

## MEDICINE

1. Rescue helicopter lands on roof of a garage

2. Victim is wheeled to the Maryland EMS center

3. Inside, he is examined and X-rayed. An angiogram indicates a blood clot exists. An operation is planned. The victim's head is shaved.



Photos by Terry Arthur

# It's an Emergency!

**1:15 a.m.:** A 21-year-old welder is driving a jeep along Route 1 near Laurel, Md. Suddenly, he loses control of his jeep, and it flips over. A cruising highway patrol car radios for an ambulance. Twenty miles away, at the Maryland Institute for Emergency Medical Services in Baltimore, Marvin Witcher has already picked up the police report on a radio scanner in the communications room. Minutes later, his phone rings. An emergency medical technician at the scene gives Witcher vital information: the victim is white, male and young, unconscious with a possible skull injury and bleeding from the ears, nose and mouth. He needs immediate help.

**E**mergency medicine is fast becoming a specialty in itself. The reason is painfully obvious. The Department of Health, Education and Welfare lists accidents as the third most common cause of

death in the U.S., trailing only cancer and heart disease. Accidents are the leading killer of people under 38. As recently as a decade ago, injured patients were treated primarily by interns working under nightmarish conditions, and most ambulances were operated by funeral directors and private firms, many without two-way radio equipment and without attendants who had even a boy scout's training in first aid. Each year, tens of thousands of Americans lost their lives as a result of treatment that was inadequate, inept or simply too late.

The situation has improved dramatically in the 1970s. The upgrading of emergency medical care began with the 1966 Emergency Highway Safety Act, directing states to develop so-called Emergency Medical Services (EMS) systems or risk losing 10 per cent of their highway-construction funds. To function properly, an EMS system draws together a vari-

ety of elements, including adequately equipped ambulances, specially trained personnel and a communications network between doctors at the base hospital and technicians in the field. By today's standards, it may not seem like such a dazzling innovation. But Dr. David Boyd, now HEW's director for EMS, remembers those bleaker days when he was a resident at Chicago's Cook County Hospital. "We'd operate all night long," he says. "When we were done, we'd pass the morgue on our way to the cafeteria. For every guy we saved, there would be one who died."

Boyd's anger led him to create an emergency-care system in Chicago that became statewide. It cost \$7 million to set up and about 11 cents per person per year in taxes to run. The system became a model for the Emergency Medical Services Systems Act of 1973, which got the Federal government directly involved. Since then, the Department of Transportation has spent \$91 million and HEW \$97 million to fund statewide EMS systems. The television series "Emergen-

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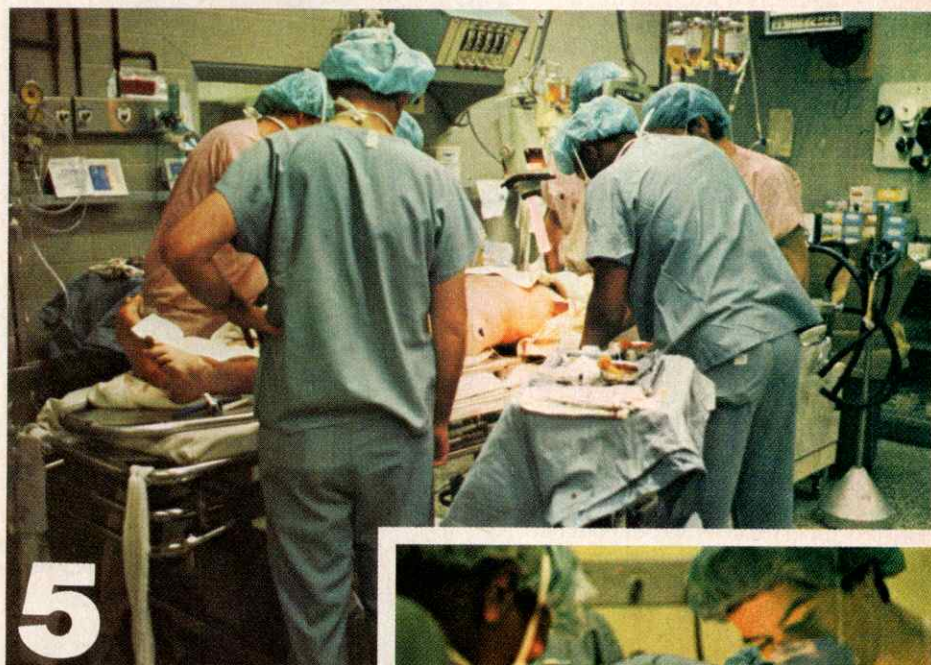
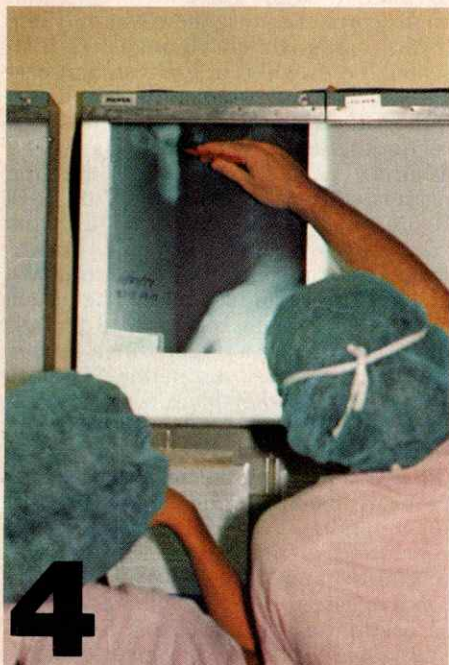
cy" helped create a national demand for such services, but it was Federal money that produced the greatest improvements. Today, there are 27,500 ambulances on the road, most of which meet new Federal standards for design—and most of which are driven by volunteer firemen. More than 280,000 Emergency Medical Technicians (EMT) have been certified, and 20,000 have received advanced training as paramedics. As a result, the number of dead-on-arrival accident victims has decreased by as much as 19 per cent since 1968.

**1:45 a.m.:** Witcher receives another phone call. He is told by the highway patrol that, to save time, they have summoned a helicopter from a nearby air-

Extreme caution must be exercised when first treating a victim because, as Cowley puts it, merely moving one finger may be enough to induce shock in a severely injured person. Before EMT volunteers are allowed to help treat and then move a victim from the scene of an accident, they must pass an 81-hour course at a participating hospital. There they learn how to recognize and treat breathing obstructions and to revive people whose hearts have stopped, how to stop bleeding and when to lift and move a victim. Paramedics, who have more responsible duties, are required to pass a rigorous, 480-hour course. They can insert IV tubes, reinflate a collapsed lung and use a defibrillator on coronary victims. "The old routine of

by radio telemetry such information as electrocardiogram readings which show up on a mini-television screen at the hospital.

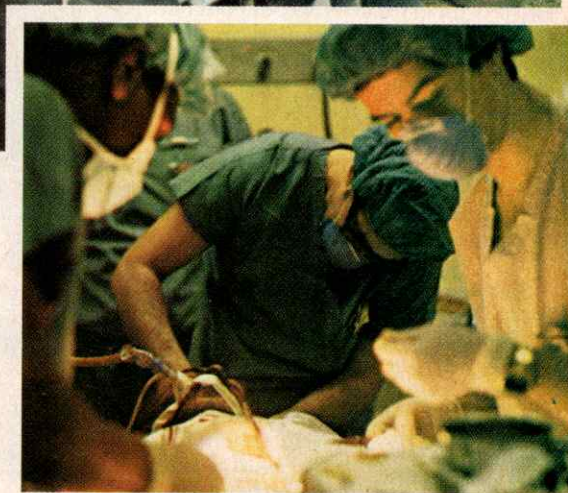
**2:18 a.m.:** The victim lies on a brightly lit examination table. His blood has been typed, and plasma is being administered by IV. His stomach is pumped, and he is attached to a respirator. An angiogram indicates that a blood clot may exist, and Dr. Hatem Abdo wants the operating room prepared for surgery. A chunk of the victim's skull will be removed to relieve the pressure in his brain. "It is fairly routine," shrugs Abdo, "but the prognosis is not so good." Attendants begin shaving the victim's head and chest. X-rays definitely reveal a fracture



Photos by Terry Arthur

**4.** Doctors check X-rays, which show a skull fracture

**5.** They remove a section of victim's skull and remove blood clot from his brain.



port to pick up the victim and transport him to the Maryland Institute. Witcher then makes several calls himself—to the admitting clerk, to a neurosurgeon and to acting emergency-room head Dr. George Kapusta and his team. Downstairs, two nurses begin to unwrap instruments and to check the intravenous and chest-tube apparatus. The helicopter lands on the roof of a nearby parking garage, and the victim is transferred to a waiting ambulance by the center's own team of EMT's. An hour after his accident, the victim is wheeled into the emergency room.

Speed is essential in any EMS system—accident injuries can swiftly become irreparable. "In the case of the most severe crunches," says Dr. R. Adams Cowley, director of the Maryland Institute, "if a person is not in the system of care within an hour, his opportunity for survival is greatly decreased. Then, it doesn't matter whether he gets the best surgeon or whatever. He may live—three days, two weeks, a month—but something has gone out of his system."

snatch and run just isn't viable any more," says EMS captain Sam Gazzarata of Detroit General Hospital.

New medical technology and sophisticated electronic equipment are also responsible for much of the improvement in emergency services. Some ambulances, for example, are outfitted with such exotic devices as "shock trousers," which can slow the flow of blood to the legs during shock and keep it in the chest and abdominal region. Two-way radios enable doctors at a base-station hospital to talk to ambulance personnel. Thus the physician can diagnose what is wrong with the victim and advise the EMT volunteer and the paramedic how best to proceed. There are even ambulances that can transmit

in his skull. "That slow pulse rate worries me," mutters one of the other doctors. The victim is hurriedly wheeled into the operating room, leaving behind a floor strewn with wet, bloody hair, stained bandages and syringes. His clothes are stuffed into a plastic bag.

With Boyd at the helm of its EMS division, HEW is trying to set up regional networks of emergency medicine. These networks range in size from fifteen counties to a single large city and encompass rural areas as well. At the

moment, there are 100 EMS systems in operation, and Boyd is shooting for 200 more. "We're going wall to wall across the country by 1982," he predicts. Boyd is pushing for a ten-year Federal grant of \$500 million to fund and plan the expansion. To insure long-term funding and support, he also hopes to lock EMS programs into state health departments. "We want to be able to promise," says Boyd, "that if you are anywhere and seriously injured, you will be driven or flown to a trauma center."

It is difficult to evaluate the effectiveness of many EMS programs. "EMS is an infant," says Dr. Eugene Nagel, a professor of anesthesiology at Johns Hopkins. "Research so far has been limited. I know of no good studies that truly document the impact of EMS on a large-scale basis." Nevertheless, the systems in Chicago, Seattle, Los Angeles and Charlottesville, Va., have excellent reputations. Detroit virtually relies on one hospital—Detroit General—for emergency services, but the performance of its dedicated staff laboring under a staggering caseload is widely applauded.

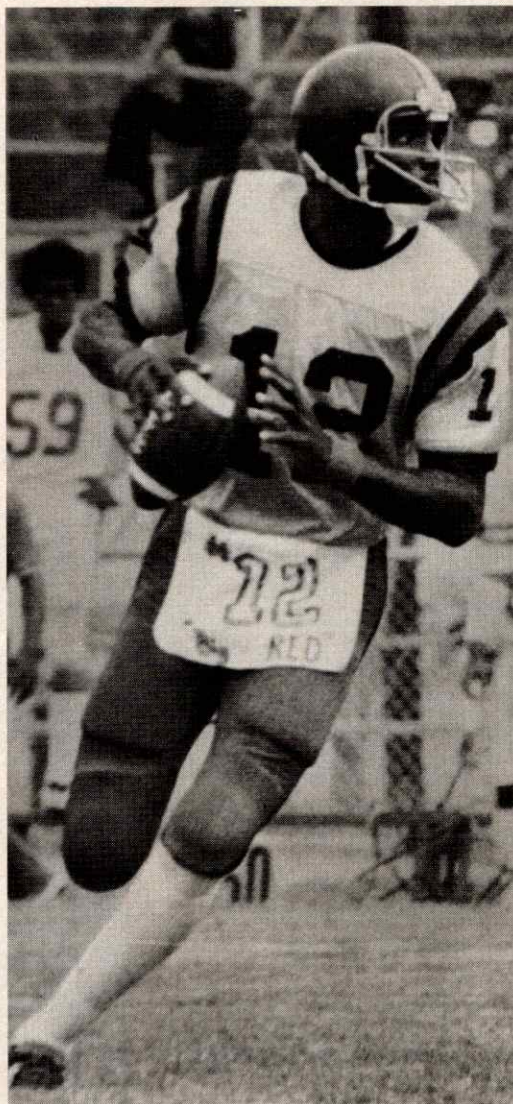
An outstanding example of the EMS program is the Maryland Institute, which has an annual budget of \$3.6 million for computer terminals and patient data banks, for staff salaries and for medical equipment. It has three police helicopters at its disposal, and specialists who are on call around the clock. In 1968, before the center existed, an estimated 70 per cent of all serious accident victims in the Baltimore area were either dead on arrival at a hospital—or died there eventually. Last year, 80 per cent of the center's 1,105 patients survived. "We're saving patients who would probably die anyplace else," says Kapusta. "Our system is to treat first and diagnose later."

**3:31 a.m.:** *The operating room is ready. An attendant scrubs the victim's shaved head with a coarse sponge and antiseptic. Blood flows like red ink from the head gash which lies open to the bone. A nurse prepares the drill that will bore into the victim's skull, and another straps him onto the operating table. Wearing pink-and-green sterile garments, the surgeons file into the room. One of them uses a blue Magic Marker to draw an area on the skull where the incisions should be made. The blood clot is located and removed from beneath the lining of the brain. At dawn, the operation over, the victim is wheeled up to the twelve-bed critical-care unit, where he will receive constant supervision. Two weeks later, the victim remains in critical condition—but still alive.*

—PETER BONVENTRE with MARY LORD in Washington, JON LOWELL in Detroit and bureau reports

## The Grambling Rifle

When the Grambling State University football team holds its daily passing drill, even the local sheriff eases his patrol car alongside the practice field to watch the show. The master of ceremonies is quarterback Doug Williams, who usually warms up by hurling a stinging down-and-out pass to tight end Mike Moore. His next pass travels 45 yards on a straight line to split end Carlos



Williams: 'Call me a quarterback, period'

Pennywell, and then he lofts a perfect strike to speedy Robert Woods. But Williams reserves his best act for Saturdays, as he did in the eighth game of the season against Oklahoma's Langston University. On the way to a 65-to-0 rout, he completed 23 of 30 passes for seven touchdowns and 378 yards.

The Grambling star leads the nation in both touchdown passes and total yardage. His career figures are even more awesome. He has already tossed more touchdowns (84) than any college quar-

terback in history and is close to breaking the yardage record. This gives him a chance to become the first player from a black college to win the Heisman Trophy. And many think he will be the No. 1 draft pick of a pro team. "Doug is in a better position than any other quarterback I ever had because he's broken national records," says Eddie Robinson, longtime coach of the Louisiana school, which has sent 160 players into the pro ranks. "We've also given him the freedom to throw the ball a lot. He's the kind of person who can dominate your offense."

**Strong Arm:** One of eight children, Williams was raised in Zachary, La., a town so small, he says, "You couldn't go stand on the corner because there was only one road running straight through." In high school, he excelled in baseball and basketball, and only four colleges offered him football scholarships. But Williams reminded Robinson of James Harris and Matthew Reed, two former Grambling passers who made it into the pros. Says Robinson, "It's a matter of knowing what you want. We want a guy who can execute, but the key thing is an arm. We knew Doug could throw." The coach also liked Williams's size—218 pounds distributed along a 6-foot 4-inch frame.

Williams almost enrolled at Southern University, another black football powerhouse, but eventually chose Grambling because Robinson runs a pro-style offense rather than the wishbone, which demands more running of a quarterback than passing. As a freshman, he was redshirted, giving him an extra season of eligibility, and he took over the starting job five games into his sophomore year. "I used to just rear back and let it rip," Williams recalls. "If a receiver couldn't run under it, that was his problem. But I've learned there's a time to hum it and a time to take something off it."

**Pinpoint Control:** At Grambling, Williams has had the luxury of working with a dandy corps of receivers and operating behind an offensive line that averages 265 pounds. "I know that without them," he says, "I'd just be Doug Williams, ordinary." His teammates doubt that. So do the pro scouts, who not only admire his power and pinpoint control, but are also impressed by his intelligence and leadership. Ken Herock, personnel director of the Tampa Bay Buccaneers, puts it flatly: "He's the best black quarterback to ever come out of college."

Williams isn't interested in being a wide receiver or a defensive back, positions the pros traditionally assign to black college quarterbacks. And he is well aware of the pressures ahead. "The only thing I hate about it is the label," he says. "In high school, you're called a quarterback. In college, you're called a quarterback. But as soon as you go to the pros, you're a black quarterback. Call me a quarterback, period."

—PETER BONVENTRE with VERN E. SMITH in Grambling, La.