



EARNING EXTRACORPOREAL CREDIT: DEVELOPMENT OF AN ECLS PATHWAY IN THE BEEHIVE STATE

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DISCLOSURES

None

BACKGROUND

Interdisciplinary, protocol-driven ECLS pathway developed over 2 years

Initiated in July 2015

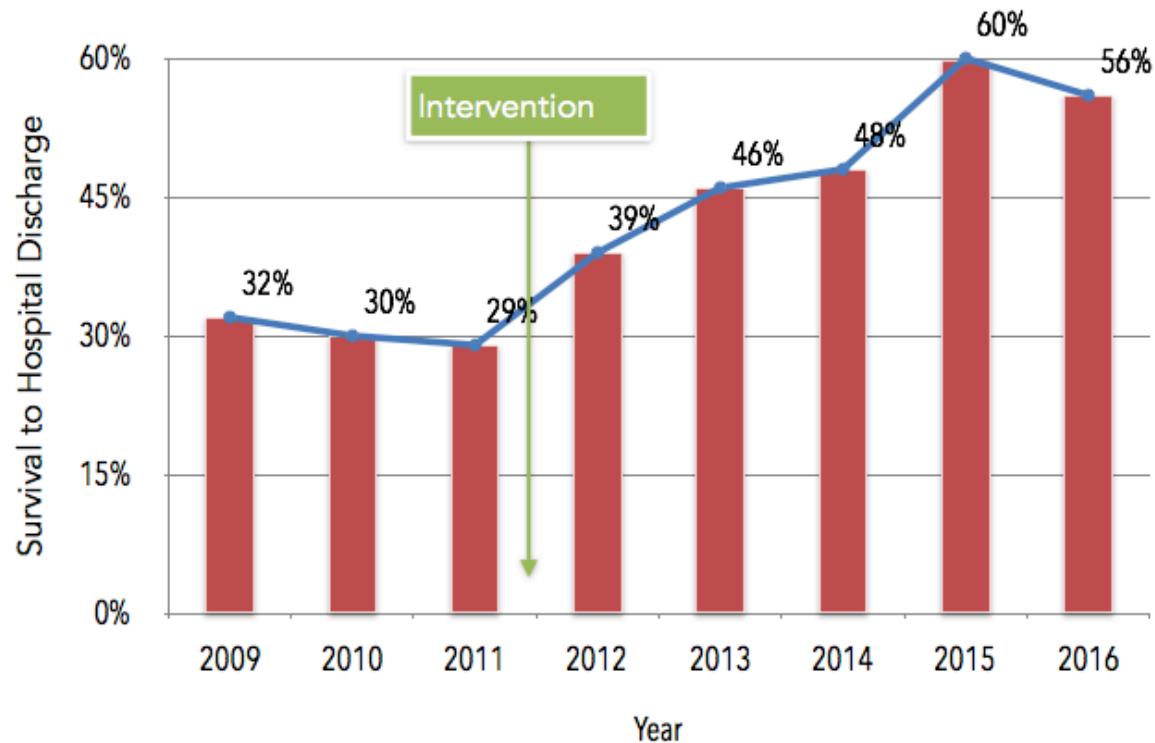
Focus on refractory VF patients, witnessed to collapse, got bystander CPR



SURVIVAL ALREADY GOOD BUT NOT GOOD ENOUGH!

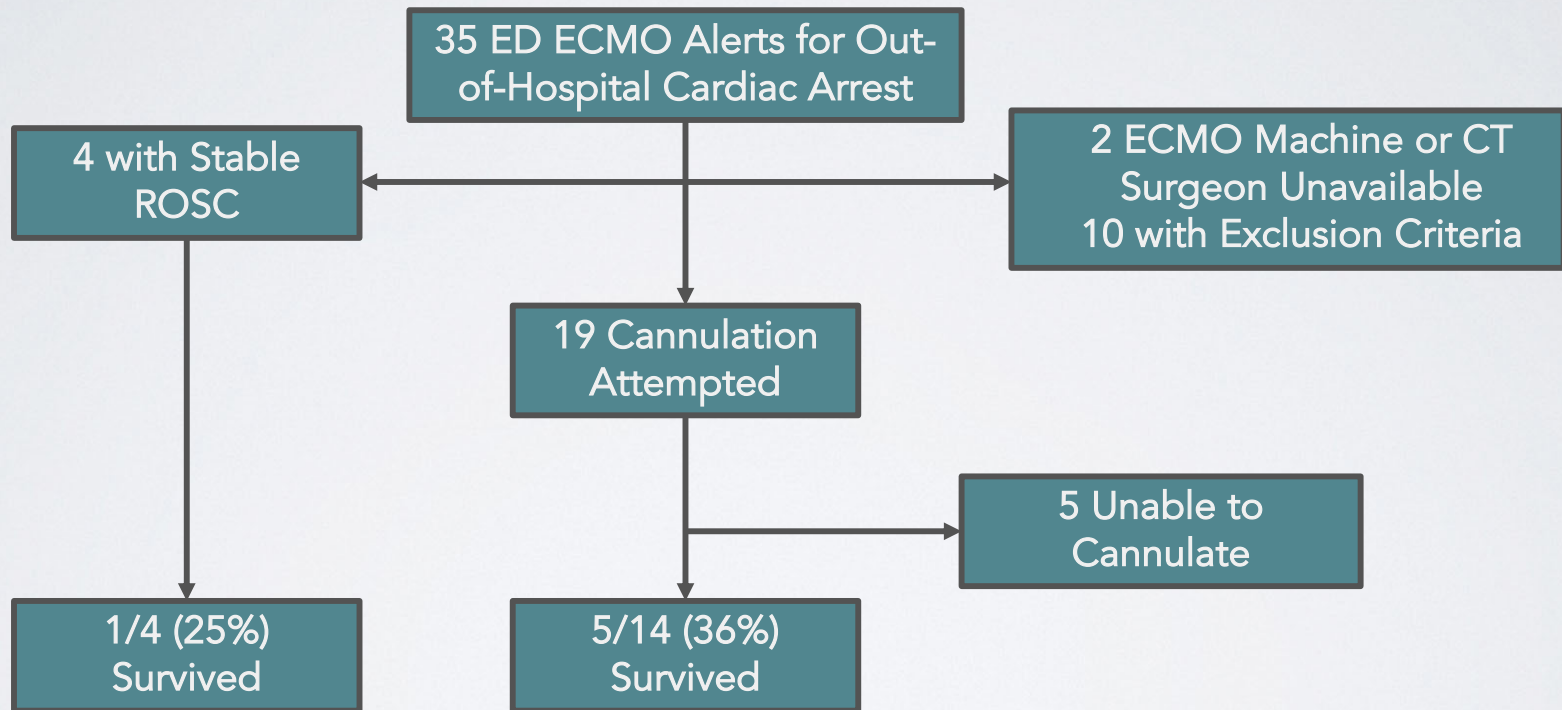
SLCFD Utstein Survival

Witnessed with Shockable Initial Rhythm



WHAT ARE THE OUTCOMES
OF ECLS PATIENTS IN SLC?

UNIVERSITY OF UTAH OUTCOMES



WHAT 5 CHALLENGES
HAVE WE ENCOUNTERED?

CHALLENGE #1: INCLUSION/EXCLUSION CRITERIA WERE NOT SIMPLE

Inclusion Criteria

- a) Adults 18–60 y
- b) Out-of-hospital cardiac arrest with presumed cardiac cause
- c) Witnessed arrest
- d) Bystander CPR
- e) Initial cardiac arrest rhythm of “shockable” rhythm (VF/VT)
- f) Remains in cardiac arrest at the scene at 15 min after standard paramedic advanced cardiac life support (intubation, intravenous adrenaline)
- g) Within 10-min ambulance transport time to University of Utah
- h) ECMO commences within 90 min of the initial collapse

Exclusion Criteria

- a) Presumed noncardiac cause of cardiac arrest such as trauma, hanging, drowning, intracranial bleeding, and respiratory arrest

- b) Any preexisting significant neurologic disability
- c) Confirmed or presumed significant noncardiac comorbidities that cause limitations in activities of daily living, such as:
 - i. COPD, pulmonary fibrosis (exclude patients on oxygen)
 - ii. Cirrhosis (exclude patients with ascites, stigmata of liver disease, jaundice, upper GI bleeding)
 - iii. Renal failure with dialysis (exclude patients with fistula or tunneled catheter present)
 - iv. Cancer (exclude patients with port)
 - v. Morbid obesity (because of technical difficulties with emergency cannulation)
 - vi. Severe and uncontrolled CHF (exclude patients with severe pitting edema)
 - vii. VAD patients (mechanical circulatory support)
 - viii. Active infection in groin

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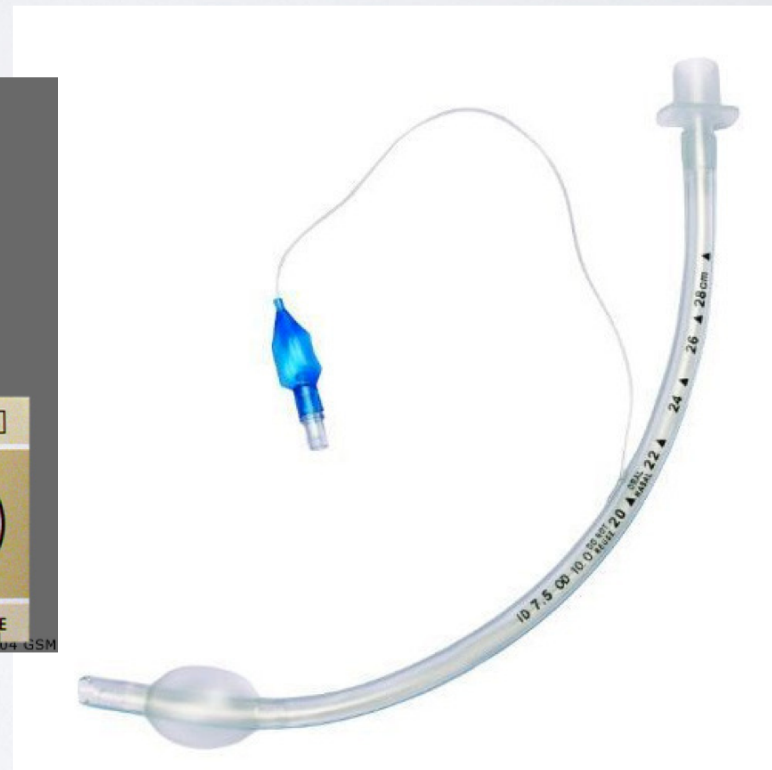
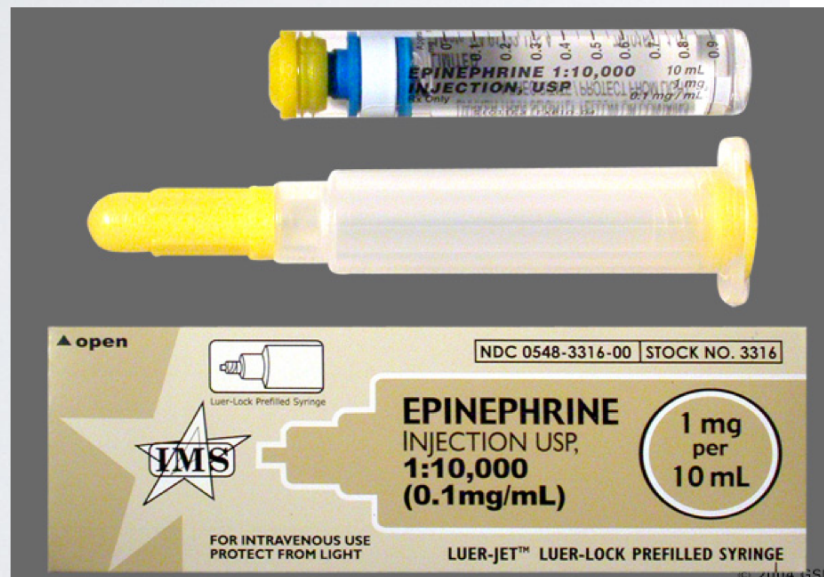
CHALLENGE #2: LIMITING SCENE TIME IS DIFFICULT!



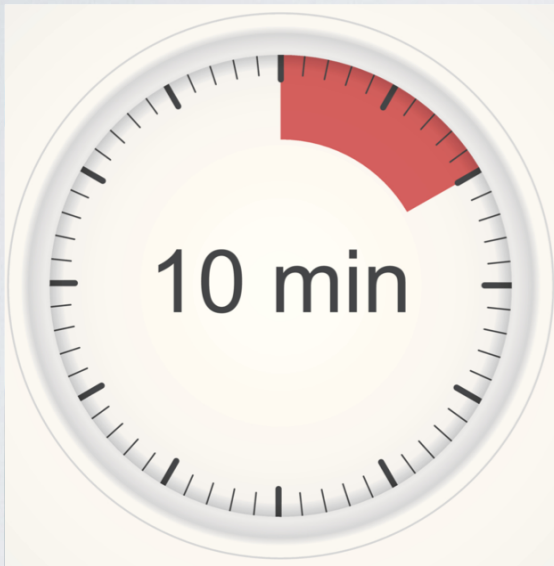
PICTURE FROM <https://medictests.com/ems-pharmacology-drugs-affect-cardiovascular-system/>

CHALLENGE #2: LIMITING SCENE TIME IS DIFFICULT!

If you must do more of this, do it on the way to the hospital!



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CHALLENGE #3: RESUSCITATION
IN THE BACK OF AN AMBULANCE
IS TOUGH!

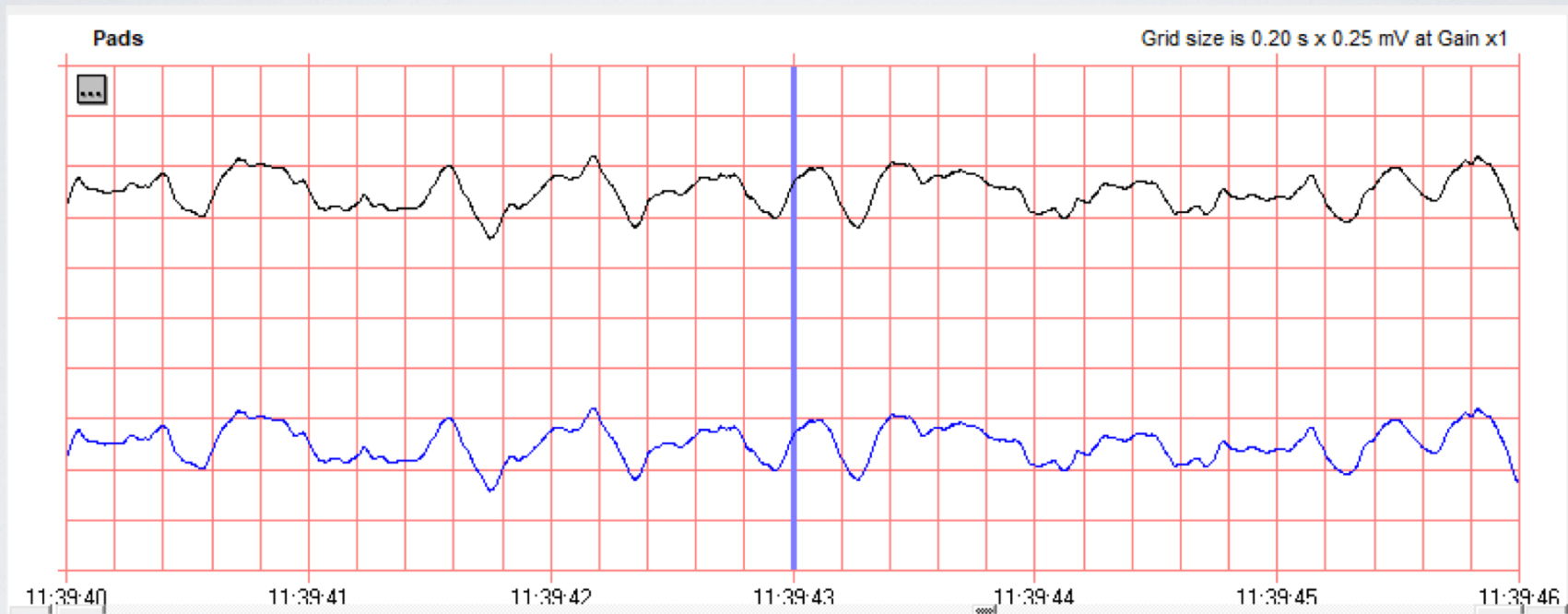


CHALLENGE #3: RESUSCITATION IN THE BACK OF AN AMBULANCE IS TOUGH!



Necessary for transport? Most likely!

CHALLENGE #3: RESUSCITATION IN THE BACK OF AN AMBULANCE IS TOUGH!



15 min of untreated VF on mechanical
compression device during transport

CHALLENGE #4: COMMUNICATION BREAKDOWNS OCCUR



“Witnessed” not “Found
Down” when an arrest
has been seen or heard.

EMS should stick around
to report to decision-
makers

CHALLENGE #5: ED OVERCAPACITY IS FREQUENT!

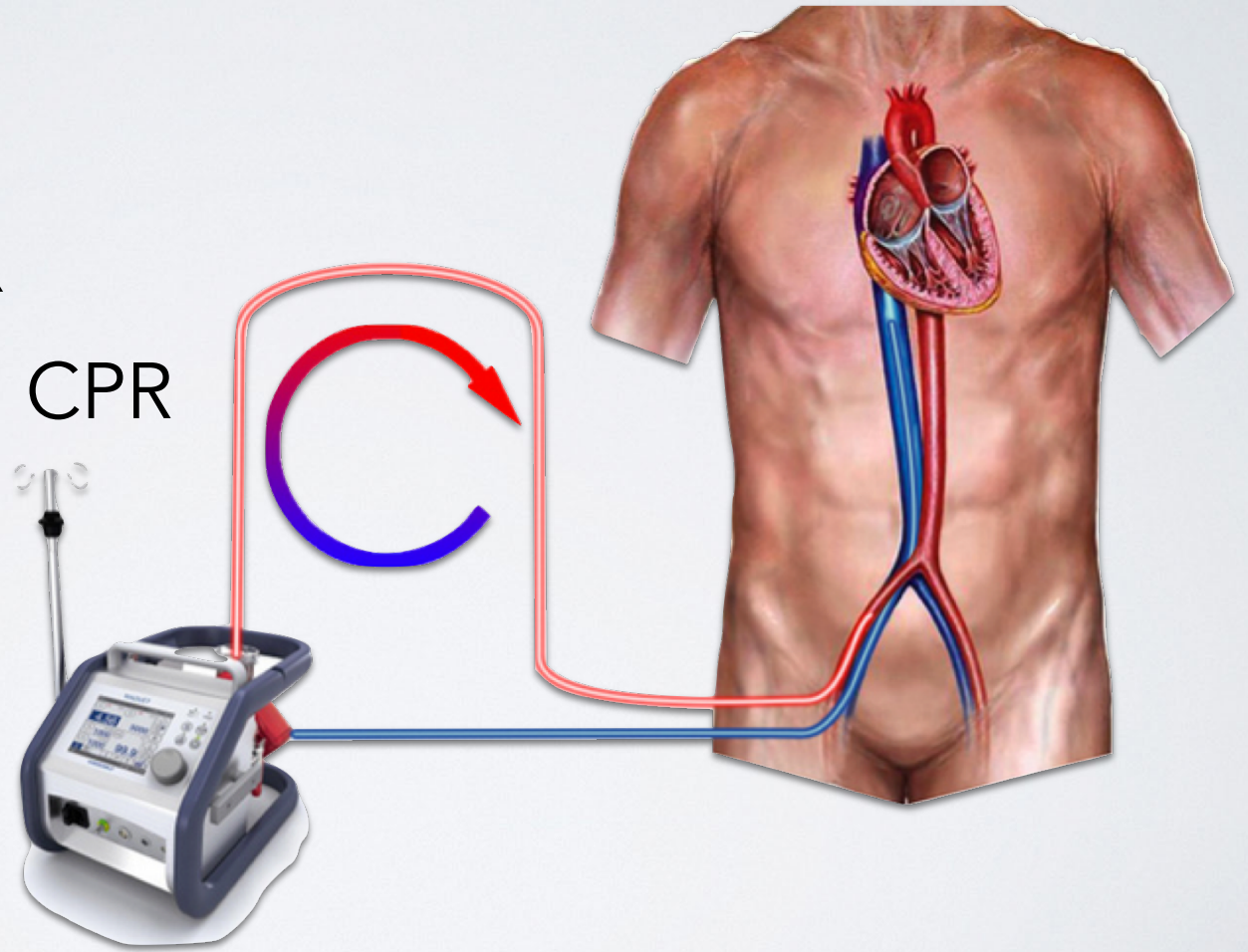




John Gibbon 1953 Philadelphia, PA

ECPR

Extracorporeal CPR



AMBULANCE



NO SMOKING
IN THIS AREA

5 CHALLENGES

1. **Creating Simple Field Inclusion/Exclusion Criteria**
2. **Limiting Scene Time**
3. **Back of the Ambulance Resuscitation Quality**
4. **Communication Breakdowns**
5. **ED Crowding**