5 ICEHTMC
International Clinical Engineering & Health Technology Management
CONGRESS | VISAKHAPATNAM, INDIA
NOVEMBER 10-13 | 2023

Evidence-based, standardized and high-quality knowledge products on management of medical oxygen and respiratory care devices for South and South-East Asia

Barun Kumar Rauniyar
World Health Organization, Office of South-East Asia Region

Sushmita Das
PATH

EVENT WEBSITE:
www.globalcea.org/icehtmc-2023

GLOBAL CLINICAL ENGINEERING ALLIANCE™ | IFMBE Clinical Engineering Division | AMTZ | AAMI

The Team / Workgroup

Barun Kumar Rauniyar (first author)
World Health Organization, Office of South-East Asia Region (WHO SEARO)

Sushmita Das (second author)
PATH

Pushpa Ranjan Wijesinghe
WHO SEARO

Nilesh Buddha
WHO SEARO

Edwin Ceniza Salvador
WHO SEARO

K G Venkateswaran
PATH

Namrata Agarwal
PATH

Neeraj Jain
PATH

Description/ Background

The problem

- An unprecedented demand for medical oxygen during 2021 due to the surge in COVID-19 cases
- Gap in capacity to manage the newly installed respiratory care devices in the health facilities
- Limited knowledge and lack of relevant skills to operate and manage the respiratory care devices

The solution

High-quality and reliable knowledge products to strengthen the capacities of biomedical engineers and other healthcare service providers

Developed by

Member States in WHO's South-East Asia region, in collaboration with PATH

Goals of the project and end-users

Goal

Strengthened biomedical capacity for oxygen and respiratory care devices

Beneficiaries

Regional goods for use by –

- Health facility managers,
- Biomedical engineers and
- Technicians in the area of biomedical engineering

The knowledge products will also be available for use as ready reference

Approach

Equipment Listing & approach

IDENTIFY

A long list of oxygen and respiratory care equipment

Included diagnostic equipment like USG, ECG as well

Preliminary literature review

COLLECT & COLLATE

Information on respiratory care trainings, SOPs, manufacturers' guides, etc. from all SEAR nations

Documentation framework

REVIEW & DESIGN

A framework for the regional module and operating guides

Reviewed literature from WHO's Global and regional offices

Document development & review

DOCUMENT

Training module and operating guides as per the framework.

Shared with technical experts for review and feedback

Disseminate

FINALIZE

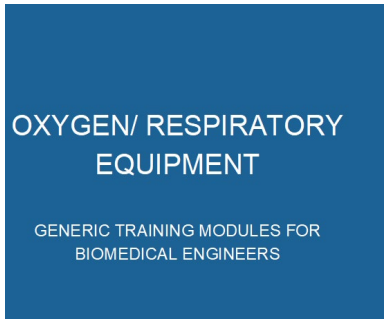
Incorporate all feedback, quality check, finalize and disseminate

Areas covered

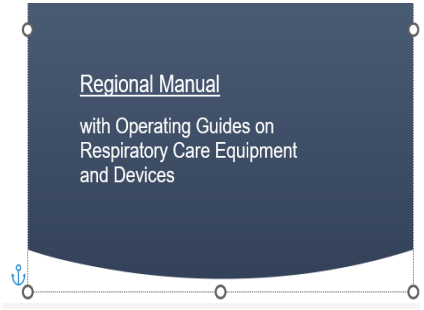
- Oxygen Production Sources (PSA, OCs)
- Oxygen Storage Systems (Cylinders, LMO Tanks)
- Oxygen Distribution Systems (MGPS, Manifold)
- Oxygen Delivery to Patients (Ventilators)
- Oxygen Delivery to Patients (Devices)
- Oxygen Delivery to Patients (Consumables)
- Patient Monitoring Systems
- Patient Diagnostic Systems
- Fire Safety Measures
- Biomedical Waste Management

Result/Output

To supplement the medical oxygen infrastructure developed by the Member States in WHO's South East Asia region during the COVID-19 pandemic, two high quality and reliable knowledge products on respiratory care devices were developed to strengthen the capacity of biomedical engineers.



Training Modules on Oxygen and Respiratory Care Equipment and Devices



Regional Manual with Operating Guides on Oxygen and Respiratory Care Equipment and Devices.

Both documents are expected to be included in the National Influenza Pandemic Preparedness Plans (NIPPPs) as annexes for preparedness and response during epidemics and pandemics

Regional Manual With Operating Guides

1. To provide foundational information on key biomedical aspects of maintaining respiratory care equipment and respiratory care ecology
2. The guidance document will give the users an idea of the level of expertise required to install the devices, the types of maintenance required, and the frequency of interventions needed
3. These guides will help the biomedical engineers perform routine tasks to improve efficiency and compliance with quality standards, as well as standardize processes
4. Each operating guideline provides technical product specifications respiratory care equipment and devices that may prove useful in the selection, procurement, use, maintenance of these products
5. This document is meant to serve as a complementary knowledge product series to other respiratory care and oxygen management documents

Training Modules

1. Provides a course plan spanning over 04 days, with multiple session per day

2. Includes information on medical oxygen systems, from its source, to storage, to its delivery to patients.

3. Considering the evolving nature of respiratory infections, the modules also cover diagnostic devices, such as ultrasound machine, electrocardiogram (ECG) and X-ray machines

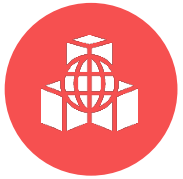
4. Employ participatory learning techniques, led by both the trainers and trainees. Course design provides opportunities for individual participation in exercises and engage with the facilitator

5. This document can be customized and translated as per availability of respiratory care equipment and devices in the country and translated into local language

Unique Value Proposition

Made by biomedical engineers, for biomedical engineers

Developed specifically for the Biomedical Engineers and technicians. Field tested and vetted by technical experts.



Covers oxygen devices from source to storage to delivery

Covers medical oxygen systems from its source to storage to its delivery to patients, including diagnostic devices, such as ultrasound machine, ECG and X-ray machines

Evidence based TLMs, custom built to country's requirements

Standardized, evidence-based, and high-quality training and learning materials, which can be custom built as per the availability of country's respiratory care equipment and devices.

Specifications to guide a wide range of administrative functions

Each operating guideline provides technical product specifications for respiratory care equipment and devices that may prove useful in the selection, procurement, use and maintenance of these products


5
ICEHTMC
International Clinical Engineering
& Health Technology Management
CONGRESS | VISAKHAPATNAM, INDIA
NOVEMBER 10-13 | 2023
Thank you!
GLOBAL CLINICAL ENGINEERING ALLIANCE™
IFMBE
Clinical Engineering Division
AMTZ
AAMI
EVENT WEBSITE:
www.globalcea.org/icehtmc-2023