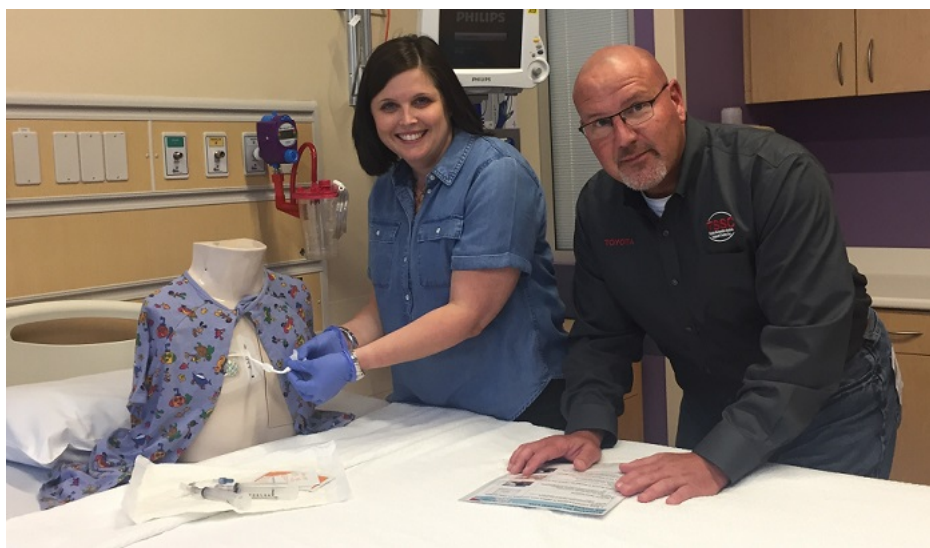




TPS for the Children

TSSC's collaborative work with four pediatric hospitals helps reduce the rate of central line infections by 75 percent

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Partners in Problem Solving -- TSSC Advisor Scott Dickson joined forces with Amy Taylor, clinical manager of Gastroenterology, and other members of the staff at Children's Health in Dallas to find a solution to the problem of central line-associated blood stream infections.

Scott Dickson has enjoyed a very rewarding career over his 15 years with Toyota, including the past five as a senior advisor in the Toyota Production System Support Center (TSSC).

But he's happy to admit that his collaboration with four children's hospitals in 2016 was especially meaningful.

"When you see a sick child at a hospital, it gets pretty emotional," says Dickson. "If there's any way we can do something to help them, we're going to do it. I felt very blessed to get to do this."

In this instance, Dickson's work put him in partnership with Children's Health in Dallas, Cook Children's Hospital in Fort Worth, Texas, Children's Hospital in Cincinnati, Ohio, and Children's Hospital of Kings Daughter in Norfolk, Virginia. All shared a similar challenge: Far too often, young patients fitted with a central line – a plastic tube placed in a large vein that routes to the heart – were contracting infections. In medical speak, such events are referred to as Central Line Associated Bloodstream Infections or CLABSI.

According to a study published in the *Clinical Journal of Oncology Nursing*, approximately 250,000 CLABSI occur annually at hospitals across the country. These infections are serious but often can be treated successfully. However, such countermeasures cost more than \$6 billion annually, according to a study published in the *Journal of Infusion Nursing*.

All four of the institutions in the TSSC project were baffled and frustrated by this persistent issue. After all, doctors and nurses at each hospital were following strict hygiene protocols. Yet, somehow, harmful bacteria as well as other germs were getting past their defenses.



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Huddle Up -- Children's Health staff meet daily to review and tweak their processes, in keeping with the principles of the Toyota Production System.

Go and See

In keeping with the TPS principle of *genchi genbutsu* (or “go and see”), Dickson spent time at each hospital observing and taking notes. That unbiased perspective proved to be the turning point. In each case, healthcare practitioners were following the proper steps to ensure they were germ free. But the rooms in which the children were being treated? That was a very different story.

So, for example, while a nurse might don sterile gloves to operate a medical device, he or she might inadvertently place that device on a counter or blanket that was not sterile.

“What they thought was the problem and what was actually the problem turned out to be very different things,” says Dickson. “There’s no way we would have figured it out if we hadn’t spent time at each site and talked with the nurses on the floor.”

Once they’d identified the culprit, Dickson said the next step was to apply Toyota’s problem solving methodology to come up with a solution. Then it applied TPS standardization principles so that everyone who might come in contact with patients knew exactly what steps to follow.

That included the use of sterile pads to serve as a barrier between a potentially contaminated surface and the medical devices being used to treat the children — such as the chest hubs that are often used in such circumstances.

“The way we systemically break down a problem was completely foreign to the people at the hospitals,” says Dickson. “In the end, their reaction was: ‘Oh, my gosh. We never thought of that.’”

Through the first six months of full implementation, the objective was to reduce the number of CLABSI by 50 percent at the four hospitals.

“It’s now been more than a year and infections are down 75 percent,” says Dickson. “They’re absolutely thrilled with the progress we’ve made and, if at all possible, looking to eliminate these infections all together.”



Measuring Stick -- The hospital employs quantitative methods to track their progress and identify opportunities for further improvement.

Standardizing the Process

In keeping with TSSC's mission, Dickson says he's helped the hospital partners integrate TPS principles into their ongoing operations so that they can isolate and solve other problems on their own, without Toyota's help.

"They've standardized the process," he says. "Every floor has a visual board where they track their progress. They do audits. And they have a huddle meeting every morning to discuss any events that might have occurred the day before. They problem solve them immediately. Before, they depended on monthly reports.

"It all comes back to how we observe and think and then teaching them how to observe and think," he adds. "TPS works, and not just in manufacturing. I've been very fortunate to be involved in many of these projects. But when you can do something to help children, it does make it even more special."

By Dan Miller

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