THE *LANCET GLOBAL HEALTH* COMMISSION

MEDICAL OXYGEN SECURITY

Overview of the Lancet Global Health Oxygen Commission

April 2024

What is a *Lancet* Commission?

A scientific review, inquiry, and response to an urgent, and perhaps neglected or understudied, health predicament

- Science-led
- International collaboration
- Multidisciplinary
- Aims for (transformational) change
- Focused on policy and/or political action
- Report of no more than 20,000 words and 250 references
- Published in regular journal and printed as a stand-alone booklet
- Around two years in the making

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What makes a strong *Lancet* Commission report?

- Bold message
- New, compelling findings
- New idea
- Forward looking and actionable conclusions
- Active afterlife

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What are the goals of the Commission?

Identify and address major evidence gaps related to:

- hypoxemia and oxygen need burden
- oxygen access
- oxygen solutions
- oxygen financing, political economy and priorities for future research

Mobilize a broad coalition to promote best practices in:

- addressing gaps in medical oxygen delivery systems
- facilitating and conducting relevant knowledge generation to inform implementation

Accelerate investment efforts and impact towards stronger oxygen systems and reduced morbidity and mortality globally

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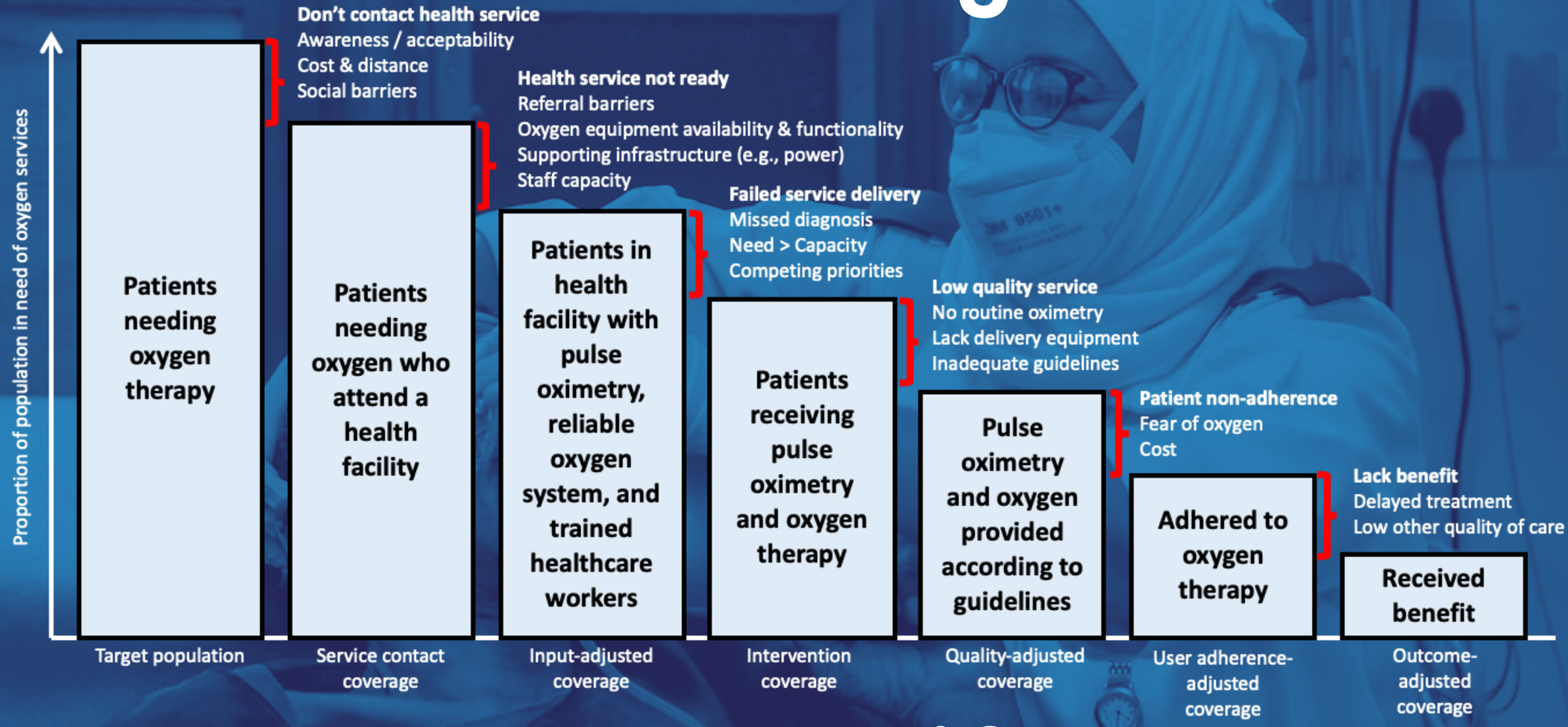
What problem is the Commission addressing?



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What are the barriers to oxygen access?

- **Weak hypoxemia detection and referral pathways** (e.g., lack pulse oximetry, social barriers, transport and cost barriers, etc.)
- **Unreliable and costly medical oxygen supply** to smaller facilities and disadvantaged communities (e.g., high cost, high risk, lack of pooled procurement)
- **Weak biomedical support** for oxygen-related devices (include lack of engineers, guidelines, tools, procurement, technology management plans, etc.)
- **Lack of strategic planning** and action on medical oxygen systems (e.g., funded plans, M&E systems, accountability, crisis flexibility, etc.)
- **Low healthcare worker capacity**, opportunity, and motivation to provide oxygen therapy (lack of staff, guidelines, clinical mentoring, etc.)
- **Weak broader health systems** infrastructure, workforce, and systems (e.g., workforce planning, quality of care, universal access, affordable health services)

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Commission governance

Commissioners
20 experts from academia

Executive
6 institutions

- Makerere University, Uganda, Co-chair
- icddr,b, Bangladesh, Co-chair
- University of Melbourne/Murdoch Children's Research Institute, Co-chair
- Karolinska Institutet, Sweden
- Every Breath Counts, USA
- Lancet Global Health, UK

Advisors
40 stakeholders from diverse sectors

Oxygen Access Collaborators
100+ global network

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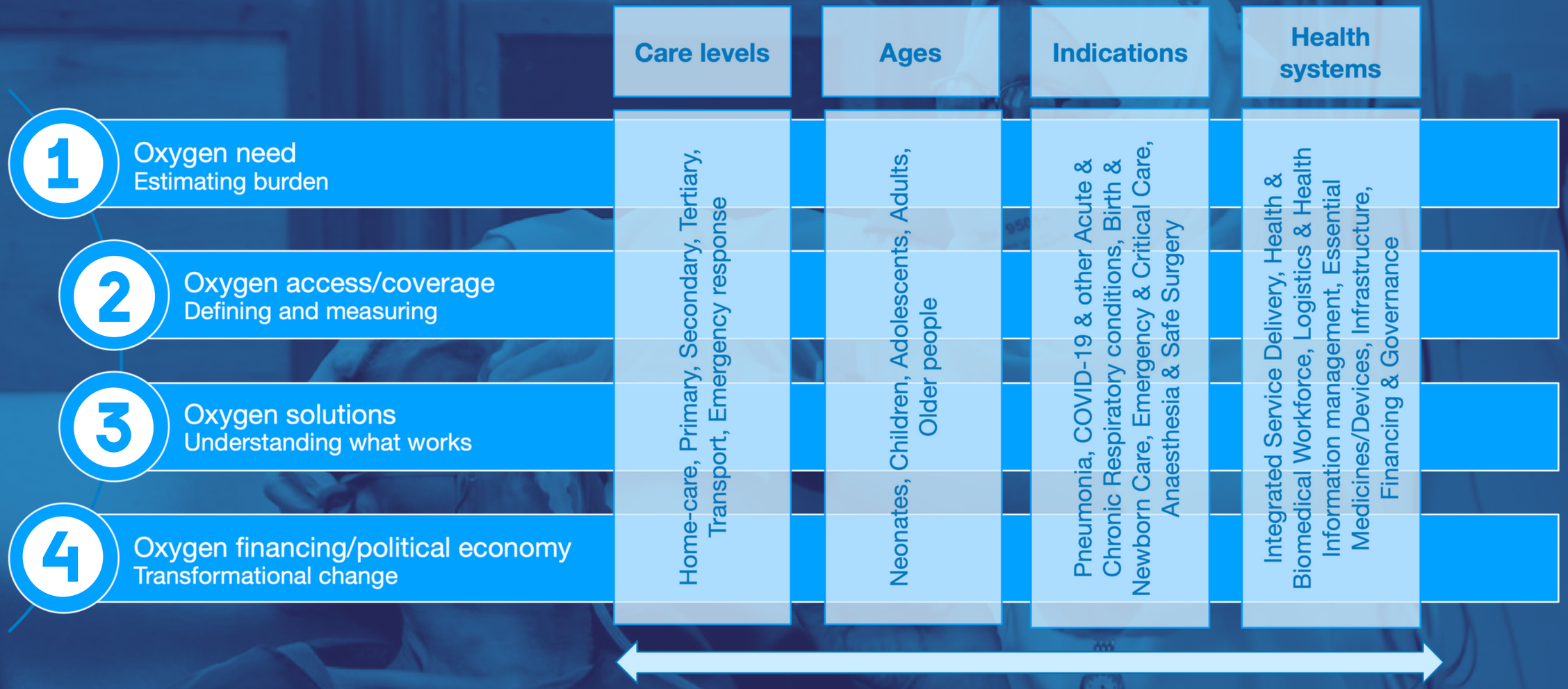
Four work packages



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Four work package leads

icddr,b

1 Oxygen need

murdoch children's research institute

2 Oxygen access

Makerere University

3 Oxygen solutions

Karolinska Institutet

4 Oxygen financing/political economy

EVERY BREATH COUNTS

Co-ordinates Executive Committee, Commissioners, Advisors, and Oxygen Access Collaborators and leads advocacy and communications

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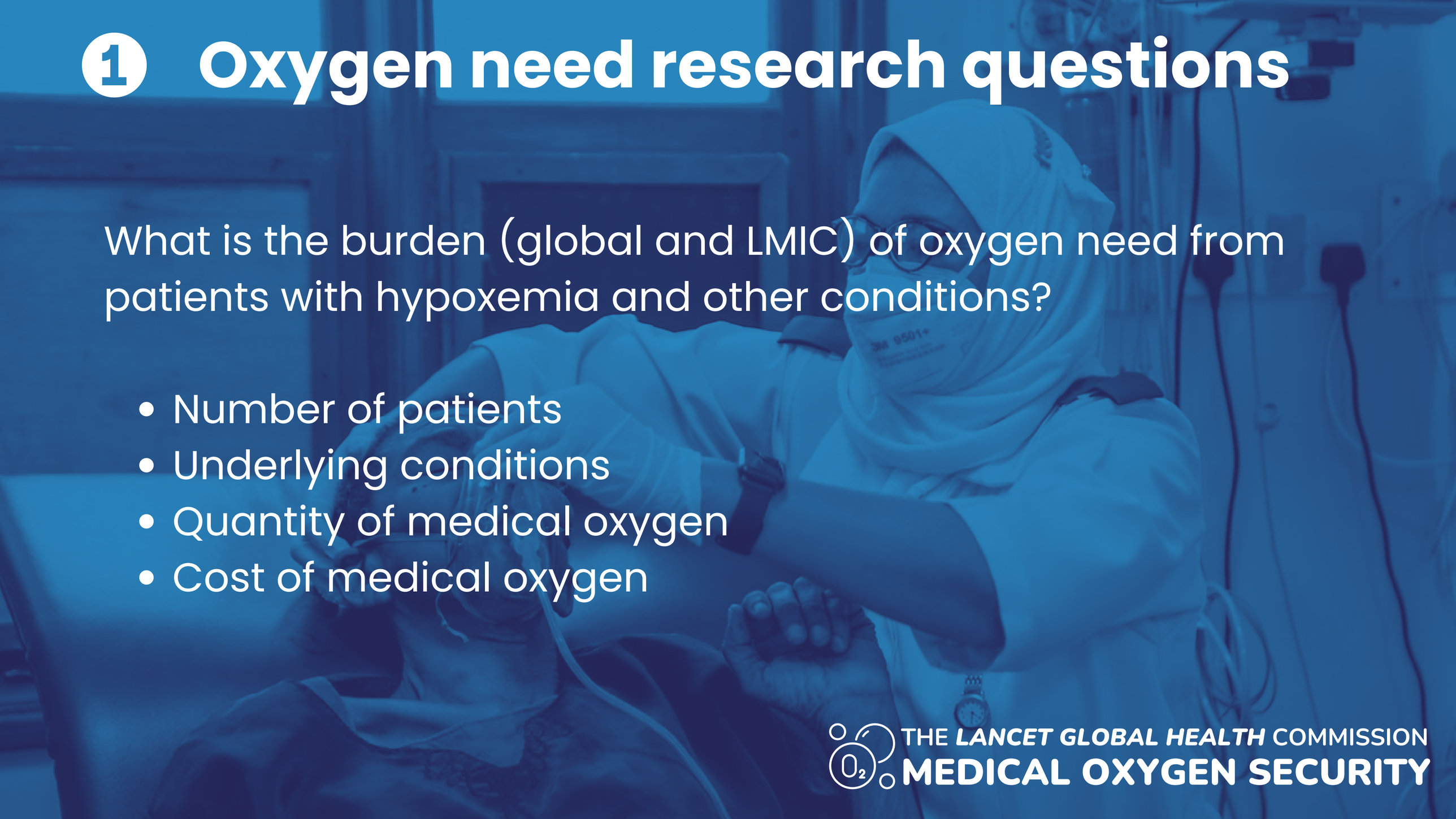
1 Oxygen need research questions

What is the burden (global and LMIC) of oxygen need from patients with hypoxemia and other conditions?

- Number of patients
- Underlying conditions
- Quantity of medical oxygen
- Cost of medical oxygen



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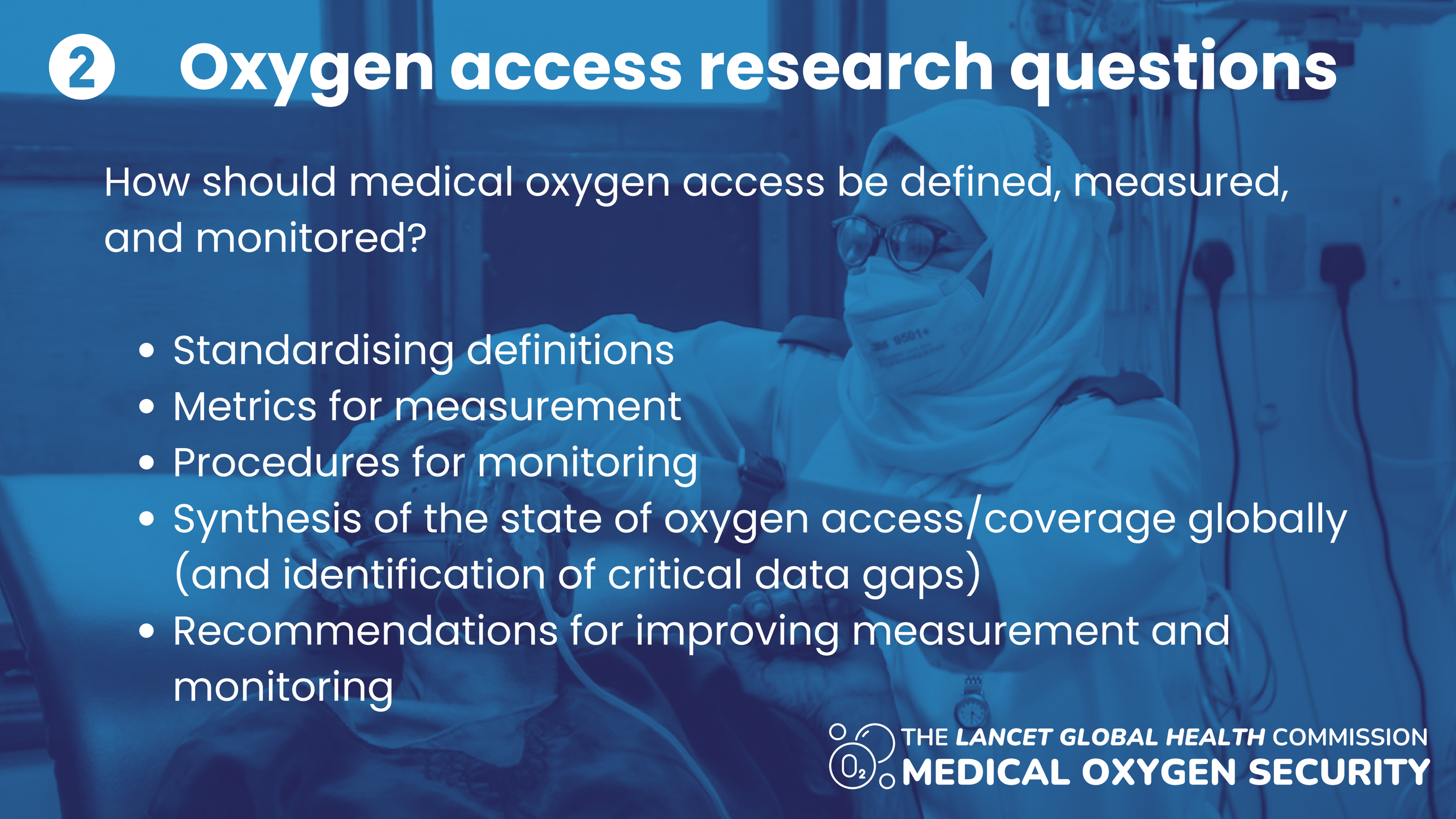
❷ Oxygen access research questions

How should medical oxygen access be defined, measured, and monitored?

- Standardising definitions
- Metrics for measurement
- Procedures for monitoring
- Synthesis of the state of oxygen access/coverage globally (and identification of critical data gaps)
- Recommendations for improving measurement and monitoring



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❸ Oxygen solutions research questions

- What are the barriers and enablers of medical oxygen access?
- What influences adoption, scale-up, and sustainability of pulse oximetry?
- What health worker and work environment factors influence the implementation outcomes of medical oxygen solutions*?
- To what extent have healthcare packages been used to contribute to scaling up and sustaining medical oxygen solutions*?

*pulse oximetry, oxygen sources, delivery interfaces, and associated procedures and processes

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Outcomes of interest

Acceptability: Is the intervention acceptable to those implementing it?
Feasibility: Is the intervention easy to understand and use?
Appropriateness: Is the intervention perceived as relevant, compatible with setting, cultures?
Fidelity: Is the intervention able to be implemented as intended?
Adoptability: Is the intervention adopted?
Penetration: Is the intervention integrated and institutionalized as agency practice?
Cost: Is the intervention affordable?
Sustainability: Is the intervention easily maintained?

4 Political economy/financing research goals

- **Develop and validate a scorecard** o inform and track progress on medical oxygen access at the national level
- **Pilot-test and refine the scorecard** with WHO Member States to assess the quality of current medical oxygen access, and to track progress at global, regional, and national levels
- Document **case studies of implementation** of oxygen solutions in seven countries (Bangladesh, India, Malawi, Nigeria, Peru, Sweden, Uganda)
- Develop and conduct a **cost-effectiveness analysis** of selected scenarios increasing coverage of pulse oximetry and oxygen therapy in select countries

Cross-cutting research questions

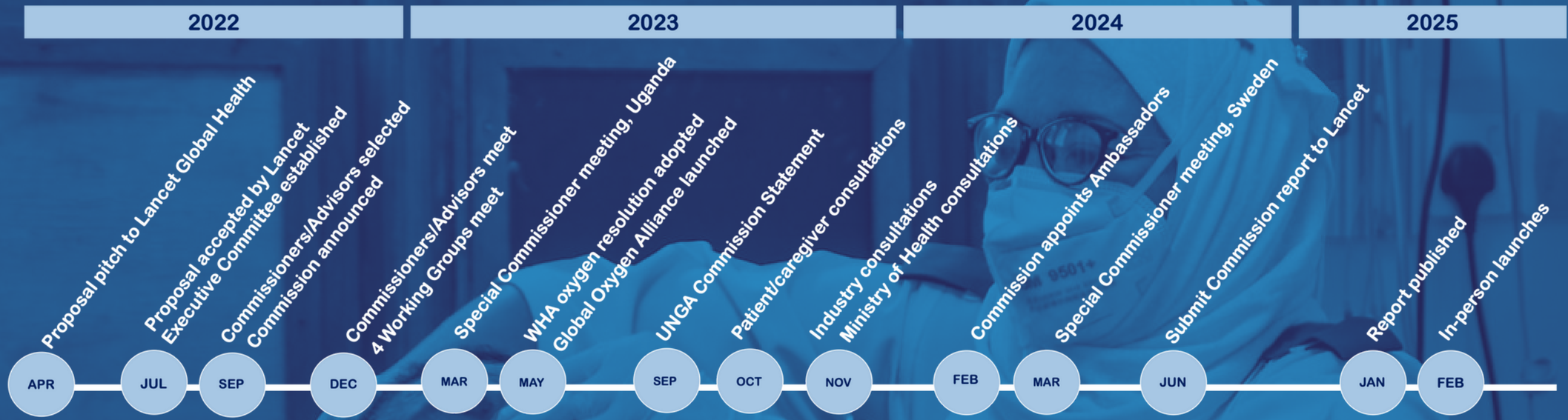
What is the investment case for improving medical oxygen systems?

- integrate data on need, coverage, cost, and benefit, and contribute to articulating an investment case

What is the missing data and what research questions need to be investigated?

- Commission will endeavour to set a research agenda and influence investment decisions

Proposed timeline (revised)



Comment

Announcing the *Lancet Global Health* Commission on medical oxygen security

Medical oxygen is an essential health treatment for both acute and chronic conditions across all age groups. Strong medical oxygen systems save lives. Therefore, adequate access to safe, affordable, and appropriate medical oxygen services is crucial for improving population health and meeting the Sustainable Development Goal targets. However, severely limited or unreliable oxygen services have been a persistent issue in many low-income and middle-income countries (LMICs), particularly among small health facilities serving poor, rural, and otherwise marginalised populations.

Medical oxygen insecurity has been a defining inequity of the COVID-19 pandemic, with LMICs bearing the worst of oxygen-related disruptions and excess mortality. Millions of health care workers and families have experienced the desperation of trying to find oxygen for severely unwell patients and family members. We might never know how many COVID-19 deaths resulted from a lack of access to oxygen during the pandemic, but the limited data available suggest that it is substantial. For example, a study of COVID-19 deaths in 64 intensive care units across ten African countries showed that one in two patients died without receiving medical oxygen,[1] with the situation likely to be worse in smaller, less-resourced hospitals.

Although COVID-19 exposed and exacerbated a massive underlying gap in access to medical oxygen across LMICs, it also resulted in unprecedented attention to, and investment in, oxygen systems that can benefit many patients. Severe COVID-19 is just one indication for medical oxygen therapy. Other notable indications include neonates in respiratory distress, infections including pneumonia, malaria, sepsis, and tuberculosis, chronic illnesses including chronic obstructive pulmonary disease, heart disease, and asthma, and surgery and trauma care. Data suggest that this cumulative need is massive and largely underserved.[2–4] For example, an estimated 7 million children with hypoxaemic pneumonia alone needing medical oxygen therapy are admitted to LMIC hospitals each year,[5] yet in many contexts only one in five actually receives it.[6,7]

Health-care personnel and patients in many LMICs have experienced the medical oxygen crisis as a painful reality for many years, frustrating efforts to provide quality care, forcing choices about who to prioritise, and burdening patients with treatment costs. But it has taken a global respiratory disease pandemic to draw the attention of the global community. With support from the Access to COVID-19 Tools Accelerator Oxygen Emergency Task Force, and other donors, many LMICs have received new oxygen technologies (eg, liquid, pressure swing adsorption plants, mobile concentrators, pulse oximeters, continuous positive airway pressure devices, ventilators, etc) to treat patients with COVID-19. However, radical improvements in underlying support structures, processes, and personnel are needed if these are to be sustainably integrated into health systems, alongside surge capacity, to achieve a long-lasting effect on lives.

Meetings:Executive Committee (monthly, Oxygen Access Collaborators (monthly),Commissioners & Advisors (quarterly)

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HISTORIC OPPORTUNITY TO DRIVE PROGRESS ON ACCESS TO MEDICAL OXYGEN AT 78th UN GENERAL ASSEMBLY

15 September 2023

The Lancet Global Health Commission on Medical Oxygen Security encourages the 194 Member States of the United Nations gathered at the 78th General Assembly to ensure that access to medical oxygen is adequately addressed at the three high-level health meetings on Pandemic Prevention, Preparedness, and Response (PPPR), Universal Health Coverage (UHC), and Tuberculosis (TB) from 20 to 22 September 2023.

Oxygen is a life-saving essential medicine with no substitute. Healthcare professionals use oxygen to treat both acute and chronic respiratory illnesses like COVID-19, pneumonia, COPD and many more, and for surgery and trauma care. Vulnerable groups like pregnant women, newborns and children, and older people need oxygen therapy regularly.

When Member States met at the World Health Assembly (WHA) on 26 May 2023, they unanimously adopted the first-ever resolution dedicated to Increasing Access to Medical Oxygen, underscoring its central role in the PPPR, UHC, and TB agendas. The resolution not only affirms that increasing access to medical oxygen will accelerate progress towards the Sustainable Development Goal (SDG) for UHC (target 3.8) and in the treatment of AIDS-, tuberculosis- and malaria-related conditions (target 3.3), but it also urges its inclusion in global and national pandemic preparedness and response efforts and other health emergencies, including infectious disease outbreaks.

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Stakeholder consultations

1. **Patients and caregivers**: To ensure patient input to the Commission, patients and their family representatives with direct experience of oxygen treatment across all regions will be invited to submit testimony

2. **Industry**: To ensure industry input to the Commission, medical oxygen and respiratory device manufacturers serving all regions will be invited to share their views

3. **Ministries of Health**: To ensure government input to the Commission, Ministries of Health representing countries in all regions will be invited to share their views

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Commission afterlife

Launches in WHO regions following publication with Regional Oxygen Ambassadors to promote recommendations with:

- Political influence in Africa, Asia/Pacific, Middle East, Americas, and Europe
- Large networks of influence (political, professional, and/or social)
- Excellent public speaking skills
- Credibility with health decision-makers

Adoption of recommendations by:

- Global Oxygen Alliance (GO_2AL) activities
- WHO Increasing Access to Oxygen Resolution implementation
- SDGs, including Universal Health Coverage movement
- Pandemic Prevention, Preparedness, and Response stakeholders

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Find out more...

https://stoppneumonia.org/latest/lancet-global-health-oxygen-commission/

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