

**Improving ECMO outcomes through comprehensive education**

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Extracorporeal Membrane Oxygenation (ECMO) is a form of mechanical circulatory support that combines an extracorporeal blood pump with an oxygenator<sup>1</sup>. Extracorporeal Life Support (ECLS), or ECMO, has the ability to perform cardiac and pulmonary functions in case these systems failure<sup>2</sup>. These life support systems are efficient and can prove lifesaving in cases of severe cardiopulmonary depression. It can be used when conventional CPR (Cardiopulmonary resuscitation) fails to restore the spontaneous cardiopulmonary function. It gained popularity during the COVID-19 pandemic, as it was used to provide life support to critically ill patients<sup>3</sup>.

The availability of ECMO is an issue in developing countries. Only a limited number of emerging nations possess access to these sophisticated systems. ECMO is a relatively new technology for which very few individuals are trained to use it effectively. There are numerous complications associated with the use of this lifesaving equipment. Inadequate mechanical ventilator care during ECMO can result in ventilator-associated infections and delayed lung recovery. Bleeding, thrombosis, haemolysis, renal and neurological damage, concurrent infections, and mechanical and technical issues are among the short-term complications. The physical, functional, and neurological sequelae of critical illness are reflected in long-term complications<sup>4</sup>.

These complications can be mitigated in ECMO-assisted patients by applying the appropriate skill and expertise.

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Prior to initiation, a thorough understanding of ECMO equipment handling, timing of initiation, and patient selection criteria is mandatory. ECMO patients need to be managed carefully to prevent life-threatening complications and must be kept on standby for surgical circuit exchange<sup>5</sup>. Continuous monitoring of ECMO patients is necessary to avoid any debilitating or fatal complication. Comprehensive ECMO training programmes for physicians can significantly reduce the risk of complications by ensuring proper technique, timely intervention, and informed clinical decision-making throughout the course of ECMO support.

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