

Brighton
UTAH

Resuscitation Standard 2018



Discussion



- As a team, if you were to respond to a cardiac arrest, what would that look like (based on your own experience)?
- What is your current success rate for Return of Spontaneous Circulation (ROSC)?
- Can we improve our chances of ROSC, thereby increasing the likelihood of survival?
- Can change really make a difference?

ARC Benchmarks for Professional Rescuers (same for AHA, slightly different terms)



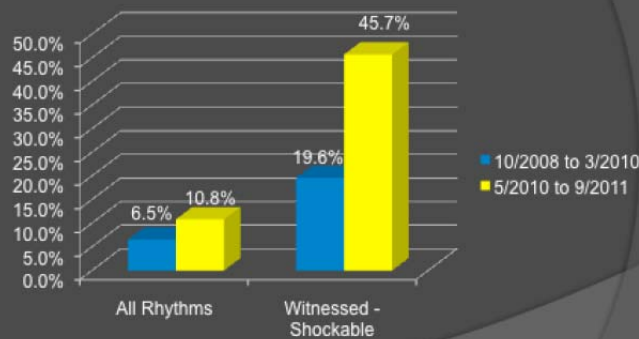
- ✚ Organized TEAM approach to providing High Performance CPR
- ✚ Minimize interruptions of High-Quality Chest Compressions
- ✚ < 5 Seconds off chest at any time during the arrest
- ✚ Use age-appropriate compression depth (adult 2-2.4")
- ✚ Maintain a Chest Compression Fraction (CCF) of at least 60%
with a goal of 80%
- ✚ Use appropriate compression rate (adult 100-120/minute)
- ✚ Allow for FULL chest recoil
- ✚ Avoid rescuer fatigue by changing positions every 2 minutes

1 minute delay in CPR & defibrillation = 10% ↓ survival

Coronary Performance Category (CPC) (data before & after implementation)



OHCA – Favorable CPC, 1 or 2



Bobrow et al, Annals of Emergency Medicine 2013

Study Conclusion



- Implementation of resuscitation training combined with real-time audiovisual feedback was independently associated with improved CPR quality, an increase in survival, and favorable functional outcomes after out-of-hospital cardiac arrest.

-Bobrow, B.J. et al., Ann Emerg Med. 2015 Mar;65(3):344

Who is using this and what is their data?



- King County Washington currently has a 62% success rate
- Mesa Fire currently has a 54% success rate
- **National Average is 8%**
- UFA and SLC Fire 8% prior to implementation
- UFA increased from 8% to 22% since February 2015
- Sandy City has seen marked increases since implementation

Bottom line: What we were doing was not working

THIS WORKS!

What about rapid transport?



Studies indicate that ambulance transportation does not increase the chances of survival, and may actually decrease it

- There is little chance of maintaining CCP at least 80% of the time
- Many studies suggest that survivors of OHCA regained ROSC in the field, not in the ambulance or ED following transport

What about the airway?



- Layperson CPR is now being taught as “Hands Only CPR”
- Professional rescuers should still appropriately manage the airway, however passive ventilation should be considered for up to the first 8 minutes of resuscitation
 - This includes the use of “super-plugging” the patient with 1 NPA & 1 OPA and Non-Rebreather Mask(NRM) 15L/min
- Endotracheal intubation is still the gold standard for managing an airway, however CPR should never be interrupted to place a tube

Five Pillars of Survival



1. High performance “pit-crew” style CPR
2. CPR being performed prior to EMS arrival
3. Data management
 - Review how response changes are working
4. Public access to AEDs
5. Continuing education on all of the above listed pillars

Recommendations/Considerations



PLAN OF ACTION

- Train each crewmember on High Performance CPR and Resuscitation Standards
- Replace all defibrillator pads with CPR feedback pads
- Implement a system to review all full arrest calls
- Make internal recommendations for improvement based on the review of cases
- Consider changes in the response system to maximize CCP



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▪ Key Considerations

- Effective chest compressions are critical
 - Minimize interruptions in chest compressions, the major operational goal.
 - Rate 100-120/min.
 - Depth: >2 inches (adult) / 1/3 of chest depth (pediatric)
 - Allow for full chest recoil after each compression
 - After each shock, immediately perform continuous chest compressions.
 - Rotate compressors every 2 minutes
 - “Super plug” airway. Place 1 NPA/1 OPA and a NRM during the first 2-3 cycles of CPR/defibrillation. After 2-3 cycles apply asynchronous BVM breaths at a rate of 1 breath every 6-8 seconds , if available.

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- **Consider the “Pit Crew” model for treatment**
 - Pre-defined roles, for members of an integrated team for first responders, BLS, and ALS
 - Designated individuals for chest compressions
 - Designated individuals for airway management
 - Additional roles to be assigned as determined by specific agency based on provider availability include: IO/IV access, medication administration, CPR quality monitoring, cardiac rhythm monitoring, defibrillation.
 - Consider transitions of roles as additional providers become available to ensure maximal use of resources

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- **Two Rescuer Model:**
 - Rescuer One – Compressions
 - Rescuer Two – Super Plug Airway/NRM (switch to compressions after two minutes)
- **Three Rescuer Model:**
 - Rescuer One – Compressions
 - Rescuer Two – Super Plug Airway/NRM (second to compress, ALS if PM)
 - Rescuer Three (Officer) – Scene survey and history if available (switch to compressions if necessary, ALS if PM)

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- **Four Rescuer Model:**
 - Rescuer One – Compressions
 - Rescuer Two – Super Plug Airway/NRB (ALS if PM)
 - Rescuer Three – Help assemble equipment (second to compress, ALS if PM)
 - Rescuer Four (Officer) – Scene survey and history if available
- **Five Rescuer Model:**
 - Rescuer One – Compressions
 - Rescuer Two – Super Plug Airway/NRM (ALS if PM)
 - Rescuer Three (Officer) – Scene survey and history if available
 - Rescuer Four (Patient Person) – ALS and “coaching”
 - Rescuer Five (Airway) – ALS airway and compressions as needed

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- **Revised Transport Standard**
 - Transportation is only indicated after return of spontaneous respirations (ROSC) has occurred. At that time, paramedics begin treatment and transport protocols (to LZ or base rendezvous with EMS).
 - Perform perfect CPR for 45 minutes on scene, then transport to the bottom of the mountain Aid Room if ROSC has not occurred. No CPR during toboggan transport.
 - Contact On Line Medical Control (OLMC) before terminating CPR to detail patient status.

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