

Increasing capacity to deliver high-quality clinical management of COVID-19 cases in Nepal

Nepal reported over 1.1 million cases and a little over 12,000 deaths in the first three years of the COVID-19 pandemic. From June 2020 through November 2023, the Meeting Targets and Maintaining Epidemic Control (EpiC) project provided technical assistance (TA) and capacity-strengthening support to improve clinical case management among health care providers and facilities. The United States Government (USG), through the United States Agency for International Development (USAID), provided the Government of Nepal's (GON) Ministry of Health and Population (MOHP) with a donation of 100 ventilators for intensive care units (ICU) to assist in its fight against COVID-19. The donation delivered on the U.S. administration's pledge to provide these critically needed supplies and support Nepal's ongoing efforts to mitigate the effects of the COVID-19 pandemic in the country.

EpiC collaborated closely with the MOHP to strengthen the capacity of the government to receive, install, and use the ventilators. EpiC also led facility-level assessments of critical care capacity and resources and TA needs for the clinical management of COVID-19 and provided clinical TA.

EPIC'S KEY ACCOMPLISHMENTS

- Supported the installation of 100 ventilators across 51 hospitals and national ambulance service
- Conducted 51 facility-level assessments to evaluate hospital capacity and identify training needs
- Trained 338 clinicians (161 doctors and 177 nurses) in COVID-19 clinical case management through essential critical care training (ECCT) and pediatric essential critical care training (PECCT)
- Trained 45 biomedical personnel on the installation, operation, and maintenance of donated ventilators

Activities and Accomplishments

COORDINATION WITH STAKEHOLDERS

EpiC collaborated with the Department of Health Service (DOHS) and key stakeholders in-country to convene meetings to design, plan, and implement project activities, as well as strategize how to track the progress of ventilator installation and upkeep for the donated ventilators. EpiC and the National Health Training Center (NHTC) co-facilitated these meetings alongside an anesthesiologist and a critical care expert, aiming to offer TA to clinicians by supporting essential critical care training (ECCT) and pediatric essential critical care training (PECCT) for effective COVID-19 case management.

FACILITY-LEVEL ASSESSMENTS

EpiC conducted two rounds of facility-level assessments (FLA) in 51 sites receiving ventilators. These were designed to examine facility capacity to provide critical care, including care for mechanically ventilated patients, and to effectively use ventilators. The 23 sites assessed in the first round were selected by the MOHP and consisted mainly of tertiary hospitals and designated COVID-19 treatment centers. The 28 sites selected in the second round by the Province Health Division, Ministry of Social Development, were mainly district hospitals.

EpiC worked with the Curative Division (CD) of the DOHS to adapt the standard FLA tools to the Nepalese context. The CD sent letters to each site requesting their participation in the assessment. Local critical care consultants were also engaged to provide technical expertise on the adaptation and administration of the FLA tools through EpiC.

Technical experts in critical care conducted the assessments, leveraging strong relationships with facility leaders and streamlined communication to ensure accuracy and reliability. The assessment provided extensive information that could be used to shape and customize training and other interventions for individual sites. It also increased understanding of the capacity of these sites to absorb and optimally utilize the allotted ventilator units. The process proved useful for the technical consultants to establish contacts with specific hospital personnel at an early stage, and future communications regarding TA built on this initial contact.

The findings revealed that 15 of 51 hospitals had severe deficits in available human resources, infrastructure, and supplies or had no intensive care unit (ICU). Similarly, it found that 36 sites would benefit from extensive clinical TA, as they demonstrated moderate to severe gaps in human resource capacity for ventilated patients.

TRAINING ON COVID-19 CLINICAL CASE MANAGEMENT

In collaboration with the NHTC, EpiC Nepal conducted 10 batches of ECCT. The project employed a team of critical care experts and used a national training curriculum to conduct this training. A total of 161 participants (78 doctors and 83 nurses) were trained in the 51 sites that received donated ventilators. Similarly, 11 batches of PECCT were conducted across all 51 sites where FLAs were conducted. A total of 177 participants (83 doctors and 94 nurses) were trained at the 51 sites that received a donated ventilator.

The training strengthened the capacity of doctors and nurses who were involved in the ICU, the cardiac care unit (CCU), and emergency care to provide critical care to COVID-19 patients, as well as other critically ill patients, and prepared clinicians to safely and effectively use ventilators as a lifesaving intervention in critical care.

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The participants underwent intensive training on ICU monitoring, telemetry, and responsive management followed by training on both manual and mechanical ventilation systems, utilizing manual and mechanical ventilators effectively, addressing common issues in ventilator software, conducting CPR, managing acute respiratory failure/acute respiratory distress syndrome (ARDS), addressing circulatory failure and septic shock, and the unique requirements of managing severe and critical COVID-19 disease in an intensive care setting. This training encompassed hands-on practical skill sessions, interactive breakout sessions, integration of knowledge and skill assessments, and evaluation stations to gauge participant proficiency.



An EpiC Nepal critical care expert demonstrates ventilator use to the medical and nursing staff during essential critical care training in January 2021. Photo credit: Epic Nepal



EpiC Nepal critical care experts show methods to secure basic and advanced airways during pediatric essential critical care training in November 2023. Photo credit: Epic Nepal



An EpiC Nepal critical care expert demonstrates various ventilator settings during pediatric essential critical care training in November 2023. Photo credit: Epic Nepal

The participants gave high ratings to the effectiveness, relevance, and usefulness of the training, especially the skill testing session, which played a pivotal role in enhancing their skills and competencies.

NONCLINICAL TRAINING FOR BIOMEDICAL STAFF

EpiC Nepal supported the NHTC to develop a one-day orientation package to orient the biomedical professionals at all sites that received ventilators. The orientation package was developed in collaboration with the national and international critical care experts and consultants, with support from the NHTC. Three batches of this orientation were conducted in August 2021. A total of 45 participants attended the orientations. The orientation enhanced knowledge and skills and strengthened the capacity of the government biomedical professionals to handle and manage ventilators used in ICU, critical care, high dependency units, and emergency care services of hospitals.

Conclusion

Through strategic coordination of assessment, equipment donation, and comprehensive clinical and nonclinical training, EpiC enhanced the country's capacity to provide high-quality clinical management of COVID-19 cases and to care for mechanically ventilated patients. The GON expressed deep appreciation for the commitment and endeavors of the project in enhancing the health care system and preserving lives within the community. The donation of the ventilators, matched with practical skill building for critical care health professionals, delivered considerable opportunities to improve the care of people with critical and severe COVID-19 in Nepal.

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, and Population Services International (PSI). 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.

This brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the EpiC project and do not necessarily reflect the views of USAID or the United States Government.