

# Survey provides snapshot of global ECMO transport services

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Extracorporeal membrane oxygenation (ECMO) is a life-sustaining therapy for patients with respiratory or circulatory failure that is best performed at high-volume centers with special expertise. A survey providing an overview of leading ECMO transport programs around the world is presented in the *ASAIO Journal*, official journal of ASAIO.

The first-of-its-kind survey provides information on the structure and organization of 15 successful ECMO [transport](#) programs. The variations among programs underscore the need for a worldwide organization and accreditation process for ECMO transport services, according to the report by an international expert panel. The lead author is L. Mikael Broman, MD, Ph.D., of Karolinska University Hospital, Stockholm, Sweden.

## International Standards Needed for ECMO Transport Services, Experts Suggest

Extracorporeal membrane oxygenation is a form of advanced life support that can take over the work of the heart and/or lungs for [patients](#) with severe organ failure. Transport programs play a critical role because ECMO is most effective and efficient when performed at centers that treat a high volume of ECMO patients. Typically, ECMO teams travel to the location where the patient is hospitalized, initiate life support, and transport the patient back to the home hospital for specialized care and monitoring.

To describe the organization and functioning of ECMO transport programs, the researchers surveyed the directors of 15 programs. The analysis included five US programs, including one [military service](#) and one [private company](#); eight in European countries (Belgium, Germany, Italy, Norway, and Sweden); one in Japan (greater Tokyo area); and one in Australia.

The programs varied considerably in terms of organization, team structure, certification process, and funding. Financing and reimbursement varied between different national healthcare systems. In all programs, ECMO transport services were available 24 hours a day, seven days per week.

Formally or informally, most of the programs were organized in a "hub-and-spoke" model, with the sickest patients transferred to centralized, high-volume ECMO centers. "The hub-and-spoke model is the most cost-effective, resource-effective way to organize advanced medical treatment for a large population, as it consolidates cumulative expertise for improved patient outcomes," Dr. Broman and colleagues write.

Transport teams ranged in size from three to nine members, but included at least one ECMO specialist (nurse or perfusionist), often with an intensivist (critical care specialist) and a surgeon. In most programs, [special education](#) and training were required to become a mobile ECMO team member, including experience with transporting critically ill patients.

Three-fourths of programs reported that they had a quality control program in place, including regular simulations and drills. "An important safety principle on transports is that the whole team has the same minimal initial and continuing training," according to the authors. "All team members should have the competence to intervene in the system if a crisis occurs."

Although the survey didn't focus on patient outcomes, the 15 centers reported just four deaths in a total of approximately 2,000 ECMO transports. Data from other sources suggest that complications occur in up to one-fourth of transports. Team experience appears critical to reducing the risk of complications and deaths; the authors estimate that 10 to 20 ECMO cases per year are necessary for education and skills maintenance.

The survey is the first major description of a global sample of ECMO transport programs, including several of the world's most experienced centers. The findings demonstrate the feasibility of performing inter-hospital ECMO transports within different types of healthcare systems. However, Dr. Broman and colleagues point out the lack of regulatory oversight regarding the validation, structure, and quality assurance of mobile ECMO transport. They conclude, "Accreditation of ECMO transport programs could serve as a 'Quality stamp' to encourage compliance with guidelines and international standards."

**More information:** "International Survey on Extracorporeal Membrane Oxygenation Transport" [DOI: 10.1097/MAT.0000000000000997](https://doi.org/10.1097/MAT.0000000000000997) , [journals.lww.com/asaiojournal/ ... PRID\\_ASAIO\\_PR\\_040419](https://journals.lww.com/asaiojournal/...PRID_ASAIO_PR_040419)

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