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Learning objectives

1. *Understand the importance of workflow optimization for sterile processing departments.*
2. *Understand the potential benefits of implementing a workflow optimization program.*
3. *Understand how managers should approach an optimization program.*
4. *Learn how to use some of the basic tools used to identify process waste and optimize workflow.*
5. *Understand the benefits and mechanics of how to map the SPD process.*

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SELF-STUDY Series

A roadmap to optimizing sterile processing workflow

by Dan Johnson, SterilTek Inc.

There are a number of trends that are pressuring sterile processing departments (SPDs) in today's healthcare industry. Here are just a few of them:

- Higher surgery volumes
- Overburdened process capacities
- Inadequate instrumentation availability
- Reduced or under-skilled staff
- Viable sterile processing outsourcing alternatives

None of these are going away soon, and increasing spending on capital equipment, space, instrumentation and human resources is not necessarily going to buy the long-term answers needed to effectively address these concerns. However, there are some proven methods that can be borrowed from other industries to improve healthcare operations.

Some healthcare industry administrators are beginning to view their SPDs in the same way that manufacturing executives view their factories. They are embracing concepts long adhered to by manufacturing firms to deal with similar types of concerns. Among the concepts gaining a foothold is the process improvement method known as Lean. Lean concentrates improvement effort along the workflow, known as the value stream, to identify and drive out waste and variability from the processes.

Increasingly, efforts are being directed toward improving the circular flow of reprocessing work from the O.R. through the SPD and back. The goal is to produce more and higher quality work with the same resources by improving process efficiency throughout the operation.

Workflow optimization is all about developing processes to promote a rational, logical and efficient flow of work. In a hospital SPD, the process is about determining what is of value to your customers, how to deliver more value to them, how to accomplish more with the resources available, and how to satisfy the supply needs of the operating room.

Why does workflow matter?

Workflow optimization relieves your staff from performing non-productive repetitive tasks and helps you to cultivate an environment that seeks to improve efficiency, strengthen customer relationships and reengineer processes to be leaner and more productive. Workflow optimization positions a sterile processing department for growth.

Costs associated with ineffective and inefficient workflows often go unexamined, unmeasured and therefore, unmanaged. In an increasingly competitive world, poor workflow compromises the effectiveness of the operation and impacts the level of customer service that you can provide. Conversely, open, efficient and effective workflow positions you for growth, operational cost savings and a competitive advantage. In addition, workflow can affect many parts of your healthcare organization, including central sterile staff, O.R. nurses, your processes and even your technologies.

In a hospital, an effective sterile processing workflow incorporates the specifics of your reprocessing operation and related systems, automates wherever possible, and eliminates redundancy and process variability. This all helps to reduce errors and improve speed and quality. Workflow is a valuable tool and it lies at the heart of your healthcare organization.

Eli Goldratt's business objective in his book, "The Goal," is "to reduce operational expense and reduce inventory while simultaneously increasing throughput." This statement aligns very well with the goals for a sterile processing department. Ultimately the goal of your workflow should be to provide your customer with the best quality product, at the volume required, at the proper time, at the proper cost. This translates into a central sterile customer service goal that has been defined by a leading sterile processing consultant as **100%**[3]; 100% clean and sterile instruments, 100% complete instrument sets, delivered to the O.R. 100% on time.

Characteristics of optimal workflows

There are three key characteristics of effective workflows:

1. *They are compatible with current systems and they streamline existing methods.* This limits the additional investments that must be made and the systems that must be learned by your employees.
2. *They can be applied across similar functional departments.* The same workflow should be effective in an on-site sterile processing department, an off-site reprocessing center or an O.R. reprocessing room.
3. *They are consistent.* Reprocessing tasks are simple, repeatable, reliable and efficient.

What managers should know

To ensure process improvement success, there are three recommendations that sterile processing management should follow. First, *take action*: don't be paralyzed by what you don't know, or think you don't know. The key is to gather all the information that you can within a reasonable time, analyze it, determine the action steps and implement them. Then do it again. Try as you might, first results will seldom be perfect, but change has been made in the right direction. To quote an axiom borrowed from manufacturing, "Now and better is better than perfect and never," or in the fabled words of Taiichi Ohno, former vice president of Toyota Motor Corporation, "Just do it."

Secondly, it is wise to *actively involve your employees and customers* in your improvement efforts. No one knows the pitfalls and makeshift operations that have been developed over the years better than the people who do the work every day and no creative source is more readily available or willing. Your hospital customer will also be happy to help you improve your product or service level and to identify where a potential change will have impact. These are your most creative resources. Make good use of them.

Finally, *be prepared for resistance.* Making changes within an organization is hard work and people have a natural reluctance to change since it challenges their comfort zone. Some people feel threatened when change is proposed. You must work to help people understand what, why and how, and remove the fear - or make *not* moving forward a greater negative consequence. Show that you are a strong leader dedicated to the improvement process. Leading change is not a part-time job. It requires daily attention from leaders who fully understand the scope of the project and who won't get caught up in each day's distractions. I recommend engaging the services of a knowledgeable change agent to facilitate the improvement process, plan and lead improvement activities, and demonstrate and teach effective techniques.

Step 1: Mapping your Central Sterile workflow

Optimizing your sterile processing functions begins with understanding your workflow; the path your instruments take as they cycle through their daily routine. The first step in this process is to develop a process flow and map. The process map is a visual representation of the surgical instrument reprocessing cycle. The key to successful process mapping is to first get the primary process steps down, then dive deeper into each piece of the map, ultimately uncovering each step and layer of complexity. A sample process map in its initial simplified state is shown in Figure 1.

Performing this mapping activity will help you to identify all of the actions required to bring an instrument set through its entire reprocessing cycle. It will also help you to analyze these activities to determine if they are value-added functions or are not. Activities that add value to the product or service are those that the customer would be willing to pay for, that physically improve the fit, form or function of an item, or that are done correctly the first time. Non-value-added activities take time, resources or space but do not add value to the product. Typical examples are rework at any point in the process, searching or waiting for instruments or supplies, waiting on machine cycles, or double handling.

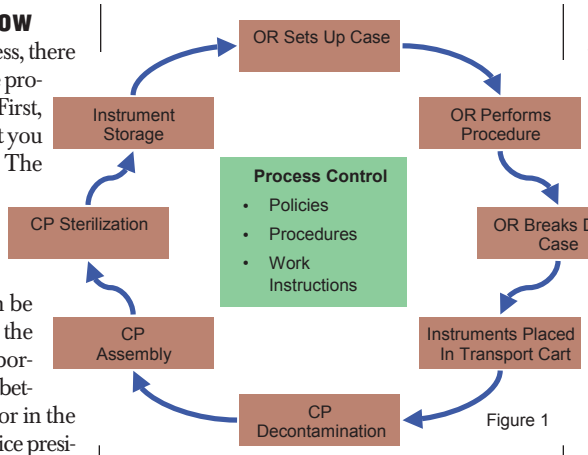

Figure 1

In creating the process map each of the activities identified in the map is timed and charted. This enables you to clearly identify actions that are non-value-added and therefore wasteful. Waste is anything that impedes the flow of product as it is being transformed in the value stream. This means anything that may prevent central sterile from efficiently delivering 100% clean, sterile and complete instruments to the O.R. on time, every time. Process mapping also highlights constraints or bottlenecks (areas where current demand is greater than the current ability to supply) in your processes. The process map becomes the launch pad for additional improvement activities. A more detailed subsection of the process map is shown in Figure 2.

Step 2: Improving functions and workflow

Once the process and value stream maps are completed, you can begin the improvement processes. There are a number of activities that are instrumental to effective workflow optimization. These activities include:

• **Streamlining; eliminating or minimizing non-value-adding steps**: Although the order in which these activities are performed is not critical to your success, there is some logic to streamlining and simplifying the work processes before moving on. By streamlining and simplifying first, you avoid factoring steps into the other activities that you may find unnecessary.

It is important to note that not all non-value-adding activities can or should be eliminated. These are activities that may be essential to the operation of your department. Examples include in-service training, safety meetings, inspections, etc. Your goal is to identify and eliminate *unnecessary* non-value-adding activity.

• **Identifying waste**: Experienced sterile processing consultants routinely reveal waste in the process flow and work that helps managers streamline activities. Some typical examples of waste that have been identified in SPDs are:

1. Labor

•Quality inspections after the set is completed versus IT solutions and certification to ensure proper set preparation

•Time spent looking for an item that should be readily available

• Improperly staffed SPDs or O.R. reprocessing rooms

2. Overproduction

•Excessive stat washes or flash sterilization in the O.R. (done frequently but not used only for an immediate procedure)

3. Space

•Non-linear workflow from decontamination to sterile storage, requiring storage racks and transportation routes

•Non-reprocessing supplies stored in work areas

4. Defects

•Sets put up with missing instruments, extra instruments or wrong instruments

•Improper count sheets or documentation

•Instruments not returned to decontamination in their original container

•Sets returned with instruments missing

5. Time

•Improper staff scheduling doesn't meet workload demand

•Assemblers waiting for a set from the decontamination area

• Miscellaneous material (linens) arriving in containers from the O.R. that slow decontamination

6. Safety

•Ergonomically poor workstation layouts create reaching and excessive movement

•Sharps, fluid and other hazardous material in containers at the decontamination stage

• **Work process simplification:** The intent of simplification is to promote the utilization of equipment and facilities to their full capacity by reducing bottlenecks and developing a smooth flow of materials, work and communication. Simplification focuses on the elimination or reduction of unnecessary work,

See ***SELF-STUDY SERIES*** *on page 32*

Answers
1. d
2. b
3. b
4. b
5. b
6. b
7. d
8. d
9. a
10. d

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rework, fatiguing motions, long transports, and complicated paperwork by using easier methods and mechanization. It improves quality by improving work practices and inspection techniques, and reduces accidents and infections by eliminating hazards, reviewing work conditions and encouraging proper cleaning within the SPD.

To determine the priority for work simplification, look first at your bottleneck operation, the one for which any improvement will help a whole group or speed up the entire process. Second, select a job on which a lot of time is spent. Improvements will be greater for these than for smaller tasks. Any task that involves a lot of chasing around, hard work or inspection steps is a prime candidate for simplification. Instrument assembly often offers simplification opportunities, from providing all needed materials within the technician's reach to eliminating unnecessary materials and instruments from the set. Situations in which the working conditions are undesirable are also ripe for simplification.

Work simplification can only be accomplished with an open mind, and no work process can be taken for granted. The steps to work simplification are straightforward:

1. Select the job or function to be improved.

2. Break the job down in detail. Make a process chart. Similar to the process map discussed earlier, the process chart is a picture of all the steps; operations, transportations, inspections, storage and delays that occur for a particular instrument set. When developing the process chart follow the instrument set through its entire cycle. Be certain to note the time and distance associated with each step in the process. Only then can you account for improvement.

3. Question each detail; is it necessary and does it add value for the customer?

4. Develop the new method. The basic principles in developing a new process chart include:

•Reduce the number of steps (ask why is it done, why is equipment used, where is it done?)

•Arrange the steps in the best order (ask why is done there, why in this order, why is it designed this way?)

•Make the steps as efficient as possible

•Reduce handling

•Combine steps

•Shorten moves

•Provide the most economical means to move the set through the process

Instrument Set Assembly

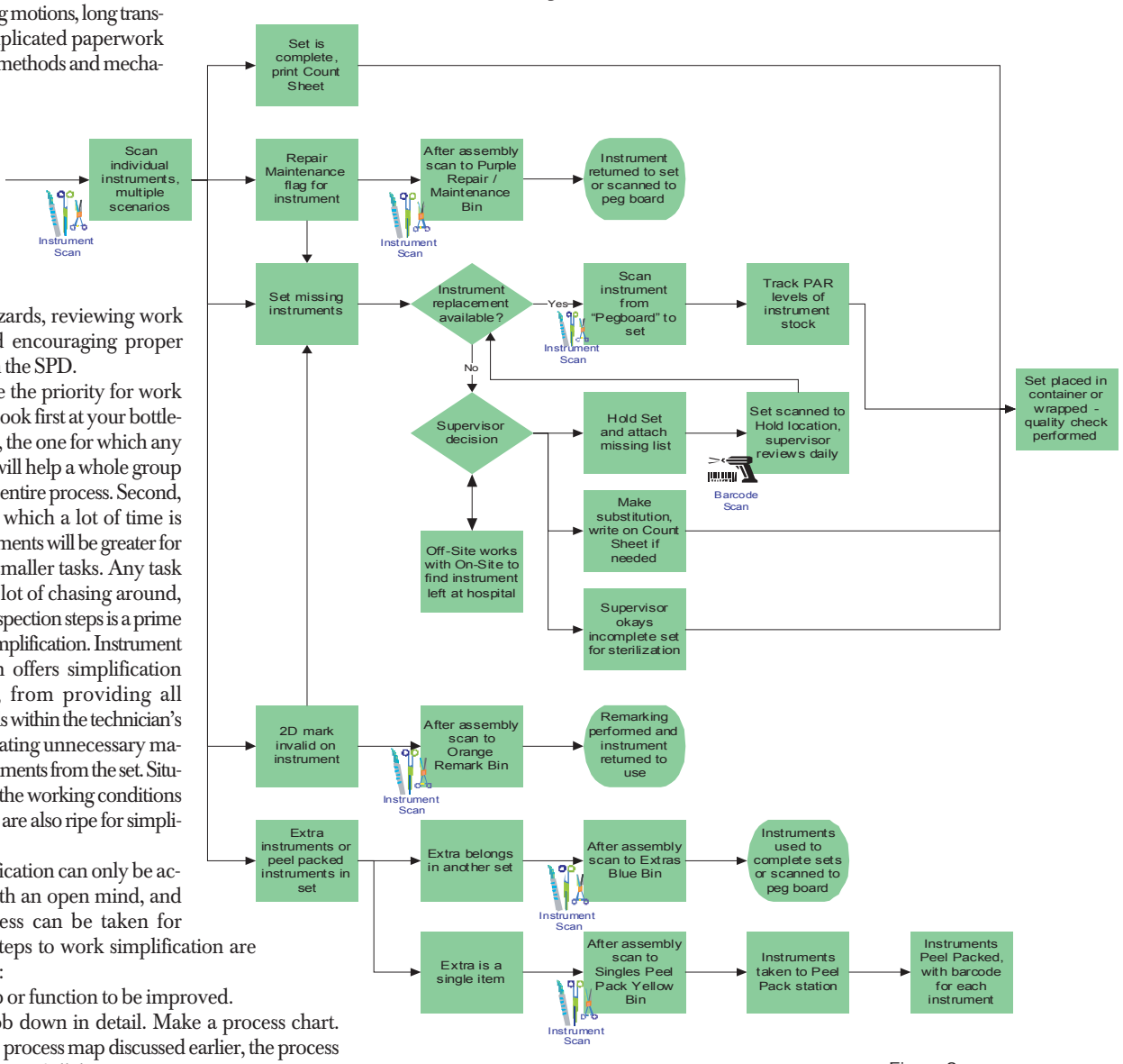

Figure 2

5. Implement the new process, ensuring that all involved persons are adequately trained in the new process and have the opportunity to provide feedback on the changes.

6. Review, measure and repeat. Continuous improvement is a never-ending cycle.

• **Capacity line balancing:** Reprocessing capacity refers to the ability of the process to handle the workload that is expected of it, matching the output of the preceding operation and the requirements of the next. SPD process flows can show capacity variations of 100% or more, meaning that one step in the process can handle twice as much, or more, as the other steps. This imbalance causes waste in the over-capacity areas and backlogs, clutter, and late deliveries in the under-capacity areas.

Too often managers think in terms of maximizing the utilization of a piece of equipment rather than optimizing capacity for the *entire process.* For example, the production capacity of an SPD's washer-disinfectors and sterilizers is often found to greatly exceed the capacity of the assembly technicians working between the disinfection and sterilization processes.

Many CS managers neglect to address the growing backlog of work in the assembly area.

There are two linked elements to the capacity picture. The first element is the *capacity analysis*, which will tell you the number of pieces of equipment (washers, sterilizers, etc.) and instrument set assembly workstations that are required to meet a given level of demand. The second element is the identification and proper utilization of the process constraint or *bottleneck*.

Capacity analysis: A capacity plan or model for an SPD begins with an accurate workload picture. In most cases this workload is the direct result of a given number of O.R. procedures. The steps taken to determine workload are:

1. Identify the sources of instrument reprocessing for the SPD.
2. Determine the number of procedures within these identified sources.
3. Determine the number of instrument sets, ridged containers, single instruments, etc. commonly associated with these cases.
4. Establish the timing of the workload arrival at CS.

This information can then be analyzed in conjunction with data on the SPD's reprocessing equipment load capacities, cycle times, etc. Ultimately the capacity analysis provides you with a picture of your SPD's washer, assembly station and sterilizer requirements.

The bottleneck: In 'The Goal', the bottleneck is defined as "any resource whose capacity is equal to or less than the demand placed upon it. A non bottleneck is any resource whose capacity is greater than the demand placed on it. Bottleneck flow should be on par with demand. The key is to **balance flow, not capacity."**

We need to identify the process point that is least capable of meeting demand, the bottleneck, and manage that point. The first step is to ensure that the bottleneck operation is properly scheduled and staffed to handle the reprocessing workload that is coming into it. This includes having needed supplies available. Next, ensure that the operation and its equipment is functioning at its peak performance. The last place in your process that you want mechanical troubles is at your bottleneck. Thirdly, acquire additional pieces of equipment or staff to meet demand, if it is determined from the capacity analysis.

Manage the remaining process to the level of throughput you are capable of at the bottleneck operation. Balancing flow is much like conducting an orchestra. All parts need to be in synch. No musician gets extra credit for finishing first.

Step 3: Workstation and operations sequence layout

In general, the most effective SPD is laid out in a somewhat departmentalized, linear flow. This is contrary to the thinking of Lean proponents, but is necessary in order to separate the clean and dirty areas within the SPD environment. Therefore, we typically set up a decontamination room, containing the handling of any dirty instruments and supplies, followed by partitioning walls that provide the separation between dirty and clean areas, within which the mechanical washers are placed. The assembly area is normally set up as a separate department, and the quality check and sterilization functions follow it in line.

Further, each workstation, whether in the semi-automated decontamination area or in the more labor-intensive assembly area, must be set up and arranged so that all necessary, frequently used items are easily accessible (within arm's reach) and always available. Items that are less frequently used can be placed in cabinets or drawers or on shelves at the work station and any item that is not used routinely can be removed and placed in an easily accessible storage area.

Properly designed seating, floor fatigue mats, and ergonomically arranged workstations help create a safe, clean and relatively pleasant work environment. These elements, in conjunction with well-defined processes and expectations and management support, help to ensure that employees are consistently productive and efficient in their processes.

Step 4: Standardized work practices

Standardized work practices define how a task should be performed and lets everyone involved in the process know the most efficient way to complete the task. It is impossible to establish a baseline or best practice and make consistent, across-the-board changes when people perform the same task differently. Without standardized work practices, continuous improvement is not attainable and abnormal events go undetected.

Standardized work practices must be developed by those performing the tasks. These practices should then be documented in procedures and work instructions, with applicable detail to diagrams and training aides. All employees should then be trained in the acceptable practice and management should follow up to ensure that the practices are adhered to.

This approach helps to ensure flexibility and responsiveness to the O.R.'s ever-changing needs by providing clearly written instructions that can be followed by even the most inexperienced CS technician. It also helps with identifying problems in the process or practice and leads to continuous improvement. Process changes and improvements are continually encouraged, and they are documented and trained as they occur. Rather than stifling creativity, the continuous improvement process empowers employees to offer solutions and make choices within optimal boundaries.

Step 5: Scheduling process

The sequence of the SPD operation must be logical and easily understood, and must flow without interruption or delay. It is important to "push" instrumentation through the decontamination function as quickly as possible on a first-come first-served basis due to the need to clean bio-hazards from instruments as quickly as possible. However, once the instruments have been pushed through the decontamination process, the assembly technicians can apply the "pull" method to prioritize their work according to customer demands. At this point, they have the option to choose which instruments to process and thereby pull them through the process based on the O.R. schedule, their order of priority and any missing instrument needs from the O.R.

Step 6: Measuring process performance

Processes must be supported with strong metrics that align with a hospital's values. We all measure what we value. On a personal level, we value financial solvency. Therefore we measure money; our income and bank account levels, and we adjust our activities and expenses accordingly. Measures like this create a link between what we value and our action.

Organizations need to measure what they value as well. In this case, they need to measure what matters to the SPD and its customers. Effective metrics for SPD processes help us to establish the differences between perception and reality, gather facts that lead to sound decision making, identify process bottlenecks, and evaluate our customer's satisfaction level. Metrics also provide a baseline against which we can measure our performance and notice improvements and whether the gains are being sustained.

There are two purposes for developing consistent metrics and measures within an organization. First, there is a need to measure the impact of any improvement. Successful improvement requires a measurement system to track progress. This weaves accountability into the initiative and provides a tangible picture of the organization's efforts. In order to accomplish this task a baseline must be determined, so measurement must begin at the start of the improvement effort or it must be ascertained by methodical review of past records.

The second purpose is to sustain and then drive additional improvements within the same processes. According to the authors of "Six Sigma," the breakthrough management strategy, organizations "need to establish improvement goals, referred to as Stretch Goals, which focus people on changing the process rather than tweaking the existing processes. This can lead to exponential improvement."

There is a rule of process improvement that states, "We can't change what we don't mea-

*See **SELF-STUDY SERIES** on page 34*

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sure," and its corollary: "Don't measure what you won't change." It is important that measures be properly focused on elements of the operation that reflect what you value and want to improve. For example, if customer satisfaction is valued by your SPD, then there must be a way to continually measure that value. First, identify what steps in your processes are critical to customer satisfaction. Next, correlate your process map to the elements that are critical to improving customer satisfaction. This will help you to focus improvement efforts on the right parts of the process.

It is also important to understand the impact of the measures you introduce, since organizations and individuals have a natural tendency to perform in accordance to how they are measured:

•If efficiency is your primary measure, then people will be efficient at specific tasks that they perform, but will not necessarily perform consistently all day long or complete the tasks that are a departmental priority.

•If piece count is used as a measure of productivity, they may select work that is less difficult or time-consuming, unless this workload is properly assigned and controlled by management.

•If equipment utilization is the key measure then focus will be on running cycles, regardless of how filled to capacity the equipment is or the priority of the job.

The right selections of measures accurately capture department and individual performance. Performance factors should be tracked, posted, discussed and corrective action taken to adjust less-than-desirable trends. Timeliness of the measure is important as well. A manager or employee who is aware of poor trends early can make appropriate corrections and impact results early. Too often, managers look at performance indicators once each month and react with "that's old news", and "I have this month to worry about". The same is true of employees. Employees should have a clear understanding of what is expected of them and productivity should be plainly defined as output or results per hour.

Some key metrics that can be used within an SPD are:

•***Customer satisfaction and quality***, defined in the goal of **100%**[3]. This includes measures of cleanliness and sterility of instruments presented to the O.R. and completeness and timeliness of sets delivered.

•***Demand***; what is the workload amount and timing to CS. This metric assists you in understanding bottlenecks and staffing requirements.

•***SPD hours per procedure***; this is a benchmark by which you can compare your staff performance level against that of other institutions. A caution about using this performance indicator as a staffing level determinant is that not all SPDs perform identical tasks, and therefore the metric may not be exact. For example, one SPD we encountered during a project employed SPD staff as runners, to collect instrumentation and durable medical equipment from 5 O.R. floors, bring it to CS, clean the durable medical equipment, and then return the items to central supply. This represented a considerable workload expansion that we have not observed in other hospitals.

•***Productivity***; defined as items or tasks completed within a given time-frame. This measure ensures that your department is performing effectively and requires that reasonable expectancies (standards) be established for each key task included in the workload.

•***Skill mix and competency***; is a measure of skill attainment, both individually and organizationally. Identifying skill sets required for the successful operation of an SPD and the competency rating of each employee provides powerful insight to training needs and your ability to move cross-trained employees to understaffed areas during peak demand.

There are variations of these metrics, as well as additional measures that can be used. Select those that best suit your organization and its objectives.

Step 7: Active management/ supervisory techniques

• Communication

Management's daily interaction with their workforce is often undervalued or neglected. Typical rationalizations and excuses given to explain why supervisors are not spending adequate time and energy in the midst of their people and processes include: "I don't have time to spend with my people;" "my people all know what to do, I don't need to follow-up;" and "that's micro-managing."

A cycle of supervisor-to-employee communication, especially effective assignment-giving and routine follow-up, is critical to the success of the SPD. Regular interaction ensures that the processes that have been established and the practices that have been standardized are being followed and that problems are being identified and acted upon quickly. Nothing in the process or practice should be taken for granted by supervisors or employees. The frequent result of neglecting supervisory interaction is that SPD staff, with the very best of intentions, will begin to do things their own way, deviating from accepted, standard procedure and causing the process to drift.

• Problem resolution and documentation

Beginning with the waste and bottlenecks discovered by process mapping and workflow optimization activities, it is paramount that the improvement tasks be set down in a document that provides for effective control and follow-up. Another process improvement rule states: "If it isn't written, it isn't done." This simply means that far too many things are on our plates each day and if the task isn't important enough to write down and follow up on, it likely isn't important enough to complete. An action item list containing a description of the problem, the name of the person who brought it to the improvement team's attention, planned resolution steps, assignment of responsibility and due date should be created. This tool provides the necessary information to ensure effective and timely completion of the improvement task and feedback to the employee who initiated the action item.

In summary, it doesn't take a crisis, but it helps…

We've discussed many elements for optimizing workflow and have looked at what it takes to employ these elements in your own SPDs. It often takes considerable stress and strong outside forces for a hospital to begin making major changes to its processes and practices. These forces may stem from an inability to perform at expected service levels, or growth rates that are limited by space, equipment and other resources, or infection rates that are out of control, just to name a few. Any of these can motivate your hospital to look at how it conducts business and force it to make substantial changes.

But it doesn't have to take a crisis. Forward-thinking managers can drive the change effort by recognizing that their current processes are less than perfect. Organizations that are healthy are often in a better position to make dramatic improvements simply because the resources are available and the process can move forward without an extreme sense of urgency. Take the first step by understanding your process as it exists today and identify the first opportunity for improvement. Now you are on your way down the workflow optimization road. **HPN**

Dan Johnson is a senior professional services consultant for SterilTek Inc., a wholly owned subsidiary of STERIS Corporation that specializes in process improvement and management consulting. He works with hospitals nationwide to improve their CS operations and support O.R. growth. Johnson has more than eleven years of consulting experience in healthcare and other industries. His resume includes Lean Process facilitation, process design, capacity planning, management training and organizational development. He is certified in Production and Inventory Control, APICS, and holds a Masters degree in Operation Management from the University of Arkansas.

References:

1) Jeffrey Liker, *Becoming Lean*, Productivity Press, 1998.
2) Womack, J.P. and D.T. Jones, *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*, New York, N.Y.: Simon & Schuster, 1996.
3) Eliyahu M. Goldratt, *The Goal*, North River Press, 2nd edition, 1992.
4) John Kimsey and Jim Barton, *The Sterile Processing Factory Goal: 100% Cubed*. Infection Control Today, April 2005.
5) Mikel Harry, Ph.D., Richard Schroeder, *Six Sigma, The Breakthrough Management Strategy*, Currency / Doubleday, 2000.
6) Yasuhiro Monden, *Toyota Production System*, Industrial Engineering and Management Press, Norcross, Ga., 1983.

Continuing Education Test-November 2005

A roadmap to optimizing sterile processing workflow

CIRCLE THE CORRECT ANSWER

1. Workflow optimization in the SPD can help address which of the following challenges?
a) Process inefficiencies
b) Varying reprocessing demand
c) Poor resource utilization
d) All the above

2. Two of the best sources of ideas for process improvement are:
a) CS supervisors and technicians
b) CS technicians and O.R. staff
c) Instrument vendors and hospital management
d) a and c

3. Value-Added activities are those that take time, resources or space, but do not add value to the product.
a) True
b) False

4. Assembly of sets missing instruments is an example of value-added work
a) True
b) False

5. Which of the following SPD workload functions are best scheduled and prioritized using a Pull system?
a) Transport of dirty instruments to the SPD and decontamination
b) Assembly and sterilization
c) Decontamination and sterilization
d) Case cart assembly and decontamination

6. A process map is:
a) A map showing transportation routes from the O.R. to CS
b) A visual representation of the surgical instrument reprocessing cycle
c) A document providing work instruction to the CS technician
d) None of the above

7. SterilTek Inc.'s 100%³ SPD goal includes:
a) 100% clean and sterile instruments
b) 100% complete instrument sets
c) 100% on time delivery to the O.R.
d) All of the above

8. Primary tools used to optimize workflow include:
a) Streamlining and work process simplification
b) Capacity line balancing and standardized work practices
c) Workstation layout and staff scheduling
d) All the above

9. A bottleneck is any resource whose capacity is equal to or less than the demand placed upon it.
a) True
b) False

10. Why are metrics and performance measures important in SPD?
a) To measure the impact of improvements
b) To identify tasks that may be eliminated
c) To sustain gains made and encourage additional improvement
d) a and c

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