The Tampa General Hospital Experience of Building an ECMO Program: Quality Outcomes Through Collaboration and Structure

Ioana Dumitru,MD, Charles Hunley,MD, Satish Chandrashekeran, MD, Uysal Askin, MD, Joel Shoemaker, PA, Emily Arentz, CCAPP, Leah Toms

Tampa General Hospital/University of South Florida

Background: Use of extracorporeal membrane oxygenation (ECMO) for critically ill patients with cardiac or pulmonary failure has grown rapidly over the past two decades, yet outcomes remain variable across centers.[1,2] Survival to liberation from support is commonly reported at 40%–60%, and complication rates remain high.[1] Higher-volume, well-organized programs are associated with lower mortality, and professional societies have called for structured, multidisciplinary ECMO programs with clear governance and quality oversight.[2–4] The COVID-19 pandemic further exposed the need for such a model in this complex, resource-intensive population.[5]

Objectives: To describe Tampa General Hospital's (TGH) development of a multidisciplinary ECMO program as a dedicated service line supported by formal leadership, infrastructure, accountability, and quality oversight.

Methods: In 2021, TGH's risk-adjusted ECMO mortality index (observed-to-expected) was 2.81, placing the institution in the 81st percentile nationally. Leadership identified gaps in protocols, processes, organizational structure, education, and accountability, and implemented staged programmatic changes:

- **2021:** Adopted an intensivist-led ICU model, including closure of the cardiothoracic ICU.[6]
- **2022:** Launched a multidisciplinary cardiogenic shock program.[7,8]
- **2023:** Established ECMO as a dedicated service line with its own directorship.
- **2023–2024:** Implemented an ECMO specialist model alongside perfusion support; defined roles, responsibilities, and competencies; created a monthly multidisciplinary committee; and introduced mortality review, a quality structure with key performance indicators, and structured education.

CON EL RESPALDO

- **2025:** Expanded leadership to a triad model spanning transplant pulmonology, advanced heart failure cardiology, and pulmonary critical care.
- **2025:** Achieved ELSO Award for Excellence in Life Support (Gold-level Center of Excellence) designation.[9]
- **2025:** Hired advanced practice providers and formalized ECMO rounding and a consult service.
- **2026:** Hired a dedicated ECMO coordinator.

Results: The ECMO mortality index improved steadily from 2.81 in 2021 (81st percentile) to 2.36 in 2022 (67th), 1.10 in 2023 (12th), 0.74 in 2024 (4th), and 0.79 in 2025 (3rd percentile nationally).

Conclusions: Defining ECMO as an institutional priority enabled appropriate resource allocation, clear governance, dedicated staffing, standardized processes, and multidisciplinary accountability. These structural changes were associated with substantial and sustained improvement in risk-adjusted mortality, and may inform other centers seeking to build or restructure ECMO programs.

References

1. Tonna JE, Boonstra PS, MacLaren G, et al.; ELSO Member Centers Group. Extracorporeal Life Support Organization Registry International Report 2022: 100,000 survivors. ASAIO J. 2024;70(2):131–143.

2. Barbaro RP, Odetola FO, Kidwell KM, et al. Association of hospital-level volume of extracorporeal membrane oxygenation cases and mortality: analysis of the Extracorporeal Life Support Organization registry. Am J Respir Crit Care Med. 2015;191(8):894–901.

3. Combes A, Brodie D, Bartlett R, et al.; International ECMO Network (ECMONet). Position paper for the organization of extracorporeal membrane oxygenation programs for acute respiratory failure in adult patients. Am J Respir Crit Care Med. 2014;190(5):488–496.

4. Abrams D, Garan AR, Abdelbary A, et al.; International ECMO Network (ECMONet) and the Extracorporeal Life Support Organization (ELSO). Position paper for the organization of ECMO programs for cardiac failure in adults. Intensive Care Med. 2018;44(6):717–729.

5. Barbaro RP, MacLaren G, Boonstra PS, et al.; Extracorporeal Life Support Organization. Extracorporeal membrane oxygenation support in COVID-19: an international cohort study of the Extracorporeal Life Support Organization registry. Lancet. 2020;396(10257):1071–1078.

6. Pronovost PJ, Angus DC, Dorman T, Robinson KA, Dremsizov TT, Young TL. Physician staffing patterns and clinical outcomes in critically ill patients: a systematic review. JAMA. 2002;288(17):2151–2162.

7. Tehrani BN, Truesdell AG, Sherwood MW, et al. Standardized team-based care for cardiogenic shock. J Am Coll Cardiol. 2019;73(13):1659–1669.

8. Basir MB, Kapur NK, Patel K, et al. Improved outcomes associated with the use of shock protocols: updates from the National Cardiogenic Shock Initiative. Catheter Cardiovasc Interv. 2019;93(7):1173–1183.

9. Extracorporeal Life Support Organization (ELSO). Award for Excellence in Life Support. Ann Arbor, MI: ELSO. https://www.elso.org (accessed 2026).

CON EL RESPALDO