

Intervention Plan Components

Melissa Smith

Capella University

MSN-FP6030 MSN Practicum & Capstone

March 2021

Intervention Plan Components

The problem statement highlighted the fact that Baylor Scott and White Medical Center at Irving (BSWI) has had increased CLABSI rates since the COVID 19 pandemic. As a healthcare improvement opportunity, an innovative intervention of implementing a vascular access team (VAT) to decrease the central line-associated bloodstream infections (CLABSIs) will be discussed. Implementing a dedicated vascular access team (VAT) to insert, maintain, and educate on central lines will ensure consistency in line management and education. Literature review indicates that implementing a VAT will be beneficial in reducing CLABSIs and improve the quality of care. Savage et al., 2019, states that a dedicated VAT will help standardize practices and policies for central lines that address insertion, maintenance and care, and removal. Major components of the team will include two motivated full-time registered nurses, an ultrasound machine, and supplies such as IV catheters, midline catheters, and peripherally inserted central catheters. The intervention plan will start with the team inserting, managing, and removing central lines for CCU and ICU as well as developing education for nurses regarding the administration of medications through central lines and assessing the dressings. The VAT will review all orders for appropriateness before placing a central line. If a central line is not justified, then this will be replaced with a central venous catheter (CVC). The difference between a CVC and a central line or peripherally-inserted central catheter (PICC) is where the catheter is placed in the vein near your heart. A CVC is placed in central veins and a PICC is threaded until the catheter tip is in the heart. Part of the intervention plan for the team will be to create a checklist for central line placement. This will assist in the decision-making process of insertion. To evaluate the success of implementing reviewing orders and creating a checklist will be to track the number of CVC and PICC being inserted. Developing standardized processes and practices,

and providing education to nurses on the units will also be part of the intervention plan. Improving vascular access practices by implementing processes, educating staff on new practices, emphasizing patient safety and satisfaction, and selecting appropriate vascular access products benefit a hospital's patients, staff, and economic prospects (Morrell, 2020).

The target population for this project is patients in the intensive care unit (ICU) and cardiac care unit (CCU) requiring central line placement and management at BSWI. BSWI provides care for a large number of Hispanic patients and staff encounter many challenges such as language barriers and differences in health beliefs when caring for these patients. Culturally competent healthcare is necessary at BSWI. Nair & Adetayo, 2019, define cultural competence as the ability to collaborate effectively with individuals from different cultures. Nair & Adetayo, 2019, showed improvement in health care experiences and outcomes in their study by utilizing measures such as cultural competency training to staff, using interpreter services to communicate effectively, and providing culturally appropriate health care education to improve cultural competence and ethnic diversity. By taking these measures into account, an assumption is made that BSWI can impact the cultural needs of the patients in the ICU and CCU.

Theoretical Foundations

A theoretical nursing model relevant to the intervention plan is the Environmental Theory by Florence Nightingale. Gonzalo et al., 2019, explains that this theory involves the nurse's initiative to configure environmental settings appropriate for the patient's health and the patient's surroundings affect the process. Five environmental factors are identified in this theory which are pure air, pure water, effective drainage, cleanliness, and light. Cleanliness is relevant to the project. By maintaining cleanliness to the environment, it will assist in decreasing CLABSIs. A

weakness of this theory is that Florence Nightingale believed that disease was caused by a dirty environment, but this has been proven false.

Another framework that is relevant to the intervention plan is Knowles Adult Learning Theory or Andragogy Theory. Emma, 2020 describes this theory as the study of how adults learn and how it differs from children and shows how adult learning is distinct. The theory consists of five assumptions and four principles to andragogy. The assumptions are self-concept, learner experience, readiness to learn, the orientation of learning, and motivation to learn (Emma, 2020). The principles of andragogy are adults want or need to be involved in how their training is planned, delivered, and executed, adults gain more from past experiences into the learning process, adults need to solve problems and use reasoning to best take in the information they are being presented with, not memorize facts and information, and lastly, adults want to know that what they are learning applies to their lives (Emma, 2020). A weakness of this theory is that the adult learner's initiative could be a burden to learning. This theory is important as it will be utilized by the VAT during the development of education materials.

Technology will play a large role in the success of the intervention plan. There are a variety of technological devices to use during vascular access. Some technologies to use are ultrasound to measure the vein size and electrocardiography (ECG) to guide the catheter tip to the right location during PICC placement. The development of this technology has improved clinical care and patient outcomes (Chopra et al., 2017).

Reviewing the literature published justifies the implementation of a VAT at BSWI. Martillo et al., 2020, conducted a study over 24 months, proved a 58% reduction in CLABSI by implementing a VAT that promoted care and maintenance of lines. Corcuera Martínez et al., 2020, performed a study that analyzed the effectiveness and quality of the VAT. The results

concluded to lower complication rates, high patient satisfaction, and good economic benefits. Center for Disease Control and Prevention, 2019, has established guidelines for preventing catheter-related infections. A best practice is to designate trained personnel to insert and maintain intravascular catheters. Implementing a VAT will provide this best practice. Although there are many studies published reporting that a VAT impacts positive patient outcomes, they are no randomized controlled trials to compare.

Stakeholders, Policy, and Regulations

The Infusion Nurses Society has developed evidence-based standards and practice criteria for infusion teams. These standards are used as a foundation for developing policies, procedures, and protocols created on evidence-based guidelines to ensure the best patient care (Gorski, 2017). This will be used to develop standards of practice for the VAT.

The project correlates with Healthy People 2020 by focusing on decreasing CLABSIs. One of the goals of Healthy People 2020 is to attain high-quality living free of preventable disease and create physical environments that promote good health (Healthy People.gov, 2020). The VAT will achieve these goals of Healthy People 2020.

Support from key stakeholders is essential for the project to be a success. As part of the intervention plan, BSWI needs to ensure that the stakeholders are engaged and committed to supporting a VAT. Stakeholder's influence, leadership, and communication skills can affect the outcomes of the project. The stakeholders included are to accomplish a positive rollout of the VAT are senior leadership, the ICU and CCU managers, the risk manager, the manager of interventional radiology, and the medical director of infectious disease. Senior leadership includes the chief nursing officer and chief financial officer. They are vital to the intervention as they will make the ultimate decision to implement the project, which will be based on the

financial impact to the organization. The ICU manager, CCU manager, risk manager and the manager of interventional radiology are important to the intervention. They will develop the team. The manager of interventional radiology will be the leader over the VAT. This will be the person they will report to. The medical director of infectious disease will oversee the development of the team by approving appropriate processes and protocols to ensure patient safety. It is assumed that all stakeholders will be engaged with the development of the team and communicate clear set expectations.

Ethical and Legal Implications

Legal issues associated with vascular access are due to complications associated with the quality of the insertion procedure and catheter maintenance. Complications consist of nerve injury, infection, and thrombosis. Having a dedicated VAT can reduce these complications by adopting safe approaches to insertion which will reduce legal liability. It is unknown if the complication is caused by the insertion technique or the maintenance of the line during the hospital stay. This will need to be analyzed once the VAT is up and functional.

The main question when placing vascular access is it clinically justified to insert the line? The VAT will design an appropriateness checklist to ensure that all CVC and PICC lines are necessary before inserting. CVC and PICC line knowledge deficits exist within the facility as many nurses do not know the difference between the two and their indications. Four principles in health care ethics play a key role in ensuring patient safety. The four principles are autonomy, beneficence, non-maleficence, and justice. Autonomy is the right for the patient to make the decision, beneficence is that health care providers must do all they can to benefit the patient, non-maleficence is to do no harm, and justice is that all decisions are fair (Drysdale, 2020). All

four of these ethical principles play a role in vascular access and will be utilized when developing the VAT.

References

Center for Disease Control and Prevention. (2019). *Prevention Strategies*. Center for Disease Control and Prevention.

<https://www.cdc.gov/infectioncontrol/guidelines/bsi/background/prevention-strategies.html>

Chopra, V., Kuhn, L., Ratz, D., Winter, S., Carr, P. J., Paje, D., & Krein, S. L. (2017). Variation in use of technology among vascular access specialists: an analysis of the PICC1 survey.

The Journal of Vascular Access, 18(3), 243–249. <https://doi.org/10.5301/jva.5000711>

Corcuera Martínez, M. I., Aldonza Torres, M., Díez Revilla, A. M., Maali Centeno, S., Mañeru Oria, A., Elizari Roncal, I., Ibarra Marín, B., Casado del Olmo, M. I., Escobedo Romero, R., & Ferraz Torres, M. (2020). Impact assessment following implementation of a vascular access team. *The Journal of Vascular Access*, 112972982098428.

<https://doi.org/10.1177/1129729820984284>

Drysdale, N. (2020, November 12). *The 4 Principles of Health Care Ethics*. Clipboard Health.

<https://clipboardhealth.com/how-the-4-principles-of-health-care-ethics-improve-patient-care>

Emma, O. (2020, March 3). *What is Adult Learning Theory It's Impact on your Corporate*

Training? LearnUpon. <https://www.learnupon.com/blog/adult-learning-theory/>

Gonzalo, A., BSN, & RN. (2019, August 22). *Florence Nightingale's Biography and*

Environmental Theory: Study Guide. Nurseslabs. [https://nurseslabs.com/florence-](https://nurseslabs.com/florence-nightingales-environmental-theory/#:~:text=The%20Environmental%20Theory%20by%20Florence)

[nightingales-environmental-theory/#:~:text=The%20Environmental%20Theory%20by%20Florence](https://nurseslabs.com/florence-nightingales-environmental-theory/#:~:text=The%20Environmental%20Theory%20by%20Florence)

Gorski, L. A. (2017). The 2016 Infusion Therapy Standards of Practice. *Home Healthcare Now*,

35(1), 10–18. <https://doi.org/10.1097/nhh.0000000000000481>

Healthy People.gov. (2020). *About healthy people | Healthy people 2020*. Healthypeople.gov.

<https://www.healthypeople.gov/2020/About-Healthy-People>

Martillo, M., Zarbiv, S., Gupta, R., Brito, A., Shittu, A., & Kohli-Seth, R. (2020). A

comprehensive vascular access service can reduce catheter-associated bloodstream

infections and promote the appropriate use of vascular access devices. *American Journal*

of Infection Control, 48(4), 460–464. <https://doi.org/10.1016/j.ajic.2019.08.019>

Morrell, E. (2020). Reducing Risks and Improving Vascular Access Outcomes. *Journal of*

Infusion Nursing, 43(4), 222–228. <https://doi.org/10.1097/nan.0000000000000377>

Nair, L., & Adetayo, O. A. (2019). Cultural Competence and Ethnic Diversity in Healthcare.

Plastic and Reconstructive Surgery - Global Open, 7(5), 1.

<https://doi.org/10.1097/gox.00000000000002219>

Savage, T. J., Lynch, A. D., & Oddera, S. E. (2019). Implementation of a Vascular Access Team

to Reduce Central Line Usage and Prevent Central Line-Associated Bloodstream

Infections. *Journal of Infusion Nursing*, 42(4), 193–196.

<https://doi.org/10.1097/nan.0000000000000328>

