



P¹-I-P²-E Your Flow

And Gain Efficiency in the OR

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To effectively manage the enormous economic pressures facing hospitals today, leaders must be able to move the organization through change and seek efficiency in providing care. Sharing a vision for change and challenging long-standing paradigms promotes an environment of influence where others feel empowered to seek new ways of providing care. Identifying elements using a metaphoric framework aids in communicating a vision and helps in standardization; thereby leading care teams to meet efficiency goals.

This article will focus on communicating a simple framework of care across all aspects of the surgical department. The use of a simple model provides ease in communicating various care principles, promotes system thinking and opens the staff to investing time in creating new ways of delivering care.

MODEL OF EFFICIENCY

Healthcare workers in the operating room deal with many aspects of care. A surgical patient's care begins in the surgeon's office with scheduling the surgery. This care continues through the pre-operative steps, including patient pre-op testing, post-op care and rehab. During this initial phase in the workflow, a wide variety of patient and staff communications occur inside and outside the operating room. The number of interactions and steps involved, coupled with a vast number of diverse roles, can cause process inefficiencies. These inefficiencies lead to barriers

LEARNING OBJECTIVES

- ▲ Identify a simple framework for communicating in the OR
- ▲ Learn how to decrease system clogging and increase flow efficiencies
- ▲ Explain why pre-surgical screenings are a necessary component of the care team
- ▲ Examine principles on how hospitals can use scheduling systems to be more predictive
- ▲ Read about how a care teams' friendly approach to meeting with the patient can help with the patient's recovery

in patient flow. When surgery patients begin to clog patient flow in the hospital, delays can cause overall pressure on inpatient units and hospital services.

To explain the framework for efficiency discussed in this article, patient flow will be referred to as water flowing through a pipe. A smooth flow of water through a pipe is demonstrated when nothing blocks the passage inside the pipe and nothing pushes on the outside of the pipe to narrow the passage of water. If something inside the pipe or an unwanted force pushing on the outside of the pipe occurs, smooth flow is restricted, and less water can pass through, thus causing a clogged or inefficient flow. This metaphor allows us to imagine a similar flow when describing efficiencies through the OR. If barriers inside or outside of the OR occur, a decrease in patient flow occurs, patient clogging results and it effects the entire facility.

This article focuses on four areas of perioperative care which should be considered to decrease clogging and increase flow efficiencies: The first section is named “P¹” and identifies pre-care considerations and activities. The second is “I” indicating interoperative ideas to improve effective delivery within the OR suite. The third is “P²” and stands for post-care considerations, which aid in faster recovery time and care efficiencies to discharge patients earlier. Lastly, “E” is meant to highlight efficiency across the peri-op process by understanding the foundational practices needed to accomplish elements in the first three areas.

P¹ - Pre-op:

The key to a smooth intra-operative experience and positive patient outcome begins at the surgical pre-op phase. In this phase, the surgical procedure is scheduled and pre-op testing is performed (when medically necessary). Obtaining and providing the surgical department with timely and accurate patient information aids in optimal use of operating rooms, equipment and staff. “Studies have demonstrated that failure to implement an effective pre-surgical screening process leads to higher rates of same-day cancellations and late starts, incomplete and over-ordered testing, patient dissatisfaction and staff frustration.¹³ Appropriate pre-testing, an up-to-date patient H&P, consent for surgery and proper scheduling eliminates potential cancellations and delays. Authors of a recent white paper for the Institute for Healthcare Improvement (IHI) discussed a variety of principles for improving hospital-wide patient flow.¹² One such principle explains how hospitals can invest time

and resources into learning how to shape their demands by expanding the operating room scheduling system capabilities to be more predictive. Predictive or advanced data analytics can be used to reduce not only scheduling variations, but forecast demand patterns, assist in planning for appropriate staffing levels and define bed management plans for patients who require special needs or higher levels of care post-surgery. As noted by a variety of researchers, moving to a more proactive stance when scheduling and prepping patients appropriately, surgeons and staff have proven to be more successful at achieving workflow goals. One study by the University of Pittsburg Medical Center in collaboration with IHI, reports improvement in hospital-wide patient flow using their predictive bed management program. This program demonstrated shorter wait times for patient-to-bed placement post-surgery; therefore, safer, more reliable patient outcomes were achieved.¹²

Likewise, instructing patients in advance about after-care needs demonstrated success across a variety of surgical procedures. For instance, discussing post-care while already in the physician’s office has proven to provide patients with more clarity because they are in a more familiar environment. Most agree it is easier to co-build a safe space and transparency with family members or significant others prior to the surgical procedure. It provides a way to set patient expectations for post-discharge care and potential therapy planning including how much time is involved for recovery to a normal level of wellness. Pre-surgical instructions not only help to define true informed consent, but it also aids in anticipating barriers.

Although slow in adoption among many surgeons, some support the use of Enhanced Recovery After Surgery (ERAS) planning as part of their pre-op regiment. ERAS are ...

“... multimodal perioperative care pathways designed to achieve early recovery after surgical procedures by maintaining pre-operative organ function and reducing the profound stress response following surgery. The key elements of ERAS protocols include preoperative counseling, optimization of nutrition, standardized analgesic and anesthetic regimens and early mobilization.”¹¹

Whether hospitals use pre-op testing, block surgery scheduling or ERAS, the principle of anticipating and planning to assist patients in meeting their desired outcome is the goal. Once there is a clear understanding of the path, the care team’s goal is making a smooth path so as not to impede effective progression of care.

I - Intra-op

The roles of the surgical technologist and the circulating nurse are critical not only for the well-being of the patient, but to also keep the surgical schedule flowing in the room. From the time the nurse or surgical team member retrieves the patient from pre-op and throughout the intra-operative experience, surgical check lists should be communicated and documented to ensure steps are not missed. Although the primary activities of the circulating nurse occur inside the operating room, the circulating nurse is responsible for a smooth transition between pre-operative and intra-operative care by making sure the chart is in order, verifying elements of informed procedure consent including correct patient, correct site, correct procedure and signatures by both the surgeon and patient.

Chang and colleagues (2013) noted a correlation between caregiver communication and patient satisfaction. Results in their study conclude, "Perception of interpersonal-based medical service encounters positively influences service quality and patient satisfaction, perception of service quality among patients positively influences their trust, and perception of trust among patients positively influences their satisfaction."² Patients who are satisfied with their care are typically active listeners and become participants in their own path toward wellness.³ This moves the healing process along and aids in disposition discharge efforts.

Communication seems like it should be straight forward, yet the execution and fundamental components of it are often overlooked and seen as the most common reason for delayed flow in surgery. Communication begins in the pre-operative area and continues throughout the patient's hospital stay. The operating room is an intimidating place for all patients. By communicating, the patient becomes part of the team which aids in the patient's orientation to its environment. When the patient is brought into the operating room, every member of the surgical team should take time to greet the patient and provide his/her name and role in the patient's care during the case. According to a variety of researchers, this type of approach has been successful in several patient care circles. Patients may not always

remember what exactly was said, but they will remember a feeling of calmness and safety before undergoing anaesthesia, which may affect their health outcomes and healing.⁹

All members must be present to proceed and conduct the time-out procedure. Waiting on a single member holds up the entire surgical team. There is never a short cut to the time-out process and the check sheet should be followed without fail no matter how mundane it may seem. The time-out process is an important step in patient flow and must be acknowledged as the CST's first step and goal after the patient enters the room. The CST can ensure that all sterile members of the surgical team are paused for the time-out by holding the sterile drapes back from the physicians after

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the prep has been completed. The standard three minutes waiting time for the prep solution to dry is a perfect time for this pause to occur.

The main factors affecting the efficiency in the OR and during the case is related to proper preparation before the patient enters the OR. Surgeon preferences for medications, supplies and equipment used for each case helps to streamline these processes. E-cards are the most effective and can be updated easily in association with just in time (JIT) supply chain management. In turn, for supplies that require reporting, the same could be sent electronically to the chart and recorded as a part of structured report for surgical note updates. Detailed surgeon preferences ensure everyone has proper instruments and supplies ready for each surgery, every time; thereby saving time in set up, time during the procedure, and time in room turnover.

When the surgery has been completed, a timely and smooth transition should occur between the OR and post-anesthesia care unit (PACU). The circulating nurse should be following each step of the case to provide notice to the PACU for timely transfer. Adequate information can be provided in advance of the move so staff in PACU are prepped and ready to receive the patient.

P² - Post-op

The third part of the model is P² and stands for post-care. The most effective transitions from recovery to home or to acute inpatient care are by using standard directives. Physician-driven directives clearly outline patient recovery criteria and define timing guidelines for patient discharges from PACU including post-care instructions and medications. When the patient meets the care transition goals listed in the directive, recovery room nurses may begin the discharge process eliminating the need for surgeons to visit the recovery room simply to dismiss the patient. Surgeons can continue to move through their block time or scheduled cases and not interrupt smooth turnovers between cases maintained in the OR. Another effective means of communicating constantly with family members is to use approved private health information screens in the waiting rooms. When surgeons and nurses enter electronic time-stamps, they update the family message boards without them leaving their designated locations.

Predictive or advanced data analytics can be used to reduce not only scheduling variations, but forecast demand patterns, assist in planning for appropriate staffing levels and define bed management plans for patients who require special needs or higher levels of care post-surgery.

Post-recovery includes time spent in units after leaving PACU. On surgical units, patient education performed during pre-op can be reinforced during the post recovery phase of the patient's care. In addition, pathway management aids in decreasing unnecessary hospital days and long lengths of stays. Relieving barriers to recovery is imperative at this time due to the more obvious potential issues of a decline in patient orientation and hospital-acquired

infections. As discussed in several recent studies, the quicker patients can be discharged from the hospital the better their outcomes and the less likely they are to become a victim of a hospital-acquired infection or hospital-induced delirium.⁴ Therefore, making certain that standards of practice are in place, followed, and clearly communicated helps to ensure positive patient outcomes.

E -Efficiency and Leadership

The fourth and final element in the model relates to the surgical department and hospital system. Efficiencies can be gained by a variety of performance improvement activities; however, being able to lead effectively is by far the most important asset a hospital or healthcare facility has as noted in The Joint Commission accreditation program, 2018 Leadership Chapter, LD.04.03.11. The standard reads, "The hospital manages the flow of patients throughout the hospital."¹⁴ A simple statement, yet in a complex organization it is often difficult to accomplish. Leading with a clear and concise message everyone can understand and relaying this message as a shared vision makes it easier to gain followers. Clarity in efficiency goals helps staff to achieve their full potential for implementation of quality practices.

CONCLUSION

Dr. Kirk Jensen, faculty member at the Institute for Healthcare Improvement (2018) explains, "A hospital is a great example of an adaptive system."⁷ He suggests many patient flow decisions are made at a micro level without consideration to the overall macro consequences. Using P¹IP²E as a communication tool can aid in starting good dialog about the macro level care members and inevitably leads to a joint understanding of why flow might be impeded and can help to break down barriers at each step in the workflow process. It is a tool for building relationships across the hospital while understanding transitions of care, and appreciating the external forces causing delays. In each phase of care, anticipating potential barriers can mitigate issues before they occur.

At the National IHI Forum in December 2016, Derek Feeley, President and CEO of IHI (Institute for Healthcare Improvement) identified six resolutions to ensure the continued quest toward patient safety and reliable health care. These included:⁵

"Focus on what goes right as well as learning from what goes wrong;

Move to greater proactivity;
 Create systems for learning from learning;
 Be humble — build trust and transparency;
 Co-produce safety with patients and families; and
 Recognize that safety is more than the absence of physical harm; it is also the pursuit of dignity and equity.”

Each of these resolutions speaks to the relentless efforts healthcare professionals put toward the ways of improving flow and removing barriers or clogs. These barriers, whether they are created inside the system or there are external forces at work, cause patient workflows to suffer. In the end when workflow suffers, patients and staff pay the price.

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1. **The first "P" in the P¹-I-P²-E Workflow Model stands for:**
 - a. Phase 1
 - b. Pre-op
 - c. Predictive
 - d. Post-op
2. **Studies have found that failure to implement an effective pre-surgical screening process leads to higher rates of:**
 - a. Late starts
 - b. Incomplete testing
 - c. Same-day cancellations
 - d. All of the above
3. _____ can assist in planning for appropriate staffing levels or to help determine a bed management plan.
 - a. Predictive data analytics
 - b. Demand patterns
 - c. Scheduling software
 - d. Block surgery scheduling
4. **The key elements of Enhanced Recovery After Surgery (ERAS) include:**
 - a. Counseling
 - b. Nutrition
 - c. Post-recovery workouts
 - d. Both a and b
5. **What is viewed as one of the most common reasons for delayed flow in surgery?**
 - a. Teamwork
 - b. Communication
 - c. Over-scheduling
 - d. Case cancellations
6. **After the patient enters the room, what is the CST's first goal?**
 - a. Organizing the back table
 - b. Introducing themselves to the patient
 - c. Conducting the time-out process
 - d. Gowning and gloving the surgeon
7. **Physician-driven directives clearly outline patient recovery criteria and defines _____.**
 - a. Patient discharges
 - b. Patient wellness goals
 - c. PACU schedules
 - d. None of the above
8. **Pathway management aids in decreasing unnecessary _____.**
 - a. Pain management
 - b. Hospital stays
 - c. Secondary procedures
 - d. Recovery time
9. **A correlation between caregiver _____ and patient satisfaction helps move the healing process along and aids in patient discharges.**
 - a. Communication
 - b. Satisfaction
 - c. Support
 - d. Capabilities
10. **By communicating, the patient becomes part of the team which aids in the patient's orientation to its _____.**
 - a. Environment
 - b. Procedure
 - c. Surgical care team
 - d. Both a and b

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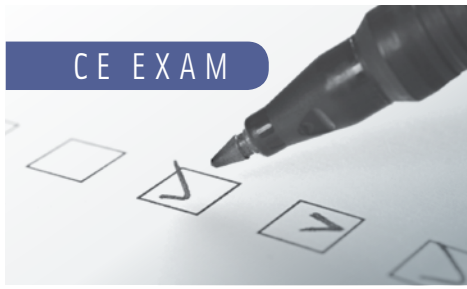
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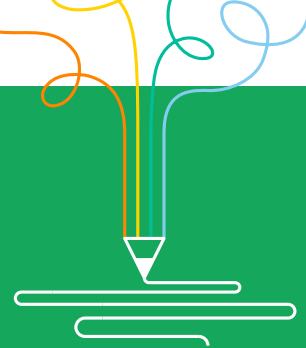
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