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39 years Respiratory Therapist  
23 years ECMO Specialist  
16 years ECMO Educator  
7 years Simulation Coordinator – ECMO Advantage  
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Children's Hospital at Vanderbilt



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EXPLORING THE PATH  
TRANSITIONING FROM  
RRT TO ECMO SPECIALIST.

*New Hiring*  
**ECMO SPECIALIST**  
RESPIRATORY THERAPIST



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DISCLOSURES

- I have nothing to disclose



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**OBJECTIVES**

- History of ECMO
- Describe the path from respiratory therapist to ECMO Specialist
- Identify some of the hurdles on the path from an RRT to ES



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**DEFINITIONS**

- ECMO - Extracorporeal Membrane Oxygenation
- ECLS – Extracorporeal Life Support
- ELSO – Extracorporeal Life Support Organization



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**WHAT IS ECMO?**

- ECMO is the apex of life support.
  - Three basic modes of support
    - V-V, RV-PA, VA
  - The disease must be reversible
    - or
    - Transplant candidate
    - Device
  - Time-limited therapy
    - Buys time for recovery, device, or transplant



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1971  
1<sup>ST</sup> ADULT ECMO PATIENT



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1975  
ESPERANZA 1<sup>ST</sup> SURVIVING NEONATE



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RT CAREER PATHS

- Acute Care
  - ECMO
- Home Care
- Sales
- Transport Teams



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**PATH FROM  
RRT TO RRT  
ECMO  
SPECIALIST**



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**PATH FROM RRT TO RRT ECMO SPECIALIST**

- Core didactic Education
  - eLearning
  - lecture
- Simulation
  - wet labs
  - high fidelity
- Preceptor training
  - at the bedside of the patient



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**CORE  
DIDACTIC  
EDUCATION**



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### CORE DIDACTIC EDUCATION

- Typical topics
  - Introduction to ECMO
  - ECMO Physiology
  - Concepts of V-V ECMO
  - Concepts of V-A ECMO
  - Cannulation and initiation
  - ECMO Patient Management
  - ECMO Specialist Skills
  - ECMO Ethics
- Typical topics
  - Anticoagulation
  - Weaning and Trial off
  - Complex ECMO cases

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### SIMULATIONS



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### SIMULATIONS

- Wet – Labs
  - Buttonology
  - Circuit fluid priming
  - Replacing broken connectors
  - Removing venous air
  - Removing arterial air
  - Identifying a clotting oxygenator
  - Hand cranking
- High Fidelity Simulations
  - Cannulation and Initiation
  - Lab management
  - Patient management
  - ECMO emergencies
  - Weaning and trialing off ECMO
  - Pump responses to patient
  - Patient responses to the patient

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**PRECEPTOR TRAINING**



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**PRECEPTOR TRAINING**

- At the bedside.
- Allowing the RRT learner to experience caring for the ECMO system and the patient with guidance from an experienced ES.
- Discussion of topics related to the current patient
- Discussion of ECMO concepts
- Assess vital signs and responses
- Assessment of lab values and responses



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**WHAT!!!**



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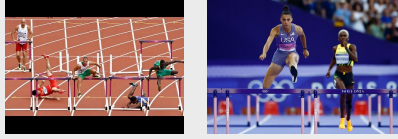
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### HURDLES ENCOUNTERED BY THE RRT

- Qualification
- Lab values
- Drugs
- Self-comparison




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### STRENGTHS OF RRT

- Circuits
- Flows
- Pressures
- Pulmonary function
- Cardiac function
- Ventilator management
- Pulmonary hygiene

• MacGyver 1985 / 2016




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### REWARDS OF BECOMING A RRT ECMO SPECIALIST

- Better RRT at baseline
- Career path
- Autonomy
- Job satisfaction
- Pay




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### REWARDS OF BECOMING A RRT ECMO SPECIALIST WHAT TO DO FROM HERE

- A hospital that provides ECMO support
  - Dr. Goggle
  - ELSO
- ECMO team that accepts RRT's
  - Relocate
- Show interest
- Interview

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### REWARDS OF BECOMING A RRT ECMO SPECIALIST WHAT TO DO FROM HERE

The screenshot shows a Google search for 'ECMO benefits'. The top result is from Ascension Saint Thomas, titled 'ECMO Care', mentioning 'Near 50-year Treatment & Care - Each Year, Ascension Saint Thomas Provides Care To More Than 7,000 Heart Failure Patients...'. The second result is from Vanderbilt Health, titled 'Extracorporeal Membrane Oxygenation (ECMO)', with the address '1211 Medical Center Drive, Nashville, TN 37232'. To the right, there is a snippet from the ELSO Center Director website, which includes the text 'ELSO Worldwide Directory of ECMO and ECLS Centers'.

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### RT STUDENT INTRODUCTION TO ECMO

- Hospital
  - bedside introduction with ES
- ECMO Advantage Training Center
  - Education
  - Simulations – hands-on

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### RESOURCES

- ECMO Advantage <https://ecmoadvantage.com/>
- ELSO (Extracorporeal Life Support Organization) <https://www.elseo.org/>



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