

PRMC leans to extreme efficiency

By identifying, tackling pain points, CSP team vanquishes reign of error

by Rick Dana Barlow

Central Sterile Processing's track record at Peninsula Regional Medical Center resembled that of a lackluster college or professional sports team with perennial losing records.

At Salisbury, MD-based Peninsula Regional (PRMC), no matter who led the team, CSP suffered from continual instrument processing backlogs, stockouts and a duet of telephones that never seemed to stop ringing.

Surgical Services was not pleased. Distrust and mistrust flowed so rampantly that CSP served as a convenient mark, an easy target for blame and error. Any out-of-order instrument set ignited a firestorm of disrespect. In short, it was ugly, according to Eddie Conklin, a Lean/Six Sigma disciple from the manufacturing industry who accepted the challenge of leading this Cinderella team to victory.

Conklin, a long-term machine tool and die maker by trade, learned quickly about healthcare's office politics and waded through the morass of CSP's performance history. He became the latest to earn the "NFL" title bestowed by those in the O.R. trenches who were familiar with CSP's managerial revolving door. NFL stood for "Not For Long."

Just not this time.

PRMC administrators, including Steven Leonard, Vice President of Operations Optimization and Innovation, and Carol Deal, Executive Director, Surgical Services, (Conklin's supervisor), hired a consulting firm, HGA, to help resolve physician recruitment/retention issues, technology gaps and throughput concerns in Surgical Services by applying Lean methodology and Six Sigma tools as new surgical suites were constructed and existing ones renovated as part of a 50,000-square foot expansion master plan.

Just two weeks into the job, HGA's consulting team

recruited Conklin and colleague Laura McIntyre, OR/CSP/Cath Lab Materials Manager, to participate in the project. "Having been here for only two weeks I was unencumbered by the existing culture and able to focus on the process and challenge some of the old school of thought," Conklin noted.

As Conklin and McIntyre immersed themselves in workflow value stream mapping to support Surgical Services the project team uncovered a number of pain points clogging the process. Not surprisingly, CSP occupied one of the top three slots in a number of areas, topping the list in others.

But as the project team determined how CSP and Materials Management would operate going forward to support Surgical Services, Conklin decided to apply the same macro strategies to his department on more of a micro level.

"HGA had been brought in to help the entire organization, value-stream mapping operations from a 10,000-foot viewpoint," Conklin said. "We identified all of the pain points within each [staff and patient] flow facility-wide. Well, I did the same thing on a different level by mapping our processes in CSP and came up with our own internal pain points to address and solve.

"I absolutely recommend this for anybody looking to trouble-shoot an issue," Conklin continued. "Once you know what your pain points are you focus on the flow and cycle times to reach solutions. With us I measured case carts [processed] per hour. Lean helps you to uproot processes to see bottlenecks."

Conklin and his CSP team worked with McIntyre and her department to reinforce support for Surgical Services. CSP focused on instrument processing; materials management honed in on supplies.

"We were working closely together because we knew we had to make things happen or put our internal customers at risk," Conklin recalled. "This led to our morning coffee huddle meetings.

Each day we talked about what we would improve today and this week and started the Lean journey with our staff, the ones who create the value every day." In fact, some of their respective team members are cross-trained between departments.

Thankfully, construction and renovation took some time that Conklin and McIntyre used to establish priorities, "learn by doing and fail often to succeed sooner." Their strategy was simple enough: When Surgical Services began operating in their new and renovated operating rooms, CSP and Materials Management have cemented their process improvements, "delivering the measurable outcomes we promised in the design/planning phase," he noted.



First row - bottom (left to right): Eddie Conklin, Ronnie Holt, Yolanda Jones; Second row: Alex Stanley, Cindy Morris, Lisa Smiley, Mary Ballard Fontaine, Oksana Kruger; Third row: Nyazina Thompson, Karen Green, Tasha Allen, Patrece Peterson, Darrel Lee; Fourth row: Larry Gross, Marlyn Evens, Todd Johnson; Fifth row - top: Fred Burrell, Jeff Brown

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Fast Facts

on Peninsula Regional's CSP team

CSP FTEs	18 FTEs (and 4 stand-bys)
Percent of FTEs Certified	60%
Number of acute care facilities serviced	1
Number of nonacute care facilities serviced	0
Number of OR suites	16
Emergency department volume	89,305
Inpatient volume	84,660
Baby deliveries	1,980
Outpatient procedures	5,100

Annual Performance and Production	2010	2011	2012	2013 to date
Number of surgical cases	10,936	10,767	10,818	1,741
Number of sets/singles assembled/processed	n/a	n/a	90,260	18,679
Number of instruments/hardware (touched)	n/a	n/a	1,979,692	114,213
Number of case carts assembled/processed	n/a	10,713	12,068	3,563
Error rates:	n/a	n/a	1%	2,954 ppm
Inventory line items:	n/a	1,507	905	905
Inventory value:	n/a	\$600,000	\$300,000	\$300,000

Other CSP year-to-date averages

Percentage of sets complete before 7 a.m.	99.6%
Inventory Stockouts	0%
Medic Carts (Crash Carts)	60/month
Average Cycle Time Total Sets	13 hrs.
Average instruments/singles processed per week	38,071
Average Case Carts processed per week	242

Average Loaners processed a week	47
Average quality issues per week (4)	2,954 ppm (parts per million)
Average total department hours worked	650
Average Overtime hours per week	16
Average stand-by hours	29 (average 2 FTEs out per week)

PRMC's CSP team persevered under fire and continual pressure, enduring continuous expectations of failure. Yet rather than smooth over the status quo, administrators took a calculated risk in hiring someone from manufacturing with no sterile processing experience to apply a performance improvement manufacturing philosophy to a team that could have easily thrown in the towel. Instead, CSP mapped their processes, identified their pain points, treated them through a number of "extreme scheme" performance improvement concepts and through sweat and tears earned the emblem of efficiency they now display.

For these reasons, *Healthcare Purchasing News* selected **Peninsula Regional Medical Center's 22-member CSP team** as its **2013 SPD Department of the Year**.

Pain points

Three years ago, before CSP embarked on their process improvement initiative, byzantine chaos seemed to be the order of the day.

Staffers didn't have standardized processes, work instructions or key performance indicators, didn't know the OR's daily demand and didn't have a program to monitor and analyze quality problems.

Fewer than half of the instrument inventory was processed in less than 24 hours. In fact, case carts holding dirty instruments often were backed up in the OR, sometimes out in the hallway and up to 10 case carts down in CSP's decontamination area. Capacity planning for a day or even a week didn't exist. Neither did a cross-trained stand-by employee



Todd Johnson checks Loaners sets in SPM system



Mary Ballard Fontaine scans instruments in Decontam

stations, leading to tight quarters and tense moments.

Intimidation and stress, fueled by crisis-after-crisis of confidence, process and production, defined the team, few of which were certified.

Tripping the fuse? CSP's telephone rang incessantly.

Of course, there were only two direct lines to the department — one for the manager and the other for staff. Why? When the hospital upgraded its old telephone system, CSP somehow was left off the list, leaving IT unaware of the problem. Still, CSP tried to work around it, but not very well.

"When the phone would ring, anyone was told to answer," Conklin recalled sheepishly. "This led to confusion as you can imagine. It caused frustration and a huge dependability problem with the ORs.

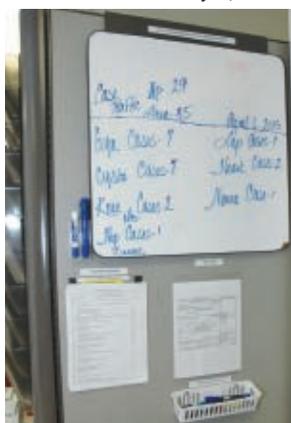
"From no one answering the phone to the phone always being busy, this led the OR to view CSP as not dependable," he continued. "There were huge quality issues where the norm was just to open another set. CSP turnaround speed was slow and unpredictable, which caused a lack of trust."

Today, CSP, with 18 full-time equivalents and four stand-by staffers, has five cordless phones and four inbound lines spanning customer service, technical issues, decontam, assembly and management, but with a three-ring rule. "Simple and effective," Conklin said.

With a litany of departmental challenges to overcome Conklin and Co. had to start somewhere. He suggested to his team a "breakthrough goal that will drive most of the improvement action items," something



CSP's Flow/Takt Time, Demand Board command center



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lofty enough that if achieved would “wow” their internal customers.

Bubbling to the top: What if CSP had everything the OR needed for the day processed by 7 a.m. that day? “At the time, the OR Managers and CSP Leads thought it was laughable,” Conklin recalled. Meanwhile, McIntyre’s breakthrough goal was reducing inventory and shelf space by 50 percent with no stockouts, Conklin indicated.

Extreme schemes

During the OR’s expansion and renovation planning phase, the planning teams developed a series of “extreme schemes” that explored improvement possibilities. Then they fused a number of them into “hybrid schemes” to implement.

“Each Extreme Scheme is responsible for promoting a specific attitude optimizing certain attributes at the expense of others,” indicated Brent Peterson, HGA consultant who worked on the PRMC project. “The ultimate purpose is to explore at the edges to see where attributes are harmonious or in direct conflict. This spurs innovation as the design team and core team are freed from having to go in with one compromised plan from the start, with the goal of taking all of the best of each extreme and rolling it into a high performing hybrid.

“CSP specifically was a critical performance design component as it had to integrate with three programmatic functions – delivery of instrumentation to core, stocking of the case carts with consumables both downstairs in CSP and the core, and recovery of soiled instruments and waste for processing and removal,” he continued. “Extreme schemes maximized with relationship in some options and abandoned it in others to promote other attitudinal attributes.”

Through the extreme scheme exercises, planning and design sessions and staff interviews, PRMC staff members identified needs – including CSP – and likely solutions to problems.

PRMC’s CSP team

Eddie Conklin, CRCST/CHL, Manager

Tasha Allen*, Lead Tech – 1st Shift

Ronnie Holt, CRCST, Lead Tech – 2nd Shift

Darrel Lee, CRCST, Lead Tech – 3rd Shift

Technician, Assembly

Marlyn Evans, CRCST

Mary Ballard Fontaine

Karen Greene, CRCST

Yolanda Horsey, CRCST

Oksana Kruger, CRCST

Alexandra Stanley, CRCST

Whitney Wilson

Oliver Yarrell*

Technician, Decontamination

Larry Gross

Technician, Customer Service/Flow

Cindy Morris*

Brenda Phippin

Customer Service/SPM

Todd Johnson

Technician, Equipment

Saji Koshy

Technician, 3rd Shift All-coverage

Zach Morris, CRCST

Patrece Peterson

Technician, Stand-by

Jeff Brown, CRCST

Blair Donaway, CRCST

Nyazina Thompson

Donna Weldon

* Registered to take the CRCST exam within 3 months

“With each obstacle we needed to break it down and discover the root cause,” Conklin noted. “That’s the trick of integrating process improvement with facility design. We are

at risk if we don’t deliver. If we commit to change, design our building around that change and we fail to deliver all of the space inventory we removed from the design in additional OR throughput, storage, etc., it can’t be brought back – and we can’t afford it anyways. It’s imperative we define the problem correctly, estimate the dividend and move forward with confidence that we can deliver on our promises.”

Using Lean methodologies and Six Sigma tools, both Conklin’s team and McIntyre’s team sorted products, slowly but surely freeing areas of clutter and labeling retained products, set places for supplies, shined the environment and equipment, standardized access and storage and sustained processes through audits, checklists and walkabouts as part of Lean’s 5S strategy. They also re-aligned their resources to match demand by redesigning their workstation space, reconfiguring shifts and incorporating a “stand-by” staffer pool to cover any demand spikes and process changes to facilitate continuous flow and productivity. Lean’s 5S remains an ongoing strategy and tactic within CSP.

Conklin conducted departmental productivity studies, gathering months of data to calculate the number of hours needed to process a requisite number of case carts for the OR.

Through all of that they developed and defined key performance indicators and made those critical metrics visible enough on a prominently displayed whiteboard in a high-traffic area. Conklin favors the manual touch over putting this on computer display.

“No, I’m not planning to automate this,” he said. “We work the whiteboard with add-ons and cancellations and call the OR to validate the actual cases left. The employees look at it when they walk by at shift start and end, and during lunch and breaks.

“I found that a whiteboard has a little more human touch to it with a smiley face, exclamation point or even the handwriting

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Alex Stanley loads instrument container into Sterrad unit



Oksana Kruger assembles kits

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Larry Gross checks tubing in Decontam



CSP's kit assembly line in action



Laura McIntyre, OR/CSP/Cath Lab Materials Manager

ing style," Conklin continued. "The most important thing is taking the pulse of the department, and the employees know how to affect it. Our mean is about 38 case carts so if they see a 45-case cart day you can feel the momentum change. Also, if a bunch of loaners come in, we can look at what kind of day we're having to see if we can absorb the demand or if we have to rethink a plan."

Loaner instruments presented a unique challenge for CSP, Conklin learned. "We found out that we had a different inspection and decontam process for loaners vs. in-house/consigned orthopedic sets," he noted. "So now we have one process for both. In this case we only had a few occurrences to work with so just walking through and prioritizing the failure modes is where we made our discoveries."

After all of the initial planning, the core and project teams, with Surgical Services' blessing, agreed that CSP and Materials Management will move all instruments and supplies from CSP to the core and stored at the point of use, according to Conklin.

"Along with that, we will be only assembling the first two case carts ahead of time — at midnight," he continued. "The remainder of case carts will be assembled as the OR completes a case, as in just-in-time and a pull process. This also eliminates the 'Needs List,' a workaround of a push system and not a pull process. In order for this to work our team had to drastically reduce our inventory, reduce our cycle time and improve our quality. But the real breakthrough and commitment to me was the fact that the OR managers went ahead with the plan knowing in advance they would have to depend and trust

that CSP and Materials will have what they need when they need it." This new process debuts this month.

Conklin knows his team is ready to perform. "Our cycle time is hovering around 12 hours, and we have great speed in turning items around now," he added.

CSP also vastly improved communications with one another and with internal

customers, Conklin admitted. Aside from traditional inservices, staffers receive "One-Point Lessons," which Conklin classifies as "an immediate alert and additional method of urgent communication.

"We use them for process changes, quality problems and material location moves. I post them on the main door in and out of the department," he said. Plus, CSP developed

its own Web site, Conklin issued e-mail accounts for all staffers (he even had to teach several how to use them) and texting capabilities, including pop-up messages at workstations.

Last month, Conklin initiated "Lessons Learned" mini movies using his handheld Flip video camera. In one example, Conklin recorded a Lead Tech properly assembling a spring-loaded drill guide in the OR as he and she narrated what was happening. "Once I created the file I sent an e-mail to the staff to click on the link and watch the video," he added. "They click on the link and watch. In Outlook I click on receipt request so I can validate who received and opened the message." *Editor's Note: Visit HPN Online to watch the video.*

Lean and clean

Since October 2010, CSP has made great strides. They reduced inventory by \$350,000 in the first year, inventory touch time by four hours per day and obsolete products 2 percent per year. They improved service levels to 99 percent from below 50 percent and saved 50 percent of space by "right-sizing" inventory and storing it at the point of use. They've been stockout-free for

Saluting SPD excellence for 20 years

Two decades ago, the magazine previously known as *Hospital Purchasing News* wanted to show the healthcare industry just how vital central service/sterile processing and distribution (CS/SPD) was to high-quality patient care and customer service.

During the last 20 years, *HPN* honored and recognized SPD teams both large and small in number for renovating their operational footprints and physical plants to clinical procedures, infection control and performance improvement.

We've heard from a wide variety of SPD departments scattered across the country — from both coasts to the span of land in between.

One department included a staff of six to cover a 90-bed facility. Another department was staffed by all women. Others specialized in selected clinical areas.

We've feted facilities for multi-disciplinary improvement, and not just for new construction, new equipment, new procedures and the latest management improvement programs, all of which can contribute to a superior operation. But new tools and toys can remake any department. We've found that represents only a small part of what defines and promotes SPD dedication and determination — the passion to make a difference in what you do.

We've gotten history lessons and cultural commentary reinforcing just how far SPD has progressed through the decades. This year's winner, **Peninsula Regional Medical Center, Salisbury, MD**, offered a snapshot of both in an even shorter period of time.

The four other finalists among this year's batch of bests-in-practice denote SPD's relevance and importance, hearkening to our original vision which remains tried and true even today. To **Exeter (NH) Hospital; Sanford USD Medical Center, Sioux Falls, SD; North Mississippi Medical Center, Tupelo, MS; and Rush University Medical Center, Chicago**; you turned our heads, if not our hearts.

When the pressure's on and the crises mount, remember that *HPN* knows how hard you work and how seriously you take your roles. Thank you for all you do.

Editor's Note: For the complete list of winners since 1993, as well as a partial list of finalists, visit http://www.hpnonline.com/hall_of_fame.html.

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more than a year. Cycle times plunged to more than 8 hours from 72.

"If I were to start over I would start by understanding the OR demand," Conklin noted. "I would Value Stream Map the process. Measure case carts per hour and sets per case cart per hour and calculate the 'takt time' per hour per shift. This would identify the constraints, and these are your target areas for improvement."

Meanwhile, Conklin has pinpointed more than 30 areas of improvement for CSP to tackle going forward.

Most of the staff is certified, but Conklin hopes everyone will be in time. He acknowledged that the test can be intimidating, if not difficult. "It took me twice to pass the exam myself," he admitted. But he's working with the rest of his team. PRMC pays 20 percent more for achieving certification, but even that's not enough of an incentive for some, he lamented.

Despite his non-SPD background Conklin urged SPD departments to seriously consider Lean methodologies and Six Sigma tools to improve performance and generate influence and respect because PRMC's CSP team proves it.



Lead Technicians (Left to right): Ronnie Holt, Darrel Lee, Tasha Allen, and Manager Eddie Conklin

"Lean brings common sense tools to the front line and allows you to listen to the employees and managers actually doing the work," he said. "The Lean process has a high success rate if you follow the steps and use the tools correctly. It's a way of going after low-hanging fruit with big bucks using front-line (non-engineering) employees. Six Sigma requires a little more finesse, and it's 100 percent based on gathering and analyzing data. It's a way to use structured problem solving to understand and cope with variation and probability.

"Lean will bring flow and speed," he added, "and Six Sigma will bring predictability and great problem-solving techniques for issues that just will not go away."

Conklin lauded Steven Leonard and Carol Deal for being "risk takers that hired me and allowed me to make a career path change. They also believed in the Lean/Six Sigma process along the way.

"When CSP employees rebelled and became the squeaking wheel they stood by me. When the clinical managers classified me as NFL they coached me through the healthcare environment and politics. When our team came up with barriers and needed items that were not budgeted they obtained them for us. They never micro-managed us and let us go through all the stages of team building: Forming, Storming, Norming and Performing. They are great leaders and true Leanies." **HPN**

Editor's Note: For more details on PRMC's improvement projects and its communication initiatives, visit www.hpnonline.com/inside/2013-05/1305-SF-SPDDOY.html