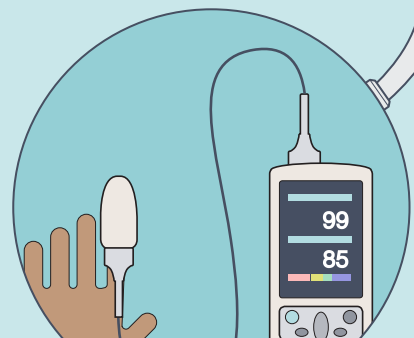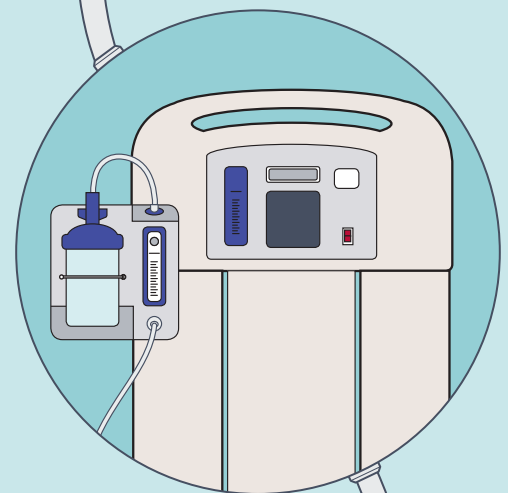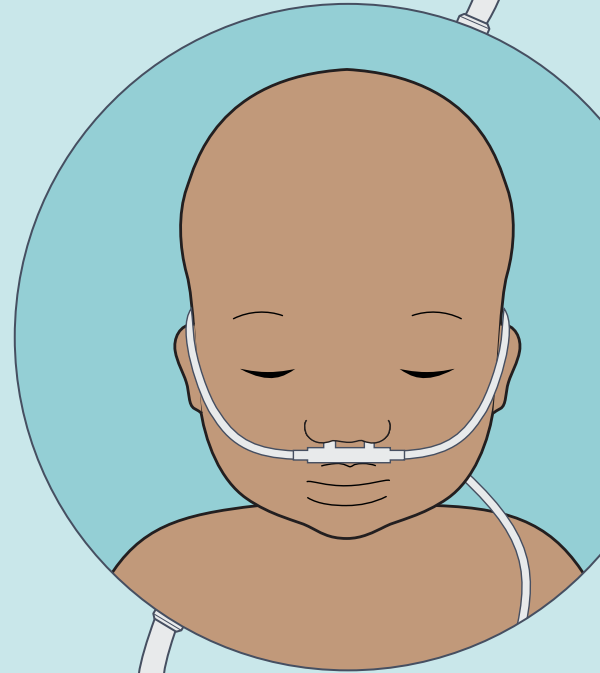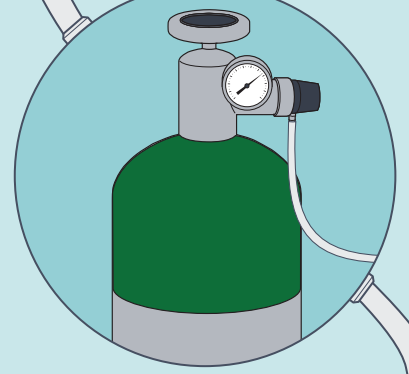# Oxygen Delivery Toolkit

Resources to plan and scale medical oxygen

User guide

April 2021

Introduction

Oxygen therapy is an essential part of ending preventable deaths among children and adults globally. However, reliable access to oxygen, paired with pulse oximetry, remains inadequate across many health facilities in low- and middle-income countries for many reasons. Limited data, perceptions about costs, poor understanding of the impact on health outcomes, and the complexity of integration and maintenance across the health system all contribute to decreased access.

Scaling up access to oxygen is one of the most effective and critical actions decision-makers can take to improve health outcomes and save lives. **The Oxygen Delivery Toolkit: Resources to plan and scale medical oxygen** provides materials to help decision-makers, implementers, and advocates plan, manage, and communicate the value of scaling up oxygen delivery systems and access to oxygen and pulse oximetry.

Who is this toolkit for?

Decision-makers

People with the authority to make improved access to oxygen delivery systems a reality through supportive policymaking and implementation—including funding, regulations, and laws. Examples: Representatives of funding or regulatory bodies, officials from the ministry of health or finance, parliamentarians, regional health leaders, district health committee members, among others.

Implementers

People with the authority to organize action plans and necessary resources, and put them into practice. Examples: Health facility managers, procurement teams, ministry of health or finance officials, among others.
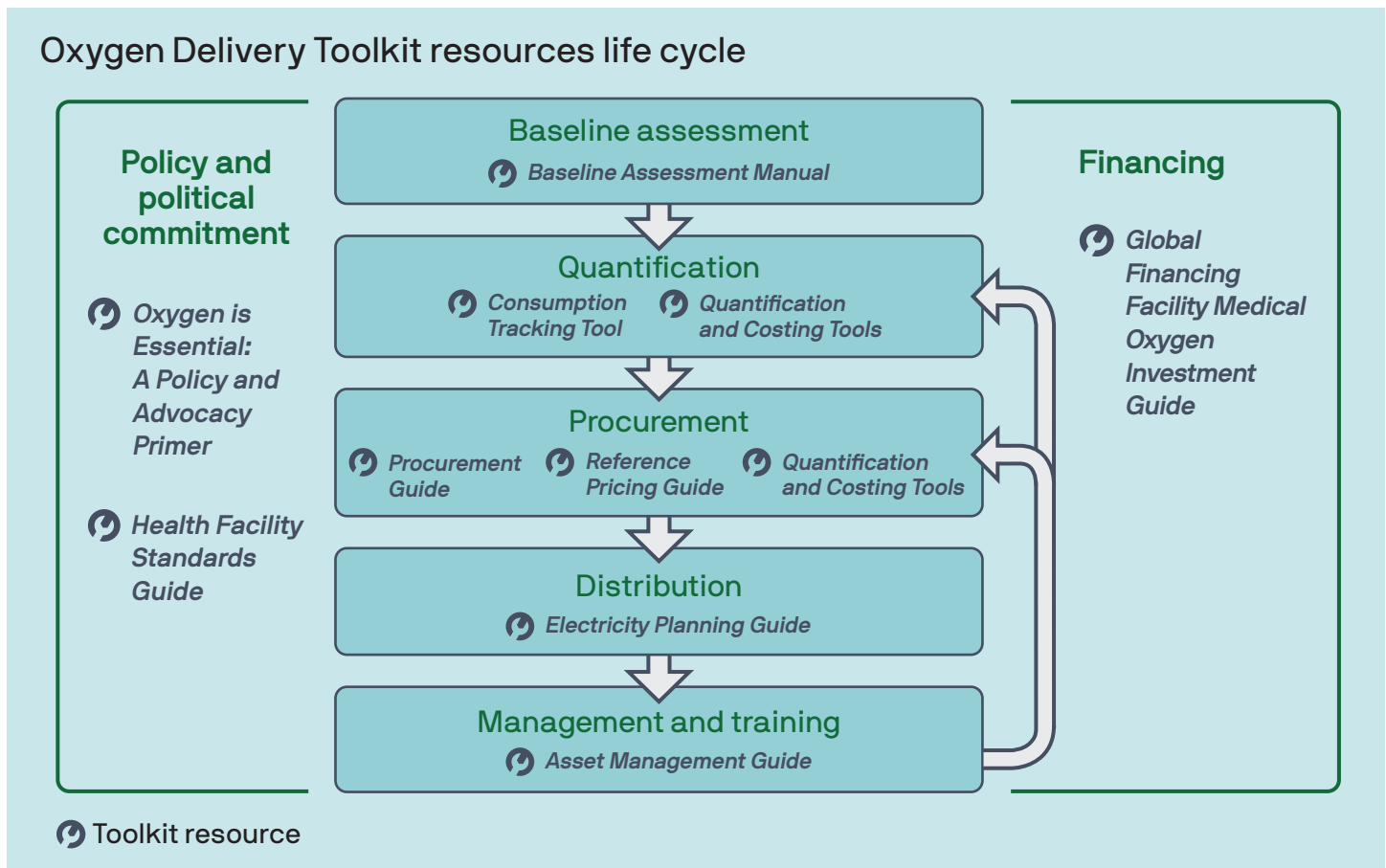
Advocates

Anyone aiming to increase access to oxygen delivery systems by influencing decision-makers to act in support of this goal. Examples: Civil society representatives, technical experts, academia, community members, religious and community leaders, among others.

Table 1. Oxygen Delivery Toolkit resources and intended users.

Toolkit resources	Decision-makers	Implementers	Advocates
Oxygen Is Essential: A Policy and Advocacy Primer	X		X
Health Facility Standards Guide	X	X	X
Baseline Assessment Manual	X	X	
Consumption Tracking Tool		X	
Procurement Guide	X	X	
Quantification and Costing Tools	X	X	
Reference Pricing Guide	X	X	
Electricity Planning Guide	X	X	
Asset Management Guide	X	X	
Global Financing Facility Medical Oxygen Investment Guide	X		X

Toolkit resources

Oxygen Delivery Toolkit resources life cycle

Policy and political commitment

- Oxygen is Essential: A Policy and Advocacy Primer
- Health Facility Standards Guide

Baseline assessment
- Baseline Assessment Manual

Quantification
- Consumption Tracking Tool
- Quantification and Costing Tools

Procurement
- Procurement Guide
- Reference Pricing Guide
- Quantification and Costing Tools

Distribution
- Electricity Planning Guide

Management and training
- Asset Management Guide

Financing
- Global Financing Facility Medical Oxygen Investment Guide

Toolkit resource

Oxygen Is Essential: A Policy and Advocacy Primer
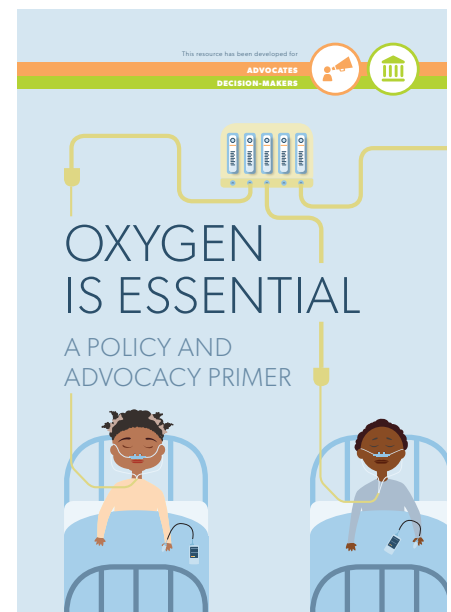
Decision-makers

Advocates

Scaling up access to oxygen is one of the most effective, and critical, actions decision-makers can take to improve health outcomes. The *Oxygen Is Essential: A Policy and Advocacy Primer* provides resources to help advocates and decision-makers understand the planning, policies, and technologies involved in oxygen delivery scale-up. The primer includes:

- An explanation of the global need for oxygen and data on current undersupply of oxygen.
- Global guidelines for shaping national oxygen policy.
- An overview of oxygen technologies and supplies.
- Guiding questions for oxygen scale-up.
- A case study on oxygen planning in Ethiopia.
- An oxygen messaging map that highlights key language and evidence that can be used for advocating for oxygen access.

This resource has been developed for
**ADVOCATES
DECISION-MAKERS**

OXYGEN IS ESSENTIAL
A POLICY AND ADVOCACY PRIMER

Link to *Oxygen Is Essential: A Policy and Advocacy Primer*

Health Facility Standards Guide

Decision-makers

Implementers

Advocates

Health facility infrastructure and medical device standards documents (i.e., health facility standards) are a set of suggestions or recommended requirements for each health facility level, including guidelines for location, infrastructure, staffing, health services, and/or medical devices. The *Health Facility Standards Guide* provides recommendations on how to create or improve high-quality, country-specific resources that outline health facility infrastructure and medical device requirements across different levels of the health system. The guide includes:

- A review of health facility standards documents from countries across income levels and world regions, with summaries of similarities, differences, case studies, and best practices.
- Suggestions for improving facility standards documents, with a focus on improving medical device requirements.
- Oxygen as a specific case study to evaluate if there is additional value that can be generated by including more detail regarding guidelines for deployment of oxygen delivery systems and pulse oximeters.

Link to *Health Facility Standards Guide*

Baseline Assessment Manual

Decision-makers

Implementers

A complete understanding of the current availability of oxygen can enable precise identification of gaps within or across health facilities and streamline efforts to ensure accurate supply of needed oxygen delivery devices. The *Baseline Assessment Manual* provides resources to carry out the training of those involved in conducting a baseline assessment of the current status of oxygen delivery systems and barriers to access, as well as tools to collect those data. The manual includes:

- A ready-made digital survey tool, compatible with tablets and Android phones, for facility-level data collection of oxygen sources at all levels of the health system and within all wards in a facility at a cross section in time.
- A training curriculum for data collectors (inclusive of a training PowerPoint presentation), which includes an introduction to various device types, use of the survey tool, and quality assurance measures for data accuracy.

Link to *Baseline Assessment Manual*

Consumption Tracking Tool

Implementers

Health facilities often lack a clear picture of the amount of oxygen that is being used across all patients. The *Consumption Tracking Tool* is designed to help track daily oxygen use and, ultimately, inform future procurement planning. This tool helps health facilities compare oxygen consumption to the number of patients, by patient group, treated during a given time period. The tool includes:

- A simple paper or Excel-based form designed for use on an ongoing basis in a health facility.

- Metrics on patient visits and volume of oxygen used across multiple oxygen device types.

- An estimation of current oxygen usage in order to monitor changes over time and estimate future oxygen need.

Link to *Consumption Tracking Tool*

Procurement Guide

Decision-makers   Implementers

An integrated and efficient procurement process is key to helping ensure that an appropriate, cost-effective, and sustainable oxygen delivery system is selected. The *Procurement Guide* describes the key steps that should be followed when procuring and contracting for an oxygen delivery system. The guide is intended to help:

- Understand the critical decisions and use a multistep procurement process for effective identification, selection, procurement, and introduction of oxygen delivery systems.

- Consider which oxygen delivery device is most appropriate for a particular health facility based on electricity, supply chain networks, and existing facility capacity.
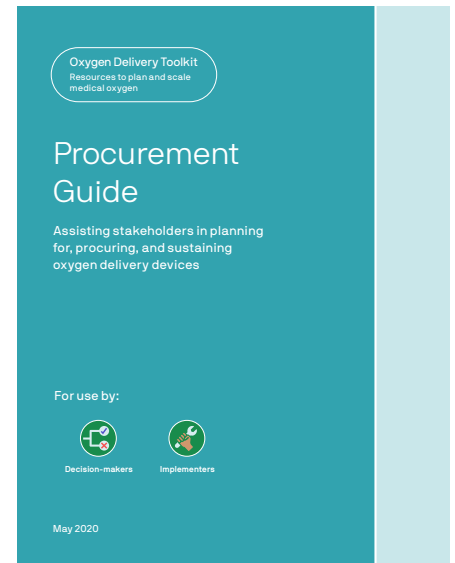
Link to *Procurement Guide*

Quantification and Costing Tools

Decision-makers

Implementers

It is important to be able to quantify the unmet need for medical devices before seeking to procure new ones. In addition, the price to procure medical devices is often viewed as only the initial capital expense to purchase it. However, medical devices incur operating costs over time. It is essential to understand the initial and long-term costs associated with different purchasing options in order to make informed procurement choices. The *Quantification and Costing Tools* are Excel-based resources that quantify the potential need for oxygen and pulse oximeters; based on these estimates of need, they calculate the anticipated costs over time for meeting this need with different device types.

Link to *Quantification and Costing Tools*

Quantification within the tools includes:

- Ideal oxygen need calculated using a formula with inputs based on the number, type, occupancy rates, and average oxygen flow rates of inpatient beds in an individual health facility or across health facilities.
- Pulse oximetry need calculated according to the number of spot check and continuous monitoring pulse oximeters desired per bed type in an individual health facility or across health facilities.

Budget and planning within the tools include:

- Recommended quantities and estimated costs over time assuming a single device type to meet the estimated need.
- A comparison of costs assuming a mix of device types at different quantities to meet the estimated need.
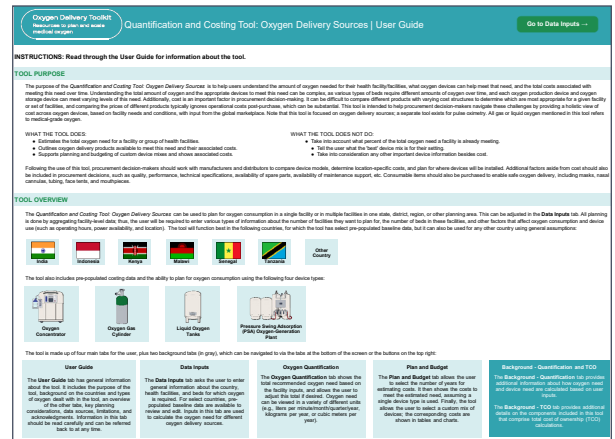
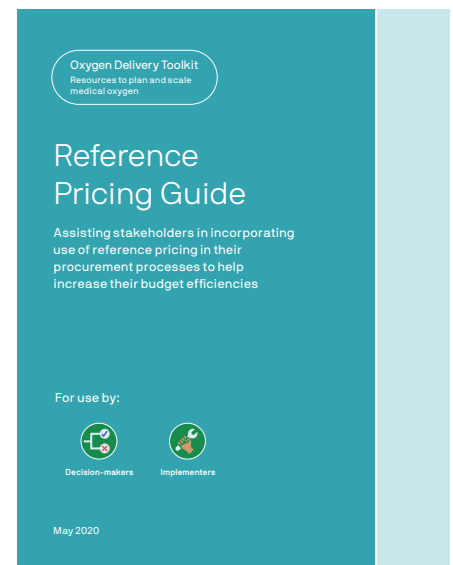# Reference Pricing Guide

Decision-makers

Implementers

Reference prices are an important safeguard against overcharging by device manufacturers and distributors; however, obtaining a reference price for a device can be challenging. It is often difficult to make like-to-like price comparisons between devices with different specifications, life spans, or order quantities. The *Reference Pricing Guide* presents a guiding framework for decision-making based on reference prices. The guide includes:

- An explanation of the value of reference pricing in negotiation.
- Specific case studies using oxygen and pulse oximetry as examples.
- Recommendations for budgeting and device selection.
- Recommended safeguards for preventing lowest-price bias in price comparisons.

Link to *Reference Pricing Guide*
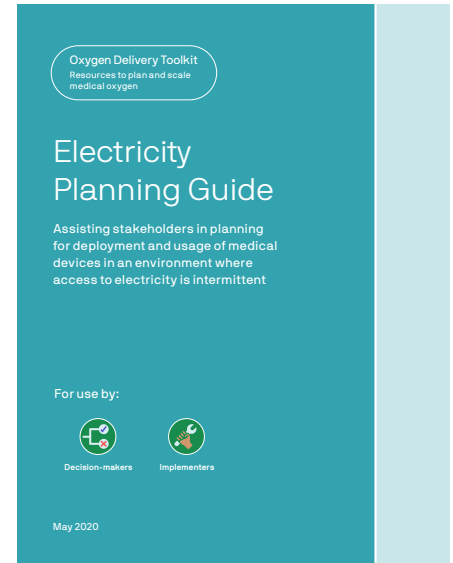
Electricity Planning Guide

Decision-makers

Implementers

Many essential medical devices require electricity to function; however, access to reliable electricity is still limited in numerous low- and middle-income countries. Besides power interruptions, voltage sags, surges, and other events of low-quality electricity can adversely affect the functionality of devices. The *Electricity Planning Guide* outlines recommendations for understanding the state of electricity access as well as methods for improving procurement and deployment of appropriate medical devices in environments where electricity challenges persist. The guide includes:

- Methods for collecting electricity data—both electricity availability and quality information—that may be routinely collected to inform device selection and placement.
- An overview of technology requirements that decision-makers should consider before purchasing an electromedical device, including the electricity requirements for a specific device (e.g., voltage specifications and anticipated electricity draws).
- Suggested protective accessory technologies, such as voltage stabilizers and surge protectors, that can help mitigate effects of poor electricity quality.
- Examples and recommendations specific to oxygen delivery devices and pulse oximeters.

Link to *Electricity Planning Guide*

Asset Management Guide

Decision-makers

Implementers

Medical devices are an important health care investment, supporting effective treatment of a range of medical conditions across the life span. However, in many low- and middle-income countries, they quickly fall into disrepair due to poor management and maintenance over time. The *Asset Management Guide* offers resources to help track medical device upkeep and, over the long term, improve future procurement decisions. The guide includes:

- An overview of the value of asset management systems in improving access to medical devices.
- Case studies and recommendations for best practices in the design, implementation, use, and maintenance of asset management systems.
- Recommendations for the type of health facility and medical device data to collect and methods for tracking details over time.
- Recommended opportunities to leverage asset information to improve procurement decision-making.
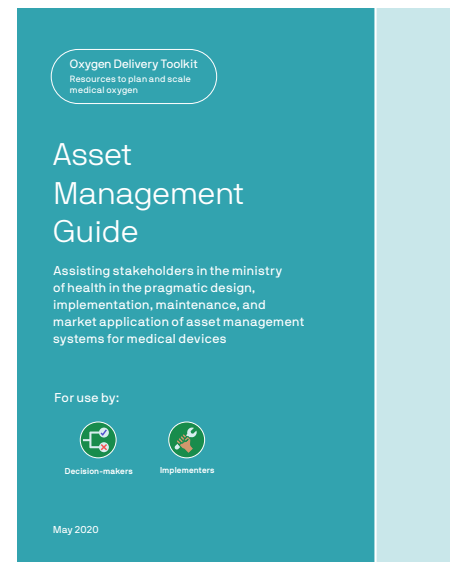
Link to *Asset Management Guide*

Global Financing Facility Medical Oxygen Investment Guide

Decision-makers

Advocates

The Global Financing Facility for Women, Children and Adolescents (GFF) is a catalytic financing mechanism that supports low and middle-income countries to close financing gaps in reproductive, maternal, newborn, child, and adolescent health and nutrition (RMNCAH+N) by using resources more effectively and improving the efficiency of health spending over time. The primary mechanism of the GFF is the investment case, which presents an opportunity for eligible low- and middle-income countries to improve access to medical oxygen, defined here as oxygen therapy administered with the support of pulse oximetry. Presented in the *Global Financing Facility Medical Oxygen Investment Guide* are practical approaches and actions that decision-makers and civil society groups can use throughout the GFF process to advocate for medical oxygen proactively during GFF investment case development, as well as later, during its implementation. This guide includes:

- Background information on challenges to medical oxygen access.
- High-level overview of the GFF process with embedded references to additional resources.
- Advocacy content for civil society to use to engage decision-makers in the importance of medical oxygen.
- Pragmatic recommendations for civil society to participate in the GFF process, including in national health financing and costing of investment cases.
- Case studies from two GFF supported countries, Tanzania and Uganda, showing how medical oxygen scale-up activities can be included in an investment case.

Link to *Global Financing Facility Medical Oxygen Investment Guide*

Acknowledgments

For more information

www.path.org/oxygen-delivery-toolkit

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