Using pulse oximetry for decision support for COVID-19

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Does the patient have any of the following?

- Fever (>38°C) within the last 14 days
- Cough or shortness of breath
- Respiratory rate elevated
  - ≥22 for adults (age 16y or older)
  - ≥30 for children (age 5-15)
  - ≥40 for young children (age 1-5)
  - ≥50 for infants (2-11 months)
  - ≥60 for neonates (<2 months)
- Emergency signs: obstructed/absent breathing; severe respiratory distress; central cyanosis; shock; coma; convulsions.

NO

Assessment and management using WHO/local protocols, including testing and isolation for COVID-19 if indicated.

- If patient develops rapid breathing, difficulty breathing, shortness of breath, or emergency signs, re-evaluate oxygen saturation with pulse oximeter.

YES

Check oxygen saturation with pulse oximeter.

- If emergency signs, give oxygen immediately.

SpO2≥94% without Emergency Signs

SpO2<94% OR Emergency Signs

SpO2<94% OR Emergency Signs

Provide supplemental oxygen via nasal prongs. Initiate at 5 L/min (adults) or 1-2 L/min (children), titrate flow rates to keep SpO2 ≥ 90%.

- Recheck SpO2 after 15 minutes.
- If emergency signs, recheck vital signs/SpO2 every 2-5 minutes, titrate flow rates to keep SpO2≥94%.

SpO2≥90% without Emergency Signs

Continue inpatient management using WHO/local protocols.

- Check vital signs/SpO2 every 4-6 hours while on oxygen.
- Maintain SpO2 between 90-96%, reducing oxygen flow rate when possible.
- For pregnant patients, maintain SpO2 between 92-96%.

SpO2≤90% OR Emergency Signs

Increase oxygen to maximize low-flow support.

- If available, use face mask with reservoir (adults) or head hood (infants).
- Recheck SpO2 after 15 minutes.
- If emergency signs, recheck vital signs /SpO2 every 2 -5 minutes, titrate flow rates to keep SpO2≥94%.

SpO2≥90% without Emergency Signs

SpO2≤90% OR Emergency Signs

SpO2≤90% OR Emergency Signs

Admit to intensive care unit, if available.

- Maximize oxygen support and consider escalating respiratory support if available.
- Monitor SpO2 continuously, if possible.
- If emergency signs, aim for SpO2≥94%.

Created by Lifebox and ALIMA with guidance from the World Health Organization.

WHO Case Definition of COVID-19

A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g. cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset;

OR

A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case in the last 14 days prior to symptom onset;

OR

A patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g. cough, shortness of breath; AND requiring hospitalization) AND absence of an alternative diagnosis that fully explains the clinical presentation.