

Lessons From America's Safest Hospitals

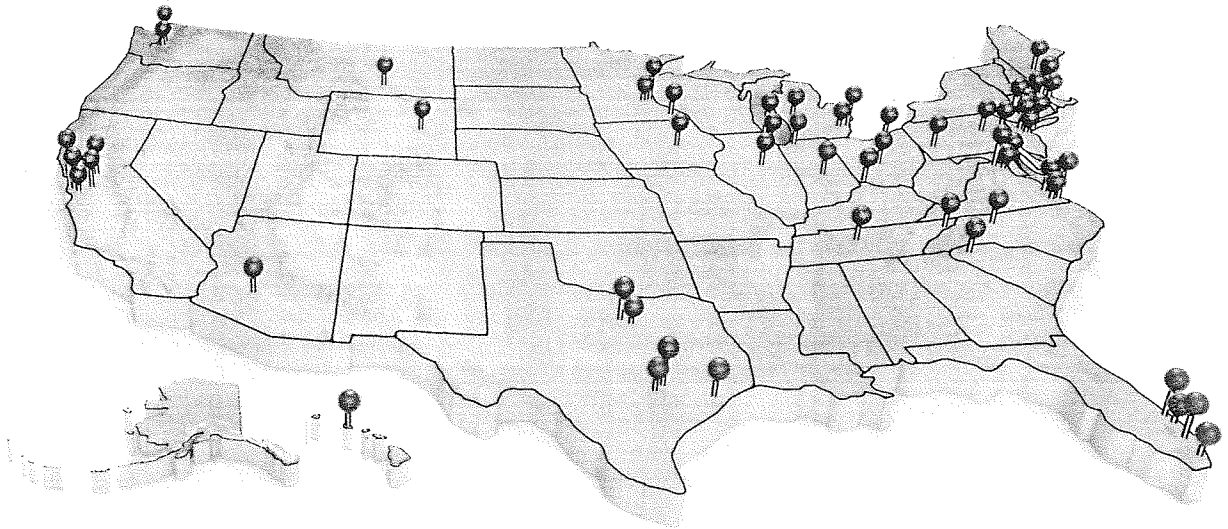
More than 180,000 people die every year from hospital errors. Here's what the top medical centers are doing to improve your odds

By BETH HOWARD / Photograph by JOHN KEATLEY

On November 4, 2004, Mary McClinton, a beloved 69-year-old social worker and mother of four, checked into Virginia Mason Medical Center in Seattle for a relatively complex but routine procedure to treat a brain aneurysm. Doctors planned to inject her with a contrast dye to help them guide a stent into her brain, via a catheter in her leg, to repair the aneurysm. Instead, they injected her with an antiseptic—a topical cleaning agent—that had been stored in an unlabeled container on the same tray as the dye. The antiseptic blocked the flow of blood in her leg, which swelled to twice its normal size. Within hours, McClinton's blood pressure dropped, her kidneys failed, and she suffered a stroke. As the toxin coursed through her system, her other organs began to fail as well. Nineteen agonizing days later, surrounded by her grief-stricken family and friends, Mary McClinton died, her son Gerald holding her hand.

Tragically, McClinton's case is far from unique. An estimated 6,000 “never events”—egregious errors like operations on the wrong limb or instruments left inside a surgical wound—occur every month among Medicare patients alone, according to a report from the U.S. Department of Health and Human Services (HHS). The total number of preventable errors is far higher—some studies suggest that up to a third of all hospital admissions result in harm to a patient. And a 2010 study from HHS estimates that 180,000 Medicare beneficiaries die every year from accidents and errors.

Top Hospitals



● **Allegheny General Hospital**
Pittsburgh, Pa.

● **Baystate Medical Center**
Springfield, Mass.

● **Bellevue Hospital Center**
New York, N.Y.

● **Beth Israel Deaconess Medical Center**
Boston, Mass.

● **Billings Clinic**
Billings, Mont.

● **Brigham and Women's Hospital**
Boston, Mass.

● **California Pacific Medical Center**
San Francisco, Calif.

● **Central Maine Medical Center**
Lewiston, Maine

● **The Christ Hospital**
Cincinnati, Ohio

● **Cleveland Clinic Florida**
Weston, Fla.

● **Detroit Receiving Hospital/University Health Center**
Detroit, Mich.

● **Dublin Methodist Hospital**
Dublin, Ohio

● **Englewood Hospital and Medical Center**
Englewood, N.J.

● **Fairview Southdale Hospital**
Edina, Minn.

● **Geisinger Medical Center**
Danville, Pa.

● **Grinnell Regional Medical Center**
Grinnell, Iowa

● **Hackensack University Medical Center**
Hackensack, N.J.

● **Harper-Hutzel Hospital**
Detroit, Mich.

● **Homestead Hospital**
Homestead, Fla.

● **Indiana University Health La Porte Hospital**
La Porte, Ind.

● **Inova Fair Oaks Hospital**
Fairfax, Va.

● **Inova Loudoun Hospital**
Leesburg, Va.

● **JFK Medical Center of Atlantis**
Atlantis, Fla.

● **Kaiser Permanente**
Multiple locations

“Preventable hospital errors are a terrible danger to American families and a huge driver of unnecessary health costs,” says Leah Binder, president and CEO of The Leapfrog Group, a Washington, D.C.-based nonprofit that assesses hospitals on national standards of safety, quality and efficiency.

To draw attention to the tragic reality of cases like McClinton’s, AARP THE MAGAZINE has teamed up with Leapfrog to showcase what some of the most innovative hospitals are doing to prevent errors. With its Hospital

Safety Score, Leapfrog rates institutions on 26 measures of safety—including “never events,” infection rates from IV and catheter lines, secondary infections, and hospital-acquired conditions like pressure ulcers and air embolisms—using data it compiles from the Centers for Medicare & Medicaid Services, the American Hospital Association and the Leapfrog Hospital Survey.

One surprising standout: Virginia Mason. In fact, for the past seven years Leapfrog has consistently given the hospital

for Safety

Best Practices
Find out what each of these hospitals does to enhance patient safety at aarp.org/safehospitals.

- **Lahey Clinic**
Burlington, Mass.
- **Lehigh Valley Hospital**
Allentown, Pa.
- **Mayo Clinic Hospital**
Phoenix, Ariz.
- **The Methodist Hospital**
Houston, Texas
- **Mills-Peninsula Health Services**
Burlingame, Calif.
- **Montefiore Medical Center**
Bronx, N.Y.
- **MultiCare Good Samaritan Hospital**
Puyallup, Wash.
- **Northern Westchester Hospital**
Mount Kisco, N.Y.
- **NorthShore University Health-System—Skokie Hospital**
Skokie, Ill.
- **Northwestern Memorial Hospital**
Chicago, Ill.
- **OSF St. Joseph Medical Center**
Bloomington, Ill.
- **The Queen's Medical Center**
Honolulu, Hawaii
- **Regions Hospital**
St. Paul, Minn.
- **Rush University Medical Center**
Chicago, Ill.
- **Sentara CarePlex Hospital**
Hampton, Va.
- **Sentara Leigh Hospital**
Norfolk, Va.
- **Sentara Williamsburg Regional Medical Center**
Williamsburg, Va.
- **Sibley Memorial Hospital**
Washington, D.C.
- **Skyline Medical Center**
Nashville, Tenn.
- **Spectrum Health Blodgett Hospital**
Grand Rapids, Mich.
- **St. David's Georgetown Hospital**
Georgetown, Texas
- **St. David's Medical Center**
Austin, Texas
- **St. Francis Hospital Downtown**
Greenville, S.C.
- **St. Mary's Hospital of Rochester**
Rochester, Minn.
- **St. Vincent Indianapolis Hospital**
Indianapolis, Ind.
- **Stanford Hospital and Clinics**
Stanford, Calif.
- **Sutter Tracy Community Hospital**
Tracy, Calif.
- **Swedish Medical Center First Hill Campus**
Seattle, Wash.
- **Takoma Regional Hospital**
Greeneville, Tenn.
- **Texas Health Harris Methodist Hospital Azle**
Azle, Texas
- **Tufts Medical Center**
Boston, Mass.
- **University Hospitals Case Medical Center**
Cleveland, Ohio
- **University of California Davis Medical Center**
Sacramento, Calif.
- **University of Michigan Hospitals and Health Centers**
Ann Arbor, Mich.
- **USMD Hospital at Arlington**
Arlington, Texas
- **Valley Hospital**
Ridgewood, N.J.
- **Vanderbilt University Hospital**
Nashville, Tenn.
- **Vassar Brothers Medical Center**
Poughkeepsie, N.Y.
- **Virginia Mason Medical Center**
Seattle, Wash.
- **Wake Forest Baptist Medical Center**
Winston-Salem, N.C.
- **West Palm Hospital**
West Palm Beach, Fla.
- **Wyoming Medical Center**
Casper, Wyo.

THE LEAPFROG GROUP

While these hospitals are safety superstars, others have received an "A" Hospital Safety Score from The Leapfrog Group, which rates hospitals on safety and resource use. To find the "A" hospitals near you, log on to hospitalsafetyscore.org or download the free Hospital Safety Score app through Apple's App Store or Google's Android market.

high ratings. Based on the nonprofit's survey, it even named Virginia Mason a top hospital of the decade in 2010. So what was behind the remarkable turnaround? In short, Virginia Mason made becoming the safest hospital in America a top priority. Even before McClinton's death, it launched an investigation into the error, and later issued public and private apologies to her family. The hospital, which had already started to revamp its safety procedures, redoubled its efforts, systematically implementing new safety protocols

across every area of the hospital. Administrators nearly tripled the time that nurses spent at the bedside, instituted checklists before surgeries and established patient safety alerts, which empowered any employee to speak up when a patient's life or health was at risk.

"The hospitals that are transforming health care put patient safety above all," says Lucian Leape, M.D., cofounder of the National Patient Safety Foundation. Of Virginia Mason, he says, "We wish we could clone them."

Read on to learn what Virginia Mason and other superstar hospitals are doing—and what Leapfrog says all hospitals should be doing—to improve patient safety.

Medication errors

About 400,000 drug-related injuries occur each year in hospitals, according to an Institute of Medicine study. To help solve the problem, many of the safest hospitals have embraced the use of a computerized provider order entry (CPOE) system, which forces doctors to enter prescriptions into the computer electronically. “It basically eliminates transcription errors,” says Anthony J. Ardire, M.D., senior vice president for quality and patient safety at Lehigh Valley Health Network in Allentown, Pennsylvania. The system also has built-in safety alerts—for example, it won’t allow doctors to prescribe more medicine than is generally recommended. Since implementing the system and introducing bar coding, in which a patient’s bracelet is scanned to ensure the right patient is getting the right medication at the right dose, Lehigh Valley’s medication-error rate has been reduced from 2 in 100,000 doses to 2 in 1 million doses.

Virginia Mason and Kaiser Permanente, which provide both outpatient doctor visits and in-hospital care, have integrated their CPOE systems with electronic medical record keeping, so new drug orders can be checked against the patient’s existing medication record for possible interactions and allergies. When a patient leaves the hospital, the system updates his or her medication list.



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Virginia Mason also takes the unusual step of tracking medications prescribed outside the hospital—staff can learn if a patient has actually filled a prescription. That could change the treatment if the hospital staff notices that a patient admitted with high blood pressure, for instance, hasn’t been filling prescriptions.

Infection control

Five to 10 percent of patients get a preventable infection in the hospital, and nearly 100,000 people die from one each year, reports the Centers for Disease Control and Prevention. To avert these tragedies, today’s safest hospitals rely on checklists, such as those used by airline pilots. One such checklist, developed by Peter J. Pronovost, M.D., senior vice president for patient safety and quality at the Johns

5 Ways to Protect Yourself

● Check credentials.

Make sure the hospital is accredited by The Joint Commission, the chief hospital accrediting organization in the U.S. (qualitycheck.org).

● **Ask questions.** “Overwhelming data show that when patients actively participate in their own care, they have better outcomes,” says Peter J. Pronovost, M.D., patient-safety expert at Johns Hopkins.

● Bring an advocate.

Another set of eyes and ears monitoring your care helps. “I slept in a cot by my mother’s side for two days when she was in the hospital,” says Robert M. Wachter, M.D., associate chair of the department of medicine at the University of California, San Francisco.

● **Be persistent.** Make sure providers follow standard procedures for common practices like inserting IV lines.

● **Sanitize surfaces.** Guard against superbugs with alcohol and bleach wipes. —B.H.

Hopkins Medical Center in Baltimore, has been tremendously successful in reducing central line infections, which occur when a catheter used to provide a patient with medicine or nourishment becomes contaminated. Up to 20,000 patients die each year from central line infections, according to an article in the journal *Emerging Infectious Diseases*. When the University of Michigan Hospitals and Health Centers introduced Pronovost’s five-item checklist—which includes such practical steps as washing your hands and cleaning patients’ skin before inserting a line—it was able to reduce central line infections by 66 percent.

Several years ago Brigham and Women’s Hospital in Boston started a prevention protocol against *C. difficile*—a cause of infectious diarrhea in hospitals—featuring prominent door signs for affected patients, while also stepping up its *C. difficile* treatment regimen. The result: Incidence rates have dropped by 40 percent.

And The Methodist Hospital in Houston uses an electronic screening tool to pick up early signs of sepsis—a severe blood infection that kills more than 230,000 people annually.

Surgical errors

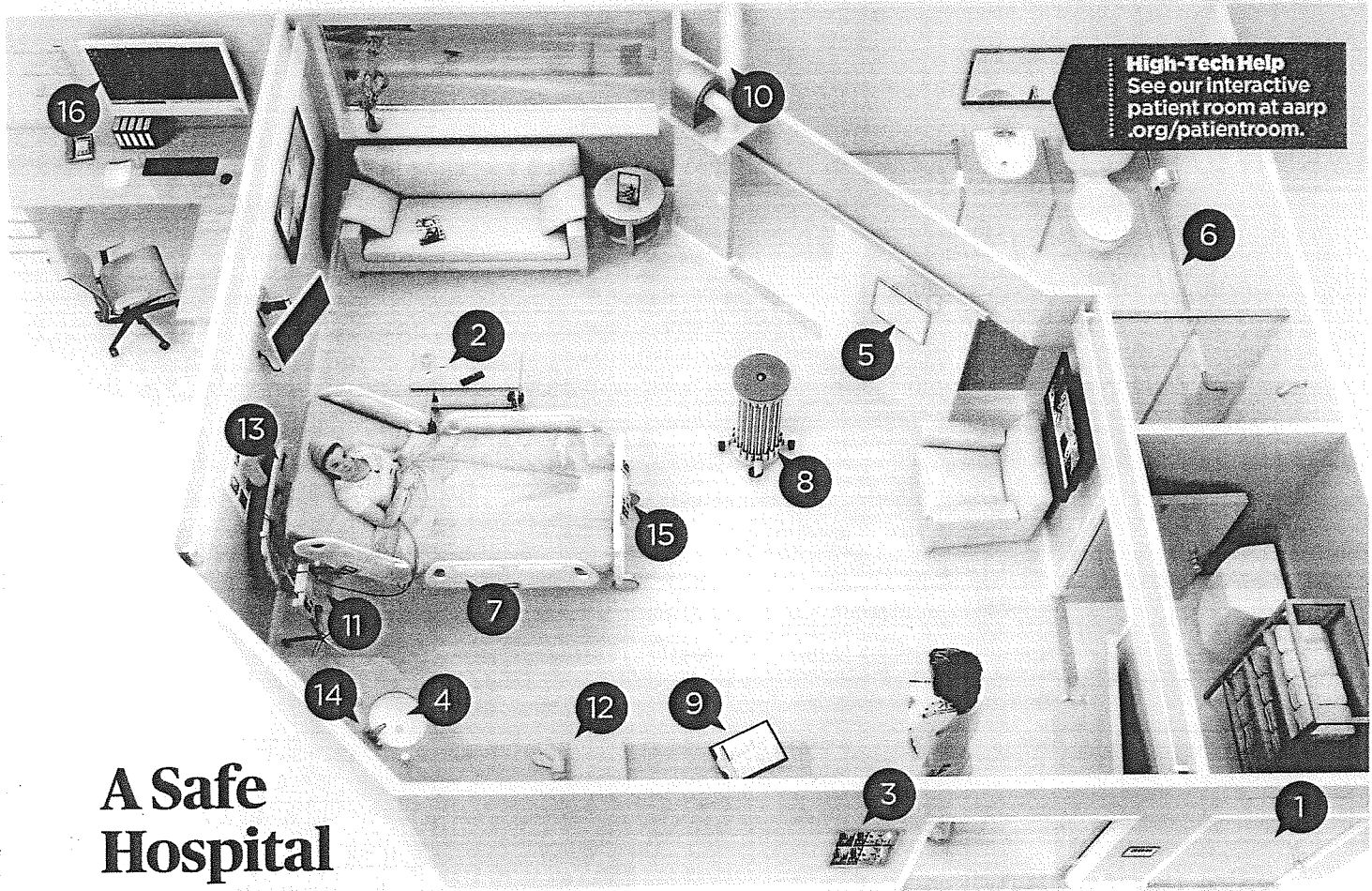
Before every surgery at Regions Hospital in St. Paul, Minnesota, the flurry of pre-op activity stops and team members who are preparing to spend the next few hours together gather around the patient for a time-out: an opportunity to introduce themselves to one another.

The team verifies the patient’s name, the type of surgery, and the surgical site, using a checklist with each of these steps blown up in giant letters so everyone can see them. “We make it easier for providers to do the right thing,” says Beth Heinz, the hospital’s chief quality officer. The hospital also places a sterile “time-out towel” over the surgical instruments, to act as a visible cue to perform this important step. Says Heinz, “You can’t touch the instruments without that reminder to do the time-out.”

Such “time-outs” are routine among the hospital-safety superstars. “Anonymity is not safe in the OR,” says Marty Makary, M.D., author of *Unaccountable: What Hospitals Won’t Tell You and How Transparency Can Revolutionize Health Care*. He maintains that it tends to reduce accountability, which in turn can “promote harmful behavior.”

Surgeons at Montefiore Medical Center in the Bronx, New York, supplement manual counts of surgical tools

High-Tech Help
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patient room at aarp.org/patientroom.



A Safe Hospital Room of the Future

1 Double-sided linen closets allow staff to restock supplies without disturbing the patient.
2 Bar codes increase safety by matching the right medicine to the right patient.

3 A two-bin supply system ensures that providers don't run out of critical supplies.
4 A hand-washing station in every room gives providers a place to wash their hands.
5 A sliding glass door doubles as a **smart board** for information exchanges.

6 Hand bars on all sides of the bathroom help patients navigate more safely.
7 Bed alarms alert nurses that a patient may be attempting to get out of bed unassisted.
8 Disinfecting units use ultra-violet light to kill germs.
9 Checklists give providers a set of

proven rules for preventing infections.
10 Vents suck the air out of the room of sick patients, filter it and then release it from the building.
11 "Smart" pumps deliver fluids, nutrients and medicines to patients at precisely controlled rates.

12 Kits for fall prevention include color-coded nonslip socks, lap blanket and wristband.
13 Frequently touched surfaces, such as IV poles, bed rails and faucets, are made with **germ-resistant copper alloys**, which are naturally anti-microbial.
14 Infrared

technology that lights up the sink reminds health care providers to wash their hands.
15 Beds with translation technology help staff speak with all patients.
16 Real-time vital signs—heart rate, blood pressure—can be monitored from computers outside the room. —B.H.

with a technology that tags surgical sponges with radio frequency chips. Before closing up a patient, the surgeon waves a wand over the body to locate missing sponges. "Sponges soaked in blood or fluid can be hard to spot inside a body cavity," says Robert E. Michler, M.D., Montefiore's surgeon in chief. The system allows surgeons to work more efficiently, avoiding X-rays and getting the patient into recovery more quickly.

ICU safety

At Virginia Mason, gone are the days when a patient stops breathing and everyone comes running, creating mass confusion. Now key responders have designated roles and stand at specific places around the bed of a patient in crisis. In addition, the hospital conducts code drills to fine-tune performance. "Every time we drill, we find a place to improve," says Ian Smith, M.D., head of the hospital's (CONTINUED ON PAGE 71)

Safe Hospitals

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critical-care unit and respiratory therapy and one of its 12 “intensivists,” doctors trained to manage the complex care needs of critically ill patients.

Only about 35 percent of hospitals that responded to a Leapfrog survey had intensivists monitor every patient in the ICU. Yet doing so reduces the risk of death in critical-care units by up to 40 percent, according to Leapfrog.

At night, when many ICUs are staffed solely by nurses, hospitals such as Lehigh Valley rely on remote monitoring by intensivists from a command center a few miles away. “Our system provides both audio and visual access in room,” says Lehigh Valley’s Ardire. “The picture is so clear you can examine the pupils of the patient’s eyes.”

Nursing quality

In the years before Virginia Mason’s safety crusade, nurses scrambled for supplies, sometimes waiting in line at a medication vending machine or even running down the street to get supplies at a drugstore. At shift changes, they gathered in a conference room to discuss patients, leaving them unattended for up to an hour, says Charleen Tachibana, RN, chief nursing officer.

Today the hospital places supplies in patients’ rooms and conducts “hand-offs”—where information about patients is passed from one nurse to the next—right at the bedside. “It’s much safer for the patient and more rewarding for us,” says Janet G. Streifel, RN.

Nurses at Homestead Hospital in Homestead, Florida, make regular rounds so they can anticipate patients’ needs, rather than waiting to respond to a frantic call button. “That prevents patients from trying to get out of the bed to go to the toilet by themselves,” says Gail Gordon, RN, vice president and chief nursing officer. Answering nature’s call is a major reason for hospital falls, which affect up to 15 percent of patients and result in serious injury 30 percent of the time.

Finally, nurses at Sentara CarePlex

Hospital in Hampton, Virginia, make special rounds to examine the skin of patients at high risk for pressure ulcers, or bedsores, which can cause pain and even deadly infection.

Design safety

When top hospitals get the chance to build a new building, patient safety is key to the design. Take Englewood Hospital and Medical Center in Englewood, New Jersey. The hospital’s ER, which opened in 2009, features private rooms separated by opaque sliding glass doors. “The older ER had curtains separating patients,” says Bettyann Cifu, Englewood’s director of quality development and accreditation. “There was no privacy. When another patient can hear, patients may not confide crucial factors.”

In Chicago, patients at the Rush University Medical Center’s gleaming year-old facility, called the Tower, stay in private rooms to thwart the spread of infection. And rooms can be negatively pressurized so air from contagious patients is expelled from the building instead of circulating inside.

Significantly, every room is exactly alike. “When you enter a patient’s room, you may need to find something quickly,” explains David Ansell, M.D., Rush’s chief medical officer. “Things like oxygen are in the same place in every single room.”

Teamwork and transparency

Doctors have always been at the top of the medical hierarchy in this country, and that, say experts, often makes nurses and support staff hesitant to speak up—even when they see a disaster about to occur. “For 150 years we’ve taught physicians they’re the boss, that they know more than anybody else. In effect we’ve taught them anti-team behavior,” says Leape, of the Harvard School of Public Health. “That doesn’t work in 21st-century medicine.”

The country’s safest hospitals recognize this and have worked hard to change the culture, telling nurses and technicians to speak up when they see a problem. It hasn’t always been easy. Early in Virginia Mason’s trans-

formation, a nurse there noticed that a cancer patient hadn’t received the echocardiogram that is standard protocol before starting chemotherapy. She mentioned it to the patient’s doctor. Annoyed, he ordered her to begin the treatment anyway. Instead, she called the head of cancer services, who backed her up. When the doctor yelled at her for going around him, she alerted higher-ups through the patient safety alert system, which resulted in the doctor’s temporarily being removed from practicing at Virginia Mason.

The institutional culture is changing, too, albeit slowly, as hospitals become more open about their mistakes. Hospitals earn trust when they admit to errors, says Richard C. Boothman, executive director of clinical safety at the University of Michigan Hospitals and Health Centers. He pioneered the health system’s Disclosure, Apology and Offer model, in which patients are quickly told of errors, issued an apology and offered a settlement. To understand just how rare this policy is, consider that hospitals inform patients immediately when a mistake has occurred only about 2 percent of the time, according to a Johns Hopkins study.

Michigan also monitors rates of infection for individual doctors and pulls outliers aside—not for punishment but for retraining. Beth Israel Deaconess Medical Center in Boston displays infection and error rates on its website as a way to stay accountable to the public.

Virginia Mason received a barrage of criticism for Mary McClinton’s untimely death, but over time, staff and community members have come to view it as the defining moment when the hospital began to truly change its safety culture. And in a personal vote of confidence, McClinton’s son Gerald decided to have his own knee surgery at Virginia Mason two years ago. “It was one of the hardest decisions I’ve had to make, but they took care of me quite well,” says Gerald, who owns a real estate company in Seattle. “As long as they stay set on making the hospital one of the safest in the world, they’ve got my support.” ■