The only way to reconstruct what happened in the emergency room is to know its trauma procedures.

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**WHAT DO A WORKER WHO FALLS** from scaffolding, a child who breaks a bone, and a gunshot victim have in common? They all must seek emergency treatment for their trauma-related injuries.

Trauma-related injuries are the fourth leading cause of death in the United States and they are the primary source of death among individuals under the age of 45. Edward E. Cornwell III, “Trauma,” in Emergency Medicine — A Comprehensive Study Guide, 1609 (Judith Tintinalli, Gabor Kelen & J. Stephan Stapczynski eds., McGraw-Hill 2000). Motor vehicle accidents are the major culprit of these types of fatalities, and in children under the age of 19, trauma is the leading cause of death above all other diseased conditions combined. Centers for Disease Control, http://www.cdc.gov/ncipc/
Surprisingly, the number of years of life lost before the age of 65 due to trauma exceeds those lost from heart disease and cancer put together. Cornwell, supra. Trauma patients are among the most critically injured and require more sophisticated emergency room care than the garden-variety “walk-in” patients with colds or sprain and strains. In fact, many emergency rooms are staffed with trauma specialists and other personnel who have advanced training in trauma policies and procedures, with the ultimate goal of saving lives within the critical 60 minutes from when the trauma occurred — the golden hour. Candace Smith, “Emergency Room Trauma Procedures,” eHow, http://www.ehow.com/list_6789699_emergency-room-trauma-procedures.html (updated July 29, 2010).

Most attorneys are not aware of the nuances, procedures, and goals involved in the treatment of trauma patients. This type of insight, however, is crucial in any meaningful attempt to understand the medical records of these victims. This article will discuss how trauma impacts the body part injured as well as the other systems of the body. For instance, a chest wound from a gunshot will obviously cause bleeding and damage to the surrounding tissues. However, it can also affect the respiratory system because the bullet will cause a lung to collapse. If the person stops breathing, there will be no gaseous interchange in order for the circulatory system to distribute oxygen to the body. If the flow of oxygenated blood to the brain is interrupted, this vital part of the nervous system could die. So, a single injury can negatively influence and impact many other systems even if they are distant from the site of injury. With this in mind, the reader will be taken step-by-step through the trauma examination with an explanation as to why each body part is inspected.

**TRAUMA** • The word *trauma* is derived from the Greek word for wound so a simple definition is that trauma is a bodily injury resulting from the application of an external physical force. This force can be unintentional, such as a car accident, or it can be intentional, as in a physical assault. Trauma can also be divided into two categories: blunt and penetrating. Blunt trauma is exactly what its name implies; injury caused by some form of blunt force being applied to the body that does not penetrate the body cavities. This type of injury is most commonly seen in motor vehicle accidents or falls. Penetrating trauma on the other hand, is when the force penetrates into the body in some form or fashion. Bullet wounds, stabbings, or even stepping on a nail are good examples of this type of injury.

**What Are The Goals Of Trauma Treatment?**

Trauma may have a fairly simple definition but when it comes to treatment of trauma patients, there is nothing uniform or standard about it. Trauma places great demands on hospitals to maintain emergency room departments staffed with physicians who specialize in this field of practice. However, trauma is not a recognized board specialty. The American Board of Emergency Medicine is the ABMS-approved specialty for emergency physicians. Emergency Medicine physicians are not surgeons and this board is not trauma-specific. James Bartimus and Anthony DeWitt, *Making the Trauma Negligence Case*, 44 Trial 22, May 2008. Nevertheless, the ultimate goal of trauma treatment is to minimize the morbidity and mortality associated with the insult.

Studies have established a trimodal distribution of death as a result of trauma. R. Shayn Martin and J. Wayne Meredith, *Introduction to Trauma Care*, in *The Trauma Manual: Trauma and Acute Care Surgery* (Andrew B. Peitzman et al. eds., Lippincott Williams & Wilkins, 3d ed. 2008). Almost half of the deaths occur immediately at the time of the injury.
and are usually due to massive bleeding or severe neurological injuries. Id. The second peak time of death is in the minutes and hours immediately following the injury and is usually due to severe head or thorax trauma. Cornwell, supra. This second period accounts for 30 percent of the mortalities associated with trauma. R. Shyam Martin and J. Wayne Meredith, supra. The final peak period in the distribution occurs several weeks after the injury with deaths that are usually secondary to severe infection (sepsis) or the failure of multiple organ systems of the body. Id. The deaths in this third period are thought to be due to organ damage sustained either in the accident or in the hours shortly afterward due to a lack of an adequate blood flow. Cornwell, supra.

The goal of trauma care is to reduce the deaths associated with the second peak period which occurs in the hours shortly after the injury. This is accomplished by establishing and implementing a systematic approach toward the trauma patient that allows for rapid assessment and stabilization of the victim. These established protocols allow physicians to evaluate the patient in a logical, algorithmic manner and treat injuries in the order that has the greatest chance to prolong life and minimize long-term consequences from the injury. By focusing on the immediate period following injury, doctors believe they can also limit organ damage and infections that claim victim’s lives in the third peak period; thus ultimately reducing the late stage mortality. The most prevalent trauma protocol in the United States is the Advanced Trauma Life Support Protocol (ATLS) established by the American College of Surgeons. See, American College of Surgeons, ATLS Overview, at http://www.facs.org/trauma/atls/index.html (last visited Jan 2011).

“The golden hour” is a term often used by physicians or rescue personnel when referring to victims of trauma. The idea is that the time frame immediately following the injury is the crucial period in which to initiate life-sustaining care. The starting of medical treatment in this window provides the victim with the greatest chance of surviving the injury and minimizing subsequent complications that could result in death. Despite the first 60 minutes following trauma being dubbed the “golden hour,” there are no studies that prove that post-accident survival rates actually drop off after this initial time period. See E. Brooke Lerner, M.S. and Ronald M. Moscati, M.D., The Golden Hour: Scientific Fact or Medical “Urban Legend?”, 8 Academic Emergency Medicine 758 (2001). Instead, the phrase represents the core concept that the greatest chance of survival for a trauma victim is rapid treatment in an appropriate facility that can manage his or her injuries.

What Is A Trauma Center?

In 1976, a physician was taking his family on a trip by private plane when the aircraft crashed. The family members sustained severe injuries and were taken to a local hospital where they received sub-standard care. See James K. Styner, M.D., The Birth of Advanced Trauma Life Support, 13 J. Trauma Nursing 41-(Apr.-June 2006). This prompted the doctor to seek the help of colleagues to correct the problem. These physicians ascertained that taking severely injured people to the closest, rather than the best staffed and best equipped hospital, could result in death. This started the movement to establish specialized trauma units and to change protocols so that paramedics would take the most severely injured people to those trauma centers. Id. at 44.

Today, it is customary to transport accident victims directly to the appropriate level trauma center and not to the most convenient hospital. Robert Steinbuch, Preventing Under-Equipped Medical Facilities from Killing Heart Attack Patients: Correcting Inefficiencies in the Current Regularity Paradigm for Providing Critical Health Care Services to Patients with Acute Coronary Syndrome, 17 Health Matrix 17 (Winter, 2007).

Trauma care in our current environment is thought of as a system which comprises the overall treatment of the trauma victim from the initial eval-
uation through definitive care. The process of sending the injured party to an appropriate treatment facility is a vital part of this system approach. The treatment of a trauma patient begins the instant the patient is evaluated by any type of emergency medical personnel; from EMS to physician. One of the first steps is to determine the level of care that is needed. If the injury is minor, then any hospital or emergency room will suffice. If the patient is seriously injured or suffers from multiple problems, then the individual requires treatment at a specialized trauma facility.

Not all hospitals and emergency rooms, however, are created equal; they come in different sizes and have different capabilities. Hospitals can range from small rural facilities consisting of a few inpatient beds to large, metropolitan medical centers with multiple buildings and hundreds of inpatient beds. The sophistication of the attached emergency room tends to be directly proportional to the overall size of the hospital. Larger, more modern heath care centers have a greater ability to care for more severely injured patients than would a small hospital. This is because larger hospitals have more equipment and personnel available to treat a wider array of ailments. These bigger tertiary hospitals have many different types of physicians and specialists available in-house at all times; such as neurosurgeons or hand surgeons. (“In-house” means that a physician representing the particular medical specialty is physically in the hospital 24 hours per day or else is available to be at the hospital within minutes.) On the other hand, smaller hospitals may be staffed by a minimal number of in-house physicians with the majority of doctors being available on an on-call basis. These smaller facilities may also be manned by general practitioners with no specialist physicians on staff.

Some facilities receive the important designation of a trauma center. This title does not refer to a specialized part of an emergency room but is a label applied to a medical facility whose staff possesses specialized training, a surgical group, the finest equipment for emergency care, and be accredited to treat the most critically injured patients. A trauma center operates on a “team approach” whose staff includes emergency room physicians, neurosurgeons, anesthesiologists, and orthopedic surgeons who are experts in treating trauma victims. Typically, these physicians must be within a close proximity of the hospital, and be available any hour of the day or night. NC Trauma Centers, http://www.nctrualcenters.org (last visited Jan. 2011).

Trauma centers earn a “level” designation, as determined by the American College of Surgeons, based on the facility’s ability to treat trauma. Centers for Disease Control, Access to Trauma Care, http://www.cdc.gov/traumacare/access_trauma.html (updated on Aug. 24, 2010). These designations range from a Level I facility to a Level V facility. A Level I facility provides the highest level of care and is capable of offering definitive treatment for any type of injury. Level I facilities must have 24-hour availability of all surgical subspecialties and advanced imaging capabilities. These requirements have demonstrated that severely injured patients brought to a Level I trauma center have better outcomes than lower-level facilities in treating patients with specific injuries associated with high mortality and poor functional outcomes. Demetrios Demetriades, et al., The Effect of Trauma Center Designation and Trauma Volume on Outcome in Specific Severe Injuries, 242 Anals of Surgery 512 (Oct. 2005) http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1402347/ (last visited Jan. 2011). On the other end of the spectrum are the Level V facilities. These hospitals generally lack the equipment or specialist availability needed in the evaluation and treatment of all trauma-related cases. Instead, they focus only on the immediate stabilization of the patient with the goal of rapid transfer to a more suitable facility for treatment. This may mean transfer to a Level II facility for the moderately injured patient or to a Level I facility in