A warm welcoming environment, complete with coordinated curtains, carpeting and bedspread, greets a patient at the University of Missouri Hospital and Clinics.

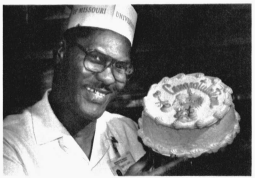
HIGH TECH WITH A HUMAN TOUCH

HIGH TECHNOLOGY is a way of life at the University of Missouri Hospital and Clinics, now celebrating its 25th year.

The latest technological advances available in medicine — from a CT scanner and radio telemetry to a hot scalpel and an endothelial specular microscope — are used to give today's patients the best possible care.

"The role of technology is easily misunderstood," says Robert Smith, director of the Hospital, as well as the Rusk Rehabilitation Center next door. "One tends to think only in terms of equipment."

But the sophisticated, diversified capabilities would be useless without the human resource, which at the 495-bed teaching hospital means a full-time staff of 175 physicians (all of them also teachers in UMC's School of Medicine), 165 residents and 335 registered nurses. Residents (MDs receiving further training



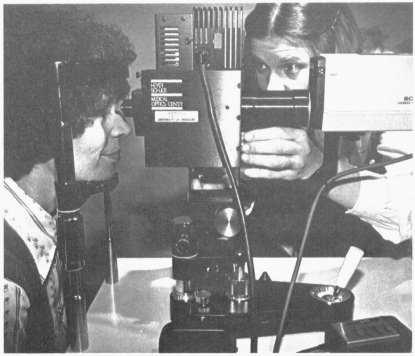
Head baker Elmer McQuitty enjoys making desserts, especially decorated cakes for new parents and special cookies for diabetic patients.

in their specialties) and third- and fourth-year medical students are involved in patient care under the supervision of the attending physician. Therapists, technicians, nutritionists, pharmacists, psychologists, social workers and others round out the total health-care team.

The comprehensive care offered at the Hospital and Clinics means patients are seen by many health providers, including residents and upper-level students. "The good news," says John Cochran, associate director of professional services, "is that all these people work together to resolve the patients' health problems."

Patients are assured that an expert in virtually every medical specialty — from anesthesiology to urology — is physically present 24 hours a day. When a patient at the University Hospital and Clinics needs a cardiologist, the only one available isn't out on the golf course.

TO MAKE A PATIENT'S STAY as pleasant as possible, the Hospital is in the midst



With the endothelial specular microscope, ophthalmologists can view cells lining the cornea. It helps them diagnose eye problems and determine probable success of surgery.

of a planned five-year, $10 million renovation effort. A warm, welcoming earth-toned climate combines aesthetics and efficiency. Brown, gold and orange horizontal graphics line the corridor walls, and carpeted floors and lower walls are trimmed with native Missouri oak handrails.

A recent patient survey indicated certain homelike amenities and personal service rank second to competent physicians and nursing care. "People aren't willing to accept a sterile, cold, institutional appearance," Smith says, "and we don't intend to provide one."

While renovations bring welcome change to both patients and hospital staff, the underlying reason concerns the bottom line: "We must be able to compete with private practice and private hospitals," Smith says. A common misconception is that the Hospital is state-supported. Not so. Only 20 percent of its $60 million budget is funded by the state government, he says. That amount covers teaching costs (including salaries of residents) and the care of patients who cannot pay for all, or part, of their medical costs. With declining state revenues, however, that funded portion is likely to shrink, making it even more important that the Hospital's services and facilities appeal to every range of society.

ANOTHER MISCONCEPTION is that it's a hospital for indigents. "We do carry that responsibility," Smith says, "but it's not our only role. Less than 10 percent of our patients fall into that category. Most of our patients are from the middle class." In a year's time, there are 20,000 who use the emergency room, 130,000 seen as outpatients and another 12,000 who are admitted as patients.

At the Hospital, renovation of patient rooms combines the comforts of home with space-age technology. In an attempt to approximate normalcy for the patient, a room with coordinated curtains, carpeting and bedspreads includes a bedside phone and color television. Private bathing and toilet facilities are provided, along with the patient's own wardrobe. An attractive clock hangs on the wall and a bulletin board holds cards from well-wishers.

IN A SEMI-PRIVATE ROOM, a built-in wall unit between the two beds is the patient's efficient and safe line to high technology. This is the source from which oxygen, suction, monitors and the nurse-call system are powered.

The nurse-call system allows two-way communication between the patient and the nurses' station. The computerized system also has a built-in memory and nurse locator function, all of which give the patient a response to his needs and problems, says Jim Shedno, associate hospital director for support services.

Another example of how technology will help health professionals deliver better care is the Hospital's computer system, now being installed. Once a common denominator of patient information is plugged into the system upon admission, it will be available through computer terminals in various service units. For example, the computer might alert radiology that a patient needs an X-ray before his surgery the following day. Or, a dietitian could use the information to profile a young patient and decide that, within nutritional limits, the youngster might enjoy a hot dog and french fries more than veal parmigiana.

A sophisticated combination of computer and X-ray equipment has revolutionized the way diagnoses are made and, in some cases, eliminates the need for exploratory surgery. "When a computed tomography scanner is available," Cochran says, "the need for exploratory surgery of the body drops by as much as 10 percent." The whole-body scanner obtains cross-sectional X-ray views of body structures and uses a computer to

assemble the detailed images on a video screen. Because the computer stores a large amount of information, it can reformat the image from different perspectives without re-exposing the patient to X-rays.

ANOTHER COMPUTER-LINKED wonder is an endothelial specular microscope, one of only 18 such microscopes in the nation. The microscope, an attached computer terminal and television screen enable ophthalmologists to view endothelial cells lining the cornea. This capability helps diagnose eye problems, determine appropriate surgery and its probable success, and after surgery, know how the procedure affected the cells.

Before the microscope was available, a cornea from a deceased elderly person wouldn't even have been considered for transplant because age decreases the amount of nonreproducible corneal endothelial cells. With the microscope, several older corneas have been found acceptable for transplant.

Several new tools also are at the surgeon's fingertips. One is the Shaw hot scalpel that cuts and seals blood vessels in one step. Other scalpels only cut vessels, which are then either cauterized or clamped and tied off. The tool is especially good for burns, ulcers, mastectomies or any operation involving a lot of blood vessels. It reduces blood loss, operating time and anesthesia time.

Another new tool is the laser scalpel that acts by vaporizing tissue without disturbing cells around it. Since human tissue is more than 90 percent water, when the high energy, monochromatic beam of light is focused on a "wet" tumor or diseased tissue, it simply vaporizes. With the laser scalpel, doctors can operate better, faster and with less trauma to the patient.

A NEW TECHNIQUE for treating heart disease, especially for patients who need to avoid major coronary surgery, is known as transluminal angioplasty. This procedure, says Verne Singleton, assistant director of professional services, removes deposits from clogged areas of cardiac arteries and improves patients' circulation without surgery.

When cardiac patients no longer need intensive care, they're moved to a less expensive, more homelike setting where monitoring continues with a radio telemetry system that doesn't limit their mobility. "It used to be after a heart attack, patients were confined to bed, making them feel like invalids even though they didn't 'feel' sick," Shedno says. "They're no longer connected to an umbilical cord."

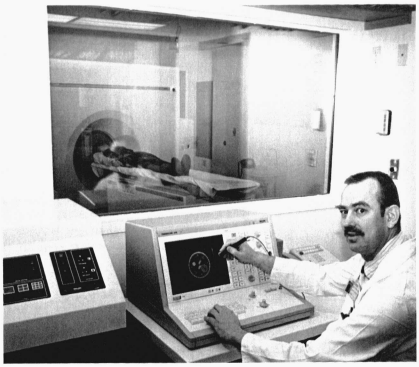
The Hospital and Clinics is one of a few Missouri hospitals that features an I.V. therapy team. This specially trained group of nurses, responsible for insertion and removal of intravenous medication and nutrition, reduces the incidence of I.V. complications, Cochran says, and assures a high level of service to the patient.

Another innovation in medication delivery is the Hospital's satellite pharmacies, located on each floor. The move facilitates physician-pharmacist communication about possible choices of drug therapies, reduces medication problems and provides excellent medical records.

NEW THIS YEAR, too, is the Birthing Room, where expectant parents can have their baby in a homelike atmosphere that's close to medical resources if needed, and the designation of the Hospital Emergency Service as a Level I Trauma Center for Central Missouri, one of four in the state, because the hospital meets criteria for providing around-the-clock treatment for severely injured victims.

This is the University of Missouri Hospital and Clinics — where nationally respected professionals practice state-of-the-art medicine with a personal touch.

— *Karen Worley*



The need for exploratory surgery drops 10 percent when a computed tomography scanner is available. Here Dr. Richard Tully mans the controls.