The last time I went under the knife was not a particularly ennobling experience. It wasn't just the hospital gown or the hair net or the fashionable paper slippers — the classic pre-surgical ensemble — I was wearing, it was also the fact that just before I went under, my doctor wrote his initials on my right hand. There's a veal calf quality to being branded like this, but I felt a lot less indignant when he explained why he'd done it: it was one final way to make sure he operated on the correct side of my body. Washing off the Sharpie, I reckoned, would be a lot easier than coming back for a surgical do-over. (More on Time.com: Want Good Health? There Are 10 Apps for That).

Operating-room errors hold a special terror for patients, if only because they seem like the most avoidable kind of complications. The occasional horror stories of patients who have the wrong leg removed or the wrong knee replaced generate the most headlines, as do tales of patients whose identities are mixed up entirely. But even errors that are caught early — when a surgeon cuts deeply into the wrong side of the abdomen, say, then switches sides before any permanent damage is done — can still lead to pain, infection and slower recovery times.

A new study just published in the Archives of Surgery, sought to determine just how often wrong-site, wrong-patient or wrong-procedure errors still occur. The authors of the paper, affiliated with the University of Colorado School of Medicine, conducted their work by mining a liability insurance database listing "clinician-reported adverse events" in Colorado from January 2002 to June 2008. The National Quality Forum (NFQ), a nonprofit group that serves as a standard-setting body for American medical practice, lists wrong-site, wrong-patient and wrong-procedure accidents as "never events" — in other words, zero-tolerance errors. But according to the new paper, never is a standard that has yet to be attained.

Of the 27,370 adverse events in the database, 25 involved wrong-patient errors and 107 involved the wrong site. Five of the wrong-patient errors and 38 of the wrong-procedure ones caused the patients serious harm and one led to death. (More on Time.com: Special — Health Care for the Uninsured).

The authors dug into each case to determine what had been behind the mistakes and found that 56% of the time simple misdiagnosis of the patient's problem had contributed to the error. In 85% of cases poor medical judgment had played a role and — perhaps no surprise — in 100% of the cases, poor communication was at least partly to blame.

In 2004, the Joint Commission, a national accrediting body for hospitals, issued what it calls the Universal Protocol, which is designed in part to help prevent surgical errors. The Protocol requires surgical teams to go through three pre-op steps: a verification of the procedure to be performed, a visible marking of the proper side of the body or site of the surgery and a pre-incision "time-out," during which a final check of the patient's identity should be made, as well as a confirmation of the work to be done and a list of all implants or drugs that will be used. The new study found that in a whopping 72% of cases, failure to perform the time-out had been at least partly to blame for errors. (More on Time.com: Top 10 Product Recalls).
Not all types of doctors were equally mistake-prone. Internal medicine specialists led the list, with 24% of all errors. Orthopedists were next at 22.4%, followed by general surgeons at 16.8% and anesthesiologists at 12.1%. Pathologists, urologists, ob-gyns, pediatricians and others tied at around 8% each. The numbers, of course, can be skewed by the simple fact that some types of doctors perform more operations than others, and thus have more opportunities to make a mistake.

The one group that wasn't included in that list were the patients themselves — and in fairness, they should hardly be blamed if their surgeons bungle the job. But for those patients who do worry about the prospect of going in for elbow surgery and coming out with a titanium hip, the final line of defense may be the most powerful: speak up. Once the oxygen mask is on your face and the anesthetic is in your veins, you'll be in entirely in the hands of the doctors. There's no harm in making sure one last time that they know who you are, why you're there, which parts need attention — and which should be left alone.

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