Increasing the capacity to provide high-quality clinical management of COVID-19 cases in Sri Lanka

Between June 2020 and July 2021, EpiC provided technical assistance (TA) and capacity-strengthening support for critical case management to health providers and facilities. The United States Government (USG), through the United States Agency for International Development (USAID), provided the Government of Sri Lanka with a donation of 200 ventilators for intensive care units to assist its fight against COVID-19. The donation delivered on the U.S. administration's pledge to provide these critically needed supplies and support Sri Lanka's ongoing efforts to mitigate the impacts of the COVID-19 pandemic in the country.

EPIC'S KEY ACCOMPLISHMENTS

- Supported installation of 200 mechanical ventilators at 115 hospitals
- Conducted 62 facility-level assessments to examine hospital capacity and identify technical assistance needs
- Trained 1,385 health care providers in COVID-19 clinical case management
- Trained 18 Emergency Care Physicians as master trainers

EpiC collaborated closely with Sri Lanka's Ministry of Health (MOH) to strengthen the capacity of the government to receive, install, and use the USG-donated ventilators. EpiC then led an assessment of TA needs for the clinical management of COVID-19 and provided clinical TA on developing a ventilator tracking system (described in detail below). EpiC also established a resource pool of 18 emergency care physicians as a resource team that then trained a total of 1,385 health care providers (consisting of 773 nurses and 612 medical officers) on emergency care management related to COVID-19.

Activities and Accomplishments

COORDINATION WITH STAKEHOLDERS

USAID and EpiC staff coordinated with key stakeholders in the MOH, including the Biomedical Engineering (BME) unit, Planning unit, and Director General of Medical Services, for the roll out of the ventilator TA. The initial planning meeting was conducted under the leadership of the Health Secretary and attended by the USAID Mission Director, relevant senior managers from the MOH, the local service provider of the USG donated ventilators, and EpiC project staff. Weekly meetings were conducted with the BME unit, the local service provider, and EpiC to roll-out implementation of ventilator installation, conduct the facility-level assessments, and establish a ventilator tracking system. EpiC coordinated with the Sri Lankan College of

Emergency Care Physicians to roll out training of the health care workers at the selected facilities.

FACILITY-LEVEL ASSESSMENTS

Two hundred ventilators were transported and placed in 115 hospital facilities across Sri Lanka. EpiC facilitated an assessment of the facilities' capacity to effectively use the ventilators and determine the TA needs of health care providers. EpiC trained a team of biomedical engineers to carry out the facility-level assessments, which were completed in 62 of the 115 facilities that received donated ventilators. The assessment was designed to understand their level of readiness to use the ventilators in the care of patients with COVID-19, including supporting infrastructure and equipment, infection prevention measures, availability of essential medications, and human resource capacity. The facility-level assessments revealed the need for the MOH to address infrastructure and supply chain management issues, and address gaps in human resources by providing training for junior doctors and nurses on emergency case management.

TRAINING OF HEALTH CARE PROVIDERS

The MOH requested that EpiC train health care staff on COVID-19 adult case management, emergency care, and transport ventilation. EpiC partnered with the College of Emergency Care Physicians to train 18 emergency care physicians as master trainers. The trainees learned of resources available for teaching the set up and clinical use of the Zoll EMV+ ventilator (Sri Lanka received 200 Zoll ventilators); understood the content of the COVID-19 case management series; identified other resources available for learners at www.opencriticalcare.org; and developed a framework for training end users incorporating these available resources.

Four cascade clinical trainings were then conducted virtually by the master trainers and reached 1,385 health care workers, including 733 nursing staff and 613 doctors. The training covered the following topics:

- Identifying the types of personal protective equipment (PPE) needed for suspected or confirmed COVID-19
- Recognizing the basics of ICU communication
- Developing a systematic approach to triage a hypoxemic patient

Photo credit: EpiC Sri Lanka

A nursing Officer at Kalutara General Hospital uses the ZOLL ventilator after receiving training from the EpiC project

- Applying a framework for when to use low- and high-flow noninvasive oxygen delivery
- Recognizing special considerations needed for COVID-19 airway management
- Applying the basics of lung-protective mechanical ventilation
- Describing the basics of sedation and routine care for mechanically ventilated patients
- Recognizing special considerations needed for COVID-19 ventilator liberation
- Comparing and contrasting therapeutics for COVID-19

With the ventilators donated by USAID under the EpiC project, we were able to save lives of many patients affected by COVID-19 pneumonia. The training provided us with a wealth of knowledge on patient care and use of the ventilator in a correct manner.

– Ms. Rasadari, Nursing Officer at Kalutara General Hospital

VENTILATOR TRACKING SYSTEM

The MOH requested TA from EpiC to develop a system to monitor the use of ventilators to make informed decisions on their placement in facilities, attend to preventive maintenance, and ensure repairs when needed. EpiC developed an online, cloud-based ventilator tracking system to alert administrators on ventilator maintenance needs and use and piloted it in one facility. Based on the results of the pilot, the ventilator tracking system is currently being scaled up with American Rescue Plan Act funds to cover all medical equipment and supplies needed for COVID-19 management and across all hospitals in Sri Lanka.

Conclusions

Over the life of the project, EpiC's assistance to the MOH in Sri Lanka has helped strengthen the health system and the country's capacity to manage the COVID-19 epidemic through technical assistance, including training of health care providers and development of a ventilator tracking system. With TA from the EpiC project, Sri Lanka was able to use the portable ventilators to transport oxygen-dependent patients from intermediate care centers to high dependency units and intensive care units. EpiC will continue to extend TA to the MOH and Government of Sri Lanka to further strengthen the COVID-19 response.

Meeting Targets and Maintaining Epidemic Control (EpiC), a five-year global project funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the United States Agency for International Development (USAID), is dedicated to achieving and maintaining HIV epidemic control. EpiC is led by FHI 360 with core partners Right to Care (RTC), Palladium, Population Services International (PSI), and Gobee Group. EpiC and its consortium members are implementing COVID-19 activities in more than 20 countries on three continents. In 13 of those countries, EpiC is providing technical assistance (TA) to governments and specific health facilities that received U.S. Government (USG)-donated ventilators and to health providers on COVID-19 clinical case management.

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