

# The Multidisciplinary Cardiogenic Shock Team

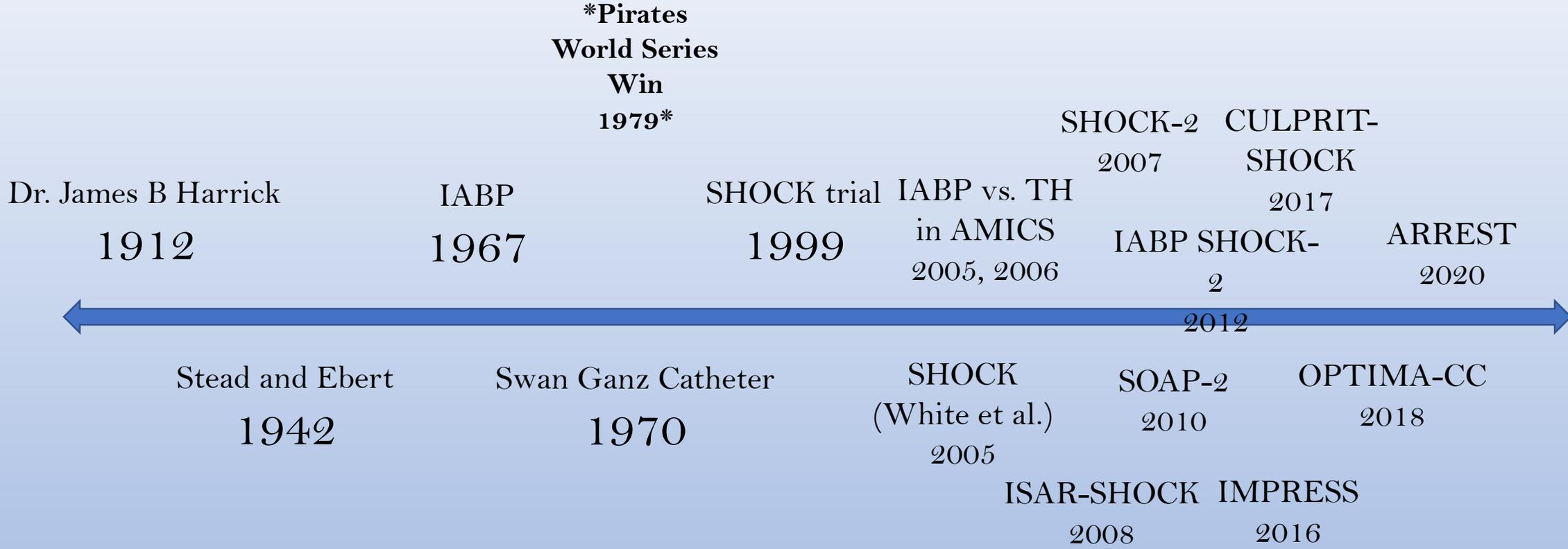
Abigail Ferry, MSPAS PA-C

# Objectives

- Define the role of the multidisciplinary cardiogenic shock (CS) team and identify its key stakeholders
- Examine the hub and spoke model and its value in expediting advanced care for CS patients
- Scrutinize literature in support of the multidisciplinary CS team



# A Timeline...



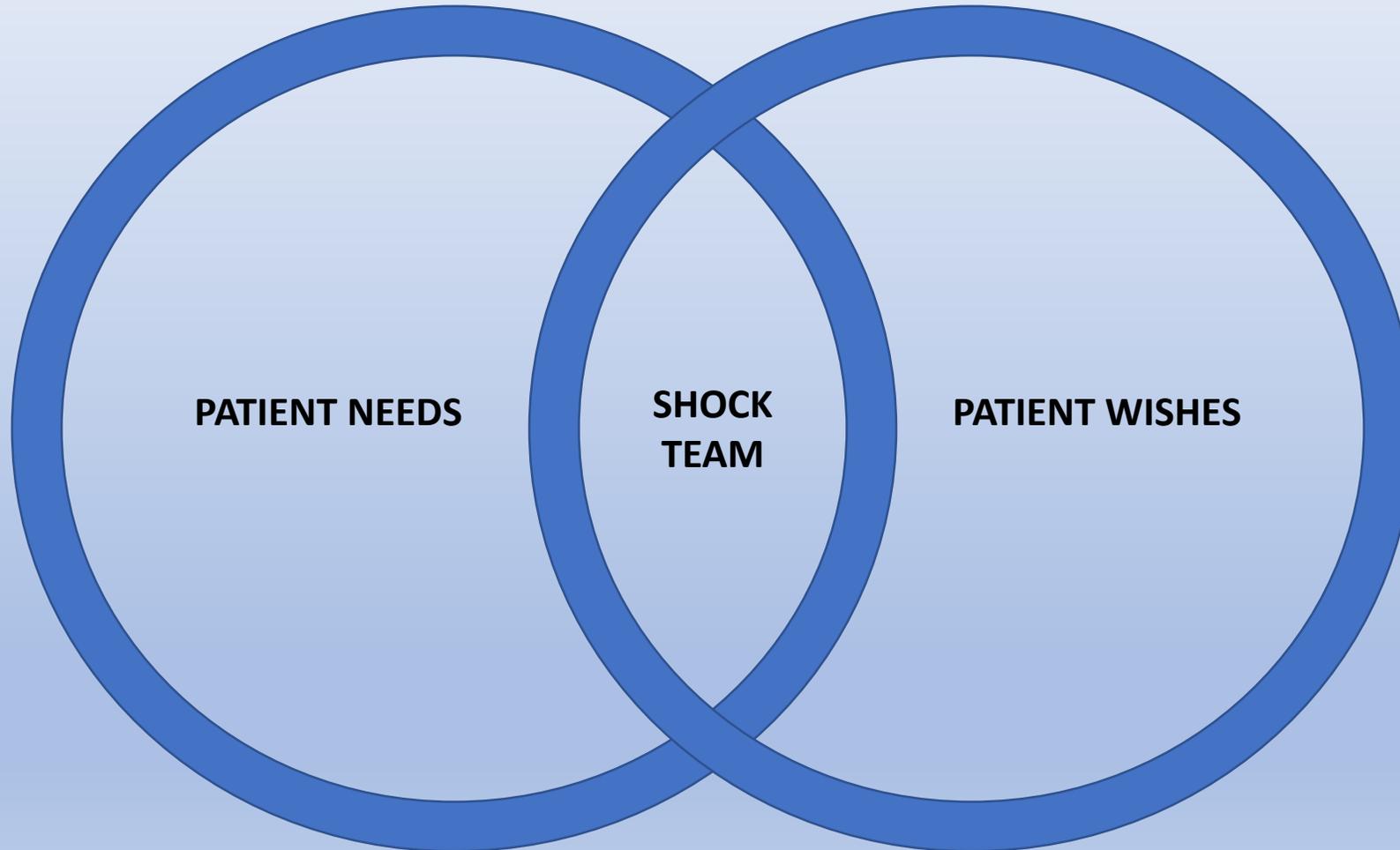
CGS mortality rate 1999  
**70-80%**



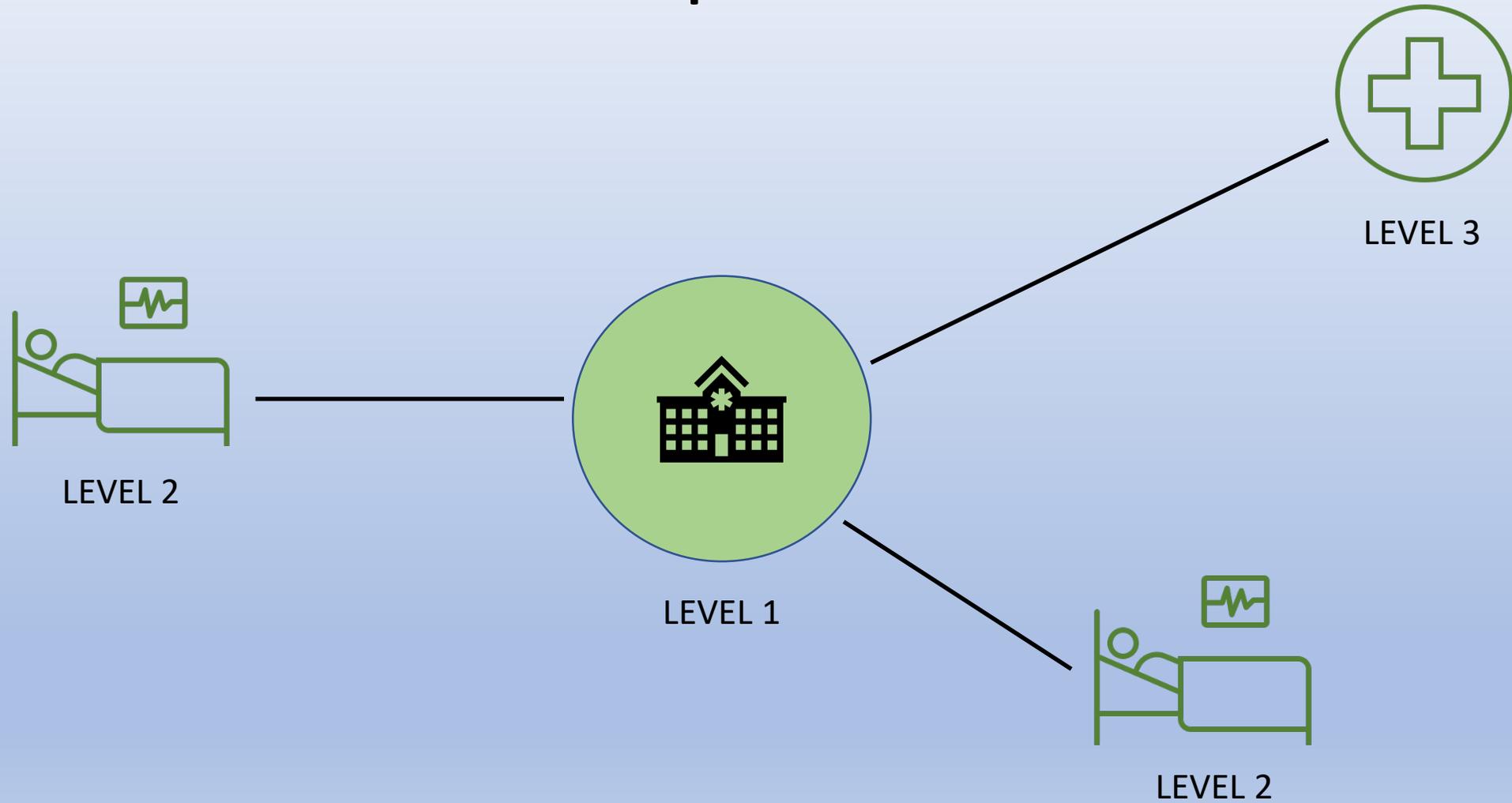
CGS mortality rate 2022  
**40-60%**



# The Multidisciplinary Shock Team



# Hub and spoke model



# Data tells us we are better together

## Circulation

Volume 140, Issue 1, 2 July 2019; Pages 98-100  
<https://doi.org/10.1161/CIRCULATIONAHA.119.040654>



### RESEARCH LETTER

## Shock Team Approach in Refractory Cardiogenic Shock Requiring Short-Term Mechanical Circulatory Support

A Proof of Concept

Iosif Taleb, MD, Antigone G. Koliopoulou, MD, Anwar Tandar, MD, Stephen H. McKellar, MD, MSc, Joseph E. Tonna, MD, Jose Nativi-Nicolau, MD, Miguel Alvarez Villela, MD, Frederick Welt, MD, Josef Stehlik, MD, MPH, Edward M. Gilbert, MD, Omar Wever-Pinzon, MD, Jack H. Morshedzadeh, MD, Elizabeth Dranow, PhD, Craig H. Selzman, MD, James C. Fang, MD, and Stavros G. Drakos, MD, PhD

- Single-center combined prospective and retrospective cohort analysis of ACS and non-ACS CS patients
- Primary end point 30-day-all-cause mortality
- Secondary end points shock-to-support time, in hospital mortality, length of MCS support, escalation to durable device, length of ICU stay

### Takeaways:

- AMI-CS, lactate level, and AKI identified as independent risk factors when present at time of MCS initiation
- **30-day all-cause mortality decreased in shock team cohort**
- **In-hospital mortality decreased from 61% to 47.9% (p = 0.04) with comprehensive shock team assessment**
- Additional secondary end-points comparable between cohorts

# Data tells us we are better together

- Longitudinal analysis of 204 patients (AMI and ADHF CS)
- Engaged multidisciplinary shock team
- Patients assigned a risk score based on lactate, duration of vasopressor treatment, CPO, DM, RRT, PAPI, age

- **Takeaways:**

- Every 1hr delay in escalation for patients who needed MCS = 9.9% increase in mortality
- Out of hospital transfer was not associated with increased mortality (52% of study population)
- Lactate >3, persistent RV dysfunction at 24hrs, and standalone VA-ECMO carried higher mortality risk
- Use of RHC was associated with 39% absolute increase in survival (71% vs. 32%)
- **30-day survival before implementation of shock team 47% → 1yr post-implementation 58% → 2yrs post-implementation 77% (p < 0.001)**

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## Standardized Team-Based Care for Cardiogenic Shock



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# Cardiogenic shock team in action

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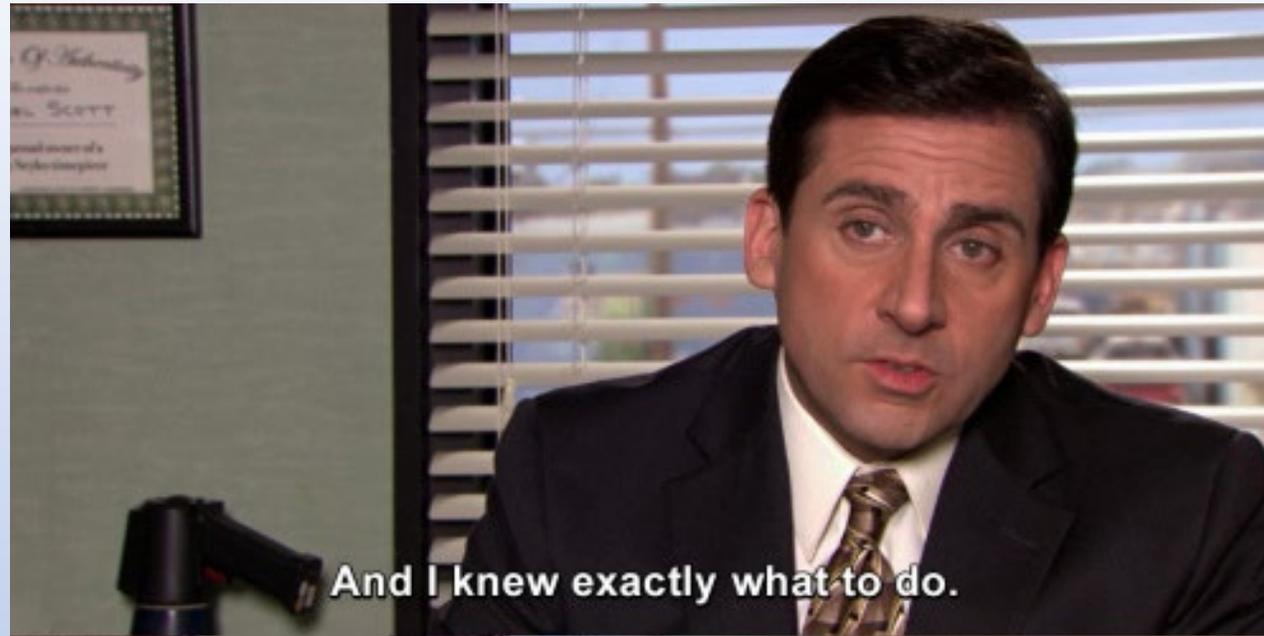
VOL. 78, NO. 11, 2011

## Management and Outcomes of Cardiogenic Shock in Cardiac ICUs With Versus Without Shock Teams

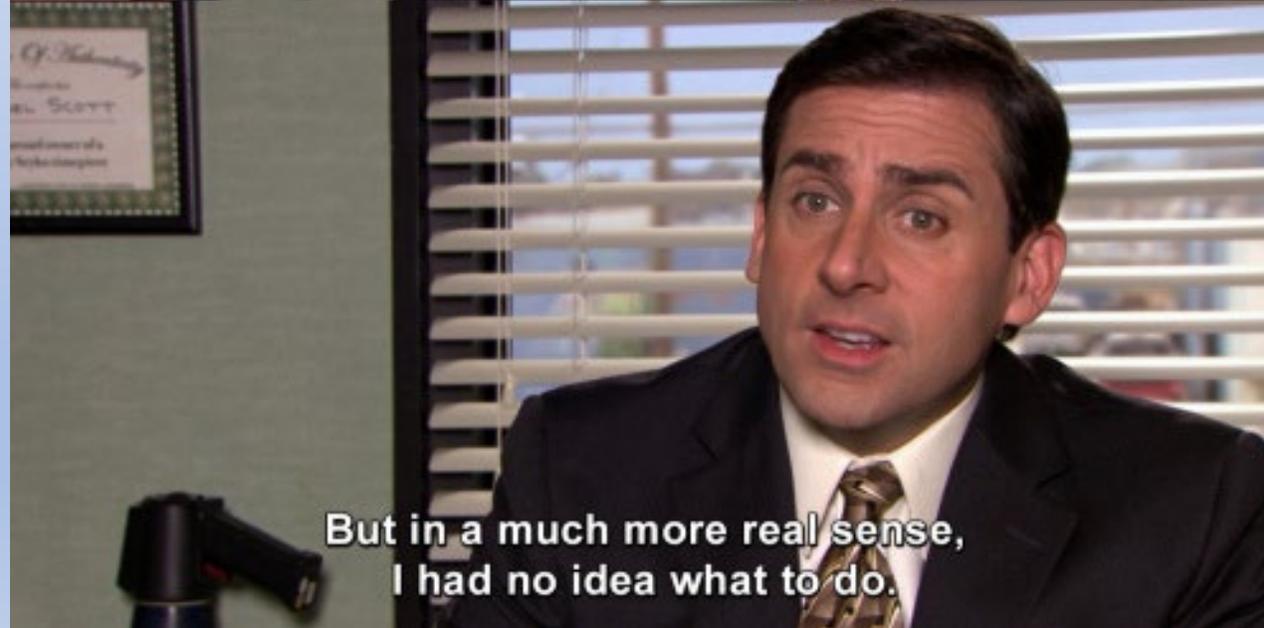


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- **At institutions with a dedicated shock team:**
  - Higher rates of PA catheter use, placed in less than half the time
  - Lower median number of inotropic agents per patient
  - Lower rates of overall mechanical circulatory support (MCS)
  - Higher likelihood of advanced mechanical circulatory support as initial device
  - Shorter CICU stay and less likely to be mechanically ventilated
  - Lower mortality for those admitted to a CICU with cardiogenic shock



And I knew exactly what to do.



But in a much more real sense,  
I had no idea what to do.

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