From

Additional Chief Secretary to Haryana Government Health Department

То

1. All the Deputy Commissioners of State

2. All the Civil Surgeons of State

Memo No. 3PM(COVID)/2021/1047-1090 Dated: 28.04.2021

Subject: Protocols to rationalize the hospital beds and oxygen consumption for COVID patients.

With reference to the subject cited above,

In view of recent COVID-19 surge, the number of COVID cases requiring hospitalization and accordingly the demand of oxygen for hospitals have increased manifold. The matter has been discussed in the meeting of Crisis Coordination Committee held on 27.04.2021 and it has been decided that the following protocols to rationalize the hospital beds and oxygen consumption for COVID patients are strictly implemented in the State:

- The Proposed COVID-19 Management State Protocol-April'2021 (Annexure-A) and revised Discharge Policy, issued by MoHFW (GoI) (Annexure-B) shall be strictly followed in all the Dedicated COVID hospitals for treatment of COVID patients.
- 2. Patient oxygen consumption norms, issued by MoHFW (GoI) (Annexure-C) shall be followed in letter and spirit.
- 3. In each district, the hospitals having less than 10 beds shall not be allowed to admit and treat COVID patients, except Gurugram, Faridabad, Panchkula, Karnal, Hisar and Sonepat, where the minimum number shall be 15-20 beds.

However, it shall be ensured that total No. of beds for COVID patients does not decrease in any district. The number of beds, if decreased by disallowing the hospitals with less than 10-20 beds, as mentioned above, shall be added in the larger hospitals.

It is clarified that no hospital, which is not enlisted on S3 portal, shall be allowed to treat COVID patient, without prior approval; any violation of the same may invoke action under section 188 of Indian Penal Code, exercising the powers conferred under the Epidemic Diseases Act, 1897.

4. The addition of beds or private health facilities for providing treatment to COVID patients shall be done on the basis of requirement of additional heath facilities in the district, availability of prerequisite infrastructure/manpower/oxygen supply/essential drugs/etc. with such health facility, possibility of allocation of oxygen, etc. Formal orders regarding addition/deletion of health facilities shall be issued under intimation to O/o MD-NHM and O/o DGHS, so that the details may be updated on the S3 portal.

- 5. All the Civil Surgeons shall ensure that a vehicle carrying oxygen concentrator/cylinders (3-4 in No.) is readily available to meet any exigency w.r.t. oxygen supply at any private or Govt. COVID hospital in the district, as a stopgap arrangement till the regular oxygen supply is reinstated.
- 6. Isolation facilities (DCCC/Hotels/etc.) with oxygen support may be requisitioned and attached with tertiary care institutions for managing pre-admission and recovering patients, which do not require intense hospital care but still cannot be discharged; so that hospital beds are made available for most needy patients.

A District Level Committee to ensure the above is constituted, as follows:

- 1. Deputy Commissioner, as Chairman
- 2. Civil Surgeon, as Member Secretary
- 3. Nodal Officer for oxygen supply

It is reiterated that the Committee shall ensure adequate number of beds in the district for treatment of COVID patients and all the COVID hospitals get regular supply of oxygen and essentials such as drugs, consumables, etc. required for treatment of COVID patients.

Director General Health Services for: Additional Chief Secretary to Haryana Government Health Department

Endst. No. 3PM(COVID)/2021/1091-1093

Dated: 28.04.2021

A copy is forwarded to the following for kind information:

- 1. MD-NHM
- 2. PS/Hon'ble Health Minister, Haryana
- 3. PS/ACS (Health)

for: Additional Chief Secretary to Haryana Government Health Department

PROPOSED

COVID 19 MANAGEMENT

HARYANA STATE PROTOCOL

April 2021

INFECTION

INFLAMMATION



Time line of COVID-19 disease







https://www.icmr.gov.in/pdf/covid/strategy/Advisory_for_rapid_antigen_test_14062020.



****Ivermectin, HCQs : No role except in trial settings**

Process Flow For Home Isolation



Role of Ivermectin in COVID-19

•WHO recommend **not to use** ivermectin in patents with COVID-19 except in the context of a clinical trial.

• This recommendation applies to patents with any disease severity and any duration of symptoms.

•The effects of ivermectin on mortality, mechanical ventilation, hospital admission, duration of hospitalizaton and viral clearance remain uncertain because of very low certainty of evidence addressing each of these outcomes.

AIIMS guidance- Ivermectin may be considered inpatients with high risk features

Therapeutics and COVID-19: living guideline – March 31st 2021 WHO

National Early Warning Score (NEWS)- NEWS 2

To identify patients who are at risk

Parameters	3	2	1	0	1	2	3
Age				<65			>65
Respiratory Rate	<8		9-11	12-20		21-24	>25
Oxygen Saturation	<91	92-93	94-95	>96			
Supplemental Oxygen		Yes		No			
Systolic Blood Pressure	<90	91-100	101-110	111-120			>200
Heart rate	<40		41-50	51-90	91-110	111-130	>131
Consciousness				Alert			Drowsy, lethargy, coma Confusion
Temperature	<35		35.1-36	36.1-38	38.1-39	>39	

National Early Warning Score (NEWS)- NEWS 2

Score	Risk grading	Warning level	Monitoring frequency	Clinical response
0			Q 12 hrly	Routine Monitoring
1-4	Low	Yellow	Q 6 hrly	Doctor to review 12 hrly and Increase monitoring
5-6 or has 3 in one parameter or comorbidity	Medium	Orange	Q 1 hrly	Get Critical Care Review or Transfer to Critical Care Facility. High Flow Oxygen.
>7	High	Red	Needs continuous monitoring in ICU/HDU	Admission in Critical Care. Treatment Plan as per need

6 Minute Walk Test

A 6-minute walk test is an established clinical test to look for cardio pulmonary exercise tolerance. This test is used to unmask hypoxia.

Patient with pulse oximeter attached to his finger is asked to walk in confines of his room.

Any drop in saturation below 93%, or an absolute drop of more than 3%, or feeling unwell (light headed, short of breath) while performing the test are significant findings.

Patients with positive 6 minute walk test may progress to become hypoxic and hence early intervention in form of admission to hospital, or shifting to ICU and giving oxygen and +/- Steroids is recommended.

The 6 minutes may be cut short for 3 minutes in patients above 60 years of age.



#JAMA. 2020;324(11):1048-1057

Indication for Convalescent Plasma Therapy

At least one of each sign or symptom in the following two categories for less than 48 hours:

Temperature of at least 37.5°C, unexplained sweating, or chills; and

dry cough, dyspnea, fatigue, myalgia, anorexia, sore throat, dysgeusia, anosmia, or rhinorrhea. **Convalescent plasma** with an IgG titer greater than 1:1000 against SARS-CoV-2 spike (S) (200 ml in single dose).

Administered **in <72 hours after the onset of symptoms** in patients who > 75 irrespective of current coexisting conditions, or 65-74 years with at least one coexisting condition reduced the progression of Covid-19

Early administration of high titre plasma in selected patients may prevent progression to severe covid

DONOR WORK FLOW



**INDICATIONS FOR TOCILIZUMAB/Pulse methyl prednisolone:

- Rapid deterioration
- RR > 30 bpm,
- SaO2 < 93% on room air & CRP \geq 75 mg/L [&]
- PaO2/FiO2 < 300 mm Hg in room air, and
- Lung infiltrates > 50% within 24–48 h
- Need of Respiratory or cardiac support[@]
 - Invasive or noninvasive mechanical ventilation, including through HFNC with flow > 30L/min & FiO2 > 0.4

CONTRAIMERATERS or inotrope.

- Coexistent infection other than COVID-19;
- PaO₂/FiO₂ > 300 mm Hg; chronic or current glucocorticoid use
- H/O severe allergic reactions to monoclonal antibodies
- ANC < 500 per μL; platelets < 50×10⁹
- Active diverticulitis, IBD , or another symptomatic gastrointestinal tract condition that might predispose patients to bowel perforation;
- Severe haematological, renal, or liver function impairment.

[&] RECOVERY Collaborative Group Feb 2021

[@] The REMAP-CAP Investigators NEJM Feb 2021.



Oxygen Therapy



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ACCEPT PERMISSIVE HYPOXIA – SpO₂ > 84%

*Dead Space Calculation

 $\frac{VD}{VT} = \frac{P_{a}CO2 - P_{E}CO2}{P_{a}CO2}$

TIMING OF INITIATION OF ANTI INFLAMMATORY THERAPY





REFERENCES

- <u>https://www.icmr.gov.in/pdf/covid/strategy/Advisory_for_rapid_antigen_test_14062020</u>.
- Early High-Titer Plasma Therapy to Prevent Severe Covid-19 in Older Adults N Engl J Med 2021;384:610-8.
- Interleukin-6 Receptor Antagonists in Critically III Patients with Covid-19 The REMAP-CAP Investigators DOI: 10.1056/NEJMoa2100433
- Tocilizumab in patients admitted to hospital with COVID-19 (RECOVERY): preliminary results of a randomised, controlled, open-label, platform trial RECOVERY Collaborative Group <u>https://doi.org/10.1101/2021.02.11.21249258</u>
- Therapeutics and COVID-19: living guideline March 31st 2021 WHO

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• RECOMMENDATIONS FOR THE MANAGEMENT OF COVID-19 PATIENTS Maharashtra Covid Task ForceDate 30 /03/2021

Revised Discharge Policy for COVID-19

The revised discharge policy is aligned with the guidelines on the 3 tier COVID facilities and the categorization of the patients based on clinical severity (Available at:

https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf)

1. Mild/very mild/pre-symptomatic cases

Mild/very mild/pre-symptomatic cases admitted to a COVID Care Facility will undergo regular temperature and pulse oximetry monitoring. The patient can be discharged after 10 days of symptom onset and no fever for 3 days. There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to isolate himself at home and self-monitor their health for further 7 days.

At any point of time, prior to discharge from CCC, if the oxygen saturation dips below 95%, patient is moved to Dedicated COVID Health Centre (DCHC).

After discharge from the facility, if he/she again develops symptoms of fever, cough or breathing difficulty he will contact the COVID Care Centre or State helpline or 1075. His/her health will again be followed up through tele-conference on 14th day.

2. Moderate cases admitted to Dedicated COVID Health Centre (Oxygen beds)

2.1.Patients whose symptoms resolve within 3 days and maintains saturation above 95% for the next 4 days

Cases clinically classified as "moderate cases" will undergo monitoring of body temperature and oxygen saturation. If the fever resolve within 3 days and the patient maintains saturation above 95% for the next 4 days (without oxygen support), such patient will be discharged after 10 days of symptom onset in case of:

- Absence of fever without antipyretics
- Resolution of breathlessness
- No oxygen requirement

There will be no need for testing prior to discharge.

At the time of discharge, the patient will be advised to isolate himself at home and self-monitor their health for further 7 days.

2.2. Patient on Oxygenation whose fever does not resolve within 3 days and demand of oxygen

therapy continues

Such patients will be discharged only after

- resolution of clinical symptoms
- ability to maintain oxygen saturation for 3 consecutive days

3. Severe Cases including immunocompromised (HIV patients, transplant recipients,

malignancy)

Discharge criteria for severe cases will be based on

- Clinical recovery
- Patient tested negative once by RT-PCR (after resolution of symptoms)







भारत सरकार स्वास्थ्य एवं परिवार कल्याण मंत्रालय निर्माण भवन, नई दिल्ली-110011

GOVERNMENT OF INDIA MINISTRY OF HEALTH & FAMILY WELFARE NIRMAN BHAVAN, NEW DELHI - 110011

> DO No. 1830290/Imm/2020 Date: 10th April 2021

डॉ. मनोहर अगनानी, भा.प्र.से. अपर सचिव

DR. MANOHAR AGNANI, IAS Additional Secretary

Dear All,

This is in reference to letter of even number dated 25th September 2021, wherein guidelines for rational use of Oxygen for management of COVID-19 were shared (enclosed herewith).

In this regard, it is reiterated that in view of rising number of COVID-19 cases across many States/UTs, the guidelines for rational use of Oxygen are to be adhered across all health facilities. The oxygen consumption should be regularly monitored at each hospital/health facility level and oxygen monitoring committees in every hospital will supervise inventory planning, oxygen consumption and regular repair & maintenance of oxygen plants and auxiliaries. Refresher trainings of OT technicians and nurses may also be conducted on proper oxygen administration and monitoring. District Magistrates (DM), assisted by the Chief Medical Officers (CMO) of the districts must also monitor the consumption in all facilities of the district on weekly basis.

You are requested to kindly direct the concerned officials at State and district level to ensure compliance of these guidelines for efficient management of COVID-19 patients. For all issues related to medical oxygen, Prof. (Dr.) Rajiv Garg, Professor of Excellence (email id: rajiv.garg23@gov.in) may be contacted.

with bind regards,

Yours sincerely

poulsor

(D. Manohar Agnani)

To:

Additional Chief Secretary / Principal Secretary / Secretary (Health) - All States/UTs

Copy to:

Enclosure: As above

- 1. Shri, Pankaj Agrawal, Additional Secretary, Cabinet Secretariat
- 2. Mission Director (NHM) All States/UTs
- 3. State Nodal Officer, Oxygen All States/UTs



अपर सचिव

आरती आहूजा भा.प्र.से.

Arti Ahuja, IAS

Additional Secretary

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भारत सरकार स्वास्थ्य एवं परिवार कल्याण मंत्रालय निर्माण भवन, नई दिल्ली-110011

Government of India Ministry of Health and Family Welfare Nirman Bhavan, New Delhi - 110011

D. O. No. 1830290/Immunization/2020 Dated the 25th September, 2020

Subject: Guidelines for rational use of Oxygen for management of COVID-19

Dear Sin/madam,

As you are aware that medical oxygen is one of the mainstays for management of "Moderate" and "Severe" COVID-19 cases. COVID-19 pandemic has led to a need of ensuring adequate supply of oxygen and also the protocols for its rational use.

Keeping above facts in mind, Ministry of Health and Family Welfare has developed new '*Guidelines for rational use of Oxygen for management of COVID-19*' which are enclosed.

You are requested to instruct all the concerned state and district level officials to strictly follow these Guidelines for creation of Non-ICU oxygen supported beds & ICU beds and for calculation of oxygen requirement for each and every health facilities providing COVID-19 treatment accordingly.

Lotte coaren regarelo,

Encl: as above

Yours sincerely

To: - Additional Chief Secretary / Principal Secretary / Secretary (Health) - All States/UTs

Copy to:

- 1. Mission Director (NHM) All States/UTs
- 2. State Nodal Officer, Oxygen All States/UTs

GUIDELINES FOR RATIONAL USE OF OXYGEN FOR MANAGEMENT OF COVID-19

These guidelines are being issued based on the recommendations of The Empowered Group 1 (EG - 1) chaired by Dr. V.K. Paul, Member, NITI Aayog, the Joint Monitoring Group (JMG) headed by Director General of Health Services (DGHS) MoHFW and the inputs provided by Prof. (Dr.) Randeep Guleria, Director, AIIMS, New Delhi and Prof. (Dr.) Balram Bhargav, DG ICMR cum Secretary, Department of Health Research.

- 1. It is assumed that out of the 100 confirmed cases of Covid-19;
 - a. 80 cases will be Asymptomatic / Pre-Symptomatic or with "**Mild**" disease requiring home isolation or admission to Covid Care Center (CCC).
 - b. Out of remaining 20 cases:
 - i. 17 cases will be of "Moderate" disease requiring hospitalization for 7 days on Non-ICU Oxygen Supported Beds. States / UTs would require to have oxygen storage capacity for all 17 Beds. However, for the purpose of calculation of Daily Oxygen consumption requirement, 50% of these Beds (i.e. 8.5) would be considered for computation purpose.
 - ii. 3 will be "Severe" cases requiring ICU Beds for 18 days in ratio of 20% for Invasive Ventilation, 40% for Non-Invasive Ventilation (NIV) / High Flow Nasal Cannula (HFNC) and remaining 40% for oxygen therapy by Non-Re Breathing Mask (NRBM) etc. For the purpose of calculation of Daily Oxygen consumption requirement at each health facility, all the Beds (i.e. 3) would be considered for computation purpose.
- 2. <u>For Moderate cases</u> (SpO2 level *between* 94%-90%), the indicative oxygen flow rate is 2-4 Liters/minute by nasal prongs; 6-10 Liters/minute by facemask and 10-15 Liters/minutes by Non-Rebreathing Mask (NRBM).
- 3. <u>For Severe cases</u> (SpO2 level less than 90%), the indicative oxygen flow rate is 10 Liters/minute by Invasive Mechanical Ventilation; 25-60 Liters/minute by Non-Invasive Ventilation and 10-15 Liters/minutes by NRBM.

- 4. <u>For rational use of oxygen for COVID 19 management</u> and for monitoring of oxygen consumption, the following action points are suggested to be implemented by the States / UTs :
 - i. Oxygen is a life-saving essential drug. The target **Oxygen saturation rate should be 94%-95%** for the hospitalized COVID 19 patient. Once this rate is achieved, flow of oxygen may not be increased as it may not provide any additional benefit to the patient.
 - ii. Oxygen consumption should be regularly monitored at each hospital/health facility level.
 - iii. Oxygen Monitoring Committee may be formed in every hospital which may consist of Additional Medical Superintendent, Head of Anesthesia, Head of Respiratory Medicine (Head of Internal Medicine in case Respiratory Medicine department does not exist) and Nursing Superintendent.
 - iv. The Oxygen Monitoring Committee may be mandated to supervise inventory planning, oxygen consumptions, regular repair and maintenance of gas pipelines, gas plant, and wall mounted gas outlets etc.
 - v. A team of one Nurse and one OT Technician may be designated as **Oxygen Monitoring Team** for each shift at each hospital/health facility level.
 - a. The team must inspect the gas pipeline, wall mounted gas outlets, as well as gas cylinders to detect and promptly address leakages, if any. Nurse in the team will check the oxygen mask on a regular basis.
 - b. Ensure closure of valves during 'no-use' at all times.
 - vi. HFNC device should be used only in ICU setting under supervision of a respiratory physician/physician. Patient should be put on HFNC only after approval of the senior most respiratory physician/physician.
- vii. Patients who are on oxygen therapy may be reviewed during daily rounds to evaluate their oxygen requirements as well as oxygen saturation rates.

- viii. Regular training of OT Technicians and Nurse should be undertaken on proper oxygen administration and monitoring.
 - ix. District Magistrate (DM) assisted by the Chief Medical Officer (CMO) of the district must also monitor the consumption including the rational use of oxygen in all facilities of the district on a weekly basis.
