Streamlining the Crash Cart Model: Less is More

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*No conflicts of interest to disclose

Objectives

- **Pharmacist**
  1. Identify resuscitation processes that are critical to survival from sudden in-hospital cardiac arrest.
  2. Describe the role of the pharmacist in a mobile crash cart model.

- **Technician**
  1. Identify the two most important steps in a cardiac arrest.
  2. Explain the difference between a standard crash cart model and a mobile crash cart model.

In-hospital Cardiac Arrests

- **In-hospital**
  - Incidence: 209,000
  - Survival rate: 24.8%

- **Chicago airports**
  - Incidence: 18
  - Survival rate: 61%
    - 100% received chest compressions
    - Time to shock < 5 minutes in 2/3 of people

  1. http://cpr.heart.org/AHAECC/CPRAndECC/General/UCM_477263_Cardiac‐Arrest‐Statistics.jsp

Chain of Survival

- Successful resuscitation requires **early**
  - Recognition of cardiopulmonary arrest
  - Activation of trained responders
  - Chest compressions
  - Defibrillation when indicated
  - Advanced life support (ALS)

  1. http://circ.ahajournals.org/content/95/8/2211

Defibrillation

- Delayed defibrillation
  - More than two minutes after the arrest
  - Nationally reported to occur in 30% patients
  - Associated with lower probability of survival to discharge

  1. Committee on the Treatment of Cardiac Arrest, National Academies Press (US); 2015 Sep 29.
Problem
• Delays in cardiac rhythm analysis and defibrillation
• Unit-based crash cart maintenance

Solution
• Replace semi-automatic Automated External Defibrillators (AEDs) with fully automatic public access defibrillators (PADs)

• First responder to perform cardiopulmonary resuscitation (CPR) and defibrillate when appropriate prior to arrival of cardiac arrest team

Ideal Set-Up

Actual Set-Up

Solution
• Eliminate crash carts

• Replace with a mobile crash cart
  – Streamlines supplies
  – Kit of emergency medications placed in all automated dispensing cabinets (ADCs)
  – Pharmacist supplies and assists with medications

Key Points
• Implement a mobile crash cart model with simpler public access AEDs

• Perform CPR and defibrillate when appropriate prior to arrival of cardiac arrest response team

• Pharmacist takes ownership of all medications