

Accelerating Access and Equity to Oxygen Supply in COVID-19 and Beyond

I.BACKGROUND#1

- Low blood oxygen, or hypoxemia, is a life-threatening condition unless oxygen is provided.
- 15-17% of all hospital patients and 24% in ambulance transit need oxygen therapy at given time.
- 19% of all neonatal admissions are hypoxic—including 27% of preterm births, 15% of sepsis admissions, and 34% of birth asphyxia cases.
- In Ethiopia, CHAI chart reviews from 32 hospitals indicate 7% of pediatric pneumonia patients—and 59% of severe pneumonia patients—are hypoxic.

COVID-19

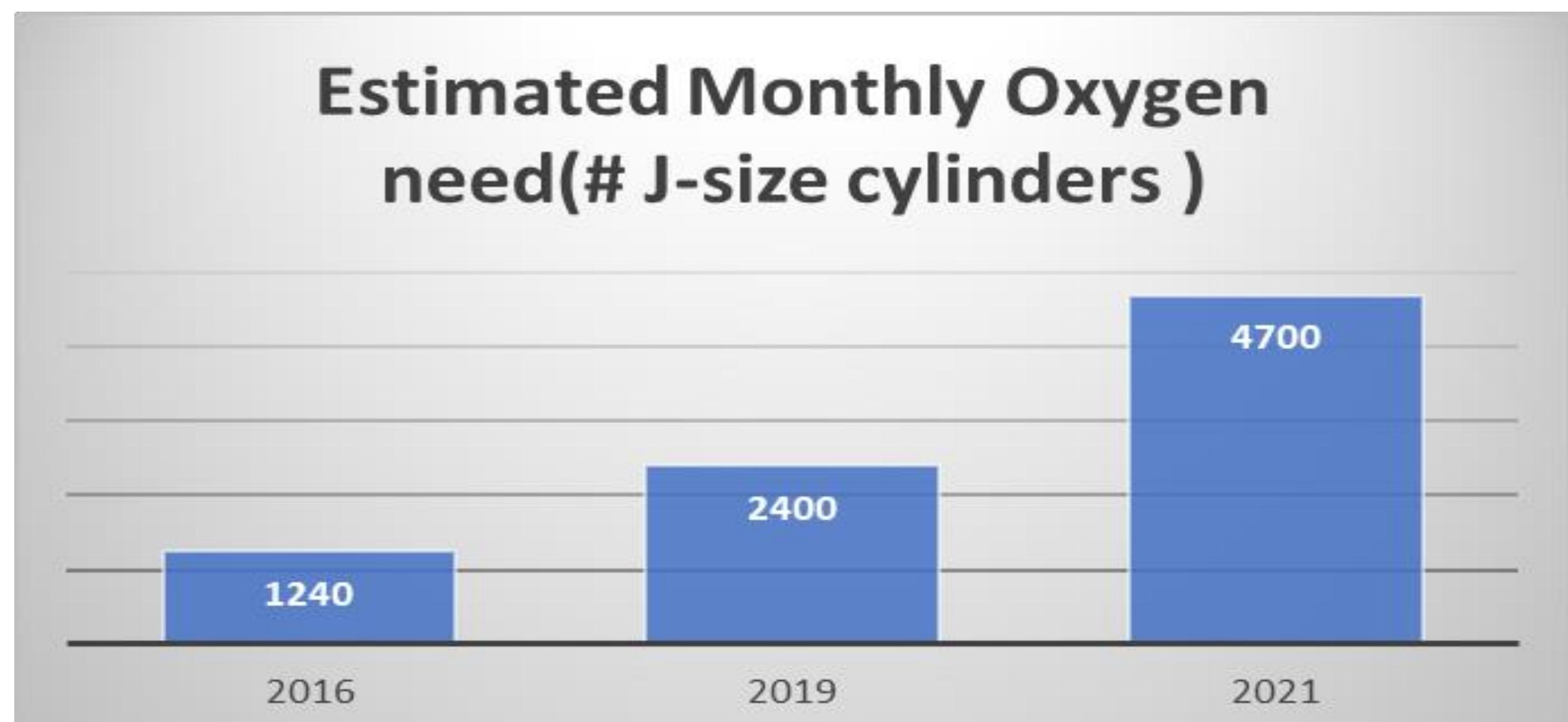
- Globally and in Ethiopia, around one in five(20%) people with COVID-19 suffers respiratory distress either as severe(15%) or critical condition(5%).
- Oxygen therapy is recommended for all severe and critical COVID-19 patients
- Oxygen requirement in COVID-19 patients needing critical can be quite high(>30LPM) and exacerbate shortages in resource limited settings

I.Background#2

- Beyond child health, oxygen across all disease types including:
- Operation Theaters
 - Gynecologic and obstetric services including Labor and delivery units,
 - Severe malaria, Severe pneumonia,
 - COPD including B. Asthma and other cardio pulmonary disease
 - The ability to detect and treat hypoxemia is therefore critical to patient care and oxygen should be available in all hospitals and most Health Centers.

II. Meeting the demand: FMOH and Regional Health Bureaus put a concerted effort to improve oxygen systems and huge demand in pre COVID-19 period

Estimated Monthly Oxygen need(# J-size cylinders)



- 60% driven by adult wards and OR
- 15% by neonatal and in-patient pediatrics services
- Current oxygen production capacity is 30-40% of the need.

FMOH responded to address these need and gaps

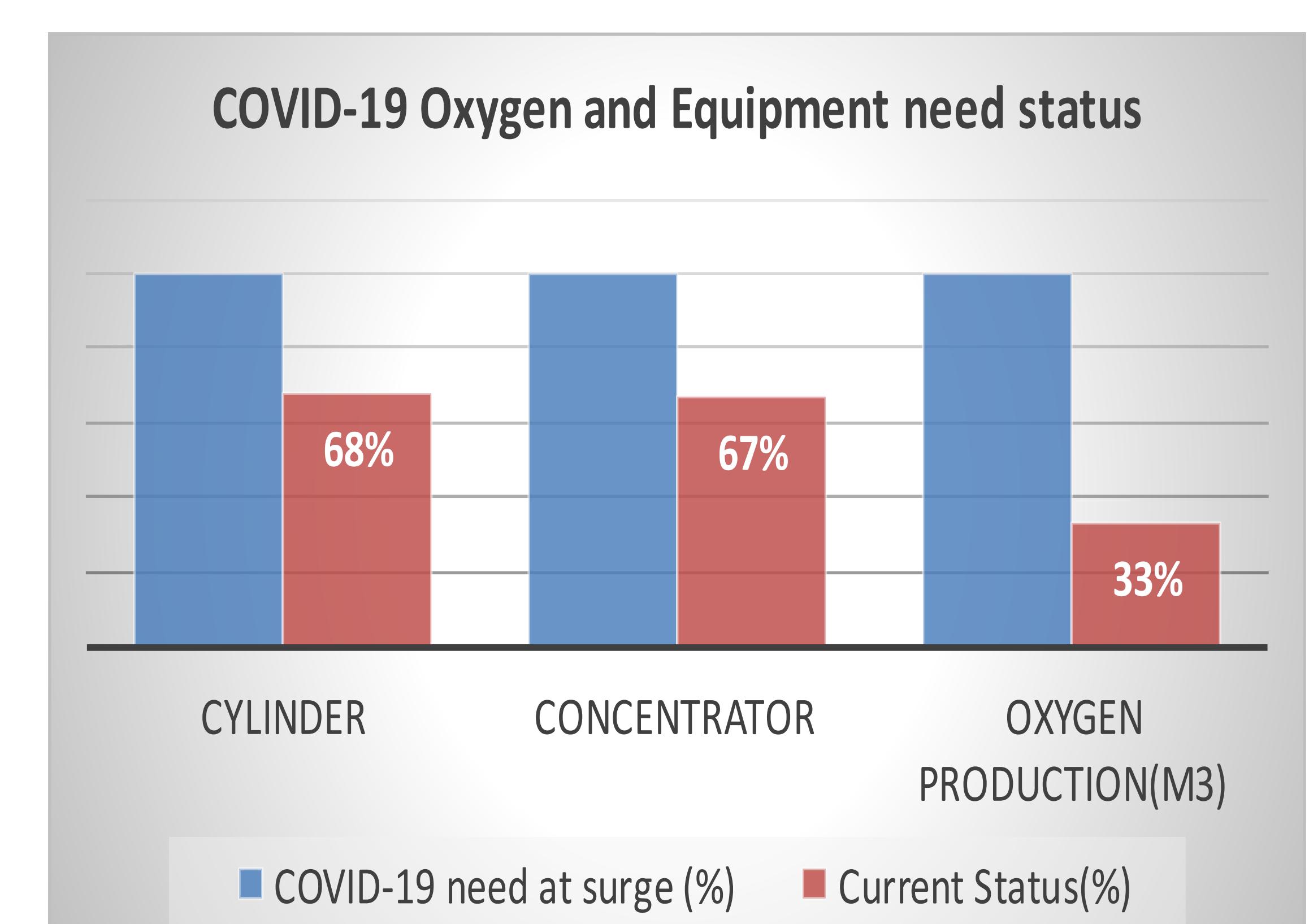
- Developed national 2016-2020/21 Oxygen Scale-Up roadmap
- And as a part of implementing the road map,
 - oxygen and pulse oximeters included in clinical guidelines.
 - FMOH funded procurement of more than 3,000 concentrators, 800 cylinders, 5,500 pulse oximeters mainly targeting hospitals.
 - Developed national curricula and training packages targeting Oxygen therapy for clinicians and Maintenance for Biomedical techs
 - Developed national specifications for oxygen plants, oxygen concentrators, and pulse oximeters.
 - More than five public oxygen plants become functional in different parts of the country

But progress in implementing the road map and meeting its targets are slow:

- Only five of plants are functional compared to 13 planned in the road map due to limited financing for procurement
- Health oxygen availability is low and oxygen concentrators are not introduced at this level
- Limited availability of spare parts and accessories at all levels

III. COVID-19 further exacerbated the existing Oxygen related challenges

- COVID-19 patients require two to six times more oxygen than the average non-COVID-19 ICU patient.
- Ethiopia needs at least 2200 concentrators(LPM), more than 8000 cylinders(J-size) 4 additional new PSA plants(of 150M3/hr size) to meet COVID-19 oxygen demand alone.
- Building on its pre-COVID experience and platform FMOH responded to the demand through quick planning, procurement and engagement of private oxygen producers.
- Despite huge efforts by FMOH, 2/3 of oxygen need for critical care might not be met at surge while there is still 1/3 gap of cylinders and concentrators for COVID-19 need.



IV. Looking ahead: by closing the current gap in oxygen supply, many lives could be saved in Ethiopia including 100,000 neonatal, Child and maternal deaths each year! FMOH calls for stronger support from donors and partners!



Production

Increase national oxygen production through:

- Additional plants establishment through out the regions
- Roll outs of concentrators at primary care level, Health centers in particular



Operations

Refilling and Distribution of cylinders with accessories

- Maintenance
- spare parts availability



Clinical/rational use

HCWs awareness and training

- Clinical aids
- M&E systems

While government commitment at all levels is in place for increased public financing and coordination, FMOH calls in for:

- Increased investment through Private and/or Public-private partnerships investment
- Robust financial and technical support from donors and non-profit Implementing partners

This investment and nation wide availability of oxygen will save many lives annually including 100K from MNCH causes in Ethiopia.