

# Mythbusters

A series of essays giving the research evidence  
behind Canadian healthcare debates

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## Myth: We can eliminate errors in healthcare by getting rid of the “bad apples”



People expect that when they go to hospital, they will come out in better health. However, a minority of patients will suffer what are known as “adverse events,” or poor outcomes related to their care rather than their disease. Sometimes adverse events are the result of human error — from rolls of gauze left inside patients to hospital equipment improperly sterilized. One particularly tragic adverse event occurred in March 2004, when two Calgary patients died after being given potassium chloride rather than sodium chloride.<sup>i</sup>

When an error does occur, a common response is to “name, blame, and shame” — the person who made the mistake will be singled out, possibly sued or fired, and everyone feels an uneasy comfort — after all, the problem person has been dealt with.

While this is a common response, it does not make our hospitals any safer. Though there are some “bad apples,” most healthcare professionals don’t make mistakes because they’re negligent or careless. Rather, research shows that larger systemic problems are the cause of most mistakes, such as staff who are tired and not thinking clearly, equipment that is hard to read and control, or different medications that have similar names and packaging.<sup>ii-vi</sup>

### The cost of medical errors

In 2004, the first large-scale study of adverse events in Canadian hospitals found that 7.5 percent of adult hospital admissions for surgery or medical care are associated with an adverse event — that’s about 185,000 events a year. And almost 70,000 (36.9 percent) of these

could likely be prevented.<sup>vii</sup> A second study found that nearly one-quarter of adult Canadians reported having an adverse event happen to them or a family member in hospital or community care.<sup>viii</sup>

Though it is cold comfort, Canada’s numbers are in line with data from Australia, New Zealand, and England, which found adverse event rates of between 10.8 and 16.6 percent, with similar or slightly higher proportions of preventable errors as in Canada.<sup>vii, ix-xi</sup> In the United States, the Institute of Medicine estimates that between 44,000 and 98,000 Americans die annually because of system errors,<sup>xii</sup> and the adverse event rate is estimated at between 2.9 and 3.7 percent. However, different methodologies and definitions make it difficult to compare results directly, and the American studies did not calculate preventability.

These studies tell us that people working in health-care systems around the world — with different types of funding, organization, and delivery — are making mistakes, often the same mistakes, refuting the myth of “a few bad apples.”

### Why we make mistakes

Errors are not isolated problems, but have underlying systemic causes.<sup>viii</sup> Research has long shown that working in complex, stressful environments like hospitals makes everyone prone to mistakes. Despite the demand for “multi-tasking,” the human brain is not capable of keeping more than a few pieces of information straight at any one time.<sup>ii-iv</sup> Thus there is a risk of information



overload when healthcare professionals must monitor many pieces of equipment in surgery or fill several medication orders in a short time.<sup>ii-vi</sup>

This is made worse when they are tired and overworked, or when there isn't enough staff.<sup>ii-vi</sup> Physical aspects of healthcare today also contribute to mistakes; for example, handwritten prescriptions are often difficult to read, especially when medications have similar names.

### How to fix the problem

An effective strategy is to change policies and procedures to make it more difficult for people to make mistakes and easier to recognize and recover from those that will occur.<sup>ii-v, vii, ix, xi-xvi</sup> There are some simple ways to do this, such as bar codes on medications, patient-specific electronic health records, computerized ordering of medical tests, and standard treatment guidelines.<sup>viii</sup> Just using a computerized prescription system can cut medication errors by nearly 20 percent.<sup>xvii, xviii</sup>

Some improvements have already been made. It used to be common for anesthetists to accidentally connect oxygen lines to nitrous oxide tanks until the fittings were changed to make it physically impossible to do so.<sup>xix</sup> Following the deaths in Calgary, the health region moved its potassium chloride supply, and it changed its supplier to ensure the package is different from sodium chloride.<sup>i</sup>

In the long run, it is probably more important, but perhaps more difficult, to address the “culture of silence” around system mistakes. Many healthcare professionals say that, while patient safety is a high priority in their workplaces, they believe they would be treated negatively if they reported errors.<sup>viii</sup> However, it appears that this alone will not solve the problem; New Zealand, with its no-fault patient compensation system, still experiences a significant number of adverse events.<sup>viii, ix</sup>

While they can lead to tragic outcomes, mistakes should be seen as learning opportunities, so another patient doesn't suffer the same error.<sup>ii-v, vii, ix, xii-xvi</sup> And this is indeed what most patients, families, and healthcare professionals want.<sup>viii</sup>

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