NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

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Guidelines on Critical Care Hospital Block

PM-Ayushman Bharat Health Infrastructure Mission

Ministry of Health & Family Welfare
Government of India

Guidelines on Critical Care Hospital Block

PM – Ayushman Bharat Health Infrastructure Mission

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Government of India
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Ministry of Health and Family Welfare

Preface

Critical Care Blocks

India has made notable achievements in the Health Sector during last few years. Various health initiatives launched at the National Level by the Government of India, have played crucial role in tackling several health challenges. While life expectancy at birth has increased, infant mortality and crude death rates have greatly reduced, and diseases such as polio have been eliminated. These achievements were possible because of the collaborative efforts of the Centre and States/UTs. During the Covid-19 pandemic, this collaboration ensured effective management of the pandemic and saving precious lives.

The COVID 19 pandemic also highlighted the need of augmenting Intensive Care beds, Isolation beds, Oxygen supplies, and Ventilators to strengthen critical care, particularly at and below the district level. Public health facilities, therefore, needed further strengthening to cope with unforeseeable epidemics and other health emergencies.

With an ambitious vision to build resilient health systems in the country, the Hon'ble Prime Minister of India launched the PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) which has several components for improving public health surveillance and also strengthening critical care services through Critical Care Blocks in every district. A brief guideline in this regard has already been shared with the States and UTs. There is a need to make these units fully functional quickly.

In this context, Operational Guidelines have been prepared to provide a comprehensive and holistic view to the States/UTs in planning and designing of the Critical Care Blocks. The guidelines give suggestive location, minimum covered area, flow and processes and also the layout plans for timely operationalization of critical care services in every district of the country.

I appreciate the work done by the NHM division at MoHFW, NHSRC, other partner institutions and experts who contributed in these efforts. I believe the Principal Secretaries, Mission Directors and other state and district programme officers will find the guidelines useful in establishing Critical Care Blocks and delivery of assured critical care services to our people.

Place : New Delhi
Date : 16th March 2022

(Rajesh Bhushan)

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FOREWORD

Effective and efficient healthcare services form the core responsibility of every Nation. Since the launch of the National Health Mission, India has shown positive trends in reduction of various morbidity and mortality indicators and also in achieving the long-term health targets and attainment of SDGs. Rural Health Statistics (RHS) also indicates significant improvement in health infrastructure, including that in tribal and other underserved areas.

However, in the recent years, disease burden of the country has shown a rising trend in Non-Communicable Diseases, accidents, injuries, etc. This epidemiological transition in disease pattern and also the emergence of pandemics/disease outbreaks like COVID-19 has necessitated the need for development of appropriate health infrastructure for definitive emergency and critical care services. Provision of assured critical care services at District Hospitals will help not only in reducing the load on tertiary care facilities but also help in reducing OOPE.

The Government of India has launched the largest health infrastructure scheme, the Pradhan Mantri - Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), for establishing 100/75/50 bedded Critical Care Blocks in District Hospitals or Medical Colleges functioning in the districts. This will help in improving the capability of Districts in managing both routine and emergency critical care, and also to respond to critical care needs during any future epidemics/pandemics or any other unforeseen disasters.

I would like to express my sincere gratitude to Mr. Rajesh Bhushan, Secretary-H&FW for his continuous guidance. The efforts of the NHM team under leadership of Joint Secretary-Policy is deeply appreciated. I would also like to convey my thanks to NBCC, NPCC, HSCC and HLL-HITES for their contribution. The efforts put by NHSRC in providing technical support and in assimilation of inputs given by the experts have been pioneering in the preparation of this guideline.

I sincerely believe that this document will serve as a guidance for States /UTs and shall be utilized by the Principal Secretaries, Mission Directors, State and District health officials in establishing and operationalizing Critical Care services in the districts.

(Mr. Vikas Sheel)

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FOREWORD

Government of India (GoI) has taken several initiatives to provide the secondary care services nearer to the community by supporting States in establishing CHCs, SDH and DHs. During the surge of COVID -19 pandemic, the need of providing affordable, and quality critical care services to the patients in their close proximity also came to light. Several initiatives were taken by the central government to augment the health care infrastructure in the country by adding oxygen, ventilator and oxygen supported critical care beds, necessary equipment, and diagnostics to strengthen timely identification and mitigation of the ongoing pandemic.

Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM- ABHIM) is the flagship initiative which will help the States & UTs in further strengthening healthcare infrastructure by creation of Critical Care Hospital Blocks with 50, 75 or 100 beds in the districts, depending on population size. By establishing Critical Care Hospital Blocks at District Hospitals and Medical Colleges, the districts will be able to better treat and manage patients with contagious, infectious or critical illnesses.

The guidelines provide a comprehensive and integrated approach to the planning and design of Critical Care Blocks and will be a useful tool to all the States and UTs in establishment of critical care blocks. These CCBs will be a vital asset in improving the capacity of all States and UTs for catering to the critical care service needs of the population.

I would like to express my sincere gratitude to the Secretary (H&FW) and AS&MD (NHM) for their support and guidance in preparing these guidelines. I also deeply appreciate the contribution of NHM division at Ministry, NHSRC and other experts in developing the guideline. I believe that this document will be a guiding light for the States in planning, establishing and operationalizing Critical Care Blocks in all the districts of the country.

(Vishal Chauhan)

Abbreviations

ABG	Arterial blood gas
AHU	Air Handling Unit
CCB	Critical Care Blocks
CHC	Community Health Centres
CSS	Centrally Sponsored Scheme
CSSD	Central Sterile Services Department
DH	District Hospital
DPR	Detailed Project Report
EC	Executive Committee
ECG	Electro Cardio Gram
ETP	Effluent Treatment Plant
FAR	Floor Area Ratio
GoI	Government of India
HDU	High Dependency Unit
HEPA	High Efficiency Particulate Air
HLL	Hindustan Lifecare Limited
HR	Human Resources
HSCC	Hospital Services Consultancy Corporations Limited
ICMR	Indian Council of Medical Research
ICU	Intensive Care Unit
IHME	Institute for Health Metrics and Evaluation

IPHS	Indian Public Health Standards
ISO	International Organization for Standardization
IV	Intravenous
LDR	Labour, Delivery & Recovery
MCH	Maternal and Child Health
MGPS	Medical Gas Pipelines System
MoHFW	Ministry of Health &Family Welfare
MoU	Memorandum of Understanding
MSG	Mission Steering Group
NBC	National Building Code
NBCC	National Buildings Construction Corporation Limited
NHA	National Health Authority
NHM	National Health Mission
NHSRC	National Health Systems Resource Centre
NOC	No Objection Certificate
NPCC	National Projects Construction Corporation Limited
NSSO	National Sample Survey Office
OOPE	Out of Pocket Expenditure
OT	Operation Theatre
PM-ABHIM	Pradhan Mantri Ayushman Bharat Health Infrastructure Mission
PMS	Programme Monitoring System
RHS	Rural Health Statistics
RO	Reverse Osmosis
SDGs	Sustainable Development Goals
SDH	Sub District Hospital
TPQA	Third Party Quality Audit

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Chapter A

Background

1. Critical Care Services comprise of emergency, surgical and intensive care. As per NSSO/NHA, most of the critical care services are confined to tertiary care level with limited access to secondary care and referral transport systems. National Health Accounts, reports out of pocket expenditure of Rs. 2097 per capita, which is 48.8% of the Total Health Expenditure (NHA 2017-18).
2. COVID-19 highlighted the need for strengthening health systems response and availability of adequate infrastructure.
3. The top five conditions requiring critical care are Acute Myocardial Infraction, Cardiao-vascular Stroke, COPD, Acute Respiratory Distress Syndrome, Poisoning, Septic Shocks etc. (IHME, ICMR, Global Burden of Disease, 2019). If these are managed timely at the level of district hospital itself, it will not only reduce the burden on tertiary care facilities but will also reduce the OOPE significantly.
4. To provide assured, affordable and quality critical care services nearer to the community, Hon'ble Prime Minister launched Pradhan Mantri Ayushman Bharat Health Infrastructure Mission. It includes Critical Care Hospital Blocks in all districts with a population of more than 5 lakhs, in state government medical colleges/District Hospitals and in 12 Central Institutions.
5. This document provides the technical guidance for development of Critical Care Blocks at the district level under the CSS component of the PMABHIM.

Chapter B

Purpose of Guidelines

1. The aim of this document is to guide the states in developing of critical care blocks under PMABHIM. It covers parameters such as location, minimum covered area, flow and process, design principles, cost and legal requirements necessary to complete the projects timely and efficiently.

Chapter C

Critical Care Block

1. Under PMABHIM, support will be provided to 602 districts across all states/ UTs. For the 102 districts having more than 20 lakh population, the size of the critical care block may be limited to 25% of the existing District Hospital bed capacity subject to a minimum 50 and maximum of100 beds. This implies that the bed capacity for districts with more than 20 lakh population will be as follows:

TABLE 1: BED STRENGTH OF CRITICAL CARE BLOCK

S. No	*Existing Bed Strength*	*Bed strength of Critical Care Block*
1.	Less than 200	50
2.	200-300	75
3.	More than 300	100

2. For 274 districts with 5-20 lakhs population, it is envisaged to set-up 50 bedded critical care hospital block/wing.

3. Apart from the above, 226 districts, with government medical colleges, would also be supported to establish a 50 bedded critical care hospital block/wing.

C.1. LOCATION

1. Critical care wing or block is expected to be an integral part of the existing District Hospital (DH) or Medical College Hospital (MCH). However the number of bed proposed in the CCB are additional to the IPHS beds for the critical care. While planning infrastructure of the critical care block, overall infrastructure of the existing hospital should be taken into account. Planning should not only be limited and services provided by the existing infrastructure but should also consider the prospective vision and future expansion plan.

2. The 100, 75 and 50-bedded Critical Care Hospital Blocks/Wings would be functionally integrated with the respective DH or MCH. During the time of an outbreak such as COVID-19, the block/ wing can be isolated from the main building so as to ensure adherence to infection prevention practices, while during regular time, the critical care block can function as an integral part of the district hospital.

3. The critical care block would have functional units for critical care including emergency area and ICU, isolation wards, OT, Labor-Delivery-Recovery rooms (LDRs) with Newborn Care Corner, etc. The support services like Imaging facility, Dietary services, CSSD with Mechanized Laundry, etc. needs to be linked with existing DH or to be created if not available. These blocks/wings would also be supported with Medical Gas Pipeline System, Oxygen generation plants/ Oxygen supply, Air Handling Units (AHUs), etc., and mechanism for Infection Prevention and Control.

4. The infrastructure for all facilities should follow the rules and regulations as per National Building Code and the state by-laws. At some places, old and dilapidated facilities may need to be demolished to build new infrastructure at the same site. However, while demolishing any old building, it should be ensured that alternate arrangements are made for effectively running the existing services.

Figure 1: External Elevation Critical Care Block

C.2. AREA COVERED

As per Indian Public Health Standards (IPHS), per bed area requirement is of 85 sq.m., so,

- Total area for 100 bedded hospital is 8500 sq.m.
- Total area for 75 bedded hospital is 6375 sq.m.
- Total area for 50 bedded hospital is 4250 sq.m.

C.3. LAYOUT

1. Critical Care block should ideally be integrated as a part of the existing hospital in order to ensure optimum utilization of resources. However, it must be ensured that there are separate entry and exit for the critical care block. It should be constructed in such a manner that as & when necessary it is possible to isolate and use it as a dedicated facility for management of infectious diseases. Suggestive layout of Critical Care Block is placed at Annexure 1.
2. While layout designs indicating, flow and suggested dimensions have been provided, these may need to be adapted to fit the space constraints. The existing infrastructure, where possible and appropriate, can be changed, renovated or upgraded to fit these requirements as far as possible. Some degree of flexibility and innovative planning will therefore be required to accommodate additional services to be provided in existing infrastructure and ensure that the facility is compliant with the necessary rules, regulation and norms while remaining-fit-for purpose, from a clinical perspective.
3. The suggestive components for the 100, 75 and 50 bedded critical care blocks are placed below. However, the actual numbers may vary as per local requirement.

TABLE 2: SUGGESTIVE DISTRIBUTION OF BEDS

Beds	***100 beds***	***75 beds***	***50 beds***
ICU	20 (including 4 paediatric beds)	12 (including 2 paediatric beds)	10 (including 2 paediatric beds)
HDU	20 (including 4 paediatric beds)	12 (including 2 paediatric beds)	6 (including 2 paediatric beds)
Isolation beds	30	30	24
Isolation Room	12	5	2
Dialysis	4	4	2
MCH	6	4	2
Emergency	10 (4 Red + 4 Yellow + 2 Triage)	10 (4 Red + 4 Yellow + 2 Triage)	5 (2 Red + 2 Yellow +1 Triage)
Total	100 + 2 Triage	75 + 2 Triage	50 + 1 Triage
OT	2	2	2
LDR	2	2	2
Point of Care Lab	1	1	1

C.4. DESIGN PRINCIPLES

1. Factors to be considered while building a new facility either at the same site or selecting a new site for a facility :
   (a) Minimizing exposure to air, noise, water and land pollution and that facility buildings are vector-breeding proof
   (b) Reviewing land utilization in adjoining areas, the general topography, and obtaining the necessary environmental (including seismic safety), fire safety and administrative clearances
   (c) National Building Code (NBC), the local agency by-laws and rules should be strictly adhered with
2. Wherever possible, new buildings should be constructed vertically than horizontally so that there is more space available for other necessary services.
3. Where lack of space is a particular concern, **the possibility of expansion vertically based on floor area ratio (FAR) rather than horizontally should be seriously considered, while bearing in mind that a minimum necessary space all around the boundary wall should be left open as per the prevailing NBC and fire safety norms.**
4. The foundation of the health facility infrastructure should be strong enough to meet the requirement of the seismic zones of that area and any future vertical expansion. An open area to facilitate the management of disasters and emergencies should also be provisioned for. A fluorescent fire exit plan should be considered where appropriate. Adequate width to allow easy access to the fire engine and ambulance should be provisioned for and should be **as per the prevailing norms**.
5. The Project Land along with its approaches, free from all encumbrances can be facilitated by the State Govt. for Construction works
6. As a general principle and wherever possible, the Emergency services and LDR complex, should be planned on the ground floor.
7. Emphasis should be given to create a positive, client friendly ambience and environment around the facility. This includes due consideration to the provision of facilities for patient registration, waiting areas, clear way-finding and sign-posting, parking, gardens, washrooms, drinking water and disabled friendly facilities.
8. The facility should be environment friendly with scope for adequate natural light, rainwater harvesting and solar energy, wherever appropriate.
9. Adequate and clear signage should be displayed on the main and connecting roads to the facility. Colour coding could be used for clarity at larger facilities.
10. Clear access for vehicles and ambulances should be maintained, especially near the Emergency department. Inside the hospital premises, there should be an open space available in line with the average expected load of vehicles for parking. Wherever possible, separate parking spaces should be allotted for staff parking and visitor parking.

11. The infrastructure being created or renovated should meet the requirements for isolating critical care and emergency services in view of existing or future pandemics or outbreaks. Thus, various wings and critical care areas can have separate entry or exit to maintain isolation, if required.

12. For easy access of non-ambulant (wheelchair, stretcher), semi-ambulant, visually disabled and elderly people, infrastructural norms in line with the 'Guidelines and Space Standards for barrier-free built environment for Disabled and Elderly Persons' of the Government of India should be followed. **Provisions of the 'Persons with Disability Act' should be implemented.**

13. Tactile pathways should be made for visually incapacitated visitors.

14. The flooring of circulation areas such as corridors, lifts, ramps, staircases and other common spaces should be anti-skid and non-slippery. The size of corridors, ramps, and stairs should enable easy manoeuvrability of wheeled equipment, minimum width of corridors should be **as per the prevailing norms**.

15. Structural and non- structural earthquake proof measures (in line with the state Govt. Guidelines) should be incorporated, especially in high seismicity earthquake prone areas. This includes simple non-structural measures like fastening of shelves, almirahs and movable equipment, as appropriate.

16. A separate drainage system for effluents being generated from various service areas to Effluent Treatment Plant (ETP) needs to be in place, so that all effluents are treated before discharge.

17. Collection, transportation, treatment and disposal of bio-medical waste should be as per the latest BMWM Rules. Permanent Water, Sewer & Electrical Power connection needs to be facilitated by the State Govt as per requirements.

18. The Critical Care Block must have MGPS which can be utilized for supply of oxygen from a storage tank or an oxygen generation plant to bed side or critical care units like OT, labour room, emergency and other critical beds. A definite area for "manifold" to be designated in the facility should be as per 'Gas cylinder rule 1981, ISO 7396-1:2016 and Indian Explosive Acts, 1984. Manifold should be in a cool, clean area that is constructed of fire resistant materials. Conductive flooring must be present but is not required if non inflammable gases are stored. Adequate ventilation to allow leaking gases to escape, safety labels and separate places for empty and full cylinders to be ensured.

19. The isolation rooms, HDU and ICU areas should be separated, have negative air pressure. At least 6 air changes per hour in Isolation Room, and 12 air changes in HDU/ICU and 20 air changes in OT needs to be maintained. Air Handling Units equipped with HEPA filters should be placed in all critical services areas such as OT, HDU, ICU etc.

20. Only essential personnel should enter such rooms, following standard infection control precautions. These include basic hand hygiene, use of personal protective equipment, respiratory etiquettes, and environmental disinfection. Dedicated or disposable equipment should be used. If equipment is to be used for more than one patient, it should be cleaned and disinfected before use on other patients as per the infection control protocols. .

C.5. HUMAN RESOURCE SUPPORT

1. The following HR support is as defined under IPHS :

TABLE 3: NORMS FOR HUMAN RESOURCE	
HR Norms	**Specialists** - round the clock for OT, ICU, Emergency, delivery unit and other areas as per IPHS.
	GDMO - 1 for 10 beds - critical care area and 1 for 20 beds non critical area
	Nurses - 1:1 ICU; 1:2 Step Down Unit; 1:6 wards and other areas; OT - 2 per OT per shift; 1 nurse round the clock for delivery unit
	Support staff- as per IPHS/GoI Guidelines

2. Support for HR requirement for these components will be provided only up to the scheme period, i.e. up to **FY 25-26** and after that, states would be responsible for maintaining the facilities including Human Resources. The State to **take into consideration that the recurring HR expenditure will not be available beyond the scheme period.** Recurring cost breakup for 100, 75 and 50 bedded critical care blocks is annexed at the end of these guidelines as Annexure-3.

3. States have the flexibility for fixing the remuneration/ salary structure for hiring of HR. The State may propose the numbers of positions to be engaged for CCBs as per their local context. It is suggested that at least the minimum necessary additional positions as per the norms prescribed in these Guidelines should be proposed. Support for the HR component will be up to the limit of support for recurring component as indicated in these Guidelines.

4. The State has to commit that it shall create and fill up the regular posts in the required places, to manage and ensure that the assets created under the PM-ABHIM are kept fully functional even beyond the scheme period.

5. Under PM-ABHIM, support will be provided for only contractual/outsourced Human Resource. However, if the State Government appoints permanent human resources either on its own or by virtue of orders of Hon'ble Court, then the State Government shall be liable to maintain the same at its own cost, and the liability of the Central Government will strictly be only to the extent of agreed and approved PM-ABHIM Plan.

6. The State Health Society is responsible for appointment (contractual/ conditional/ permanent) of employees, their transfers/termination of services, payment of wages, salary, remuneration, etc. There would be no privity of contract between the Central Government and the employees appointed by the State Health Society.

Chapter D

List of Equipment

An indicative list for equipment required in the critical care block is placed at Annexure 2. However, is not an exhaustive list.

Chapter E

Implementation Mechanism

Implementation of components under PMABHIM will be undertaken as per the framework provided in the Operational Guidelines. The States/UTs should adhere to the procurement rules/ norms/ guidelines prevailing in the respective States/UTs.

A brief summary of the steps is also placed below:

1. MoU to be signed between state and MoHFW
2. Selection of site as per criteria mentioned in the Guidelines
3. Site survey
4. Preparation of DPR & Layout plans
5. DPR Finalization including preliminary estimated cost as per state process
6. Tender
7. Initiation of work

Chapter F

Monitoring

1. At the national Level, the Ministry, under the NHM Framework, will monitor the progress of implementation of various components across the country. Overall, oversight will be provided by the Mission Steering Group (MSG).
2. Additional Chief Secretary/Principal Secretary/Secretary (Health) in the States/UTs as the chairperson of EC of the State Health Society, will be responsible for monitoring the progress and implementation status of various components of PMABHIM under the scheme.
3. District Health Society will be monitoring the implementation of all the components sanctioned in the District under PMBHIM, against the approvals on a periodic basis.
4. The States have to prepare the proposals as per the format given in the Operational Guidelines on PMABHIM and send along with the required annexures.
5. States/UTs shall submit monthly progress on the implementation of various CSS components of the Scheme to the Ministry, as prescribed, from time to time and the same have to be updated

in the Progress Monitoring System. States/UTs have to collect the progress from all the Districts and Institutions and same have to be submitted and updated on regular basis on the PMS portal. States/UTs have to establish a mechanism for collecting and compiling the reports and will ensure entry of the progress on a regular basis. The NHM-PMS system will also be used for the regular up-dation of the progress, which would be essential for release of subsequent instalments of grants. For effective Quality Control measures and 'Structural Design vetting', Third Party Quality Assurance (TPQA) may be engaged by the State Govt.

6. As the PM-ABHIM is a CSS scheme, the central share will be released based on fulfilment of necessary conditions such as submission of UCs and expenditure reports as per extant Rules and instructions of the Central Government in this regard. The conditions for the release of funds will be the same as under the National Health Mission.

Chapter G

Necessary Clearances

1. All the Statutory Acts, rules and regulations like Building Plans, Fire NOC and Occupancy Certificate, etc., shall be facilitated by the State Govt for strict adherence. It will be the responsibility of relevant officials to comply these with a regular monitoring and feedback mechanism. All applicable and necessary clearances must be taken by the implementation agency.

Chapter H

Budget

1. The estimated unit cost for critical care units is given below:

TABLE 4: ESTIMATED UNIT COST.

Type of critical care units	*Capital Cost (in Rs.)*	*Recurring Cost* (in Rs.)*
100 bedded	44.50 Cr	7.912 Cr
75 bedded	36.35 Cr	5.844 Cr
50 bedded	23.75 Cr	4.592 Cr
50 bedded in Medical Colleges	23.75 Cr	Recurring cost to be borne by state government from their own resources.

2. The recurring cost is inclusive of HR support, Equipment maintenance, Oxygen refilling, teleconsultation, drugs, consumables like reagents, diagnostic kits, infection prevention-masks, gloves, etc., bio medical wastes, etc.

TABLE 5: COST BREAK-UP (DETAILED COST BREAKUP IS GIVEN IN ANNEXURE 3)				
S. No.	***Particulars***	***50 bedded CCB (4250 sq. m .)***	***75 bedded CCB (6375 sq. m .)***	***100 bedded CCB (8500 sq. m.)***
1	Cost of Construction	Rs. 16.63 Cr	Rs. 24.95 Cr	Rs. 30.55 Cr
2	Cost of Equipment	Rs. 7.12 Cr	Rs. 11.40 Cr	Rs. 13.95 Cr
3	One Time Fixed Cost (1+2)	Rs. 23.75 Cr	Rs. 36.35 Cr	Rs. 44.50 Cr
4	Recurring Cost	Rs. 4.592 Cr	Rs. 5.844 Cr	Rs. 7.912 Cr

Note:

1. The above costs are only indicative.
2. The estimated cost should be carefully worked out at the stage of preparation of DPR. Factors such as site conditions, availability of existing structures, if any, gaps in availability of equipment etc. should be duly considered at the stage of DPR preparation.
3. The actual cost shall be discovered through an open and transparent bidding/ tendering process.
4. Support for a critical care block, shall be limited to the extent of the normative unit cost as given in Table 4 & 5.
5. If the discovered cost for a critical care block is more than the normative unit cost, any additional funds shall be provided by the State/UT government from its own resources.

Annexure 1

SUGGESTIVE LAYOUT

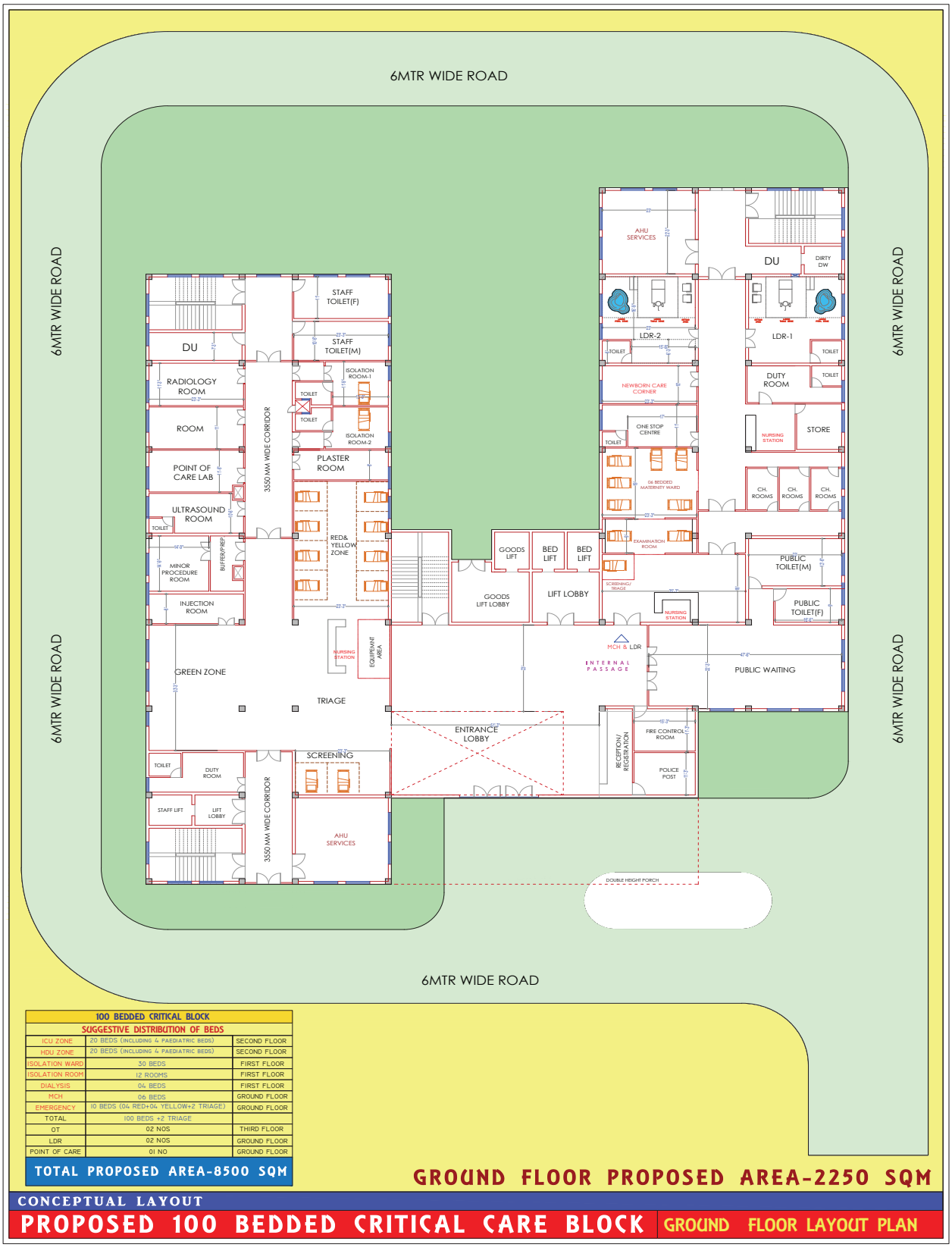
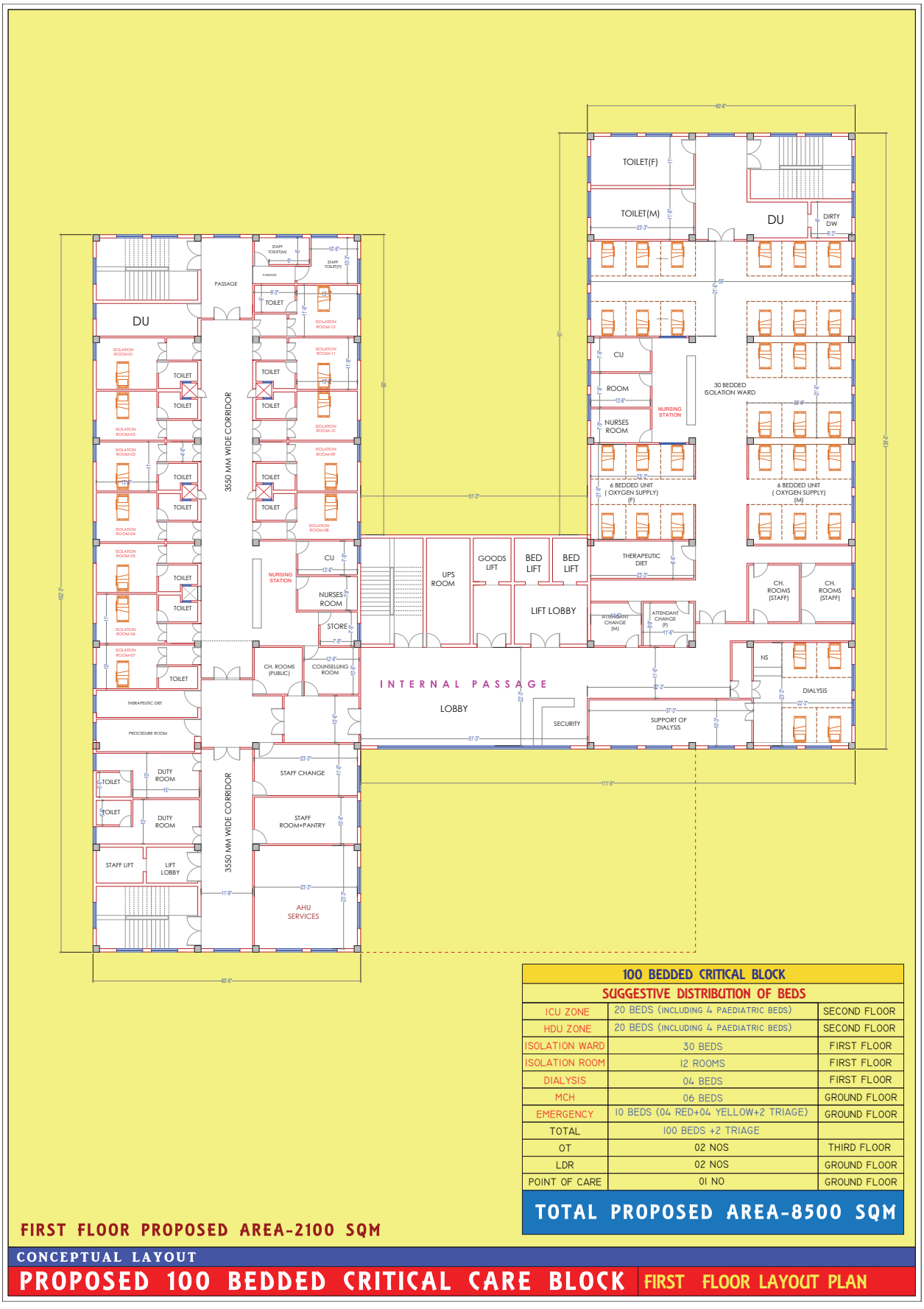


Figure 2: Layout 100 bedded - Ground Floor.



100 BEDDED CRITICAL BLOCK		
SUGGESTIVE DISTRIBUTION OF BEDS		
ICU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
HDU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
ISOLATION WARD	30 BEDS	FIRST FLOOR
ISOLATION ROOM	12 ROOMS	FIRST FLOOR
DIALYSIS	04 BEDS	FIRST FLOOR
MCH	06 BEDS	GROUND FLOOR
EMERGENCY	10 BEDS (04 RED+04 YELLOW+2 TRIAGE)	GROUND FLOOR
TOTAL	100 BEDS +2 TRIAGE	
OT	02 NOS	THIRD FLOOR
LDR	02 NOS	GROUND FLOOR
POINT OF CARE	01 NO	GROUND FLOOR

TOTAL PROPOSED AREA-8500 SQM

FIRST FLOOR PROPOSED AREA-2100 SQM

CONCEPTUAL LAYOUT

PROPOSED 100 BEDDED CRITICAL CARE BLOCK | FIRST FLOOR LAYOUT PLAN

Figure 3: Layout 100 bedded - First Floor.

100 BEDDED CRITICAL BLOCK		
SUGGESTIVE DISTRIBUTION OF BEDS		
ICU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
HDU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
ISOLATION WARD	30 BEDS	FIRST FLOOR
ISOLATION ROOM	12 ROOMS	FIRST FLOOR
DIALYSIS	04 BEDS	FIRST FLOOR
MCH	06 BEDS	GROUND FLOOR
EMERGENCY	10 BEDS (04 RED+04 YELLOW+2 TRIAGE)	GROUND FLOOR
TOTAL	100 BEDS +2 TRIAGE	
OT	02 NOS	THIRD FLOOR
LDR	02 NOS	GROUND FLOOR
POINT OF CARE	01 NO	GROUND FLOOR

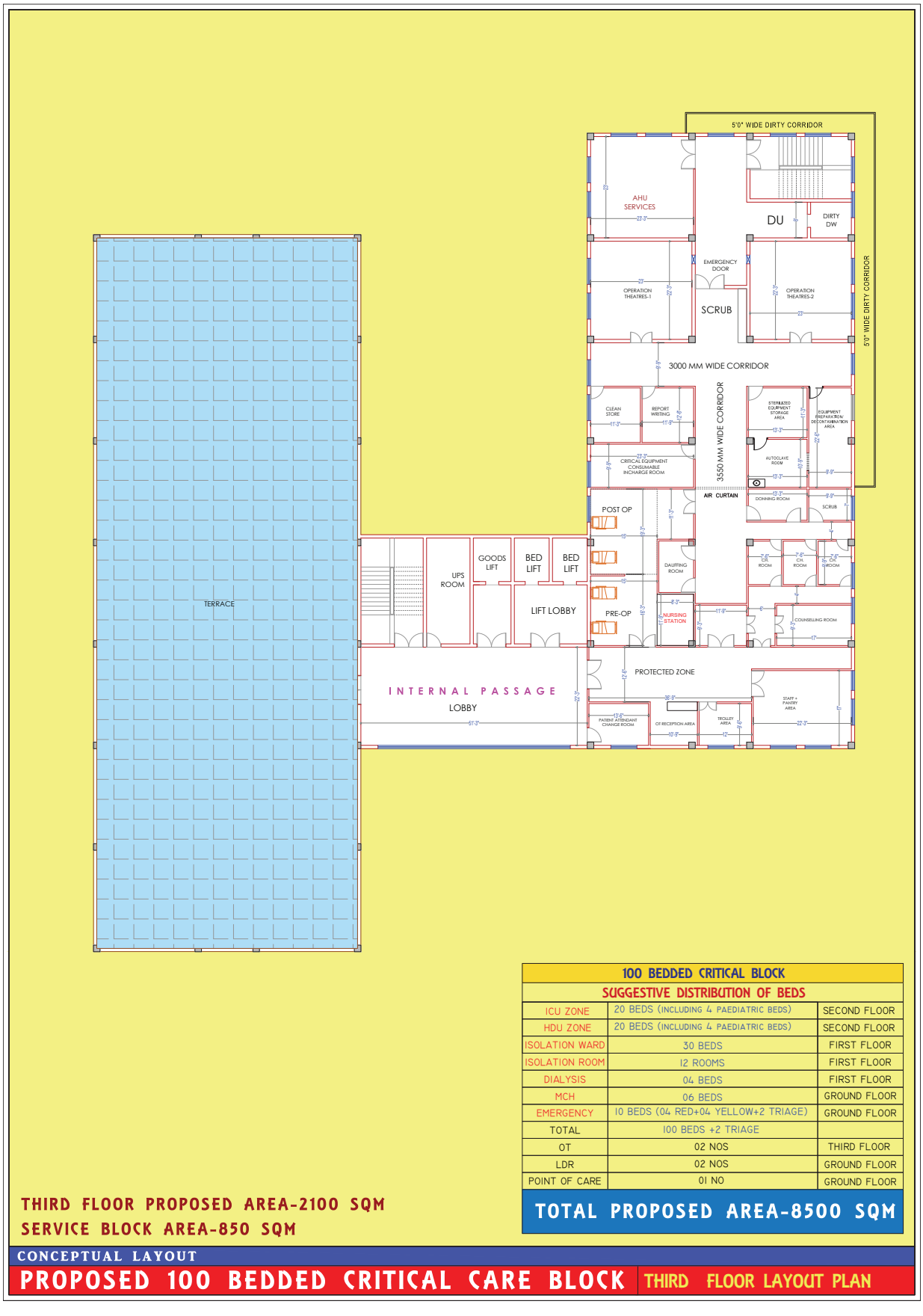
TOTAL PROPOSED AREA-8500 SQM

SECOND FLOOR PROPOSED AREA-2100 SQM

CONCEPTUAL LAYOUT

PROPOSED 100 BEDDED CRITICAL CARE BLOCK | SECOND FLOOR LAYOUT PLAN

Figure 4: Layout 100 bedded - Second Floor.



100 BEDDED CRITICAL BLOCK		
SUGGESTIVE DISTRIBUTION OF BEDS		
ICU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
HDU ZONE	20 BEDS (INCLUDING 4 PAEDIATRIC BEDS)	SECOND FLOOR
ISOLATION WARD	30 BEDS	FIRST FLOOR
ISOLATION ROOM	12 ROOMS	FIRST FLOOR
DIALYSIS	04 BEDS	FIRST FLOOR
MCH	06 BEDS	GROUND FLOOR
EMERGENCY	10 BEDS (04 RED+04 YELLOW+2 TRIAGE)	GROUND FLOOR
TOTAL	100 BEDS +2 TRIAGE	
OT	02 NOS	THIRD FLOOR
LDR	02 NOS	GROUND FLOOR
POINT OF CARE	01 NO	GROUND FLOOR

THIRD FLOOR PROPOSED AREA-2100 SQM
SERVICE BLOCK AREA-850 SQM

TOTAL PROPOSED AREA-8500 SQM

CONCEPTUAL LAYOUT

PROPOSED 100 BEDDED CRITICAL CARE BLOCK THIRD FLOOR LAYOUT PLAN

Figure 5: Layout 100 bedded - Third Floor.

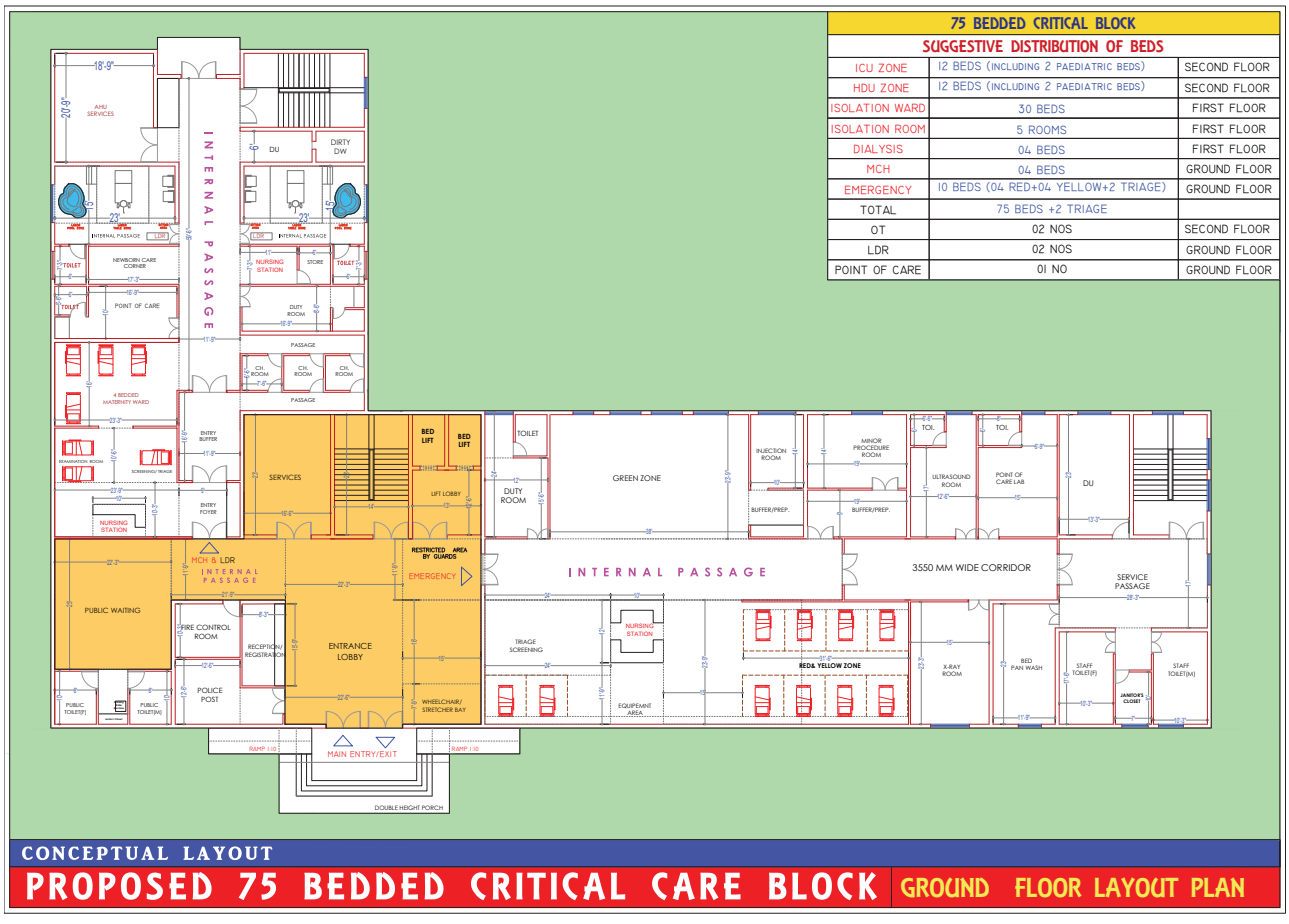


Figure 6: Layout 75 bedded - Ground Floor.

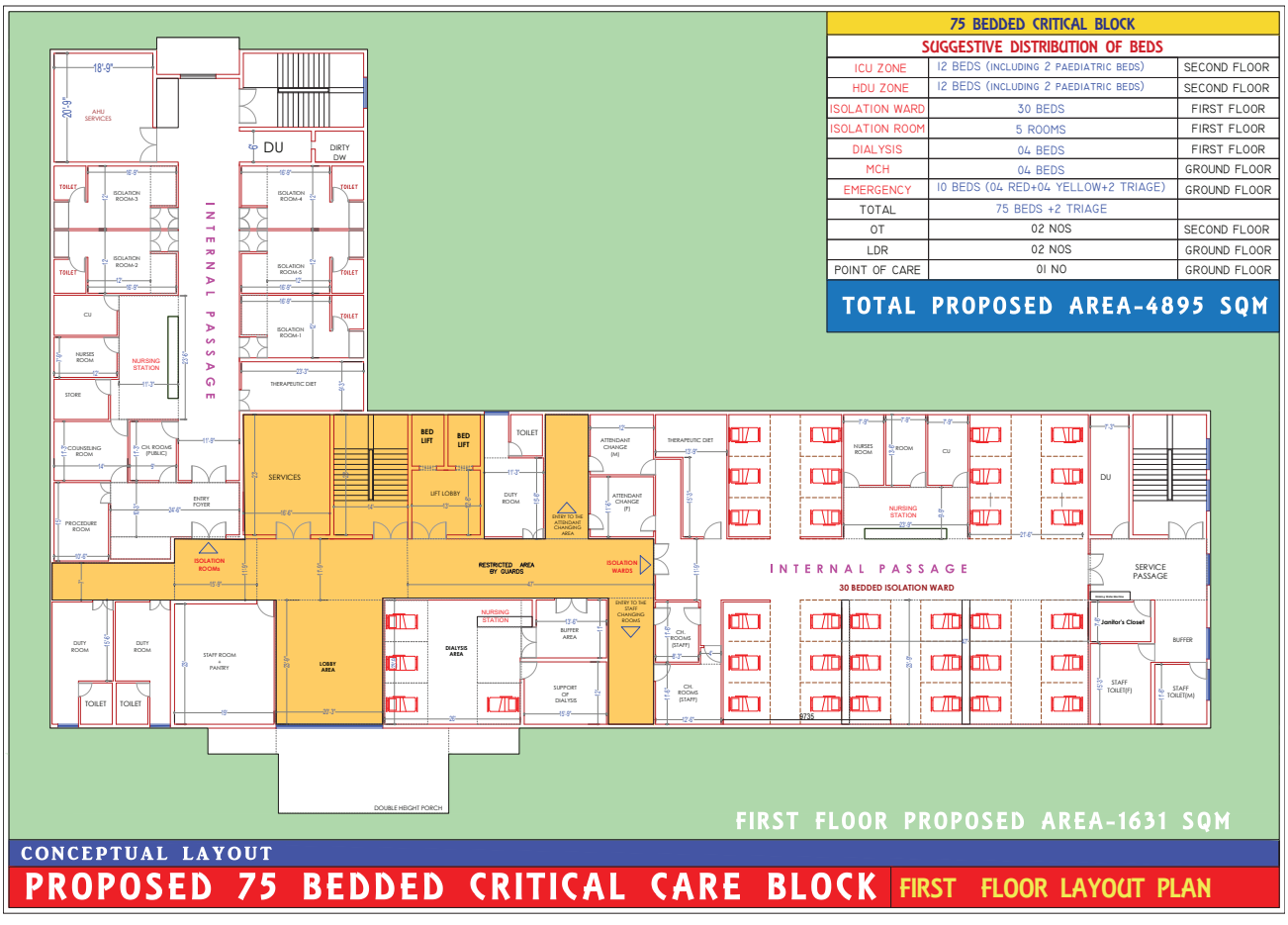


Figure 7: Layout 75 bedded - First Floor.

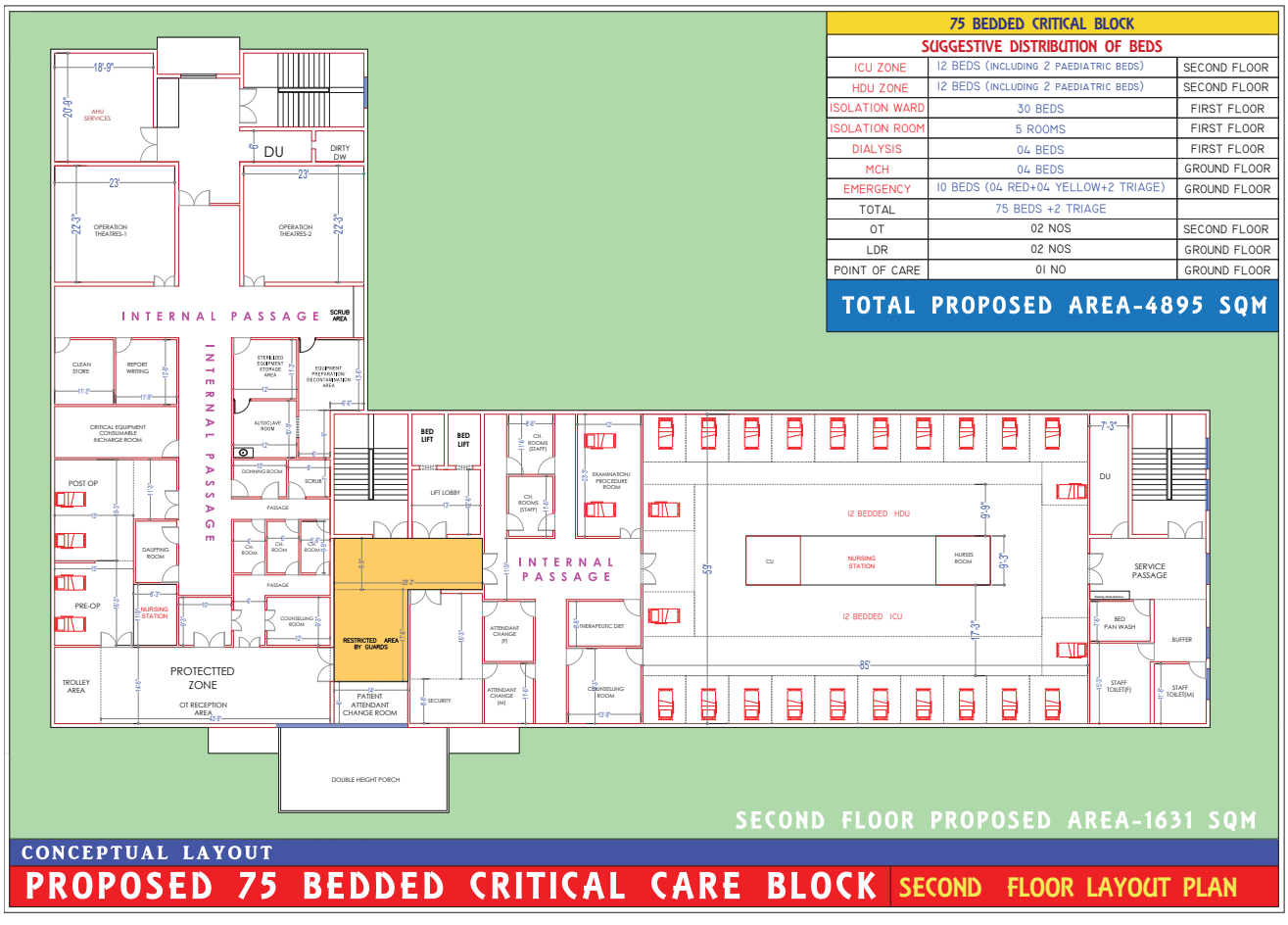


Figure 8: Layout 75 bedded - Second Floor.

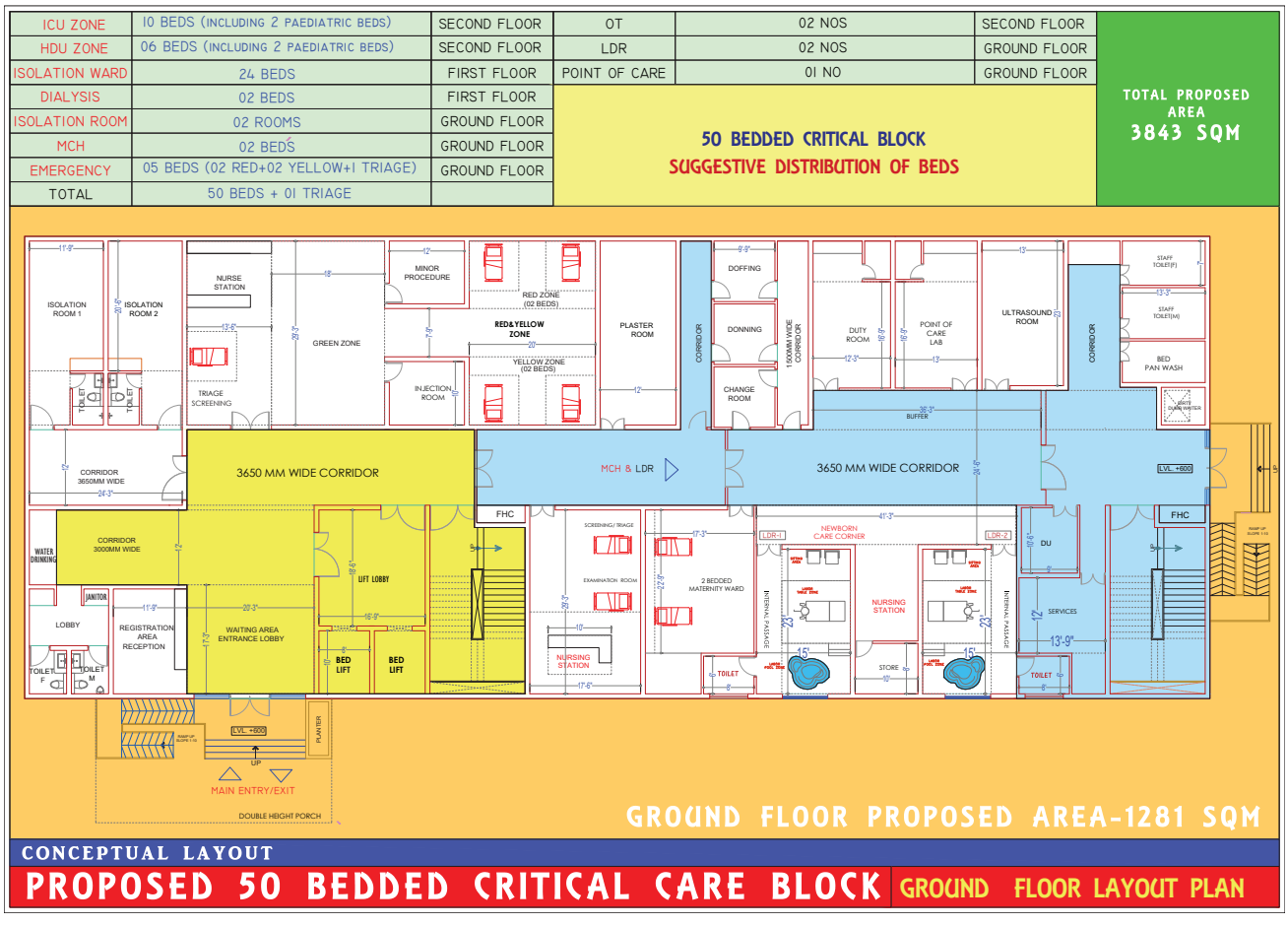


Figure 9: Layout 50 bedded - Ground Floor.

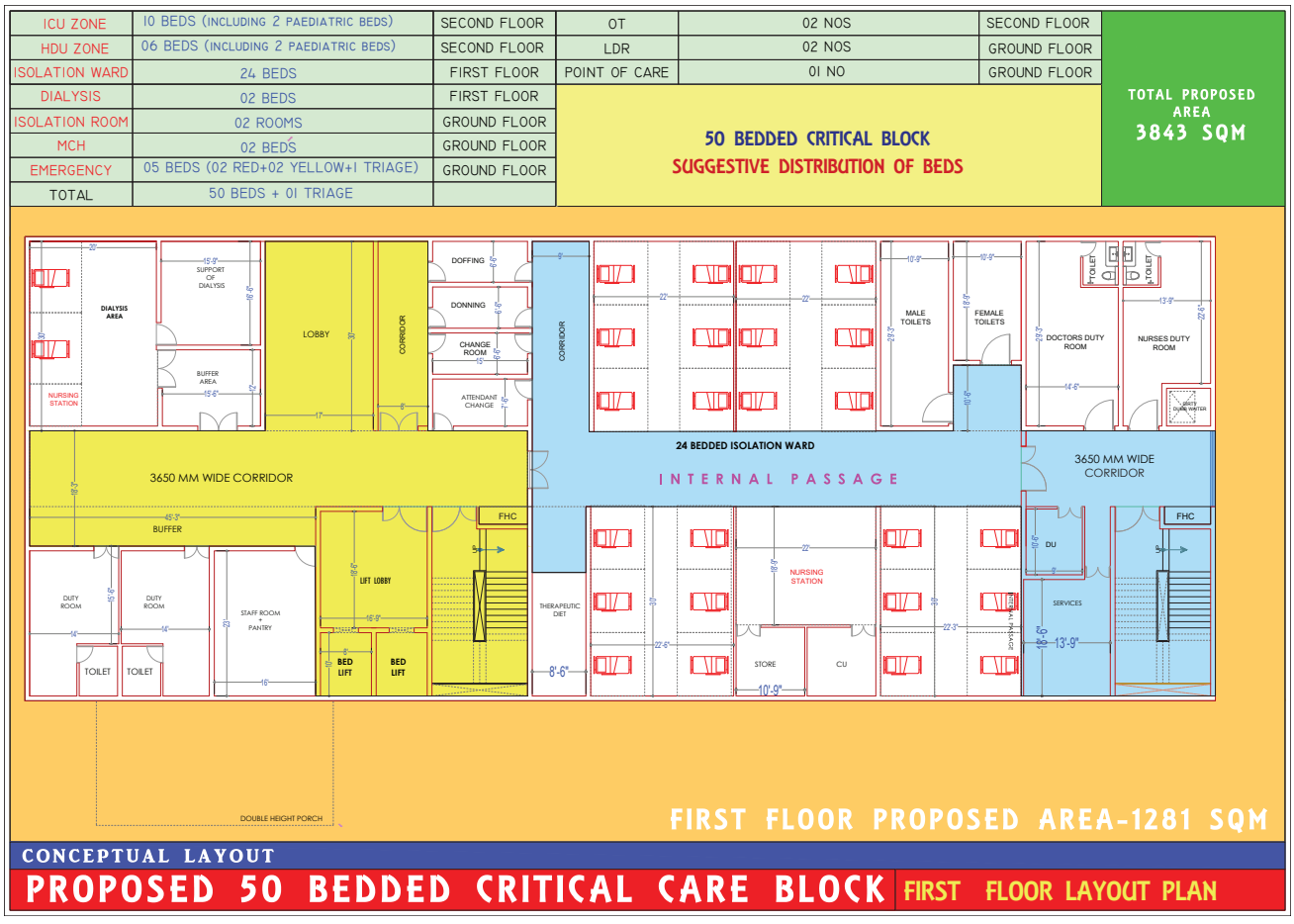


Figure 10: Layout 50 bedded - First Floor.

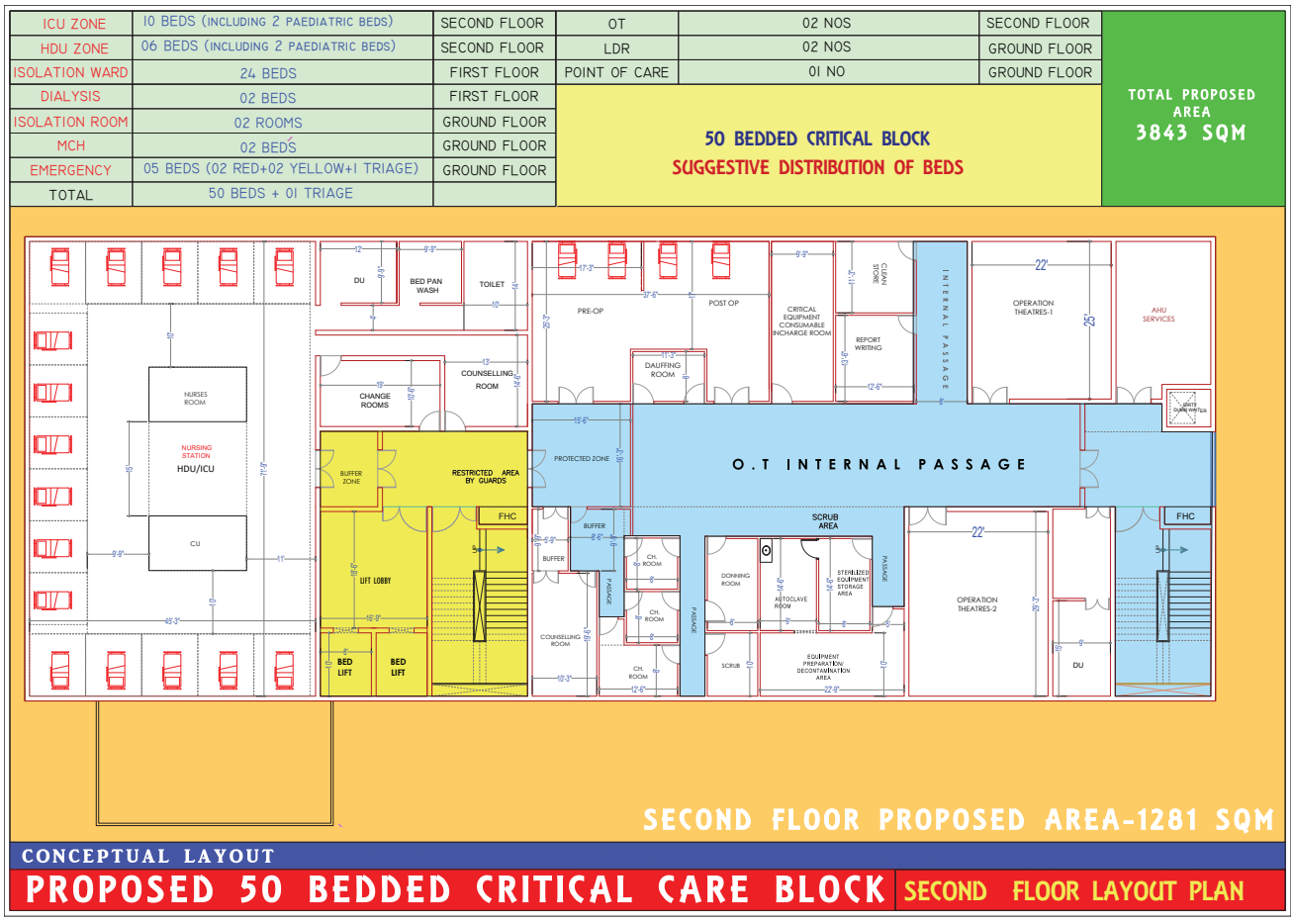


Figure 11: Layout 50 bedded - Second Floor.

Annexure 2

LIST OF EQUIPMENT

The following list is only indicative. States may decide the actual equipment based on gap analysis.

100, 75 AND 50 BEDDED CCB

SN	*Equipments*	*Quantity*		
	ICU Beds	**100 beds (ICU -20 beds)**	**75 beds (ICU -12 beds)**	**50 beds (Hybrid (ICU /HDU -16 beds unit))**
1	Motorized ICU bed 4 section with Mattress	20	12	10
	Manual bed 4 section with mattress	-	-	6
2	Bedside locker	20	12	16
3	Overbed table	20	12	16
4	Iv stand with ss rod and castor base	5	3	4
6	Bed side stool	5	3	4
7	Biomedical waste bin- small -set of 3	20	12	16
8	Multi para monitor with central Station	20	12	16
9	ICU ventilator	20	12	10
10	Syringe pump	20	12	16
11	Infusion pump	5	3	-
12	Laryngoscope	2	2	3
13	Thermometer- infrared type	5	3	1
14	Ambu bag adult	5	3	4
15	Aneroid bp apparatus	2	1	2
16	Ophthalmoscope	2	1	2
17	ECG machine 12 channel	1	1	1
18	Portable ventilator	1	1	-
19	Portable x ray	1	1	-
20	Portable ultrasound	1	1	1
22	Biphasic defibrillator	2	1	1
23	ABG machine with ISE	1	1	1
24	Electronic weighing scale- adult	2	1	2
25	Electrical suction apparatus	4	2	2
26	Patient stretcher (fully ss)	2	1	1
27	Wheelchair - foldable	2	1	1
28	Crash cart	1	1	1
29	Dressing trolley	1	1	1
30	Drug trolley/medicine cart	2	1	1
31	ECG machine trolley	2	1	1
32	Instrument trolley	2	1	1

SN	Equipments	Quantity		
33	Oxygen cylinder trolley	2	2	1
34	Glucometer	4	2	2
35	Stethoscope	4	2	2
	HDU Beds	**100 beds (HDU-20 beds)**	**75 beds (Stepdown ICU 12 beds)**	**50 beds**
1	Manual bed 4 section with mattress	20	12	-
2	Bedside locker	20	12	-
3	Overbed table	20	12	-
4	Iv stand with ss rod and castor base	10	6	-
6	Bed side stool	20	12	-
7	Biomedical waste bin- small -set of 3	20	12	-
8	Multi para monitor	20	12	-
9	Syringe pump	5	3	-
10	Infusion pump	5	3	-
11	Laryngoscope	2	2	-
12	Thermometer- infrared type	5	3	-
13	Ambu bag adult	5	3	-
14	Aneroid bp apparatus	4	2	-
15	Ophthalmoscope	2	1	-
16	ECG machine 12 channel	1	1	-
17	Portable ventilator	2	1	-
18	Biphasic defibrillator	1	1	-
19	Electronic weighing scale- adult	2	1	-
20	Electrical suction apparatus	3	2	-
21	Patient stretcher (fully ss)	1	1	-
22	Wheelchair - foldable	1	1	-
23	Crash cart	1	1	-
24	Dressing trolley	1	1	-
25	Drug trolley/medicine cart	1	1	-
26	ECG machine trolley	1	1	-
27	Instrument trolley	1	1	-
28	Oxygen cylinder trolley	1	1	-
29	Glucometer	2	2	-
30	Stethoscope	2	2	-
	Operation Theatre (OT)	**100 beds (OT-2)**	**75 beds (OT-2)**	**50 beds (OT-1)**
1	OT table	2	2	1
2	OT light	2	2	1
3	Anesthesia workstation	2	2	1
4	Surgical diathermy	2	2	1
5	Syringe pump	2	2	1

SN	*Equipments*	*Quantity*		
6	Infusion pump	2	2	1
7	Blood fluid warmer	2	2	-
8	Biphasic defibrillator	2	2	1
9	Instrument set	2	2	1
10	Footstep-double	2	2	-
11	Laryngoscope	2	2	1
12	Radiant warmer	2	2	-
13	Thermometer- infrared type	2	2	-
14	Ambu bag adult	2	2	1
15	Electrical suction apparatus	2	2	1
16	Patient stretcher (fully ss)	1	1	1
17	Wheelchair - foldable	1	1	1
18	Crash cart	1	1	1
19	Drug trolley/medicine cart	2	2	1
20	Instrument trolley	2	2	1
21	Oxygen cylinder trolley	2	2	1
22	Mayo trolley	2	2	1
23	Glucometer	2	2	1
24	Stethoscope	2	2	1
	Emergency Unit (EU)	**100 beds (EU-10 beds)**	**75 beds (EU-10 beds)**	**50 beds (EU-5 beds)**
1	Manual bed 4 section with mattress	10	10	5
2	Bedside locker	10	10	5
3	Overbed table	10	10	5
4	Iv stand with ss rod and castor base	5	5	2
5	Footstep-double	5	5	-
6	Biomedical waste bin- small -set of 3	10	10	5
7	Multi para monitor	10	10	2
8	ICU ventilator	4	4	1
9	Syringe pump	5	5	2
10	Infusion pump	5	5	-
11	Laryngoscope	2	2	2
12	Thermometer- infrared type	2	2	2
13	Ambu bag adult	5	5	2
14	Aneroid bp apparatus	4	4	1
15	Ophthalmoscope	2	2	1
16	ECG machine 12 channel	1	1	1
17	Portable monitor	1	1	1
18	Portable ventilator	1	1	1
19	Portable x ray	1	1	-
20	Biphasic defibrillator	1	1	1

SN	Equipments	Quantity		
21	Electronic weighing scale- adult	2	2	1
23	Electrical suction apparatus	2	2	1
24	Patient stretcher (fully ss)	1	1	1
25	Wheelchair - foldable	1	1	1
26	Crash cart	1	1	1
27	Dressing trolley	2	2	1
28	Drug trolley/medicine cart	2	2	1
29	ECG machine trolley	1	1	1
30	Instrument trolley	2	2	1
31	Oxygen cylinder trolley	2	2	1
32	Glucometer	4	4	1
33	Stethoscope	2	2	2
	Isolation Room (IR)	**100 beds (IR-12 beds)**	**75 beds (IR-5 beds)**	**50 beds**
1	Manual bed 4 section with mattress	12	5	-
2	Bedside locker	12	5	-
3	Overbed table	12	5	-
4	Iv stand with ss rod and castor base	5	3	-
6	Biomedical waste bin- small -set of 3	12	5	-
7	Portable monitor	1	1	-
8	Syringe pump	5	3	-
9	Infusion pump	5	3	-
10	Laryngoscope	1	1	-
11	Thermometer- infrared type	5	2	-
12	Ambu bag adult	5	2	-
13	Aneroid BP apparatus	2	1	-
14	Ophthalmoscope	1	1	-
15	ECG machine 12 channel	1	1	-
17	Electronic weighing scale- adult	2	1	-
18	Electrical suction apparatus	2	1	-
19	Patient stretcher (fully ss)	1	1	-
20	Wheelchair - foldable	1	1	-
21	Crash cart	1	1	-
22	Dressing trolley	1	1	-
23	Drug trolley/medicine cart	1	1	-
24	ECG machine trolley	1	1	-
25	Instrument trolley	1	1	-
26	Oxygen cylinder trolley	1	1	-
27	Glucometer	2	1	-
28	Stethoscope	2	1	-

SN	Equipments	Quantity		
	Dialysis Unit (DU)	**100 beds (DU-4 beds)**	**75 beds (DU-4 beds)**	**50 beds (DU-2 beds)**
1	Manual bed 4 section with mattress	4	4	2
2	Bedside locker	4	4	2
3	Overbed table	4	4	2
4	Iv stand with ss rod and castor base	2	2	2
5	Haemodialysis machine	4	4	2
6	CRRT machine	1	1	-
7	RO plant system	1	1	1
8	Dialysis Reprocessor	1	1	1
9	Multi para monitor	4	4	1
10	Syringe pump	2	2	1
11	Infusion pump	2	2	-
12	Laryngoscope	1	1	1
13	Thermometer- infrared type	1	1	1
14	Ambu bag adult	1	1	1
15	Biphasic defibrillator	1	1	-
16	Electronic weighing scale- adult	1	1	1
17	Wheelchair - foldable	1	1	1
18	Crash cart	1	1	1
19	Dressing trolley	1	1	1
20	Drug trolley/medicine cart	1	1	1
21	Glucometer	1	1	1
22	Stethoscope	2	2	1
	Isolation ward (IW)	**100 beds (IW-30 beds)**	**75 beds (IW-30 beds)**	**50 beds**
1	Ward bed (2 section) with mattress	30	30	-
2	Bedside locker	30	30	-
3	Iv stand with ss rod and castor base	10	10	-
4	Biomedical waste bin- small -set of 3	10	10	-
5	Portable monitor	1	1	-
6	Pulse oximeter	2	2	-
7	CPAP/Bipap machine	5	5	-
8	Syringe pump	5	5	-
9	Infusion pump	5	5	-
10	Laryngoscope	2	2	-
11	Thermometer- noncontact type	5	5	-
12	Ambu bag adult	5	5	-
13	Aneroid BP apparatus	5	5	-
14	Ophthalmoscope	2	2	-
15	ECG machine 12 channel	1	1	-

SN	Equipments	Quantity		
16	Electronic weighing scale- adult	3	3	-
17	Electrical suction apparatus	3	3	-
18	Patient stretcher (fully ss)	2	2	-
19	Wheelchair - foldable	2	2	-
20	Crash cart	1	1	-
21	Dressing trolley	2	2	-
22	Drug trolley/medicine cart	2	2	-
23	Instrument trolley	2	2	-
24	Oxygen cylinder trolley	2	2	-
25	Glucometer	4	4	-
26	Stethoscope	4	4	-
	MCH Ward	**100 beds (MCH W-6 beds)**	**75 beds (MCH W-4beds)**	**50 beds (MCH W-2 beds)**
1	Ward bed (2 section) with mattress	6	4	2
2	Bedside locker	6	4	2
3	Iv stand with ss rod and castor base	6	4	2
4	Biomedical waste bin- small -set of 3	3	2	1
5	Crash cart	1	1	-
6	Instrument trolley	2	1	1
7	Glucometer	2	1	1
8	Stethoscope	2	1	1
	LDR	**100 beds (LDR-2 beds)**	**75 beds (LDR-2 beds)**	**50 beds (LDR-1 bed)**
1	LDR bed	2	2	1
2	Foetal doppler machine	2	2	1
3	Radiant warmer	2	2	1
4	Bedside locker	2	2	1
5	Iv stand with ss rod and castor base	2	2	1
6	Biomedical waste bin- small -set of 3	2	2	1
7	Crash cart	1	1	1
8	Instrument trolley	2	2	1
9	Glucometer	2	2	1
10	Stethoscope	2	2	1
	AHU	**100 beds**	**75 beds**	**50 beds**
1	Air handling unit	5	5	3
	MGPS	**100 beds**	**75 beds**	**50 beds**
1	MGPS system for hospital	1	1	1
	Admin furniture	**100 beds**	**75 beds**	**50 beds**
1	Admin furniture (furniture for nursing station, duty room, doctor's room, doctor's examination area and other admin furniture)	1	1	1

SN	*Equipments*	*Quantity*		
	Ward (W)	**100 beds**	**75 beds**	**50 beds (W-24)**
1	Ward bed (2 section) with mattress	-	-	24
2	Bedside locker	-	-	24
3	Iv stand with ss rod and castor base	-	-	5
5	Biomedical waste bin- small -set of 3	-	-	24
6	Pulse oximeter	-	-	1
7	Syringe pump	-	-	2
8	Laryngoscope	-	-	2
9	Thermometer- noncontact type	-	-	1
10	Ambu bag adult	-	-	3
11	Aneroid bp apparatus	-	-	3
12	Electronic weighing scale- adult	-	-	1
13	Electrical suction apparatus	-	-	1
14	Patient stretcher (fully ss)	-	-	1
15	Wheelchair - foldable	-	-	2
16	Crash cart	-	-	1
17	Dressing trolley	-	-	1
18	Drug trolley/medicine cart	-	-	1
19	Instrument trolley	-	-	1
20	Oxygen cylinder trolley	-	-	1
21	Glucometer	-	-	2
22	Stethoscope	-	-	2

Annexure 3

Recurring Cost Breakup for 100 Bedded Critical Care Block

100 BEDDED CRITICAL CARE BLOCK		
SNo	***Particulars***	***Total Cost (in Rs.)***
1	**Non HR Recurring Cost** (including Equipment maintenance, Oxygen refilling, teleconsultation, drugs, consumables like reagents, diagnostic kits , infection prevention- masks, gloves etc., bio medical wastes etc.)	50,00,000
2	**Human resource***	
2.1	Specialists-7 (At round the clock)	84,00,000
2.2	GDMO-19 (At least 6-7 round the clock)	1,36,80,000
2.3	Nurses-129 (At least 43 round the clock)	4,64,40,000
2.4	Allied Health Professional-9 (At least 3 round the clock)	27,00,000
2.5	Support Staff-12 (At least 4 round the clock)	28,80,000
Sub-total	HR Cost per Year	7,41,00,000
Sub-total	Non-HR Recurring Cost	50,00,000
	Total Recurring Cost (Non-HR + HR)	7,91,00,000
Note for HR Calculation	Specialists - round the clock for OT, ICU, Emergency and Other areas	
	GDMO - 1 for 10 beds - critical care area and 1 for 20 beds noncritical area	
	Nurses - 1:1 ICU; 1:2 Step Down Unit; 1:6 wards and other areas; OT - 2 per OT per shift	
	Support staff- as per IPHS/GoI Guidelines	

*The rates at which the HR costs are worked out are only indicative. The State/UT may fix the monthly remuneration based on their context. Support for cost of HR, however, is available only to the extent of the Total Recurring Cost indicated in the table above (Para C.5.3).

Recurring Cost Breakup for 75 Bedded Critical Care Block

75 BEDDED CRITICAL CARE BLOCK		
SNo	***Particulars***	***Total Cost (in Rs.)***
1	**Non HR Recurring Cost** (including Equipment maintenance, Oxygen refilling, teleconsultation, drugs, consumables like reagents, diagnostic kits , infection prevention- masks, gloves etc., bio medical wastes etc.)	39,00,000
2	**Human resource***	
2.1	Specialists-6 (At least 1round the clock)	72,00,000
2.2	GDMO-14 (At least 4-5 round the clock)	1,00,80,000
2.3	Nurses-90 (At least 30 round the clock)	3,24,00,000

2.4	Allied Health Professional-9 (At least 3 round the clock)	27,00,000
2.5	Support Staff-9 (At least 3 round the clock)	21,60,000
Sub-total	**HR Cost per Year**	5,54,40,000
Sub-total	**Non HR Recurring Cost**	39,00,000
	Total Recurring Cost (Non HR + HR)	**5,84,40,000**
Note for HR Calculation	Specialists - round the clock for OT, ICU, Emergency and Other areas	
	GDMO - 1 for 10 beds - critical care area and 1 for 20 beds non critical area	
	Nurses - 1:1 ICU; 1:2 Step Down Unit; 1:6 wards and other areas; OT - 2 per OT per shift	
	Support staff- as per IPHS/GoI Guidelines	

*The rates at which the HR costs are worked out are only indicative. The State/UT may fix the monthly remuneration based on their context. Support for cost of HR, however, is available only to the extent of the Total Recurring Cost indicated in the table above (Para C.5.3).

Recurring Cost Breakup for 50 Bedded Critical Care Block

50 BEDDED CRITICAL CARE BLOCK		
SNo	***Particulars***	***Total Cost (in Rs.)***
1	**Non HR Recurring Cost** (including Equipment maintenance, Oxygen refilling, teleconsultation, drugs, consumables like reagents, diagnostic kits, infection prevention- masks, gloves etc., bio medical wastes etc.)	26,60,000
2	**Human resource***	
2.1	Specialists-5 (At least one round the clock)	60,00,000
2.2	GDMO - 12 (At least 3-4 round the clock)	86,40,000
2.3	Nurses- 66 (At least 20-22 round the clock)	2,37,60,000
2.4	Allied Health Professional-9 (At least 3 round the clock)	27,00,000
2.5	Support Staff-9 (At Least 3 round the clock)	21,60,000
Sub-total	**HR Cost per Year**	4,32,60,000
Sub-total	**Non HR Recurring Cost**	26,60,000
	Total Recurring Cost (Non HR + HR)	**4,59,20,000**
Note for HR Calculation	Specialists - round the clock for OT, ICU, Emergency and Other areas	
	GDMO - 1 for 10 beds - critical care area and 1 for 20 beds non critical area	
	Nurses - 1:1 ICU; 1:2 Step Down Unit; 1:6 wards and other areas; OT - 2 per OT per shift	
	Support staff- as per IPHS/GoI Guidelines	

*The rates at which the HR costs are worked out are only indicative. The State/UT may fix the monthly remuneration based on their context. Support for cost of HR, however, is available only to the extent of the Total Recurring Cost indicated in the table above (Para C.5.3).

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