

## Checklists are Changing Hospitals

I just read Dr. Peter Pronovost's and Eric Vohr's book, *Safe Patients, Smart Hospitals – How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out*. Dr. Pronovost's central line checklist virtually eliminated central line blood stream infections (CLBSI) in 77 Michigan hospitals and has been spreading across the nation and around the world. This is it:

1. Wash your hands using soap or alcohol prior to placing the catheter.
2. Wear sterile gloves, hat, mask and gown, and completely cover the patient with sterile drapes.
3. Avoid placing the catheter in the groin (these have a higher infection rate) if possible.
4. Clean the insertion site on the patient's skin with chlorhexidine antiseptic solution.
5. Remove catheters when they are no longer needed.

This book details Dr. Pronovost's journey to first eliminate CLBSIs in the SICU at Johns Hopkins and then take it first to Michigan and then the rest of the world.

**Shocking statistics:** In the United States patients are receiving barely 50 percent of recommended therapies. Patients in ICUs experience 1.7 errors per day. Of these, 29 percent could cause clinically significant harm or death. Since ICU patients are in for at least three days, all ICU patients “sustain a potentially life-threatening mistake at some point during their stay.” Misdiagnosis kills 40,000 to 80,000 people every year (“although this is likely a gross underestimation”).

### TRIP – Translating Research Into Practice

*“Our success at virtually eliminating central line infections in the SICU created a spark. And we wanted to use this spark to ignite a wildfire of change throughout the hospital and health care.” – Dr. Peter Pronovost*

To do this, Pronovost's team created a structure for figuring out how to “fix” health care—the TRIP model:

1. Summarize evidence into checklists.
2. Identify and mitigate local barriers to implementation.
3. Measure performance.
4. Ensure all patients reliably receive the intervention.

As you might imagine, local barriers to implementation are the first challenge. “People don't fear change, they fear loss.” To minimize fear, focus on minimizing *real loss* and debunking the *mythological* fear of loss.

While TRIP teams were successful at reducing CLBSIs and VAP (ventilator-assisted pneumonia), they hit a wall in operating rooms. Shaving a surgical site increases the likelihood of a surgical site infection due to small nicks in the skin. Getting surgeons to abandon their razors, even with a mountain of evidence, was almost impossible.

## **CUSP – Comprehensive Unit-based Safety Program**

Hopkins' safety team reviewed liability claims and errors, and found that in 90 percent of the cases one of the patient's clinical team members knew there was something wrong and either kept silent or was ignored. "Anywhere teams have to work together to care for patients, bad culture, communication, and teamwork have a negative effect on that care."

To address this issue, they developed the CUSP program to focus on a work unit where culture lives. "The health care industry has a strange culture that drives people to believe they are perfect, invincible machines that can work long hours with little sleep and do everything perfectly."

The CUSP teams focus on identifying problems in the unit. They call them defects not errors, because people make errors, but systems have defects. This simple shift focuses on fixing the system, not the people. In an average unit, there may be 20 defects a day. A patient with an infection, for example, will require an antibiotic. If it's not available in the unit, it may take hours to get the prescription filled from the pharmacy, which threatens the patient. This is a defect, a system problem.

After implementing CUSP countermeasures, length of stay (LOS) dropped by half in the ICU; medication defects dropped from 94 percent to almost zero, and nursing turnover dropped from 9 percent to 2 percent.

## **Michigan's Journey**

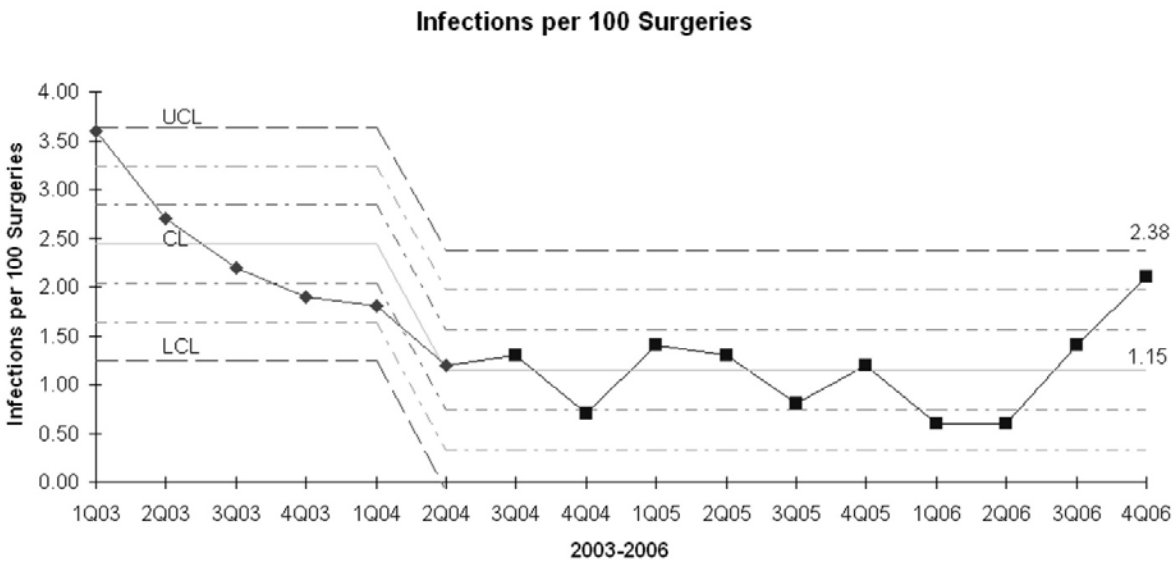
The Michigan Hospital Association asked Dr. Pronovost to help them reduce CLBSIs. Although it wasn't easy or all smooth sailing, median CLBSIs dropped from 2.7 infections per 1,000 catheter days to almost zero and has stayed down for four years, saving an estimated 2,000 lives and \$200 million a year.

## **The Challenge**

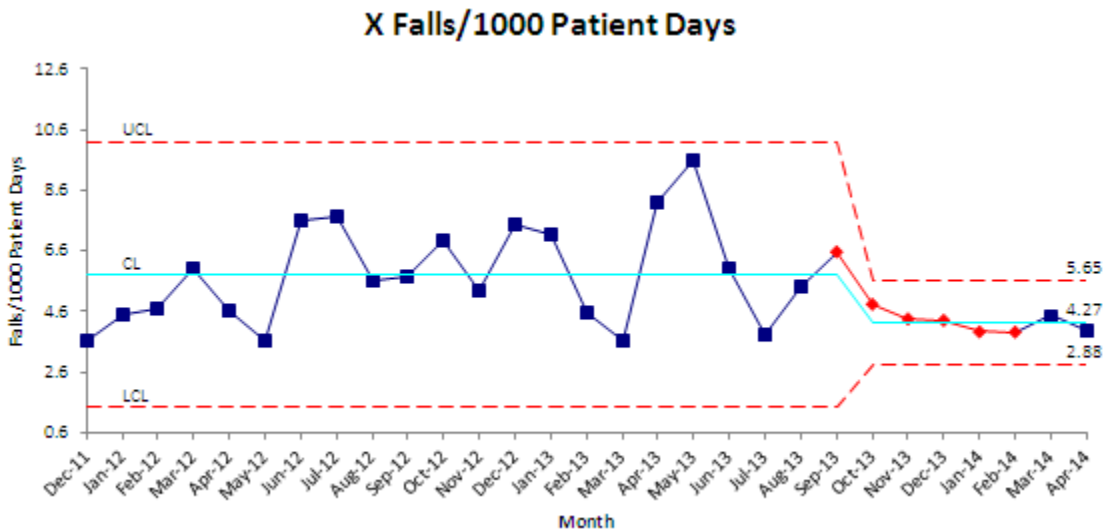
When a drug trial gets results, it's easy to see, but when a safety improvement is successful, *nothing happens*. There are no blood stream infections, there are no medication errors, there are no surgical complications; a non-event is often *invisible*. It's also hard to get funding for more *nothing*. This is the challenge of all improvement efforts—making the invisible visible.

## Making the Invisible Visible

The easiest way I know to do this is with a control chart showing performance before and after the intervention. Here's an example of infections per 100 surgeries:



This can be done with patient falls, denied insurance claims and all manner of defects.



## Summary

*Safe Patients, Smart Hospitals* is an insightful look into the challenges and opportunities for saving time, saving money and saving lives in healthcare. Anyone considering these methods is embarking on the Hero's Journey fraught with allies and enemies. I think it's fantastic that we have heroes like Dr. Peter Pronovost chasing the dream of fast, affordable and flawless healthcare. Our children and grandchildren will benefit greatly from their efforts.

**Jay Arthur, the KnowWare Man**, works with hospitals that want to save time, save money and save lives using Lean Six Sigma.