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Plus:
A Complete Guide to Managing Your Hospital Stay
Navigating the Hospital

No one happily anticipates a hospital stay. But if you follow this guide, at least it will be briefer—and safer

By Sarah Baldauf

Foreign, overwhelming, frightening, a hospital is a place where you turn your body over to white-coated authority figures and try not to let your thoughts drift to what they plan to do to it. All you have to do is hear the words “you need surgery,” says patient safety guru David Nash, chair of the department of health policy at Jefferson Medical College in Philadelphia, “and your IQ falls by 50 percent.”

But a little familiarity with hospital people and processes can quiet your restless mind and lessen the fear factor. Even better, this grounding will tell you what you need to know to help keep you safe, shorten your stay, and hasten your recovery.

On the next pages, we’ll lead you through the steps you would follow at a typical hospital if you needed surgery, starting when the procedure is scheduled and ending when you go home. The showcase operation will be coronary artery bypass surgery; it is commonly performed in hospitals of all sizes and calls for both skill and teamwork.

We went through the steps via a patient’s-eye tour of Sentara Heart Hospital, a 112-bed facility on the campus of Sentara Norfolk General Hospital in Norfolk, Va. Sentara Heart is considered a high-volume center, performing 905 bypass procedures in 2005. Its mortality rate, adjusted for patients’ health status, was 1.6 percent, a nice step below the 2.2 percent national average.

Name, please. Sentara is also on the leading edge of a burgeoning hospital safety and quality movement. By the time one 69-year-old patient was about to be wheeled into open-heart surgery last month, the retired engineer from Manteo, N.C., had already been asked over and over, by a string of nurses and doctors, his full name, his date of birth, and the surgery he was to have. “My name’s Thomas Adams and I was born yesterday,” he joked after the umpteenth repetition.

It wasn’t because none of his caregivers had made notes in his chart or could be bothered to remember who he was. Rather, it demonstrated the hospital’s safety focus, helping to prevent such medical errors as performing the wrong procedure (or performing it on the wrong side of the body) or giving a medication to the wrong patient.

In a facility that faithfully follows guidelines issued by the Joint Commission, the hospital accrediting body, the number of people who go through the name/birth date/surgery drill during your stay will seem comical at best and annoying at worst. But if you’re not asked before a nurse, technician, or doctor does or administers anything, you need to speak up.

As the person donning that humiliating gown, you have the right to participate actively in your care. Politely and assertively asking questions of your caregivers may be the most important thing you do, even in the best of institutions with the most risk-averse staff. Face it, says Nash, a hospital is a whirlwind of activity—a “hurly-burly, rock ‘em, sock ‘em place.” The goal is to get well, and not to get socked.
SCHEDULING SURGERY

Before the OR is even booked, the surgeon should walk you through the risks and benefits of the procedure he suggests against those of other possible options (including doing nothing at all). Only after you’ve received and digested his answers should surgery be scheduled. And a crucial part of the discussion should be about the surgeon himself. As Nash says: “In God we trust. Everyone else bring their data.”

The critical questions: How many of these operations did you do last year? (For bypass surgery, at least 100.) How many did the hospital do? (Bypass: Look for 450 or more.) What was your mortality rate, and how does it compare with national averages? Lower obviously is better, but slightly higher could reflect a willingness to accept riskier patients and shouldn’t be an automatic deal killer.

And if you’re a 64-year-old diabetic male, say, outcomes in similar patients who had the procedure are relevant, says Thomas Russell, executive director of the American College of Surgeons and a specialist in colon and rectal procedures.

To get a feel for the hospital’s commitment to care after surgery, you can inquire about nurse-patient ratios. California, the only state that currently sets specific standards, requires a nurse-patient ratio of 1 to 2 in intensive care and 1 to 4 in the step-down unit, as the patient floor is called. (The latter figure will improve to 1 to 3 next year.) These should be expected targets.

In your talk with the surgeon, you’ll be steered through the results of your angiogram, MRI and maybe CT scans, and the surgical plan. Absorbing it all is hard.

“On initial discussion, very little is retained,” says Glenn Barnhart, chief of cardiac services at Sentara Heart. Bring someone who can take notes and think of questions is a good idea. If you must go solo, copious note taking beats memorizing. Pay really close attention to instructions about your current medications. The blood thinner Coumadin, for example, can cause serious bleeding in or after surgery and should be stopped five to seven days ahead of time. If you forget, you’ll go for surgery only to be turned away. This is also a good time to ask about management of postoperative pain. Depending on the procedure, you may have choices between, say, a regional nerve block and a device that allows you to press a button for a dose of relief, delivered through an IV or an epidural inserted near your spinal canal.

If you can arrange it, making your surgery the first one of the day on a Tuesday, Wednesday, or Thursday has merit. The surgeon might be fresher and not coming right off the weekend, and early-morning cases are less likely to be bumped by emergencies. Major surgery on a Friday means you’ll be in the hospital over the weekend, when specialists in infection, cardiology, pulmonology, and other backup services are more likely to be on call than on the premises. And late June and July are good months to put off going to a teaching hospital. The “house staff” physicians will turn over with the arrival of a new crop of novice residents. They’re bright and well trained, but let them practice before working on you. •

Your Guardian Angel

Experts in patient safety insist you’ll need an advocate in the hospital—someone who will scrutinize every pill and IV bag, question authority, keep cool in a crisis, and keep you calm and your spirits high.

Dream on, says Martin Hatlic, president of Partnership for Patient Safety, a Chicago-based advocacy group. “There are certain things as a layperson that you cannot understand about the medical world,” he says—why the patient is suddenly spiking a fever, say, and a take-no-prisoners attitude will alienate nurses and other caregivers (bad idea).

What you really need at your side, says Hatlic, is someone who meshes with your medical providers. “Make yourself indispensable to them,” he suggests—learning to spot whatever calls for attention, like a nearly empty IV bag or nearly full urine container. Giving alcohol rubs. Helping you to the bathroom. At the same time, complimenting caregivers who perform their jobs conscientiously and thoughtfully, like the nurse who finds a vein with little discomfort on the first try.

And making a genuine effort to get to know them a little—asking a doctor about his children or a nurse what he likes to do in his free time.

Yes, your advocate may need to be a bit pushy on occasion. “I do understand the hospital has a rule against staying overnight in a patient’s room,” she might say. “But might an exception be made? My friend is really anxious.” That’s an advocate you want at your side—someone who chooses her battles and plays well with others. Not a tightly wound watchdog. —S.B.
PREADMISSION

The preadmission appointment is a hospital's version of confession. It's where you come clean about everything: your allergies to seafood, eggs, and sunscreen (some people strongly react to PABA, a chemical in sunscreen); your garlic supplements or Viagra; your penchant for ginseng tea. If you're sensitive to latex, "it's a big deal," says David Schinderle, a cardiologist at Sentara Heart. Patients with a latex allergy are always done as the first case of drug and herbal and dietary supplement (vitamins count) into a bag, and bring it to the appointment. A written or printed list falls short. "We don't want people to self-select what they think is important," says Mark Lema, president of the American Society of Anesthesiologists and chair of anesthesiology at the State University of New York at Buffalo.

Test parade. The surgeon and anesthesiologist need a clinical baseline, so you'll be run through a gamut of tests in your preadmission session. Blood work for cardiology patients will, among other things, allow the transfusion service to prepare a unit of blood, should one be needed, before surgery. You may get a chest X-ray and an EKG. If there's any test that you weren't expecting or don't understand, you're entitled to an explanation.

This is also the time you'll discuss specific changes to your current drug regimen. It is nearly certain, for example, that you will be told to stop taking aspirin, even so much as a baby tablet, a week or so in advance. Aspirin deactivates blood platelets, possibly leading to excessive bleeding during or after surgery.

But your surgeon will probably want some drugs—a beta blocker for high blood pressure, say—continued right up to the morning of surgery. If that's the case, it is important to understand the instructions for taking the pill that morning, since food and drink will be off limits typically from midnight the night before surgery, but water may be acceptable. Explicit details, recorded in a notebook, will keep it straight.

Who determines the medications and dosages after surgery should be sorted out at this appointment. It could get complicated, says respiratory therapist Fran Griffin, a director at the Institute for Healthcare Improvement, a Cambridge, Mass.-based group that promotes safety initiatives. Patients often come to the hospital on a drug regimen determined by their internist, who, Griffin notes, may or may not be involved in their postop care. The course of the surgery could affect the mix of medications immediately afterward and during your stay, and knowing in advance who will make the call for changes is information you should have.

If there's a test you don't understand, you're entitled to an explanation.

Making the Pain Go Away

NEW OPTIONS DO THE JOB AND KEEP THE MIND CLEAR

Your doctors and nurses want to keep you from suffering after surgery—to a point. Opiate-type drugs such as morphine can induce nausea and vomiting, hamper the return to normal of your digestive and respiratory functions, and affect your ability to communicate with your caregivers. So the idea is to minimize real pain but accept some discomfort.

Putting pain medication right at the source, where it is more effective and keeps the mind clear and other body parts unaffected, is an increasingly popular alternative with some procedures.

Taking control. A nerve block is one such approach. Following a knee operation, for example, a thin needle, guided by ultrasound, is placed next to the femoral nerve in the groin to deliver a long-acting drug similar to lidocaine. Epidural blocks, long used during labor, are another option. For an abdominal procedure, say, an epidural catheter is inserted near the spinal canal where the abdominal nerves branch off, and medication is pumped in. Patients may be allowed to control the pain themselves, pushing a button to release a monitored dose as needed.

Pain control matters not just because it makes patients feel better, says Michael Ashburn, director of pain medicine and palliative care at the Hospital of the University of Pennsylvania. Uncontrolled, the body's response to the stress of surgery raises the risk of bleeding, stroke, and angina. The nervous system may change how it processes pain signals, possibly leading to chronic pain.

Even stoics should disclose pain to caregivers—both the degree and kind (such as throbbing and persistent). Your words take the measure of your pain better than any instrument can.—S.B.
COUNTING DOWN

The weeks leading up to surgery are a time for attending to a plethora of details. A large one is the possibility of a transfusion. If the surgeon thinks the chances are more than about 1 in 10 you could need one and the operation is several weeks off, you might inquire about pre-donating blood to yourself. The risk is minimal, and the safest blood of all is your own.

Changes by the surgeon to the medications you usually take are often especially confusing, so review those instructions—as well as the ones you got at the preadmission appointment—at least a week and a half in advance. Some medications may need to be halted more than a week prior to surgery. Many surgeons feel so strongly about aspirin that if you pop one anytime during the week before the operation, you risk being sent home when you show up. You might need to shelve your blade, too. "Using razors can cause little microscopic cuts in the skin and increase the risk of infection," says the Institute for Healthcare Improvement’s Fran Griffin, meaning that your surgeon could ask you to stop if the operative site includes an area you normally shave such as your face or legs. You should be told when it’s time to quit. The current concern over hospital-acquired infections clearly outweighs any embarrassment you might feel about unsightly hair. At Sentara, presurgical preparation involves clipping rather than shaving the hair around the incision site. Patients are asked not to trim ahead of time so that staff can get a closer clip just before the procedure.

Food and beverage rules are strict, with nothing permitted in the hours just before surgery, typically from midnight on. Sentara patients who are told they can or should take medication the morning of surgery are instructed to do so with the tiniest possible sip of water, says Jennifer Chiusano, director of cardiac nursing services.

The danger is that anything you ate or drank before surgery could find its way into your lungs. During intubation, when the breathing tube is put down your airway, you could inhale the contents of your stomach. That could trigger a cascade of events leading to severe pneumonia or even death. So no midnight snack.

Before leaving the house, remember to leave behind your watch and all jewelry and accessories (including body studs). The hospital won’t take responsibility for them, they are reservoirs of bacteria, and you don’t need an instrument snagging on an overlooked earring.

Your New Best Friends, the Nurses

It’s not doctors who watch your heart rate and blood pressure and catch a hint of redness that could indicate infection. It’s not doctors who change your dressings, bring you a cold cup of ginger ale at 2 a.m., and maybe bend a rule or two on your behalf. You know who does, and you want those nurses to be your allies. They will if you respect their time, make an effort to understand the system in which they operate, and know when and when not to go over their heads.

Most nurses are in constant overdrive. Being specific helps them set priorities. "It’s one thing to say, ‘I need my nurse,’” but what can expedite the request is, ‘I need help getting out of bed to go to the bathroom,” says Isis Montalvo of the American Nurses Association. When you press the call button, you’ll probably be asked over the intercom what you want. If it is important and your assigned nurse is with another patient, some other nurse may be able to step in. If you just need a little water or your pillow pumped, you may have to wait. You can manage, and the nurse will appreciate your accepting that other tasks come first.

Squeaky wheel. Sometimes you’ll need chutzpah, sometimes finesse. If your pain is unresolved or worsening even after getting pain medication, use the call button. If no one comes, ask again, and then a third time. "They do have other patients, but your pain comes first,” says critical-care nurse Debra Simmons, associate director of the Institute of Healthcare Excellence at the University of Texas M. D. Anderson Cancer Center. If your nurse wants to give your pain meds another 15 minutes to kick in, get him to commit to checking with you then, she says. If he doesn’t show, hit the call button again. And if he asks you to sit tight for a few more minutes because of a patient down the hall whose blood pressure is dropping, Simmons says that’s when you ask to talk to a supervisor.

On the other hand, why bother them with things you or a family member can handle or complain about issues beyond their control? Nurses may seem all-knowing, but they don’t run the whole hospital. If meals are consistently late or the TV doesn’t work right, don’t gripe to the floor nurse. Ask her whom you should call. -S.B.
PRE-OP

You dutifully awoke in the wee hours so you could get to the hospital by the appointed hour. For your trouble, now you’re in hurry-up-and-wait mode in a hospital bed or gurney. The anesthesia team is readying the OK for your surgery based on a review of your chart and a brief conversation you’ll soon have. At Sentara Heart, patients and their families at least get to pass the time in private rooms. More typically, you’ll be put in a large “holding area” along with other pending surgery cases, with a privacy curtain around each bed.

Various scrubs-clad staff will come by to check who you are and what you’re in for. You’ll also be asked whether you had anything to eat or drink since midnight the night before. If you ate anything at all or drank fluids other than a small amount of water permitted to take a medication, you’ll have to tick off six to eight hours while your stomach empties—if you’re lucky. If not, you’ll have to go back home, reschedule the surgery, and redo the early-morning routine all over again.

You’re going to be in a pre-op holding pattern for a while. This is where you’ll also be stuck to have an IV line inserted so that sedatives, anesthesia drugs, and other medications can be delivered directly into the bloodstream. Blood may be drawn from this same needle stick to check its clotting ability, especially if you’ve been taken off blood-thinning meds prior to surgery or had abnormal potassium, say, in your preadmissions blood work.

You can put in a request for a standing order from the anesthesiologist for a local anesthetic such as lidocaine when getting a stick that requires searching for a vein or artery (which could hurt more than a bit, depending on your pain tolerance), especially if yours are hard to find. The numbing agent is injected with a fine needle with the ouch factor of a bee sting before applying the larger one.

Brown-bagging. When the anesthesiologist arrives, she will want to review your medical history, allergies, and every drug or supplement you take (again, bring everything in a brown bag). Tell all, and let her decide what is relevant.

She will check your mouth and throat for anything that might give her trouble when she inserts the breathing tube into your windpipe. Most patients given general anesthesia are intubated. A ventilator will breathe for you throughout and just after surgery. To avoid injury that might extend your hospital stay, the doctors and nurses should be told about esophageal disease or surgery, or previous difficulty when you had general anesthesia in the past. This is a good time to review management of your postop pain, since certain approaches need to be initiated prior to surgery.

You’ll also get a visit from your surgeon, who will use a marking pen to in-

Monitoring Your Meds

PHARMACISTS DO A JUGGLING ACT EVERY DAY

Like vital moving parts inside an engine, cadres of unseen pharmacists are critical to the care of hospitalized patients. The range and complexity of medications that hospital pharmacists count and concoct make a retail pharmacist’s job look easy by comparison.

The central pharmacy in a typical hospital is aswarm with pharmacists and their assistants busy measuring, counting, and checking. One patient needs an IV bag with a particular mix of anesthesia drugs for surgery. Another gets an assortment of pills and capsules, separated by specific times they must be taken. Countless bags of Ringer’s solution, a blend of water and electrolytes that is dripped into patients to restore their fluid balance, are zipped to patient units across the hospital.

Going public. Pharmacists at some hospitals, among them Sentara Heart, have emerged from the shadows to work directly in the units. Over the course of the day, the unit pharmacist reviews every medication sent from the central pharmacy and enters new physician’s orders into an electronic ordering system. He can check on possible drug interactions and conflicts between a patient’s new lab results and her drug regimen, because unlike those who staff the central pharmacy, he has access to each patient’s chart. -S.B.
dicate the correct surgery site. Along with having a heart valve replaced, Sentara patient Margaret Denison got an X and a "yes" on the left side of her neck, indicating that vascular surgeon Noel Parent would work on her left carotid artery. "There's nothing worse than a good operation on the wrong side," said Parent, only half joking. He would shortly clear plaque from the artery, one of a pair that supply blood to the brain. The plaque buildup was limiting blood flow, which often made the 71-year-old from Herford, N.C., feel lightheaded.

About an hour before surgery, you'll get a dose of an antibiotic. It will be continued for 24 hours afterward to stave off surgical site infection, which affects an estimated 1 in 7 patients and more than doubles the risk of dying.

**FINALLY, THE OR**

Down the corridor you roll, through the swinging doors and into the OR. Your gurney will be pushed up next to the operating table and adjusted to the same height, and you'll be eased over. The table may seem awfully skinny, which it is. That's to let the OR team get close to their work. Around you is a dance of purposeful activity as nurses, technicians, and doctors roll carts of instruments and supplies into place. If a sedative wasn't started in pre-op it will be now, to blunt your jitters and keep you comfortable.

A needle will be inserted into an artery, most likely in your wrist, to monitor blood levels of oxygen and carbon dioxide and keep closer tabs on your blood pressure than a cuff would. If this "arterial stick" is done in pre-op, as is customary in some hospitals, it can be painful. Arteries have more nerves than veins and are deeper and their muscular walls thicker, so puncturing them is more difficult. With sedation and injection of a local anesthetic first—standard practice at Sentara Heart—pain is greatly reduced. That's something else to bring up with your hospital.

Then it's lights out. Closely monitoring your blood pressure and heart rate, the anesthesiologist starts the sleep-inducing drug to push you under. "I remember the anesthesiologist telling me he was putting drugs in the IV," says Thomas Adams; after that, nothing. It was not only because he lost consciousness. As is commonplace, he also had received a drug, typically Versed, the causes amnesia.

The anesthesiologist grazes your eyelashes with his fingertips, looking for complete absence of any reaction. Then your eyelids will be taped shut to keep your eyes from drying out. (Special tape that won't irritate the skin when stripped off after surgery can be requested ahead of time.) A paralyzing drug flows into your body to prevent involuntary movement during surgery. "Paralyzing" in this case doesn't mean rigid, with muscles locked. Just the opposite—you're as floppy as a wet noodle and incapable of twitching. The anes-

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**The Real Inner You**

**NEVER HAD A CT OR MRI SCAN? LOOK INTO THIS QUICK COURSE**

Even after you're admitted, you might get a CT or MRI scan, so here's what you need to know.

A CT (computed tomography) scanner takes multiple X-rays of your body and can assemble "slices" thinner than 1/50th of an inch into a 3-D image. You will get an IV injection (sometimes a drink) of a contrast dye first, to highlight the tissue of interest. Then you'll lie flat on a table and positioned inside a ring like a large doughnut.

A magnetic resonance imaging (MRI) scanner produces two-dimensional images from electromagnetic waves. You will be secured to a platform and pushed inside a body-length tube, perhaps after an injection of contrast dye. If offered headphones, with or without music, use them to muffle the jackhammer-like racket. It could take an hour or longer; you'll have to keep still and hold your breath on cue.

You can get a sedative if you're apprehensive, and a panic button will signal the staff to pull you out. At Sentara, the room is spritzed with a vanilla-scented spray that calms some patients, and glasses with angled lenses are provided for a view to the outside world. Electromagnetic waves are harmless but can affect metal objects in the body—patients with a pacemaker or other metallic implants should tell the radiologist.

CT scan of a patient's heart reveals all.
The surgeon might appear only after he puts in the final closing stitch, or he could come out earlier and allow a more junior physician or a specialized nurse to close. The operation itself is harder on families than on their blissfully unaware loved ones. Several years ago, nursing director Jennifer Chiusano found herself waiting in a Kentucky hospital for word from the OR about her mother, who was undergoing bypass surgery. Her anxiety was a revelation. Until you’re on the other end, she says, “you just don’t realize how valuable that phone call is.”

**THE SURGICAL ICU**

Still unconscious and laden with tubes and wires, you’ll be moved onto a hospital bed and wheeled to the surgical intensive care unit, or SICU, for close monitoring during the critical postsurgical hours. Surgery assaults the body, hammering the immune system and tilting the balance of fluids and electrolytes, and this particular procedure demands cracking the sternum and doing needlepoint on the heart’s own arteries. The SICU team will track your blood pressure, heart rhythm, respiratory rate, and urine output, and check for bleeding from your incisions to make sure you won’t need a return visit to the OR.

The timing of the return to consciousness is usually up to the critical-care nurses, although your surgeon will visit shortly after you arrive. For all of the digital readouts and LCD screens, assessing patients still involves touch. As Barnhart, the cardiac surgeon, gently grasped one of Margaret Denison’s feet in each hand, he nodded at a device by her bed. “There’s a lot of potential for inaccuracy between her body and that monitor,” he said. A few hours earlier, vascular surgeon Noel Parent had cleared a buildup of plaque from the carotid artery on the left of Denison’s neck. Then Barnhart had cut out her calcium-encrusted aortic valve and sutured a pig’s valve in its place. For heart patients, he explained, the strength of the “pedal pulse”—the beat in the feet, if you will—and the warmth of each foot are the best read on the newly repaired heart’s vigor.

**VERY INTENSIVE CARE.** Just out of heart surgery, Sentara patient James Walls gets checked out.

You will be weaned from the ventilator over an hour or two, the flow of drugs gradually dialed back as you regain consciousness. The breathing tube will remain in place, which is uncomfortable and can trigger anxiety or frustration because you can’t talk. Once the respiratory monitor shows that your lungs are not relying on the ventilator, a nurse will do a quick test for the amount of oxygen in blood drawn from the arterial line in your wrist. If it is sufficient, the tube will be removed, with a respiratory therapist standing by if needed.

**Bark, please.** Early the morning after surgery, Adams was extubated—his breathing tube was removed. “I barked a couple of times,” he says of the strange sounds he made when a nurse coaxed him to cough. The breathing tube irritated the vocal cords, making the first cough an effort to speak something of a struggle. But coughing is vital—it helps prevent pneumonia by flushing fluid from the lungs, which are back at work for the first time in quite a while.

Your team wants almost as badly as you do to get that tube out of your throat. Intubation for longer than 48 hours raises the risk of ventilator-associated pneumonia, says Michael Klompas, an infectious diseases physician at Brigham and Women’s Hospital in Boston. A literature review he headed, published in the Journal of the American Medical Association in April, showed that patients who develop VAP have twice the risk of dying as those who don’t.

Preventing VAP is surprisingly simple: Extubate as soon as possible, raise the
head of the bed at least to 30 degrees, and practice diligent handwashing. The surgeon and nurses will also watch very closely for other threats, such as infection at the site of the incision.

After extubation, you will be rapidly pushed toward self-sufficiency, even jollied out of bed. "They got him up in a chair right in the ICU!" marvels Adam's wife, Joanne, laughing. Just hours earlier, the evening after his surgery, the family had visited Adam, still unconscious, in the ICU. He could have looked worse. "There were tubes running everywhere," says Joanne. "He was pale but not as ghastly gray-looking as they'd said he'd be."

**ON THE FLOOR**

0 ut of the ICU and recuperating in your room, you will have little to do but read, chat with visitors, watch TV, and lament your new virtuous, heart-healthy, bland diet. Much of the time, that is. Nurses, doctors, specialists, and therapists will be frequent company. Each will have a particular mission—and the hospital where caregivers communicate seamlessly has yet to be discovered. Information can and will fall through the cracks. That spiral notebook should be at the ready to record the name of everyone who comes in, the time, and what they do or what directions they give. "If you can't remember who told you what, it's lost," says Nash.

That invites mistakes. In *Preventing Medication Errors*, a 2006 report by the Institute of Medicine, which advises Congress on health matters, a key finding was that "on average, a hospital patient is subject to at least one medication error per day"—wrong drug, wrong time, wrong administration (such as giving a drug by IV instead of orally). And, of course, wrong patient. If your blood thinner came at noon one day and at 3 p.m. the next, asking whether that's OK is appropriate. The nurse should faithfully identify all medications and match the patient name on the order to your ID band. Few of these slip-ups cause harm, but "vigilance is critical," says Nash.

That applies to the need for caregivers to disinfect their hands before touching

**Their Altered Mental States**

**THE CONFUSION OF DELIRIUM**

Especially if they are older and in intensive care, some patients go through episodes of delirium—a word that may suggest shouting and thrashing, but it's more a state of confusion. It may not be obvious at all. It may reveal itself as disorientation, irritability, or difficulty in following instructions. Or it may be more extreme—paranoid statements, claims of bugs crawling on the body, or sudden efforts to rip out wires and IV tubes. Less frequently, younger patients who are neither in intensive care nor on a ventilator are affected.

While enormously distressing to families, these occurrences typically are written off as benign, just one of those problems that come and go. Often the symptoms do fade quickly. But in the
past few years, researchers have unearthed evidence that "sundowning," as delirium states are nicknamed because of their timing, may be far from benign and could have lasting effects. "Delirium is a predictor of death, a longer hospital stay, and increased costs," says Wesley Ely, a critical-care specialist who founded the ICU Delirium and Cognitive Impairment Study Group at Vanderbilt University School of Medicine. It may also be a risk factor for dementia-like illness.

A key finding of Ely's group is that delirium is far more likely to affect patients who are sedated and ventilated. These cases often go undiagnosed, says Ely, because the breathing tube prevents the patient from talking. He developed a quick, nonverbal way to check such patients' mental state: For example, they are instructed to squeeze a nurse's hand only when she comes to an A as she spells "save a heart" out loud.

**Disrupted sleep.** Diagnosis is crucial, because delirium signals other issues. Ely is studying possible problems posed by common sedatives. Established factors include pneumonia, infection, low blood oxygen, a specific drug or combination of medications, too much fluid in the body, and out-of-balance electrolytes. A suddenly changed sleep cycle may induce delirium. The disruption could be due to sedation or, as happens too often, because a patient is awakened during the night for a routine chore such as getting a bath or having blood drawn. What's more, "it's fairly rare that you'd see a single factor causing the delirium," says Laura Fochtmann, professor of psychiatry and behavior science at Stony Brook University in New York.

Family and friends can help keep patients oriented. Remind them every day where they are and what is going on, says Ely. Bringing familiar or helpful items from home—glasses, hearing aid, clock, calendar—can better anchor them in reality.

After a bout of delirium, caregivers can be pressed to hunt down and address the cause. A psychiatric specialist can be consulted, a ban on late-night wake-ups can be requested, and the need for a prescribed psychoactive drug can be re-evaluated. The biggest problem, says Ely, is that too often "doctors are focused only on the organs that got the patient into the hospital." -S.B.
patients, as well. Nurses, doctors, and therapists will take blood, manipulate IVs, change dressings, and clean wounds or incisions. They will hold your wrist to take your pulse, place a stethoscope on your abdomen to hear your digestive tract gurgle, put a sympathetic hand on your shoulder as you cough. Every one of these acts exposes you to possible infection. Yet in a survey published last year in the Journal of General Internal Medicine in which 46 percent of discharged patients said they were “very comfortable” asking medical staff whether they washed their hands, only 5 percent said they spoke up. You’re well advised to be an exception (box, Page 85).

The intent of many of your regular visitors will be simple: to make you work. Bodily need to move after surgery, to promote healing and to prevent blood clots that can form when blood pools or moves sluggishly because of inactivity. For Adams, prevention took the form of repeated laps around the periphery of the step-down unit, guiding a wheelchair for stability.

The assignments in the step-down unit are the most basic imaginable—walking, coughing, breathing, navigating bathroom visits. After the trauma of surgery and the effects of general anesthesia, which can linger for weeks, these simple tasks take on a surprising level of difficulty. “That’s as deep as I can go,” became Adams’s plaintive claim when nurses firmly encouraged him to take deeper and deeper breaths or inhaling harder from his incentive spirometer (a hand-held plastic device used to help measure and restore lung capacity). For patients who have had open-heart surgery, every cough hurts, but forced hacking is a must, to clear mucus and exercise the lungs. Clutching a pillow or folded towel to the chest lessens the discomfort. Sentara gives patients a heart-shaped pillow with an anatomically correct picture of the human heart.

Making your way to the bathroom is trickier postoperatively not just because

HUG TIGHT: A pillow for a less painful cough

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Video: Inside the Cleveland Clinic
You need surgery. Three words you hope you never hear, but knowing how to navigate the hospital and what to expect at each step can speed recovery.
U.S. News Health Editor Bernadine Healy takes you to the Cleveland Clinic for an inside look at a common yet complex medical procedure—open-heart surgery.
www.usnews.com/hospitalVideo

Bernadine Healy, M.D., talks to a patient at the Cleveland Clinic.

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The Fine Print

On roll the charges for eight pages. When his ordeal began, the 25-year-old man figured he just had a stubborn cold. His breathing grew labored. An ultrasound exam prompted doctors to thread a tube into an artery and snake it up to his heart to look around. The verdict: pericarditis—inflammation of the sac around the heart. Ultimately he needed open-heart surgery.

He could have used a translator later. The itemized surgery bill excerpted below includes no-brainers like “aspirin 325mg tab.” But what about “telemetry-semi,” and “lab-fungus smear”? And are all the charges correct? Did this man receive every service listed?

Ninety percent of hospital bills have errors of some kind, estimates Mary Jane Stull, president of the Patient’s Advocate, a South Bend, Ind., firm paid by befuddled patients to intercede on their behalf. “But it’s not always intentional,” she says. “You find just as many mistakes for things they’ve forgotten to charge you for as you find overcharges.”

Line by line. You’ll have to plod through to find out. Some hospitals are working on patient-friendly bills, but yours will most likely resemble this one. The billing office should be willing to explain puzzling entries. If not, and the stakes are high, you can obtain help, for a fee, from members of the Medical Billing Advocates of America (www.billadvocates.com).

If the total is unaffordable or far beyond what your health insurance will cover, the hospital may have a special program to help cover at least some of the charges. You should ask, if—just—possible—the hospital doesn’t volunteer the information.

—Adam Voiland

Translating Your Hospital Bill

These are two excerpts from an eight-page bill for heart surgery.

Procedures get 5-digit CPT (current procedural terminology) billing codes. They can be looked up at http://www.cpt.com/1984v6.

Billing dates don’t always show when a service was provided. The order also may be off.

Three separate readings of blood oxygen level with a fingertip monitor. Many unfamiliar terms are explained at www.medicinenet.com.

HCPCS (healthcare common procedure coding system) billing codes identify medical supplies and certain drugs and procedures. ("C" codes describe injectable drugs.) A reference can be found at www.2palmettopa.com.

A drug library like www.drugslibrary.org will explain medications like this generic version of Tornodil, a pricier pain reliever. “IN” means injected.

If an itemized bill doesn’t come automatically, a request to the billing office should bring one. At a minimum, summary categories should be provided such as pharmacy and medical supplies.

Laboratory tests, therapy, surgery, and other charges other than room and board

Follow-up statements from the hospital (and health insurer if you’re covered) will show what you supposedly owe.

The tab for five days doesn’t include physician charges, which for this patient easily may add $10,000 to $12,000 more.