SAGINAW VALLEY
MEDICAL CONTROL AUTHORITY

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MEMO

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TO: All EMS Providers and Agencies

FROM: Noel Wagner, M.D.
Medical Director

DATE: February 9, 2009

RE: Cardiac Arrest

Over the past six months, this office has had the opportunity to review the system's performance in relation to cardiac arrests. While we do a good job, there are several areas that need consideration by everyone in the Saginaw Valley Medical Control Authority's system.

1. Management of medical and traumatic arrests are exact opposites. Traumatic arrests should be transported immediately (unless Code 12 criteria is met), with ALL interventions being performed enroute to the hospital. Medical arrests should be worked on scene for an extended period of time. The remainder of this memorandum deals with medical arrests.
2. Medical cardiac arrests are not to be moved. CPR must be immediate and continuous. Movement to backboards, to stretchers, and to ambulances only decreases survival. The arrest must be worked where it occurs. Any early movement must weigh the benefits (crew safety) with the negatives (decreased survival). In short, your patient has *less chance of living* if they are moved. Movement must be considered only if immediate life threats are present.
3. Public place arrests are not a reason to move the patient. The laws of physiology and the optimal techniques for survival do not change if the arrest is in a church, a school, a mall or on the street. Do not decrease someone's chance of living because you are uncomfortable with the venue.
4. Defibrillation should not be delayed under any circumstance. The defibrillation pads must be applied immediately and the patient's rhythm analyzed early. With a 2 person crew, one should start immediate CPR while the other cuts clothes and applies the pads. Pads may be applied without interruption in compressions. This will give close to the recommended 2 minutes of CPR before defibrillating an unwitnessed arrest.
5. CPR must be continuous. Do not stop for anything short of defibrillation and rhythm checks. Compressions must not be stopped for IVs, intubation, or movement. **Continuous means continuous.**
6. After defibrillation, go straight into compressions. Do not check pulses and DO NOT check the rhythm. Perform 2 minutes of CPR before the rhythm check. Even if the defibrillation works, the heart's function will be weak and ineffective. Continued CPR will promote blood flow while the heart "recovers". Studies have shown this offers the best chance of survival.
7. Intubation and ventilation have been proven to be very <u>un</u>important in medical cardiac arrest. Intubation is a last line consideration (not first as in the past). Intubation is no longer encouraged by the American Heart Association and other similar groups. BVM ventilations are just fine, and might even be better than intubation for a variety of reasons (but this is still being researched). The ACLS recommendations are for 6-8 ventilations a minute. This is quite a slow rate and requires diligence on your part not to over ventilate. "Normal" ventilation is hyperventilation in a cardiac arrest. Hyperventilation is *lethal* and MUST be avoided.

8. There is *no maximum* scene time for a medical cardiac arrest. A patient should be moved only after return of pulses or an extensive scene time. There is no benefit to transporting to the hospital so that they may perform the same interventions that are available on scene when additional cerebral hypoxia will occur due to the inherent difficulties in moving a patient and the resultant negative effects on CPR.
9. Everything that minimizes time to CPR and defibrillation must be attempted. The first arriving ambulance should not waste time backing into a driveway. Backboards should not be brought into the call on your initial entry. Medical history and meds are irrelevant during the initial approach to the cardiac arrest patient. Having your equipment ready to grab and go is important. When you get out of the ambulance, act like someone is dying and move accordingly.

Many of these points represent a big change in perspective. We must embrace the concept that a hospital usually has nothing additional to offer for a medical cardiac arrest. Movement is not a life enhancer in these situations. We should expect to be on scene a long time and be very tired when the call is over. 25 minutes of ALS is a good general rule as the minimum scene time (unless a pulse is obtained) for a medical cardiac arrest. You, what you do on scene, and how long and hard you do it are the main controllable determinants in whether a patient will live or die.

If you have any questions, please feel free to contact me or anyone in our office.

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