Bring In Your Dead
Other Considerations Beyond
On-Scene Termination

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The Past

Frank Pantridge

“Flying Squad”, 1967

Pantridges' Portable Defibrillator
The Present

• Less emphasis on ALS interventions
• Greater emphasis on:
  – Early activation of 9-1-1
  – Rapid response
  – Bystander CPR, public access AED
  – High-quality CPR, early defib.
  – Pit crew approach
• When to terminate efforts?
Termination of CPR

• In the past, indications for EMS stopping CPR:
  – Return of spontaneous circulation
  – Transfer of care to another trained provider
  – Instructed to stop by MD
  – EMS too exhausted to continue
The Present

• Field termination of cardiac arrest resuscitation efforts now more common
• Makes sense: Transporting coding patients who have no chance of survival may:
  – Jeopardize safety of providers and public
  – Delay EMS response to patients who may better benefit from care
NAEMSP Position Statement

• “EMS systems should have…protocols that allow for termination of resuscitation in non-traumatic cardiopulmonary arrest

• Termination…may be considered when:
  – Arrest not witnessed by EMS provider
  – No shockable rhythm
  – No ROSC prior to EMS transport

• *Further research needed to determine appropriate duration of resuscitation*”

- NAEMSP Position Statement, 2/18/2011
PA Statewide Protocol

When to stop:

• CA patient has not responded, AND medical command physician has ordered termination.
  – Consider field termination when:
    • No response to ~ 20 min. of ALS
    • BLS care when AED has advised “no shock” on 3 sequential analyses, and patient cannot arrive at ED or ALS cannot arrive at patient within 15 min.

• Is there a downside to field termination?…
Downside of Field Termination

"I don't wanna be dead! There's no future in it!"
Golden Age of Resuscitation Science

- Penn’s Center for Resuscitation Science
  - Dedicated to improved CA outcome through advances in clinical care, research, education
  - Brings together EM, critical care, surgery, anesthesia, neurology, basic sciences, engineering
  - $4 million annual NIH funding
The Age of Resuscitation Science

- Penn uses multidisciplinary treatment protocol for resuscitated pts
  - Treatment bundle includes TH, early PCI for STEMI, early hemodynamic optimization
  - Before program, 22% of OHCA survivors admitted to hospital with pulse survived to d/c
  - After implementation, > 50% survived

Other Resuscitation Programs

• Other programs in U.S., abroad
• Emphasize:
  – Early TH (intra-arrest, post-arrest)
  – Early hemodynamic stabilization
  – Early PCI
• Committed leadership & clinical departments
• Dedicated oversight, QA
• Active education programs
• +/- Research
Regionalized CA Care

• Hospitals with such programs seem to have higher success rates than others
• May make sense to transport CA pts to one of these hospitals
• Within one EMS system could have:
  – Primary resuscitation centers
  – Comprehensive resuscitation centers
• So why not transport all CA patients?
On Scene/En Route

• Uninterrupted CPR
  – Mechanical device
  – Manual CPR with metronome/feedback

• Defibrillation when indicated

• Therapeutic hypothermia (*maybe*)
  – After ROSC or intra-arrest (yet to be decided)

• Early notification of nearest resuscitation ctr

• *Drive!*
Challenges to Implementation

• Not feasible for all systems
  – Insufficient hospital resources/commitment
• ? Patient/rhythm selection
• ? Role of transport times
• ? Urban versus rural
• No direct evidence base to support this
  – Need head-to-head comparison studies
Conclusions

• May be time to give Curly a chance
• As resuscitation science grows, transporting all CA pts may save some patients
• Could enhance research efforts of resuscitation ctrs by bringing them more pts
• Ultimate benefit to all CA patients, both in prehospital setting and in hospital
I Don’t Want to Go on the Cart!