

**Title:**

Healthcare-Associated Infections: It Is a Bundle, Not a Switch

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**Session Title:**

Hospital-Acquired Infections

**Slot:**

H 03: Monday, 30 October 2017: 2:45 PM-3:30 PM

**Scheduled Time:**

3:05 PM

**Keywords:**

Evidence-based bundles, Healthcare-associated infections and nurse workflow

**References:**

Gorski, L., Hadaway, L., Hagle, M., McGoldrick, M., Orr, M., & Doellman, D. (2016). Infusion Therapy Standards of Practice. *Journal of Infusion Nursing*, 39 (suppl 1), S1-S159.

Manor-Shulman, O., Beyene, J., Frndova, H., & Parshuram, C. (2008, June). Quantifying the Volume of Documented Clinical Information in Critical Illness. *Journal of Critical Care*, 23(2), 245-250.

Resar, R., Griffin, F. A., Haraden, C., & Nolan, T. W. (2012). *Innovation Series 2012 Using a Bundle to Improve Health Care Quality*. Institute for Healthcare Improvement, Cambridge, MA.

Resar, R., Pronovost, P., Haraden, C., Simmonds, T., & et al. (2005). Using a Bundle Approach to Improve Ventilator Care Processes and Reduce Ventilator Associated Pneumonia. *Joint Commission Journal on Quality and Patient Safety*, 31(5), 243-248.

**Abstract Summary:**

Evidence-based bundles are standards to keep patients safe from harm. Bundles seem like an easy solution to prevent healthcare-associated infections, but compliance is not necessarily easy for staff at the bedside with competing priorities. Supporting staff to provide excellent care to patients requires understanding of more than just the bundle.

**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
1. The learner will be able to evaluate the impact bundle compliance has at the bedside.	1. Explain the science of evidence-based bundles
2. The learner will be able to support the care components at the bedside that result in bundle compliance.	2. Discuss the impact of completing all components of evidence-based bundles, utilizing the central line associated blood stream infection maintenance bundle
	3. Explain how implementation of bundles impacts nursing practice at the bedside

	4. Explain the importance of providing rationale for practice changes
	5. Discuss the impact of leadership support in practices that lead to bundle compliance

**Abstract Text:**

Evidence-based bundles are the cornerstone of many improvement initiatives. The concept of bundles was developed to assist healthcare providers to reliably provide the best possible care for patients related to specific devices or procedures (Resar, Pronovost, Haraden, Simmonds, & et al, 2005). Bundles are structured sets of care practices that reliably improve patient outcomes when they are performed collectively and consistently.

Healthcare leaders frequently discuss their difficulties in achieving bundle compliance in the battle to prevent healthcare-associated infections (HAIs). There is a belief that everyone knows the steps of the bundles and that they are evidence-based; if staff would just comply with the bundle, patients would not develop HAIs, outcomes would dramatically improve, infection rates would improve, and fines would be reduced. It appears that it should be easy to consistently achieve compliance with the three to five practice steps that make up a bundle.

In practice, bundle compliance is anything but easy. Compliance with those “easy” three to five steps translates to a significant time commitment and an understanding of the rationale and practices that support the bundle. In an effort to gain insight into the “simplicity” of bundle compliance, we will use the central line associated blood stream infection (CLABSI) bundle to examine just how complicated it can be to achieve bundle compliance. This understanding will enable us to find ways to better support the staff at the bedside who have the ability to impact HAIs most directly. It is necessary to remember, as we consider bundle compliance for a patient with a central line, that this is only one aspect of the care required of the bedside nurse. These patients have many needs that the nurse must respond to, each need competing with the other needs and the needs of the nurse’s other patients and obligations.

The CLABSI maintenance bundle includes five items, which include:

- Daily discussion of line necessity, functionality and utilization including all members of the interdisciplinary team
- Routine assessment of dressing to ensure that it is clean, dry, and intact
- Standardized access procedure
- Standardized dressing, cap, and tubing changes
- Specific bath and line change process

These steps appear straightforward and easy to achieve. What makes it so difficult to obtain the compliance that is required to impact patient outcomes and HAI rates? What is not evident when simply reviewing the bundle is the understanding of all the supporting practices and nursing judgment that is required to successfully perform within the bundle compliance window.

By looking at each of the components of the CLABSI maintenance bundle, it becomes evident that there is far more required than would be revealed in an initial review of the five steps. First is the daily discussion of line necessity, functionality and utilization. The preparation for this discussion requires that the nurse assess each lumen of the central line to ensure that it flushes and draws without difficulty. They must also evaluate medication and fluid requirements, drug compatibilities, timing, and access availability. Finally, the nurse must also assess the site for any signs of complications, infection, or contamination. The nurse must share the information gained during their complete assessment of the central line and be willing to advocate for any changes deemed necessary based on their evaluation. This simple

conversation with the interdisciplinary team requires up to an hour of evaluation and assessment, and a level of skill that is beyond a novice nurse.

The next element of the CLABSI maintenance bundle is routine assessment of the dressing; this requires not only the evaluation of the dressing, but also ensuring that the dressing is completely occlusive, dry both on top and underneath, and clean (Gorski, et al., 2016). This process is completed at a minimum of every two to four hours and with every change in caregivers. If the dressing is not clean, dry, and intact at any time, the nurse must then change the dressing, which can consume 15-30 minutes depending on the placement of the central line and the cooperation of the patient. During this time, the nurse is not available to their other patients.

The next element of the CLABSI maintenance bundle requires a standardized access procedure. This process includes the ten rights of medication administration: right drug, right patient, right dose, right route, right time and frequency, right documentation, right history and assessment, drug approach and right to refuse, right drug-drug interaction and evaluation, and right education and information. In addition to the 10 rights, the nurse must complete hand hygiene, don clean gloves, scrub the access site for the appropriate amount of time, and allow the access site to dry. This process must be completed for every delivery of medication or fluid, and a slightly different process is completed for any blood sampling. This access includes assessment of the patient and their central line site.

The fourth element of the CLABSI maintenance bundle requires a standardized dressing, cap, and tubing change process. Each of these items must be assessed at least once each shift to ensure they are current and not due for change. Tubing and cap change standards are based on CDC recommendations and hospital policy; these may also be dependent on use, device type, and medication being infused. Knowledge of these standards is required to enable the nurse to maintain each in a current and compliant state.

Finally, many facilities have implemented daily chlorhexidine gluconate (CHG) bathing and linen changes for patients with central lines. This process, unlike many of the other bundle components, requires the nurse to confront their personal beliefs about bathing. It also requires the nurse to explain the importance of this process to the patient, who may be resistant to the process; the nurse must be willing to support the CHG bath as a medical treatment.

In reviewing the processes that are required by the nurse to maintain their patient's central line, it becomes evident that this is not easy work. There is a wealth of knowledge, evaluation, and effort required to protect patients from CLABSI.

In addition to caring for a patient's central line, the nurse is required to provide comprehensive care for all their patients. A study was completed in a pediatric intensive care unit that recorded the number of items documented as clinical data; in a 24-hour period, the median number of documented clinical data was 1,348 (56 items per hour) (Manor-Shulman, Beyene, Frndova, & Parshuram, 2008). Nursing was responsible for approximately 950 items of documented clinical data per patient day (40 items per hour). During the six years this study was conducted, the number of items documented by nursing per patient day increased by 30%. This volume of documented clinical information per patient day is a marker of patient-related workload. The clinical data has to be observed, validated and documented (Manor-Shulman, Beyene, Frndova, & Parshuram, 2008). It is reasonable to expect that the sheer volume of information that the nurse observes and validates is significantly higher than that which is documented; this highlights the incredible amount of information nurses evaluate on a daily basis. The recognition of the amount of information the RN assimilates and reacts to makes the difficulties in maintaining bundle compliance more understandable. Recognizing the amount of information the nurse evaluates and reacts to on a daily basis when everything is going right leads to the necessity to find ways to streamline the nurse's workload. Innovative processes that reduce their task load are necessary to give them the opportunity to provide the quality of care we all desire.

Bundle compliance, while not easy, is not optional. We all recognize that this is the best way to prevent HAIs and protect our patients from harm. What is optional is how we support our staff in providing care to our patients.

The first step is the implementation of the evidence-based bundles. This implementation must include:

- Rationale - why is this particular element important?
- Supporting practices - how do I achieve success at the bedside in changing conditions?
- Access to necessary practice guidelines that support the bundle
- Policies that correspond with practice guidelines

Next, the entire healthcare team needs to understand the processes and practices required to maintain bundle compliance. Their common goal to protect the patient must be enmeshed with the understanding of each role included in the interdisciplinary care team. Non-licensed providers need to understand the important role they play in protecting the patients. An awareness of each person's value and impact builds a new opportunity to provide excellent care that reduces risk to the patient.

Bundles are groupings of best practices that individually improve care and, when applied together, result in significantly greater improvement than when implemented individually (Resar, Griffin, Haraden, & Nolan, 2012). It is important to always remember that bundles are groups of practices to improve care; they were never intended to be used as a switch to chastise nurses.