Physician's Risk Advisory

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4th Quarter
Volume 18 Issue 4

The "Boiling Frog Syndrome" and the Normalization of Deviance

Back in the 19th century, experiments were conducted that appeared to demonstrate an unusual, self-destructive behavior among frogs. Specifically, if a frog was placed into a pot of hot water, it would jump out. But, if you put it into the pot while the water was cold and then very, very slowly heated it, the frog would ultimately die because it would not sufficiently perceive the growing danger and would adjust to and accommodate the change in temperature until it became lethal. The reality is, of course, that a frog *will* jump out long before the water gets too hot. However, the story is usually seen as a metaphor for the tendency of people (and often organizations) not to react to potentially harmful changes in culture or behavior that occur gradually over time.

This concept was revisited by Columbia University sociologist and author Diane Vaughn in her 1996 book, *The Challenger Launch Decision.* Dr. Vaughn called this behavior the "normalization of deviance" which essentially means that when an individual, knowing that a behavior is inherently dangerous or risky, will sometimes repeat it anyway if they have done so in the past without suffering any ill-effect or having been detected. Eventually, this potentially harmful behavior is tolerated to the point that it becomes widely accepted. In the case of the *Challenger* disaster, Dr. Vaughn noted the increasing tendency of the engineers at NASA and Morton Thiokol (the *Challenger's* builder) to disregard specific safety data over time and then develop short cuts and excuses to justify their now "normalized deviant" behavior.

Significantly, we don't refer to the *Challenger* loss as an "accident" but rather as a "disaster." In fact, the findings of the *Rogers Commission* noted that as early as 1977 (9 years before this tragedy), NASA managers had not only known about potentially critical O-ring-related problems, but had observed them in 14 of the 24 previous orbiter launches. This led the *Commission* to conclude that the *Challenger* disaster was "an accident rooted in history." Specifically, an O-ring (a type of seal) failed that led to the craft's breaking apart just 73 seconds into the flight. The "normalization of deviance" issue at hand was that the critical O-ring seals were rated for use only at or above 59 degrees. At the time of the launch on the morning of January 28, 1986, the temperature was 29 degrees at Cape Kennedy, which was the coldest launch temperature yet. A midnight call by Thiokol engineers to NASA warning them of this concern was disregarded. After all, according to NASA's subsequent explanation, there had been cold temperature launches before and nothing bad had happened, so it's unlikely nothing bad would happen with *this* launch, irrespective of Thiokol's late-night warning. Besides, the launch had been previously postponed before and there was internal pressure from above to get the orbiter up. As a result of this strategic decision, seven astronauts perished and the shuttle program was suspended for almost 3 years. Ironically, 17 years later, the contributing factors associated with the next shuttle to fail, the *Columbia*, were also traced back to a "normalization of deviance" again creeping back into NASA's culture.

The subtle signs of "normalization of deviance" are often difficult to recognize, until confronted with them too late, like the poor frog noted above. These signs are often masked by using excuses such as "everyone else does it, so why shouldn't I" and "so far, so good… nothing bad has happened yet."

Although the protective value of seat belts has been known for over 50 years, according to the National Highway Traffic Safety Administration, 51% of motor vehicle accident-related fatalities occurring in 2010 involved individuals who were *not* wearing them. Presumably every one of those victims had made a conscious decision to forego using their seat belt because, after all, "nothing bad has happened to me yet." This lapse in judgment may have caused them their lives. Other common examples of the "normalization of deviance" are driving while impaired ("it's just a few drinks and I can handle my alcohol"), so-called "cognitive distractions" while driving such as texting, cell phone use and fiddling with the radio and, closer to home, failing to wash ones hands between seeing patients.

Lack of hand washing by medical providers and staff is particularly interesting as Semmelweis first published his study correlating hand washing with a decline in infection

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rates back in 1847 (as was discussed in the First Quarter, 2009 edition of the PRA) and, according to the Federal Centers for Disease Control and Prevention, hand washing is "the single most effective way to prevent the transmission of disease." If that's the case, why would anyone disregard it? "Normalization of deviance," e.g., irrespective of the evidence to the contrary, I don't need to follow hand washing protocols because [fill in excuse here]. What is it about the culture of health care that even when confronted with conclusive evidence of the value of this acknowledged patient safety technique, the lessons learned so long ago appear not to resonate with some practitioners to the extent they clearly should? The health and wellbeing of our patients is, after all, at stake.

Next steps? Human nature is unlikely to change. We are supposed to learn from the mistakes of others or our own past practices. Some do and some don't. However, recognition of this common human characteristic (and a bit of soul searching) can have a significant, positive impact on all aspects of our professional and personal lives. How tolerant should we be of potentially harmful behaviors in ourselves or our colleagues? With the lessons learned from *Challenger* and *Columbia*, what kind of tragedy are we waiting to happen before we do? Or, like the proverbial frog in the kettle, will we just wait until it's too late.

Three New Laws for 2012

AB 499 (Family Code Section 6926)

This law was amended to permit minors 12 years of age or older to independently consent to medical related to the *prevention* of a sexually transmitted disease. This law expands upon a minor's present authority to seek diagnosis or treatment of an infectious or communicable disease if they believe they were exposed. Significantly, the new amendments to the law state that the minor's parents or guardian are *not* liable for payment for such care.

SB 41 (Business and Professions Code 4144)

This new law provides that physicians may, without a prescription or a permit, furnish hypodermic needles and syringes. An individual may, without a prescription or license, obtain hypodermic needles and syringes from a physician *if* he or she is known to the physician and the physician has previously provided a prescription or other proof of a legitimate medical need requiring a hypodermic needle or syringe to administer a medicine or treatment. The authority of pharmacists to furnish needles is also expanded.

SB 100 (Business and Professions Code 2023.5 and Health and Safety Code sections 1248 et seq)

Existing law relating to offices and clinics that provide treatment involving anesthesia (except for local anesthesia and peripheral nerve blocks) has been amended to require enhanced accreditation oversight and the reporting of significant patient-related injuries to the state. These new, detailed mandates add another layer of accountability to these "outpatient settings." An online program explaining the new law will be offered by Healthcare Risk.

To review these and other laws related to healthcare, click on this link to view all California laws of 2012: http://www.leginfo.ca.gov/bilinfo.html.

As always, we encourage you to submit ideas for articles for upcoming editions. Please contact Mark Cohen at cohenm1@sutterhealth.org with your suggestions.

"As a physician, I would rather be humane than encyclopedic. I can always look up the information, but where can I find humanity?"
~ William Crosby, M.D. (1980)