



Critical Care Transport: Ground vs. Air

by Michael Dermont, Guardian Critical Services, LLC

This article was written to share the opinion of Guardian Critical Care Services and to express our views on the benefits of Critical Care Ground transport.

The ambulance pulls up into the entrance and comes to a stop. By the tone in the paramedic's voice during the radio report, it's obvious this patient is critical. Transport to a Level One Trauma Center is the best choice for this patient. But what is the best mode of transport for this patient? Should a helicopter be used? Will an ALS ground unit with two Paramedics be able to handle the complexity of the patient's injuries? These are questions not easily answered in the heat of the moment.

Fortunately, another form of transport has evolved over the past ten years: Critical Care Ground Transport. According to the Illinois Department of Public Health, critically-ill patients are required to be cared for and treated by licensed professionals during transport (Critical Care Paramedic and Registered Nurse). These highly trained, Critical Care Nurse & Critical Care Medic, and an EMT-Driver Teams employ all of the same high-level care afforded a patient in a helicopter without the risk or the increased cost, and do so from the back of an Advanced Life Support (ALS) Ambulance. But when is it appropriate to use this new mode of transport? And what are the advantages of it over air transport? What are the disadvantages?

The argument remains that speed is the reason to transport a patient by air, versus ground, and there is proof that some patients benefit from limited transport times. In a 2003 study of 947 helicopter transports of trauma patients in Silicon Valley, only 22% of patients possibly benefited from air

transport. 33.5% of these patients were never admitted to the hospital(1); instead they were discharged after treatment in the Emergency Department. In Washington DC a similar study of 3861 pediatric trauma patients, 85% of the time air transport was deemed unnecessary(2). A ten year study of air transport in Los Angeles showed only 1.8% of trauma patients transported by air required life saving surgery on arrival at the hospital(3). On discontinuation of air transport, University of Texas showed no increase in patient mortality rates.

Critical Care Ground Transport is the option of choice now being considered in most transports of these types of patients. It may be argued that speed still takes precedence, yet studies show that transports of less than 45 miles are typically performed faster by ground. And transports fewer than 10 miles were always faster by ground. Other factors can affect the speed of air transport: does the sending facility have a pad or does the patient need to be brought to the helicopter by a ground vehicle? Does the receiving facility have a pad? The City of Chicago currently does not allow helicopters to land at any hospitals except Children's Memorial, and University of Chicago. Helicopters are forced to land at the Cook County pad and then continue the transport by ground. This greatly increases the time factor; to a point where some family members leaving the sending facility by car at the same time that the helicopter lifts, have actually beaten the

helicopter team to the receiving facility.

Weather has a great influence on whether a helicopter can even respond for the transfer. With recent FAA regulations tightening down on what are considered safe operating conditions, the likelihood that a helicopter will not be able to fly has greatly increased. These same restrictions do not affect a ground team.

In this difficult time when the economy is on everyone's mind, personnel making transport decisions need to be fiscally responsible towards the patients they serve. The best patient care should never suffer in the name of cost savings. Fortunately, now patients can be safely transported by a highly skilled team without increased risk to themselves or to their financial situations at home. Critical Care Ground Transport, in most instances, is the most appropriate mode to be employed when transferring these types of patients. ■

- (1) Shatney CH, Homan SJ, Shrek JP, Ho CC. The utility of helicopter transport of trauma patients from the injury scene in an urban trauma system. *J Trauma* 53:817--822, 2002.
- (2) Moront ML, Gotschall CS, Eichelberger MR. Helicopter transport of injured children: System effectiveness and triage criteria. *J Pediatr Surg* 31(8);1183--1186, 1996.
- (3) Eckstein M, Jantos T, Kelly N, et al. Helicopter transport of pediatric trauma patients in an urban emergency medical services system: A critical analysis. *J Trauma* 5:340--344, 2002.

About the Author:

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