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February 9, 2016

To: All professionals in the EMS System for Metropolitan Oklahoma City and Tulsa

From: Jeffrey M. Goodloe, MD, NRP, FACEP
Medical Director

Re: ResQPUMP® Active Compression-Decompression CPR Device Use

True to prior and expected form, I do not like communicating with you via memo because of how impersonal it is, but you need to know the very important information that follows to help you safely use the ResQPUMP® and specifically, to help you avoid causing harm to patients with improper ResQPUMP® mechanics. Since Oct 1, 2015, our EMS System has safely treated well over 100 adults with non-traumatic sudden cardiac arrest using the ResQPUMP® as part of the ResQCPR™ System. We are now aware of a particularly small number of patients treated with the ResQPUMP® that developed tension pneumothorax. Please immediately follow each and all of the directives in this memo to reduce the chances of tension pneumothorax from occurring when using the ResQPUMP®. These points will also be reflected in a new protocol in development regarding the ResQCPR™ System that the Medical Control Board will discuss at its March 9, 2016 meeting.

- Recognize that “stronger, faster, harder, deeper” is a very outdated way of thinking about chest compressions – manual or device-assisted. Rate, depth, and force CAN be life saving, when it is the correct rate, the correct depth, and the correct force.
- The correct compression/decompression rate is 80 cycles/minute when using the ResQPUMP®.
- The correct compression depth is 2 inches in adults when using the ResQPUMP®. Excessive depths can lead to chest wall trauma and chest wall trauma can lead to tension pneumothorax.
- The correct compression force is whatever occurs at no more than 2 inches of depth in adults when using the ResQPUMP®. In many adults, this will be at or very near 40kg of force as measured on the device’s force gauge (which should read as 0kg of force when pulled out for patient use), but let the depth determine the force. Do not start out trying to achieve a certain force regardless of depth. Excessive force can lead to chest wall trauma and chest wall trauma can lead to tension pneumothorax.
- Any compression with the ResQPUMP® should be directly midline of the sternum. Avoid placing the ResQPUMP® laterally to the sternum. Improper placement can lead to chest wall trauma and chest wall trauma can lead to tension pneumothorax.



- The correct compression technique with the ResQPUMP® involves the compressor's shoulders being over and in line with the sternum, producing a direct down (compression) and up (decompression) cycle. Even slight lateral movements of the ResQPUMP® can cause loss of suction between the device and the patient's chest, losing the active decompression advantage of the ResQPUMP®.
- The correct decompression force of the ResQPUMP is at 10kg as measured on the device's force gauge. Additional decompression force is unnecessary and could lead to chest wall trauma and chest wall trauma can lead to tension pneumothorax.
- Avoid any ResQPUMP® use when standing. All ResQPUMP®-assisted compressions should be performed when kneeling immediately next to the patient's side.
- Avoid any ResQPUMP® use when the patient is in motion. This includes during movement of the patient to the ambulance for transport. This includes during ambulance transport of the patient to an Emergency Department.

EMS resuscitation care is challenging. Scientifically-validated new devices, while exciting in their potential to improve patient outcomes, bring the need to be particularly careful about how such devices are used.

I am proud of the passion that our EMS system collectively and that you individually have for saving lives. Carefully reading and incorporating the information shared in this memo will help fuel that passion into what matters most: the best possible outcomes for the patients we all serve. Safe outcomes. Survival outcomes. Neurologically-intact outcomes.

Thank you for your time. More ResQCPR™ System related resources are actively in development and I'll be sharing those with you as soon as they are correctly completed.

If you have any questions, please contact your EMS officer/supervisor or you can contact me directly at jeffrey-goodloe@ouhsc.edu or cell 918-704-3164.