may be 3.5 m<sup>2</sup>.

#### 15.7.4 *Nurses Station*

It should be so placed so as to ensure continuous watch over the nurseries and to render efficient treatment to infants.

#### 15.7.5 *Photo Therapy Room*

A room with one transparent side wall for observation of babies in natural light.

#### 15.7.6 *Formula Room*

A formula room shall be provided close to the nursery for the preparation of food for the infants who are not fully breastfed. The size of the room shall be increased, if washing and sterilizing of feeding bottles is done in the room.

### 16 INTENSIVE CARE UNIT

#### 16.1 **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 of

total medical and surgical patients in a hospital. The unit shall not have less than 4 beds nor more than 12 beds.

#### 16.1.1 *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, continuous electric supply, heating, ventilation, air-conditioning and efficient lift services. A good natural light and pleasant environment would also be of great help to the patients and staff as well.

#### 16.1.2 *Floor Space*

All beds in this unit are to be arranged in glazed cubicles with centrally located nurses station. The area per bed in this unit should be 10.5 m<sup>2</sup> to cater for free movement, check against infection and at time utilization of specialized bulky equipment.

#### 16.1.3 *Planning of the Ward*

The basic consideration in planning should be to have:

- a) A fully visible patients area with adequate space all round for positioning of specialized equipment,
- b) A central nurses station with minimum possible walking distance,
- c) An adequate stock of medicines, and
- d) Distinct clean and dirty utility area where movement of staff and supplies could be minimized.

### 16.2 **Facilities**

Various facilities required for the unit are given below.

#### 16.2.1 *Nurses Station ( Control Console )*

This should be planned as an open area with adequate counter space for writing, telephones, patients monitoring equipments, X-ray viewing boxes, etc. Open planning should be adopted for visibility as well as audibility of the entire patients area. A small pantry space along with the nurses station may be helpful.

#### 16.2.2 *Clean Utility Area*

This should contain all the essential supplies, linen, medicines, lotions, syringes, trolleys, various mobile equipment, etc.

#### 16.2.3 *Equipment Room and Intensive Care Laboratory*

This should provide for immediate clinical tests and

investigations. All essential testing equipment should be housed in it.

## 17 CRITICAL CARE AREA (EMERGENCY SERVICES)

17.1 The department is also termed as casualty wing for emergent cases. As such, 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. It should be located in the complex of the OPD for reasons of easy accessibility and sharing medical facilities with the OPD. It shall be placed on ground floor of the hospital. Guidance to the route from main gate to the doorways of reception hall shall be ensured. The physical facilities of the department should include accommodation for out-patients and in-patients in one block with a separate entrance for ambulance, all facilities for reception and immediate treatment, operation theatres, the necessary supporting services and resuscitation services.

17.2 There should be an easy ambulance approach with adequate space for free passage of vehicles and covered area for alighting patients. The arrangements for reception of trolleys and walking patients should be close by but independent. It should serve as waiting space also for persons accompanying the patients. As the accident cases are closely associated with police department, a separate room for their use shall be provided in this area.

Separate toilet facility for men and women should be provided nearby.

## 18 THERAPEUTIC SERVICES

### 18.1 Operation Theatre Staff

Operation theatre suite is technically a therapeutic aid in which a team of surgeons, anaesthetists, nurses and sometime pathologist and radiologist operate upon or care for the patients. For optimum utilization of the operation/labour room units, the department, as a rule, should not be reserved rigidly for use by a particular department.

#### 18.1.1 Location

The location of the department should be decided on the following factors:

- a) Quite environment;
- b) Freedom from noise and other disturbances;
- c) Freedom from contamination and possible cross infection;
- d) Maximum protection from solar radiation; and
- e) Convenient relationship with surgical ward, intensive care unit, radiology, pathology, blood bank and CSSD.

This unit also needs constant specialized services, such as, piped suction and medical gases, electric supply, heating, air-conditioning, ventilation and efficient lift service, if the theatres are located on upper floors.

#### 18.1.2 Zoning

A high degree of asepsis should be ensured to provide appropriate environment for staff and patients. For this, the passing of the patients and the equipment through long corridors and other unprotected areas should be avoided. Zoning shall be done to keep the theatres free from micro organisms. There may be four well defined zones of varying degree of cleanliness.

- a) Protective zone (A) — Containing mostly theatre supply, changing rooms, pre-anaesthetic examination room and waiting area.
- b) Clean zone (B) — It includes the casualty theatres, recovery wards, plaster room, theatre pack preparation and pre-operative wards.
- c) Aseptic or sterile zone (C) — It consists of operation theatres, anaesthetic and sterilizing rooms. It shall provide the highest degree of antibacterial precautions.
- d) Disposal or dirty zone (D) — The soiled instruments and dressings are transacted through this area for washing and re-sterilization or disposal. It includes the sluice rooms and disposal corridor.

#### 18.1.3 Circulation

Normally there are three types of traffic flow, namely, (a) patients, (b) staff, and (c) supplies. All these should be properly channelized.

#### 18.1.4 Patients

Patients are brought from the ward and should not cross the transfer area in their ward clothing which is a great source of infection. Change-over of trolleys should be effected at a place which will link up both pre-operative and post operative rooms.

#### 18.1.5 Preparation Room (Theatre pack)

It should be a work room for arranging for sutures, dressings and all other surgical items.

#### 18.1.6 Pre-operative Room

Patients are transferred from respective ward to this room for premedication before operation. Segregation of male and female patients is to be taken care of. The room should have toilet facility separately for men and women.

#### 18.1.7 Post-operative Resting

Immediately after the operation, the patients are kept in

a room situated close to the operation theatre/labour room until such time they are found fit to be taken to their parent ward.

#### 18.1.8 Staff

The doctors, nurses, technicians and class IV staff should enter from a separate route and through a set of change rooms and an air lock. They should communicate with the sterile corridor. A shoe change and gowning space near the air lock shall also be provided. Separate change rooms for doctors, nurses and technicians shall be provided, with arrangement for lockers, bathing and toilet facilities.

#### 18.1.9 Supplies

All sterile goods should have a separate entry point reaching the clean corridor independently; soiled material should be taken out by the exit only. Store rooms shall be provided for storing theatre supplies like stretcher, trolley, sterile material, medical gas cylinders, instruments and linen.

#### 18.1.10 Operation Theatre

Operating room should be made dust-proof and moisture proof. Corners and junctions of walls, floor and ceiling should be rounded to prevent accumulation of dust and to facilitate cleaning. All doors should be two leaf type with a minimum 1.5 m width and shall have self closing devices. Natural lighting shall be provided with fixed light windows (where there is no operable shutter) and general illumination by means of fluorescent tubes. The operating room/labour room should be normally arranged in pairs with scrub-up and instrument sub-sterilizing room.

#### 18.1.11 Scrub-up

In this room the operating team washes and scrub-up their hands and arms, put on their sterile gown, gloves and other covers before entering the operation theatre. 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 with elbow or knee operated taps are essential.

#### 18.1.12 Instrument Sterilization

It is a sub-sterilizing unit attached to the operation theatre limiting its role to operating instruments on an emergency basis only. This room should be equipped with high pressure, quick sterilization apparatus. Instrument cupboard and a work bench with sinks are essential.

#### 18.1.13 Disposal

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.

#### 18.2 Delivery Suite Unit

The delivery suite unit should include the facilities of accommodation for various facilities as given below.

##### 18.2.1 Reception and Admission

As the patients, many a time, arrive in a state of imminent delivery, the registration counter should open into an entrance lobby.

##### 18.2.2 Examination and Preparation Room

The room should accommodate one or two beds and provide space for the doctor with the work table, etc. A change room with attached toilet facilities shall be provided with the examination cubicle. The provision of lockers for keeping personal clothes and articles may also be kept in view.

##### 18.2.3 Labour Room

Labour rooms should preferably be in the form of cubicles; two labour rooms for every 10 maternity beds. As birth follows labour, the labour rooms should be placed adjacent to delivery rooms. The examination-cum-preparation room and labour room may be combined into a single room.

##### 18.2.4 Delivery Rooms

Delivery rooms shall be of the following types:

- a) Clean delivery room for normal deliveries, and
- b) Operation theatre for caesarean.

One delivery bed shall be provided for every 10 maternity beds. The size of the operating theatre for caesarean shall be the same as that of the operating theatres. Sterility and other requirements shall be maintained like operation theatres department.

##### 18.2.5 Sterilizing Rooms

The facilities for sterilization of the equipment in the delivery suites should be provided. This room should house a work counter, sink, small high-speed pressure instruments sterilizer, etc.

##### 18.2.6 Sterile Store Room

Close to the sterilizing room, a room to store sterile material should be provided. It should be provided with issue windows.

##### 18.2.7 Scrubbing Room

Scrub-up facilities may be provided between two delivery rooms similar to those provided in operation theatre department.

### 18.2.8 *Dirty Utility*

For collection and transferring of blood stained clothes to the laundry unit, a sluice room shall be provided. It is desirable to install mechanical aid for washing of bed pans, urinals, etc.

### 18.2.9 *Other Facilities*

Other facilities for the unit should include change rooms for doctors, nurses, technicians, anaesthesia room, pack preparation rooms, instrument and linen storage, recovery room, etc, and these should be identical to operation theatres department. They should be arranged in the same degree of asepsis.

## 18.3 *Physiotherapy*

The physiotherapy department provides treatment facilities to patients suffering from crippling diseases and disabilities. Treatments may be classified as physical and electro-therapy, hydro-therapy and exercise (gymnasium).

### 18.3.1 *Location*

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. Availability of natural light, fresh air and adequate ventilation are of extreme importance for the department. Physiotherapy demands complete privacy. Accommodation should therefore be provided in the form of booths. A long room provided with curtains which could be drawn to form cubicles and afford adequate privacy should be suitable.

### 18.3.2 *Physical and Electro-therapy*

The nature of treatment and equipment employed may be of various kinds, such as, electrotherapy, thermotherapy, traction and massage, etc. Each cubicle for treatment should be large enough for the physiotherapist to work on either side of table without having to move the equipment. Cubicles should be divided by curtains for easy movement of wheel chairs and stretcher.

### 18.3.3 *Gymnasium*

A large hall shall be provided for group or individual exercise activities including parallel bars, pulleys, wall bars, ladders, etc. It is used extensively by patients in wheel chairs, crutches or with walking sticks or other disabilities which limit motion and ability. It may be oblong in shape with the wall bar and climbing bars fixed to one of the long walls. Mirrors should be provided for correcting walking disabilities. Flooring of gymnasium shall be wooden parquet type.

### 18.3.4 *Office*

The physiotherapist should have an office room where

patients may be interviewed and examined. In addition, there shall be sufficient space for staff to maintain clinical records of patients.

### 18.3.5 *Store*

Articles and equipment which are not in use should have space for storage.

### 18.3.6 *Toilets*

Separate toilet facility for patients should be provided and they should be designed to accommodate wheel chairs.

## 19 HOSPITAL SERVICES

### 19.1 *Hospital Kitchen (Dietary Service)*

The dietary service of a hospital is an important therapeutic tool. Properly rendered, it shall be a clinical and administrative means of stimulating rapid recovery of patients thereby shortening patients stay in the hospital. The aim in hospital catering, therefore, should be to produce well cooked, appetizing and nutritious food as economically as possible. The achievement of this objective shall depend on administrative efficiency of the staff, planning department, layout and equipment. The hospital kitchen could be alone responsible for spreading diseases if hygienic conditions are not maintained. Use of cooking gas and electricity will definitely improve the hygienic conditions of a hospital kitchen. Good natural light and ventilation is of great importance

#### 19.1.1 *Location*

Location should ensure that any noise or cooking odours emanating from the department do not cause any inconvenience to the other departments. At the same time the location should involve the shortest possible time in delivering food to the wards.

### 19.2 *Central Sterile and Supply Department (CSSD)*

Sterilization, being one of the most essential services in a hospital, requires the utmost consideration in planning. Centralization increases efficiency, results in economy in the use of equipment and ensures better supervision and control. The materials and equipment dealt in CSSD should fall under three categories; (a) those related to the operation theatre department, (b) common to operating and other departments, and (c) pertaining to other departments alone.

#### 19.2.1 *Location*

Since 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.

### 19.3 *Hospital Laundry*

Laundering of hospital linen shall satisfy two basic



considerations, namely, cleanliness and disinfection. Manual/electric laundry can be provided with necessary facilities for drying, pressing and storage of soiled and cleaned linens. Air change in laundry area may be 10 times per hour.

#### 19.4 Medical and General Stores

Hospital stores comprise of stores needed for various hospital functioning and should be grouped centrally in the service complex. The area for each type of stores should be utilized to the optimum by providing built in shelves at different heights according to the type of stores. Adequate ventilation and security arrangement shall be provided. Stores should also be provided with fire fighting arrangement.

#### 19.5 Mortuary

Mortuary shall provide facilities for keeping of dead bodies and conducting autopsy. It should be so located that the dead bodies can be transported unnoticed by the general public and patients. Relatives and mourners should have direct access to the mortuary. The mortuary shall have facilities for walk in cooler, post mortem area, etc.

### 20 ENGINEERING SERVICES

#### 20.1 Electrical Engineering

##### 20.1.1 Sub Station and Generation

Electric sub station to accommodate transformer, HT/LT panel and generating set to meet the electrical load requirements of the hospital shall be provided. Standby generators should be provided to generate power requirements for essential and critical areas of the hospital, like, OT/LR, radiology department, etc.

##### 20.1.2 Illumination

For requirements for daylighting in hospital building reference may be made to IS 2440. The level of illumination for various visual tasks shall be provided in accordance with IS 4347. General lighting of all hospital areas except stores and lavatory block shall be fluorescent. In other areas, it is recommended to be of incandescent lamps. Electrical installations except for artificial illumination, shall be in accordance with IS 732, IS 8030 and SP 30.

##### 20.1.3 Shadowless Light

Shadowless light (mountable type) shall be provided in operation theatres and operating delivery rooms whereas in other areas, where operation of minor nature are carried out, shadowless light (portable type) shall be provided.

##### 20.1.4 Emergency Lighting

Emergency portable light units should also be provided

in the wards and departments to serve as alternative source of light in case of power failure.

#### 20.1.5 Lighting Protection

The lighting protective system of hospital buildings shall be in accordance with IS 2309.

#### 20.1.6 Call Bells

Call bells (*see* IS 2268) 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.

#### 20.1.7 Ventilation

Ventilation of hospital buildings may be achieved by either natural supply and natural exhaust of air, or natural supply and mechanical supply and mechanical exhaust of air. The following standards of general ventilation are recommended for various areas of the hospital building based on maintenance of required oxygen, carbon-dioxide and other air quality levels and for the control of body odours when no products of combustion or other contaminants are present in the air or anaesthesia gases, which are highly explosive, are present:

<i>Space to be Ventilated</i>	<i>Air Changes Per Hour</i>
Bathrooms/toilets	6 - 12
Wards	8 - 12
Kitchens	6 - 9
Operation theatres	15 - 20
Other air-conditioned spaces	8 - 10

20.1.8 The general principles of natural ventilation shall be in accordance with IS 3362. Where adequate air changes cannot be obtained by natural ventilation, mechanical ventilation either by exhaust of air or by positive ventilation (like fans and other equipment) or combination of the two shall be provided. Fans and other equipment for mechanical ventilation may be located in convenient positions having regard to the intake of fresh air, accessibility for maintenance and noise control. Exhaust fans shall be provided in walls on one side or in the attic or roof. The exhausted air shall not find entry back into hospital.

#### 20.2 Mechanical Engineering

##### 20.2.1 Airconditioning and Room Heating

Air conditioning units shall be provided only for the operation theatre and neonatal unit. However, air-coolers or hot air convectors may be provided for the comfort of the patients and the staff depending upon the local needs.

##### 20.2.2 Refrigeration

Hospitals shall be provided with water coolers

(see IS 1475) and refrigerator (see IS 1474) in wards and departments depending upon the local needs.

### 20.3 Public Health Engineering

#### 20.3.1 Water Supply

Arrangements shall be made to supply 10 000 litres of potable water per day to meet all the requirements (including laundry) except fire fighting. Storage capacity for 2 days requirements should be on the basis of the above consumption. Round the clock water supply shall be made available to all wards and departments of the hospital. Separate reserve emergency overhead tank shall be provided for operation theatre. Necessary water storage overhead tanks with pumping/boosting arrangement shall be made. The laying and distribution of the water supply system shall be according to the provisions of IS 2065. Cold and hot water supply piping should be run in concealed form embedded into wall with full precautions to avoid any seepage.

#### 20.3.2 Drainage and Sanitation

The design, construction and maintenance of drains for waste water, surface water, sub-soil water and sewerage shall be in accordance with IS 1742.

**20.3.2.1** The selection, installation and maintenance of sanitary appliances shall be in accordance with IS 2064. The design and installation of soil, waste and ventilating pipes shall be as given in IS 5329.

#### 20.3.3 Waste Disposal System

The guidelines provided by Central Pollution Control Board, Ministry of Environment and Forests shall be followed.

### 20.4 Fire Protection

#### 20.4.1 First-aid Fire-fighting Equipment

Adequate first-aid, fire-fighting equipment shall be provided and installed in accordance with IS 2190.

#### 20.4.2 Fire Alarm

Manually-operated fire alarm facilities shall be provided in hospital buildings which sound an audible alarm in administrative department, engineering service offices, fire office and such other locations where gongs, sirens, whistles or bells do not disturb the patients. Distinctive visual or audible alarm shall be installed at each nurses duty room, duty station and used for fire alarm purpose only. Hospitals may also be equipped with automatic fire alarm system conforming to IS 2189.

### 20.5 Telephone and Intercom

Wiring in conduits shall be provided to give telephone

outlet points in rooms, wards and departments as desired by the authority. An intercom system may also be provided in addition to the telephones. The communication system should be adequately designed in hospitals for alerting all persons charged with duties for patient care and all employees of the hospital who are within the building in the event of emergency. The alerting system shall be capable of being operated from intercoms, telephones and the administrative office.

### 20.6 Medical Gas

Medical gases comprise mainly of oxygen and nitrous oxide. The cylinder supply should be made available.

**20.6.1** Medical gas supply through centralized gas supply system may also be considered.

### 20.7 Cooking Gas

For better hygienic conditions use of LPG (liquefied petroleum gas) cylinders is recommended.

### 20.8 Laboratory Gas

LPG (liquefied petroleum gas) cylinders should be made available for pathological lab. Alternatively, kerosene stove may be made available where gas supply is not available.

### 20.9 Building Maintenance

An office-cum-store should be provided to handle day to day maintenance work of the hospital building

### 20.10 Horticulture

To maintain the hospital landscaping, a room to store garden implements, seeds, etc, should be provided.

### 20.11 Parking

Sufficient parking space shall be provided.

## 21 ADMINISTRATIVE SERVICES

### 21.1 General Administration

The administration department of hospital shall essentially look after organized group of people, patients and resources in order to accomplish the task of providing best patient care. It shall have two main sections, namely, general and medical records. General section shall deal with all matters relating to overall upkeep of the hospital as well as welfare of its staff and patients. Medical records section shall function for professional work in diagnosis, treatment and care of patients.

## ANNEX A

( Clause 4.2.11 )

## FUNCTIONAL PROGRAMME

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
<b>Entrance Area</b>			<u>420.00</u>	<u>4.20</u>
<i>Main Entrance</i>		<u>25.0</u>	<u>175.00</u>	<u>1.70</u>
	Entrance lobby		49.00	
	— Trolley park	1.5		
	— General waiting	3.5		
	— Public utilities	2.0		
	Reception		63.00	
	— Enquiry counter	1.5		
	— Registration counter	1.5		
	— Queuing tracks	2.0		
	— Records	2.0		
	— Staff accommodation	2.0		
	Dispensary		63.00	
	— Issue counter	2.0		
	— Queuing track	2.0		
	— Drugs store	2.0		
	— Staff accommodation	3.0		
<i>OPD/Emergency Entrance</i>		<u>25.0</u>	<u>175.00</u>	<u>1.75</u>
	Entrance Lobby		49.00	
	— Trolley park	1.5		
	— General waiting	3.5		
	— Public utilities	2.0		
	Reception		70.00	
	— Enquiry counter	1.5		
	— Admission/discharge	1.5		
	— Cash counter	1.5		
	— Queuing track	2.0		
	— Staff accommodation	2.0		
	Arcade		35.00	
	— Chemist	2.0		
	— Gift, book shop	1.5		
	— Snack counter	1.5		

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Control Room		21.00	
	— Security/fire	1.5		
	— Ambulance station	1.5		
<i>Service/Staff Entrance</i>		<u>10.0</u>	<u>70.00</u>	<u>0.70</u>
	Landing Bay		42.00	
	— Trolley park	2.0		
	— Temporary storage	2.0		
	— Central receipt/inspection	2.0		
	Staff Utilities		28.00	
	— Lockers	1.5		
	— Change rooms	1.5		
	— Time keeping	1.0		
<b>Ambulatory Care Area Clinics (Required)</b>			<u>931.00</u>	<u>9.31</u>
		<u>86.0</u>	<u>602.00</u>	<u>6.02</u>
	General Clinics		56.00	
	— Exam/Consultation (2)	4.0		
	— Sub-waiting	4.0		
	Medical		56.00	
	— Exam/Consultation (2)	4.0		
	— Sub-waiting	4.0		
	Surgical		56.00	
	— Exam/Consultation (2)	4.0		
	— Sub-waiting	4.0		
	Ophthalmic		112.00	
	— Exam/Consultation (2)	4.0		
	— Refraction	2.0		
	— Orthoptics	2.0		
	— Treatment	2.0		
	— Minor surgery/Treatment	3.0		
	— Sub-waiting	3.0		
	ENT		77.00	
	— Exam/Treatment (2)	4.0		
	— Audiometry	2.0		
	— Speech therapy	2.0		
	— Sub-waiting	3.0		

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	<b>Dental</b>		63.00	
	— Exam/Treatment (1)	3.0		
	— Dental laboratory	2.0		
	— Dental X-ray	1.0		
	— Sub-waiting	3.0		
	<b>OBS and Gynae</b>		70.00	
	— Exam/Consultation (2)	4.0		
	— Toilet/Change	2.0		
	— Sub-waiting	4.0		
	<b>Paediatric</b>		56.00	
	— Exam/Consultation (2)	2.0		
	— Counselling	2.0		
	— Treatment (Immunization)	2.0		
	— Sub-waiting	2.0		
	<b>Orthopaedics</b>		56.00	
	— Exam/Consultation	2.0		
	— Plaster room	2.0		
	— Splint store	1.0		
	— Sub-waiting	3.0		
<i>Clinics (Optional)</i>		<u>25.00</u>	<u>178.00</u>	<u>1.78</u>
	<b>Dermatology and Veneriology</b>		63.00	
	— Exam/Consultation	2.0		
	— Skin lab	2.0		
	— Treatment	2.0		
	— Sub-waiting	3.0		
	<b>Psychiatry</b>		66.50	
	— Exam/Consultation	2.0		
	— Counselling	2.0		
	— ECT and recovery	2.5		
	— Sub-waiting	3.0		
	<b>Neonatology</b>		49.00	
	— Exam/Consultation	2.0		
	— Counselling	2.0		
	— Sub-waiting	3.0		
<i>Nursing Services</i>		<u>21.5</u>	<u>150.50</u>	<u>1.50</u>

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Nursing station		35.00	
	— Nurse's desk	2.0		
	— Clean utility	1.5		
	— Dirty utility	1.5		
	Diagnostic		63.00	
	— Sample collection	1.5		
	— Side laboratory	2.5		
	— Electrocardiography	2.0		
	— Sub-waiting	3.0		
<b>Diagnostic Services</b>			<u>595.00</u>	<u>5.95</u>
<i>Imaging</i>		<u>50.0</u>	<u>350.00</u>	<u>3.50</u>
	Reception		63.00	
	— Enquiry/Registration	2.0		
	— Queuing track	2.0		
	— Records	2.0		
	— Sub-waiting	3.0		
	General X-ray		63.00	
	— Radiography room	4.00		
	— Control room	1.00		
	— Change room	1.00		
	— Sub-waiting	3.00		
	Special X-ray		87.50	
	— Radiography room	5.0		
	— Control room	1.0		
	— Change room	1.0		
	— Toilet	1.0		
	— Barium preparation	1.5		
	— Sub-waiting	3.0		
	Ultrasound		35.00	
	— Ultrasound	2.0		
	— Change room	1.0		
	— Sub-waiting	2.0		
	Support		52.50	
	— Dark rooms	2.0		
	— Film/Chemical store	1.5		
	— Reporting	2.5		
	— Archive/Record	2.0		

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	<b>Staff</b>		49.00	
	— Consultatnt (1)	2.0		
	— Residents	2.0		
	— Technicians	2.0		
	— Staff toilets	1.0		
<i>Clinical Laboratories</i>		<u>25.0</u>	<u>175.00</u>	<u>1.75</u>
	<b>Reception</b>		49.00	
	— Enquiry/Record	2.0		
	— Sample receipt and preparation	2.0		
	— Sub-waiting	2.0		
	— Toilets	1.0		
	<b>Laboratories</b>		56.00	
	— Emergency	2.0		
	— Immnopathology	2.0		
	— Histology	2.0		
	— Cytology	2.0		
	<b>Support</b>		35.00	
	— Washing and disinfection	2.0		
	— Media preparation	1.5		
	— Chemical/Glassware store	1.5		
	<b>Staff</b>		35.00	
	— Pathologist (1)	2.0		
	— Technicians	2.0		
	— Staff toilets	1.0		
<b>Blood Bank</b>		<u>10.0</u>	<u>70.00</u>	<u>7.00</u>
	— Reception/Waiting	2.0		
	— Bleeding	2.0		
	— Refreshment/Donors rest room	2.0		
	— Blood lab/Storage	2.0		
	— Doctors rest room	2.0		
<b>Intermediate Care Area</b>			<u>1575.00</u>	<u>15.75</u>
<i>General Wards (2 × 30 Beds)</i>		<u>120.00</u>	<u>840.00</u>	<u>8.40</u>
	<b>Nursing station</b>		168.00	
	— Nurses desk	(2) 3.0		
	— Clean utility	(2) 3.0		
	— Pantry	(2) 3.0		

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	— Store	(2)	3.0	
	— Treatment room	(2)	4.0	
	— Dirty utility/Sluice room	(2)	4.0	
	— Janitor	(2)	1.0	
	— Trolley park	(2)	3.0	
	<b>Patient beds</b>		<b>476.00</b>	
	— General beds 2 × 24		48.0	
	— Isolation beds 2 × 2		8.0	
	— Progressive beds 2 × 4		12.0	
	<b>Patient conveniences</b>	(2)	9.0	63.00
	<b>Day space</b>	(2)	9.0	63.00
	<b>Staff accommodation</b>			70.00
	— Nurse duty <sup>1)</sup>	(2)	5.0	
	— Doctors duty <sup>1)</sup>	(2)	5.0	
<b>Private Ward-A/C Non A/C 9 Beds (Optional)</b>			<b>40.0</b>	<b>280.00</b>
	<b>Nursing station</b>			<b>84.00</b>
	— Nurses desk		1.5	
	— Clean utility		1.5	
	— Pantry		1.5	
	— Treatment room		2.0	
	— Dirty utility/Sluice room		2.0	
	— Janitor		0.5	
	— Trolley park		1.5	
	<b>Patient beds</b>			<b>143.00</b>
	— Single beds <sup>1)</sup> 5		12.5	
	— Double beds <sup>1)</sup> 2		8.0	
	<b>Visitors bay</b>		2.5	17.50
	<b>Staff accommodation</b>			35.00
	— Nurses duty <sup>1)</sup>		2.5	
	— Doctors duty <sup>1)</sup>		2.5	
<b>Maternity Ward 15 Beds</b>			<b>40.0</b>	<b>280.00</b>
	<b>Nursing station</b>			<b>84.00</b>
	— Nurses desk		1.5	
	— Clean utility		1.5	

<sup>1)</sup> With attached toilet.



<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	— Pantry	1.5		
	— Store	1.5		
	— Treatment	2.0		
	— Dirty utility	2.0		
	— Janitor	0.5		
	— Trolley park	1.5		
	Maternity beds		133.00	
	— Pre natal beds 5	6.0		
	— Toxemia beds 2	3.0		
	— Delivery beds 4	4.0		
	— Post natal beds 4 with baby bassinets	6.0		
	Patient conveniences	2.0	14.00	
	Day space	2.0	14.00	
	Staff accommodation		35.00	
	— Nurses duty <sup>1)</sup>	2.5		
	— Doctors duty <sup>1)</sup>	2.5		
<b>Paediatric Ward 6 BEDS</b>		<u>25.0</u>	<u>175.00</u>	<u>1.75</u>
	Nursing station		77.00	
	— Nurses desk	1.0		
	— Clean utility including formula room	1.5		
	— Pantry	1.5		
	— Store	1.5		
	— Treatment room including phototherapy	2.0		
	— Dirty utility/Sluice	1.5		
	— Janitor	0.5		
	— Trolley park	1.5		
	Patient beds		49.00	
	— Paediatric beds 4	5.0		
	— Premature nursery 1	1.0		
	— Septic nursery 1	1.0		
	— Patient conveniences	1.5	10.50	
	— Day space	1.5	10.50	
	Staff accommodation		28.00	

<sup>1)</sup> With attached toilet.

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i> m <sup>2</sup>	<i>Area per</i> <i>Bed</i> m <sup>2</sup>
(1)	(2)	(3)	(4)	(5)
	— Nurses duty <sup>1)</sup>	2.0		
	— Doctors duty <sup>1)</sup>	2.0		
<b>Intensive Care Area</b>			<u>196.00</u>	<u>1.96</u>
<i>Patient Care Area</i>		<u>28.0</u>	<u>196.00</u>	<u>1.96</u>
	Nursing station		87.50	
	— Central console	3.0		
	— Clean utility	1.5		
	— Pantry	1.5		
	— Store	1.5		
	— Equipment park	1.5		
	— Dirty utility	1.5		
	— Janitor	0.5		
	— Trolley park	1.5		
	Patient beds		66.50	
	Intensive care beds 4	6.0		
	— Patient conveniences	1.5		
	— Relatives bay	2.0		
	Staff accommodation		42.00	
	— Nurses duty <sup>1)</sup>	2.5		
	— Doctors duty <sup>1)</sup>	2.5		
	— Staff change	1.0		
<b>Critical Care Area</b>			<u>469.00</u>	<u>4.69</u>
<i>Emergency Service</i>		<u>67.0</u>	<u>469.00</u>	<u>4.69</u>
	Nursing station		150.50	
	— Nurses desk	1.5		
	— Clean utility	1.5		
	— ECG room	2.0		
	— Pantry	1.5		
	— Reception	2.0		
	— Medico-legal specimen and record	1.5		
	— Emergency lab	3.0		
	— Mobile X-ray	3.0		
	— Dirty utility	1.5		
	— Janitor	0.5		
	— Trolley park	1.5		
	— Stores	2.0		

<sup>1)</sup> With attached toilet.

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Exam/Resuscitation 6 beds		147.00	
	— Waiting	3.0		
	— Social worker	1.5		
	— Police/Legal recording	1.5		
	— Drug dispensing	2.0		
	— Examination cubicles	3.0		
	— Emergency beds 3	4.5		
	— Observation beds 3	4.5		
	— Patient conveniences	1.0		
	Operating suite		119.00	
	— Emergency OT	4.5		
	— Scrub/Gowning	1.5		
	— Instrument sterilization	1.5		
	— Dirty utility	1.5		
	— Anaesthesia	2.0		
	— Plaster room	3.0		
	— Treatment room	3.0		
	Staff accommodation		52.50	
	— Nurses duty <sup>1)</sup>	2.5		
	— Doctors duty <sup>1)</sup>	2.5		
	— Ambulance driver/nursing assistant <sup>1)</sup>	2.5		
<b>Therapeutic Services</b>			<u>875.00</u>	<u>8.75</u>
<b>Operation Theatre Suite</b>		<u>63.0</u>	<u>441.00</u>	<u>4.41</u>
	Protective zone		161.00	
	Staff changing (3 units)			
	— Lockers	2.0		
	— Change rooms/Staff resting	3.5		
	— Rest room	2.0		
	— Pantry	1.5		
	— Staff conveniences	1.5		
	Staff accommodation			
	— Nurses' duty <sup>1)</sup>	2.5		
	— Anaesthetist's duty <sup>1)</sup>	2.5		
	Theatre supply (stores)	3.0		
	— Pre-anaesthesia exam	2.0		
	— Waiting	2.5		

<sup>1)</sup> With attached toilet.

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Clean zone		154.00	
	Nursing station			
	— Nurses desk	1.5		
	— Clean utility	1.5		
	— Dirty utility	1.5		
	— Janitor	0.5		
	— Trolley park	1.5		
	Patient beds			
	— Pre-anaesthesia 2	3.0		
	— Recovery 2	3.0		
	— Patient conveniences	1.5		
	— Theatre pack prep	2.0		
	— Frozen section	1.0		
	— Plaster room	2.5		
	— X-ray with dark room	2.5		
	Sterile zone		112.00	
	— Operating theatres(2)	9.0		
	— Scrub/Gowning	2.0		
	— Instrument trolley layup	2.0		
	— Anaesthesia	3.0		
	Disposal zone		14.00	
	— Dirty utility	2.0		
<b>Delivery Suite</b>		<u>40.0</u>	<u>280.00</u>	<u>2.80</u>
	Patient area		84.00	
	Nursing station			
	— Nurses desk	1.5		
	— Clean utility	1.5		
	— Janitor	0.5		
	— Trolley park	1.5		
	Patient beds			
	— Exam/Prep 3	3.0		
	— Recovery 2	3.0		
	— Patient conveniences	1.0		
	Staff area		21.00	
	Staff changing ( 3 units )			
	— Lockers	1.5		
	— Change rooms	1.5		

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Staff conveniences		21.00	
	— Pantry	1.5		
	— Staff conveniences	1.5		
	Delivery area		154.00	
	— Labour rooms (3)	4.5		
	Delivery rooms (2)	6.0		
	— Scrub/Gowning	2.0		
	— Clean utility	2.0		
	— Anaesthesia	2.0		
	— Nursery-baby bath	1.0		
	— Dirty utility	1.5		
	— Sterile storage	1.5		
	— Instruments and linen	1.5		
<i>Physiotherapy</i>		<u>22.0</u>	<u>154.00</u>	<u>1.54</u>
	Therapies		119.00	
	— Reception/Record	2.0		
	— Electrotherapy	3.0		
	— Thermotherapy	1.5		
	— Massage therapy	1.5		
	— Gymnasium	5.0		
	— Traction	2.0		
	— Store	2.0		
	Staff accommodation and patient waiting		35.00	
	— Physiotherapist with attached toilet	2.5		
	— Sub-waiting with toilet	2.5		
<b>Hospital Services</b>			<u>700.00</u>	<u>7.00</u>
<i>Hospital Kitchen</i>		<u>22.0</u>	<u>154.00</u>	<u>1.54</u>
	Entrance		10.50	
	— Lockers	0.5		
	— Staff change	1.0		
	Bulk storage	1.5	10.50	
	Day store	1.0	7.00	
	Pre-preparation	1.0	7.00	
	Preparation	2.0	14.00	

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Cooking/Baking	4.5	31.00	
	Loading/Distribution	1.5	10.50	
	Washing		17.50	
	— Trolley wash	1.5		
	— Utensil and pot wash	1.0		
	Utensil storage	1.5	10.50	
	Trolley park	1.5	10.50	
	Staff accommodation		17.50	
	— Dietician	1.5		
	— Dietetics staff	1.0		
	Staff conveniences	1.0	7.00	
<i>Central Sterile Supply</i>		<u>20.0</u>	<u>140.00</u>	<u>1.40</u>
	Entrance		10.50	
	— Lockers	0.5		
	— Staff change	1.0		
	Dirty receipt	1.0	7.00	
	Washing/Disinfection	2.5	17.50	
	Assembly	1.5	10.50	
	Sterilization	2.0	14.00	
	Sterile storage	3.0	21.00	
	Delivery/Distribution	1.5	10.50	
	Trolley wash	1.0	7.00	
	Trolley park	1.5	10.50	
	Bulk store	1.5	10.50	
	Staff accommodation		17.50	
	— CSS supervisor	1.5		
	— Technical staff	1.0		
	Staff conveniences	0.5	3.50	
<i>Hospital Laundry</i>		<u>22.0</u>	<u>154.00</u>	<u>1.54</u>
	Entrance		10.50	
	— Lockers	0.5		
	— Staff change	1.0		
	Dirty receipt	1.0	7.00	
	Sorting/Weighing	1.5	10.50	

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Sluicing	1.0	7.00	
	Washing	2.5	17.50	
	Hydro-extraction	2.0	14.00	
	Tumble drying	1.5	10.50	
	Flat work ironing	1.5	10.50	
	Hand pressing	1.0	7.00	
	Clean storage	1.0	7.00	
	Mending	1.0	7.00	
	Delivery/Distribution	1.5	10.50	
	Trolley wash	1.0	7.00	
	Trolley park	1.0	7.00	
	Staff accommodation		17.50	
	— Laundry supervisor	1.5		
	— Laundry staff	1.0		
	Staff conveniences	0.5	3.50	
<i>Medical &amp; General Stores</i>		<u>26.0</u>	<u>182.00</u>	<u>1.82</u>
	Surgical and dressing	4.5	31.50	
	Linen and livery	2.0	14.00	
	Stationery and printing	2.0	14.00	
	Chemical and glassware	2.0	14.00	
	Sanitation and misc	2.0	14.00	
	Furniture	4.5	31.50	
	Issue	2.0	14.00	
	Trolley park	1.5	10.50	
	Awaiting condemnation	1.5	10.50	
	Staff accommodation		28.00	
	— Stores officer	1.5		
	— Secretarial staff	1.0		
	— Store keepers	1.5		
<i>Mortuary</i>		<u>10.0</u>	<u>70.00</u>	<u>0.70</u>
	Autopsy	3.0	21.00	
	Body store	1.5	10.50	
	Body wash	1.5	10.50	

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Staff accommodation	1.5	10.50	
	Public utilities	0.5	3.50	
	Sub-waiting	2.0	14.00	
<b>Engineering Services</b>			<u>392.00</u>	<u>3.92</u>
<i>Electrical</i>		<u>14.0</u>	<u>98.0</u>	<u>0.98</u>
	Sub-station	4.5	31.50	
	Standby generator	4.5	31.50	
	U.P.S.	1.5	10.50	
	Workshop	1.5	10.50	
	Switch rooms	2.0	14.00	
<i>Mechanical</i>		<u>14.0</u>	<u>98.00</u>	<u>0.98</u>
	Lifts	5.0	35.00	
	Air-conditioning	5.5	38.50	
	Boilers	1.5	10.50	
	Solar energy	—	—	
	Air handling unit	2.0	14.00	
<i>Public Health</i>		<u>8.0</u>	<u>56.00</u>	<u>0.56</u>
	Water supply	2.0	14.00	
	Sewage disposal	2.0	14.00	
	Solid waste disposal	2.0	14.00	
	Incineration	2.0	14.00	
<i>Fire Protection</i>		<u>4.5</u>	<u>31.50</u>	<u>0.31</u>
	Fire detection	1.5	10.50	
	Fire fighting ( water storage )	2.0	14.00	
	Fire extinguishers	1.0	7.00	
<i>Communication</i>		<u>4.5</u>	<u>31.50</u>	<u>0.32</u>
	Supervisor	1.0	7.00	
	Telephone exchange	2.0	14.00	
	Public address system	1.5	10.50	
<i>Medical Gases and Vacuum</i>		<u>7.0</u>	<u>49.00</u>	<u>0.49</u>
	Landing bay	1.5	10.50	
	Manifold	2.5	17.50	



<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Compressor	1.5	10.50	
	Vacuum	1.5	10.50	
<i>Workshop</i>		<u>4.0</u>	<u>28.00</u>	<u>0.28</u>
	Electro-mechanical	2.0	14.00	
	Bio-medical	2.0	14.00	
<b>Administrative/Ancillary Services</b>			<u>448.00</u>	<u>4.48</u>
<i>Hospital Administration</i>		<u>9.0</u>	<u>63.00</u>	<u>0.63</u>
	Medical superintendent	3.0	21.00	
	Secretarial staff	3.0	21.00	
	Sub-waiting	3.0	21.00	
<i>Nursing Administration</i>		<u>7.0</u>	<u>49.00</u>	<u>0.49</u>
	Matron	2.0	14.00	
	Secretarial staff	3.0	21.00	
	Sub-waiting	2.0	14.00	
<i>General Administration</i>		<u>12.0</u>	<u>84.00</u>	<u>0.84</u>
	Personnel office	2.0	14.00	
	Accounts office	2.5	17.50	
	Purchase office	2.5	17.50	
	Secretarial staff	3.0	21.00	
	Sub-waiting	2.0	14.00	
<i>Hospital Information</i>		<u>4.5</u>	<u>31.50</u>	<u>0.31</u>
	Supervisor	1.5	10.50	
	Computer room	3.0	21.00	
<i>Security/Fire</i>		<u>2.5</u>	<u>17.50</u>	<u>0.17</u>
	Supervisor	1.5	10.50	
	Secretarial staff	1.0	7.00	
<i>Mobile Transport</i>		<u>2.5</u>	<u>17.50</u>	<u>0.17</u>
	Supervisor	1.5	10.50	
	Secretarial staff	1.0	7.00	
<i>House Keeping</i>		<u>2.5</u>	<u>17.50</u>	<u>0.17</u>
	Supervisor	1.5	10.50	
	Secretarial staff	1.0	7.00	
<i>Library/Conference</i>		<u>14.0</u>	<u>98.00</u>	<u>0.98</u>

<i>Zone Service</i>	<i>Functions</i>	<i>Module</i>	<i>Area</i>	<i>Area per Bed</i>
(1)	(2)	(3)	m <sup>2</sup> (4)	m <sup>2</sup> (5)
	Supervisor	1.5	10.50	
	Secretarial staff	1.5	10.50	
	Index/Issue counter	2.0	14.00	
	Storage racks	2.0	14.00	
	Reading bays	1.5	10.50	
	Conference room	4.0	28.00	
	Reprographics	1.5	10.50	
<i>Medical Records</i>		<u>10.0</u>	<u>70.00</u>	<u>0.70</u>
	Receipt	1.0	7.00	
	Compilation desk	1.5	10.50	
	Indexing/Coding	1.0	7.00	
	Statistical analysis	1.5	10.50	
	Issue	1.0	7.00	
	Stationery store	1.0	7.00	
	Staff accommodation		17.50	
	— Medical records officer	1.5		
	— Secretarial staff	1.0		
	Staff conveniences	0.5	3.00	

**ANNEX B***( Clause 4.2.11 )***SUMMARY OF AREA REQUIREMENT PER BED**

<i>Particulars</i>	<i>Area Per Bed (m<sup>2</sup>)</i>
Entrance area	4.20
Ambulatory	9.31
Diagnostic services	5.95
Intermediate care area	15.75
Intensive care area	1.96
Critical care area	4.69
Therapeutic services	8.75
Hospital services	7.00
Engineering services	3.92
Administrative/Ancillary services	4.48
	<hr/>
	66.01
	<hr/>
Add 40 percent for circulation space including corridors	26.40
	<hr/>
	92.41
	<hr/>
Say	92.50

**ANNEX C***( Clause 9.1 )***MANPOWER REQUIREMENTS FOR NURSING STAFF**

Normal Wards	1 Staff nurse/Nursing sister for every 6 beds
Special Wards	1 Staff nurse/Nursing sister for every 4 beds
Nursery	1 Staff nurse/Nursing sister for every 2 beds
ICU (Intensive Care Unit)	1 Staff nurse/Nursing sister for every bed
Labour Room	1 Staff nurse/Nursing sister for every board/table
Operation Theatre	
a) Major	Two staff nurses/nursing sisters for every functional operation table, including recovery room
b) Minor	One staff nurse/nursing sister for every functional operation table
Casualty	
a) Casualty (Main) Attendance upto 100 patients per day	3 staff nurses/nursing sisters for 24 hours, that is, 1 per shift

Thereafter for every additional attendance of 35 patients	1 Staff nurse/nursing sister
b) Orthopaedics Attendance upto 45 patients per day	3 Staff nurses/nursing sisters for 24 hours, that is, 1 per shift
Thereafter for every additional attendance of 15 patients per day	1 Staff nurse/nursing sister
c) Gynae/Obstetrics Attendance upto 40	3 Staff nurses/nursing sisters for 24 hours
Thereafter for every additional attendance of 15 patients	1 Staff nurse/nursing sister

**Out Patients Department (Injection Room):**

Attendance upto 100 patients per day	1 Staff Nurse
Attendance from 120 to 220 patients per day	2 Staff Nurses
Attendance from 221 to 320 patients per day	3 Staff Nurses
Attendance from 321 to 420 patients per day	4 Staff Nurses

**Out Patients Departments :**

<i>Name of Department</i>	<i>Number of Staff Nurses/Nursing Sisters</i>
Blood bank	1
Paediatric	2
Immunisation work	2
Eye	1
Ear	1
Pre-anaesthetic	1
Cardiac laboratory	1
Bronchoscopy laboratory	1
Vaccination anti rabies	2
Family planning	1
Medical	1
Surgical	1
Dental	1
Central sample collection centre	1
Orthopaedics	2
Gynae	2
X-ray	3
Skin	2
V.D. Centre	2
Neurology	1
Microbiology Infection Control	2
Psychiatry	1

NOTE — In addition to the 10 percent reserve as per rules, 45 percent post may be added for offices where services are provided for 365 days in a year.

## ANNEX D

( Clauses 10.1 and B-3 )

## INDIAN STANDARDS ON EXTRACTION FORCEPS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
4976 : 1987	Forceps, extraction, dental, upper anteriors, No. 1 and 2 ( <i>first revision</i> )	6859 : 1972	Forceps, extraction, dental, upper root, wide beak
4977 : 1968	Forceps, extraction, dental, lower molar, Hawk's Bill No.1	6866 : 1986	Forceps, extraction, dental, upper wisdom tooth ( <i>first revision</i> )
6824 : 1972	Forceps, extraction, dental, lower wisdom tooth	6867 : 1972	Forceps, extraction, dental, upper root, medium beak
6825 : 1972	Forceps, extraction, dental, upper cuspids and bicuspid	6868 : 1991	Dental instruments — Dental extraction forceps — Specification ( <i>first revision</i> )
6826 : 1972	Forceps, extraction, dental, lower incisors, cuspids and bicuspid, left	8044 : 1976	Forceps, extraction, dental, lower molar, children
6827 : 1972	Forceps, extraction, dental, upper molars, left	8045 : 1976	Forceps, extraction, dental, lower incisors and canines, children
6828 : 1972	Forceps, extraction, dental, upper molars, right	8046 : 1976	Forceps, extraction, dental, upper incisors
6856 : 1972	Forceps, extraction, dental, upper root, narrow beak	8047 : 1976	Forceps, extraction, dental, upper molar, children
6858 : 1972	Forceps, extraction, dental, lower incisors, cuspids and bicuspid		

## ANNEX E

[ Clause 10.1 (G-5) ]

## INDIAN STANDARDS ON BLACKSMITH AND CARPENTRY TOOLS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
402 : 1990	Cold chisels ( <i>third revision</i> )	2586 : 1986	Bench vices ( <i>second revision</i> )
510 : 1986	Blacksmith's anvils ( <i>second revision</i> )	2852 : 1998	Carpenter's augers ( <i>first revision</i> )
552 : 1965	Smith bits ( <i>revised</i> )	3587 : 1989	Rasps ( <i>second revision</i> )
663 : 1980	Adzes ( <i>second revision</i> )	3650 : 1981	Combination side cutting pliers ( <i>second revision</i> )
703 : 1999	Axes ( <i>second revision</i> )	4017 : 1992	Carpenter's squares ( <i>first revision</i> )
841 : 1983	Steel hammers ( <i>second revision</i> )	4057 : 1986	Carpenters' metal bodied bench planes
842 : 1968	Smith swages ( <i>first revision</i> )	5169 : 1986	Hacksaw frames ( <i>first revision</i> )
843 : 1968	Smith tongs ( <i>first revision</i> )	6891 : 1973	Carpenters' auger bits
844	Screw drivers:	6892 : 1973	Blacksmiths' bick-iron
( Part 1 ) : 1979	Technical supply conditions ( <i>second revision</i> )	7041 : 1973	Carpenter's plain brace
( Part 2 ) : 1979	Dimensions ( <i>second revision</i> )	7958 : 1976	Head vices
( Part 3 ) : 1979	Dimensions for screw drivers for recessed head screws ( <i>second revision</i> )	8202 : 1999	Carpenter's wooden bodied planes ( <i>first revision</i> )
846 : 1968	Smith's flatters ( <i>first revision</i> )	10860 : 1984	Bead planes and bead planes iron
847 : 1968	Smith fullers ( <i>first revision</i> )	10886 : 1984	Carpenter's vice
		11832 : 1986	Cut iron and cap irons for carpenter's metal bodied planes

( Continued from second cover )

Section 6 Instruments, equipment and furniture requirements

Section 7 Building requirements

It is envisaged that above requirements will not only serve as guidelines for planning of 100 bedded hospitals but will also form the basis of development in the field to structure specific building standards for hospitals with more or less bed strength than 100 beds, with higher or lesser degree of specialization.

This standard is one of a series of Indian Standards on basic requirements for hospital planning. Part 1 of this Indian Standard has been published as given below:

IS 12433 ( Part 1 ) : 1988 Basic requirements for hospital planning : Part 1 Upto 30 bedded hospital

The other parts of this Indian Standard which will be published in due course are as follows:

Part 3 Upto 250 bedded hospital

Part 4 Upto 500 bedded non-teaching hospital

Part 5 Upto 500 bedded teaching hospital

Part 6 Upto 750 bedded teaching hospital

Part 7 Upto 750 bedded non-teaching hospital

Certain items in this standard have been indicated as optional. These items are considered desirable for optimum functioning of the hospital. However, in consideration of unfavourable logistics and non-availability of skilled manpower for providing them in the initial stages of hospital development, these have been indicated as optional.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of the test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### Amendments Issued Since Publication

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