WHO Clinical operations for COVID-19: Therapeutics and oxygen

Member state briefing, 17 June 2021
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Lead, Clinical management COVID-19 response
WHO, Health Emergencies Programme
Prevention remains key to stopping transmission.

Once on rapid increase in curve, health systems can become quickly overwhelmed.
Comprehensive, multi-disciplinary, holistic: from triage to recovery

**Staff:** multi-disciplinary, trained, safe, outpatient, inpatient

**Structures:** patient flow, ventilation, IPC controls

**Supplies:** medicines, biomedical equipment

**Systems:** home care, community care, referral paths

**Study:** clinical characterization, clinical trials

**Standards:** guidelines, tools
WHO Living guidelines for COVID-19: Also available on MAGICapp, BMJ

https://www.who.int/publications/i/item/WHO-2019-nCoV-therapeutics-2021.1
WHO care bundles for home care and health facility: evidence-based interventions done together to improve outcomes
WHO Living guidelines for COVID-19: Next update August 2021

https://www.who.int/publications/i/item/WHO-2019-nCoV-clinical-2021-1

New recommendations on the way anticipate publication in August 2021:

1. MISC recommendations: GDG meeting 24 June 2021.

2. Non-invasive ventilation (NIV) and high flow nasal oxygen (HFNO) for severe and critical COVID-19.
   - GDG meeting late July 2021.
   - Current recommendation to use NIV or HFNO for some case of critical COVID-19 (i.e. mild ARDS) with caution.

3. New systematic review data on:
   1. Co-infections: i.e. mucormycosis—main message: better diagnosis and management of DM—avoid hyperglycemia and rationale use of corticosteroids (low dose, short course, severe/critical COVID-19)
   2. Pregnancy and COVID
   3. Children and COVID
   4. HIV and COVID
New recommendation to be published 30 June 2021

(Draft) Strong recommendation for IL 6 receptor blockers (Tocilizumab, sarilumab) for severe and critical COVID-19. Corticosteroids have previously been strongly recommended in patients with severe and critical COVID-19, and we recommend patients meeting these severity criteria should now receive both corticosteroids and IL-6 receptor blockers.

In pipeline for GDG June and July:
• REGN-COV2, colchicine, baricitinib, anticoagulants (full dose), cPlasma

Monitoring studies on the following closely:
• Molnupiravir, GSK-VIR 7832 (sotronib), bamlanivimab
WHO Oxygen access initiative

Medical Oxygen Fire Risk
Mitigation Measures

Prepare Actions
- DO REGULAR EQUIPMENT CHECKS
  - Check regularly the fire extinguisher and alarm systems

Response Actions
- SOUND ALARM AND CALL FIRE BRIGADE

Train and Certify on Fire Detection, Alarm Systems and Extinguisher Skills
- Staff understands how to activate the alarm and the fire extinguisher in the event of a fire
- Staff understands the proper use and maintenance of the fire extinguisher

Activate Evacuation Plan
- Evacuate occupants to emergency contact numbers and the alarm

Know the Facility Emergency Brigade Procedures and Evacuation Plan
- Know the patient transfer route and how to activate the alarm
- Learn and practice evacuation exercises

Keep Oxygen Supply and Use Areas Clean and Ventilated
- Ensure that all areas related to oxygen supply and use are kept clean and well ventilated

Verify and Turn Off Electrical Systems Linked to Oxygen Sources
- Ensure that all electrical systems linked to oxygen sources are turned off

Oxygen Cylinder Safety
Intended for health workers and all personnel managing medical oxygen

The first action

Oxygen Cylinder Safety

Do

- Learn proper medical cylinder safety handling
  - Read and follow the cylinder labeling instructions

- Transport cylinders correctly
  - Use personal protective equipment and mechanical ventilation when handling cylinders
  - Grasp cylinder regardless of size in the cylinder handle or lifting ring
  - Cap off the cylinder before lifting or handling
  - Ensure that the valve guard or caps are fitted when cylinders are not in use or when being transported for delivery

- Do not alter, transport or handle cylinders incorrectly
  - Do not change the labeling or repair cylinders
  - Do not transport gas cylinders in the passenger compartment of a vehicle
  - Do not handle more than one cylinder at a time or use cylinders stored in a vehicle unless designed for handling gas cylinders

- Do not use un-certified medical oxygen cylinders
  - Do not refill cylinders that are not meant for medical oxygen
  - Cylinders must be for other gases and have been pressure tested and not passed a quality test by a specialist

Only a strong and collaborative action on oxygen quickly. That is why WHO is putting efforts to find context appropriate, sustainable solutions to increase access and use of oxygen.
COVID-19 Respiratory support research: O2CoV2 observational study: JUST LAUNCHED EOI

- **Full title:** Oxygen requirements and approaches to respiratory support in patients with COVID-19 in low- and middle-income countries

- Targeting 4 countries per WHO region; 2 paired sites per country

- Prospective cohort study to understand patient level use of oxygen and respiratory support devices

- Expressions of Interest form available online and via QR code, open until 9 July 2021
  Please share with relevant networks

[https://www.who.int/initiatives/oxygen-access-scale-up](https://www.who.int/initiatives/oxygen-access-scale-up)

covidrespstudy@who.int
Oxygen access scale-up

THE NEED-GAP IS UNDERSTOOD AS THE FORECASTED NEED MINUS THE BASELINE SUPPLY CAPACITY

What are the outstanding need-gaps?
- Oxygen sources
- Distribution systems
- Delivery equipment
- Consumables
- Spare parts
- Training
- Maintenance, service agreements
- Power generation
- Funding

1. Coordination and expertise: Biomedical experts + OSL + clinical teams working together: forecast needs, needs-gap assessment (ESFT), develop contextualized solution and then procurement, installation, and commissioning. Work with partners on ground (mapping available).

2. Readiness is key: what is the surge plan?
   - Liquid bulk: map suppliers in country and region, estimate
   - PSA procurement: standardized RFP for procurements available
   - PSA repair: WHO launched EOI for entities that do repairs and maintenance—4 submissions now being evaluated
   - Cylinders: local suppliers with local QA (tech support can be provided)
Global Supply Chain Dashboard
Weekly Comparison from Supply Chain Dash – O2 Conc. focus

<table>
<thead>
<tr>
<th>Biomedical Procurement Bi-Weekly Comparison</th>
<th>Quantity Procured</th>
<th>Value Procured</th>
<th># of Countries</th>
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<tbody>
<tr>
<td></td>
<td>67,588</td>
<td>$48,285,189</td>
<td>129</td>
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</table>

**O2 concentrator**

- **Global supply**

- **Quantity Delivered**: 44,297
- **Value Delivered**: $30,671,930
- **Quantity In Transit**: 286
  - Value In Transit: $171,356
- **Quantity In Preparation**: 23,005
  - Value In Preparation: $17,441,903
### Regional Cumulative Breakdown

<table>
<thead>
<tr>
<th>Item</th>
<th>AFRO</th>
<th>EMRO</th>
<th>EURO</th>
<th>PAHO</th>
<th>SEARO</th>
<th>WPRO</th>
<th>Grand Total</th>
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<tr>
<td>BIPAP</td>
<td>220</td>
<td>423</td>
<td>152</td>
<td>24</td>
<td>73</td>
<td>38</td>
<td>930</td>
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<td>Bubble humidifier</td>
<td>150</td>
<td>50</td>
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<td>200</td>
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<td>Flow splitter</td>
<td>154</td>
<td>60</td>
<td>2</td>
<td>216</td>
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<tr>
<td>HFNC</td>
<td>214</td>
<td>279</td>
<td>290</td>
<td>566</td>
<td>70</td>
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<td>Nasal oxygen cannula - adult</td>
<td>91,061</td>
<td>39,300</td>
<td>90,890</td>
<td>6,480</td>
<td>5,220</td>
<td>31,680</td>
<td>264,631</td>
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<tr>
<td>Nasal oxygen cannula - paediatric</td>
<td>65,685</td>
<td>33,600</td>
<td>7,340</td>
<td>5,220</td>
<td>31,680</td>
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<td>150,005</td>
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<td>Oxygen concentrator - 10L</td>
<td>294</td>
<td>337</td>
<td>1,178</td>
<td>184</td>
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<td>Oxygen concentrator - 8L</td>
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<td>3,374</td>
<td>3,369</td>
<td>639</td>
<td>4,810</td>
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<td>Oxygen mask - adult</td>
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<td>18,300</td>
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<td>70,000</td>
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<td>Oxygen plant</td>
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<td>Patient monitor</td>
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<td>Pulse oximeter</td>
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<td>2,858</td>
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<td>118</td>
<td>5,770</td>
<td>1,854</td>
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<td>Spare parts, O2 conc.</td>
<td>2,380</td>
<td>1,501</td>
<td>221</td>
<td>324</td>
<td>4,061</td>
<td>1,109</td>
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<td>14,233</td>
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<td>Ventilation bag</td>
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<td>115</td>
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<td>Ventilator - type 1</td>
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<td>5</td>
<td>128</td>
<td>13</td>
<td>198</td>
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<td>Ventilator - type 2</td>
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<td>10</td>
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<td>Venturi mask - adult</td>
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<td>13,745</td>
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<td>Venturi mask - paediatric</td>
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<td>9,283</td>
<td>6,785</td>
<td>1,620</td>
<td>13,645</td>
<td>63,473</td>
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**O2 Concentrators:**
- **20,184 units delivered**
- **8,000 units in preparation**

**WHO represent 46%**

**Total Cost**

$67,726,469
Biomedical Essential Supplies update

- Biomedical items/asset market scarcity:
  - O2 concentrator: lead time X 4 (3 months)
  - High demand on accessories and consumables
  - Other assets (ventilator, Bibap) remain accessible (3 to 4 weeks lead time)
  - Transport/logistics remain a serious concern (average $X2 up to X4)

- Global supply:
  - Other systems are in place, but demand on WHO
  - Portal still running
  - Catalogue is being updated to best match the therapeutic approach

- Forecast and supply data:
  - ESFT new version online V4.1. Imperial college data. More than 400 persons
  - Global supply data dashboard
Thank you