CARDIOLOGY 2024

Ethical Dilemmas in Complex ECMO

Perfusionist Breakout Session III: Changing Dynamics in ECMO Care

February 17, 2024

SickKids | Labatt Family Heart Centre

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CARDIOLOGY 2024

Ethical Dilemmas in Complex ECMO

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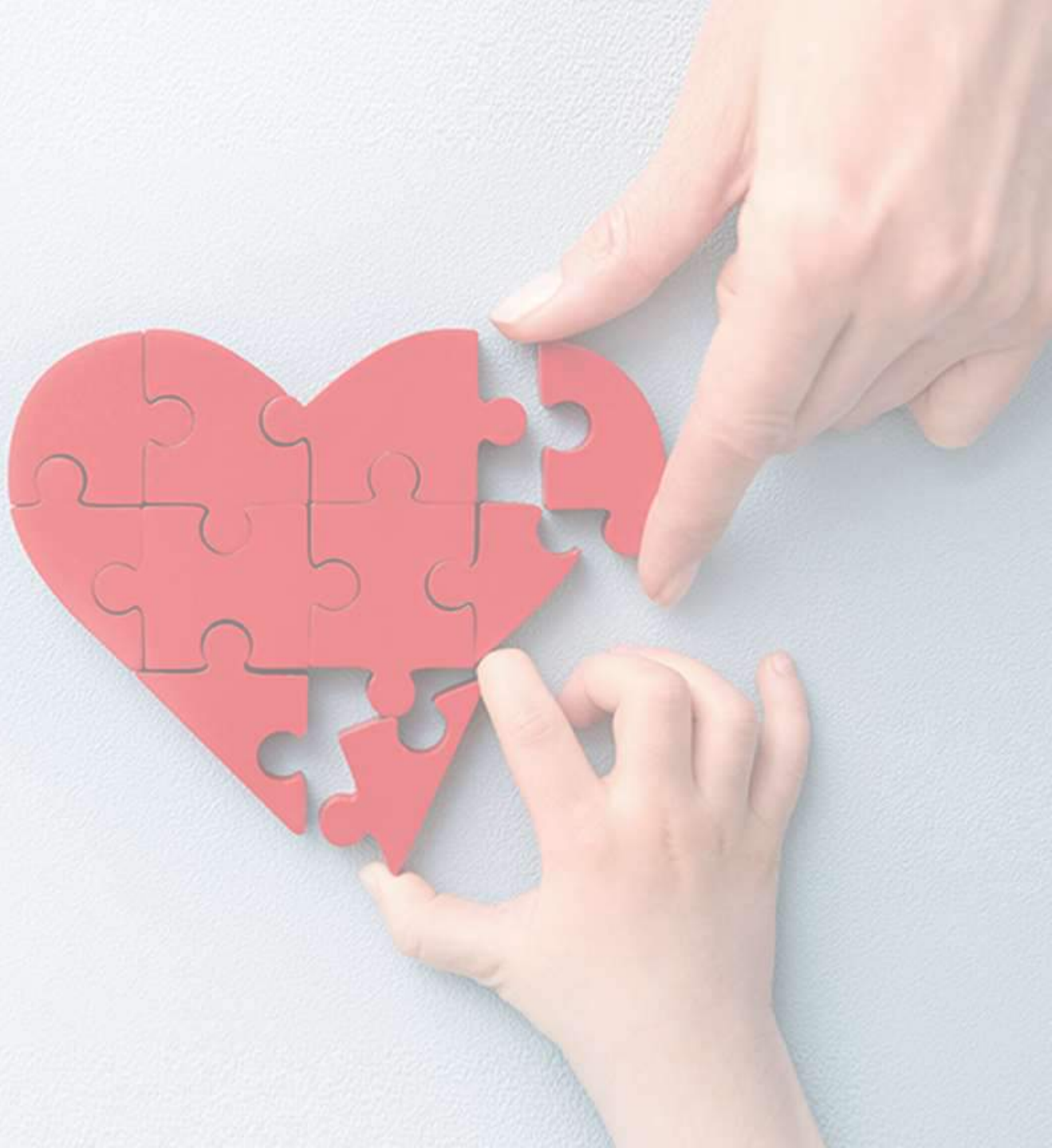


No Disclosures

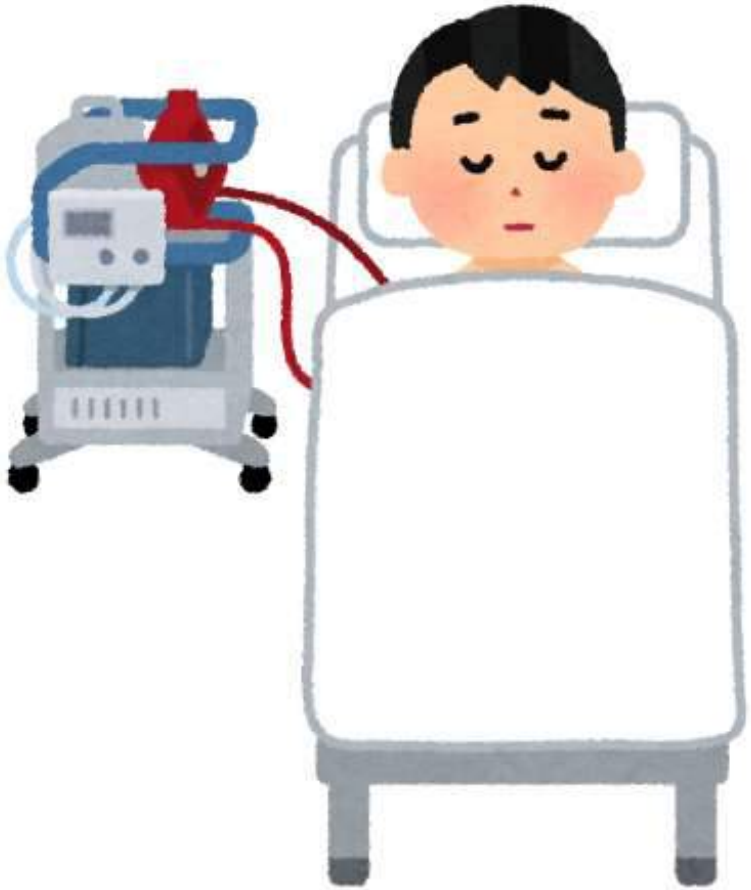
ALL PATIENT PHOTOS USED WITH PERMISSION

OBJECTIVES

Review ethical considerations in ECMO initiation

Ethical analysis of a multi-ECMO case

Considerations: patient, team and resources



Ethical Considerations in ECMO

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Ethics Committee Consultation and Extracorporeal Membrane Oxygenation AATS 2016

Andrew M. Courtwright[1,2], Ellen M. Robinson[1,3], Katelyn Feins[4], Jennifer Carr-Loveland[4], Vivian Donahue[5,6], Nathalie Roy[7], and Jessica McCannon[8]

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REVIEW Open Access

Ethics in extracorporeal life support: a narrative review

Alexandra Schou[1], Jesper Mølgaard[2], Lars Willy Andersen[3], Søren Holm[4] and Marc Sørensen[3*]

Schou *et al. Crit Care* (2021) 25:256

Decision-Making, Ethics, and End-of-Life Care in Pediatric Extracorporeal Membrane Oxygenation: A Comprehensive Narrative Review ***PCCM 2021***

OBJECTIVES: Pediatric extracorporeal membrane oxygenation is associated with significant morbidity and mortality. We sought to summarize literature on communication and decision-making, end-of-life care, and ethical issues to identify recommended approaches and highlight knowledge gaps.

DATA SOURCES: PubMed, Embase, Web of Science, and Cochrane Library.

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Anna Dorste, MLIS[3]
Bryan D. Siegel, MD[1,2]
Edon J. Rabinowitz, MD[3]
Andrew McReynolds, MD[3]
Tessie W. October, MD, MPH[1]

Mitigating ethical conflict and moral distress in the care of patients on ECMO: impact of an automatic ethics consultation protocol ***JME 2021***

M Jeanne Wirpsa,[1,2] Louanne M Carabini,[3,4] Kathy Johnson Neely,[5,6] Camille Kroll,[7] Lucia D Wocial[8,9]

Questions resemble traditional ethics concerns ICU/technology:

burdens of treatment
decisional authority
Prognostication
Consent
Withdrawal life-sustain therapy
systems level concerns
resource allocation

Case vignette

Evie,

1 week old

Truncus arteriosus repair

Hemodynamic instability – LCOS

ECMO (VA)

Angiography reveals - LCA occlusion

Surgery – return on ECMO

Kirsch R, Coleman R. Ethical Considerations for ECMO Initiation and End-of-Life Care. In: Extracorporeal Membrane Oxygenation: An Interdisciplinary Problem-Based Learning Approach. Maybauer MO (Ed). Oxford University Press, New York, 2022.

Ethical Considerations: ECMO Initiation

Purpose - “bridges” –

decision

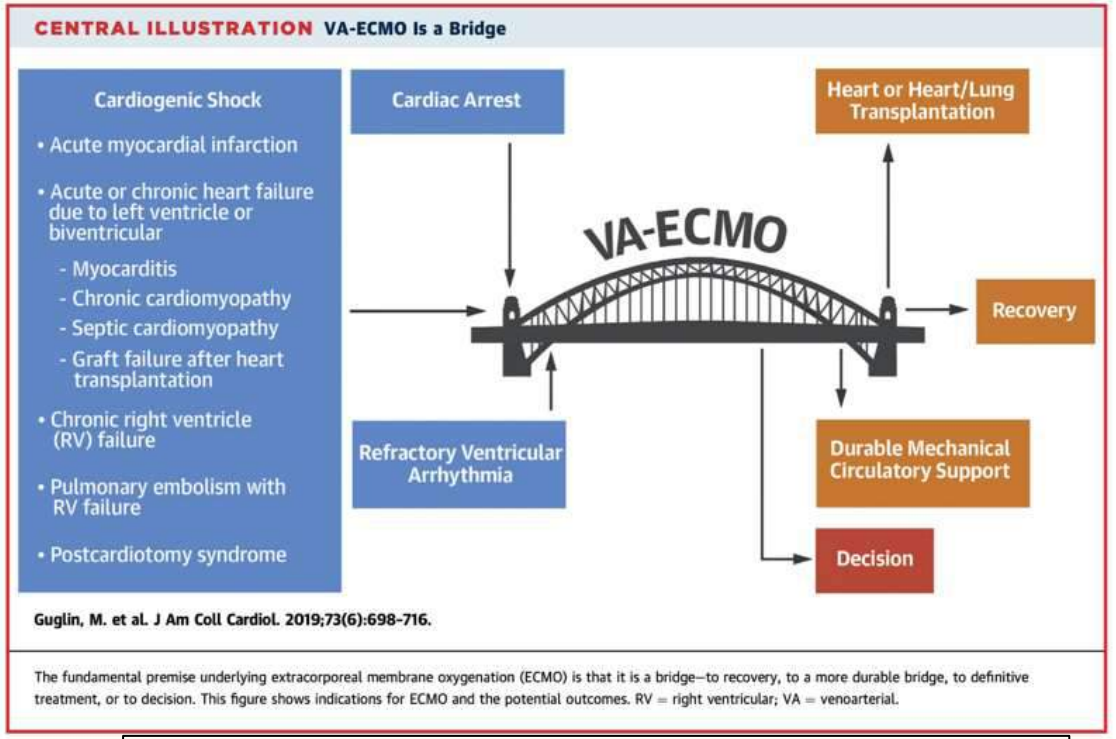
recovery

optimization of a therapy/intervention

transplant/alternate organ replacement

Indications for ECMO always shifting

Higher burden = higher threshold



Bridges relevant VV ECMO also

Kirsch, Clark. ELSO Red Book 2017
Kirsch, Munson. Arch Perinat 2017

Candidacy not constrained by cannulas

ONLINE *PCCM* PERSPECTIVES

Extracorporeal Membrane Oxygenation Candidacy Decisions: An Argument for a Process-Based Longitudinal Approach

ABSTRACT: Are all children extracorporeal membrane oxygenation (ECMO) candidates? Navigating ECMO decisions represents an enormous challenge in pediatric critical care. ECMO cannulation should not be a default option as it will not confer benefit for "all" critically ill children; however, "all" children deserve well-considered decisions surrounding their ECMO candidacy. The complexity of the decision demands a systematic, "well-reasoned" and "dynamic" approach. Due to

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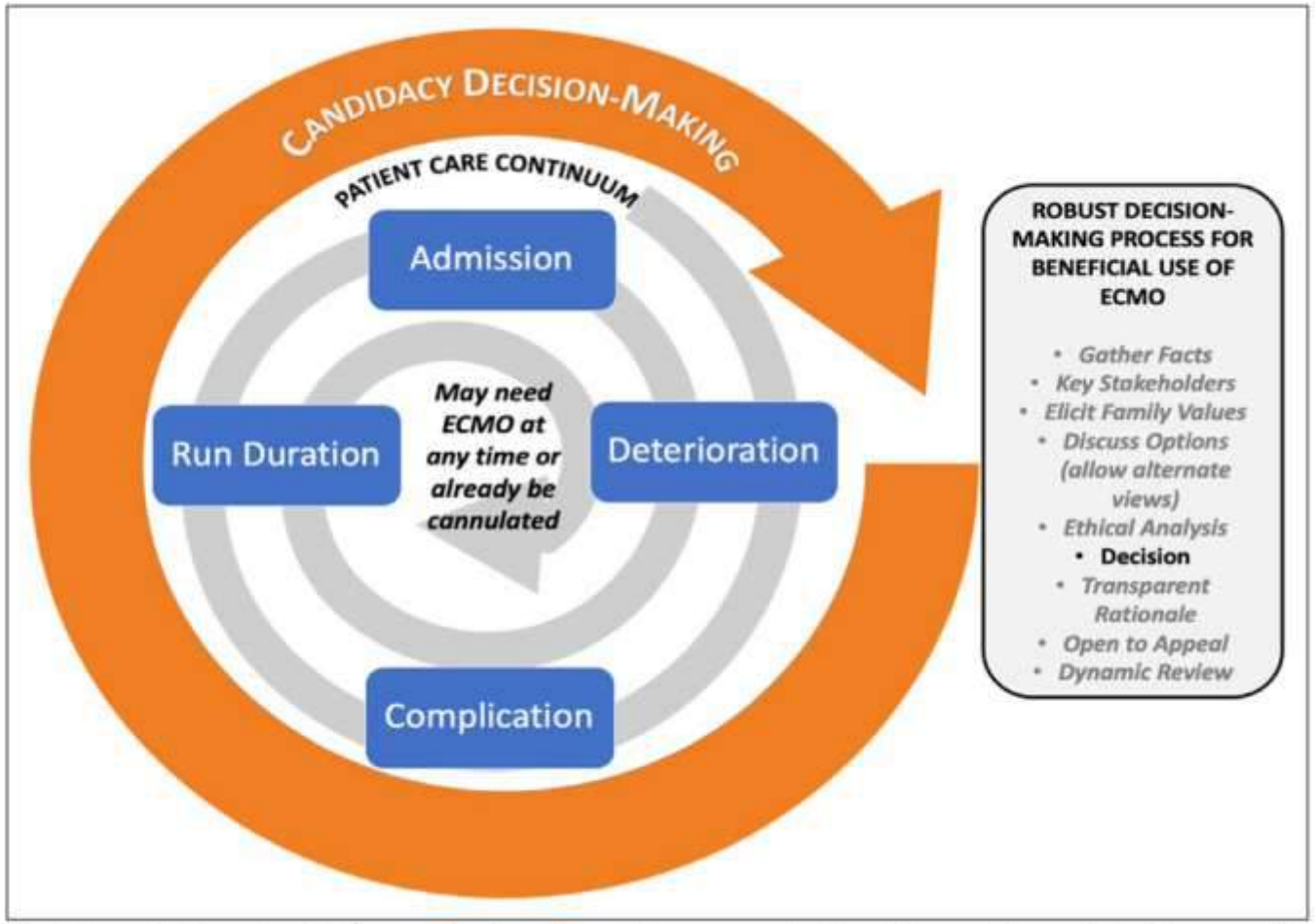

Figure 1. Candidacy decisions should follow a robust decision-making process that is not temporally constrained by cannulation status. ECMO = children extracorporeal membrane oxygenation.

Higher burden therapy = higher threshold to initiate

CONSENT is A longitudinal PROCESS:

Documentation = one moment

Complexity congruent with intervention

Consent
(voluntary, capacity, properly informed)

Capacity
(understand & appreciate)

Surrogate decision makers:

substituted decision

best interests decision

medical determination PLUS context of family/patient's known values

Best interests framework

Communication about stopping begins at communication about starting

High quality therapeutic communication skills

-goal-directed communication guide

-time points/milestones of progress

REVIEW ARTICLE

A Communication Guide for Pediatric Extracorporeal Membrane Oxygenation

PCCM 2021

ABSTRACT: Decision-making surrounding extracorporeal membrane oxygenation initiation and decannulation has become a key challenge in critical care. Nuanced communication skills and transparent discussions about prognosis are imperative during this lifesaving, yet high-risk and burdensome intervention. Serious illness conversation guides are proving

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Joanne Wolfe, MD[2,4,5]
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Communicating with families during pediatric ECMO: Results from a Delphi study

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IN PRESS
ICM: Neo/Peds

Eric

1 week old

Truncus arteriosus repair, s/p ECMO and LCA patch ostioplasty, high–in, CATH on ECMO post bypass

Seizures, small stroke (not prohibitive to continuing ECMO), AKI

Separation – LCA – planned for OR

Progressive improvements:

improving function, on Milrinone, diuretics,

Weaning ventilator

Good urine output, initial CRRT discontinued

Projected to extubate in 24-48 hours…

Vent settings increasing, lungs congested, echo: worsened LV function, no flow seen – good hemodynamics ECMO day 5 (total) (poor but improved LV function)

Cardiac arrest – E-CPR

Should ECPR have been provided?

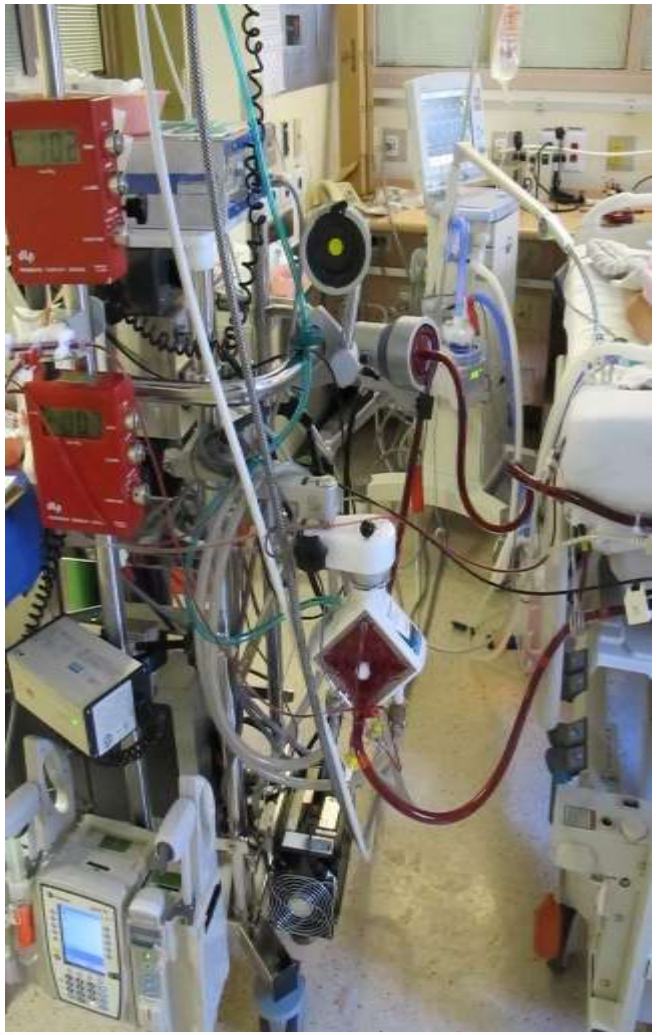
Could justify proceed or withhold

-highly interventional, low likelihood intact survival – rescue with no means of recovery/separation following not appropriate

-no benefit beyond immediate rescue, only prolonging death

Emergency situation – ECPR “standard” in that unit, family’s views/values unclear/unknown, initiate for time to understand potential for recovery

‼ Initiation not predicated on agreement to intervention towards recovery



Context – standard high volume cardiac ICU for congenital heart disease

Different context / uncommon or no ECPR program – justified not to provide ECMO

“bad ECMO” is not better than “no ECMO”

Best interests justification not changed – but risk/benefit profile has

Parents would agree to intervention for attempt to benefit recovery

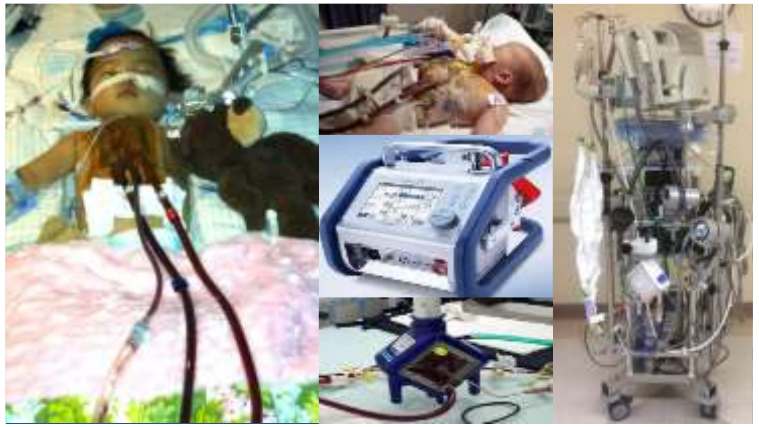
Medical team need to assess sequelae/end organ injury – aid understanding of appropriateness to proceed surgery

Communication focus to sequelae of arrest/ECMO, post-surgical outcomes (guarded), and potential for need to stop, WLST

Influences in decisions about additional (any) ECMO

May not be an outcomes based measure to guide what to do

Technologic imperative – therapeutic momentum



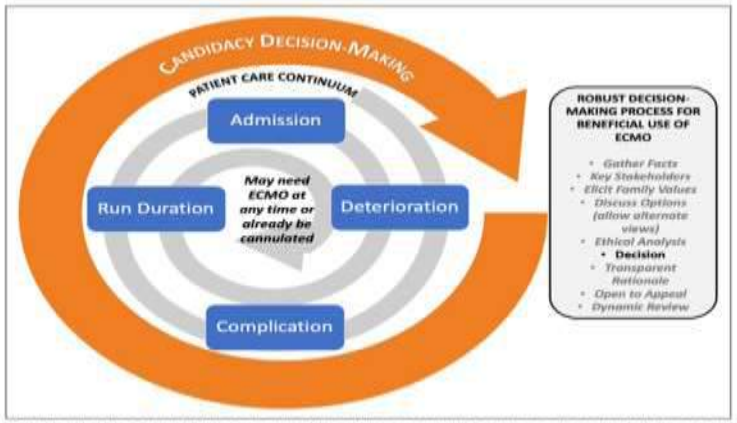


Figure 1. Candidacy decisions should follow a robust decision-making process that is not temporally constrained by cannulation status. ECMO = children extracorporeal membrane oxygenation.

Decision for 2nd ECMO run:

-purpose, likelihood of benefit

-without ECMO lose opportunity for agreed upon plan

-possible recovery; quality of life impacted for certain

Should Evie be deemed not for ECMO any longer?

Likelihood very low:

successful intervention with minimal additional consequences

disease requiring multiple medical and surgical admissions

impact on quality of life

disease that is life-limiting even with best outcomes

Carefully consider not offering; considerations family views/values

May consider ECPR separately from ECMO “electively”

Not strictly wrong to offer – but need to really consider escalating cost to patient and diminishing returns

-technical challenges cannulating; potential for organ replacement diminishing

No single “correct” answer necessarily

Clear, honest communication – uncertainty, expectations, timelines to next consideration

Team support – multiple care providers, escalating concerns across complicated admission – debriefs, peer supports, moral distress debriefs

Resource/Justice considerations

ELSO centers worldwide (reproduced with permission of Peter Rycus, ELSO)

Difficult/impossible to balance in single case

Policy for access/limitations to therapies over populations – equity/fairness

Deny all multi-ECMO – disease/individual; ECMO center/skillset

What “ratio” poor outcome accepted when better outcome might be achieved

Few (?no) instances where limitation therapy explored on cost ($) in resource replete countries

Case Conclusion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