CUSP for Safe Surgery:
The Surgical Unit-Based Safety Program (SUSP)

Armstrong Institute for Patient Safety and Quality

JOHNS HOPKINS MEDICINE
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Introduction

Healthcare organizations around the world are increasingly focused on patient safety and healthcare quality. While healthcare providers are committed to improvement efforts, many struggle to create and sustain positive change. The Comprehensive Unit-based Safety Program (CUSP) helps providers achieve the lasting improvements they seek.

You can redesign your care system through technical and adaptive work to improve patient safety and eliminate preventable harm. Technical work changes procedural aspects of care that can be explicitly defined, such as surgical skin preparation procedures. Adaptive work changes the attitudes, values, beliefs and behaviors of the people who deliver care.

Adaptive work can be discouraging and nebulous. Creating a skin prep checklist is far easier than managing staff’s attitudes and values, or engaging senior executives in patient safety efforts. You may be tempted to focus on technical work, and leave complex adaptive problems unaddressed. Yet many change efforts fail because adaptive work is neglected: An evidence-based procedural checklist (technical work) will only impact outcomes if staff understand, value, and prioritize use of the checklist (adaptive work).

The five steps of CUSP bring adaptive work into the change process and help your team improve your unit’s safety culture. By integrating CUSP with technical interventions, your team can achieve real and sustainable improvements in safety.

The CUSP Toolkit in practice

In 2004, more than 100 intensive care units in the State of Michigan implemented CUSP in their celebrated work to eliminate central line-associated bloodstream infections. Since their success, thousands of units nationwide have used CUSP to target a wide range of safety problems: patient falls, hospital-acquired infections, medication administration errors, among others. Check out the list of references to learn more.

CUSP is Local

CUSP is perhaps the only intervention that has improved teamwork and safety culture on a large scale. Large scale change is achieved when multiple teams implement CUSP locally. Patient safety culture improvement at the local unit-level is crucial. Local norms have a powerful influence on the attitudes and behavior of care providers. Unit culture influences the extent to which providers participate in quality improvement efforts, adhere to evidence-based guidelines, or even speak up when they are concerned about the care of a patient.
How Does CUSP Change Local Culture?

Frontline providers cultivate wisdom by delivering care within their local systems. They encounter patient safety hazards on every shift and develop tactics to safeguard their patients against them. CUSP helps your team improve local safety culture by tapping frontline wisdom. It provides a mechanism to change systems and eliminate safety hazards for all patients. Far too often, frontline staff feel like patient safety improvement efforts are done to them instead of done with them. When frontline providers own the improvement process, local safety culture improves.

CUSP Steps: An Overview

Though CUSP is comprised of five steps, the program is a continuous process designed to incorporate an evidence-based patient safety infrastructure into your unit. The steps are briefly described below:

Step 1: Science of Safety Training

Introduce your teams to the principles that promote and support patient safety and quality. Help them develop lenses to focus on system factors that can negatively impact care and lead to preventable harm.

Step 2: Staff Identify Defects

Identify patient safety defects in your work area. Your team can identify defects from incident reports, liability claims, or sentinel events. In this step, ask frontline staff how the next patient will be harmed through a short written survey.

Step 3: Executive Partnership

In this step, you’ll partner with a senior hospital executive to develop a shared understanding of local defects, build consensus and a plan for how to mitigate those defects, and develop shared accountability for implementing and evaluating the plan.

Step 4: Learning from Defects through Collective Sensemaking

Your teams will use a practical and valid tool to learn from defects, answering four basic questions:

1. What happened?
2. Why did it happen?
3. What did you do to reduce risk?
4. How do you know that risks were reduced?
Step 5: Tools to Improve

Use tools to improve teamwork and communication in the perioperative area. Teamwork and communication tools include OR briefings and debriefings, and tools from the national TeamSTEPPS program.

Who is Accountable for CUSP?

CUSP is a transdisciplinary process that incorporates the wisdom and unique perspectives of all providers and staff. However, in order to ensure timely completion of project activities, your team will need to choose a team leader. This leader will oversee the implementation of CUSP, and additional team members can help implement each of the steps.

Pre-CUSP Work

Assemble a CUSP Team

The CUSP team transcends discipline silos. Transdisciplinary teams collaborate throughout the entire problem solving process, instead of developing solutions in isolation and then trying to align them. The CUSP team includes your team leader, a surgeon champion, an anesthesia provider champion, and a nursing champion. The CUSP team leader and transdisciplinary project champions must be able to dedicate a minimum of 2-4 hours per week to this program. Additionally, hospital epidemiology or infection control professionals are important CUSP team members, since they will contribute important expert advice and data to the project. Your CUSP team will be most effective if it includes people from across the perioperative area – frontline staff from the PACU, OR, ICU and surgical floors.

The CUSP team leader (or designee) should work with hospital management to connect with a senior executive, and secure his or her commitment to the CUSP program. When selecting a senior executive, ensure he or she is available to contribute meaningfully to the team and is approachable. Whether he or she has experience as a clinician or not, your senior executive partner should be comfortable having important discussions about difficult and sensitive topics.

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<tr>
<th>Tools you can use</th>
<th>How you’ll use them</th>
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<tr>
<td>CUSP for Safe Surgery Team Membership Form (Appendix A)</td>
<td>List team member names and contact information in this form. Post the list in a visible location for staff reference.</td>
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<tr>
<td>CUSP for Safe Surgery Team Roles and Responsibilities Form (Appendix B)</td>
<td>Clarify mutual expectations for CUSP team members</td>
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Our quality improvement department has worked on SCIP measures for years. At first, we didn’t understand why our hospital CEO had signed us up for CUSP for Safe Surgery. We thought, “We are already doing this stuff.” After joining a few project calls, we began to understand that CUSP would require a new quality team of frontline staff and administrators, and a fundamental restructuring of how our hospital did quality work.

– CUSP for Safe Surgery Surgeon Champion

Assess your Culture of Safety (Baseline Assessment)

The ongoing measurement of safety culture using surveys or questionnaires is quickly becoming an industry norm in healthcare. If your organization has not conducted a safety culture survey, such as the Hospital Survey on Patient Safety (HSOPS), it should be done in the perioperative areas at the outset of this project.

Safety culture questionnaires elicit frontline providers’ attitudes and perceptions about patient safety topics. Individual providers complete the questionnaire anonymously, and responses can be reported by job category (for example, nurse, physician, or surgical tech), by unit, or by hospital. Your team can reassess perioperative safety culture every year or so.

Before administering a safety culture survey, explain its purpose to frontline providers. Emphasize that you want to tap into their wisdom, opinions, and perceptions of safety on their unit, and ensure that they will receive feedback on the results. All clinical and nonclinical providers who work in your perioperative area should be included in this culture assessment (for example, nurses, physicians, and unit clerks).

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<th>Tools you can use</th>
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| HSOPS Manual 1: Planning and preparing for your survey  
(Appendix C) | Learn how to plan and administer your survey, and make use of the important data you collect. |
| Quick Guide: HSOPS Coordinator-Roles and Responsibilities  
(Appendix C) | Find the HSOPS Coordinator who’s right for your project team. |
<p>| Quick Guide: Template Debriefing Plan | Now that you’ve collected data, making it actionable is the important next step. A good debriefing plan will help. This template provides |</p>
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<th>Tools you can use</th>
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<tr>
<td>(Appendix C)</td>
<td>some important tips.</td>
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We measure safety culture across the hospital every year, but when CUSP for Safe Surgery started, we saw an opportunity to really assess our perioperative culture. Even though our staff is tired of taking surveys, we administered HSOPS through the online project platform. This time, we shared survey results and their interpretation with our staff. We told them that we needed their leadership to make things better. Our frontline started to realize that they were the center of our quality team.

— OR Nurse manager, CUSP for Safe Surgery Team Member

How do you optimize HSOPS response rates and use your culture data?
Join the conversation at the CUSP for Safe Surgery social networking site.

CUSP Steps

Step 1: Science of Safety Training

A “system” is a set of parts interacting to achieve a common goal. All too often we assume that patient harm occurs because of inexperience, lack of supervision, or bad luck, when in fact care is delivered in imperfect systems. Perioperative teams must understand the system in which they work to enable change in their clinical setting.

Rather than being the main instigators of an accident, operators tend to be the inheritors of system defects...their part is that of adding the final garnish to a lethal brew that has been long in the cooking.

James Reason, *Human Error*

What the CUSP team needs to do

Have your staff view the Science of Safety video featuring Dr. Peter Pronovost. The CUSP team leader should ensure that all clinicians and staff members watch the Science of Safety presentation within the first month of CUSP implementation. Your CUSP champions can facilitate training for their respective disciplines. Training can be done in large groups, several smaller groups, or during individual sessions depending on what is practical for your perioperative area.
When we introduced this project to our perioperative area, individual units were quick to blame the others for our surgical infection rates. The floors blamed the OR; the OR blamed the floors and clinics. We had to teach our staff that infection rates are the result of faulty systems, not bad clinicians. Our SSI rate is not going to budge if all we do is exchange blame. After the Science of Safety training, you could see a few lights go on. It’s definitely a journey, though. Clinicians take care so personally.

— CUSP for Safe Surgery Nurse Champion

How do you train your entire perioperative staff?
Join the conversation at the CUSP for Safe Surgery social networking site.

Step 2: Staff Identify Defects

Frontline providers understand patient safety risks in their clinical areas and have great insight into potential solutions to these problems. Your team needs to tap into frontline providers’ knowledge and use it to guide your safety improvement efforts. The Perioperative Staff Safety Assessment helps you access this wisdom by directly asking providers:

- How will the next patient be harmed in your unit?
- What do you think can be done to prevent this harm?
- How will the next patient develop a surgical-site infection (SSI) on your unit?
- What do you think can be done to prevent this SSI?

One of the strongest determinants of safety culture is whether local and hospital leadership respond to staff patient safety concerns. Therefore, it is important to follow up on the defects identified by your staff.
What the CUSP team needs to do

The CUSP team leader (or designee) should hand out a Perioperative Staff Safety Assessment (PSSA) form to all clinical and nonclinical providers in the unit.

**Timing:** We strongly recommend that you hand out the Perioperative Staff Safety Assessment form at the end of the Science of Safety training session.

**Logistics:** One person should be assigned the task of handing out and collecting the safety assessment forms. To encourage staff to report safety concerns, it may work well to establish a collection box or envelope in an accessible location where completed forms can be dropped off.

**Collective Sensemaking:** Group PSSA responses by commonly identified defects (such as communication, medication process, equipment failure, supplies, etc.) and summarize defects (i.e., what percent of total responses were related to communication?).

**What comes first?** Prioritize identified defects using the following criteria:

- Likelihood of the defect harming the patient
- Severity of harm the defect causes
- How commonly the defect occurs
- Likelihood that the defect can be prevented in daily work

**A tool you can use**

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<tr>
<td>Perioperative Staff Safety Assessment (<a href="#">Appendix E</a>)</td>
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<tr>
<td>Gauge perceptions of risks in your unit and tap into team wisdom to proactively identify improvement targets</td>
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Our SCIP compliance rates were great, and we thought we had normothermia maintenance figured out. When we reviewed our PSSA data, we were surprised by the number of comments related to hypothermic patients. Our nursing champion audited OR patients’ charts for more data. She confirmed what our frontline had reported – our patients were cold postoperatively. For years, we had been telling our frontline how to improve. It became clear that they should be telling us that information.

– Quality Improvement Officer, CUSP for Safe Surgery Team Member

How do you get honest feedback about patient harm?
Join the conversation at the CUSP for Safe Surgery social networking site.

Step 3: Senior Executive Partnership

The senior executive and frontline staff partnership is crucial to the CUSP teams’ success. These partners hold each other accountable for reducing risk to patients. At the unit-level, the senior executive stimulates discussions about safety, helps prioritize and solve safety concerns, and helps set goals for the clinical area. At the hospital-level, the senior executive may lobby for policy change, promote access to resources, or resolve inter-departmental issues. Additionally, the senior executive is a bridge to the hospital’s C-suite (CEO, CMO, CFO, etc.), and helps to share local wisdom with hospital administration and management.

What the CUSP team needs to do

The CUSP team leader (or designee) should schedule hour-long monthly safety rounds with the senior executive. He or she should also prepare the senior executive for meaningful participation in safety rounds. If the senior executive does not have a clinical background, offer a tour of your perioperative units. Schedule time with your senior executive to discuss perioperative unit-specific information. Include in this information packet:

1. Safety culture survey results
2. The prioritized list of safety issues compiled from the Perioperative Staff Safety Assessment
3. Pertinent information about the unit that the senior executive may not know (for example, staff turnover rate and SSI rate or NSQIP data).

Executive Safety Rounds

Executive safety rounds may begin with a senior executive walk-through of the clinical area, led by a frontline clinician. The focus of executive safety rounds, however, is collaboration between the senior executive, CUSP team, and frontline providers to address safety issues. Your team can solicit collaboration with sit-down discussions that are open to all staff. Review identified safety issues together. The senior executive can help prioritize your perioperative units’ safety concerns. You can
use quantitative (for example, numerically rating risk of harm) or informal (for example, discussion until group consensus) methods to prioritize the greatest risks. Informal methods tend to be less burdensome and can accurately reflect unit level risks.

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<th>Tools you can use</th>
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<tr>
<td>Executive Safety Rounds Kickoff Template <em>(Appendix F)</em></td>
<td>That first meeting’s very important for engaging your senior executive. You can use this template for suggested activities and talking points.</td>
</tr>
<tr>
<td>Safety Issues Worksheet for Senior Executive Partnership <em>(Appendix G)</em> (or a tracking log of your choice)</td>
<td>A worksheet you can use for listing and prioritizing risks you’ve identified.</td>
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**We discussed our PSSA data with the team at a monthly CUSP meeting.** Our clinicians were concerned that the esophageal probes used in the OR were inaccurate. They wanted to trial more expensive bladder temperature probes. We knew we had to build our project around temperature measures our clinicians believed were valid. Our executive advocated for our team and got us the bladder probes. Her ability to remove higher-level barriers was a crucial component of our success.

*– CUSP for Safe Surgery Team Leader*

**Step 4: Learning from Defects through Collective Sensemaking**

Once defects are identified and prioritized, the CUSP team must learn from them and implement improvement efforts. The Learning from Defects through Sensemaking (LFD) worksheet (Appendix G) helps frontline providers investigate safety defects: It guides CUSP teams through a structured process to answer four questions:

1. What happened?
2. Why did it happen?
3. What did you do to reduce risk?
4. How do you know that risks were reduced?

**What the CUSP team needs to do**

Take a defect identified in your clinical area; an incident report, sentinel event, liability claim, or defect identified from the Perioperative Staff Safety Assessment; and complete the LFD worksheet. You may want to start with ‘low hanging fruit’ and
progress to more difficult problems as you gain experience with the LFD process. After you are comfortable using and explaining the LFD process, you should discuss your LFD projects during executive safety rounds.

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<th>A tool you can use</th>
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<tr>
<td>Learning from Defects through Collective Sensemaking Worksheet (Appendix H)</td>
<td>Use this tool to lead discussions that engage frontline staff in characterizing defects, uncovering system-level causes, and developing plans for improving patient safety and quality. We recommend learning from at least one defect a quarter.</td>
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After piloting the bladder probes, sure enough – some of our patients were still hypothermic at the end of their surgeries. It was time to fix the problem. We went through the Learning from Defects through Sensemaking process at our next monthly meeting. It wasn’t easy to develop an intervention that everyone could agree on, but we knew our intervention was more likely to succeed because we incorporated different perspectives. It wasn’t a top-down approach.

--- CUSP for Safe Surgery Senior Executive

How do you develop and evaluate your intervention?
Join the conversation at the CUSP for Safe Surgery social networking site.

**Step 5: Use Tools to Improve**

Throughout this document, we’ve identified tools you can use as you implement CUSP for Safe Surgery. In this section, we’ve listed some additional practical tools to help your team improve communication and teamwork. You can find them, and others, in the CUSP Toolkit on the CUSP for Safe Surgery project website. Each tool comes with detailed instructions.

**What the CUSP team needs to do**

Review your safety culture scores and determine which areas need improvement (for example, poor teamwork climate). Collaborate with frontline providers to select a tool that best addresses their concerns.
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<th>More tools you can use</th>
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<td>Briefing and Debriefing Tool</td>
<td>Improve team communication and role clarity while caring for a patient in the OR.</td>
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<td></td>
<td><strong>When to use?</strong> This tool should be used with every OR case. Research shows it can make a big difference when used in a meaningful way.</td>
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<tr>
<td>Briefing and Debriefing Audit Tool</td>
<td>Assess the quality of briefings and debriefings in your OR.</td>
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<td><strong>When to use?</strong> When you want to evaluate how well your staff is implementing briefings and debriefings.</td>
</tr>
<tr>
<td>Preoperative Daily Huddle</td>
<td>Improve team communication regarding perioperative workflow with this tool.</td>
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<td><strong>When to use?</strong> When staff believe that perioperative workflow is poorly-coordinated</td>
</tr>
<tr>
<td>Shadowing Another Professional</td>
<td>Identify and improve communication, collaboration &amp; teamwork skills between different disciplines</td>
</tr>
<tr>
<td></td>
<td><strong>When to use?</strong> When staff believe that disciplines need to walk a mile in each other’s shoes</td>
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After a few project gains, we realized that we could tap frontline wisdom after every OR case by implementing briefings and debriefings. Now, after every case, the surgeon leads a brief discussion about what went right with the case, and what went wrong. The circulating nurse documents concerns on the debriefing form, and submits it to our CUSP team. We are not just ‘implementing CUSP’; we are building a patient safety infrastructure.

--- CUSP for Safe Surgery Anesthesia Champion

How do you optimize briefings and debriefings?
Join the conversation at the CUSP for Safe Surgery social networking site.
CUSP is an Ongoing Process, Not an Endpoint

CUSP is an ongoing process, and is never truly finished. For example, it will be helpful to have a process to ensure that new frontline providers, who join the unit after CUSP is underway, watch the Science of Safety video. One strategy is to include the Science of Safety presentation in their orientation. Additionally, though staff complete the Perioperative Staff Safety Assessment in the second step of CUSP, you may consider completing the staff safety assessment on a periodic basis (e.g., quarterly) or keep the forms readily available for staff to complete when they identify a patient safety risk.

Getting Help

We recognize that CUSP represents a lot of new material. You can access more learning materials, such as recorded project calls and slide sets, on the CUSP for Safe Surgery Project website. If you have additional questions, please post them to the CUSP for Safe Surgery Project social network or email us at susp@jhmi.edu.
Appendices

Appendix A  Collect important information about your team members.
Click the link for a copy of the CUSP for Safe Surgery Team Membership Form.
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Appendix B  Set the foundation for a productive improvement team.
Click the link for a copy of the CUSP for Safe Surgery Team Roles and Responsibilities Form.
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Appendix C  Every journey starts with a single step.
Click the link to access helpful HSOPS Documents.
- HSOPS Manual 1: Planning and Preparing your Survey
- Quick Guide: HSOPS Coordinator Roles and Responsibilities
- Quick Guide: HSOPS Template Debriefing Plan
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Appendix D  Keep track of your education sessions.
Click the link for a copy of the Science of Safety Training Attendance Sheet.
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Appendix E  Empower your frontline to voice their patient safety concerns.
Click the link to access the Perioperative Staff Safety Assessment.
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Appendix F  Get your senior executive up to speed.
Click the link to adapt your own Executive Safety Rounds Kickoff Template.
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Appendix G  Document your progress.
Click the link for a copy of the Safety Issues Worksheet for Senior Executive Partnership.
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Appendix H  Work as a team to redesign your care delivery system.
Click the link for a copy of the Learning from Defects through Collective Sensemaking Tool.
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References


