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At MCP Hospital, self-examination

By Andrea Gerlin
INQUIRER STAFF WRITER

The Medical College of Pennsylvania Hospital is constantly striving to limit medical errors and improve patient care, said Stanley Trooskin, a trauma surgeon.

Trooskin, the hospital's chief of surgery and medical director, cites an array of performance measures and improvement programs used at MCP.

"You get the expectation that you can't make an error because the stakes are high," Trooskin said in an interview. "From the patient's point of view, you can't make an error."

Facing that pressure, he said the hospital closely monitors how patients fare and seeks to correct the problems it identifies. The process begins with the staff reporting errors to hospital officials, but that is not always easy, Trooskin said.

"It's going to depend on the environment for reporting," he said. "It is very rare to have this kind of openness because people don't want to get up and share an error and say, 'This is what I did wrong.'"

"You can't admit an error. You'll lose your practice. Nobody wants to admit an error. The public wants you to be perfect."

Aware of this climate, Trooskin, who arrived at MCP in 1993, said the hospital provides opportunities for staff to report and analyze anything that goes wrong. "There are a lot of different layers that make sure that it's going to get reported," he said.

Every week, departments hold hour-long meetings known as "morbidity and mortality" conferences. There, attending and resident doctors gather to privately go over unexpected results, a process that Trooskin said can be "a little unnerving."

At MCP's surgery conferences, Trooskin said, cases are reviewed with the help of a "report card" devised in the last year. The report cards are filled out by residents, who designate the type and severity of problems and whether outcomes were predicted. They also note what corrective actions were taken.

"We can pick up systems problems and get them solved," Trooskin said.

The most serious cases are brought to the attention of the peer review committee, a group of MCP physicians who scrutinize problems in patient care. The peer review committee has power to place information in files that the hospital keeps on doctors' performance.

Trooskin said he tries to balance the tension between reporting to the committee and maintaining openness at his department's weekly conferences.

"I want to create an atmosphere in morbidity and mortality conferences where [doctors] don't think everything will go into their credentialing file," he said. "It's important to strike a balance in fixing systems problems and preventing errors and not totally scaring everyone."

In addition to internal controls such as these, Trooskin said, the hospital receives plenty of outside oversight. He pointed to his own program, the trauma service, which is reviewed every three years by the Pennsylvania Trauma System Foundation.

The trauma foundation certifies state trauma centers. During its surveys, it examines records of patients who died within a designated period. It looks at details such as response time and critiques the ways that patient care was managed. It can act harshly if it does not like what it finds.

Adhering to the foundation's regulations "has to be done or they'll come in and take the sign down," Trooskin said.

If a physician is noted to have made the same error repeatedly, Trooskin approaches him or her.

"You sit down with a colleague and say maybe you should try to do it this way," he said. Sensitively handling such a conversation can frequently improve the doctor's performance, Trooskin said.

Trooskin, 50, is responsible for the hospital's quality-assurance program and said that role is a priority for him. Four years ago, he read about a patient at University Community Hospital in Tampa, Fla., who had the wrong leg amputated.

The surgeon, whose license was suspended, was a respected colleague with whom he had trained at New York University-Bellevue Hospital.

"I was shocked when I picked up the newspaper and saw his name," Trooskin said.

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A leader in studying medical errors

Lucian Leape published the "Harvard Medical Practice Study" in the New England Journal of Medicine in 1991 and "Error in Medicine" in the Journal of the American Medical Association in 1995. In congressional testimony in 1997, he estimated that 120,000 people in the United States die each year as a result of hospital errors.

Rather than being ostracized, Leape has won respect for raising issues that his peers overlooked.

Leape, 69, was a pediatric surgeon for more than 20 years. He has published 130 articles in medical journals, including 50 on error and prevention, and now frequently addresses medicine's most orthodox groups. He is on the board of the National Patient Safety Foundation, an American Medical Association-led group.

Foundation president Nancy W. Dickey, who was AMA president until June, said Leape's work has heightened awareness: "It may just be that the Lucian Leapes of the world have finally gotten enough data to wake people up."

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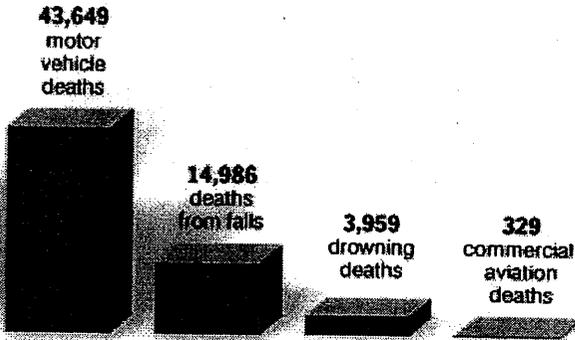
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Accidental Deaths in the U.S.

An estimated one million people are injured by errors during hospital treatment each year and 120,000 people die as a result of those injuries, according to a study led by Lucian Leape of the Harvard School of Public Health. Here's how that number compares with other causes of accidental death in the United States*

*SOURCE: (for accidental deaths shown in bars) National Safety Council. Data are for 1996.
KEVIN BLARETT / Inquirer Staff/Arts



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For a systemic problem, no easy fix

Part 2 of a four-part series

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By **Andrea Gerlin**
INQUIRER STAFF WRITER



As most Americans would, more than 30,000 patients who were admitted to 51 of the hospitals in New York state in a single year expected that the finest health-care system in the world would provide them every chance of recovery.

For some, the reality was otherwise: 1,133 of the patients suffered injuries caused by medical errors - not their underlying medical conditions. Of those, 154 died from the injuries.

Lucian Leape of the Harvard School of Public Health says that up to one million people are injured by errors in hospital treatment yearly, and that 120,000 people die from those injuries. (AP Photo / Julia Malakie)

Put another way, one of every 200 of the patients admitted to a hospital ended up dead because of a hospital mistake.

Those were among the key findings of the "Harvard Medical Practice Study," published in 1991 in the New England Journal of Medicine. It remains the most comprehensive and rigorous examination of hospital errors ever, while data supporting the findings throughout the country continue to mount.

"The facts are, we commit thousands of errors every week nationally," said David Nash, associate dean and director of the Office of Health Policy and Clinical Outcomes at Thomas Jefferson University.

"People get killed every day in hospitals," said Bertrand Bell, a professor at Albert Einstein College of Medicine in New York. "This goes on in every hospital in the United States. The public doesn't see it at all."

In interviews, top doctors at the University of Pennsylvania, Thomas Jefferson University, Harvard Medical School, Stanford University School of Medicine, the University of California at Los Angeles, and Albert Einstein College of Medicine in New York, said that medical errors are a serious and common problem at hospitals across the country. One reason, they say, is that the culture of medicine is founded on unattainable standards of perfection, and those ideals are reinforced by public expectations.

"The country spends an awful lot of money making sure cars and airplanes are safe," said David Gaba, a physician and professor at Stanford University. "But this is an issue that's been somewhat hidden because when there's a problem, it's not 100, it's one or two."

Lucian Leape, a pediatric surgeon and adjunct professor of health policy at the Harvard School of Public Health, who led the 1991 study, said those seemingly small numbers add up to one million people being injured by errors in hospital treatment every year - and 120,000 people dying as a result of those injuries.

"Health care is a huge industry, and injury is its number one problem," Leape said. "There's an incredibly long way to go."

When the Harvard study was published, it received little public attention. But organized medicine went on the defensive. The American Hospital Association disputed the conclusions. The American Medical Association attacked the researchers' methods and findings.

But as the decade has progressed, and as the public has shown declining confidence in the health-care system, the associations have changed course, and now frequently cite the work of Leape and his colleagues. The American Hospital Association even made medical-error reduction one of its top two quality initiatives for 1999.

"Most hospitals have systems in place, particularly in terms of medication, to make sure errors do not occur," said Jack Lord, chief operating officer of the AHA and a forensic pathologist. "There are clearly initiatives under way. Is there better coordination that could be done? Yes."

Nancy W. Dickey, a family physician who completed her term as president of the AMA in June, said: "We still believe that health care is extremely safe in this country when you consider the millions of interactions every year. However, it could be better. It could have better controls to prevent mistakes."

Medication mistakes represent a leading category of hospital errors, accounting for 19.4 percent of the adverse events in the Harvard study. Among the drugs most frequently at the center of medication errors are insulin, blood thinners and chemotherapy drugs. They are commonly prescribed in chronic conditions that can lead to hospitalization, and have lethal potential.

The largest number of errors - 48 percent - resulted from surgical treatment. By its very nature, surgery carries risks, some unforeseen and others preventable. Technical mistakes during surgery and wound infections afterward each accounted for roughly 13 percent of the adverse events identified in the study.

The Inquirer reported yesterday that internal records from the Medical College of Pennsylvania Hospital documented 598 incidents in which mistakes were suspected from January 1989 through June 1998. The confidential information became public as the result of a bankruptcy proceeding involving MCP's former owner. The hospital's experience reflects the events at hospitals across the country, according to national studies.

The Harvard study found that, on average, there was a 3.7 percent medical error rate at the hospitals in its sample. Other studies have found that only 5 percent to 10 percent of all medical errors are reported to hospital administrators; the remaining 90 percent to 95 percent go unreported.

At MCP, 140,000 patients were admitted during the period covered in the records. Based on an average error rate of 3.7 percent, 5,180 patients would be predicted to have experienced errors. The MCP records document 598 incidents. That represents about 12 percent of the predicted number of errors, which is consistent with the expectation that 5 to 10 percent of all errors are reported.

In addition, studies in New York and California have found that hospitals are sued for 2 to 10 percent of their medical errors. On that basis, MCP would be predicted to have faced from 100 to 500 malpractice lawsuits during the decade. The actual number of lawsuits was 266.

One study, published in part in 1997 in the journal *Law and Contemporary Problems*, found an overall error rate of 3 percent among 15,000 patients admitted to hospitals in Utah and Colorado. Another study, published in 1995 in the *Journal*

of the American Medical Association, found that medication errors occurred in the care of 7 percent of patients at Massachusetts General Hospital and Brigham and Women's Hospital, major teaching hospitals in Boston.

The Harvard study examined the records of 30,121 randomly selected patients hospitalized in New York in 1984. Among the adverse events it found, 27.6 percent were judged as having been due to negligence, and 13.6 percent led to death. Adverse events were defined as injuries caused by medical management, not the underlying condition, that lengthened hospitalization or resulted in a disability upon discharge.

Doctors interviewed at leading medical centers agreed that hospital error rates could be reduced significantly. The steps would not be easy, they say. The change would have to be broad-based, requiring the medical profession to overhaul its culture and encourage openness about its limits. In addition, hospitals and the medical profession would have to use new technology and systems that have made improvement possible in other industries. And hospitals and doctors would have to develop more effective means of policing medical errors.

Harvard's Leape recalls that the late W. Edwards Deming, a pioneer in developing systems to improve industrial quality, told him that even a 99.9 percent proficiency rate was unacceptable in most industries. It would result in two unsafe airplane landings a day at Chicago's O'Hare airport; 16,000 pieces of lost mail every hour; and 32,000 checks deducted from the wrong bank account every hour. Assuming that rate could be achieved in health care, it would still leave thousands of patients dead each year as the result of medical error.

Paul H. O'Neill, chairman of aluminum producer Alcoa and chairman of RAND Corp., a California think tank, spent 10 years in the White House developing health-care policy during the Johnson, Nixon and Ford administrations. O'Neill said in an interview that the error rate in hospitals could be reduced substantially.

"If we decided as a nation that we were going to have a 90 percent or 95 percent improvement in outcomes as far as patient errors were concerned, we could," O'Neill said.

Bell, the Einstein professor, practices medicine at Jacobi Medical Center. He said he is so aware of the potential for medical error at hospitals that he once left a stern warning for residents in the medical record of a patient whom he had admitted.

"I put in the chart: 'DO NOT KILL MR. CROOKS.'" Bell said the warning was not sufficient. Though medical residents did not kill the patient, they mistakenly gave him insulin, which caused a seizure. "They put him into hypoglycemic shock," Bell said. "I'll admit somebody to the hospital, and they'll do all sorts of things. This is at my own hospital!"

Gaba, director of the Patient Safety Center of Inquiry at the Veterans Administration Health Services Center in Palo Alto, Calif., and an associate professor of anesthesiology at Stanford University School of Medicine, said his institution is no different from others. "The problems we have, in terms of suboptimal care, are the same as everywhere else," Gaba said.

Michael Cohen spent 14 years as a pharmacist at Temple University Hospital and Quakertown Hospital. Today he is the full-time president of the Institute for Safe Medication Practices, a small nonprofit organization based in Huntingdon Valley. His group collects 50 to 60 confidential reports of drug errors each month and sends weekly alerts to 5,800 hospital pharmacies around the country.

Cohen got started in the field after a dire episode while he was at Temple in 1975. "A patient was killed by an insulin order," he said. In that case, Cohen said, the doctor wrote a prescription for 6 units of insulin, abbreviating "units" to the letter "u." The letter was read as a zero in the pharmacy, and the patient received 60 units of

insulin, or 10 times the proper dose.

The reasons that mistakes occur are multiple and complex. Errors were a problem long before managed-care pressures led to cutbacks at hospitals in the last decade.

Many doctors point out that given the number of opportunities they have to err, it is remarkable that more mistakes do not occur. A study presented at a 1989 conference in Denver found that 178 "activities" were performed each day on the average patient in an intensive-care unit, with 1.7 errors occurring, or a 1 percent daily rate.

Many mistakes have what in retrospect seem to be simple origins in poorly designed systems, experts say. Patient care becomes fragmented as doctors and nurses change shifts or more consultants join the treatment team, multiplying the risk of communication breakdowns. Different medications may come in similar packages or have similar names. Handwritten prescriptions and medical charts are frequently illegible.

"People die of penmanship errors," said Arthur Caplan, director of the Center for Bioethics at the University of Pennsylvania Health System. "Anybody who thinks that a system that keeps paper records in script is ready to deal with error is dreaming. You've got a 19th-century Charles Dickens system in an era of high technology."

Almost uniformly, doctors and researchers cite an unrealistic and less than honest culture among medical professionals as the single most important factor that contributes to errors.

Beginning in medical school, the culture of medicine discourages acknowledging mistakes, asking for assistance, exhibiting any weakness, or challenging a supervisor. In medicine's carefully ordered hierarchy, admitting or pointing out a mistake is frowned upon.

Doctors have traditionally dealt with errors at teaching hospitals' weekly "morbidity and mortality" conferences. They gather in confidential settings - with legal protection provided by state laws - to discuss among themselves what went wrong in the care of patients who died or suffered complications.

The pressure under which doctors and nurses work, deprived of sleep and motivated by fear of making mistakes, can actually increase the chances that they will make errors. "It's well-known that people are more likely to make mistakes when they're tired, overworked, hungry, bored, anxious, frightened, in a hurry, and under pressure from above," Leape said.

In addition, there is little incentive for hospitals to acknowledge and deal with the problem of medical errors.

Hospital executives, for example, face business pressures to deny the occurrence of medical errors, lest they be sued and have to pay for them. As in most other fields, colleagues are usually reluctant to say anything negative about their peers - especially to outsiders - while subordinates such as residents or nurses fear retribution. Lawsuits that are settled after serious errors are almost always resolved quietly in exchange for confidentiality agreements to avoid adverse publicity.

"It's a cultural barrier we have to overcome to talk about our defects," said Nash, the health policy director at Thomas Jefferson University. "What do hospitals do with their risk-management reports? We bury them as fast as possible."



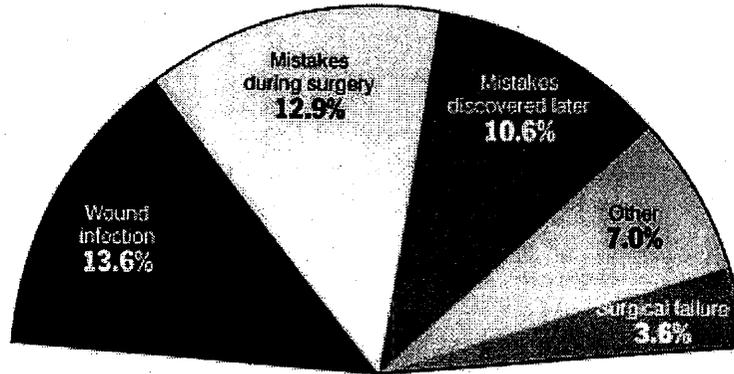
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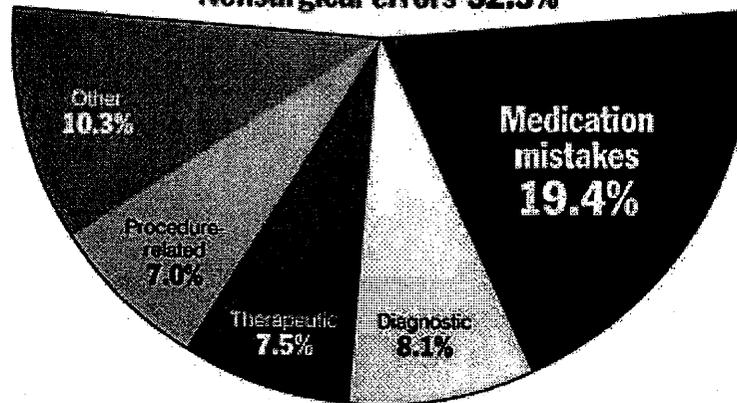
Types of Medical Errors

A Harvard study in the New England Journal of Medicine, which analyzed the medical records of 30,121 patients in New York, found these types of medical errors:

Surgical errors 47.7%



Nonsurgical errors 52.3%



Drug-Related Errors

In a separate study of 696 medication mistakes published in 1997 in the Journal of the American Medical Association, overdose was found to be the most common type of drug-related error.

Error type	Number	Percentage
Overdose	291	41.8%
Underdose	115	16.5%
Allergic reaction	90	12.9%
Dosage form	81	11.6%
Wrong drug	36	5.0%
Duplicate therapy	35	5.0%
Wrong route	23	3.3%
Wrong patient	3	0.4%
Other	29	3.3%

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If You Go to the Hospital

■ **Try to avoid going alone.** A friend or relative is legally permitted to accompany you 24 hours a day, as long as they do not hinder the ability to provide your care.

■ **Check all medications that come to your bedside,** including the color, size, and any changes you notice. Don't be afraid to ask your nurse about each medication being given. If anything is different, ask why the prescription was changed and who ordered the change.

■ **Make sure that staff members who come in contact with you wash their hands** or change their gloves when they visit you. As many as half of hospital-acquired infections may be due to staff not washing their hands.

■ **Monitor your catheter two or three times daily** to make sure that it is draining properly. Malfunctioning catheters can be

a source of hospital-acquired infections.

■ **Inspect surgical wounds** and make sure the dressings are changed regularly. If you notice oozing or color changes, don't hesitate to inform a nurse.

■ **Question personnel who transport you** or perform any tests, such as blood tests or X-rays. Ask why they are conducting the test and how often it needs to be done.

■ **Ask your nurse to review your previous day's medical record** with you every morning. Check that diagnoses reflect what your doctor has told you and that doctors' visits, tests and medications are accurately documented.

■ **If in doubt, seek an independent second opinion** at another institution. Use your mouth. You don't have to be obnoxious but you can be forthright. People who speak up tend to get the best care.

SOURCE: *Take This Book to the Hospital With You*, by Charles Inlander of the People's Medical Society

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Mum is often the word when caregivers stumble

Part 3 of a four-part series

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By Andrea Gerlin
INQUIRER STAFF WRITER



Doctors at the Medical College of Pennsylvania Hospital made a mistake three years ago when they performed a procedure on the right side of Morton Tarason's chest: The problem they were attempting to fix was on the left side of Tarason's chest.

The incident was properly reported to MCP administrators, who earmarked \$7,500 in estimated damages in case the episode came to light and the 79-year-old Tarason or his family filed a claim or lawsuit.

At the Veterans Affairs Medical Center in Lexington, Ky., Connie Johnson (left), Steven Kraman and Ginny Hamm oversee a policy of seeking out victims of medical errors. (Mark Cornelson / For The Inquirer)

The administrators need not have worried about that. No one from the hospital ever informed the patient or the family that the hospital had made the mistake.

"I was not told that it was done on the wrong lung and that he had to go back for a second procedure," said Tarason's daughter, Lynne Jaffe, who lived with her father in Bensalem. She learned about the mistake when The Inquirer asked about her father's medical treatment at MCP and provided her with the information in the hospital's internal incident report.

Jaffe said that neither she, her father nor her brother, Rick Tarason, was told about the botched procedure. Jaffe said she was at the hospital with her father virtually round-the-clock during his illness.

"That would have been something I should have been told," she said.

Her father died three months later. It is unclear whether the unnecessary invasive procedure worsened his health. Tarason's family has not filed a lawsuit.

The hospital's current and former owners declined to discuss the treatment of specific patients, including Tarason.

The Inquirer has reported over the last two days that hundreds of patients suffer medical errors at hospitals across the country every day. One reason the problems persist is that medical professionals routinely do not tell patients or their families

about the errors. As a result, the public is effectively shielded from knowing about them.

In a study published in 1991 in the Journal of the American Medical Association, researchers at the University of California at San Francisco found that only 54 percent of medical residents discussed their mistakes with their attending doctors, who are legally and ethically responsible for them. Only 24 percent told the patients or families of the mistakes. The study confidentially surveyed 254 residents - doctors-in-training who have completed medical school - in three large internal medicine training programs that it did not identify.

Lenny Rosenfeld, vice president of quality management at Tenet Healthcare Corp., MCP's current owner, said: "We do not withhold information on these things. We deal with them appropriately." The hospital's former owner, the Allegheny health system, declined to comment.

In some cases, MCP patients or their families learned of errors only through an inadvertent disclosure by a hospital worker or after suspicions led them to contact lawyers who obtained medical records documenting the mistakes. In other cases, including the Tarasons', the family learned about mistakes when The Inquirer provided them with information in the hospital's own internal incident report obtained from Bankruptcy Court documents.

Professional medical associations are unequivocal about a doctor's responsibility to disclose errors to patients or relatives acting on their behalf. The American Medical Association's Council on Ethical and Judicial Affairs states in its ethics code:

"Situations occasionally occur in which a patient suffers significant medical complications that may have resulted from the physician's mistake or judgment. In these situations, the physician is ethically required to inform the patient of all facts necessary to ensure understanding of what has occurred. Concern regarding legal liability which might result following truthful disclosure should not affect the physician's honesty with a patient."

Many doctors say that guideline is routinely not followed.

"Welcome to the real world," said Frank Davidoff, a physician and editor of the Annals of Internal Medicine, the journal of the Philadelphia-based American College of Physicians. "There's a pull in a doctor's mind. Part of you feels obligated to tell the patient, part of you feels your own professional competence is at stake."

Sometimes doctors are untruthful with the lawyers and malpractice insurers defending them, said John Reed, director of the Pennsylvania Medical Professional Liability Catastrophe Loss Fund. "We've had cases where we made doctors pay [the settlement] out of their own pocket because they lied to us," he said.

Doctors commonly contact hospital risk managers - lawyers and administrators who seek to limit error and accompanying liability - after mistakes occur to seek advice on what to tell patients or relatives.

William N. Kelley, chief executive officer of the University of Pennsylvania Health System, said the system's risk-management team gets involved when mistakes are made. He said the Penn system expects its staff to be honest. "I can't guarantee it happens 100 percent of the time, but that's the intent," Kelley said.

Howard Grant, a pediatrician and lawyer who is chief medical officer of the Temple University Health System, said Temple encourages its staff to be truthful with patients. He added, "You always discuss situations with risk management."

Stanley Trooskin, chief of surgery and medical director at MCP Hospital, said MCP has a 24-hour risk-management hotline for employees to report errors.

He said that whether doctors tell patients about errors "is going to depend on the individual." He added, "I think that you have to be honest. It's not good for the lawsuit, but you have to be as honest as possible. Lawyers wouldn't want you to be honest."

A chest scan overlooked

until after a patient's death

After 78-year-old Emilio Devico underwent a triple bypass at MCP Hospital in September 1997, he developed complications, including an adverse drug reaction, a bowel hernia, and a wound infection. After making progress, Devico was weaned a week later from a ventilator that was helping him breathe. His breathing difficulties returned, and he died that day.

A week before he died, Devico had undergone a chest scan. According to internal hospital records, no one looked at the results of the scan until *after* Devico died. The scan offered at least one clue explaining why Devico might have been struggling: He had a blood clot in his inferior vena cava, a large vein that brings blood from the lower body back into the heart.

That no one had read the scan while Devico was alive came as news to Devico's son Anthony, who had power of attorney for his father, and said he was told that everything possible had been done to save his father.

"They never told me that he had a clot," Anthony Devico said. "This is the first time I'm hearing about it."

Emilio Devico had so many ups and downs following his surgery that his son said he became suspicious and returned to MCP Hospital the day after his father died to get a copy of his father's medical records. A clerk told Anthony Devico that the records were not available, he said. He said he returned two days later, threatened to bring a lawyer, and the hospital provided him with the records. They charged him \$900 for the copies. The hospital currently charges 25 cents a page for copy requests exceeding 60 pages, a Tenet spokesman said.

Devico has not filed a lawsuit.

Equipment with a defect

causes a delay in treatment

Pauline Langhuber, 62, went into cardiac arrest at MCP Hospital's dialysis center in March 1997. According to the hospital's internal report, a paddle on the center's defibrillator, which is used to jump-start the heart's electrical activity, would not come off its base.

A staff member had to get another machine from the emergency room, and Langhuber was revived after an estimated 10 to 15 minutes. She underwent an emergency cardiac catheterization, after which she remained unresponsive, having suffered severe brain damage. It is unclear whether the delay caused the brain damage.

An attendant in the dialysis center, who witnessed the resuscitation, told Pauline Langhuber's husband about the defective machine, said her brother, Edward Brosz. Her husband, Carl, approached hospital officials, who agreed that something had gone wrong but refused to acknowledge that the defibrillator was defective.

"They were not forthcoming," Carl Langhuber said.

The hospital's internal report is entirely consistent with the account that the dialysis attendant gave Carl Langhuber. It says that the defibrillator paddle could not be removed from its base and that a second machine had to be obtained from the ER.

Langhuber has not filed a lawsuit.

A patient cannot be connected

to resuscitation equipment

MCP internal records note that Howard Ferguson could not be connected to resuscitation equipment when he developed breathing problems in the cardiac-care unit in April 1997.

The polio that Ferguson, 74, contracted in the 1950s required him to have a tracheostomy, an opening directly into the windpipe that enabled him to breathe. His widow, Elaine, said the "trache" attachment was metal, which permitted him to talk.

The metal attachment was in place after Ferguson underwent a coronary artery bypass and valve replacement at MCP Hospital two years ago. Afterward, he developed shortness of breath and a slowed heartbeat. According to the hospital's insurance report, nurses in the cardiac-care unit could not assist his breathing because a manual-ventilation "ambubag" cannot be connected to a metal attachment.

Ferguson went into cardiac arrest and died.

Elaine Ferguson said no one at MCP ever told her what happened before her husband died.

"That was not explained to me," she said after she was told about the information in the hospital's internal incident report.

Ferguson, a registered nurse, said she was aware of the metal attachment's limitations but was never told that a problem had developed in connecting the ambubag. She said she had assumed that nurses had switched her husband in an instant to an alternative plastic trache attachment known as a "Shiley." She now suspects that the CCU crash cart lacked the plastic attachment, which is commonly used in hospitals and could have been rapidly connected to the ambubag had it been available.

"They should have had a Shiley on the cart," she said. "Nursing personnel could put it in, if they had one, in five seconds."

Ferguson has not filed a lawsuit.

Numbness develops when a bar

impinges on a patient's nerve roots

Nancy Rowbottom was taken to MCP Hospital after she broke her pelvis in a car accident in 1996. An orthopedic surgeon there put two bars in the region where her lower spine joined her pelvis. After the surgery, she developed numbness in the area. The 32-year-old Rowbottom said it remains a "horrible" impediment, and she expects it will continue for the rest of her life.

She asked the surgeon whether the bars caused the problem. She said his account was "sketchy" and that he had said that he had checked a scan and did not see the

bars putting pressure on nerves. "He blamed it more on the accident," Rowbottom said. "I didn't really believe him at the time."

Rowbottom did not learn that her skepticism had been justified until she was told about the information in the hospital's insurance report. The entry indicated that she had developed the numbness "as a result of sacral bar impinging on nerve roots."

The statute of limitations

sometimes is extended

Under Pennsylvania law, plaintiffs in malpractice cases have two years to file suit or they forfeit the right to sue. In some circumstances, hospitals or doctors who withhold information can be legally vulnerable beyond the two-year statute of limitations.

Clifford Rieders is a lawyer from Williamsport, Pa., who has researched the statute of limitations in medical malpractice cases. "Where a person in the exercise of reasonable diligence did not know or could not know that they were harmed, the statute of limitations is extended so it's two years from when they found out they were harmed," Rieders said.

The law is clearer in cases where information has been fraudulently concealed from patients, Rieders said.

However, it is usually difficult for patients to prove what they were not told. Most state laws - including Pennsylvania's - consider the information contained in internal hospital reviews of physicians' competency as "privileged" and unavailable to patients or the public.

Internal records of medical errors at MCP were made public last year when Tenet Healthcare Corp., which purchased the hospital from the Allegheny health system, included them in documents filed in U.S. Bankruptcy Court in Pittsburgh.

It is unclear how many MCP Hospital patients or their families were not told the truth about their treatment. Of the 598 entries recorded in the hospital's 10-year insurance report, 154 were "closed" as of June 30, 1998, the date of the report. Of the closed incidents, 140 were resolved - according to the report - because the statute of limitations had expired.

Frank Donahue, Inquirer news researcher, and Sally Downey, Inquirer editorial assistant, contributed to this article.

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Accepting responsibility, by policy

By Andrea Gerlin
INQUIRER STAFF WRITER

The Veterans Affairs Medical Center in Lexington, Ky., handles medical errors differently from most hospitals.

The 400-bed hospital does not simply encourage its staff to tell patients and their families the truth about errors. It has a tough policy that requires giving the information as soon as possible by aggressively seeking out patients and families, even after discharge if necessary. Beyond that, hospital employees persuade the occasional reluctant victim to accept financial compensation.

"Almost every risk manager and attorney says, 'We always tell the truth,'" said Steven Kraman, the hospital's chief of staff and chairman of its risk-management committee. "But I don't know of any other hospital that goes out and calls the family when there's been an error."

Is the VA Medical Center inviting its patients to sue it into oblivion? Not really, hospital officials say. Rather, they say, they are just accepting responsibility when they are at fault.

"Telling the truth is the right thing to do," said Connie Johnson, a clinical analyst and quality assurance nurse at the hospital.

"The attorneys around here in Lexington used to think we were crazy," said Ginny Hamm, the hospital's lawyer. "But we have an ultimate responsibility to the veterans and their families."

The VA hospital in Kentucky has learned that doing the right thing can also mean saving money. By going out of its way to be open and honest with patients and their families, the hospital has found that it is minimizing its legal exposure because families are not as angry when they learn of a medical error.

Leonard J. Marcus, director of the Program for Health Care Negotiation and Conflict Resolution at the Harvard School of Public Health, has analyzed malpractice mediation sessions in an effort to determine what plaintiffs really want.

Marcus concluded that most patients who are harmed by medical errors want three things: an explanation of what happened; an apology from whoever was responsible; and an assurance that changes have been made to prevent harm from being done to someone else. Money seems to be a distant concern.

Lexington VA officials may have found a way out of the litigation thicket using this approach. The hospital's average total payout for settlements has been about \$180,000 a year over the last decade, on eight to 10 cases in a typical year. The hospital has reduced its claims payments from among the highest in the 178-hospital VA system to one of the lowest.

Hospital officials admit that they arrived at that point painfully. In 1986, the hospital lost two malpractice lawsuits at trial, costing it a total of \$1.5 million in awards. For a government facility that primarily treats older patients, whose claims usually result in lower damages, that was an eye-opening sum. Kraman was a defendant in one of the cases and said the outcomes forever changed the hospital's approach.

Hospital officials now begin assembling dossiers and taking testimony soon after incidents. Hamm said that as soon as they determine that a mistake has occurred, they notify the patient or family members. If they believe harm has been done, rather than evade the truth in an attempt to avoid liability, they advise the family to hire a lawyer and they seek to quickly resolve the problem with a fair settlement.

That is what they are doing with Lloyd Brown, a 77-year-old veteran from Stanford, Ky. Last year, he temporarily lost sight in his right eye. Brown had previously lost most of the vision in his other eye to a cataract. His wife, Martha, said she called the VA's triage hotline and left a message with a receptionist describing the episode. No one ever called the Browns back because some messages were not being relayed by the triage hotline.

Two more episodes and six weeks later, they went to the medical center. A doctor there told them that an artery in the right side of Lloyd Brown's neck had closed due to a stroke and that he would be permanently blind in the affected eye. Worse, none of that had to happen.

"They said that if we'd gotten it within four hours they could have saved the eye," Martha Brown said. "We didn't think about seeing a lawyer."

Three months later they received a letter from the hospital advising them to get a lawyer so they could begin discussing a settlement, which is pending. Kraman said the couple, touched by having been dealt with honestly, became teary-eyed at the meeting during which the hospital acknowledged its mistake.

VA officials have also been helping Lloyd Brown obtain full disability benefits. The Browns are impressed: Lloyd Brown even returned to the medical center this spring for treatment of a heart problem.

"We think a lot of them," Martha Brown said. "They're taking responsibility. I never had experience with it, but I've never heard of a hospital admitting a mistake."

Kraman said the hospital drills its policy into its staff, especially the residents who train there, seeking to create a culture in which mistakes are acknowledged and lead to changes that prevent recurrences. Some of the ethics seminars that it has held for employees have featured patients who were injured by treatment at the hospital, explaining how honesty reinforced rather than undermined their trust.

As obvious as this approach seems, there are reasons that a VA hospital can use it and that other hospitals will be slower to follow. As government facilities, the VA's liability is limited under the federal Tort Claims Act. Its hospitals are self-insured and its physicians are employees, and do not pay higher malpractice insurance premiums after a costly settlement.

Still, Kraman and his colleagues argue that their approach should be a model for other institutions.

"If everybody did this nationwide, every patient who was injured would get fair compensation, the lawyers would get nothing, and you wouldn't see \$12 million verdicts," Kraman said.



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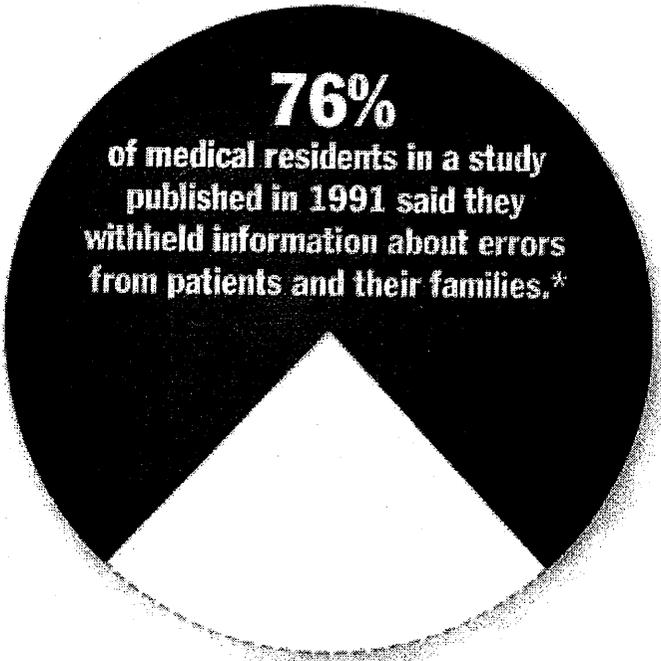
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SOURCE: Journal of the American Medical Association
 *From a survey by researchers at the University of California at San Francisco of 254 internal medicine residents at three unidentified training programs.

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Cause and Effect

Here's how 254 residents responded when asked what caused medical errors and how they changed practices after the errors occurred.

Perceived causes

Personal factors	
Lack of knowledge	54%
Not enough experience	42
Did not ask for advice	33

Job overload	
Too many other responsibilities	51%
Fatigue	41

Faulty judgment	
Misread warning signs	50%
Unusual case	39
Very complex case	38
Hesitated too long	32

Changes in practice

Constructive changes	
Pay more attention to detail	82%
Personally confirm data	72
Seek more advice	62
Ask peers	60
Ask superiors	56
Read	54
Change organization of data	62
Trust others' judgment less	49
Ask for references	26

Defensive changes	
Keep mistakes to self	13%
Avoid similar patients	6

SOURCE: Journal of the American Medical Association, 1991

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Bertrand Bell is a professor at Albert Einstein College of Medicine in New York.

**By Andrea Gerlin
INQUIRER STAFF WRITER**

The nation's health-care industry is making small-scale efforts to address medical errors in hospital care.

New training programs, some of which include the use of simulation devices, have been put in place at some medical centers to focus on avoiding errors.

Systems are being developed to encourage medical professionals to report errors.

Information technology has become available to reduce the risk that hospital patients will receive improper medication or treatment.

But these efforts have been limited, and there is no comprehensive initiative by the industry to minimize the occurrence of errors, despite growing data and warnings in recent years that have made the industry more aware of the high frequency of errors.

"I am puzzled that senior clinical leaders and boards of trustees seem not to understand the degree of opportunity for improvement," said Donald Berwick, president and chief executive officer of the Institute for Healthcare Improvement in Boston. "There's such a long list of areas that can be improved that you don't have to think hard."

A major factor in the health-care industry's lack of progress is its carefully guarded system of self-policing, an honor system that even insiders say is ineffective. At its roots is what doctors and researchers describe as a culture built around blame, in which medical professionals face intense pressure to deny or rationalize failure, lest they be ruined.

And little is being done to change that culture.

Though the health-care industry represents one of the largest sectors of the American economy, it has failed to strive for the higher standards required in comparable industries. Health care costs the country an estimated \$1.2 trillion a year and accounts for 14 percent of the gross domestic product. In Philadelphia, the industry is one of the largest sources of jobs.

In addition to injuries and deaths, the financial costs of medical errors are enormous. Testimony during a 1997 congressional hearing estimated that hospital mistakes cost the nation \$51 billion a year.

Though hospital executives, doctors and nurses complain about the burdens of regulations and licensing, in practice they have enjoyed a long and cherished tradition of autonomy when mistakes occur.

"It's very clear that the medical profession has been loath to police itself," said Jay Krakovitz, a physician and medical director for Aetna U.S. Healthcare's mid-Atlantic region.

"There is absolutely no reason for them to sweat," said Charles Inlander, president of the People's Medical Society, a health-care advocacy group in Allentown.

The result, according to Inlander: "This stuff just grows and grows, and they never correct these problems."

Most experts on medical errors view the prospect of a government crackdown as counterproductive. Punitive action, they say, will drive the problem further underground as hospitals and health-care professionals seek to avoid sanctions and shame by not reporting errors. That, in turn, would make it even harder to obtain information about errors and find solutions.

The focus on patient safety, they argue, should turn to the failure of systems, not individuals. Experts agree that there are incompetent and irresponsible health-care providers who should be held accountable, but they say that incompetent professionals are not the majority of those who make mistakes at patients' expense.

"If we could find a way to deal with error that didn't deal with so much individual accountability, we might do better in the long term in dealing with error," said David Blumenthal, a professor at Harvard Medical School and director of the Institute for Health Policy at Massachusetts General Hospital.

Accreditation visits

rarely come as a surprise

The task of monitoring the quality of hospital care has been led chiefly by a private group, the Joint Commission on Accreditation of Healthcare Organizations. The commission, based in Oakbrook Terrace, Ill., is an arm of five professional groups that also represent the interests of doctors, dentists and hospitals. In many states, hospitals must be accredited by the commission to receive reimbursement from government and private health plans, which gives the commission significant authority.

Joint Commission committees composed of doctors, dentists, nurses, pharmacists and hospital executives visit and survey the commission's 5,000 member hospitals in the nation every three years. Their visits to hospitals rarely come as a surprise.

Hospital administrators spend months readying their staffs for accreditation committee visits, directing them in memos on bulletin boards, meetings, internal newsletters, and on signs posted in corridors to assure optimal conditions when

the visitors arrive. In a report issued in July, the inspector general of the federal Department of Health and Human Services harshly criticized the commission's cozy relationship with the hospitals it accredits and its failure to aggressively monitor substandard care and incompetent doctors.

Julie Roberts, a commission spokeswoman, said hospitals are not required at the time of surveys to open their incident report files or inform the committees of medical errors. Rather, when serious incidents occur, she said, "We ask them to self-report. What we're doing is creating a database of errors."

What is in that database? After nearly five years, very little. Since the policy took effect in 1995, the commission has received fewer than 500 incident reports from 5,000 member hospitals. More than that number of errors, experts say, would be expected to occur in one large hospital in that period.

Hospitals do not send state health departments and licensing authorities any more information about errors. In the case of the Medical College of Pennsylvania Hospital, none of the most serious medical errors contained in the hospital's internal insurance report - those that led to death or permanent disability - was included in three years of reports that the health department provided to The Inquirer. No sanctions or fines were levied either.

The MCP internal report was made public in its former owner's Bankruptcy Court proceedings.

A health department spokeswoman said reporting requirements that took effect in June 1998 now require Pennsylvania hospitals to report 14 types of events that seriously jeopardize patient safety or lead to death. Among them are fatal medication errors, wrong-site surgery, and hemolytic reactions following blood transfusions.

She said the department cannot release figures for individual hospitals because the information is considered confidential. However, Philadelphia's 35 acute-care hospitals reported to the department one death and five other incidents during the year ended June 30, 1999.

New York state began requiring hospitals to report similar information to its Department of Health in 1993, in an effort to better understand the causes of errors. For 1995-1996, Montefiore Medical Center in New York City filed 469 patient event reports, and Mount Sinai Medical Center filed 321. In contrast, St. Vincent's Hospital-NY filed two event reports, and Beth Israel Medical Center filed 17.

"The ones that report the most are just the most honest," said Bertrand Bell, a professor at Albert Einstein College of Medicine in New York.

A health-care issue,

and a money issue, too

That the health-care industry and its regulators have failed to take action to prevent errors is not lost on health insurers.

Who pays for costs stemming from errors?

"We do," said Krakovitz of Aetna, which insures more than 21 million Americans.

The costs eventually are passed to employers and patients.

"It's remarkable that people are blindly writing checks for crappy quality," said David Nash, associate dean and director of the Office of Health Policy and Clinical Outcomes at Thomas Jefferson University.

A study conducted at Brigham and Women's Hospital and Massachusetts General Hospital, published in 1997 in the Journal of the American Medical Association, calculated total additional hospital costs from preventable drug errors to be \$2.8 million a year at the 700-bed teaching hospitals, or \$4,685 for each error.

Employers, who pay for health insurance for 152 million American workers, so far have not used their purchasing power to pressure hospitals and doctors to reduce medical errors. Though they would have unequaled clout, they are struggling to determine their appropriate role.

"It's an area that a lot of us are concerned about as we take a look at the data," said Bruce Bradley, medical director of managed-care plans for General Motors Corp., which provides health insurance to 1.5 million workers, retirees and their dependents. "We're trying to figure out if it makes sense for us to incorporate patient-safety considerations in our purchasing decisions."

Health-care industry lags

in error-reduction efforts

Commercial aviation, to which the health-care industry is most often compared in terms of safety, has reduced airplane crash deaths to one of every two million passengers, a tenth of the rate of 20 years ago. Along with the nuclear power industry, which suffered heavy criticism in the aftermath of the Three Mile Island accident in 1979, aviation has improved safety by developing extensive training and simulation requirements, reporting "near misses," and harnessing technology.

Such efforts may or may not be as effective in health care, given the uncertainties and variation among patients. And people are obviously different from computer chips and airplane parts. But hospitals and health care are far behind in even attempting the types of initiatives that have reduced errors in aviation and other high-risk industries. Their efforts so far have been on a small scale.

Training and simulation are high on the list of necessary changes, experts say. Robert Helmreich, a professor of psychology at the University of Texas at Austin, has studied the behavior of aviation and aerospace crews and medical teams. He said that though operating rooms may be more complex environments than cockpits, aviation and medicine have much in common, such as a need for clear communication.

"The range of things that can go wrong is probably no greater than the things that can go wrong in an airplane at 40,000 feet," Helmreich said.

Helmreich advocates overhauling medicine's culture, which he describes as seriously flawed. In surveys, he has found that pilots and doctors hold markedly different attitudes about their own capabilities. Roughly 60 percent of surgeons and anesthesiologists responded that they perform effectively when fatigued,

compared with 30 percent of pilots.

"They deny overwhelmingly the influence of fatigue," Helmreich said. "There's a certain climate in which the surgeon can say, 'I'm the surgeon and I'm infallible.'"

The perfectionism that drives many in medicine can also render them vulnerable to overconfidence that escalates into arrogance and reinforces competitiveness. "I'd start working on that in the first year of medical school," Helmreich said.

The University of Colorado School of Medicine has been developing a virtual-reality spinal tap and surgery simulation. Harvard-affiliated Beth Israel Deaconess Medical Center has designed computer programs for diagnosing numerous medical conditions, on which medical students are required to practice.

Medical error experts also advocate more extensive reporting systems, similar to the Federal Aviation Administration's Aviation Safety Reporting System. Airline crew members file thousands of confidential reports of unsafe conditions and near misses to the system every year. The data are centralized and made available publicly, and safety problems are addressed in efforts to avoid accidents.

Researchers in the Department of Anaesthesia at the University of Basel in Switzerland have developed an anonymous, international Critical Incident Reporting System on the World Wide Web to distribute information about anesthesia accidents. Modeled on an Australian system, it allows doctors to send online reports, which are then posted on the Web site without identifying information about the patient or the person who reported the accident. Visitors to the site respond with their analyses.

Doctors responding to some recent reports wrote: "Reading some of these comments, I can't believe patients trust us with their lives," and "There but for the grace of God go I."

In one of the most ambitious efforts of its type, the U.S. Department of Veterans Affairs will launch a Patient Safety Reporting System pilot project at 22 of its health facilities in Minnesota, Wisconsin and upstate New York next year. "If we are able to do it at all successfully, it's going to spark a lot of interest," said Ron Goldman, a research analyst at the VA's Office of Performance and Quality in Washington.

Information technology is another area that the industry has yet to fully utilize. The health-care industry spends an estimated 2.5 percent of its revenues on information technology, much of it for billing systems, compared with an average of 12 percent to 15 percent in other industries.

Computerized physician-order entry systems on hospital wards eliminate penmanship errors and sound alarms about excessive doses, drug interactions and drug allergies. Children's Hospital of Philadelphia and the Hospital of the University of Pennsylvania are among the local hospitals that have computerized physician-order entry systems on their floors.

Using a highly sophisticated system of this type, Brigham and Women's Hospital in Boston cut its number of errors and lowered costs by reducing hospital stays. The hospital spent \$1.4 million on software and \$500,000 to maintain it, said David Bates, chief of internal medicine.

Bates estimated that Brigham and Women's has saved \$5 million to \$10 million a year since it installed the system.

"Not only would paying attention to this improve quality, but it would reduce costs," he said. "It will pay for itself, and in short order."

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Real-life situations, without risk

By **Andrea Gerlin**
INQUIRER STAFF WRITER

PALO ALTO, Calif. - It is just after dawn at the Veterans Administration Medical Center here when a patient's vital signs crash during a cardiac catheterization. An artery on the left side of his heart has been cut during the procedure, and emergency surgery is necessary.

Geoffrey Lighthall, the scrub-suit-clad chief resident in the Stanford University-affiliated anesthesiology program, is the first to respond. He tries to bring the crisis under control. It isn't easy. The 72-year-old diabetic patient, who had a previous bypass operation, is short of breath. His blood pressure and respiration have dropped while his heart beats faster and faster to compensate.

The patient is in pain. "Somebody help me," he groans. "It feels like an elephant sitting on my chest. I had cardiac surgery in 1991, and it wasn't like this."

"OK, just take it easy, sir," Lighthall, now a fellow in intensive care at Stanford, reassures him.

Lighthall calls the pharmacy for nitroglycerin and fentanyl to treat the pain. Then buzzers blare, alerting him and the surgeon that their patient's heart rhythm has been disrupted. Lighthall calls for the "crash cart." The surgeon uses a defibrillator to shock the patient's heart. The patient's blood pressure rises, and Lighthall administers anesthesia and sedatives.

From an adjacent control room, associate professor David Gaba is watching the episode through a one-way glass and on a video monitor. Nearly 20 minutes have passed, and the already complicated emergency surgery is about to begin. Gaba decides that Lighthall needs help and sends in Bogdan Popa, another third-year anesthesiology resident.

Gaba, director of the VA's Simulation Center for Crisis Management Training, is viewing the residents as they work not on a human being but on an expensive high-technology mannequin on which they practice managing patient crises. The mannequin makes bile, blood, urine, and heart and lung sounds. Its eyes blink and dilate, its chest rises and falls, and it can be intubated. It even repeats words uttered into a control-room microphone.

There are 50 to 60 such simulators in use around the country - and one is scheduled to be put into use next month at Thomas Jefferson University - but few owners of the \$200,000-plus systems run programs as extensive as Gaba's.

Gaba foresees simulation training becoming widespread and doctors being required to complete it to obtain licenses, board certification or hospital privileges. Airline pilots already must undergo flight simulation testing every six months.

Annual simulation training is already mandatory for the 45 residents in Stanford's anesthesiology program.

"My only suggestion is to do it more often," Popa said. "It replicates real-life situations very well. You could be the smartest person in the world, and when panic hits, everything flies out the door."

In real life, the American Society of Anesthesiology estimates, unanticipated events arise in about 20 percent of procedures in which anesthesia is used. Events that require vigilant monitoring occur at a rate of 3 to 5 percent. Human error is thought to be responsible for 70 percent of adverse events during anesthesia.

Anesthesiologists have played a leading role in early efforts to address medical error. They have reduced patient deaths due to anesthesia to 1 in 250,000 today from 1 in 10,000 a decade ago. It is a proficiency level that rivals that of computer chip-maker Intel Corp.

The specialty is often singled out as a model for the rest of medicine. In addition to using simulation, it has sought to change its culture by limiting residents' hours and emphasizing the importance of avoiding fatigue. It has worked with manufacturers to design standardized anesthesia machines.

After Popa and Lighthall finished their 30-minute training scenario, they and two other residents taking the daylong course gathered for a debriefing with their instructors, Gaba and fellow VA anesthesiologists Steven Howard and Brian Smith.

"If I had it to do over again," Lighthall reflected, "I would have called Bogdan right in."

"Even if you're not overloaded at the time, life-threatening critical situations can quickly get out of hand," Gaba said. "It's better to call for help."

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Clinical protocols and related information to promote the safety of patients undergoing anesthesia.

[National Patient Safety Foundation](#)

The efforts of a group launched by the American Medical Association to raise awareness, build knowledge, and educate the public about patient safety in health-care delivery.

[Simulation Center for Crisis Management Training in Health Care at the VA Palo Alto HCS/Stanford University](#)

The activities of a simulation center that trains doctors to handle anesthesia emergencies that develop during surgery.

[Critical Incident Reporting System at the University of Basel](#)

An international data bank of anonymous anecdotal reports of real errors, incidents and accidents involving patients under anesthesia.

[Medical Device Safety Reports from ECRI](#)

A repository of medical device incident and hazard information independently examined by [ECRI](#), a nonprofit health services research agency based in Plymouth Meeting.

[University of Texas Aerospace Crew Research Center](#)

Features research in human factors and group behavior in medicine and aviations, parallels between the fields, and the use of simulation to reduce incidents and accidents

[Institute for Safe Medication Practices](#)

Reports and advisories about medication errors, collected and disseminated for professionals and patients by this independent nonprofit group in Huntington Valley.

[American Hospital Association](#)

A summary of the position taken on medical error by the hospital industry's national trade association.

[Institute for Healthcare Improvement](#)

The resources of an independent nonprofit group in Boston that seeks to improve the delivery of health care, including collaborative efforts to reduce hospital medication errors.

[People's Medical Society](#)

The Web site of the largest medical consumer advocacy organization in the United States includes weekly updates about being a savvy health care consumer.



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Case studies: A patient's story

This series cites cases from the Medical College of Pennsylvania Hospital because its records became public in Bankruptcy Court. Such records rarely become public. Doctors around the country said in interviews that medical errors occur as frequently at other hospitals as at MCP.

Robert Lamar

Heparin pump was running at 11 times the prescribed dose

Aven Jackson

Hysterectomy turned into a misadventure of surgeries, bills, and eventually, death.

James Roundtree

Waited seven hours in the emergency room with chest pains and very high blood pressure.

Walter Nawracay and William Thompson

Blood vessels in brain were pierced during surgery.

Ruth Kirbyson

Received nerve-blocking drug instead of blood thinner during surgery.

Lisette Molina

Antiseizure medication was changed to drug that could induce seizures.

Rhashean Spearman

Blood type was O positive but was given type AB positive blood, plasma and platelets over four days.

Karen McDowell

Not properly monitored in ICU, despite doctor's warning.

Stephen Clark

Cotton left in brain after surgery to remove tumor.

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Surgical misadventure

Aven Jackson was 46 when she was admitted to MCP Hospital on Dec. 15, 1992, for a hysterectomy. The gift-store clerk from Pleasantville, N.J., had been told that she would spend three days in the hospital. After five additional operations, \$360,000 in health-care costs, and 28 days, she died.

"How in the world did a 46-year-old woman die of a hysterectomy when she was otherwise healthy?" asked her husband's lawyer, Frank McClellan.

Three days after her initial operation, Jackson complained of abdominal pain. It continued, and on the sixth day, her gynecologist did exploratory surgery. According to medical records, the doctor discovered that a portion of Jackson's bowel had slipped through a small hole in the membrane covering her abdomen.

The next day, Jackson had a 103.8-degree fever and her urine output had declined sharply. Doctors performed more surgery to remove six feet of bowel.

Hospital records show that she went downhill rapidly, and within days was on a breathing tube. She underwent three additional surgeries and developed a bacterial infection and kidney failure. Her abdomen was so full of fluid that it could not be sewn shut after one of the procedures and was left exposed, covered only by surgical mesh.

She died on Jan. 12, 1993.

Her husband, Robert, declined the hospital's offer to perform an autopsy. His lawyer asked Halbert E. Fillinger, a forensic pathologist who has conducted autopsies in high-profile criminal cases in Montgomery County, to do Aven's autopsy.

Fillinger identified the cause of her death as multiple organ failure. The manner of her death, he wrote: "Therapeutic misadventure."

Robert Jackson, who was left to care for the couple's teenage son, filed a malpractice suit two months later in Common Pleas Court against MCP and several doctors.

At the trial in 1997, McClellan argued that Aven Jackson's gynecologist created the hole during the hysterectomy. Lawyers for the defendants said that the hole may have existed before the surgery.

However the hole occurred, the case was fought over whether the affected portion of Aven Jackson's bowel should have been removed at the time of the exploratory surgery, instead of a day later.

The jury awarded \$750,000. The verdict was upheld in an appeals court ruling last year, and the trial judge added \$196,000 in damages for delays by the defendants. The parties finally settled for slightly less than the \$946,000.

Deurward Hughes, then-chairman of the obstetrics and gynecology department, who was found by the jury to have been negligent but not liable for any of the award, defended Jackson's doctors. Hughes was a consultant in the case, not the attending doctor. He said he was confident that Jackson received excellent care. "She happened to have a major complication which can happen in any kind of gynecological care," he said in an interview.


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Seven hours waiting

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When James Roundtree appeared in the MCP Hospital emergency room at 9:01 p.m. on Oct. 13, 1990, he complained of having had severe and constant chest pain, which he described as "pressure-like," for the previous three to four hours.

ER staff immediately found that his blood pressure was 202/120 - a dangerously high level. His blood pressure remained in that range for the next 7 1/2 hours.

It was a Saturday night. Hospital records show that Roundtree, a 62-year-old retired paper-mill worker who lived in West Philadelphia, waited nearly three hours in the ER before a doctor was notified. A chest X-ray taken after he saw the doctor showed that Roundtree's heart was enlarged, particularly around the left ventricle, the chamber of the heart that propels blood out through the aorta and into the arteries.

Roundtree was given the antacid Maalox and the antispasmodic Donnatal at 1:11 a.m., records show. The resident assigned to care for him prescribed this "GI cocktail" even though his medical team suspected a heart attack. According to the Physicians' Desk Reference, Donnatal should be used with caution in patients suffering from hypertension and heart disease and may produce a rapid heartbeat that can overwhelm the cardiovascular system.

Roundtree also was given nitroglycerin tablets, which dilate blood vessels and reduce chest pain, at 1 a.m., 1:35 a.m., and 1:47 a.m. At 2 a.m., a nurse wrote in Roundtree's chart that she had notified the resident, Ingrid Llovera, that Roundtree's blood pressure remained elevated.

Forty minutes later, a consulting doctor examined Roundtree. At 4:20 a.m., more than seven hours after he arrived at the emergency room, the decision was made to admit him to the intensive-care unit.

As a nurse was taking an inventory of his valuables at 4:38 a.m., according to hospital records, Roundtree screamed his last recorded words: "My God, the chest pain's coming back. . . . It's killing me."

He developed seizures and his heart rate jumped to 110 beats a minute, from 60 beats a minute. A code blue was called. Doctors and nurses attempted to resuscitate Roundtree for the next hour, without success.

Afterward, Llovera went to Roundtree's chart and described that resuscitation effort. At the end, she wrote, "According to nurse's note - I was made aware of the elevated BP - this is not true. I was never informed that BP was still elevated."

Llovera could not be reached at her last known address in New York.

Roundtree's widow, Blondell, filed a wrongful death lawsuit in Common Pleas Court in 1991, alleging negligence for the hospital's failure to administer beta-blockers, blood thinners or clot-busters that might have prevented his death. The suit was settled in 1993 for \$300,000, according to court and insurance records.

Blondell Roundtree, who now lives in Wallingford, said in an interview that she is still upset about the way her husband died. "They just left him waiting," she said. "He had the high blood pressure. That in itself should have been looked at."

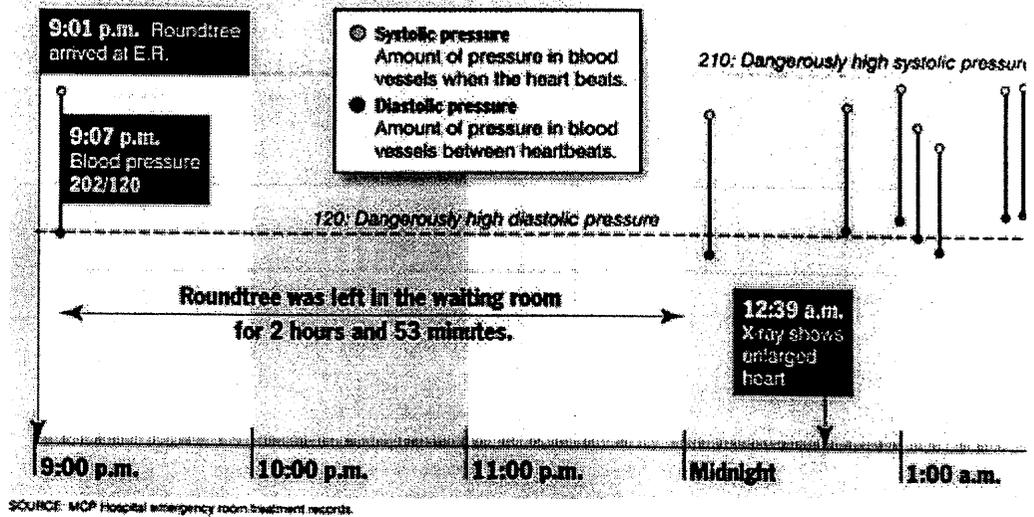
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James Roundtree arrived at MCP at 9:01 p.m. on Oct. 13, 1990, with dangerously high blood pressure. He waited nearly three hours before he was first seen by a physician. At 5:41 the next morning he died.



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Medication dosage error

Robert Lamar, a 54-year-old disabled city tow-truck driver, had suffered his share of illness when he was admitted to MCP Hospital on April 18, 1994. He had diabetes and hypertension, and required kidney dialysis. He was scheduled for surgery to repair a vein that had been grafted into his right leg a few months before.

According to written doctors' orders, Lamar was put on an intravenous solution containing heparin, a blood thinner. He was supposed to have received 10 cubic centimeters of the heparin solution an hour.

At 6:45 that evening, according to hospital records, a nurse checked Lamar's IV and wrote that she found that the heparin pump was running at 110 cubic centimeters an hour, or 11 times the prescribed dose.

When Deborah Kuhls, a medical resident, learned of the nurse's finding, she ordered the IV turned off for two hours. In an interview, Kuhls described the incident as one of the "more memorable and disturbing" crises of her first year as a doctor.

Blood test results showed that Lamar's partial thromboplastin time - a measure of clotting time - from blood drawn at 9:23 p.m. had risen to 195 seconds, a potentially dangerous level. It was far higher than the 27 seconds measured when he was admitted to the hospital. The heparin IV was turned off and on several times throughout the night.

Kuhls said that overnight she kept a watchful eye on Lamar, checking him 15 to 20 times for any sign of bleeding, and consulting with senior residents, none of whom felt that the attending doctor should be called at home. "Probably in hindsight it would have been better to call the attending, but I don't know if it would have made a difference," she said.

At 5:40 a.m., Lamar vomited a "thick mucus with brown digested material," according to his medical record. After Kuhls left the hospital at 8 a.m., Lamar's course was short and stormy.

His medical record shows that the hospital did no more lab work until he began mumbling and a surgical resident was called to his bedside at 11:45 a.m. Forty-five minutes later, he was found sitting on the side of his bed, incoherent, and was transferred to the intensive-care unit. A little more than an hour after that, he went into cardiac arrest. Resuscitation efforts failed.

Lamar was pronounced dead at 2:30 p.m. His widow, Gloria, said she had called the hospital just before 2:30, as she left her office at the Social Security Administration, where she is a file clerk. "They told me he was fine," she said in an interview. So she went home to await a repairman who was coming to fix the front door, left damaged the day before when her husband was taken out of the house on a gurney.

A coworker came to her home that afternoon and told her that her husband had died.

Lamar and her 14-year-old daughter did not immediately suspect an untoward event, so they declined to have an autopsy performed. According to his death certificate, Robert Lamar died from a series of events set in motion by blood loss - following an inability to clot - that began four hours before his death.

"This is an unexpected death," Andrew Roberts, Lamar's vascular surgeon, wrote in Lamar's medical chart. "I suspect that he hemorrhaged into his left retroperitoneum," or abdominal cavity, where a mass - presumably pooled blood - was detected. Roberts did his residency at Massachusetts General Hospital and was named one of the region's best vascular surgeons in Philadelphia Magazine's 1999 list of top doctors, based on a survey of peers.

In an interview, Roberts said he grew fond of Lamar and was stung by the way he died. He said he had treated Lamar very aggressively in an effort to avoid amputating Lamar's leg.

Roberts said he thinks that Lamar received the overdose after an accident, such as a hospital worker bumping into the IV while Lamar was being transported. As a result, he said, the hospital began using IV pumps that cannot deliver more than 25 cubic centimeters of heparin an hour.

"The thing about patients like Mr. Lamar is you have very little margin of error," Roberts said. "You need to be lucky and you can't make mistakes. When you don't make mistakes, sometimes you're not lucky."

"Almost everything we do has risk, and in medicine you're trying to balance risk and benefit."

When Gloria Lamar spoke with Roberts the day her husband died, she said, he gave her no clear answers. "I said, 'What happened to my husband?' and he said, 'I don't know,'" she said. "I said, 'What do you mean you don't know? You're his medical doctor.' I didn't even know they had administered heparin."

Roberts said that he did not recall the conversation with Gloria Lamar. He said he sent her a letter the next day that read, in part: "I suspect he bled into his abdomen and had a heart attack."

Nineteen months later, Gloria Lamar acted on a nagging hunch that her husband had died too suddenly. She visited a lawyer, Philip Rush, in November 1995. He sought the records and got them. They documented not only the blood loss, but also Robert Lamar's overdose the night before he died. That was the first that Gloria Lamar heard of the error.

The hospital settled a malpractice lawsuit brought by Gloria Lamar against it and 12 doctors and nurses, including Roberts and Kuhls, in Common Pleas Court in 1996, for \$500,000, according to court and insurance records. The suit alleged that Robert Lamar went untreated for 14 hours after the heparin overdose, and was not given an antidote - and therefore bled to death.

The suit was settled quickly, even before any depositions might have been taken. Rush said, "The number of cases I have settled without a deposition is one - this one."

Roberts said that he cannot prove that Lamar did not bleed and then die from the heparin overdose. "That this was settled reflects the fear all of us have in the medical profession of going before a jury and trying to prove a negative," he said.

"When medicine goes well, there's probably nothing more rewarding," Roberts said. "When it goes badly, it's unspeakably awful."



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Blood vessels pierced during surgeries

In the late 1980s, MCP Hospital's neurosurgery department began performing specialized brain surgery on epileptics, in an effort to pinpoint and remove the physical cause of seizures. In the procedure, electrodes are placed on the surface of the brain to monitor its electrical activity.

Walter Nawracay underwent the surgery on March 12, 1990. He had suffered lifelong epilepsy that did not respond to treatment. H. Warren Goldman, then the hospital's chief of neurosurgery, evaluated him and scheduled his surgery.

James Nawracay said he accompanied his brother Walter to meet with Goldman, who assured them that he had done more than 100 of the procedures. James Nawracay said that when he left his brother at the hospital he felt confident that Walter "was in capable hands."

Goldman was to be assisted by two second-year residents. Walter, 49, was taken to the operating room the next morning. There he had six depth electrodes placed on the surface of his brain.

At the end of the operation, he did not regain consciousness and had fixed, dilated pupils, according to hospital records. An emergency scan of his brain revealed a large hematoma under the skull, where blood had collected from a hemorrhage. He was taken back to the operating room, where the hematoma was removed, but he remained unresponsive.

James Nawracay said he got a call from Goldman about his brother's condition. He said he and his mother went to MCP. A resident told them that a blood vessel in Walter's brain had been pierced during the first surgery. The resident did not say who had performed the surgery.

Walter never recovered. He died at MCP Hospital on March 20, 1990.

Seven months later, 34-year-old William Thompson underwent a similar surgery at MCP. Goldman was assisted by a sixth-year resident and a second-year resident. Immediately following surgery, Thompson, too, was discovered to have suffered a brain hemorrhage and required an emergency operation to remove a hematoma.

Thompson went into a coma, from which he emerged permanently paralyzed on the left side.

Those two events prompted four MCP neurologists who referred patients to Goldman for surgery to write a harshly worded letter to a top MCP administrator on Nov. 23, 1990. In it, they charged that Goldman was not personally performing all of the epilepsy surgery and that it was "ethically and legally unacceptable" for them to continue referring patients to him.

"It is no secret that the implantation of depth electrodes by residents resulted in the unfortunate death of one of our patients," they wrote.

The letter kicked off a wave of infighting and resignations. Two neurologists who signed the letter, Richard Harner and Silvana Riggio, left MCP. Harner sent a second blistering, seven-page letter to the medical college's then-dean, Leonard

Ross, on Feb. 26, 1991. He accused Goldman of being absent from the operating room during surgery on Nawracay, Thompson and a third patient, and of refusing to guarantee that he would personally perform all the procedures.

Doctors and staff familiar with Goldman's patients testified in depositions taken in a lawsuit that Goldman was absent from the operating room for part of the procedures on Nawracay and Thompson, was performing surgery simultaneously on other patients during the operations in question, and allowed residents with nominal experience to place the electrodes, even in his absence.

In his deposition, Goldman acknowledged that he was in the operating room for part but not all of the procedures, and that the residents placed electrodes in his absence. He said that in Thompson's case, if he had personally placed the electrodes, the hemorrhage might not have happened. However, he also indicated that residents could work independently.

"I don't think I needed to be in the room during the placement of all the electrodes," he said. "In a residency program, you can have residents do opening and closing and certain parts of the procedure, and then you can - the surgeon can come in for the critical parts or just be back and forth between the two rooms."

Goldman, who is now a professor at Jefferson Medical College, did not respond to written and telephone requests for comment.

Medicare regulations, which applied because Nawracay and Thompson received Medicare, stipulate: "In the case of major surgical procedures and other complex and dangerous procedures or situations, such personal direction must include supervision in person by the attending physician."

Thompson and his mother sued MCP Hospital, Goldman, and others involved in the procedure. In 1996, MCP, Goldman, and some of the other doctors agreed to a \$6.75 million settlement, according to the hospital's insurance report.

James Nawracay, the brother of the man who died after the epilepsy surgery, learned of the Thompson lawsuit when he was contacted by a lawyer in 1994 seeking approval to obtain Walter's medical records for a separate employment lawsuit involving colleagues of Goldman. Nawracay then sued MCP, Goldman, and two neurosurgery residents. He dropped the suit two years later on the advice of his attorney, who said that the statute of limitations presented an obstacle.

Nawracay reported Goldman's conduct to the state Bureau of Professional and Occupational Affairs. In a letter dated Dec. 2, 1996, the bureau's complaints office said it would conduct an inquiry and notify him of the final outcome.

He did not hear from the bureau until two years and nine months later. Last month, after *The Inquirer* asked the bureau about the case, Nawracay received a letter from the bureau, saying that it had made a "thorough inquiry" and decided not to file formal charges.

"If this guy's going around professing to be a great neurosurgeon when he's not even in the room, that's not right," Nawracay said. "I didn't even give a passing thought that a resident would be doing this, particularly on his own."



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Medication error

On July 16, 1997, Ruth Kirbyson, of Manayunk, a retired CoreStates bank teller, mistakenly received the nerve-blocking drug neostigmine instead of the blood thinner heparin during surgery. The drug was supposed to have kept blood clots from developing as a result of the procedure, which was needed to prevent her aorta from bursting. The aorta is the main artery that carries blood out of the heart. Without heparin, Kirbyson quickly developed clots.

Over the next four days, she underwent more operations to salvage her damaged intestines and pancreas, but the organs were beyond repair. She died on July 20, 1997, at age 72.

A claim recorded in the hospital's insurance report noted: "It was determined that heparin syringe actually contained neostigmine and traces of Lasix," a diuretic sometimes used after operations.

Kirbyson's next of kin, her niece Nancy McGrath of Bellmawr, N.J., did not file a lawsuit but settled a claim against the hospital last year for an unspecified amount. She and her lawyer declined to comment.

Andrew Roberts, her vascular surgeon, said in an interview that an anesthesia mistake occurred in her treatment. "The heparin was asked for in the OR," he said. "A human error occurred. The drug was not given. Another was in its place. That resulted in a cascade of problems that ultimately resulted in her death."

Roberts said that the hospital told the family of everything it knew at the time and that the anesthesia department adopted policies to prevent similar accidents.

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Medication error

During a heavy rainstorm on Dec. 9, 1991, the car that Lisette Molina, 19, was driving collided with another at 27th Street and Ridge Avenue in Philadelphia. Bystanders pulled her from the vehicle, which had caught fire.

She was taken by ambulance to MCP Hospital and admitted for a head injury. Emergency room doctors noted that she was having seizures. The next day, she was prescribed the antiseizure medication Dilantin. After she developed a rash, her medication was changed on Dec. 23 to the anticonvulsant drug phenobarbital and the antipsychotic drug Haldol.

In court papers, lawyers for Molina's mother said that Haldol had a known complication of inducing seizures in head injury patients. Haldol, according to the Physicians' Desk Reference, should be used cautiously and with adequate anticonvulsants in patients with histories of seizure.

According to the lawsuit, Molina was not given phenobarbital as prescribed on Dec. 24 but was given Haldol. On Christmas Day, she suffered a prolonged grand mal seizure and did not regain consciousness.

A day later, Molina died. The cause listed on her death certificate was "closed head injury complicated by seizures." The manner was considered an "accident," and referred to the automobile crash.

Daniel Weinstein, director of brain injury rehabilitation at Magee Rehabilitation Hospital, reviewed the case at the request of lawyers for Molina's mother. Weinstein concluded: "Had the intervening medical events not occurred, it is my opinion that Ms. Molina would have been discharged from MCP to an acute rehabilitation facility within 7 days. ... She would have had an otherwise normal life expectancy."

Her mother, Enid Irizarry, settled a lawsuit against MCP for \$500,000 last year.

In its response to the civil case, the hospital denied liability for Molina's death.

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Transfused with wrong blood type

Rhashean Spearman was brought to the MCP Hospital emergency room on Nov. 16, 1992, after a stolen car in which he was a passenger struck a utility pole at Henry Avenue and School House Lane during a high-speed police chase. He was treated for multiple trauma and needed a transfusion for severe blood loss.

Spearman's blood type was O positive, but the 18-year-old was given type AB positive blood, plasma and platelets over four days, according to a report prepared by an expert hired by a lawyer for his father, Ronnie.

The younger Spearman developed a hemolytic reaction, in which red blood cells break down, a common and potentially fatal outcome in transfusion mix-ups. He died on Nov. 28, 1992.

A suit that his father filed in Common Pleas Court in 1993 is pending, delayed by the Allegheny health system bankruptcy.

"Here's a guy lying in the ICU getting injected with all these things and nobody thought to make sure the blood was right," Ronnie Spearman said in an interview. "They never called me afterward. They never apologized. They never said anything. Once he was dead, he was dead."

According to its insurance report, MCP set aside \$300,000 in its reserves, its estimate of what it might have to pay if the case ends with a settlement or jury verdict. In New York City, the family of an auto accident victim who was given the wrong type of blood in a transfusion during surgery at a public hospital in 1995 reached a \$2.2 million settlement with the hospital's operator.

The Spearman episode is described in MCP Hospital's insurance report: "18 year old male ER patient received two units of the wrong type of blood before error discovered allegedly resulting in death."

John Hanahan, who represents Spearman's father, said that emergency room staff whom he has deposed in the case told him that every patient is tracked by a medical record number, an important safeguard in ensuring that unconscious patients receive treatment meant for them.

Hospital lawyers, who declined to comment, have not denied in court responses that Spearman received the wrong type of blood. The transfusion, they have said, did not cause his death. An autopsy determined that the causes were multiple injuries and adult respiratory distress syndrome.



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Cotton left in brain

Stephen Clark collapsed at home on Feb. 22, 1995, felled by a seizure caused by a benign tumor in his brain. The 41-year-old psychiatric hospital worker went to MCP Hospital to have the tumor removed by neurosurgeon Alan Turtz on March 1.

Turtz successfully removed the tumor. But the surgeon and his team overlooked one detail: A small piece of cotton attached by a string was left in Clark's head, Turtz has acknowledged.

Nine days later, he was still hospitalized and running a fever, Clark said. Turtz prescribed an antibiotic, ran blood tests, and three days later did a brain scan that revealed the trapped cottonoid.

"That evening he came in, pulled up a chair and sat down," Clark said in an interview. "He said during the surgery one of the cottonoids had been left inside my skull. I just couldn't believe they could be so cavalier with people's lives, especially when you're doing things that are very delicate."

Turtz declined to comment.

The cottonoid had to be removed, Clark said he was told, because it could cause an infection and possibly meningitis. Turtz performed a two-hour procedure to remove it.

Clark filed a malpractice suit against the doctor and the hospital in Common Pleas Court in 1997. In their defense, the doctor and the hospital conceded that the cottonoid needed to be removed during a second procedure but argued that the patient's care was not substandard.

A panel of three arbitrators found that Turtz and the hospital had been negligent and awarded Clark \$37,500 in 1997. Insurance records show that the amount was assessed against the doctor.

"I realize people make mistakes, but it threatened my life," Clark said. "One little slip and you could kill somebody."

Patients were not the only ones to whom retained surgical objects posed a hazard. On Feb. 7, 1996, Burton J. Decker Jr. was at his family's funeral home in Warminster embalming a body that was fresh from an autopsy at MCP Hospital. While working on the abdomen of the body, Decker cut his hand. It turned out that a scalpel blade had been left in the corpse's abdomen. He complained to the hospital and settled his claim for \$2,100.

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Inadequate ICU monitoring

Karen McDowell was a 35-year-old single mother of two working in the city tax assessor's office when Guillain-Barre syndrome struck her five years ago. The viral ailment causes high fevers, numbness and tingling in the arms and legs, and eventual paralysis. Most people with this condition recover, but for 5 percent of victims it is fatal.

McDowell had some of those symptoms when she was admitted to MCP Hospital on July 8, 1994. Her medical records show that she was diagnosed with the syndrome.

By July 12, her condition had deteriorated and she was transferred to the intensive-care unit. One of the biggest-known risks of the illness is dangerously low respiratory capacity, as the lungs become paralyzed, according to Robert Cunnion, an expert in Guillain-Barre. Cunnion, of the Heart Institute of Virginia, was with the National Institutes of Health when he reviewed McDowell's records at the request of lawyers representing her mother in a lawsuit filed in Common Pleas Court in 1996.

McDowell's doctors, including critical-care specialist Arthur Combs and neurologist Nathan Blank, knew that risk and were prepared to deal with it. If her vital capacity, a measure of lung function, fell below a certain point, a tube would be inserted to help her breathe.

On July 13, Blank recommended in McDowell's chart: "Because of progressive deterioration I think it is a matter of time that her vital capacity will drop below 1.3 [liters], which is when elective intubation should be considered."

Within two days, her vital capacity fell below 1.0 liters and fluctuated above and below the danger point. Combs said in an interview that he considered preventively intubating her "24 hours a day, every day."

But she was not intubated. Suspecting that she was not trying hard enough when her vital capacity was measured, doctors requested a psychiatric consultation on July 17, according to hospital records. After relatives left her bedside that evening, a Sunday, she was discovered not breathing at 7 p.m. Resuscitation efforts revived her, but she had stopped breathing for seven to eight minutes, possibly longer.

The lack of oxygen left McDowell brain-damaged. She remained hospitalized for six weeks and today she is bedridden and unable to talk or control her bowels and bladder. She cannot swallow and must be fed through a tube. Since the episode, she has lived at her mother's home in Frankford.

Hospital lawyers strenuously denied liability and stated in court papers that McDowell's treatment "was rendered in accordance with the standard of care." On the day that a jury was scheduled to be selected for trial, they settled the suit for \$6.5 million.

Blank, McDowell's neurologist, declined to comment.

Combs, the intensive-care-unit director who treated McDowell, said it is not clear what happened to her and that she may have suffered a disturbance in her heart rhythm that could not have been foreseen or prevented. He said the last vital-capacity measure recorded in her chart prior to her respiratory failure was 1.8 liters.



He said several factors contributed to the delay in detecting McDowell's respiratory failure: The intensive-care unit then lacked a centrally wired pulse oximetry monitoring system, which measures oxygen in arterial blood; the critical-care fellow, a doctor receiving advanced training after completing a residency, was not required to be at the hospital on Sunday; and the lone resident on duty had been pulled away from the unit.

"I wish some more educated eyes were looking at that woman than one tired little resident who had two emergency admissions," said Combs, now in private industry in St. Louis. "I wish someone - me or my delegate - with a level of expertise had been at her bedside in that last hour."

"It was literally the tree falling in the forest and no one heard it," Combs said. "Mrs. McDowell is the tragic victim of the fact that we have an imperfect system."

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