



AS REAL

THE EVOLUTION OF TRAUMA CARE AND EMERGENCY MEDICINE

AS IT GETS

By Barbara Ravage

Born on the battlefield, trauma care came of age during the turbulent 1960s, when the lessons learned in the Korean and Vietnam conflicts were brought back to the United States to treat trauma on the home front. To be sure, there were hospital emergency rooms long before that time, but they would hardly be recognizable compared to today's high-tech emergency departments and Level I trauma centers.

Specialty emergency medicine and trauma care developed in response to the unique dangers and needs of the urban environment, driven by the demand for better care on the part of both providers and patients, and by technological advances ranging from CT scans to remote field telemedicine. Three public hospitals — Los Angeles County+USC, San Francisco General, and Cook County — were on the front lines of developing trauma care.

The Birth of Emergency Medicine

In the late sixties, the emergency room at LAC+USC Medical Center was no different from that in most municipal hospitals in the country, except it was bigger and busier. Patients by the hundreds walked or were carried through its portals every day. From bullet wounds to heart attacks, spinal cord injuries to severe burns, drug overdoses to miscarriages, patients in need of immediate care were tended to by a handful of residents on rotation, with the support of nurses and orderlies. According to Gail V. Anderson, MD, under whose stewardship the LAC+USC Medical Center ER became a world-class emergency department, “Before the advent of emergency medicine as a specialty, emergency rooms were staffed by part-time, itinerant physicians who were essentially moonlighting. Physician groups formed and were practicing emergency medicine on a full-time basis, but no one had been

specifically trained in emergency medicine.”

In 1910, the Flexner report, *Medical Education in the United States and Canada*, spurred the evolution of medicine into a specialty-driven field. But it took the National Research Council's 1966 report, *Accidental Death and Disability: The Neglected Disease of Modern Society*, to provide the impetus for specialty training of physicians in emergency medicine.

At the time, Anderson was professor of obstetrics and gynecology at the University of Southern California School of Medicine and

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OPPOSITE: Rancho Los Amigos National Rehabilitation Center.

BELOW: Doctors work on injured at General Hospital, Los Angeles, after the series of earthquakes that rocked Southern California, 1933.



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chief of the obstetrics and gynecology service at LAC+USC Medical Center, its main teaching hospital. In 1971, he was asked to chair a new department of emergency medicine at USC, the first in the nation. In 1976, Anderson helped found the American Board of Emergency Medicine. Emergency medicine was accepted as the twenty-third board-certified medical specialty in 1979 and administered its first certification exams in 1980.

As a pioneer of emergency medical education, Anderson asserts that the training programs in public hospitals offer “the best way of assuring quality emergency care for this large mass of people.”

From M.A.S.H. to the Home Front

Every trauma is an emergency, but not every emergency involves trauma. Indeed, trauma is a complex event requiring a team of physicians, nurses, and technicians specially trained to do the right thing at top speed. Much is made of the “golden hour,” the window of opportunity for saving the life of a severely injured patient, but in the most severe cases, the trauma team measures its opportunities in minutes.

Modeled after the mobile army surgical hospital (M.A.S.H.) units, the nation’s first hospital-based civilian trauma units were established in 1966 at San Francisco General Hospital and Chicago’s Cook County hospitals. Both had long served the poorest residents of their cities and had reputations for providing a broad range of quality emergency care. The modern facility at San Francisco General stands on the site of the old Mission Emergency Hospital, built in 1909. In 2002, the sprawling, nearly century-old Cook County Hospital was replaced by The John H. Stroger, Jr. Hospital of Cook County, with a high-tech, self-contained trauma center.

Although these two trauma units served as models in the sixties, it was a decade later that formal guidelines were established for the systematic delivery of trauma care. The 1976 report from the American College of Surgeons Committee on Trauma (ACSCOT), *Optimal Hospital Resources for Care of the Seriously Injured*, specified the requirements for effective trauma systems. Out of that report came the now-familiar trauma center levels, as well as the organization of multidisciplinary trauma teams and the trauma center verification process.

San Francisco General, LA County+USC, and Stroger hospitals are sites of Level I trauma centers. As anchors for large inner-city populations, they see more than their share of trauma cases, and as public hospitals, they are committed to offering the best possible care to all patients, regardless of ability to pay. That commitment is well expressed by Stroger’s chief of trauma, Roxanne Roberts, MD, who says, “We’re all here because we fell in love with the patients that we take care of and we believe in the mission of the hospital. We’re certainly not here for the salaries or the glory.” Or as William Schechter, MD, chief of surgery at San Francisco General, put it: “The thing about working in a place like this is that when you go home at the end of the day you at least know that you tried to do the right thing.”

The Training Challenge

“Trauma care is undergoing a sea change,” says Schechter. Thanks to huge advances in the field, innumerable lives have been saved. Today, the

EARLY CIVILIAN TRAUMA CARE



The nation’s first specialized civilian trauma units were established just four decades ago at San Francisco General and Chicago’s Cook County hospitals. But urgent care has been an aspect of hospital services throughout their history. Here, doctors at Central Emergency Hospital in San Francisco provide emergency care in 1935.

odds are that a trauma patient who reaches the hospital alive will live to be discharged. Diagnostic technologies such as CT scanners have dramatically reduced the need for exploratory surgery that was previously standard in cases of blunt trauma. Non-invasive techniques to stop bleeding also mean “the number of injured patients that actually need surgery is much lower than it used to be,” Schecter maintains.

But those advances have had unintended consequences in the training of surgeons and other trauma team members. In most hospitals, blunt trauma resulting from car accidents, for example, makes up the majority of cases. It is in the area of blunt trauma that non-surgical techniques have had the greatest utility.

“It’s becoming increasingly difficult to maintain the interest of young surgeons because the number of operations they do is much lower than before,” Schecter observes. Inner-city public hospitals like San Francisco General, however, continue to see a disproportionate number of penetrating traumas, for which surgery is a life-saving necessity. “I happen to work in a hospital where, unfortunately, we still treat numerous shootings and stabbings, so from a surgical point of view, it’s still quite interesting.” Thus, inner-city public hospitals remain the last, best training grounds for trauma surgery. “We have a saying here at San Francisco General Hospital: ‘This is as real as it gets,’” says Schecter.

If military medicine was the driving force behind the development of trauma care, LAC+USC Hospital is among a select group that is returning the favor. Taking advantage of the expertise at this public hospital, the Department of Defense initiated a cooperative program to train medical corps personnel for conditions no one in the military had seen since Vietnam. In a partnership between LAC+USC and the San Diego-based Navy Trauma Training Center, Navy fleet and forward resuscitative surgical teams gain hands-on experience in the LAC+USC Level 1 trauma center. Jackson Memorial Hospital in Miami, another NAPH member, provides a similar service to the Army at its Ryder Trauma Center, while the Air Force trains at the R. Adams Cowley Shock Trauma Center in Baltimore.

Trauma Care Evolves

The classic picture of the trauma team in a life-and-death race against time is only part of a larger view. Today, trauma care encompasses what happens to patients before they even get to the hospital and long after they leave. Resuscitation often begins in ambulances fitted out with advanced life-saving equipment and highly trained EMTs in constant telecommunication with the hospital-based trauma team. Rehabilitation for disabled trauma patients is also part of the mission.

End-of-life care and support for families are often neglected in a place where sudden and unexpected death is a daily reality, but not at Stroger Hospital in Chicago. In what is a new model for the hospice concept, Stroger was awarded a grant by the Aetna Foundation in 2005 to develop a hospice program for its trauma unit. “As surgeons we’re trained not to give up,” says Kimberly Joseph, MD, director of the Trauma ICU at Stroger. “Perhaps we wait too long before talking about death and asking the patient and their family what they would like.” The Aetna grant, she believes, “will help us identify specific needs of patients and their families during this time and how we can make the dying process easier.”

Increasingly, trauma centers are including prevention in their mandate. Injury and violence prevention programs at LAC+USC, Stroger, and San Francisco General employ public education, community outreach, and counseling in this effort. As Schecter puts it, “What we would ideally like to do is put ourselves out of business.” ❏



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