Objectives
At the end of the learning activity the attendee will be able to:
- Describe simple methods of incorporating resuscitation training and team practice into their facility.
- Discuss the importance of debriefing at the end of resuscitation training and simulation.
- Describe the benefits of resuscitation team training with measurable metrics.

In-patient cardiac arrest
- Most common initial rhythm: PEA/Asystole
- Overall survival: 15-20%
Survival From In-Hospital Cardiac Arrest During Nights and Weekends

Determinants of the distribution of cardiac arrest events are different on nights and weekends. Despite widespread and long-standing concerns about a relative decrease in survival from in-hospital cardiac arrest under such conditions, we performed a large, prospective multicenter study to investigate this hypothesis.

Methods: We performed a prospective multicenter observational study of adult patients aged 18 years or older who had an in-hospital cardiac arrest at 19 participating hospitals in France in 2000 and 2001. The primary outcome was survival from in-hospital arrest.

Results: We analyzed 86,748 in-patient cardiac arrest events. Cardiac arrest events at night were less likely to be monitored than those occurring during the day/afternoon. Cardiac arrest events at night were more likely to be asystole (39.6% vs 33.5%), less likely to be pulseless electrical activity (34.6% vs 36.9%), and less likely to be ventricular fibrillation (19.8% vs 22.9%). Figure 3 illustrates the distribution of survival rates by time category and day of week.

The relative risk for survival from cardiac arrest was not significantly different on nights versus weekends (odds ratio, 0.91; 95% confidence interval, 0.73 to 1.13).

Conclusions: Despite widespread and long-standing concerns about a relative decrease in survival from in-hospital cardiac arrest under such conditions, we found no evidence to support the hypothesis that survival from in-hospital cardiac arrest is lower on nights or weekends than on days or weekends.
Purpose of Resuscitation Drills

- Identify system issues
- Evaluate communication system
- Assess & evaluate team roles
- Evaluate quality measures:
  - How long does it take the code team to arrive?
  - Are essential people present?
  - Time to start chest compressions
  - Interruptions in chest compressions
  - Time to defibrillation
  - Airway management

Where do I begin?

- Know your stats!
- Buy-in from essential people
  - Administration
  - Managers
  - Physicians
  - Code team members
  - Code Blue Committee
  - Risk Management
  - Patient Safety Officer
- Equipment
  - Functional mannequin
  - Simulator (Rhythm generator)
  - Agreement to use crash carts
Various types of Resuscitation Practice
- New staff orientation
- Critical Care & Progressive Care Orientation
- Unit-based (Evaluate first responders)
- System-based (Evaluate Code Blue Team)
- Simulation Center

How many resources does this require?
- Low fidelity simulation
  - Minimum 2 people
- High fidelity simulation
  - Minimum 3 people

Evaluation Metrics
<table>
<thead>
<tr>
<th>Alert system</th>
<th>Quality</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paging operator</td>
<td>Compressions</td>
<td>Leadership</td>
</tr>
<tr>
<td>Internal Unit</td>
<td>Defibrillation</td>
<td>Call-backs</td>
</tr>
<tr>
<td>Time to overhead or pagers</td>
<td>Ventilations</td>
<td>Roles</td>
</tr>
<tr>
<td>First Responders/Code Team</td>
<td>Time of pulse check</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time of compressions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time of 1st defibrillation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time of airway intervention</td>
<td></td>
</tr>
</tbody>
</table>
2010 AHA Guidelines

Quality of compressions

- Time to start of compressions
- Rate at least 100 per minute!
- Depth 2 inches
- Allow for full recoil of the chest

Disco Lives!!!

- 5 Medical students & 10 MDs
- With beat avg. 103 /minute
- 5 weeks later repeated
Rate of ventilations:

- If patient does not have an advanced airway:
  30:2

- If the patient has an advanced airway:
  8 - 10 breaths / min

- 2010 AHA Guidelines

When an advanced airway is being placed:

- Interrupt compressions for < 10 seconds
  - Enough time to visualize the vocal cords & insert the ETT

Verify airway placement:

- Auscultation
- Chest expansion
- CO2 detector
- Esophageal detection device (Class IIa)
The Code Team & Defined Roles

- Dedicated team with defined, clear roles
- Practice, practice, practice!
- Team Debriefing

Code Blue Drill

- Resuscitation efforts for 10 min
- Debrief for 10 minutes
  - What went well?
  - What would you do differently next time?
  - Provide the STATs!
  - If video-recorded, play back during the brief

Take home points...

- This can be done at any facility!
- Need to practice low volume, high risk procedures

- Focus on:
  - Quality of CPR
  - Minimize interruptions in compressions
  - Defibrillation time
  - Ventilation
  - Team dynamics and leadership
  - Debrief
Additional References: