

## Comprehensive Unit-based Safety Program: Accelerating the Adoption of Evidence-Based Practices To Prevent Healthcare-Associated Infections



The Comprehensive Unit-based Safety Program (CUSP) is a proven method for preventing healthcare-associated infections (HAIs) and other patient harms. CUSP, which was developed at Johns Hopkins with AHRQ support, combines improvements in safety culture, teamwork, and communication with a checklist of evidence-based practices for preventing the target HAI or patient harm. AHRQ implements CUSP in nationwide projects addressing various HAIs.

### Goals

The goals of the CUSP implementation projects are to promote the adoption of evidence-based practices to prevent HAIs and thereby improve the safety of healthcare. CUSP is a critically important component of AHRQ's HAI Program, which sustains a robust portfolio of research and implementation projects to prevent HAIs.

### Process

CUSP was piloted in more than 100 intensive care units in Michigan, where it was shown to be effective in reducing HAIs. Based on this success, AHRQ's HAI Program has implemented CUSP in a series of nationwide projects in which CUSP has been highly effective in reducing rates of various HAIs in different healthcare settings. The nationwide CUSP projects exert their quality improvement influence through a multifaceted implementation framework that includes—

- Engagement of frontline clinicians and institutional senior leadership
- Education in the science of safety and application of its principles
- Assessment of safety culture and infection control policies and procedures
- Regional consortia of stakeholders
- Expert coaching, consultation, and technical assistance
- Peer support
- Educational materials, tools, and webinars
- Data collection and feedback for performance monitoring
- Patient and family engagement

In addition, the CUSP projects develop toolkits encompassing all of the educational interventions to extend the impact of the projects beyond their duration. CUSP is different from other change models because it combines behavioral elements—an emphasis on safety culture, teamwork, and communication—with clinical elements—the checklist of proven practices—to create a powerful tool for promoting the adoption of evidence-based practices to prevent HAIs.

Current CUSP projects are addressing—

- Reduction of central line-associated bloodstream infections and catheter-associated urinary tract infections in intensive care units with persistently elevated rates of these infections
- Improving surgical safety by promoting implementation of evidence-based practices to enhance surgical care and recovery and reduce complications, including reduction in surgical site infections and catheter-associated urinary tract infections

- Promoting antibiotic stewardship to improve antibiotic use and combat antibiotic-resistant HAIs.

### **Results**

CUSP has a track record of success and effectiveness in reducing the rates of various HAIs in different settings in nationwide CUSP implementation projects:

- CUSP reduced central line-associated bloodstream infection rates by 41 percent in more than 1,000 intensive care units
- CUSP reduced catheter-associated urinary tract infection rates by 30 percent in more than 700 hospital non-intensive care units
- CUSP reduced catheter-associated urinary tract infection rates by 54 percent in more than 400 nursing homes
- CUSP reduced surgical site infection rates in hospitals by 25 to 40 percent, depending on the type of surgery and surveillance method

### **Promoting Learning Health System Capabilities**

The CUSP projects translate evidence into practice by accelerating the adoption of evidence-based practices to prevent HAIs. The CUSP model demonstrates the contributions of leadership, staff engagement, and culture in building a learning health system. Beyond this, the CUSP projects generate data on changes in care processes and outcomes in the projects; these data are used locally and nationally to inform the quality improvement process, assess the results of the interventions and modify them for greater effectiveness, and evaluate the impact of the projects. Moreover, the data and lessons learned from the projects are used to formulate additional research questions and generate new knowledge. In these ways, the CUSP implementation projects exemplify the characteristics of learning health systems.

### **For More Information**

HAI Program website displaying links to CUSP information, projects, and toolkits:  
<https://www.ahrq.gov/professionals/quality-patient-safety/hais/index.html>