



## **2012 5th International High Reliability Organizing Conference: Seeking Reliability through Operations, Attitudes, and Measuring Success**

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### **Part I**

#### **Health care and high reliability: a cautionary tale**

This is a story about a woman whose real name is not Joan Morris, but you'll see why that name was chosen in a second. She, at the time of this event, was a 67-year-old woman who was admitted to the telemetry unit, a cardiac monitoring unit, in a major academic medical center for angiography of her brain and for the possible treatment of aneurysms, weakened arteries that have a threat to bleed in the brain. She had had an unexplained fall, which led to an evaluation, which included an MRI, which showed these weakened arteries, these aneurysms. She's a fluent English speaker and a high school graduate, and her daughter is a physician.

Now, the doctors and nurses in the room will recognize right away something really bad is going to happen, because the patient's daughter is a physician. It happens to others as well, but she was admitted and then went down on her first hospital day to have this interventional radiology procedure, confirmed the presence of the aneurysm. One was treated with a little coil procedure through a catheter by an interventional radiologist. The other was deemed to be inaccessible for that procedure, so the plan was to discharge her from the hospital the next day and have her come back for a neurosurgical procedure to treat the other aneurysm.

After the angiography, she was not sent back to the telemetry unit where she started out; she was instead boarded on a cancer unit, because that's where the only empty bed was on a medical service in this hospital. The next day, instead of being discharged, she was taken to the cardiac electrophysiology lab, and an invasive procedure was performed, and it took more than two hours for the team to figure out they had the wrong patient. This is sort of the extreme of the wrong-site surgery problem, doing the procedure on the wrong patient.

Now, this event I'm going to recount in some detail, because it's the detail that is so revealing. My colleague, Elise Becher, and I wrote this up 10 years ago, and we still see these events happening every day. I'll get back to that in a moment. And this is a sequel — and I'll get all these references to you. What I'm going to talk to you about is actually a shortened version of this story, and if you want even more detail, you can look at these sources.

The right patient's name was Jane Morrison — Joan Morris, Jane Morrison, similar sounding names — an important part of this incident. She had been transferred from an outside hospital to that same telemetry unit where Joan Morris started out for the electrophysiology study, and her procedure had been delayed, and she was scheduled as the first patient of the day of Joan Morris's discharge.

So here's how it happened. At 6:15 in the morning, the nurse in the electrophysiology (EP) lab reviews the schedule, calls the telemetry floor and asks for Morrison. She's told that her patient was moved to the oncology floor, so she calls the oncology floor and is told her patient is there. Joan Morris's nurse is asked to take her down to the electrophysiology lab, but she is not aware that the procedure was scheduled. She is getting off to the end of her shift. There is no order in the chart for the procedure. There is no consent form in the chart for the procedure. So what does she do? She checks with her charge nurse. The charge nurse doesn't know any more than she does. And they say, "Well, they can sort it out down there in the EP lab. They must need her for something, so take her down."

So that nurse goes to Ms. Morris's room and wakes her up and says, "We've got to go down to this laboratory in the basement here." And Ms. Morris, who is just being awakened from a dead sleep, thinks she's about to go home, says, "No, I don't want this procedure. I'm going home today." What does her nurse do? Her nurse says, "Well, there must be some confusion. They can sort it out down there with you when you get down to the EP lab." So she's still waking up. She agrees to go down to the EP lab with her nurse and her chart, her medical record.

When she gets down to the EP lab, Joan Morris repeats the fact that she is unaware of any procedure, she's not supposed to have anything else, she's going home. "And by the way," she says, "I'm sick to my stomach." I think most of us might be, too.

The nurse in the EP lab pages the attending physician and puts him on the phone with the patient, and the patient repeats on the phone to the attending physician, "I'm not supposed to have this procedure, and now I'm really sick to my stomach." Now, the attending physician had met the right patient, Jane Morrison, the night before when he talked to her about the procedure that she was supposed to have the next day, but he doesn't recognize the difference in the voices — he's on the phone. After that conversation, the attending physician tells the nurse that, "Ms. Morris has agreed to go ahead with the procedure, and now you can give her something for her nausea."

Now, the nurse in the EP lab is getting ready to start this procedure, and she notices there's no consent form in the chart. Now, you and I know now why there's no consent form in the chart. She thinks it's just a mistake, a clerical error, so she calls the EP fellow — the trainee, the physician who is learning how to do these procedures, who will actually insert the tubes and the catheters, calls that physician down to the cath lab to talk to the patient.

The EP fellow comes down to the cath lab. He's never met this patient before. He looks at her chart with the cerebral aneurysms, and he's a little surprised that there's not enough — not a lot of information in this chart about why she might need an electrophysiology procedure where the heart rhythm is studied and you look for disturbances in it. He doesn't see a lot of evidence in the chart, but he skims over that, and he talks to the patient about the procedure, and she signs the consent form.

Now, remember, she's a fluent English speaker, high school graduate, completely with it and intact. What did she actually consent to? She consented to the cardiac electrophysiology study and a possible surgery to implant a defibrillator or a pacemaker should the study of the heart rhythm indicate those were necessary.

Now, if you think about Jim Reason's model, the Swiss cheese model, seeing all those defenses and all those holes in the defenses, this one, the informed consent defense, should be a perfect defense against this kind of adverse event. Right? It should be absolutely infallible. But we know that in practice this process often fails to live up to its theoretical benefit. In fact, in a couple of studies, these were done about a decade apart, patients were asked to agree or disagree with a variety of statements after having gone through an informed consent process, and over 60 percent of them agreed with the statement,

"Consent forms are designed to protect physicians' rights." So keep that Swiss cheese model in mind if you haven't already been thinking about it.

We go on. The patient was going to be re-admitted to the neurosurgery service, right, to treat that second aneurysm, so the neurosurgery chief resident, who was going to preside over this procedure, went to see Ms. Morris before she was discharged and found her room is empty. Now, he does something very unusual for a surgery resident. He interrupts his rounds and goes down to the EP lab after he finds out where she is and demands to know, "Why is my patient here?" And the EP lab nurse explains that this patient had been bumped from the schedule previously, and now she was scheduled as first case of the day, so the procedure is being done. And what do you suppose this neurosurgery resident does? I don't know how many of you have ever met neurosurgery chief residents. They are usually not to be deterred when they have a purpose. He leaves, assuming that his attending ordered the procedure without telling him.

The procedure starts. Another nurse — we're numbering these nurses so you get a feeling for how many were involved. Again, this is truncated. The nurse gives some IV sedation. The EP attending arrives — remember, who interviewed the right patient the night before. The fellow begins the procedure. This is a very invasive procedure. You have to put a large tube into the femoral artery, and then you put catheters through that tube, threading up toward the heart. And the EP attending now takes up his position outside the room where the procedure is being done at the computer. And this is what it looks like. The attending is in that red flak jacket there behind the computer. By the time he gets there, the only thing he can see is the top of the patient's head poking out from under the dressings there, so he's at a disadvantage if he's trying to identify this patient.

Now, Jane Morrison — remember her? She was supposed to be first case of the day. Her nurse calls down to the lab and asks why nobody has called her to come and get her to take her down for the procedure. So the nurse on the phone consults the nurse scrubbed into the procedure and advises Jane Morrison's nurse, "Oh, you can bring her down around 10." So none of this is raising any concerns for the team in the middle of this procedure.

Now something else very interesting happens. The charge nurse, who is using one of those old plastic patient identifying plates that came down with Jane Morris's chart, is using that to make the stickers that will go on all the paperwork from this procedure, identifying the paperwork as belonging to that patient, and she's looking at the stickers that she's making, and it says "Joan Morris," but Jane Morrison is on the schedule, and she doesn't see anybody with the name Joan Morris on the EP schedule.

So what does she do? She goes into the cath lab, into the EP lab, and questions the fellow about this problem with the names. "I've got a chart that says Joan Morris, but she's not on the schedule." And the fellow says, "This is our patient." He just did the consent. So what does the charge nurse do? She leaves. She assumes that Ms. Morris was a late addition to the printed schedule and that everything is in order. This is almost over. I promise.

Now the radiology attending physician comes to see Joan Morris — he's the one that treated that one aneurysm — and finds her room empty again and is told she was sent to the EP lab. So he picks up the phone and calls the EP lab and asks why she's there. The attending, outside the room, talks to the radiology attending on the phone, and the radiology attending says, "Why is Joan Morris in the cath lab?" And the EP attending hands the phone to the nurse, says, "This is call is about Joan Morris, but we have Jane Morrison on the table."

The charge nurse says, "No, you don't. You have Joan Morris on the table." So the EP attending asks to see the chart, and finally the error is discovered. The study is halted. Ms. Morris returns to her room, and she is later visited by both the attending physicians in the EP lab and radiology, who explain this problem to the patient and her physician daughter.

So I think you can see here — and, again, as I said, I've shortened this to make it not go on forever — lots of people made mistakes here. Most of the errors, but not all of them, were small, blameless, some — perhaps we'd have some disagreement on which were blameworthy. Clearly, no single error caused this event, and there were lots of chances to avoid the event. How many people who saw what should have been recognized as unsafe situations — and some of them did recognize it — how many failed to speak up? And how many failed to recognize that what they were in the midst of was a series of unsafe conditions and practices?

And I can tell you, both from my experience as a health commissioner in New York State, working in an academic medical center for twelve years, running the quality programs, and from my last four and a half years at The Joint Commission, none of the circumstances around this case at this particular organization are unique or idiosyncratic, and even though this is about a particular kind of adverse event, when we look behind many, many, many different kinds of adverse events — and The Joint Commission has now done this for 15 years, helping organizations through 9,000 or so adverse events — we find exactly the same weak defenses, the same lack of recognition of unsafe conditions that this case displays so well.

So the Swiss cheese model, the layers of defenses that are supposed to protect patients from this kind of adverse event, and many others — and if you think about the defenses that failed here, and I'm not going to go through all 15 or 20 of them, communication at multiple levels failed. Protocols for patient identification in the EP lab to start out, in the telemetry unit, on the oncology floor, back in the EP lab — all of them failed. Teamwork within a service, the telemetry unit, the oncology floor — this hospital did actually have, as most, if not all do, a similar-sounding name alert process. So when both patients with the similar sounding names were on the telemetry unit, there were big signs and stickers, "Be aware, we have patients with similar sounding names," but as soon as Joan Morris left and went for her cerebral angiography and went to Oncology, all of that went away, because that particular unit didn't have the similar sounding name patients on it anymore. But they were still in the same hospital. Supervision of trainees, that informed consent process, complete failures.

And perhaps underlying many of these — and we called out this problem in this write-up of ten years ago — such a poor safety culture that not only were these workarounds and unsafe conditions allowed to persist, but they were no longer recognized, if they ever were at all, in this organization as unsafe, because they came to be the way work is done here every day. So the failure of recognition — we called this at the time a culture of low expectations. Nobody expected to have good information, complete information handed from one to another to another about their patients, about their teams, about their procedures, about what they were doing that day, so that just became the norm, normalization of deviance.

So when you imagine the defenses that were in front of Ms. Morris, imagine many defenses, many layers of Swiss cheese — 15, 16, 18, depending on how you count — but most of those layers of Swiss cheese were characterized by holes, not by strong defenses against this adverse event. So all the holes lined up, the error trajectory penetrated, and you're all familiar with this model.

So I show you this story and tell you about it to indicate that I think one of the biggest challenges we have in health care is not just to find the few holes that are really still there after years and decades of work, but it is to deal with layers of defenses that are more like sieves than they are shields.