Chelan and South Douglas County EMS
Resuscitation Guidelines

Identify Goals

- Our primary goal is to measure and improve outcomes from cardiac arrest.
- Develop uniformity in our approach to resuscitation

Develop Training

- Initial training would be to develop uniformity system wide in our approach to resuscitation. All ALS and BLS services would need to be trained to expected standards to provide a uniform approach that helps eliminate variables when looking at outcomes.
- On going training for all agencies would be necessary as new procedures, changes to procedures and new goals are identified.

Collect Data

- Data collection is a key to measuring success. Things such as "down time", was there "citizen CPR" prior to arrival, are all factors that have to be considered when gauging success.

Evaluate Success

- Identify resuscitation success based on evaluation of data using the Utstein Criteria which is the standard evaluation tool for measuring outcomes from OHCA and with which we can compare longitudinally within our own community, as well as with other systems

Recommend Improvements and Modification

- Immediate recommendations are being targeted at building uniformity in the quality of CPR as well as the utilization of "High Performance CPR".
- Later recommendations will reflect changes based on provider feedback, evaluation of our own success rate, and consideration of new scientific literature as it becomes available.

Chelan and South Douglas County EMS
High Performance CPR
Key Points - Goals

Compressions 90% of Time - One of the primary goals is to deliver compressions a minimum of 90% of the time a patient is in cardiac arrest. 95% of the time would be optimum. Every effort should be made to minimize interruptions in compressions. There should not be interruption of compressions for skills (including intubation) and minimal interruptions for analysis and defibrillation.

Continuous Compressions – All CPR performed by EMS and fire will be done using continuous compressions with breaths given every 15 compressions – do not interrupt CPR for breaths. This is for patients who are intubated or are being ventilated with bag-valve-mask.

Two Minutes Intervals of CPR Between Defibrillation – Following defibrillation perform compressions for 2 minutes prior to analyzing the rhythm or doing a pulse check.

Time Keeper with a Stop Watch – Whenever possible there should be a person assigned to keeping time. This person will have a stop watch and will have the responsibility of timing CPR intervals, giving warnings 30 seconds prior to analysis/defibrillation and keeping track of time when compressions are not performed. The time keeper will also be responsible for monitoring quality of compressions and rate.

Minimal Time Between Stopping CPR and Defibrillation – Studies have demonstrated that defibrillation is most effective when performed as soon as you are safely able to do so after stopping compressions. Manual defibrillators should be pre-charged before stopping to check rhythm. For AED's that charge <u>after</u> analyzing rhythm, CPR should be re-started while the unit is charging and then stopped for the shock.

No Pulse or Rhythm Check Immediately After Defibrillation – CPR should be continued immediately after defibrillation.

Safety – Safety issues will need to be carefully addressed in training and practice. To facilitate rapid defibrillation monitors will be pre-charged while rescuers are doing CPR. Agencies will need to develop procedures such as, no one touches the "shock" button until the patient is cleared or some agencies choose to have the person doing compressions push to shock. Whichever way there needs to be safeguards to assure rescuers are clear and there are no inadvertent shocks.

Transition Between ALS and BLS Crews – Transition will be a key issue. It is very important to maintain intervals of CPR to 2 minutes. Agencies will need to know how long it takes for their defibrillators to be turned on and operationally ready, how long it takes to hook them up or switch from AED to manual defibrillator so decisions can be made on when the correct time is to transition. **Know Your Equipment!!!!!**

Chelan and South Douglas County EMS
Cardiac Arrest in Adults and Children > 8 Yrs Old

Approach To Cardiac Arrest For EMS Agencies
For the patient who is unconscious/unresponsive, pulseless, and who is not breathing normally, immediately perform chest compressions. Deliver 50 compressions while turning on and attaching the AED or monitor/defibrillator. Pre-charge manual defibrillators as indicated. At the completion of 50 compressions, clear patient, analyze rhythm and shock if indicated. Resume chest compressions immediately and continue for 2 minutes with breaths every 15 compressions before next rhythm analysis.

Begin CAB. If unconscious/unresponsive, pulseless and not breathing normally, begin compressions and attach the defibrillator/AED. After completing 50 compressions; analyze rhythm.

Shock Indicated (VF or pulseless VT)
Deliver single shock. Then immediately begin chest compressions. Perform 2 minutes of uninterrupted CPR. **Do not delay CPR for pulse or rhythm check**.

No Shock Indicated
Immediately begin chest compressions. Perform 2 minutes of uninterrupted CPR
Do not delay CPR for pulse or rhythm check.

After 2 minutes of CPR, analyze rhythm.
Do not check pulse before analyzing rhythm.

Shock Indicated (VF or pulseless VT)
Deliver single shock. Then immediately begin chest compressions. Perform 2 minutes of uninterrupted CPR. **Do not delay CPR for pulse or rhythm check**

No Shock Indicated
Check Pulse
If pulse, assess blood pressure, airway and breathing. If no pulse, perform 2 minutes of uninterrupted CPR

After 2 minutes of CPR, analyze rhythm.
Do not check pulse before analyzing rhythm.

Shock Indicated (VF or pulseless VT)
Deliver single shock. Then immediately begin chest compressions. Perform 2 minutes of uninterrupted CPR. **Do not delay CPR for pulse or rhythm check**

No Shock Indicated
Check Pulse
If pulse, assess blood pressure, airway and breathing. If no pulse, perform 2 minutes of

Within 24 hours after every cardiac arrest event contact Dr. Jobe by phone or by email. Cell 509-679-1089, email ljobe.ems@gmail.com

After 2 minutes of CPR, analyze rhythm.
Do not check pulse before analyzing rhythm.

A. Each CPR cycle begins with chest compressions (110/min, ≥ 2 inches or 1/3 of chest wall height, full recoil). Breaths are given every 15 compressions, without stopping compressions, using a bag/valve mask or via an ET tube.
B. If age is **not known** treat as an adult if there is development of axillary hair in males or breast tissue development in females.
C. For AED units that require charge time after "Analysis is complete", resume compressions until the unit is ready to deliver a shock.
D. "Pulse checks" should be done only after the AED indicates "no shock advised" or after the paramedic using a manual unit sees an organized rhythm.
E. CPR should not be interrupted whenever possible except in cases where airway management is necessary (i.e. emesis). Aspiration greatly reduces a patient's chance of long term recovery or survival.
F. Priorities on initial arrival are chest compressions and defibrillation. If there are only 2 responders to begin with, ventilations should begin after the rhythm analysis and shock if indicated.
G. Any patient found unconscious, unresponsive with a systolic BP < 60 should have CPR initiated. If during resuscitation there is a "return of spontaneous circulation" (ROSC), but the systolic BP < 60, resume CPR.
H. Cardiac arrest protocols may change. Always follow current Chelan/South Douglas protocols.
I. Use of a metronome to maintain a consistent rate is highly encouraged.