

Medical Error

The Personal Cost

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In July 2005, Dr. Alison Clay was treated for an acute systemic reaction to a bee sting at the medical center where she worked. The encounter was not routine, shaking Alison's confidence in hospital medicine and causing her to question the very health care system that had trained her.

On a beautiful summer day the July after I finished my fellowship, I prepared for an inaugural ride on a new bike. The bike was a gift to myself to celebrate the end of my formal training in pulmonary and critical care medicine. The sky was clear, a deep "Carolina" blue. There was no wind to warn of a change in weather, no premonition of just how ugly this beautiful day might become.

Then, a seemingly insignificant event: a slight irritation on my left toe and a tiny honeybee stuck to my sock. I had no allergy to bees. My breathing was fine. But as the erythema crept up my foot and past my ankle, I grudgingly drove to the emergency department. I parked my car in the deck across the street and started to walk. The entrance to the emergency department felt like it was miles away. I vomited profusely, and sweat dripped down my brow. Despite my "training," I had underestimated the situation.

At triage, I was tachycardic and febrile. I was ushered to a hallway bed (which meant I was too sick for the waiting room, but not sick enough for a resuscitation bay). A corticosteroid and an antihistamine were administered intravenously. A repeat pulse oximetry measurement demonstrated that my oxygen saturation had dropped.

As I was moved to the resuscitation bay, I remembered the patients I had met there:

patients on ventilators, patients with tubes in their noses, their throats, their bladders, and/or their chest. The seriousness of the situation settled into me. In a trauma room, in the ED, at a teaching hospital, in July.

My very busy nurse registered me to the new room, moved me to a new bed, hooked me up to telemetry, called for a respiratory therapist, and left to get epinephrine for subcutaneous injection. When she returned with the drug, I noticed that the syringe contained a very small volume. It looked like concentrated epinephrine for an intramuscular injection, but she hooked up the syringe to my IV. I considered asking her about the route of administration, but I said nothing. I had not made good decisions or good assessments about my condition so far that day.

A sense of impending doom overwhelmed me. I attributed this to a "fight or flight" response from the epinephrine. I looked for reassurance to the heart monitor, expecting sinus tachycardia. I saw a wide complex tachycardia.

I called out for help. The attending physician arrived quickly, shouting to the nurse to administer epinephrine subcutaneously, as he had already ordered.

"I received the epinephrine intravenously," I shouted.

"Intravenously"? he questioned.

The nurse turned quickly. She glared at me intently, and stated, "I gave it intramuscularly."

Before we resolved that issue, I was intubated.

During rounds two days later, the attending physician shared her plan to liberate me from mechanical ventilation. The ache in my chest suggested that

extubation would fail. I have a chronic neuromuscular disease that predisposes me to respiratory failure. From previous experience, I had learned to be aware of the pain that was building in my chest. I communicated my concern using the writing tablet provided by the nurse, but was overruled by the team. I was extubated.

Within a few hours, I struggled again to breathe. I sat upright and leaned forward into a tripod position in an attempt to catch my breath. The nurse replaced the sweat-drenched bed sheets. The emergency airway team was summoned to reintubate me. When they arrived, the medicine team communicated that I should not receive succinylcholine because of my underlying condition. Rocuronium and etomidate were ordered. Unfortunately, it seemed that the anesthesiologist did not remind the medicine house staff about the different half-lives of these two drugs, drugs that these physicians had probably never ordered or used.

I awakened some time later, paralyzed. The endotracheal tube scraped the back of my throat, but I could not cough. I felt restraints around my wrists. Cognitively, I knew why I could not move. As if fierce motivation could overcome neuromuscular blockade, I tried to move anyway. First, my toes and then my eyebrows. To no avail. Next, I tried to communicate distress by thinking of something scary to raise my heart beat (which usually runs in the 50s).

When I was finally able to open my eyes, I saw that my curtain was pulled closed. My nurse was gone, probably to lunch after a long morning. My bed was flat—leftover from reintubation. I was

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nauseated and started to vomit. The restraints prevented me from sitting up. Vomit poured out my nose and mouth along the side of my neck. I frantically searched for the call bell and pushed it repeatedly. No one responded.

Vomit entered the ventilator circuit and I choked. I tried to cough the vomit far enough into the circuit that I might take small breaths without breathing vomit. The effort exhausted me, so I ripped off the pilot balloon and extubated myself. My quiet panic became a cacophony of alarms. People rushed into my room. Expletives flew. I was admonished for undoing the team's work. I needed to be reintubated.

Perhaps because it was embarrassing to call the anesthesiologists back so soon, the fellow decided he would attempt the reintubation. I was not completely sedated when the fellow inserted the laryngoscope. I tried not to gag. I heard the fellow say, "the cords are swollen. I can't get the tube in." At some point, the medications took effect. I don't remember the rest.

A few days later I was successfully extubated. On rounds, the attending physician shared the team's daily plan with me.

"You don't need the ICU anymore," she said. "To be safe, you should go to the floor for a few more days."

"What?" I asked in complete disbelief. "I've had ENOUGH of this 'safe' place. I just want to go home."

A few days later, I finally made a safe passage home. But the experience shook my core beliefs. The hospital no longer felt safe to me. I was angry about the errors I perceived: medication administered via the wrong route, a decision to extubate too early, the use of restraints without a way to "call" for help, a bed that was not elevated, an inexperienced provider intubating a complicated patient. I was frustrated that no one acknowledged these errors, or the suffering that resulted because of them. At home, alone, I struggled with a recovery I knew would be more difficult because of the duration of my ICU stay and some of the errors that had been made.

As a doctor, I looked for explanations. It was July. The residents were new. Our emergency department was under renovation. My underlying disease is rare and hard to manage. The workload was too high for the team. It was easy to find explanations for why other people might not provide safe care. It was harder

to consider how I could (or had) provided unsafe care. I searched for answers. I became actively involved in patient safety within our health system, including discussions about how systems can prevent and respond to medical errors (1). Over the next several months my confidence in the system improved, both as a patient and as a physician.

Almost a year later, I found myself on the way to the emergency department with a postoperative fever. My surgeon wanted a quick CT and laboratory studies. He dismissed my concerns about my previous experience in the same emergency department. The ED team was also sure that things would go smoothly this time. I was sure that the system was safer and I felt empowered to be assertive if something went wrong.

But, an hour grew to two, and then to four. I vomited the contrast dye. The CT was delayed. I spiked a fever. The familiar ache returned to my chest. The ED attending physician's and resident's shift ended. As my team changed, so did "institutional memory" about my problems in the ED the previous year.

My respiratory rate increased and the monitors alarmed repeatedly. The team decided to admit me. As they left my room to page the admitting team, the nurse reached over me to turn off the monitor that was squawking. I was in the purgatory between being a new patient in the ED and being admitted to the medicine team.

As hours passed, the pain in my chest became unbearable. Knowing that an opioid was not a good idea in the context of my underlying disease and acute respiratory insufficiency, I asked for toradol. By the time the medication arrived, I was exhausted. I was also on my third set of doctors and my second set of nurses. A nurse I did not know came rushing into my room, a syringe loaded with a medication and an intravenous bag labeled with the name of an antibiotic in her hand.

I was anxious for the pain medication, but the antibiotic surprised me. If the ED physicians did not order an antibiotic hours before, why would they order it now? The inpatient team could not have ordered the antibiotic because I had not met them yet.

When I asked about the antibiotic, I learned that it was an antibiotic to which I am allergic. I asked the nurse about the medication. She offered to give me the pain medication she was "sure" I wanted while

she hung, but did not start, the antibiotic. The nurse did not check my ID band or my yellow allergy alert bracelet. As the nurse flushed the pain medication into my system, I felt warm and woozy.

"Hey—something doesn't feel quite right to me," I said.

"What's a matter, honey, haven't you ever had Dilaudid?" the nurse said as she turned to walk away.

Dilaudid? I had worked so hard the past six hours to breathe and now I was going to sleep. My husband stood in the hall while the code team was summoned. He watched from afar as I was resuscitated.

The medication I received was ordered for the patient across the hall. The incoming nurse had turned left into my room from the hallway instead of right into the correct patient's room at the start of her chaotic shift.

How could things go so terribly wrong? Was I just unlucky? Perhaps the team did not recognize how serious the mistakes had been the previous year. Or like me, perhaps they thought they could not or would not make mistakes. The team failed to see my husband and I as true "partners" in my care: partners who have time and energy, and intense motivation to devote to the details of one person's care. And when we summoned the courage to assert ourselves, at a time when offending the team could impact the very care I needed, the team did not listen.

Providers can easily "short circuit" safety: they can be "too busy" to put on a contact isolation gown, fail to scrub the hub for another few seconds, or forget to repeat the six rights of medication administration yet again. Teams may function properly most of the time, and may never know the cost of their small indiscretions. But patients and their family members do. The cost to us is personal.

Nearly a decade has passed since those two hospital admissions. The errors I endured during those hospitalizations have changed how I practice as a physician, and how my family and I behave when I am a patient. I have been a small part of the huge effort my health system has undertaken to improve safety for all patients.

As a provider, I am much more willing to listen to patients. Thinking back to fellowship, I distinctly remember a time when a mother recommended an insulin dose for her child with cystic fibrosis. I recall telling the mother that our goals for glucose

control and our dosing of insulin were different in the hospital. At the time, I was too naive (or too proud?) to realize how much knowledge that family had about cystic fibrosis and, more importantly, how that particular patient responded to infections, medications, etc. When a family offers suggestions, I try not to feel offended or ashamed that I did not “know the answer” or anticipate the family fears or needs. Even with my own patient experiences, I sometimes have to take an extra few seconds to remind myself that this is about the patient and not about me.

As a patient (and family), we are much more vocal about my care. We try to balance advocating without offending. Examples include having a family member at my bedside almost 24 hours a day, and carrying a health care plan written by my providers, including the numbers at which they can be reached. My family knows who to contact if it appears that no one is listening. My family routinely asks about the medications I am receiving, reminds teams to consult with my primary providers, offers suggestions about

my care during rounds (at the appropriate time), and watches every manipulation of my port-a-cath. At times we have made the mistake of angering caregivers or health system leaders, and that can have serious repercussions. But this has become much easier as my health system (and even health care as a whole) embraces more “patient-centered” care.

But my health system is the real hero in this story. As a start, my primary provider and the chief medical officer worked to make a summary of my care easier to find. This change in workflow not only made my care better, but made care better for all patients with chronic illness. Team training is routinely taught to leadership, front-line providers, and trainees. This training includes the expectation that team members assert themselves and speak up. Providers are taught that patients are members of the team. Patients from our health system participate as trainers in this education. There is less hesitation within the health system to openly discuss errors in a nonpunitive way with team members

(as part of “Just Culture”) and to disclose errors to patients and their family.

Recently, our adult intensive care units have relaxed visitation hours, making it possible for family to be present 24 hours a day. Families may be present during rounds. The team often needs to spend less individual time with my family when my family is permitted to listen to their plans on rounds. But it isn’t just about time; inclusion of family during this “critical” component of daily care sends a powerful message about the importance of the patient and family.

It takes a long time for the culture to change, but my health system has certainly turned the corner. While the cost of medical errors will always be personal to patients and families, care has become less frightening for me than it was a decade ago.

Part of this narrative was included in an article published previously (1). ■

Author disclosures are available with the text of this article at www.atsjournals.org.

Reference

- 1 Clay A, Knudsen N. Two sides to the bed: physician–patient and physician–friend. *Clin Pediatr Emerg Med* 2006;7:261–264.