# Surviving and Preventing Medical Errors!*


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The purpose of this article is to share what I have learned from a cascade of medical errors that happen much more commonly than surgeons, hospitals, or health care providers acknowledge. My goal here is to provide a few simple recommendations to reduce these errors.

**Medical error is the third leading cause of death in the United States.**

It is now two years since my own surgery – double hernia repair by laparoscopy. The recovery predicted by my surgeon, "In a week you can go swimming again," turned out to be totally incorrect.

Six weeks after the surgery, I was still lugging a Foley catheter with a leg collection bag that drained my bladder. I had swelling due to blood clots in the abdominal area around my belly button, severe abdominal cramping, and at times, overwhelming spasms. For six weeks my throat was hoarse following the intubation. Instead of swimming, hiking, walking, working, and making love with my wife, I was totally incapacitated, unable to work, travel, or exercise. I had to lie down every few hours to reduce the pain and the spasms. Instead of going to Japan for a research project, I had to cancel my trip. Rather than teaching my class at the university, I had another faculty member teach for me. I am a fairly athletic guy – I swim several times a week, bike the Berkeley hills, and hike. Yet after the surgery, I avoided even walking in order to minimize the pain. I moved about as if I were crippled. Now two years later, I finally feel healthy again.

How come my experiences were not what the surgeon promised? All those who cared for me during this journey were compassionate individuals, committed to doing their best, including the emergency staff, the nurses, my two primary physicians, my surgeon, and my urologist. However, given the personal, professional, and economic cost to me and my family, I feel it is important to assess where things went wrong. The research literature makes it clear that my experience was by no means unique, so I have summarized some of the most important factors that contributed to these unexpected complications, following "simple arthroscopic surgery."

• **Underestimating the risk.** Although the surgeon suggested that the operation would be very low risk with no complications, statistically, the published research data does not support his optimistic statement. Complications for laparoscopic surgery range from 15% to as high as 38% or higher, depending on the age of the patient and how well they do with general anesthesia (Vigneswaran et al, 2015; Neumayer et al, 2004; Perugini & Callery, 2001). Experienced surgeons who have done more than 250 laparoscopic surgeries have a lower complication rate. However, a 2011 Cochrane review points out that there is theoretically a higher risk that intra-abdominal organs will be injured during a laparoscopic procedure (Sauerland, 2011). My experience is not an outlier– it is more common.

• **Inappropriate post-operative procedures**. In my case I was released directly after waking up from general anesthesia without checking to determine whether I could urinate or not. The medical staff and facility should never have released me, since older males have a 30% or higher probability that urinary retention will occur after general anesthesia. However, it was a Friday afternoon and the staff probably wanted to go home since the facility closes at 5:30 pm. This landed me that evening in the emergency room.

• **Medical negligence.** In my case the surgeon recommended that I have my bladder emptied in the emergency room and then go home. That was not sufficient, and my body still was not working properly and still could not urinate, requiring a second visit to the ER and the insertion of a Foley catheter. Following the second ER visit, the surgeon removed the catheter in his office in the late afternoon and did not check to determine whether I could urinate or not. This resulted in a third ER visit.

• **Medical error.** On my third visit to the emergency room, the nurse made the error of inflating the Foley catheter balloon when it was in the urethra (rather than the bladder) which caused tearing and bleeding of the urethra and possible irritation to the prostate.

• **Drawbacks of the ER as the primary resource for post-surgical care.** Care is not scheduled for the ➤

* Adapted from the blog, Surgery: Hope for the best and plan for the worst. https://peperperspective.com/2018/03/18/surgery-hope-for-the-best-but-plan-for-the-worst/

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patient's needs, but rather based on a triage system. In my case I had to wait sometimes two hours or more until a catheter could be inserted. The wait kept increasing the urine volume which expanded and irritated the bladder further.

• **A medical system that does not track treatment outcomes.** Without good follow-up and long-term data, no one is accountable or responsible.

• **A reimbursement system that rewards lower up-front costs.** The system favors quick outpatient surgeries without factoring in the long-term costs and harm of the type I experienced.

• **Assuming the best and not planning for the worst.**

Can I trust the health care provider's statement that the procedure is low risk and that the recovery will go smoothly? The typical outcome of a medical procedure or surgery may be significantly worse than generally reported by hospitals or medical staff. In many cases there is no systematic follow-up nor data on outcomes and complications, thus no one knows the actual risks.

In the United States medical error results in at least 98,000 unnecessary deaths each year and 1,000,000 excess injuries (Weingart et al, 2000; Kohn et al, 2000). The Institute of Medicine reported in 2012 that one-third of hospitalized patients are harmed during their stay (Ferguson, 2012; Institute of Medicine, 2012).

One should also be intelligently skeptical about positive claims for any specific study: it is important to know whether the study has been replicated with other populations and not just a particular highly selected group of patients. To quote Dr. Marcia Angell (2009), the first woman editor of the highly respected *New England Journal of Medicine:*

> It is simply no longer possible to believe much of the clinical research that is published, or to rely on the judgment of trusted physicians or authoritative medical guidelines. I take no pleasure in this conclusion, which I reached slowly and reluctantly over my two decades as an editor of *The New England Journal of Medicine*.

The evidence for many procedures and medications is surprisingly limited:

• Research studies frequently select specific subsets of patients. They may exclude many patients who have other co-morbidities.

• Clinical trials may demonstrate statistical significance without providing clinically meaningful results. For example, between 2009 and 2013 almost all cancer drugs that were approved for treatment in Europe showed upon follow-up no clear evidence that they improved survival or quality of life for patients (Davis et al, 2017; Kim & Prasad, 2015).

• Pharmaceuticals are tested only against a passive placebo. In some cases, the patient's positive response may actually be the placebo effect, due to physical sensations induced by the medication or its side effects, thus inspiring hope that the drug is working (Peper and Harvey, 2017).

• Negative side effects are significantly underreported. The data depend on self-report by both the patient and the health care provider.

Many published studies on the positive clinical outcome of pharmaceuticals are suspect. As Dr. Richard Horton (2015), Editor-in-Chief of *The Lancet*, wrote in 2015:

> A lot of what is published is incorrect … much of the scientific literature, perhaps half, may simply be untrue. Afflicted by studies with small sample sizes, tiny effects, invalid exploratory analyses, and flagrant conflicts of interest, together with an obsession for pursuing fashionable trends of dubious importance, science has taken a turn towards darkness.

Most studies, including those on surgery, lack long-term follow-up. The apparent short-term benefits may not be beneficial in the long term or may even be harmful. For example, doctors and patients are convinced that SSRIs (serotonin re-uptake inhibitors – antidepressants such as Paxil and Prozac) are beneficial, with resulting global sales in 2011 of $11.9 billion. However, when all the research data were pooled, meta-analysis showed that these drugs are no more effective than placebo for the treatment of mild to moderate depression and increase suicides significantly among young adults (Fournier et all, 2010; Kirsch, 2014).

Consider long-term follow-up in my case: the surgeon will report a successful surgery, despite the fact that it took me almost two years to recover fully. (I did not die during surgery and left in seemingly good shape.). Although I called him numerous times for medical guidance during my complications, the outpatient surgical facility will report no complications since I was not transferred from that facility during the surgery to a hospital for continuing care. My insurance carrier that paid the majority of the medical bills only recorded the invoices as separate unrelated events: one surgery/one bill, but three separate bills for the emergency room, an additional visit to my primary care physician to check my abdomen when my surgeon did not return my call, and the ongoing invoices from the urologist. They all reported success because the iatrogenic events were not linked to the initial procedure in the data base.

In my case, following surgery, I had to go to the emergency room on three separate occasions due to post-operative urinary retention, placing me at risk of permanent detrusor damage. For more than a year, I was under the care of a urologist.

Over the past two years, my symptoms have included gastro-intestinal inflammation, spasms, and abdominal bulging, which are only now disappearing. Even my posture has changed. I am now working to reverse the automatic flexing at the hips and leaning forward which I covertly learned to reduce the abdominal discomfort. This level of discomfort and dysfunction are new to me. Reading the research on laparoscopy, I realized that excessive internal bruising, large hematomas, and internal adhesions are fairly common with this type of surgery. However, soft tissue injuries are difficult to confirm with imaging techniques.

My complications were also a direct result of inappropriate post-surgical recommendations and treatment. The symptoms were further compounded by faulty patient discharge procedures performed by the outpatient surgical facility. Since this was my first general anesthesia, I had no idea that I would be one of the people whose outcome were not what the surgeon had predicted. Thus, hope for the best, but plan for the worst.

**Scheduling Medical Procedures**

The following recommendations may help reduce post-surgical or medical procedure complications.

**1. Schedule elective medical procedures or surgery early morning and in the middle of the week.** Do not schedule procedures on Mondays, Fridays, or in the afternoon. Procedures performed in the afternoon have significant increase in complications and errors. Anesthesia complications, for example, are four times higher in the afternoon than in the morning (Wright et al, 2006). Our biological rhythms affect our (medical staff) ability to attend and focus. In the morning most people are able to concentrate better than in the afternoon (Pink, 2018).

**2. Avoid weekends.** Procedures performed on weekends (as compared to those done in the middle of the week) increase the risk of complications or dying. For example, babies born on the weekend have a 9.2% higher infant mortality than those born during the week, while those born on Tuesdays have the lowest death rate (Palmer et al, 2015).

It is possible that on Mondays medical staff are recovering from weekend binging, while on Fridays they are tired and looking forward to the weekend. If elective procedures are done on a Friday and complications arise, the emergency room is the only option, as the medical staff may not be available over the weekend. In my case the procedure was done on a Friday, and I left the surgical outpatient facility at 2 pm. When complications occurred, it was after 5:30 pm – phone support from the advice nurse and the surgeon on call were my only option until the following Monday. Thus, I had to go to the emergency room late Friday evening and again the next evening because of urinary retention, with a long delay in a busy waiting room. Since, I wasn't bleeding or having a heart attack, that meant I had to wait, wait and wait, which significantly aggravated my specific problem and hyper-extended the bladder.

**Don't *assume* the worst but be *prepared* for the worst. Ask your health care provider about the various side effects of surgery, including the worst things that could happen, and then develop a pre-emptive plan.**

**3. Schedule medical procedures at least one or two weeks before any holiday. Do not schedule surgery just before or during holidays.** Medical staff also take holidays and may not be available. In my case, I scheduled the procedure the Friday before Thanksgiving because I thought I would have a week of recovery during my Thanksgiving break from teaching. This meant that medical staff were less available and more involved in their holiday planning.

**4. Schedule procedures so that you are released early in the day.** This can allow you to return to the facility in case complications arise. I was released at 2 pm and the complications did not occur until early evening. The facility was closed, so the only option was the ER. When possible, schedule medical procedures or surgery in a facility that is able to provide post-operative care after 5:30 pm.

**5. Do not schedule elective procedures during the month of July in an academic teaching hospital.** During this month mortality increases and efficiency of care decreases because of the end of the academic year and subsequent changeover to new personnel (Young et al, 2011). Medical school graduates with limited clinical experience begin their residencies and experienced house staff are replaced with new trainees. This is known as the *July effect* in the US and *Killing season* in the United Kingdom. During the month of July in any given year, fatal medication errors, for example, increase by 10% at teaching hospitals, but not at neighboring hospitals which do not experience this turnover in medical personnel (Phillips & Barker, 2010).

**6. Have procedures performed at a medical facility in which the health care professional has no financial interest – take economics out of the equation.** When health care practitioners have financial interest in a facility, they tend to order more tests and procedures than health care providers who have no financial interests (Bishop et al, 2010). In my case the surgeon had a financial interest in the outpatient surgical facility where I received surgery. Had I had the operation across the street in the hospital where the surgeon also operates, I probably would not have been released early, avoiding the problems in follow-up care.

**Strategies to Optimize Outcomes and Health**

Organize your support system. Assume that recovery could be more difficult then promised.

Before your procedure, ask family members, friends, and neighbors to be prepared to help. If you did not need them, thank them for their willingness to help. In my case I did not plan for complications, thus my wife was my entire support system, especially for the first three weeks when I was unable to do anything except rest and cope. I was very fortunate to have numerous family members, friends, and colleagues who offered their expertise to help me understand what was going on and who assumed my responsibilities when needed.[1]

**1. Bring an advocate to your appointments.** Have your advocate/friend keep notes and ask questions, especially if the health care provider ➤

1. I thank my family, friends and colleagues (Karen Peper, Norihiro Muramatsu, Richard Harvey, David Wise, Annette Booiman, Lance Nagel and many others) who generously supported me during this journey.

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is a respected authority and you are suffering, exhausted, and/or anxious. Record any detailed instructions you must follow at home as a video or audio file on your cell phone or write them down (be sure to ask the health provider for permission). Under stress one may not be able to fully process instructions from the health care provider.

**2. Make a list of questions and concerns before seeing your health care provider.** Talk to your partner and close friends and ask them if there are questions or concerns that you should raise with your provider.

**3. Ask for more information when tests or procedures are proposed (Robin, 1984).**

- o Why do you recommend this particular test/procedure/intervention for me and what are the major benefits?
- o What are the risks and how often do they occur, in your experience and in the research literature?
- o What will you do if the treatment is not successful?

**4. Ask your provider if there is anything that you should or should not do to promote healing**. As much as possible, ask for advice on specific efforts you can make. General statements without instructions such as, "Relax" or "Don't worry," are not helpful unless the practitioner teaches you specific skills to relax or to interrupt worrisome thoughts. Many health professionals do not have the time to teach you these types of skills. In many cases the provider may not be able to recommend documented peer-reviewed self-care strategies. Often they imply – and they can be correct – that the specific medical treatment is the only thing that will make you better. In my case I did not find any alternative procedures that would reverse a hernia, although there may be habitual postural and movement patterns that could possibly prevent the occurrence of a hernia (Bowman, 2016). Being totally dependent upon the medical procedure may leave you feeling powerless, helpless, and prone to worry. In most cases there are things you can do to optimize self- healing.

**5. Think outside the box. Explore other forms of self-care that could enhance your healing.** Initiate self-care action instead of waiting passively. By taking the initiative, you gain a sense of control, which tends to enhance your immune system and healing potential. Do anything that may be helpful, as long as it is not harmful. In my case, future medical options to resolve urinary retention could include additional medications or even surgery. Researching the medical literature, there were a number of studies showing that certain herbs in traditional Chinese medicine and Ayurveda medicine could help to reduce bladder irritation, prostate inflammation and possibly promote healing. Thus, I began taking three different herbal substances for which there was documented scientific literature. I also was prescribed herbal tea to sooth the bladder. Additionally, I reduced my sugar and caffeine intake to lower the risk of bladder irritation and infection.

**6. Collaborate with your health care provider. Let your provider know the other approaches you are using.** Report any interventions such as vitamins, herbs, Chinese medicine. Ask if they know of any harm that could occur. In most cases there is no harm. The health care professional may just think it is a waste of time and money. However, if you find it helpful, if it gives you control, if it makes you less anxious, and if it is not harmful, it may be beneficial. What do you have to lose?

**7. Assume that every health care professional is committed to improving your health to the best of their ability.** Yet at times professionals are now so specialized that they focus only on their own discipline and not the whole person. In their quest to treat the specific problem, they may lose sight of the whole person and other important aspects of care. Thus, hope for the best, but plan for the worst.

**Preparing for Surgery**

Assume that the clinical staff will predict a more positive outcome than that reported in the medical literature. In most cases, especially in the United States, there is no systematic follow-up data since many post-surgical complications are resolved at another location. In addition, many studies are funded by medical companies which have a vested interest and report only the positive outcomes. The companies tend not to investigate for negative side-affects, especially if the iatrogenic effects occur weeks, months, or years after the procedure. This has also been observed in the pharmaceutical companies sponsoring studies for new medications.

Generally, when independent researchers investigated medical procedures they found the complication rate three-fold higher than the medical staff reported. For example, for endoscopic procedures such as colonoscopies, doctors reported only 31 complications from 6,383 outpatient upper endoscopies and 11,632 outpatient colonoscopies. The actual rate was 134 trips to the emergency room and 76 hospitalizations. This discrepancy occurred because the only incidents reported involved patients who went back to their own doctors. It did not capture those patients who sought help at other locations or hospitals (Leffler et al, 2010).

The data are even worse for patients who are hospitalized; in the US 20% of patients who leave the hospital return within a month; while in England, 7% of those leaving the hospital return within a month (Krumholz, 2013).

**1. Ask about possible complications that could arise, the symptoms, and what the physician would do if they occurred.** Do not assume the health professional will have the time to explain or know all the possible complications. In my case when the surgeon removed the catheter at 4 pm two days after my second emergency room visit in which a catheter was inserted. I had to ask, "What would happen if I still cannot urinate?" Again, the emergency room was the only answer. However, I know that he should never have allowed me to leave without checking if I could urinate. He should have referred me to an urologist and/or taught me simple self-catherization

which would have eliminated the long waiting in the emergency room, the excessive stretching of the bladder and the subsequent emergency room medical error on my third visit to the ER. It would also have reduced the medical costs by a thousand-fold.

**2. Get a second opinion.** In my case, the surgeon came highly recommended, is very experienced, and has done many hernia repairs. I trusted his judgement that I needed a bilateral hernia repair although I only felt the bulging in the right inguinal area and did not feel bulging or sensations in the left inguinal area. Despite my feeling of trust, I should have asked for a second independent opinion just to be sure. In many moments of despair when suffering the significant complications, I even started to wonder if the bilateral laparoscopic surgical repair was really necessary or just done to increase the income of the surgeon and the outpatient surgical facility in which he had a financial interest. My surgery resulted in large hematomas, irritation of internal organs, and possible damage to the GI track. This type of complication did not occur for a close friend who had a single-sided hernia repair by the same surgeon in a hospital where the surgeon had no financial interests.

**3. Request medical personnel who are highly experienced in the intervention.** Mortality and complications rates are significantly lower for practitioners who have done the procedure at least 250 times.

**4. Don't *assume* the worst but be *prepared* for the worst.** Ask your health care provider about the various side effects of surgery, including the worst things that could happen, and then develop a pre-emptive plan.

The most common problems associated with surgery and general anesthesia include the following:

*Urinary retention*. Following general anesthesia, neural enervation to the bladder and gastrointestinal tract are often affected. The general risk for postoperative urinary retention (POUR) for all types of surgeries ranges from 7% to 52% (Tammela et al, 1986; Petros et al, 1990; Petros et al, 1991; Gonullu et al, 1993; Tammela, 1994). For patients who have surgery for hernia repair 24.4% will experience postoperative urinary retention (Keita et al, 2005) – one in four. The risk for older males is even higher. Do not leave the medical unit until you have urinated or have a Foley catheter inserted with a leg bag and appropriate follow-up managed by a urologist. In my case, neither the surgeon nor the outpatient hospital checked to determine whether I could urinate – they just discharged me the moment I was conscious. Discharging a patient who has had general anesthesia without checking to determine whether they can urinate goes against all medical guidelines and standard hospital policies and constitutes malpractice. As this was my first surgery, I had no idea that urinary retention could occur. ➤

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Thus, I did not recognize the symptoms nor did the advice nurse or the surgeon when I called for advice before checking into the emergency room.

*Constipation.* Plan to eat a high roughage diet that supports bowel movements. In case bowel function is slow in resuming, you may want to have on hand simple over-the-counter supplements such as magnesium capsules, psyllium husks, and aloe vera juice or gel, all available at any health food store. Liquid magnesium citrate (GoLytely® solution available at drug stores), can be useful, but tends to be a little stressful to take. Check these over-the-counter supplements with your provider to avoid supplement-drug interaction.

*Infection*. Many patients pick up hospital-induced infections (nosocomial infections). In my case after four weeks with a Foley catheter, I got a mild bladder infection and had to control it with antibiotics. While in the hospital, avoid direct physical contact with other patients and staff, wash and rewash your hands. Remember medical staff tend are less attentive and wash their hands 10% less in the afternoons than in morning. Ask the medical staff to thoroughly wash their hands before they examine you. If you do get an infection, contact your medical provider immediately.

**Action Steps**

*Pace yourself. Assume that recovery could be slower than promised.* Although your body may appear to be healed, in many cases your vitality could be significantly reduced for a number of months, and you will probably feel much more fatigued in the evening. The recovery from general anesthesia has been compared to recovery from a head-on car collision.

*Identify your support system in case you cannot take care of yourself initially.* Organize family and friends to help you. In my case, for the first two weeks I did not have the energy or mental ability to do anything for myself – the overwhelming abdominal spasms and the three episodes in the ER had drained my energy. I was very lucky that I had my family and friends to help me. For the first few weeks, I was so distracted by the pain and discomfort that I did not drive or take care of myself.

***Assume that recovery could be slower than promised.*** **Although your body may appear to be healed, in many cases your vitality could be significantly reduced for a number of months, and you will probably feel much more fatigued in the evening.**

*Have a plan in case you need to go to the emergency room in the evening.* Know its location and have someone who can take you.

*Assume that you will probably have an extensive wait in the ER unless you are desperately ill.* Do not try to "tough it out." Be totally honest about your level of pain, so you can get the best possible care. In my case, I had terrible abdominal pain and spasms with urinary retention, but still acted as if I were okay. When the admitting nurse asked me how I felt, I rated my discomfort as a 5 on a scale from 0 to 10. In my mind I compared the pain with that I had experienced after a skiing accident, which was much worse. What I had forgotten was that the ER is triage system, so I had to wait and wait and wait, which was phenomenally uncomfortable and increased bladder hyper expansion.

*In the ER, ask which medical specialist can follow up with you if further issues develop.* A general hospital usually has specialists on call. In my case, if I had requested care from a specialist, I would have been treated directly by a urologist. I would not have had to follow the advice of the surgeon who said, "When you go to emergency room, have them empty the bladder and then go home." Almost all urologists would have recommended keeping the Foley catheter in for a few days to allow the side effects of the anesthesia and the trauma caused by the bladder expansion to ameliorate and then test whether urination was possible.

*Have a medical advocate with you at all times who can observe that the procedures are done correctly*. There is a four-fold increase in errors during the evenings and nights as compared to the morning. The more medical staff is multi-tasking, the more likely they will make errors. Have the medical personnel explain any procedure before they perform it – why and how they will do the procedure and what you will experience. In my case I had to interrupt the nurse because she was unfamiliar with how to use the Foley catherer. You also need to know if they are experienced in that particular procedure. If the answers do not make sense, stop them and ask for another staff member.

*In the ER, record the instructions on your phone.* Have medical staff explain and demonstrate to you and your support person what you will need to do at home. Then repeat the instructions back to them to be certain you have it right.

*Remind yourself that errors can occur.* In my case, during the third ER visit for urinary retention, the nurse delayed the anchoring of the catheter and it had slipped down out of the bladder into the urethra. As she began to pump, I could feel my urethra tearing and I told her to stop. This was immediately followed by another procedural error on her part, so I had to again alert her to stop, which she finally did and then left the room. All this occurred at 1 am in the morning. As the patient, I had to take charge at a time when I was totally exhausted. As the nurse retreated, I was left sitting on the gurney waiting for someone to come and follow-up. I waited and waited and when I finally stood up, the catheter dropped out and I began bleeding from the urethral opening and dripping blood on the floor.

*Lesson learned: hope for the best but prepare for the worst.* In my situation, after eight weeks and numerous visits to the urologist, the urologist removed the catheter. He did this at 8:30 in the morning. This way I could go home, and I could go back to his office for further care if I could not urinate. Before

leaving the office, I planned for the worst. I asked what would happen if I could not urinate later in the evening and requested that he give me a few catheters, so if problems developed, I could catheterize myself.

The urologist gave me the catheters and explained how to use them, although I did not actually practice on myself. Still, I felt better prepared. During the day, I become more and more optimistic because I had no problems; however, at 2 am I woke up unable to urinate. For the next hour, I felt very anxious about inserting the catheter, since I had never done it myself. Finally, my discomfort overcame my anxiety. To my surprise, it was easy. After waiting a few minutes, I removed the catheter and went to bed feeling much more comfortable. The next morning after breakfast and a cup of coffee, I found that my body was working fine without the catheter.

Had I not planned for the worst, I would have once again gone to the emergency room and probably waited for hours, risking a repeat of tremendous discomfort and irritation. This simple planning reduced my medical cost more than a thousand-fold from $1700 for the emergency room to $2 for some single-use catheters.

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