

MEETING TRAUMA

By NANCY O'BRIEN

Romans in the first century A.D. built special hospitals along the borders of the Roman Empire to care for wounded legionnaires. During the Korean War, the U.S. Army Medical Corps took wounded soldiers directly from the battlefield to a mobile army surgical hospital (MASH), and the mortality rate dropped dramatically. Quick access to comprehensive medical care has always been a matter of life and death for the critically injured. Now, physicians at the UMC Hospital and Clinics have become leaders in setting up a system of specialized care for severely injured people in Missouri and the nation.

SHORTLY AFTER MIDNIGHT the approaching car suddenly swerves and collides head-on with a Volkswagen driven by Mark Schedler, a 16-year-old Columbia high school junior. Mark smashes against the steering wheel and is thrown into the back seat.

The blows have torn his aorta; ruptured his spleen and liver; and broken his right shoulder, both ankles, and his left leg in five places. But he's alive . . . for now.

Mark is a victim of trauma, a medical term for an injury or wound.

"Trauma is the No. 1 cause of death for people under the age of 45," says Dr. Michael H. Metzler, assistant professor of surgery at UMC's School of Medicine and emergency center medical director at the UMC Hospital and Clinics. "For every person who dies as a result of trauma, two become permanently disabled. Trauma accounts for more loss of productivity than any other disease."

BUT STUDIES SHOW nearly 70 percent of the more than 100,000 people who die each year from major injuries could be saved if they had received comprehensive medical treatment in time, says Dr. Frank L. Mitchell, professor of general surgery and director of emergency medical services.

"Trauma is a time-related di-

sease," Mitchell points out. "We have limited time to correct the instability of a trauma patient before the damage is irreversible. By and large, if a trauma victim remains in the same condition for more than an hour, he will die."

But in situations like Mark's, getting the necessary medical help in time can be difficult.

"The bad thing about trauma is that it usually occurs in the middle of the night, when surgeons, anesthesiologists, pathologists and other necessary specialists are gone from the hospital," Metzler says. "The only way to deal with trauma is to set up a system whereby certain hospitals will be capable constantly of caring for seriously injured victims."

Mitchell and his colleagues have taken the lead in setting up such trauma care centers in Missouri and the nation.

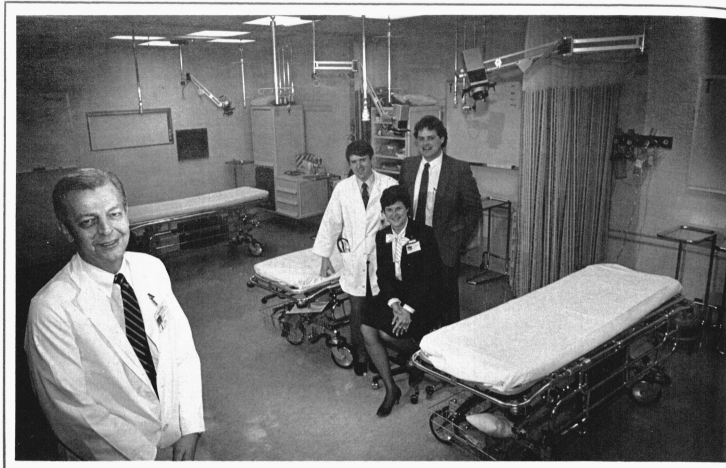
As a member of the American College of Surgeons' national committee on trauma, Mitchell helped design national criteria for trauma patient care used to qualify hospitals as Level I, II or III trauma centers.

The helicopter's speed means life to trauma victims. From left are paramedic Carey Smith, flight nurse Paula Johnson and paramedic Jerome Mason.



HEAD-ON





Missouri is one of the first states to evaluate all its hospitals, says Mitchell, state chair for ACS's committee on trauma and past chair for the governor's council on emergency medical services. He is currently helping professionals in California, Colorado and Rhode Island complete their hospital evaluations.

Of the 60 trauma centers in Missouri, UMC Hospital and Clinics is one of only five that fulfills the 115 criteria demanded of a Level I trauma center, says Mitchell, AB '51, BS Med '53. The other four are in Kansas City and St. Louis.

"We're committed to providing the highest standards of care," Metzler says.

That commitment includes around-the-clock operating room service, a physician in the emergency center at all times, a surgeon and an anesthesiologist in the hospital 24 hours a day, and immediate access to X-ray and a CT scanner.

"And because of the medical school," adds Susan Thomason, RN, manager of the emergency center, "we have immediate access to specialists in plastic surgery, orthopedics, pediatrics,

neurosurgery and other fields."

For Mark Schedler, that commitment meant that when he reached the hospital, Metzler and trauma team members swarmed around him, each attending to a specific task. Within 15 minutes the team stabilized Mark, diagnosed his internal bleeding and prepared him for surgery.

Then, for six hours surgeons operated on Mark's aorta, spleen and liver. They rejoined his severed aorta with a polyester shunt. Next came five hours of surgery to reset the broken bones.

BUT THE COMMITMENT didn't stop there. "It does little good to save a life and not rehabilitate the patient," Mitchell says.

So after monitoring Mark's recuperation in the hospital for six weeks, Metzler transferred him to the University's Rusk Rehabilitation Center, the only rehabilitation center in outstate Missouri for an additional month of extensive physical therapy.

Mark is pleased with the results. "I'm doing more now than before the accident. I've learned to water and snow

ski. And I hiked in north Minnesota with my church group."

The medical staff's commitment to improving care for trauma patients extends to education and research. "We do the major part of trauma education in the state," Mitchell says.

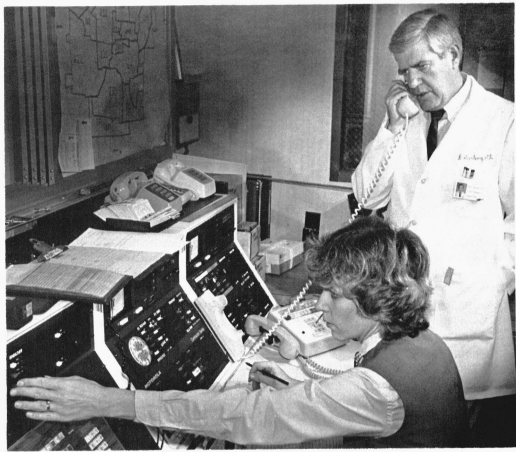
For example, he and his staff offer a two-day course that trains non-surgeon physicians in stabilizing trauma patients before they are transported. "And we cooperate with the Missouri Department of Health in training nurses and paramedics," Mitchell says.

The spinal cord injury prevention program, under the direction of Rusk Rehabilitation Center and Dr. Clark Watts, professor of surgery and chief of neurosurgery, is aimed at educating high school students in risks involved in diving, farm and auto accidents.

Watts also is doing trauma-related research. He and Dr. Walter J. Levy, assistant professor of neurosurgery, are pioneering the use of electrical monitoring systems to more accurately assess spinal cord injury.

Watts has designed a system of tongs, weights and springs to support

Leaders in the team effort to provide top-notch trauma care are, from left, Dr. Frank Mitchell, director of emergency medical services; Dr. Michael Metzler, emergency center medical director; Susan Thomason, emergency center manager; and Don Stamper, helicopter coordinator.



A sophisticated communications system enables Dr. Dean Nierling, right, to advise the helicopter flight nurse about an accident victim. Dispatcher is Glenda Curi.

the head of trauma victims while traveling to the hospital. This system prevents a fractured neck bone from cutting the spinal cord and causing paralysis in trauma patients.

Other researchers are studying blood clotting and the relationship between the amount of shock suffered by a trauma victim and the weakening of the victim's immune system.

This extensive commitment to trauma care benefits the patient even before reaching the UMC hospital, as in the case last December of 17-year-old Beth Lizzi. Beth's car fell on top of her after she lost control and drove off a hilly road near the Lake of the Ozarks.

The unconscious girl was first taken to the Lake of the Ozarks Hospital. Doctors there, fearing internal injuries, saw the need for advanced diagnostic equipment and called the UMC Hospital and Clinic's helicopter emergency care service to transport Beth to Columbia.

WITHIN 40 MINUTES, the helicopter arrived with flight nurse Greg Weaver.

"I can't say enough about Greg's

professionalism in that critical situation," says Mary Carlstedt, Beth's mother. "As he worked with Beth, he answered the questions that were going through my mind before I even had time to ask. Then when we got to the UMC hospital, I felt everything humanly possible was being done for Beth; she was getting the best medical help available."

"The helicopter dramatically reduces the time needed to begin life-saving processes since the flight nurse is trained and equipped to begin stabilizing the patient," says Don Stamper, coordinator of the year-old helicopter service.

Of the patients carried on the helicopter, Stamper estimates 30 percent would not have lived without quick stabilization and transport to the hospital.

"The quick service also reduces disabilities. For instance, rapid access to advanced care is important in the reimplantation of an amputated finger," Stamper says.

The helicopter service is one of three in Missouri. Since November 1982,

the helicopter has transported 217 trauma victims. An added service is that physicians can call a toll-free telephone number, 1-800-325-5400, to request the helicopter or seek advice and consultation concerning trauma.

"THE AVAILABILITY of the Level I trauma center means smaller, community hospitals do not have to duplicate expensive equipment and services needed for major trauma victims. They can rely on our trauma care facilities," says Sandy Blair, manager of the hospital's public relations and development department.

Mark Schedler, Beth Lizzi and the nearly 400 other trauma victims referred to the UMC Hospital and Clinics each year also benefit in a big way from the university's commitment to Level I trauma care.

"I think these people are life-savers. They really know their stuff. If it hadn't been for them, I wouldn't be here today," Mark says.

Blair adds, "We're here to serve the people of Missouri. What better service than saving lives?" □