

Guidance Note on Preparation of Proposals for “India COVID 19 Emergency Response and Health Systems Preparedness Package: Phase II”

1. Introduction

During the first phase of the ***“India COVID-19 Emergency Response and Health Systems Preparedness Package”***, funds were allocated through the National Health Mission (NHM) route to support preparedness and prevention related functions in the states for the management of the COVID-19 Pandemic. There has been an upsurge in the second wave and the rural and peri-urban areas which were so far not affected by COVID-19, also had large number of cases.

“India Covid-19 Emergency Response and Health Systems Preparedness Package - Phase-II” (ECRP-Phase-II) has been conceptualized to strengthen the health systems further and support the states to manage the second wave and any future upsurge.

The scheme is a Centrally Sponsored Scheme with some Central Sector components. The scheme has following components.

A. Central Sector (CS) Components: The CS components are proposed to be implemented by Departments, Agencies and Programme Divisions of the MoHFW. Components of this support are as under:

- a. Support to Central Hospitals, AIIMS, and other institutions of national importance for COVID-19 management.
- b. Support for strengthening War Room and IT Interventions including for COVID-19 vaccination at the central level.
- c. Support for strengthening NCDC for surveillance activities including for the Genome Sequencing related work.
- d. Support surveillance at 28 Points of Entry at Airports, sea-ports and land borders.
- e. Support to Centralized Procurement of essential drugs and supplies.

B. Centrally Sponsored Scheme (CSS) Components. These components include support to State/UT level through NHM Framework with a State Share as is applicable in NHM. Components of this support are as under:

- a. Ramping up Health Infrastructure including establishing Paediatric Care units in all the Districts of the Country under the technical guidance and mentorship of State level Paediatric Centre of Excellence, augmenting additional beds at the facilities including those in rural, tribal and peri-urban areas closer to the community, augmenting ICU beds capacity of the country and establishing Field Hospitals and support for additional fleet for Referral Transport. Support is also proposed to enhance the availability of medical Oxygen in public healthcare system by providing 1050 Liquid Medical Oxygen Storage Tanks along with Medical Gas Pipeline System (MGPS) (at least one per district).
- b. Supporting the States to utilize the UG and PG Interns, Final Year MBBS, BSc and GNM Nursing students for effective COVID-19 management.
- c. Support for procurement of Drugs and Diagnostics to enhance service delivery at district and sub district levels for management of COVID-19 cases / Post-COVID-19 sequela like MIS-C in children and for maintaining a buffer of drugs.
- d. Support for IT Interventions such as implementation of Hospital Management Information System and expanding Access to Tele-Consultations in all districts.
- e. Support for Capacity Building and Training for all aspects of management of COVID-19.

2. Objectives

The objectives of the CSS components of the Emergency COVID Response Package: Phase-II are:

- Support the States to establish dedicated Paediatric Care Unit in all 736 districts of the country for responding to the needs of Paediatric COVID-19 management, duly supporting to establish Paediatric Centre of Excellence in each State/UT (either in State Medical Colleges or State Hospitals or Central Hospitals such as AIIMS, INIs,

etc) for providing Tele-ICU services, mentoring and technical hand-holding to these District Paediatric units.

- Enable timely and quality management of COVID-19 patients at district and sub district levels by increased bed capacities at the Sub Health Centres (SHCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), etc, as well as Field hospitals, wherever necessary.
- Increase the availability of Intensive Care Unit (ICU) beds, including the Pediatric ICU beds, as per the evolving needs, for better management of COVID-19.
- Support to States to have at least one Liquid Medical Oxygen Storage Tanks along with Medical Gas Pipeline System (MGPS) in all the Districts to enhance the availability of medical Oxygen in public healthcare system.
- Support the States to utilize the UG and PG Interns, Final Year MBBS, BSc and GNM Nursing students for effective COVID-19 management.
- Increase access to ambulance services to eliminate delays in transport and referral of COVID-19 patients.
- Enhance testing capacity for identification and clinical management of COVID-19 patients, at public healthcare facilities closer to the public due to the spread of cases in rural, peri-urban and tribal areas.
- Support the States in implementation of Hospital Management Information System at all the District Hospitals.
- Strengthen Tele-consultation Platform to provide upto 5 lakhs Tele-consultation services per day, duly augmenting the availability of Spokes and Hubs for enabling access to teleconsultation to manage the patients at home and community isolation.

3. Main Components and Activities to be supported under ECRP-II

The activities under each of the main heads have been detailed below. The unit cost indicated/ maximum (as applicable) has been mentioned below for budgeting purpose.

a. Ramping up Health Infrastructure, with focus on Paediatric Infrastructure including Referral Transport.

Support is provided to the States/UTs under **COVID 19 emergency response and health systems preparedness package** for:

a.1. **Establishing dedicated Paediatric care units in all the 736 Districts**

- Provision of 42 bedded Paediatric Care Unit in 540 Districts (with the district hospitals with more than 100 beds): A 30 bedded oxygen supported paediatric wards (@ Rs. 3.34 lakh per bed) and a 12-bedded hybrid-ICU unit which will have 8 HDU beds and 4 ICU beds (@ Rs. 2.89 Cr per unit).
- Provision of 32 bedded Paediatric Care Unit in 196 Districts (with the district hospitals with 100 beds or less than 100 beds): A 20 bedded oxygen supported paediatric wards (@ Rs. 3.34 lakh per bed) and a 12 bedded hybrid ICU unit which will have 8 HDU beds and 4 ICU beds (@ Rs. 2.89 Cr per unit).

Each district should have at least one paediatric care unit. **These Units may be set at Medical Colleges or District Hospitals, as per the local context.** This budget approved for establishing the paediatric care unit is to be utilized for infrastructure preparedness at the facility and for preparation of stay of parent / care-giver along with the child in the hospital. The State proposal should indicate the number of functional beds. The district hospitals wherein Paediatricians are available must be prioritised. Also, the hospitals with more than 70% occupancy needs to be considered first (Identified source: HMIS). In case, paediatrician is not available in the district hospital, the Paediatric Unit may be established in the Medical College of the same district (if available) or the NHM flexibility and funds for hiring Paediatrician on flexible salary/ insourcing/ outsourcing may be leveraged to ensure availability of Paediatricians.

State wise bifurcation of District Hospitals into ≤ 100 and > 100 beds are mentioned in **Annexure C** along with requisites for establishing the Paediatric Care Unit.

a.2. **Establishing Paediatric CoEs**

- A Centre of Excellence (CoE) for Paediatric Care in to be established in each State/UT. The CoE could be established in a Medical College or a Central Hospital (such as AIIMS, INIs etc.) or a State Hospital. The unit cost for establishing the CoEs should be within Rs 5 Cr per state/ UT. The CoEs will be providing Tele-ICUs, mentoring and technical hand holding to district paediatric units. Indicative list of medical college/ central/ state hospitals

(state wise) which may be considered for establishing CoE has been annexed (Annexure D).

a.3. **Augmentation of Additional Beds by provision of Prefab Units of varying capacity closer to the people (SHC, PHC and CHC level).**

Report-V of Empowered Group-1 (EG-1), set up by Government of India, on Health System Preparedness Needs on Emergency Management Plan and Strategy recommended that in view of unique health challenges posed by peri-urban, rural, and tribal areas, it is important that sufficient preparedness is made to tackle the potential upsurge of pandemic in these vulnerable places and higher level of preparedness to deliver supervised institutionalized isolation care must be planned in rural regions .

Further, the EG-1 recommended that at the national-level, infrastructure should be readied to meet a surge of 4-5 lakh cases per day. This would require the following aggregate numbers of health facilities to be readied by September 2021:

- 10 lakh COVID isolation care beds
- 7 lakh non-ICU hospital beds, with 5 lakh beds enabled for oxygen delivery.
- 2 lakh ICU beds including 1.2 lakh ventilated ICU beds [inclusive of both Mechanical Ventilators and Non-invasive ventilator (NIV) equipment]
- 5% of the ICU beds and 4% of non-ICU oxygen beds need to be earmarked for paediatric care.

Hence, support is provided to increase the non-ICU beds at the Sub Health Centres, Primary Health Centres and Community Health Centres, through pre-fabricated structures. These beds are to be Oxygen supported either using the Oxygen Concentrators provided under PM-CARES or procured by State Governments or provided through Donations, etc or using the Oxygen Cylinders or other Oxygen sources. The Pre-fab structures should facilitate

for this provision of Oxygen services to the beds added at the SHCs, PHCs and CHCs.

- **Up to additional 6 bedded unit at Sub Health Centres and Primary Health Centres @ maximum of Rs 9.83 lakhs per unit can be proposed.**
- Up to additional 20 bedded unit at CHCs @ maximum unit cost of Rs 35 lakhs per unit can be proposed.

The states must indicate their requirement with suggestive layout plan along with plumbing and electrical requirement. Once the pandemic is over, the constructed structures may be utilized for other medical activities as envisioned under Comprehensive Primary Health Care (including for wellness activities, diagnostic services, OPD/IPD services, etc). The structure has to be equipped to provide Teleconsultation services. The points to be considered while or planning for these structures are provided in **Annexure E**.

a.4. **Augmentation of 20,000 ICU beds in public healthcare facilities in the states including 20% paediatric ICU beds.**

In continuation to the Para 3 (a.3) above, further, EG-I also recommended that with a clear critical need to scale-up ICU care, it is suggested that simple COVID ICUs with threadbare basic requirements, leveraging available infrastructure such as health facilities and if need be, with make-shift structures be scaled-up.

Accordingly, Support is provided to the States to augment the ICU beds at the Medical Colleges, District Hospitals, SDHs, CHCs, etc duly reserving 20% for the Paediatric ICU beds. This will be, in addition, to the Paediatric ICU beds, being set up in District Paediatric Units as explained in Para 3 (a.1).

The indicative cost per ICU bed is of Rs 16.85 lakhs. The states may allocate more resources from other sources as per needs after conducting proper gap assessment. The estimation is provided in **Annexure F**.

a.5. **Support for establishing and operating fifty 100-bedded Field Hospitals and fifty 50-bedded field hospitals.**

Support up to Rs.7.5 Cr per 100 bedded unit and Rs.3.5 Cr per 50 bedded unit will be provided under ECRP-II. Provision for operational expenses @ Rs 5.572 lakhs per bed may be made for 9 months which will include all associated costs including HR payment through empanelled agencies, wherever needed.

a.6. **Strengthening the referral transport system by augmentation of existing fleet of ambulances (up to 33%) and ensure timely referral of patient.**

The standard operating procedure issued by MoHFW for transporting COVID patient needs to be adhered by the states¹. Support up to Rs 2 lakhs per month may be proposed. **States/UTs must prioritize to augment the fleet of ALS ambulances to ensure that there is at least one ALS ambulance in each of Block of the State/UT.** The support for these additional ambulances will be available for 9 months, after which, the State will have to take over their funding. The augmentation estimation along with costing for all states/UTs is provided in Annexure G.

a.7. **Support for Liquid Medical Oxygen (LMO) tank of 10 KL Capacity with Medical Gas Pipeline System (MGPS) in the public healthcare facilities @ at least one LMO facility per district.**

The guidance note related to installation of MGPS in public health facilities is provided in Annexure H. **The unit cost of the LMO is approximately Rs. 20 Lakhs per unit and the Unit cost of MGPS (Locally manufactured) is approximately Rs.80 lakhs per unit depending on the existing infrastructure in the Hospitals.** States may prioritize to provide MGPS system to the Hospitals, where PSA plants have been sanctioned under PM-CARES or State Resources or other sources so that the Oxygen availability may be ensured to all the beds ear-marked for oxygen supply at the earliest. After appropriate gap analysis, the State may propose, under this component, both LMO Plants with MGPS system and MGPS systems to the public

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<https://www.mohfw.gov.in/pdf/StandardOperatingProcedureSOPfortransportingasuspectorconfirmedcaseofCOVID19.pdf>

healthcare facilities where Oxygen source is tied-up or available through PSA Plants.

b. IT Interventions - Hospital Management Information System and Tele-Consultations in all Districts

b.1. Implementation of Hospital Management Information System (HMIS) i.e., e-Hospital or e-Sushrut in all District Hospitals.

Presently, HMIS application is functional in 310 District Hospitals across the country. Its implementation is to be expanded to remaining 426 District Hospitals across the country for which the states may budget up to Rs 50 lakhs per DH. This budget may be utilised for the infrastructure support of PC, Laser printer, Barcode printer & scanner, LAN and for Internet connectivity (Details given at **Annexure I**). The human resources, if needed for this may be provided by the respective states/ UTs.

b.2. Strengthening the Tele-Consultation Hubs in all the Districts including establishing Spokes for Tele Consultation at COVID Care Centres.

The services may be utilized for:

- Bridging the geographical inaccessibility in tribal/ remote areas as per feasibility
- Utilizing e-Sanjeevani OPD services for both COVID and non-COVID essential services
- Triaging the symptomatic cases at village level
- Providing post-covid follow-up care

c. COVID essential Diagnostics and provision of resources to Districts to ensure availability of essential drugs for COVID management including buffer stock.

c.1. Provision for RAT and RT-PCR tests through public healthcare facilities.

Estimated support is @ Rs 70 per RAT and Rs 50 per RT-PCR.

c.2. **Provision of RT-PCR Lab including machines (consumables, AMC, etc). in the District Public Health Labs presently not having RTPCR facility**

327 District Public Health Labs have been identified as not having the RT-PCR Lab facility in public healthcare system and the list is attached at **Annexure J**. Support up to Rs 30 lakhs per RT-PCR district unit may be budgeted.

c.3. **Support to States up to Rs 1 Cr for ensuring availability of essential drugs including buffer stock of drugs for COVID19 management.**

The essential medicines required for effective COVID management may be procured using this component as per requirement to meet out the exigencies keeping in mind their short expiry. States/UTs can utilize the services of these medical services corporations to procure these drugs, to ensure economies of scale (Details at **Annexure K**).

The norms mentioned above are for the purpose of budgeting and may vary from State to State. But the unit cost indicated above is the maximum support under the package.

d. Enhanced Human Resources for Health

d.1. To tackle the potential upsurge of pandemic in the peri-urban, rural and tribal areas, the available health workforce should be leveraged. The states are expected to fill up the existing vacancies under regular cadre and NHM which already has funding from existing sources (State/ infrastructure maintenance/ NHM). In case of requirement for additional Human Resources for COVID management, the ECRP-II package provides the following support to augment the availability of additional HRH:

- Engage **UG Interns** in Covid Management duties under the supervision of their faculty, as part of the Internship rotation. The maximum budget available per month per UG intern is Rs 22,000 pm.
- Engage **PG residents** in facilities managing COVID cases @ maximum of Rs 25,000 pm.
- Utilise **final year MBBS students** for providing tele-consultation and monitoring of mild Covid cases after due orientation, under supervision of

Faculty. An amount of maximum of Rs 22,000 pm may be paid as monthly remuneration to the final year students during the period of engagement.

- Engage **final Year GNM or B.Sc. (Nursing) students** awaiting Final Exam @ maximum of Rs 18,000 pm and Rs 20,000 pm respectively. They may be given full time Covid Nursing duties under the supervision of Senior Faculty, Doctors and Nurses.

Refer to **Annexure L** for details of availability of interns, residents and final year students.

Support under ECRP II will be provided only for the above-mentioned categories. In case the monthly remuneration/ incentive is more than the amount mentioned above, the states/UTs may bear the expenditure from its own sources.

e. Support to states Capacity Building and Training for ECRP II components

- e.1. Provision for building capacities of the HR engaged in the COVID management including trainings on IT interventions, Tele-medicine, HMIS implementation in District Hospitals, Paediatric COVID19 management, CME of the professionals etc.

f. Negative List Items

States must ensure that the funds approved under ECRP -II are used **ONLY** for the activities indicated and in no situation, they should be utilized for any other activity.

4. Preparation of Plan

- The templates for preparation of the Emergency COVID Response Plan (ECRP) are given in the **Annexure A and B**.
- The States may take stock of the available facilities and resources and based on the assessment, may plan for the increase in the number of beds and other facilities that may be required be in the readiness to tackle any upsurge of COVID-19 in 2021-22.
- The following components are **priority non-negotiable components** and must be planned and budgeted in the state ECRP proposal:

- One Paediatric Unit in every district.
- One Centre of Excellence for Paediatric per state.
- Functional Hospital Management Information System across all district hospitals.
- RT-PCR testing facility in public healthcare system in all the districts.
- At least one LMO plant (with MGPS) in each district
- The sub-activities are provided under the main budget heads of the ECRP, and the unit rates indicated is the maximum permissible limit or indicative cost (as the case may be). In case of indicative cost, the rate may vary from State to State based on the specification proposed.
- States must provide justification as well as all supporting documents related to the all their ECRP proposals.
- Monthly financial reporting will be required in the pre-defined FMR codes.
- While the focus is on combating the current emergency, the larger goal of strengthening the Public Health system for epidemic preparedness should also be kept in mind. Efforts should be made to prioritize such activities that not only facilitate effective COVID-19 response but also strengthen public health facilities to respond to any similar outbreaks in future.

5. Fund Flow and Release of Fund

a. Release of Fund

Funds under ECRP-II would be released in instalments. The State share will be applicable as per the NHM norms. Time period of implementation is till 31.3.2022.

The funds under ECRP-II will flow from MoHFW to State Treasury and from State Treasury to State Health Society (SHS). The SHS will also receive the corresponding State Share and then would spend the necessary funds as per the approved ECRP II. Because of the urgency of the situation, it is expected that the State Government would transfer the funds under ECRP II to SHS **within 7 working days from the date of release of allocation from the Central Government.**

The Department of Expenditure has concurred with the proposal of DoHFW by way of a special dispensation, granting exemption till 31.03.2022 for implementation of the revised CSS procedure pertaining to release of funds under CSS in this ECRP Phase-II project, on the special ground of emergency COVID-19 related expenditure (copy enclosed) and States/UTs may kindly note the same.

For receiving the next tranche of ECRP-II funds, states must ensure physical and financial reporting as well as must ensure that the Dashboard is updated timely.

b. No Duplication with other sources of funding

Funding from other departments/ ministries may be utilised for strengthening the public health system for better management of COVID-19. These may include up to 50% of the annual allocation of State Disaster Response Fund (SDRF), CSR and any other source of funding. States must ensure that there is no duplication in the proposals send for approval under ECRP-II and a certificate to this effect will need to be provided by the State/UT.

c. Procurement Norms

The funds released under this package shall be utilized as per the prevailing procurement rules and processes in States, as is done in the case of NHM activities. Besides, the following mandatory conditions are to be followed scrupulously.

1. Efforts should be taken to see that there are no duplications in the procurement being done by various agencies at the State level.
2. The procurement will happen through GeM for all the procurements using the resources under ECRP-II and this is a mandatory condition that the States/UTs would need to adhere to.
3. Wherever exceptions are to be made on this condition, the same can be taken up in exceptional circumstances, with the concurrence of AS&FA of MoHFW after an appraisal of the State's proposal regarding the same and as assessment of the States capabilities to undertake this procurement through other robust mechanisms and institutions.

d. Approval Process

The process to be followed for approval under ECRP-II will be the same as that of NHM. The SHS will prepare the ECRP-II plan as per the State/ local requirement and context and put it up for approval to its Executive Committee (EC)/Governing Body (GB).

The ECRP proposal received from the states will be appraised in a manner similar to the NHM PIP appraisal process.

6. Monitoring and Reporting/ Dashboard

Urgency of the situation makes close monitoring imperative. The State will send the progress reports on both physical and financial progress against the approved plan on monthly basis by 7th of each month to the Ministry of Health and Family Welfare, Govt. of India.

A dashboard will be prepared to monitor the activities of ECRP-II, incorporating appropriate output / outcome indicators and this has to be updated by States regularly. Timely updating of dashboard will be a mandatory criterion for release of next tranche of ECRP fund.

7. Timelines

The targeted time frames for the above process are as follows:

Activity	Timeframe
Issuance of guidance note with intimation of resource envelope including details of mandates and components under COVID package to states by MoHFW for ECRP-II	14th July 2021
Preparation of state ECRP-II PIP, approval by EC/GB and submission to MoHFW.	21th July 2021
Appraisal and approval of PIPs by MoHFW	31st July 2021

8. Audit

The general process of annual audit undertaken by the Chartered Accountant (CA) under NHM for its programmes will also be applicable to ECRP-II and the audit report should have a separate chapter on ECRP II.

Annexures of the Guidance Note on India COVID 19 Emergency Response and Health Systems Preparedness Package: Phase II

Annexure-A

Template for Emergency COVID Response Plan (ECRP) Phase II: Summary Sheet

FMR	Activity / Item of expenditure	Budget Proposed (in Rs lakhs)	Budget Approved (in Rs lakhs)
	Grand Total	-	-
B.31.1	COVID essential Diagnostics and Drugs	-	-
B.31.1.1	Provision for RAT and RT-PCR tests	-	-
B.31.1.2	Lab Strengthening for RT-PCR (only for 327 District Public Health Labs / districts not having the RT-PCR Lab in public health system)	-	-
B.31.1.3	Essential drugs for COVID19 management	-	-
B.31.2	Ramping up Health Infrastructure with focus on Paediatric care units	-	-
B.31.2.1	Establishing dedicated Paediatric care units	-	-
B.31.2.2	Establishing Paediatric CoEs at Medical Colleges/ State Hospital/ Central Government Hospital	-	-
B.31.2.3	Establishing additional Beds by provision of Prefab Units closer to the community	-	-
B.31.2.4	ICU beds in public healthcare facilities including 20% paediatric ICU beds	-	-
B.31.2.5	Field Hospitals (50/ 100 bedded)	-	-
B.31.2.6	Referral transport	-	-
B.31.2.7	Support for Liquid Medical Oxygen (LMO) plant (with MGPS) including site preparedness and installation cost	-	-
B.31.3	Enhancement of Human Resources for Health	-	-

B.31.3.1	Medical PG Interns	-	-
B.31.3.2	Medical UG Inters	-	-
B.31.3.3	Final year MBBS students	-	-
B.31.3.4	Final Year GNM Nursing students	-	-
B.31.3.5	Final Year B.Sc. Nursing students	-	-
B.31.4	IT Interventions - Hospital Management Information System and Tele- Consultations	-	-
B.31.4.1	Hospital Management Information System (HMIS)	-	-
B.31.4.2	Strengthening the Telemedicine/ Tele-consultation Hubs	-	-
B.31.8	Capacity Building and Training for ECRP II components	-	-

Annexure-B**Template for Emergency COVID Response Plan (ECRP): Detailed Proposal**

FMR	Sl N o	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	GoI Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
		Grand Total					-		-	
B.31.1		COVID essential Diagnostics and Drugs					-		-	
B.31.1.1		Provision for RAT and RT-PCR tests					-		-	
	1	No. of RTPCR test Kits					-			
	2	No. of Rapid Antigen Test Kits					-			
B.31.1.2		Lab Strengthening for RT-PCR (only for 327 District Public Health Labs / districts not having the RT-PCR Lab in public health system)					-		-	
	1	Budget proposed for establishing RT-PCR Lab (with five year warranty) including procurement of RT-PCR Machine, biosafety cabinet, essentials such as -20 degree Celsius					-			

FMR	SI N o	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
		Freezer, pipettes, refrigerated centrifuge, vortex, etc								
B.31.1.3		Essential drugs for COVID19 Management, including maintaining buffer stock (List of drugs to be attached)					-			
B.31.2		Ramping up Health Infrastructure with focus on Paediatric care units					-		-	
B.31.2.1		Establishing dedicated Paediatric care units					-		-	
	1	Establishment of 32 bedded Paediatric Care Unit in DHs with ≤ 100 beds (List of hospitals to be attached)					-			
	2	Establishment of 42 bedded Paediatric Care Unit in DH with more than 100 beds (list of hospitals to be attached)					-			

FMR	Sl No	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
B.31.2.2		Establishing Paediatric CoEs at Medical Colleges/ State Hospital/ Central Government Hospital					-			
B.31.2.3		Establishing additional Beds by provision of Prefab Units closer to the community					-		-	
	1	No. of 6 bedded units at SHC level (List of SHCs to be attached)					-			
	2	No. of 6 bedded units at PHC level (List of PHCs to be attached)					-			
	3	No. of 20 bedded units at CHC level (List of CHCs to be attached)					-			
B.31.2.4		ICU beds in public healthcare facilities including 20% paediatric ICU beds					-			
	1	No of ICU beds (duly indicating number of Paediatric ICU beds separately) added at Medical Colleges								

FMR	Sl No	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
	2	No of ICU beds (duly indicating number of Paediatric ICU beds separately) added at District Hospitals (other than the Paediatric units mentioned at Para 31.2.1)								
	3	No of ICU beds (duly indicating number of Paediatric ICU beds separately) added at Sub District Hospitals (other than the Paediatric units mentioned at Para 31.2.1)								
	4	No of ICU beds (duly indicating number of Paediatric ICU beds separately) added at Community Health Centres (other than the Paediatric units mentioned at Para 31.2.1)								
	5	No of ICU beds (duly indicating number of Paediatric ICU beds separately) added at Public healthcare facilities, other than the								

FMR	Sl No	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
		four mentioned above (other than the Paediatric units mentioned at Para 31.2.1)								
B.31.2.5		Field Hospitals (50/ 100 bedded)					-		-	
	1	Establishment of 100 bedded Field Hospitals					-			
	2	Operational expenses for above 100 bedded Field Hospitals								
	3	Establishment of 50 bedded Field Hospitals					-			
	4	Operational expenses for above 50 bedded Field Hospitals								
B.31.2.6		Referral transport					-			
		Support for additional ambulances for nine months and preference to be given for ALS Ambulances								
B.31.2.7		Support for Liquid Medical Oxygen (LMO) plant (with MGPS) including site preparedness and installation cost					-			

FMR	Sl No	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
B.31.3		Enhancement of Human Resources for Health					-		-	
B.31.3.1		Medical PG Residents					-			
B.31.3.2		Medical UG Inters					-			
B.31.3.3		Final year MBBS students					-			
B.31.3.4		Final Year GNM Nursing students					-			
B.31.3.5		Final Year B.Sc. Nursing students								
B.31.4		IT Interventions - Hospital Management Information System and Tele-Consultations					-		-	
B.31.4.1		Hospital Management Information System (HMIS) - to be implemented in 426 District Hospitals of the Country (HR support is not covered)					-			
	1	Support to DHs to implement all modules of HMIS in District Hospitals								

FMR	SI N o	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
B.31.4.2		Strengthening the Telemedicine/ Tele-consultation Hubs					-			
	1	No of District Hubs established (indicate their locations such as Medical Colleges, DHs, etc) with required hardware and other essentials.								
	2	No of District Hubs strengthened (indicate their locations such as Medical Colleges, DHs, etc) with required hardware and other essentials								
	3	No of Spokes established (indicate their locations such as category of Public healthcare facilities including CCCs, etc) with required hardware and other essentials.					-			
	4	No of Spokes strengthened (indicate their locations such as category of Public					-			

FMR	Sl No	Activity / Item of expenditure	Average Unit Cost		Total units required in FY 2021-22	No. of Units Prop osed	Budget Propos ed (in Rs lakhs)	State Remar ks	Budget Approv ed (in Rs lakhs)	Gol Remar ks
			Unit of measure	Unit Cost (In Rs./ unit)						
		healthcare facilities including CCCs, etc) with required hardware and other essentials.								
B.31.8		Capacity Building and Training for ECRP II components					-		-	
	1	Training on IT interventions including HMIS implementation					-			
	2	Training on Paediatric COVID19 management					-			
	3	CME of the professionals					-			
	4	Other trainings (Specify)					-			

Establishing District Paediatric Units in all the Districts including Paediatric Wards and Hybrid Critical Care Area

General considerations for the States

- a) **These Units may be set at Medical Colleges or District Hospitals, as per the local context.**
- b) A State proposal would indicate the number of DHs or MCs planned for augmentation i.e., DH with less than 100 bedded, more than equal to 100 bedded and a medical college.
- c) A 12 bedded hybrid ICU unit would have a 4 bedded ICU and 8 bedded HDU beds supported under ECRP 2. This will help in optimization of resources in terms of HR, equipment etc.
- d) State may ensure at least 20 bedded pediatric unit and a 12 bedded hybrid ICU unit (4 ICU and 8 HDU) at district hospitals.
- e) Estimating the need of pediatric ward and hybrid ICUs is subjected to the gap analysis conducted by the state.
- f) District Hospitals with bed occupancy more than 70% need to be prioritized. (Identified source: HMIS)
- g) States will have the flexibility to select District Hospitals to ensure better accessibility and time to care approach.
- h) Facility for stay of parent/ caregiver along with the child.
- i) Ambulance facilities for smooth inter-facility transfer.
- j) Standard Operating Procedures for clinical protocols, emergency management, triaging etc to be in place.
- k) Assured linkages with higher facilities.

Requisites for establishing a Pediatric Ward and Hybrid ICU Units

States may identify establishing Hybrid ICU units with pediatric wards at District Hospitals with:

1. Minimum area of 30 sq meter per bed for ICU and 18 square meters for pediatric oxygen supported beds in compliance with IPHS norms. Additional circulatory area (10%) may also be considered.
2. Ideally critical care areas are located in a single place with sufficient protocols in place for optimum clinical outcome.

3. Adequate Human resource for nursing officers in the ratio of 1:1 for ICU beds, 1:2 for HDU and 1:10 for medical officers. All specialists for district hospitals need to be in place as per IPHS especially pediatricians.
4. All pediatric beds **must be supported by regular oxygen supply** (PSAs, LMO etc.), MGPS and basic equipment as per the *“Guidelines on Operationalization of COVID Care Services for Children & Adolescents”* by GoI.

Dedicated pediatric care unit in 736 districts

State Name	DH less than 100 beds	DH more than 100 beds
A & N Islands	1	2
Andhra Pradesh	0	14
Arunachal Pradesh	9	2
Assam	3	20
Bihar	20	12
Chandigarh	1	1
Chhattisgarh	10	14
Dadra & Nagar Haveli & DD	1	2
Delhi	6	29
Goa	0	2
Gujarat	1	20
Haryana	10	10
Himachal Pradesh	2	10
Jammu & Kashmir	7	12
Jharkhand	10	6
Karnataka	4	22
Kerala	2	46
Ladakh	1	1
Lakshadweep	0	0
Madhya Pradesh	4	47
Maharashtra	14	31
Manipur	2	0
Meghalaya	7	4

State Name	DH less than 100 beds	DH more than 100 beds
Mizoram	2	4
Nagaland	3	3
Odisha	5	27
Puducherry	1	3
Punjab	10	13
Rajasthan	0	27
Sikkim	4	0
Tamil Nadu	0	32
Telangana	0	7
Tripura	3	4
Uttar Pradesh	42	77
Uttarakhand	8	4
West Bengal	3	32
Grand Total	196	540

Note: The district wise allocation is indicative. States will have the flexibility to deploy the resources to the districts as per their local context and needs.

Establishing Pediatric Centre of Excellence in all the States/UTs

The overall objective is to establish a teleconsultation hub at Medical colleges (or at a Specialized Paediatric Hospital or other Hospitals such DHs where multiple specialties for secondary care as per IPHS are available). This will provide hand holding and capacity building in order to operationalise the critical care units at DHs.

- a) Medical college as a hub will be linked with the spokes of District Paediatric Units at District Hospitals or medical colleges, as the case may be to support in decision making regarding the treatment plan of the patients admitted in paediatric units through teleconsultation mode.
- b) **These CoE will be providing regular Tele-Consultation services including mentoring and monitoring of provision of services at ICUs at District Paediatric Units through Tele-ICU guidance / services.**
- c) If required, the complicated cases can be referred to medical colleges by the specialists at DHs. This will ensure assured delivery of critical care services at tertiary care level.
- d) Each medical college needs to identify coordinators to ensure mentoring support with the district hospitals attached.
- e) Efficacy of monitoring can be augmented by use of any available/ customisable application. Ideally, this model would support offline, online, and interactive telemedicine creating complete technological base of all types of services / modalities. A web-based access system for specialists from their room or via laptop/home may also be provided to address emergencies.
- f) The software should have the capability to transmit test results directly to the specialist, as well as be integrated into the existing applications which can eventually be integrated into the Electronic Health Record (*e- sushrut*).
- g) Integration with the IT applications will facilitate to analysis the real time data and monitor details of teleconsultation on a regular basis.
- h) Case based interactive sessions among specialists from Medical colleges and district hospitals to be planned twice a week ensuring cross learning and selecting the appropriate treatment plan.

The support provided under ECRP-II includes upgradation/ renovation for physical infrastructure, IT equipment's (Software and hardware) for HUB and SPOKE,

Telemedicine Server Platform, internet connection, monitoring, training, honorarium for teleconsultation services, follow-up consultations etc.

Monitoring and data reporting

Regular supervision, monitoring, data reporting should be the responsibility of facility in charge and need to be reviewed periodically.

Sustainability

Plan and operationalization of these beds/ Critical care units in such a way that they become part of functional clinical areas as per IPHS.

Indicative List of Medical College/ Central Hospital to be supported for establishing CoE

	State/UT	Name of selected Medical College	City/town	Govt/ Private/ Trust
1	Andaman & Nicobar Islands	Andaman & Nicobar Islands Institute of Medical Sciences, Port Blair	Port Blair	Govt.
2	Andhra Pradesh	AIIMS, Mangalagiri	Vijaywada	Govt.
3	Arunachal Pradesh	Toma Riba Institute of health & Medical Sciences	Naharlagun	Govt.
4	Assam	Gauhati Medical College, Guwahati	Guwahati	Govt.
5	Bihar	AIIMS, Patna, Bihar	Patna	Govt.
6	Chandigarh	PGI Chandigarh	Chandigarh	Govt.
7	Chhattisgarh	All India Institute of Medical Sciences, Raipur	Raipur	Govt.
8	Dadra and Nagar Haveli & DD	Shri Vinoba Bhave Institute of Medical Sciences (currently functioning as DH)	Silvassa	Govt.
9	Delhi	All India Institute of Medical Sciences, New Delhi	New Delhi	Govt.
10	Goa	Goa Medical College, Panaji	Panaji	Govt.
11	Gujarat	B J Medical College, Ahmedabad	Ahmedabad	Govt.
12	Haryana	Pt. B D Sharma Postgraduate Institute of Medical Sciences, Rohtak	Rohtak	Govt.
13	Himachal Pradesh	Indira Gandhi Medical College, Shimla	Shimla	Govt.

	State/UT	Name of selected Medical College	City/town	Govt/ Private/ Trust
14	J&K	Government Medical College, Jammu	Jammu	Govt.
15	Jharkhand	Rajendra Institute of Medical Sciences, Ranchi	Ranchi	Govt.
16	Karnataka	Bangalore Medical College and Research Institute, Bangalore	Bangalore	Govt.
17	Kerala	Government Medical College, Ernakulam (for Lakshadweep)	Ernakulam	Govt.
18	Kerala	Medical College, Thiruvananthapuram	Thiruvananthapuram	Govt.
19	Madhya Pradesh	All India Institute of Medical Sciences, Bhopal	Bhopal	Govt.
20	Maharashtra	All India Institute of Medical Sciences, Nagpur	Nagpur	Govt.
21	Manipur	Regional Institute of Medical Sciences, Imphal	Imphal	Govt.
22	Meghalaya	North Eastern Indira Gandhi Regional Institute of Medical Sciences	Shillong	Govt.
23	Mizoram	Mizoram Institute of Medical Education and Research, Mizoram	Mizoram	Govt.
24	Nagaland	DH Kohima (being converted to MC)	Kohima	Govt.
25	Odisha	AIIMS, Bhubaneswar	Bhubaneswar	Govt.
26	Puducherry	Jawaharlal Institute of Postgraduate Medical Education & Research	Puducherry	Govt.
27	Punjab	Government Medical College, Amritsar	Amritsar	Govt.
28	Rajasthan	All India Institute of Medical Sciences, Jodhpur	Jodhpur	Govt.
29	Sikkim	STNM Hospital	Gangtok	Govt.
30	Tamil Nadu	Madras Medical College, Chennai	Chennai	Govt.
31	Telangana	Osmania Medical College, Hyderabad	Hyderabad	Govt.
32	Tripura	Agartala Government Medical College, Agartala	Agartala	Govt.

	State/UT	Name of selected Medical College	City/town	Govt/ Private/ Trust
33	Uttar Pradesh	Institute of Medical Sciences, BHU, Varanasi	Varanasi	Govt.
34	Uttarakhand	All India Institute of Medical Sciences, Rishikesh	Rishikesh	Govt.
35	West Bengal	Calcutta National Medical College, Kolkata	Kolkata	Govt.
36	Ladakh	District Hospital, Leh	Ladakh	Govt.

Augmentation of Additional Bed by provision of Prefab Units of varying capacity closer to the people

While the health system is coping with the current pandemic situation, the primary health care facilities have to prepare for any surge that may arise, especially in rural areas. States can propose for additional beds at SHC, PHC and CHC levels to ensure provision of isolation facility closer to the community.

6 bedded Units @ 9,83,400 per unit at 34,000 Sub Health Centres and Primary Health Centres and 20 bedded units @ 35,00,000 per unit at 2,000 CHCs will be supported.

These beds are to be Oxygen supported either using the Oxygen Concentrators provided under PM-CARES or procured by State Governments or provided through Donations, etc or using the Oxygen Cylinders or other Oxygen sources. The Pre-fab structures should facilitate for this provision of Oxygen services to the beds added at the SHCs, PHCs and CHCs.

State wise list for the number of facilities to be supported is annexed. It has been prepared based on the following criteria:

- 50% of the subcentres developed as HWC-SHCs, as per AB-HWC portal.
- All functional 24x7 PHCs as per RHS-2020.
- The remaining facilities have been identified in states based on gap against PHCs functional as HWC and 24x7 PHCs.
- All FRU CHCs.

To speed up the preparedness and cater to the immediate requirement of strengthened health facilities, prefabricated structures can be opted. Generally, the quality and specifications are being guaranteed by the manufacturers with a life span of 25-30 years or more. So, states need to indicate their requirement with suggestive layout plan along with plumbing and electrical requirement. If the specifications, parameters (thickness, type of material, etc.) and quality are specified, manufacturers themselves give such guarantee which becomes easier to implement and monitor. This also brings in uniformity and standardization in structure.

- While selecting the facility to be augmented, following considerations are to be made:
- The SHC or PHC should be functional as Health and Wellness Centre with adequate space in HWC room available.

- Availability of HR should be ensured ie, CHOs at Sub Health Centre – Health and Wellness Centres and Medical Officers at PHCs should be available.
- The selected HWC-PHC should be functional round the clock.
- Health facilities (SHC/PHC) located in far flung, hard to reach, tribal areas, more than two hours away from DCH/DCHC can be prioritized.
- CHC should be operational as FRU- CHC with availability of specialists.

While planning the augmentation through pre-fab structures, following points need to be considered:

- **At the level of SHC and PHCs / SHC and PHC Health and Wellness centres, pre-fab structure units with 6 beds can be added.**
- At the level of CHC, 20 bedded such units can be added.
- Provision of all the precautionary steps of PPE, hand sanitizing and hand wash facility to be ensured.
- Preferably the ward should have a separate entry/exit.
- Availability of Oxygen and pulse oximeter.
- Visitors to the isolation facility should be disallowed.
- All non-essential furniture should be removed and ensure that the remaining furniture is easy to clean
- Drinking water and toilets should be available and conveniently located.
- Regular supervision, monitoring and data reporting should be the responsibility of facility in-charge and need to be reviewed at block and district headquarters.

Once the surge is over, the constructed structures can be utilized for wellness activities and other diagnostic services and to cater to the increased OPD / IPD services due to the implementation of 12 expanded range of services at SHC and PHC – Health and Wellness Centres as envisioned under Comprehensive Primary Health Care. The structure can also be utilized to provide teleconsultation services.

Indicative numbers (State wise) for augmentation of 6 beds units at HWC-SC/HWC-PHCs and 20 bedded units at CHCs

State	HWC-SHC	HWC PHC	Total CHCs
Andaman & Nicobar Islands	29	22	3
Andhra Pradesh	1460	606	208
Arunachal Pradesh	71	40	8
Assam	771	309	42
Bihar	427	517	74
Chandigarh	0	5	5
Chhattisgarh	1215	491	41
Dadra and Nagar Haveli and Daman and Diu	39	9	5
Delhi	0	0	3
Goa	22	13	3
Gujarat	2054	316	77
Haryana	187	258	22
Himachal Pradesh	267	10	11
Jammu & Kashmir	444	115	81
Jharkhand	688	222	49
Karnataka	1649	887	32
Kerala	693	128	10
Ladakh	35	12	3
Lakshadweep	0	3	3
Madhya Pradesh	2533	761	55
Maharashtra	3189	710	129
Manipur	77	54	7
Meghalaya	79	71	7
Mizoram	61	51	12
Nagaland	82	43	12
Odisha	159	136	44
Puducherry	40	19	3
Punjab	1083	193	130
Rajasthan	161	637	118

State	HWC-SHC	HWC PHC	Total CHCs
Sikkim	36	10	7
Tamil Nadu	1157	1320	377
Telangana	841	334	105
Tripura	121	82	8
Uttar Pradesh	3292	60	20
Uttarakhand	254	86	229
West Bengal	2022	239	57
Grand total	25231	8769	2000

Note: The above state-wise distribution of beds is only suggestive. States have the flexibility to propose the number of beds as per the gap analysis and the local requirement.

Augmentation of ICU bed facilities in the States

The second wave demonstrates the acute need for augmenting the ICU beds. The Empowered Group-I set up by the Government of India has also highlighted the need to augment the ICU beds in the Country. ECRP-II provisions for augmentation of 20,000 ICU beds (including 20% paediatric beds) @Rs. 16.85 lakhs per bed where critically ill patients requiring highly skilled lifesaving medical aid and nursing care can be admitted. These beds can be augmented at either district hospitals or medical colleges. However, district hospitals with existing ICU set-ups should be prioritized. State wise break-up for augmentation of ICU beds is annexed. For calculation purpose, 25% augmentation of available ICU beds as on April 2021 has been assumed. Patients requiring mechanical/invasive ventilation or intensive monitoring may be admitted here.

Support is provided to the States to augment the ICU beds at the Medical Colleges, District Hospitals, SDHs, CHCs, etc duly reserving 20% for the Paediatric ICU beds. This will be, in addition, to the Paediatric ICU beds, being set up in District Paediatric Units as explained in Para 3 (a.1).

While augmenting ICU beds, following points should be considered:

- Floor space of 25-30 sq. m. per ICU bed.
- There should be single-piece curtains between the rooms for ensuring privacy of the patients. The curtain fabric should be fire and waterproof, washable, clean, light colored, inherently stain resistant and non- allergic.
- Availability of specialized services such as suction (central supply or through standalone machines), medical gas supply, oxygen (through central supply or cylinders with humidifiers and flowmeters), uninterrupted electric supply, heating, ventilation and air handling unit.
- There should be >12 air exchanges per hour and negative air pressure with 40 psi maintained.
- Adequate Human resource for nursing officers in the ratio of 1:1 for ICU beds, 1:2 for HDU and 1:10 for medical officers. The entire complement of HR should be available. Ideally, staff to operationalize and manage the facility, should be utilized from the existing pool of staff/from the nearest non-functional or partially functional health facilities.

Augmentation estimation for Referral Transport

There is a necessity to transport patients requiring augmentation of the existing ambulances to meet the present Pandemic and any future surge.

In the country, presently 26,679 ambulances (10,993 Dial-108 and 10,560 (Dial-102/104) Emergency Response Service Vehicles, 5,126 empanelled vehicles for transportation of patients) are supported under NHM through a functional National Ambulance Service (NAS) to transport the medical emergency cases. The density of ambulances varies from State to State.

Under ECRP-II proposal, it is envisaged to provide additional support for 8804 new ambulances i.e. 33% of the existing ambulances (26679) being supported under NHM.

There are two types of ambulances being run by NHM – Basic Life Support (BLS) and Advanced Life Support (ALS). BLS ambulances can be used for emergency patients who require non-invasive Airway Management / basic monitoring. ALS ambulances are used for emergency patients who require invasive Airway Management / intensive monitoring. Most of the COVID patients could be transported using BLS, however, in very few cases where invasive ventilation has been put at the referring facility and being transported to higher facility/DCH for further treatment, in such cases ALS may be required to maintain the invasive ventilation and other vitals. During the COVID times, MoHFW has given the standard operating procedure for transporting COVID patient which needs to be adhered by the states. **For ECRP-II Proposal, the States must conduct a gap analysis and propose augmentation of the Ambulance fleets to ensure that there is at least one ALS ambulance per block.**

All the ambulances need to be linked with a centralised call centre for its optimal utilization, the location of the ambulances should be determined both by the density of population as well as time-to-care approach. GIS based mapping of various health facilities as well as real time GPS tracking of ambulances is required to be undertaken by the State/UT - both for plain and hilly areas. State to monitor the average calls received per day, no of trips and total kms travelled per day for each ambulance, avg. response time per day for each ambulance, average breakdown time in a month for each ambulance, percentage of EMTs trained, their type and duration of training, etc.

Now, the support is being provided for running the ambulance in Full OPEX mode (CAPEX+ OPEX) for nine months only @ Rs. 2 Lakh per ambulance per month.

Sr. No.	State/UTs	Augmentation @ 33%
1	Andhra Pradesh	207

Sr. No.	State/UTs	Augmentation @ 33%
2	Arunachal Pradesh	49
3	Assam	309
4	Bihar	411
5	Chhattisgarh	206
6	Goa	18
7	Gujarat	210
8	Haryana	141
9	Himachal Pradesh	109
10	Jammu & Kashmir	141
11	Jharkhand	706
12	Karnataka	301
13	Kerala	14
14	Madhya Pradesh	468
15	Maharashtra	1192
16	Manipur	14
17	Meghalaya	16
18	Mizoram	21
19	Nagaland	26
20	Orissa	362
21	Punjab	80
22	Rajasthan	436
23	Sikkim	3
24	Tamil Nadu	310
25	Telangana	209
26	Tripura	1
27	Uttar Pradesh	1558
28	Uttarakhand	77
29	West Bengal	1118
30	A & N Islands	1
31	Chandigarh	2
32	D & N Haveli & Daman & Diu	3
33	Delhi	76
34	Ladakh	6

Sr. No.	State/UTs	Augmentation @ 33%
35	Lakshadweep	1
36	Puducherry	3
	TOTAL	8804

Note: The above state-wise distribution of ambulances is only suggestive. States have the flexibility to propose the number as per the gap analysis based on the population saturation and the local requirement.

GUIDANCE NOTE TO STATES/UTs ON INSTALLATION OF MEDICAL GAS PIPELINE SYSTEM IN PUBLIC HEALTHCARE FACILITIES UNDER ECRP II:

Introduction

1. Medical Gas Pipeline System (MGPS) is designed to provide a safe and effective method of delivering medical & anesthetic gases, vacuum & compressed air from the source of supply to the appropriate terminal unit by means of a pipeline distribution system. These systems are typically economical in large hospitals that require a high volume of oxygen and can support the costs of the centralized pipeline infrastructure.
2. MGPS should be prioritized for those public health facilities having oxygen generation and storage facility and piped medical gas system will improve oxygen delivery at bedside, for improved patient care. The recommended areas for the piped oxygen delivery in healthcare facility are ICU/HDU, Critical Care Units, Labour Room, OT, NICU/PICU, Oxygen Supported beds, Emergency room etc.
3. The Medical gas pipeline system supplies medical gases like oxygen and nitrous oxide and mixtures of gases to different departments in a healthcare facility as per IPHS guidelines.

ECRP II proposal

4. The ECRP II proposal has been approved for support for 1050 Liquid Medical Oxygen tanks of 10 KL capacity with MGPS in 1050 public health facilities.

Unit Cost

5. **The unit cost of the LMO is approximately Rs. 20 Lakhs per unit and the Unit cost of MGPS (Locally manufactured) is approximately Rs.60 lakhs per unit depending on the existing infrastructure in the Hospitals.**
6. **States may prioritize to provide MGPS system to the Hospitals, where PSA plants have been sanctioned under PM-CARES or State Resources or other sources so that the Oxygen availability may be ensured to all the beds ear-marked for oxygen supply at the earliest.**
7. **After appropriate gap analysis, the State may propose, under this component, both LMO Plants with MGPS system and MGPS systems to the public healthcare facilities where Oxygen source is tied-up or available through PSA Plants.**

8. Hospital should assess the requirement critically based on the design of the healthcare facility, distance from manifold room, number of critical care beds, number of OTs, number of oxygen delivery points etc.
9. The MGPS costing proposal should always include the CAMC/AMC cost for ensuring preventive maintenance and smooth functioning.

Distribution Plan

10. States to plan the requirement of MGPS at their respective healthcare facility depending on the case load, HR and available infrastructure. It is suggested to plan the new proposal giving priority to first District Hospitals, then SDH and below subject to approval by MOHFW.

Specific Technical Guidance to States/UTs

11. States/UTs should ensure the following important considerations while planning their MGPS proposals.
 - a) Copper seamless pipes with flux less silver brazing are used which should be as per HTM/ASTM standard and Lloyd's/TUV/SGS certified.
 - b) The changeover should be performed by electrically/pneumatically operated valves contained in the control cabinet. In the event of an electrical power failure the valves should automatically open to provide an uninterrupted gas flow.
 - c) The medical air quality should meet the standards laid by the European Pharmacopeia or US Pharmacopeia.
 - d) The MGPS final delivery points should be colour coded and as per HTM 02-01/NFPA 99 C/EN (ISO-7396-1)/DIN standard.
 - e) Maintenance of oxygen manifold, central pipelines and pressures levels should be monitored by a dedicated team of trained manpower to maintain the oxygen gas supply systems at the facility.
 - f) Testing and certification by the manufacturer is required after completion of installation and should be certified and documented.
 - g) A logbook & inventory should be maintained by the healthcare facility. All activities of repair, maintenance and inspection should be entered in it, signed and documented.
 - h) Training of hospital staff on operations and routine maintenance of the MGPS should be undertaken at the time of installation. Refresher training after 6 months of installation and/ or during preventive/corrective maintenance visit is suggested for smooth operation of the MGPS.

Implementation of HMIS in the District Hospitals

INTRODUCTION

The COVID-19 pandemic has had a devastating impact on society, adversely affecting the health and well-being of individuals. The challenges presented by this pandemic have accelerated the adoption of digital technologies especially in the delivery of health care. The past year has underscored the importance of making better use of digital data such and mobile technologies for data driven policy decisions while formulating emergency health response.

In wake of the trend that is setting in, it is imperative to prioritize the utilization of digital health for data driven policy decisions for ensuring effective service delivery and citizen empowerment. Effective data integration and real time data reporting are vital tools to contain the outbreak of pandemic and to manage the health system effectively.

While in the current pandemic, Government has utilized the benefits of digital interventions to support the data driven decisions with consolidation of data related to COVID from State and District facilities. It has also led to the need to a comprehensive data sourcing mechanism to be implemented across the spectrum of healthcare.

While responding to the COVID, the major decisions regarding the clinical management are based on the hospitalization data of patients underlying the active cases cross the districts. Accordingly, the policy decisions were shaped to augment the infrastructure at the facilities like beds capacity, ICU beds, Ventilators, drugs etc. Based on the hospitalization data infrastructure predictions and allocations to States are being made.

It has been observed that Hospital Management Information System (HMIS) will play an instrumental role in with real time data from each facility to support the clinical management decisions.

Hospital Management Information System (HMIS)

Hospital Management Information System is a major step towards adapting technology to improve healthcare system. HMIS incorporates an integrated computerized clinical information system for improved hospital administration and patient healthcare. It also provides an accurate, electronically stored medical record of the patient. It has the potential to improve the efficiency of overall system through automation and generates necessary reports for managing operations, performance, quality, planning, decision-making and reporting.

An important aspect of implementing HMIS is generating patient care related intelligence for effectively managing the process through quality data. These systems enhance the ability of

health care professionals to coordinate care by providing a patient's health information and visit history at the place and time that it is needed which subsequently enhanced clinical decision making as well as policy decision making.

The HMIS will ensure real time data of patients in the system with their current status like bed occupancy, logistics, average length of stay, clinical status (Isolation/ICU/ventilator) etc. The standardized data from the HMIS in long term will help to establish the Clinical Decision Support System (CDSS) to create triaging and clinical protocols for next health emergencies of same type. Analysing the benefits that HMIS provides for establishing clinical management during the pandemic, Union Government has included implementation of HMIS in 426 Districts Hospitals under the ECRP-II package.

Implementation of HMIS in District Hospitals (426) under ECRP-II

Under **ECRP-II package**, for implementation of Hospital Management Information System (HMIS) in **District Hospitals (426)** across the country, **Rs 50 lakhs per DH has been provisioned to all States/UTs** (for the infrastructure support of PC, Laser printer, Barcode printer & scanner, LAN, Internet connectivity) under ECRP-II for HMIS implementation. The district hospitals which already have implemented HMIS solution (as per available details) are appended as Annexure – I & II and HMIS implementation accordingly has to be taken up in the remaining districts hospitals of the country. Given below is the indicative cost for implementation, however, at the field level, the same may be utilized as per gap analysis and as per need for effective implementation of HMIS solution.

Estimation of Unit Cost	In INR)
PC	50,000
Tablet	15,000
UPS	4,000
Multi-Functional Printer (MFP)	22,000
Laser Printer	18,000
Bar Code Printer	18,000
Bar Code Scanner	7,000
Access Point	17,000
Network Switch	75,000
LAN Work Cost(Per LAN Point)	6,000
Dedicated Internet Bandwidth (10 Mbps/Per Year) (5+5 Redundant lines)	1,00,000

***Rates are indicative and may vary from State to State.**

***Procurement should be as per govt. norm.**

States/UTs may utilize any existing HMIS applications including such as 'eHospital @NIC'; eShurut@CDAC; etc which are compliant with the EHR standards and are hosted on Cloud. Being

Cloud hosted applications, hospitals are not required to invest in software development, servers, cloud infrastructure etc.

Important Instructions:

1. State to appoint a Nodal Officer for HMIS implementation in all District Hospitals in time bound manner (by 31st March, 2022).
2. States/UTs to provide the HMIS implementation status monthly
3. State/UTs to prepare the list of all District Hospital and conduct a gap analysis for IT infrastructure readiness
4. State to indicate the HMIS implementation strategy
5. States/UTs to ensure EHR compliance of HMIS (Hospital Management Information System)

Note:

A. IT infrastructure (Computer, LAN, Printer etc.) cost will only be covered under ECRP-II package

B. Manpower cost will not be covered under ECRP-II

Appendix on the Status of Implementation of HMIS system (eHospital @NIC) in the District Hospitals

SNO	State Name	District Name	Hospital Name
1	ASSAM	Baksa	Dr Ravi Boro Civil Hospital Baksa
2	ASSAM	Barpeta	Barpeta Civil Hospital
3	ASSAM	Cachar	S M Deb Civil Hospital Sillchar
4	ASSAM	Darrang	Mangaldai Civil Hospital
5	ASSAM	Dhemaji	Dhemaji Civil Hospital
6	ASSAM	Dhubri	Dhubri Civil Hospital
7	ASSAM	Goalpara	Civil Hospital Goalpara
8	ASSAM	Golaghat	Swahid Kushal Konwar Civil Hospital
9	ASSAM	Hailakandi	S K Roy Civil Hospital
10	ASSAM	Kamrup	Tolaram Bafna Kamrup District Civil Hospital
11	ASSAM	Kamrup Metropolitan	SONAPUR DISTRICT HOSPITAL
12	ASSAM	Karimganj	Karimganj Civil Hospital
13	ASSAM	Lakhimpur	North Lakhimpur Civil Hospital
14	ASSAM	Morigaon	Morigaon Civil Hospital
15	ASSAM	Nagaon	B P Civil Hospital
16	ASSAM	Nalbari	SMK Civil Hospital
17	ASSAM	Sivasagar	Sivasagar Civil Hospital
18	ASSAM	Tinsukia	Tinsukia Civil Hospital
19	ASSAM	Udalguri	Udalguri Civil Hospital
20	CHANDIGARH	Chandigarh	Civil Hospital Sector 22 Chandigarh
21	CHANDIGARH	Chandigarh	Government Multi Specialty Hospital

SNO	State Name	District Name	Hospital Name
22	CHHATISGARH	Balod	District Hospital Surajpur
23	CHHATISGARH	Balrampur	District Hospital Balrampur
24	CHHATISGARH	Bastar	Govt Komal Deo Dist Hospital Kanker
25	CHHATISGARH	Bemetara	District Hospital Baloda Bazar
26	CHHATISGARH	Bijapur	District Hospital Bijapur
27	CHHATISGARH	Bilaspur	District Hospital Bilaspur
28	CHHATISGARH	Dantewada	District Hospital Dantewada
29	CHHATISGARH	Dhamtari	District Hospital Dhamtari
30	CHHATISGARH	Gariaband	District Hospital Bemetara
31	CHHATISGARH	Janjgir-Champa	Barrister Thakur Chhedilal District Hospital Janjgir
32	CHHATISGARH	Jashpur	Raja Deosharan Government District Hospital Jashpur
33	CHHATISGARH	Kabirdham	District Hospital Kabirdham
34	CHHATISGARH	Korba	Indira Gandhi District Hospital Korba
35	CHHATISGARH	Mahasamund	District Hospital Mahasamund
36	CHHATISGARH	Mungeli	District Hospital Mungeli
37	CHHATISGARH	Narayanpur	District Hospital Narayanpur
38	CHHATISGARH	Raipur	District Hospital Raipur
39	CHHATISGARH	Sukma	District Hospital Balod
40	CHHATISGARH	Surajpur	District Hospital Gariaband
41	DELHI	New Delhi	NDMC Charak Palika Hospital

SNO	State Name	District Name	Hospital Name
42	DELHI	New Delhi	NDMC Palika Maternity Hospital Lodhi Colony New Delhi
43	DELHI	West Delhi	DELHI STATE CANCER INSTITUTES (WEST) JANAK PURI
44	KARNATAKA	BAGALKOT	DISTRICT HOSPITAL BAGALKOT KARNATAKA
45	KARNATAKA	BANGALORE URBAN	HSIS Gosha Hospital Shivajinagar Bangalore Urban Karnataka
46	KARNATAKA	BIDAR	BIDAR INSTITUTE OF MEDICAL SCIENCES TEACHING HOSPITAL BIDAR
47	KARNATAKA	BIJAPUR	District Hospital Vijayapura Karnataka
48	KARNATAKA	Chamarajanagar	District Hospital Chamarajanagara Karnataka
49	KARNATAKA	CHICKMAGALUR	ARALAGUPPE MALLEGOWDA DISTRICT HOSPITAL
50	KARNATAKA	CHIKKABALLAPUR	DISTRICT HOSPITAL CHIKKABALLAPURA KARNATAKA
51	KARNATAKA	CHITRADURGA	DISTRICT HOSPITAL CHITRADURGA KARNATAKA
52	KARNATAKA	DAKSHINA KANNADA	Govt Lady Goschen Hospital Mangalore Dakshina Kannada Karnataka
53	KARNATAKA	DAKSHINA KANNADA	WENLOCK DISTRICT HOSPITAL DAKSHINA KANNADA KARNATAKA
54	KARNATAKA	DAVANAGARE	Chigateri District Hospital Davangere Karnataka

SNO	State Name	District Name	Hospital Name
55	KARNATAKA	DHARWAD	District Hospital Dharwad Karnataka
56	KARNATAKA	GADAG	DISTRICT HOSPITAL GADAG KARNATAKA
57	KARNATAKA	GULBERGA	GIMS Gulbarga Institute Of Medical Sciences Hospital Kalaburagi
58	KARNATAKA	HAVERI	District Hospital Haveri Karnataka
59	KARNATAKA	KARWAR(UTTAR KANNADA)	KARWAR INSTITUTE OF MEDICAL SCIENCES TEACHING HOSPITAL KARWAR (Karnataka)-581301
60	KARNATAKA	KOLAR	Sri Narasimha Raja
61	KARNATAKA	KOPPAL	District Teaching Hospital KIMS Koppal Karnataka
62	KARNATAKA	Ramanagara	DISTRICT HOSPITAL RAMANAGARA KARNATAKA
63	KARNATAKA	SHIMOGA	McGann District Teaching Hospital Shivamogga
64	KARNATAKA	TUMKUR	District Hospital Tumkur Karnataka
65	KARNATAKA	UDUPI	District Hospital Udupi
66	KARNATAKA	UDUPI	Government of Karnataka Koosamma Shambhu Shetty Memorial Haji Abdullah Mother and Child Hospital
67	KARNATAKA	YADGIR	District Hospital Yadgir Karnataka
68	KERALA	Thiruvananthapuram	Govt District Ayurveda Hospital Varkala
69	LADAKH	KARGIL	District Hospital Kargil

SNO	State Name	District Name	Hospital Name
70	LADAKH	LEH LADAKH	Sonam Nurboo Memorial Hospital
71	MADHYA PRADESH	Agar Malwa	District Hospital Agar Malwa
72	MADHYA PRADESH	Alirajpur	District Hospital Alirajpur
73	MADHYA PRADESH	Anooppur	District Hospital Anuppur
74	MADHYA PRADESH	Ashoknagar	District Hospital AshokNagar
75	MADHYA PRADESH	Balaghat	District Hospital Balaghat
76	MADHYA PRADESH	Barwani	District Hospital Barwani
77	MADHYA PRADESH	Betul	DISTRICT HOSPITAL BETUL
78	MADHYA PRADESH	Bhind	District Hospital bhind
79	MADHYA PRADESH	Bhopal	District Hospital Bhopal
80	MADHYA PRADESH	Burhanpur	District Hospital Burhanpur
81	MADHYA PRADESH	Chhattarpur	District Hospital chhatarpur
82	MADHYA PRADESH	Chhindwara	District Hospital Chhindwara
83	MADHYA PRADESH	Damoh	District Hospital Damoh
84	MADHYA PRADESH	Datia	District Hospital Datia
85	MADHYA PRADESH	Dewas	Mahatma Gandhi District Hospital
86	MADHYA PRADESH	Dhar	District Hospital Dhar
87	MADHYA PRADESH	Dindori	District Hospital Dindori
88	MADHYA PRADESH	East Nimar	District Hospital Khandwa
89	MADHYA PRADESH	Guna	District Hospital Guna
90	MADHYA PRADESH	Gwalior	Madhavrao District Hospital Gwalior
91	MADHYA PRADESH	Harda	District Hospital Harda

SNO	State Name	District Name	Hospital Name
92	MADHYA PRADESH	Hoshangabad	District Hospital Hoshangabad
93	MADHYA PRADESH	Indore	District Hospital Indore
94	MADHYA PRADESH	Jabalpur	District Hospital Jabalpur
95	MADHYA PRADESH	Jhabua	District Hospital Jhabua
96	MADHYA PRADESH	Katni	District Hospital Katni
97	MADHYA PRADESH	Mandla	DISTRICT HOSPITAL MANDLA
98	MADHYA PRADESH	Mandsaur	District Hospital Mandsaur
99	MADHYA PRADESH	Morena	District Hospital Morena
100	MADHYA PRADESH	Narsinghpur	District Hospital Narsinghpur
101	MADHYA PRADESH	Neemuch	District Hospital Neemuch
102	MADHYA PRADESH	Panna	District Hospital Panna
103	MADHYA PRADESH	Raisen	District Hospital Raisen
104	MADHYA PRADESH	Rajgarh	District Hospital Rajgarh
105	MADHYA PRADESH	Ratlam	District Hospital Ratlam
106	MADHYA PRADESH	Rewa	District Hospital Rewa
107	MADHYA PRADESH	Sagar	District Hospital Sagar
108	MADHYA PRADESH	Satna	Sardar Ballabh Bhai Patel District Hospital Satna
109	MADHYA PRADESH	Sehore	Community Health Center Nasrullaganj District Sehore
110	MADHYA PRADESH	Sehore	Community Health Center Shyampur District Sehore
111	MADHYA PRADESH	Sehore	District Hospital Sehore
112	MADHYA PRADESH	Seoni	Indira Gandhi District Hospital Seoni

SNO	State Name	District Name	Hospital Name
113	MADHYA PRADESH	Shahdol	District Hospital Shahdol
114	MADHYA PRADESH	Shajapur	District Hospital Shajapur
115	MADHYA PRADESH	Sheopur	District Hospital Sheopur
116	MADHYA PRADESH	Shivpuri	DH Shivpuri
117	MADHYA PRADESH	Sindi	District Hospital Sidhi
118	MADHYA PRADESH	Singrauli	District Hospital Singrauli
119	MADHYA PRADESH	Tikamgarh	District Hospital Tikamgarh
120	MADHYA PRADESH	Ujjain	District Hospital Ujjain
121	MADHYA PRADESH	Ujjain	MCH Ujjain(Charak)
122	MADHYA PRADESH	Umaria	District Hospital Umaria
123	MADHYA PRADESH	Vidisha	District Hospital Vidisha
124	MADHYA PRADESH	West Nimar	District Hospital Khargon
125	MAHARASHTRA	Mumbai-City	MAASAHEB MEENATAI THAKARE HOSPITAL NERUL
126	MAHARASHTRA	Mumbai-City	Rajmata Jijau Hospital Airoli
127	MAHARASHTRA	Nashik	Cantonment General Hospital
128	MAHARASHTRA	Wardha	GENERAL HOSPITAL WRADHA
129	MEGHALAYA	East Khasi Hill	Civil Hospital Shillong
130	MEGHALAYA	East Khasi Hill	Ganesh Das Government Maternal and child Health Hospital
131	MEGHALAYA	Ri-Bhoi District	Nongpoh Civil Hospital
132	MEGHALAYA	West Garo Hill	District Maternity And Child Hospital
133	MEGHALAYA	West Garo Hill	Tura Civil Hospital
134	MEGHALAYA	West Khasi Hill	Civil Hospital Nongstoin

SNO	State Name	District Name	Hospital Name
135	MEGHALAYA	West Khasi Hill	Tirot Sing Memorial Hospital
136	ORISSA	Angul	DISTRICT HEADQUARTER HOSPITAL ANGUL
137	ORISSA	Sambalpur	DISTRICT HEADQUARTER HOSPITAL SAMBALPUR
138	PUNJAB	Sahibzada Ajit Singh Nagar	Civil Hospital Mohali
139	TELANGANA	Nizamabad	Government General Hospital Nizamabad Telangana
140	TELANGANA	Rajanna	Area Hospital SIRISILLA
141	TRIPURA	Dhalai	Dhalai District Hospital
142	TRIPURA	Gomati	AMARPUR SUB DIVISIONAL HOSPITAL
143	TRIPURA	Gomati	Gomati District Hospital
144	TRIPURA	Gomati	Tripura Sundari Sub Divisional Hospital
145	TRIPURA	Khowai	Khowai District Hospital
146	TRIPURA	North Tripura	District Hospital North Tripura Dharmanagar
147	TRIPURA	Sipahijala	Melaghar S D Hospital
148	TRIPURA	South Tripura	District Hospital South Tripura Santirbazar
149	TRIPURA	Unakoti	UNAKOTI DISTRICT HOSPITAL
150	TRIPURA	West Tripura	Indira Gandhi Memorial Hospital
151	TRIPURA	West Tripura	Regional Cancer Centre
152	UTTAR PRADESH	Agra	District hospital agra
153	UTTAR PRADESH	Agra	DISTRICT WOMEN HOSPITAL AGRA

SNO	State Name	District Name	Hospital Name
154	UTTAR PRADESH	Aligarh	Malkhan Singh District Hospital
155	UTTAR PRADESH	Aligarh	Pt Deen Dayal Upadhyay Joint Hospital Aligarh
156	UTTAR PRADESH	Ayodhya	District Hospital Ayodhya
157	UTTAR PRADESH	Azamgarh	Divisional District Hospital Azamgarh
158	UTTAR PRADESH	Banda	District Male Hospital Banda
159	UTTAR PRADESH	Bareilly	MAHARANA PRATAP DISTRICT COMBINED HOSPITAL
160	UTTAR PRADESH	Basti	DISTRICT HOSPITAL BASTI
161	UTTAR PRADESH	Etawah	Dr Bhimrao Ambedkar Combined Male Hospital Etawah
162	UTTAR PRADESH	Farrukhabad	DR RAM MANOHAR LOHIA DISTT MALE HOSPITAL
163	UTTAR PRADESH	Farrukhabad	DR RAM MANOHAR LOHIA FEMALE HOSPITAL
164	UTTAR PRADESH	Gonda	Babu Ishwar Sharan District Hospital
165	UTTAR PRADESH	Gorakhpur	Netaji Subhash Chandra Bose District Hospital Gorakhpur
166	UTTAR PRADESH	Jhansi	District hospital male jhansi
167	UTTAR PRADESH	Kanpur(Nagar)	AHM and DUFFERIN HOSPITAL KANPUR NAGAR
168	UTTAR PRADESH	Kanpur(Nagar)	Manyawar kanshiram combined hospital and trauma center
169	UTTAR PRADESH	Kanpur(Nagar)	UHM District Male Hospital Kanpur Nagar

SNO	State Name	District Name	Hospital Name
170	UTTAR PRADESH	Lucknow	Balrampur Hospital Lucknow
171	UTTAR PRADESH	Lucknow	Cantonment General Hospital Lucknow Cantt
172	UTTAR PRADESH	Lucknow	Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow
173	UTTAR PRADESH	Lucknow	Dr Shyama prasad Mukherjee Civil Hospital
174	UTTAR PRADESH	Lucknow	LOK BANDHU RAJNARAYAN COMBINED HOSPITAL
175	UTTAR PRADESH	Lucknow	Veerangana Avanti Bai Women Hospital Lucknow
176	UTTAR PRADESH	Meerut	PL SHARMA DISTRICT HOSPITAL MEERUT
177	UTTAR PRADESH	Mirzapur	DIVISIONAL MALE HOSPITAL MIRZAPUR
178	UTTAR PRADESH	Moradabad	PANDIT DEEN DAYAL UPADHYAY DISTRICT HOSPITAL MORADABAD
179	UTTAR PRADESH	PRAYAGRAJ	MOTI LAL NEHRU DIVISIONAL HOSPITAL PRAYAGRAJ
180	UTTAR PRADESH	PRAYAGRAJ	Tej Bahadur Sapru Hospital
181	UTTAR PRADESH	Saharanpur	SBD district hospital saharanpur
182	UTTAR PRADESH	Varanasi	Lal Bahadur Shastri Hospital Ramnagar Varanasi
183	UTTAR PRADESH	Varanasi	Pandit Deen Dayal Upadhyay Government Hospital

SNO	State Name	District Name	Hospital Name
184	UTTAR PRADESH	Varanasi	S.S.P.G. Divisional District Hospital Varanasi
185	UTTARAKHAND	Almora	District Hospital Almora
186	UTTARAKHAND	Dehradun	PANDIT DEEN DAYAL GOVT CORONATION HOSPITAL
187	UTTARAKHAND	Dehradun	SPS GOVT HOSPITAL RISHIKESH
188	UTTARAKHAND	Haridwar	CHAINRAI DISTRICT FEMALE HOSPITAL HARIDWAR
189	UTTARAKHAND	Haridwar	HAR MILAP MISSION DISTRICT HOSPITAL HARIDWAR
190	UTTARAKHAND	Nainital	SOBAN SINGH JEENA BASE HOSPITAL HALDWANI
191	UTTARAKHAND	Udham Singh Nagar	JAWAHAR LAL NEHRU DISTRICT HOSPITAL RUDRAPUR UDHAM SINGH NAGAR

Appendix on the Status of Implementation of HMIS system (eShurut@CDAC) in the District Hospitals

S.No.	State	Hospital Name
1	Andaman & Nicobar Islands	GB Pant Hospital, Port Blair
2	Andhra Pradesh	District Hospital Anakapalle
3	Andhra Pradesh	King George Hospital Visakhapatnam
4	Chandigarh	General Hospital Sector 16 Chandigarh
5	Delhi	GGS Hospital, New Delhi
6	Maharashtra	District Hospital Amravati
7	Maharashtra	Civil Hospital Alibag
8	Maharashtra	District Hospital Satara
9	Maharashtra	District Hospital Hingoli
10	Maharashtra	District Hospital Ratnagiri
11	Maharashtra	District Hospital Aurangabad
12	Maharashtra	District Hospital Osmanabad
13	Maharashtra	District Hospital Nashik
14	Maharashtra	District Hospital Pune
15	Maharashtra	District Hospital Wardha
16	Maharashtra	District Hospital Bhandara
17	Maharashtra	District Hospital Buldhana
18	Maharashtra	District Hospital Jalana
19	Maharashtra	District Hospital Ahmednagar
20	Maharashtra	District Hospital Nanded
21	Maharashtra	District Hospital Sindhudurg
22	Maharashtra	District Hospital Parbhani
23	Maharashtra	District Hospital Nandurbar
24	Maharashtra	District Hospital Beed
25	Maharashtra	District Hospital Washim
26	Maharashtra	District Hospital Gadchiroli
27	Odisha	DHH Nuapada

S.No.	State	Hospital Name
28	Odisha	Capital Hospital, Bhubaneswar
29	Odisha	DHH Nawarangpur
30	Odisha	DHH Keonjhar
31	Odisha	DHH Khurda
32	Odisha	DHH Kendrapara
33	Odisha	DHH Jharsuguda
34	Odisha	AHPGIC Hospital Cuttack
35	Odisha	DHH Bargarh
36	Odisha	DHH Kalahandi
37	Odisha	DHH Nayagarh
38	Odisha	DHH Raygada
39	Odisha	DHH Sambalpur
40	Odisha	DHH Boudh
41	Odisha	DHH Kandhamal
42	Odisha	DHH Ganjam
43	Odisha	DHH Jagatsinghpur
44	Odisha	DHH Deogarh
45	Odisha	DHH Cuttack
46	Odisha	DHH Koraput
47	Odisha	DHH Dhenkanal
48	Odisha	Fakir Mohan Medical College Hospital, Balasore
49	Odisha	DHH Mayurbhanj
50	Odisha	DHH Sundergarh
51	Odisha	DHH RGH Rourkela
52	Odisha	DHH Bhadrak
53	Odisha	DHH Puri
54	Odisha	DHH Malkangiri
55	Odisha	DHH Sonepur
56	Odisha	DHH Gajapati
57	Odisha	DHH Anugul
58	Odisha	DHH Jajpur
59	Odisha	Sishubhawan Hospital Cuttack
60	Punjab	CJCFF DH Sangrur
61	Punjab	JBMM Civil Hospital ASR
62	Punjab	DH Barnala
63	Punjab	DH Kapurthala
64	Punjab	DH Mukatsar Sahib
65	Punjab	District Hospital Mohali
66	Punjab	DH Tarn Taran
67	Punjab	DH Mansa
68	Punjab	DH Ferozpur

S.No.	State	Hospital Name
69	Punjab	DH Faridkot
70	Punjab	Sh Parbodh Chander Civil Hospital Pathankot
71	Punjab	District Hospital Jalandhar
72	Punjab	DH Fatehgarh Sahib
73	Punjab	DH Fazilka
74	Punjab	Mata Kaushalya Govt Hospital Patiala
75	Punjab	DH Ropar
76	Punjab	DH Hoshiarpur
77	Punjab	DH Bathinda
78	Punjab	DH Ludhiana
79	Punjab	DH Nawanshahr
80	Punjab	DH Gurdaspur
81	Punjab	DH Moga
82	Rajasthan	Govt. Hospital Sriganganagar
83	Rajasthan	Govt. Hospital Mahilabag, Jodhpur
84	Rajasthan	Sadar Hospital Dholpur
85	Rajasthan	Jawahar Hospital Jaisalmer
86	Rajasthan	A. K. Hospital Beawar Ajmer
87	Rajasthan	Govt. Bangur Hospital Pali
88	Rajasthan	Pt. Briz Sundar Sharma General Hospital Bundi
89	Rajasthan	Bhandari Hospital, Jamkhandi, Jalore
90	Rajasthan	Maharao Bhim Singh Hospital Kota
91	Rajasthan	M. G. Hospital Bhilwara
92	Rajasthan	District Sahadat Hospital Tonk
93	Rajasthan	District Hospital Hanumangarh
94	Rajasthan	J. K. Lon Hospital kota
95	Rajasthan	District Hospital Barmer
96	Rajasthan	District Hospital Dausa
97	Rajasthan	District Hospital Nagaur
98	Rajasthan	J. K. Loan Hospital Jaipur
99	Rajasthan	Mahatma Gandhi Hospital Jodhpur
100	Rajasthan	Shri Hari Dev Joshi Genaral Hospital Dungarpur
101	Rajasthan	D. B. Government Hospital Churu
102	Rajasthan	Rajeev Gandhi Govt. Genaral Hospital Alwar
103	Rajasthan	Mathura Das Mathur Hospital Jodhpur
104	Rajasthan	Umaid Hospital Jodhpur
105	Rajasthan	RBM Hospital Bharatpur
106	Rajasthan	S. K. Hospital Sikar
107	Rajasthan	District Hospital Baran
108	Rajasthan	District Hospital Banswara

S.No.	State	Hospital Name
109	Rajasthan	B D K Hospital Jhunjhunu
110	Rajasthan	Sh. Haribaksh Kanwatiya Hospital Jaipur
111	Rajasthan	District Hospital Chittorgarh
112	Rajasthan	Gangori Hospital Jaipur
113	Rajasthan	District Hospital, Pratapgarh
114	Rajasthan	Jhalawar Medical College Hospital Jhalawar
115	Telangana	District Hospital King Koti
116	Telangana	GANDHI HOSPITAL

Annexure-I

Districts with No RT-PCR Testing Facility

S. No.	*State	*District
1	Andaman And Nicobar Islands	Nicobars
2	Andaman And Nicobar Islands	North And Middle Andaman
3	Arunachal Pradesh	Anjaw
4	Arunachal Pradesh	Changlang
5	Arunachal Pradesh	Dibang Valley
6	Arunachal Pradesh	East Kameng
7	Arunachal Pradesh	Kamle
8	Arunachal Pradesh	Kra Daadi
9	Arunachal Pradesh	Kurung Kumey
10	Arunachal Pradesh	Leparada
11	Arunachal Pradesh	Lohit
12	Arunachal Pradesh	Longding
13	Arunachal Pradesh	Lower Dibang Valley
14	Arunachal Pradesh	Lower Siang
15	Arunachal Pradesh	Lower Subansiri
16	Arunachal Pradesh	Namsai
17	Arunachal Pradesh	Pakke Kessang
18	Arunachal Pradesh	Shi Yomi
19	Arunachal Pradesh	Siang
20	Arunachal Pradesh	Tawang
21	Arunachal Pradesh	Tirap
22	Arunachal Pradesh	Upper Siang
23	Arunachal Pradesh	Upper Subansiri
24	Arunachal Pradesh	West Kameng
25	Arunachal Pradesh	West Siang
26	Assam	Baksa
27	Assam	Biswanath

S. No.	*State	*District
28	Assam	Bongaigaon
29	Assam	Charaideo
30	Assam	Chirang
31	Assam	Darrang
32	Assam	Dhemaji
33	Assam	Dhubri
34	Assam	Dima Hasao
35	Assam	Goalpara
36	Assam	Golaghat
37	Assam	Hailakandi
38	Assam	Hojai
39	Assam	Karimganj
40	Assam	Kokrajhar
41	Assam	Lakhimpur
42	Assam	Majuli
43	Assam	Marigaon
44	Assam	Nagaon
45	Assam	Nalbari
46	Assam	Sivasagar
47	Assam	South Salmara Mancachar
48	Assam	Tinsukia
49	Assam	Udalguri
50	Assam	West Karbi Anglong
51	Bihar	Araria
52	Bihar	Arwal
53	Bihar	Aurangabad
54	Bihar	Banka
55	Bihar	Begusarai
56	Bihar	Bhojpur
57	Bihar	Buxar
58	Bihar	Gopalganj
59	Bihar	Jamui
60	Bihar	Jehanabad
61	Bihar	Kaimur (bhabua)
62	Bihar	Khagaria
63	Bihar	Lakhisarai
64	Bihar	Madhepura
65	Bihar	Munger
66	Bihar	Nalanda
67	Bihar	Nawada

S. No.	*State	*District
68	Bihar	Pashchim Champaran
69	Bihar	Purnia
70	Bihar	Samastipur
71	Bihar	Saran
72	Bihar	Sheikhpura
73	Bihar	Sheohar
74	Bihar	Sitamarhi
75	Bihar	Siwan
76	Bihar	Supaul
77	Bihar	Vaishali
78	Chhattisgarh	Balod
79	Chhattisgarh	Baloda Bazar
80	Chhattisgarh	Balrampur
81	Chhattisgarh	Bemetara
82	Chhattisgarh	Bijapur
83	Chhattisgarh	Dantewada
84	Chhattisgarh	Dhamtari
85	Chhattisgarh	Gariyaband
86	Chhattisgarh	Gaurella Pendra Marwahi
87	Chhattisgarh	Janjgir Champa
88	Chhattisgarh	Jashpur
89	Chhattisgarh	Kabirdham
90	Chhattisgarh	Kondagaon
91	Chhattisgarh	Mungeli
92	Chhattisgarh	Narayanpur
93	Chhattisgarh	Sukma
94	Chhattisgarh	Surajpur
95	Daman And Diu	Daman
96	Daman And Diu	Diu
97	Haryana	Charki Dadri
98	Haryana	Fatehabad
99	Haryana	Kaithal
100	Haryana	Mahendragarh
101	Haryana	Nuh
102	Haryana	Palwal
103	Himachal Pradesh	Bilaspur
104	Himachal Pradesh	Kinnaur
105	Himachal Pradesh	Kullu
106	Himachal Pradesh	Lahul And Spiti
107	Himachal Pradesh	Una

S. No.	*State	*District
108	Jammu And Kashmir	Anantnag
109	Jammu And Kashmir	Bandipora
110	Jammu And Kashmir	Budgam
111	Jammu And Kashmir	Ganderbal
112	Jammu And Kashmir	Kathua
113	Jammu And Kashmir	Kishtwar
114	Jammu And Kashmir	Kulgam
115	Jammu And Kashmir	Kupwara
116	Jammu And Kashmir	Poonch
117	Jammu And Kashmir	Pulwama
118	Jammu And Kashmir	Rajouri
119	Jammu And Kashmir	Ramban
120	Jammu And Kashmir	Reasi
121	Jammu And Kashmir	Samba
122	Jammu And Kashmir	Shopian
123	Jharkhand	Bokaro
124	Jharkhand	Chatra
125	Jharkhand	Garhwa
126	Jharkhand	Giridih
127	Jharkhand	Godda
128	Jharkhand	Gumla
129	Jharkhand	Jamtara
130	Jharkhand	Khunti
131	Jharkhand	Koderma
132	Jharkhand	Latehar
133	Jharkhand	Lohardaga
134	Jharkhand	Pakur
135	Jharkhand	Ramgarh
136	Jharkhand	Saraikela Kharsawan
137	Jharkhand	Simdega
138	Jharkhand	West Singhbhum
139	Madhya Pradesh	Agar Malwa
140	Madhya Pradesh	Alirajpur
141	Madhya Pradesh	Anuppur
142	Madhya Pradesh	Ashoknagar
143	Madhya Pradesh	Balaghat
144	Madhya Pradesh	Barwani
145	Madhya Pradesh	Betul
146	Madhya Pradesh	Bhind
147	Madhya Pradesh	Chhatarpur

S. No.	*State	*District
148	Madhya Pradesh	Damoh
149	Madhya Pradesh	Dewas
150	Madhya Pradesh	Dhar
151	Madhya Pradesh	Dindori
152	Madhya Pradesh	Guna
153	Madhya Pradesh	Harda
154	Madhya Pradesh	Hoshangabad
155	Madhya Pradesh	Jhabua
156	Madhya Pradesh	Katni
157	Madhya Pradesh	Khargone
158	Madhya Pradesh	Mandla
159	Madhya Pradesh	Mandsaur
160	Madhya Pradesh	Morena
161	Madhya Pradesh	Narsinghpur
162	Madhya Pradesh	Neemuch
163	Madhya Pradesh	Niwari
164	Madhya Pradesh	Panna
165	Madhya Pradesh	Raisen
166	Madhya Pradesh	Rajgarh
167	Madhya Pradesh	Satna
168	Madhya Pradesh	Sehore
169	Madhya Pradesh	Seoni
170	Madhya Pradesh	Shajapur
171	Madhya Pradesh	Sheopur
172	Madhya Pradesh	Sidhi
173	Madhya Pradesh	Singrauli
174	Madhya Pradesh	Tikamgarh
175	Madhya Pradesh	Umaria
176	Manipur	Bishnupur
177	Manipur	Chandel
178	Manipur	Churachandpur
179	Manipur	Jiribam
180	Manipur	Kakching
181	Manipur	Kamjong
182	Manipur	Kangpokpi
183	Manipur	Noney
184	Manipur	Pherzawl
185	Manipur	Senapati
186	Manipur	Tamenglong
187	Manipur	Tengnoupal

S. No.	*State	*District
188	Manipur	Thoubal
189	Manipur	Ukhrul
190	Meghalaya	East Garo Hills
191	Meghalaya	East Jaintia Hills
192	Meghalaya	North Garo Hills
193	Meghalaya	Ri Bhoi
194	Meghalaya	South Garo Hills
195	Meghalaya	South West Garo Hills
196	Meghalaya	South West Khasi Hills
197	Meghalaya	West Jaintia Hills
198	Meghalaya	West Khasi Hills
199	Mizoram	Champhai
200	Mizoram	Hnahthial
201	Mizoram	Khawzawl
202	Mizoram	Kolasib
203	Mizoram	Lawngtlai
204	Mizoram	Lunglei
205	Mizoram	Mamit
206	Mizoram	Saiha
207	Mizoram	Saitual
208	Mizoram	Serchhip
209	Nagaland	Kiphire
210	Nagaland	Longleng
211	Nagaland	Mokokchung
212	Nagaland	Mon
213	Nagaland	Peren
214	Nagaland	Phek
215	Nagaland	Tuensang
216	Nagaland	Wokha
217	Nagaland	Zunheboto
218	Odisha	Anugul
219	Odisha	Bhadrak
220	Odisha	Boudh
221	Odisha	Dhenkanal
222	Odisha	Gajapati
223	Odisha	Jagatsinghapur
224	Odisha	Jharsuguda
225	Odisha	Kalahandi
226	Odisha	Kandhamal
227	Odisha	Kendrapara

S. No.	*State	*District
228	Odisha	Malkangiri
229	Odisha	Mayurbhanj
230	Odisha	Nabarangpur
231	Odisha	Nuapada
232	Odisha	Puri
233	Odisha	Rayagada
234	Odisha	Sonepur
235	Puducherry	Mahe
236	Puducherry	Yanam
237	Punjab	Barnala
238	Punjab	Fatehgarh Sahib
239	Punjab	Fazilka
240	Punjab	Firozpur
241	Punjab	Gurdaspur
242	Punjab	Hoshiarpur
243	Punjab	Kapurthala
244	Punjab	Mansa
245	Punjab	Moga
246	Punjab	Pathankot
247	Punjab	Rupnagar
248	Punjab	Sangrur
249	Punjab	Shahid Bhagat Singh Nagar
250	Punjab	Sri Muktsar Sahib
251	Punjab	Tarn Taran
252	Sikkim	North District
253	Sikkim	South District
254	Sikkim	West District
255	Telangana	Bhadradi Kothagudem
256	Telangana	Jagitial
257	Telangana	Jangoan
258	Telangana	Jayashankar Bhupalapally
259	Telangana	Jogulamba Gadwal
260	Telangana	Kamareddy
261	Telangana	Kumuram Bheem Asifabad
262	Telangana	Mahabubabad
263	Telangana	Mancherial
264	Telangana	Mulugu
265	Telangana	Nagarkurnool
266	Telangana	Narayanpet
267	Telangana	Nirmal

S. No.	*State	*District
268	Telangana	Peddapalli
269	Telangana	Rajanna Sircilla
270	Telangana	Wanaparthy
271	Telangana	Warangal Rural
272	Tripura	Dhalai
273	Tripura	Gomati
274	Tripura	Khowai
275	Tripura	Sepahijala
276	Tripura	South Tripura
277	Tripura	Unakoti
278	Uttar Pradesh	Amethi
279	Uttar Pradesh	Auraiya
280	Uttar Pradesh	Baghpat
281	Uttar Pradesh	Balrampur
282	Uttar Pradesh	Bhadohi
283	Uttar Pradesh	Bijnor
284	Uttar Pradesh	Bulandshahr
285	Uttar Pradesh	Chandauli
286	Uttar Pradesh	Chitrakoot
287	Uttar Pradesh	Deoria
288	Uttar Pradesh	Etah
289	Uttar Pradesh	Farrukhabad
290	Uttar Pradesh	Fatehpur
291	Uttar Pradesh	Ghazipur
292	Uttar Pradesh	Hamirpur
293	Uttar Pradesh	Hardoi
294	Uttar Pradesh	Hathras
295	Uttar Pradesh	Kanpur Dehat
296	Uttar Pradesh	Kasganj
297	Uttar Pradesh	Kaushambi
298	Uttar Pradesh	Kheri
299	Uttar Pradesh	Kushi Nagar
300	Uttar Pradesh	Lalitpur
301	Uttar Pradesh	Maharajganj
302	Uttar Pradesh	Mahoba
303	Uttar Pradesh	Mainpuri
304	Uttar Pradesh	Mau
305	Uttar Pradesh	Pilibhit
306	Uttar Pradesh	Rampur
307	Uttar Pradesh	Sambhal

S. No.	*State	*District
308	Uttar Pradesh	Sant Kabeer Nagar
309	Uttar Pradesh	Shamli
310	Uttar Pradesh	Shravasti
311	Uttar Pradesh	Siddharth Nagar
312	Uttar Pradesh	Sitapur
313	Uttar Pradesh	Sonbhadra
314	Uttar Pradesh	Sultanpur
315	Uttarakhand	Bageshwar
316	Uttarakhand	Chamoli
317	Uttarakhand	Champawat
318	Uttarakhand	Rudra Prayag
319	Uttarakhand	Tehri Garhwal
320	Uttarakhand	Uttar Kashi
321	West Bengal	Alipurduar
322	West Bengal	Coochbehar
323	West Bengal	Dinajpur Dakshin
324	West Bengal	Dinajpur Uttar
325	West Bengal	Jalpaiguri
326	West Bengal	Jhargram
327	West Bengal	Kalimpong

Annexure-K**Ministry of Health and Family Welfare
Government of India****29.06.2021****Guidelines for Buffer Stock Management of COVID-19 Drugs****1. INTRODUCTION:**

- 1.1. Drugs play a very crucial role in COVID-19 management. Access to drugs for COVID-19 patients proved to be a challenge during the 2nd surge of COVID-19 in India. Certain categories of drugs were found to be in acute shortage in the for 3-4 weeks due to sudden surge in COVID-19 cases. There was huge gap between requirement and supply of a couple of drugs for COVID-19 and COVID-19 Associated Mucormycosis (Mucormycosis), and there were critical issues of non-availability of the drugs and accessibility to the patients.
- 1.2. Government undertook various measures for augmenting the supplies of these drugs during the 2nd surge of COVID-19 cases by encouraging domestic manufacturers to augment production of the drugs, putting in place coordination mechanism with manufacturers/ States and allocating quantities of drugs to States/ UTs depending upon their respective case load, procuring through import of drugs from other countries and advising States/UTs on the rational use of these drugs.
- 1.3. Indian Pharmaceutical Industry is capable of manufacturing large quantities of quality Active Pharmaceutical Ingredients (API) and Formulations used in the treatment of COVID-19. However, required quantities of certain drugs could not be made available timely during the 2nd surge of COVID-19 cases, mainly on account of sudden increase in demand, long lead time to manufacture API and formulations (Injections), non-availability of APIs and shortage of certain excipients, mainly imported items and packing materials.

1.4. Industry may not be able to manufacture and keep sufficient stocks of these medicines since maintaining such a large inventory in anticipation of demand may not be economically viable. Even during the 2nd surge of COVID-19 cases, Industry needed the support of the Government in the form of advance payments for making necessary investments and augmenting the production of drugs specifically used for COVID-19.

1.5. In order to ensure continuous supply of drugs for treatment of COVID-19 cases and drugs required for management of sequel of COVID-19 such as Mucormycosis and Multisystem Inflammatory Syndrome in Children (MIS-C) during any future surge, definitive need has been felt to keep buffer stock of these drugs by both Central and State Governments. The main objectives of keeping buffer stock are:

- (i) To expand and enhance capabilities to respond any unforeseen emerging situation.
- (ii) To ensure continuous supply in case of any sudden surge.
- (iii) To guard against high cost procurements during emergency situation.
- (iv) To prevent manufacturing of spurious drugs.
- (v) To minimize the risk of hoarding.
- (vi) To prevent black-marketing and panic buying by the public.
- (vii) To build trust and confidence among the public.
- (viii) To undertake equitable distribution across the country and in states.

In view of the above it is extremely essential to keep buffer stock of certain drugs for use in any possible future surge of COVID-19 cases.

2. Identification of drugs for buffer stock:

2.1. Various therapeutic categories of drugs are used in the treatment of COVID-19 and COVID-19 associated diseases. While certain drugs are used only for the treatment of COVID-19, others are repurposed for treatment of COVID-19. There are some other drugs which are used for treating COVID-19 associated symptoms/complications, like Paracetamol Tablets, anticoagulants, etc. In

addition, there are drugs which are used specifically for the treatment of COVID-19 associated diseases e.g. Mucormycosis.

2.2. Clinical Management Protocol or Clinical Guidance for Management of Covid-19 Patients by the Joint National Task Force for COVID-19 prescribes drugs for treatment and management of COVID-19/ COVID Associated Mucormycosis. There are certain other drugs which have been approved by Central Drugs Standard Control Organisation, the Central Drug Regulator for restricted use under emergency situation for the treatment of COVID-19 based on recommendations of Subject Expert Committee but not included in the clinical management protocol.

2.3. Drugs specified in the Management Guidelines, as well as certain non-protocol drugs have been seen to be extensively used for the treatment of COVID-19 cases. Therefore, looking at the experience gained during the 2nd surge of COVID-19, there is a need to maintain buffer stock of certain drugs, apart from closely monitoring on the availability of other drugs for COVID-19.

2.4. The drugs for which buffer stock is required to be maintained may be considered based on following aspects:

- Drugs which need long lead time to manufacture formulation.
- Drugs prescribed for moderate and severe cases.
- Drugs which were widely prescribed during second COVID-19 surge
- Drugs included in Clinical Management Guidance.
- Drugs for which no indigenous manufacturing, and are only imported.
- Drugs which are single sourced.
- Drugs which are limited supply per month.
- Drugs having minimum 24 months shelf life.

However, the above assumptions may change depending upon the situation. COVID-19 scenario is continuously evolving, and accordingly new scenarios/ guidelines/ protocols may emerge, which can necessitate changes in both the assumptions and the drugs decided to be buffer stocked.

3. Drugs for buffer stock management:

3.1. Based on criteria/ assumptions mentioned above, current set of guidelines, and experience of shortfall/ likely shortfall on account of their extensive use during the 2nd Wave, a suggestive list of drugs to be a part of the buffer stock has been identified. This list includes the following drugs –

a. For COVID-19 treatment

1. Enoxaparin Injection 40 mg
2. Methyl Prednisolone Injection 40 mg/ml
3. Dexamethasone Injection 4 mg/ml
4. Remdesivir Injection 100 mg per vial
5. Tocilizumab Injection 400 mg

b. For treatment of Mucormycosis

6. Amphoterecin B Deoxycholate Injection 50 mg per vial
7. Posaconazole Injection 300 mg per vial

c. For treatment of MIS-C

8. Intravenous Immunoglobulin (IVIG) 2G/Kg
9. Methyl Prednisolone Injection 40 mg/ml (Also used for COVID)
10. Dexamethasone Injection 4 mg/ml (Also used for COVID)

This list is a dynamic and is only indicative. The States/UTs may suitably customise the list in accordance with their local needs and requirements for treatment/ management of COVID-19 and its sequelae such as CAM and MIS-C.

3.2 There are a few drugs in the above list which can be interchangeably used as they have similar therapeutic action. For estimating quantities of such drugs for buffer stock, ratio of consumption of drugs during 2nd wave of COVID-19 surge has been taken into consideration. Accordingly, quantities of Methyl Prednisolone and Dexamethasone for buffer stock has been considered to be in the ratio of 10:90, whereas Amphotericin-B Deoxycholate and Posaconazole in the ratio of 75:25.

4. Estimation of quantities to be maintained for Buffer Stock for drugs:

It is very difficult to predict likely number of COVID-19 cases in the coming days/ months, considering the evolving nature of pandemic, and, therefore, the quantities of drugs required to be stocked are also difficult to be forecasted. However, the data available for the trajectory and extent of COVID cases during the second surge, and the valuable experience gained in successfully combating the recent surge in COVID cases, does provide valuable insights for identification of drugs for which the buffer stock needs to be maintained. The experience gained so far, also provides the relevant insights on estimation of buffer stock requirements and indicates that such estimation will have to factor-in the following parameters –

1. The trend of daily new COVID cases during the surge period.
2. The peak number of cases observed during the surge and the peak number of cases for which the government may like to prepare.
3. The distribution of COVID cases in terms of severity of infection, i.e. the proportion of mild, moderate and severe cases.
4. The prevailing technical treatment and management protocols for mild, moderate and severe cases of COVID-19, specifying the drugs and treatment regimen in terms of period of treatment and dosages.

It may be noted that except for Remdesivir, which is exclusively used for management of COVID-19 cases, all other identified drugs are usually used for other medical conditions. Hence, the usual production and sales of drugs should not be assumed to be available for management of COVID-19, as these would also be required for management of medical conditions for which these medicines are usually used.

All of the drugs except IVIG (for MIS-C) for which the lead time for production is 2 months, have a lead time of 15 to 30 days. Therefore, while estimating the requirements for various drugs, the best possible estimates for likely number of new COVID-19 cases in a 30 day period from the start of surge, must be drawn.

The total quantity worked out on the basis of afore-mentioned criteria and assumptions would include the drugs required both for public and private sector hospitals/ medical care institutions. The public sector is expected to cater to around 60% of the total patient load. However, a flexible approach has to be adopted and the estimates may need to be revised based on the trend, trajectory and extent of new cases, wherever necessary.

A suggestive process and an example for estimation is given in Annexure – I.

5. Roles and Responsibilities:

- 5.1.** In order to ensure continuous availability of drugs during any possible next surge, there is a need to procure and maintain buffer stock of COVID-19 drugs (Drugs as stated under Clause 3.1).
- 5.2.** State/ UT Governments shall be responsible to ensure continuous supply of drugs in any future surge of COVID cases. All measures should be taken by them to make available drugs to all patients in such a situation.
- 5.3.** The States must initiate procurements on priority for building up buffer stocks. The buffer stocks should substantially be in place by 31st of July, 2021.
- 5.4.** States shall, in addition, work closely with the private hospitals/ institutions within their respective jurisdiction, in order to ensure that they also create adequate stock of buffers for addressing their likely patient load.
- 5.5.** The central government shall also make an assessment of buffer stocks required. The Central Government too shall procure and maintain a reasonable percentage of the total requirement to address any possible variations in geographical spread and the extent of COVID-19 across States, to supplement supplies to states/UTs wherever so necessary in view of such variations. The Central Government shall also mobilize resources for the stock that it shall maintain.

5.6. The Central Government may, on the request of the respective State/ UT, facilitate procurement of buffer stocks for North Eastern states and UTs. However, the states/ UTs shall be responsible for maintenance of such buffer stocks.

5.7. As a part of emergency preparedness, Governments shall engage with the manufacturers, distributors, suppliers and sellers of COVID-19 drugs. State Governments may also work with the manufacturers for maintaining inventories of sufficient quantities of these drugs.

Annexure – I

Process of estimation of requirement of buffer stock quantities**Example – Estimation of requirements of Remdesivir**

1. A suggestive process for estimation of requirements of buffer stock of Remdesivir is presented herein. The second surge in COVID cases lasted for 75 days from 1st April to 15th June 2021. It is assumed for purposes of this estimation that the next surge will be of the same duration and shall have the same distribution. The stocks for the above case load for at least 30 days has been recommended. Reason for keeping stock for 30 days is based on lead time required to manufacture these drugs.
2. Following parameters are used/worked out for estimation –
 - a. The peak number of new cases is estimated at 1.5 times the peak of the second surge (4.14 lakh new cases on 7th May 2021) at 6.21 lakh cases.
 - b. Daily average number of cases reported on ICMR's portal from 1st April to 15th June, 2021 (the duration of 2nd wave), of the 2nd wave of COVID-19 is calculated. This works out to 2.29 lakh new cases per day which is 55 % of the peak number of cases i.e. 4.14 lakh on 7th May, 2021.
 - c. The average number of cases, using 6.21 lakh peak cases as a benchmark, works out to 3.43 lakh cases per day (55% of the peak number of cases) assuming the surge lasts for 75 days and with similar spread of cases as during the 2nd wave.
 - d. Total number of cases for 30 days (with average of 3.43 lakh cases per day) will be 1.029 crore. For the purpose of buffer stock, the figure may be rounded to 1.0 crore new cases.
 - e. As per the prevailing technical guidelines it is estimated that 23% of total cases would require hospital admissions or in-patient care, with 3% on ICU beds, 15% on non-ICU but oxygen (O₂) supported beds and rest 5% on non-ICU and non-O₂ supported beds.
 - f. Remdesivir is recommended under the technical guidelines for management of such cases that may require in-patient care on ICU beds

or on non-ICU but oxygen (O₂) supported beds. This amounts to 18% of total cases, i.e. 18 lakh cases.

- g. 60% of the patients would seek care in government hospitals. Therefore, the buffer stock quantity for Remdesivir works out to $(18 \times 0.6) = 10.80$ lakh patient courses.
 - h. This includes the requirements for both the central and state government institutions. The requirement as worked out in patient courses can be converted to vials/tablets as per the technical guidelines for management of COVID cases and for COVID Associated Mucormycosis (CAM) and Multi-Infection Syndrome in Children (MIS-C).
3. Quantities may vary from drug to drug based on its dosage & frequency of administration, and percentage of patients requiring the drug. Based on the inputs on Clinical Management Guidelines by National task Force and JMG of DGHS (dated 19.05.21), percentage of patients requiring these medicines is as follows:

S.NO	Name of the drug	% of Total COVID-19 cases
1	Enoxaparin Injection	23 %
2	Methyl Prednisolone Injection	23 %
3	Dexamethasone Injection	23 %
4	Remdesivir Injection	18 %
5	Tocilizumab Injection	40% of 3%
6	Amphotericin B Deoxycholate	1% of 23%
7	Posaconazole Injection	1% of 23%
8	IVIG Injection	5% of 5% of 12% *

*(12% is the observed number of paediatric cases out of Total COVID-19 cases, 5% is the percentage of severe/Moderate cases within the paediatric category, and 5% is the percentage of such severe/ moderate cases requiring IVIG injection).

Annexure-L**Enhancement of Human resources**

	MBBS Intern (UG)	Residents (PG)	Final Year MBBS students	Final year B.Sc Nursing Students	Final year GNM Nursing Students
Total (All India)	25353	13861	25353	18691	29779
Andaman and Nicobar Islands	33	0	33	0	5
Andhra Pradesh	1719	772	1719	1462	1579
Arunachal Pradesh	17	18	17	8	48
Assam	297	211	297	125	477
Bihar	574	295	574	89	237
Chandigarh	50	186	50	18	0
Chhattisgarh	353	66	353	832	653
Dadra and Nagar Haveli and Daman & Diu	50	0	50	21	0
Goa	59	39	59	34	12
Gujarat	1815	700	1815	818	1405
Haryana	515	183	515	332	766
Himachal Pradesh	287	104	287	199	349
Jammu & Kashmir	325	187	325	148	145
Jharkhand	3001	75	3001	80	241
Karnataka	1322	1795	1322	3317	5143
Kerala	0	523	0	1371	1308
Ladakh	191	0	191	0	0
Lakshadweep	0	0	0	0	0
Madhya Pradesh	1030	466	1030	1546	3539
Maharashtra	2789	1605	2789	867	1760
Manipur	74	69	74	51	116
Meghalaya	17	10	17	17	58

	MBBS Intern (UG)	Residents (PG)	Final Year MBBS students	Final year B.Sc Nursing Students	Final year GNM Nursing Students
Mizoram	33	0	33	18	36
Nagaland	0	0	0	8	36
Odisha	578	281	578	265	678
Puducherry	472	297	472	196	75
Punjab	404	242	404	1004	2364
Rajasthan	1320	608	1320	1538	1918
Sikkim	17	7	17	32	9
Tamil Nadu	2360	1403	2360	1995	1668
Telangana	1597	733	1597	875	923
The Government of NCT of Delhi	417	887	417	118	170
Tripura	74	28	74	34	50
Uttar Pradesh	2072	922	2072	828	2883
Uttarakhand	272	570	272	202	275
West Bengal	1221	578	1221	246	855