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Reducing the Incidence of CLABSI through Hand Hygiene

Bindu Paudel
University of St. Augustine for Health Sciences

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DNP Project Manuscript: Reducing the Incidence of CLABSI through Hand Hygiene in ICU patients

Bindu Paudel, BSN, RN, MS

School of Nursing, University of St. Augustine for Health Sciences

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Doctor of Nursing Practice Program and is Approved by:

Robin Kirschner, EdD, DNP, RN, CNS

Vicky Sanders, MSN, BS, RN, CNML

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Abstract

Practice Problem: Central line-associated bloodstream infections (CLABSI) account for most hospital-associated preventable infections in the United States and globally. Implementation of effective hand hygiene practices is considered to be highly effective in preventing CLABSIs if performed during insertion and every handling instance.

PICOT: The PICOT question guiding this project is as follows: Among intensive care unit employees (P), implementation of hand hygiene awareness program and practice (I) compared to current practices (C) in reducing CLABSI incidences (O) among adult inpatients in 10 weeks (T)?

Evidence: The evidence from a rigorous literature review showed that the appropriate education promotes hand hygiene, direct observation of peer's hand hygiene practice promotes hand hygiene, and various campaigns on hand hygiene improve compliance and implementation of the appropriate guideline.

Intervention: The intervention for the change project included developing ICU staff nurses' competency and compliance in hand hygiene before and after handling patients with central lines. The intervention implemented was WHO's five moments of hand hygiene technique for effective hand hygiene. The project manager directly monitored and remediated employees for hand hygiene breaches.

Outcome: There was no statistical significance in the intervention but there was noted clinical significance. There was a slight change in CLABSI rates after implementing the WHO's five moments of hand hygiene technique. Reported CLABSI incidence before project implementation was 1 compared to zero incidences in the post-implementation period. However, the intervention was unable to yield hand hygiene compliance of 90% showing no positive effects on the compliance rates and hence deemed unsuccessful.

Conclusion: The project outcome warrants additional monitoring with additional champions to audit the hand hygiene process. The outcome also warrants additional monitoring on larger sample over longer duration to yield more statistically significant data. Further staff education and training paired with periodic audits and evaluation of the practice change over time may add insights to more evidence of clinical significance.

Reducing the Incidence of CLABSI through Hand Hygiene in ICU patients

Hospital-acquired infections (HAIs) are the major factor in the care of the patient in the acute hospital setting accounting for increased morbidity, increased length of hospital stays, increased cost of care to the patient and hospital, and decreased overall productivity of the hospital (Omar et al., 2020). Central line-associated bloodstream infection (CLABSI) is considered one of the preventable hospitals acquired infections (Luzum et al., 2020). The estimation of CLABSI in the United States is 250,000 cases with a 10% mortality rate. It is projected that CLABSIs contribute between $46,000–$75,000 cost per infection in added costs to the U.S. healthcare system even if these infections are highly preventable through the implementation of evidence-based guidelines consistently incorporated into patient care (Reynolds et al., 2021). Another study conducted by Agency for Healthcare Research and Quality (2017) that for each CLABSI case, there is an additional cost ranging between $48,108 to $68,983 per patient. For each CLABSI case the hospital stay among the patients is increased by up to 3 weeks (Aloush & Alsaraireh, 2018). It is clear that CLABSI is costly both financially and for the patient in treatment and convalescence.

This evidence-based practice (EBP) project intended to address the incidence of CLABSI in the intensive care unit of the selected hospital. This EBP project aimed to reduce the incidence of CLABSI through the implementation of a hand hygiene initiative to increase hand hygiene awareness and practice among all the healthcare workers involved in patient care. This manuscript entails a detailed discussion of the significance of the practice problem; PICOT (population, intervention, comparison, outcome, time) question; theoretical framework; evidence search strategy and results; themes with practice recommendations; setting, stakeholders, and system change; implementation plan with timeline and budget; evaluation plan; impact; dissemination plan; and conclusion.

Significance of the Practice Problem

CLABSI is a term that signifies a bloodstream infection in a patient who has a central venous catheter (CVC) (Luzum et al., 2020). Once CLABSI is suspected among patients with a CVC in place for more than 48 hours, and other possible infections are ruled out, CLABSI is confirmed with laboratory works such as blood count and culture (Myatra, 2019). CLABSI can result in a serious and fatal outcome sometimes following the breach of microorganisms such as bacteria, fungi, and others, to enter the bloodstream through the central line (Stroever et al., 2020).

Improper hand hygiene during the point of CVC insertion and handling is a major point of contamination leading to development of CLABSI infection (Jock et al., 2016). Palpating and handling CVC without proper hand hygiene is the major etiology of CVC line contamination (Jock et al, 2021). Cross-contamination might also occur with a hematogenous spread from another site of infection and needleless access site contamination; (Jock et al., 2016). All these factors leading to CVC line contamination are widely preventable with prevention strategies, including hand hygiene, use of maximal sterile barrier precautions, and chlorhexidine gluconate (CHG) for skin antisepsis before insertion of the central line (Gilmartin et al., 2016). The common pathogens associated with causing CLABSI are Gram-positive organisms and are commonly followed by gram-negative organisms such as Klebsiella, Enterobacter, Pseudomonas, E. coli, and others (Haddadin et al., 2021).

Effective hand hygiene practices are considered to be highly effective in preventing CLABSIs if performed during insertion and every handling instance (Chi et al., 2020). Hand hygiene can be one of the most convenient and cost-effective interventions to follow to prevent the transmission of pathogens and is a universal strategy to prevent all nosocomial infections (Myatra, 2019). The World Health Organization's recommended strategy of “Five Moments for Hand Hygiene”, is an evidence-based approach in preventing hospital-acquired infections such as CLABSI (Myatra, 2019). Hand hygiene is an important practice in the prevention of CLABSI

hand decontamination with either antiseptic-containing soaps or alcohol-based gels/foams and has consistently been shown to reduce CLABSI rates. It is evident proper handwashing is one of the most effective infection control measures in reducing the incidence of transmission of pathogens to patients and the spread of antimicrobial resistance (Osuala, & Oluwatosin, 2017).

PICOT Question

The PICOT question guiding this project is as follows: Among intensive care unit employees (P), implementation of hand hygiene awareness program and practice (I) compared to current practices (C) in reducing CLABSI incidences (O) among adult inpatients in 10 weeks (T)?

Population: Registered nurses who are involved in direct patient care in SICU and are of age 18 years and older.

Intervention: The intervention implemented was WHO's five moments of hand hygiene technique for effective hand hygiene. The project manager directly monitored and remediated employees for hand hygiene breach.

Comparison: Usual practice was defined as staff's usual hand hygiene practice at present and findings from pretest data and current CLABSI rates in the SICU.

Outcome: The change project revealed an effective clinical impact on CLABSI prevention as evidenced by increased hand hygiene compliance as evidenced by no CLABSI incidence post implementation. The hand hygiene compliance however was 80% significantly lower than the goal compliance of 90%.

Time: The time duration for initiation and implementation of this project was a period of 12 weeks.

Evidence-Based Practice Framework & Change Theory

The Johns Hopkins EBP model is an empowering foundation that utilizes a three-step process called PET: practice question, evidence, and translation to facilitate clinical decision

making (Vera, 2021). Application of the model to the change project can ensure that patient care changes are based on the latest research findings and best practices (Vera, 2021).

Practice evidence, question, and translation are the three components of the John Hopkins nursing evidence-based paradigm. The practice question phase is the initial stage of the process (Dang & Dearholt, 2017). During this phase, an interprofessional team is formed to identify a specific practice challenge, its context, and its influence on patient care. The gap analysis, development of the PICOT question, and identification of key stakeholders will all be guided by phase one of the model. The evidence phase is the second phase of the process (Dang & Dearholt, 2017). It is defined by the gathering, evaluating, and synthesizing of data to support a practice change recommendation. The evidence search approach, outcomes, themes, and practice suggestions will all be guided by phase two of the model. The translation phase is the third and last stage of the process (Dang & Dearholt, 2017). The evidence-based practice team should determine if the change is appropriate for the practice environment during this phase. The model's third phase will guide the model's long-term implementation of the practice change, evaluation of the project's outcomes, and distribution of the findings to the organization's members and outside, as needed.

Lewin’s change theory will be the foundation for this EBP change project. Lewin’s change theory attributes the successful change of an organization to three steps: unfreezing, change, and refreezing (Barnes, 2020; Wojciechowski et al., 2016).

The first phase of Lewin's change theory is *unfreezing phase* (Barnes, 2020). The unfreezing phase describes an organization’s awareness of the change need while accepting a possible practice gap among certain practices requiring immediate revisions (Barnes, 2020; Wojciechowski et al., 2016). This phase relates to the proposed site’s awareness of low hand hygiene compliance. Increasing incidences of HAI's, mainly CLABSIs is the evidence requiring hand hygiene change among the employees. The current state of hand hygiene compliance of

less than 70 % and two CLABSI incidences between July and September of year 2021 will work as a catalyst for this change process.

The second phase of the theory is the *change phase* (Barnes, 2020). This phase explains how employee's awareness and acceptance of the change process rather than reluctance are directly proportional to the possibility of change in an organization (Barnes, 2020). Reluctance to the change in an organization can make the change process complex leading to regression (Barnes, 2020). This project intends to increase hand hygiene knowledge and compliance among patient care employees to consistently apply the hand hygiene protocol. This will lead to an increased hand hygiene completion and decreased incidences of CLABSI's among hospitalized ICU patients.

The final phase of the Lewin Change theory is the *refreeze phase* (Barnes, 2020). Refreezing is possible when employees in an organization embrace the new behavior or change and aggress to form a habit without resistance to change (Barnes, 2020; Wojciechowski et al., 2016). The change project proposes to implement a staff audit following the intervention education to evaluate staff's support and application of the change process.

Evidence Search Strategy

The literature search strategy for the proposed project was conducted using multiple search engines. The University of St Augustine (USA) library was used mainly for literature search. The databases used within the USA library were CINHAL complete, PUBMED, DynaMed, and PubQuest. In addition to USA library databases, Google Scholar was included as an online database to extract the relevant literature. Search keywords utilized were hand hygiene and CLABSI prevention and ICU. The initial search generated thousands of articles relating to the topic. The literature search was then narrowed down using an advanced search engine to limit the articles to the English language, peer-reviewed, full text, and academic articles from the year 2016 till 2021. The inclusion criteria included research studies that focused on CLABSI in an ICU setting among health care workers. Research studies older than

2016, conducted outside the hospital, in languages other than English, and not focused on health care workers were excluded. Selection criteria were focused primarily on systematic reviews, cross-sectional studies, quasi-experimental studies, and integrative literature reviews. The final search generated 16 relevant articles, 8 from the USA library, and the remaining eight were selected from a list of 172 articles generated in google scholar chosen based on relevancy and inclusion criteria.

Evidence Search Results

An extensive evidence-based article search using multiple search engines and databases using the USA library mainly was completed. The databases used for the literature search were Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Google Scholar. The literature search resulted in 115 articles from the USA library, 1890 articles from Google Scholar and 140 articles from PubMed central as illustrated in the PRISMA diagram. After removing duplicates and applying inclusion and exclusion criteria, 310 articles were generated for review. Among 310 articles, 10 articles met the inclusive criteria. The selected articles were about hand hygiene compliance among health care workers in the prevention of CLABSI infection among hospitalized patients. The final search ended up with 10 qualitative articles.

The articles selected for the change project were graded using The Johns Hopkins evidence-based practice (EBP) model. The EBP model by Johns Hopkins guides the grading of the level and quality of evidence to generate the best available evidence into practice (Dang et al., 2022). The summary of the primary research evidence table shows the details of the grading of articles included in this change project. As illustrated in the research evidence table (see Appendix D), seven of the articles are the Level II evidence, and the remaining three are level III evidence found using the John Hopkins EBP grading model. Similarly, seven out of ten articles are Grade B articles, and the remaining three are Grade C articles. There was no systemic

review selected for the evidence review thus secondary evidence table was not developed for the literature summary.

Themes with Practice Recommendations

A thorough analysis of the literature identified the common themes and trends associated with hand hygiene. The themes identified through the literature synthesis are: Appropriate education promotes hand hygiene, direct observation of peer's hand hygiene practice promotes hand hygiene, various campaigns on hand hygiene improve compliance and implementation of the appropriate guideline.

Appropriate Education Promotes Hand Hygiene

Of all the articles reviewed, all the research studies investigated patient outcomes with the implementation of effective hand hygiene compliance and all the studies supported the intervention (hand hygiene) implemented in the studies (Acharya et al., 2021; Curlej, 2016; Esposito et al., 2017; McCalla et al., 2017; Prasad et al., 2017; Papay, 2020; Swanson et al., 2020). All the studies focused on the effectiveness of hand hygiene in HAIs mainly CLABSI and the outcomes were in support of the formulated hypothesis of each of these studies.

Direct Observation of Peer's Hand Hygiene Practice Promotes Hand Hygiene

The study by Swanson et al. (2020) focused on observations of peers' hand hygiene compliance to increase hand hygiene compliance. Positive feedback from a peer can encourage employees to maintain compliance while learning together. All of the reviewed research studies reported significant effects of an intervention (hand hygiene) in terms of CLABSI prevention effective in comparison to no hand hygiene compliance. All the reviewed articles suggest that compliance with hand hygiene will result in improved process outcomes.

Campaigns on Hand Hygiene Improves Compliance

The study by McCalla et al. (2017) focused on investigating whether implementation of the hand hygiene compliance system (HHCS) resulted in improved hand hygiene compliance

and a reduction in common HAI rates. The study by Prasad et al. (2017) focused on implementing a hospital-wide gloving campaign to comply with hand hygiene.

Implementation of the Appropriate Guideline

The study by Papay (2020), focused on the implementation of supplemental hand hygiene (HH) education using the WHO *HH When and How* leaflet to improve HH compliance of healthcare workers. the study by Curlej and Katrancha (2016) focused on Society for Healthcare Epidemiology of America (SHEA) guidelines. As per SHEA guidelines, hand hygiene consisted of using an alcohol-based waterless product or antiseptic soap and water.

Recommendation for Practice

All the reviewed articles are consistent in reporting the positive impact of hand hygiene on a patient with central lines and the positive outcome associated with it. Achieving hand hygiene compliance among the health care workers promotes patient safety and reduces the incidence of HAI such as CLABSI, promoting patients' quality of life. The studies conducted and results obtained are based upon the findings extracted from the small to moderate healthcare worker population. However, based on the Johns Hopkins quality of evidence (2021) with all the studies focusing on patient outcomes, specifically on reduction CLABSI incidences, the strength of recommendation considered at level II mostly with one being level I. Considering all the favorable findings extracted from all the reviewed research studies supporting the intervention, implementing hand hygiene compliance intervention can be beneficial to the patient with a central line in reducing CLABSIs while promoting healing and recurrence of infection and quality of life. The studies included in the literature synthesis differ significantly from one another. They examine various populations, education techniques, and outcomes. Multiple tools exist to evaluate the effectiveness of the intervention, but most are not validated. It is evident that the data available are somewhat limited to address how these interventions affect the larger patient population.

Setting, Stakeholders, and Systems Change

The change project was implemented in a non-profit, Catholic health system in Arkansas. The mission of the organization is to offer the healing presence of God by improving the health of the people the organization serves. The vision of the organization goes hand in hand with the purpose of the change project, which focuses on a healthier future for all achieved by faith, driven by innovation, and powered by our humanity. The project was implemented in the intensive care units (ICU) of the organization which includes inpatients settings. The participants for this project included the SICU nurses directly related to daily patient care. The key stakeholders at the organization includeD (a) patients, (b) healthcare providers, (c) ancillary staff members, and (d) administrative staff. As the care provided by this organization might impact patients' overall health outcomes, patients are extremely important stakeholders. Healthcare providers and ancillary staff members are also important key stakeholders, as they have frequent interaction with patients. Lastly, the administrative staff of the organization is key stakeholders as their support is essential for the successful implementation of the change project.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis.

A SWOT analysis was performed at the proposed setting to assess their capacity and readiness for a multimodal hand hygiene intervention (See Appendix B).

Strengths

The leader at the proposed organization is determined to achieve hand hygiene compliance of greater than 90% even though the hospital-acquired infection rates are significantly low. Another strength is the organization’s awareness of the magnitude of problems and support for the initiative for faster and easier implementation. Lastly, the organization’s commitment to providing the best care to facilitate successful patient outcomes is another strength.

Weaknesses

A weakness of the organization is its lower compliance with hand hygiene practices which is 70% organization-wide based on the recent survey as well as two CLABSI occurrences within 3 months duration recently (CHI St Vincent Hot Springs, 2021). The current compliance rate can be attributed to reasons such as increased staff-patient ratio leading to ignorance by the staff due to increased workload. While improvements have been made over the past year, the organization still falls routinely short of its targeted goals.

Opportunities

Through this project, the organization can improve hand hygiene compliance rates. This will prepare the organization for the visit by a Centers for Medicare and Medicaid Services (CMS) surveyor and The Joint Commission (TJC). In addition, the implementation of a hand hygiene intervention can have a direct positive impact on the health and safety of their patients and members of their community. The project planned is a collective effort by a DNP student and all the stakeholders will provide an opportunity to implement evidence-based practice to prevent HAIs especially CLABSI.

Threats

The project might render increased workload to the ICU staff. This might result in increased time demands on staff, and they may react poorly to being asked to invest more time in hand hygiene practices. Some of the external threats might be the fear that the positive benefits of the educational training might fade over time. Also, there is always a threat of decreased sustainability. Potential risks associated with the implementation might include the inability to obtain employees' cooperation to implement the proposed change. Staff shortage during the resurging pandemic might be challenging to achieve compliance considering the high staff-patient ratio. The whole experience might be overwhelming among the participants as they are under direct observation to ensure hand hygiene compliance. However, appropriate education and frequent feedback from an employee are expected to be beneficial in case of any challenges.

Since this project will be implemented in intensive care units, the proposed change will be at a meso level change (Likosky, 2014). The ICUs fall within the meso level of an organization providing clinical patient care where changes can be replicable (Likosky, 2014).

Implementation Plan with Timeline and Budget

Project Objectives

The objectives of this change project have been outlined using the SMART format (specific, measurable, attainable, realistic, and timed) and are as follows:

1. Improve staff hand hygiene compliance to reduce the incidences of CLABSI to zero occurrences by the end of 8 weeks.
2. Increase the practice of handwashing by ICU employees to reach the hand hygiene compliance of 90 % at the end of 8 weeks.
3. Obtain the staff's satisfaction score with the implementation of the change project at the project site. The goal is to obtain an adherence score of 4/5 at the end of 8 weeks.

The projected objectives will be measured using a pre-intervention and post-intervention comparison of the CLABSI incidences in the project settings during the 8 weeks implementation period. In addition to this, the comparison will be made between the numbers of participants included in the study versus the percentage of hand hygiene compliance at the end of the change project.

Implementation Plan

The change project was implemented using Lewin’s change theory as its foundation. Lewin’s change theory attributes the successful change of an organization to three steps: unfreezing, change, and refreezing (Barnes, 2020; Wojciechowski et al., 2016).

The first phase of Lewin's change theory is *the unfreezing phase* (Barnes, 2020). The unfreezing phase describes an organization’s awareness of the change need while accepting a possible practice gap among certain practices requiring immediate revisions (Barnes, 2020; Wojciechowski et al., 2016). This phase relates to the proposed site’s awareness of low hand

hygiene compliance. During this phase, the organization's CNO and CNE's identified the practice gap with the current hand hygiene compliance and the need for increased hand hygiene compliance. The project manager made several stakeholder contacts to assess the level of hand hygiene compliance knowledge in the organization. Increasing incidences of HAIs in the organization, mainly CLABSIs is the evidence requiring hand hygiene change among the employees. The current state of hand hygiene compliance and awareness among the employees worked as a catalyst for this change process.

The second phase of the theory is the *change phase* (Barnes, 2020). This phase explains how employees' awareness and acceptance of the change process rather than reluctance are directly proportional to the possibility of change in an organization (Barnes, 2020). Reluctance to the change in an organization can make the change process complex leading to regression (Barnes, 2020). During this phase, the project manager engaged in obtaining baseline data, meet with everyone to discuss their roles and responsibilities, implementation timeline, and required training (Lewin, 1951). During the implementation, the employees was assessed of their hand hygiene practices and compliance, there was an anonymous verbiage to indirectly remind each employee to stop and wash their hands before taking care of patients with central lines. This was completed by the project manager monitoring hand hygiene practices. The goal was to obtain increased hand hygiene completion and decreased incidences of CLABSI's among hospitalized ICU patients.

The final phase of the Lewin Change theory is the *refreeze phase* (Barnes, 2020). Refreezing is possible when employees in an organization embrace the new behavior or change and aggress to form a habit without resistance to change (Barnes, 2020; Wojciechowski et al., 2016). During this phase, pre and post-intervention outcomes was compared to assess if the proposed objectives were met. The finding was presented to the chief nurse executive (CNE) and chief nursing officer (CNO) of the organization. Stakeholders' and staff's cooperation and collaboration was be necessary for the sustainability of the change project. The change project

proposed to implement a staff audit following the intervention education to evaluate staff's support and application of the change process. Policy change within the organization may be necessary based on the outcome. If appropriate, efforts will be made for dissemination outside the setting will be established.

The implementation of this change project was completed during the second phase of a one-year duration. The implementation process will be guided by Lewin's change theory.

Project Timeline

The detailed timeline (see Appendix E) for this change project has been developed to plan and implement the change project. The total timeline for the change project is one year which will be divided into three fifteen-week durations each for project proposal, implementation, and outcomes. The planning period began with the project manager developing the project proposal followed by the submission of the proposal to the University of St. Augustine's Evidence-Based Practice Project Review Council (EPRC). Frequent meetings with the preceptor, CNO as well as pertinent stakeholders were required to lay the foundation of the change project. The timeline for the change project was 8 weeks. Once the proposal was approved, the project manager engaged in frequent meetings with the preceptor and key stakeholders to discuss the goals, roles, and responsibilities, timeline, and required budget for the change project. The ICU staff was trained and advised on their roles and responsibilities. The project manager was engaged in continued conversation with the ICU manager to discuss the ways to utilize hand hygiene audit tools during the implementation phase. The project manager kept track of the hand hygiene audit tools to assess the coordination and cooperation within the staff and make provision for repeat training if needed. Implementation was projected to begin in week six and be complete in week fourteen.

Project Resources and Budget

The detailed breakdown of the budget (see Appendix C) demonstrates the budget for this project is limited and will not require any grants or funding. There was no additional cost

associated with pre-intervention and post-intervention data collection. The project manager was engaged in data collection without any additional cost using a personal computer to enter data from the hand hygiene Audit tool to an Excel spreadsheet. The Inservice education was provided to the staff during work shifts at the nursing unit without additional cost. There was a minimal cost associated to generate educational handouts (see Appendix G) for the staff. The WHO handouts were available to print and distribute among the participants. The project manager ensured that these handouts obtained from the WHO's website were with appropriate accreditation. The cost was projected around $30 for the printing of educational handouts and Hand hygiene Audit Tools. The stakeholders and the leaders were aggregable to volunteer their time at the unit during the implementation phase. The hand hygiene audit tool is attached for review (see Appendix F).

Result

The change project evaluated the handwashing compliance of ICU employees in an effort to reduce CLABSIs pre-and post-intervention while increasing current hand hygiene compliance. The participants were recruited from among the Surgical ICU nurses except those who are not full-time employees, currently in training, or working on a travel contract assignment at the time of intervention. The baseline data included observational data collection of the ICU employees on handwashing prior to encountering patients with a central line. The direct observation involved monitoring employees to record compliance with washing hands before and after handling patients with central venous catheters and recorded in a hand hygiene audit tool. There was a door sign to distinguish the patient with central lines. The data obtained was entered in the hand hygiene audit tool (see Appendix D). This same tool was utilized post-intervention to collect post-intervention data from the participants. The hand hygiene tool is generated by the project manager to simply record observational data. This is a simple tool created to serve the purpose of this project. There was no limitation associated with this tool and data entered was solely for records to transcribe to an excel spreadsheet later for analysis.

The hand hygiene audit tool's face validity was determined by presenting it to a panel of professionals for comments and reviews. The project manager reviewed the outcomes using inter-rater reliability and make adjustments as needed to improve formatting. The WHO's hand hygiene audit tool served as the foundation for the Hand Hygiene Audit Tool (WHO, 2022). The employee's discipline, whether the hand hygiene opportunity was successfully carried out, date, shift, and location were all retained components of this audit tool in the Hand Hygiene Audit tool used for this evidence-based initiative.

The project manager obtained the project approval from the University of St. Augustine's Evidence-Based Practice Project Review Council (EPRC) as well the from the site where this project was implemented. The University of Saint Augustine for Health Sciences (USAHS) required this change project to be an evidence-based change project that can be sustainable and address the organization's identified practice problem. The project was reviewed by USAHS EPRC to ensure all required criteria are met. The project manager obtained the required written approval paperwork from the organization's leader and stakeholders. The project manager performed data collection and analysis following all approval from both organizations. Data analysis is placed in Appendix I. All project site and college approvals are placed in Appendix H.

The project manager was responsible to keep completed Hand hygiene Audit Tools locked and secured. Patient privacy remained intact due to no patient identifiers being collected, recorded, or observed. The observation made was random observations that eliminated the need for participant identifying information.

The evaluation of this project focused on two measures, hand hygiene compliance of 90% by the end of the intervention and no incidence of CLABSI during the implementation phase. The reduction of CLABSI incidence and increased hand hygiene compliance were two major projected outcomes of this project as indicated in the literature review. These outcomes were projected to promote care delivery and decreased length of stay, decreased treatment cost, and so on. The project manager was responsible to transfer data from Hand Hygiene Audit

tool from the pre-intervention and post-intervention phases. The project manager used a personal computer for the convenience of transcribing. Statistical significance for this project was established with a *p*-value of 0.05. The project manager used a t-test to statistically analyze and compare previous 8-week compliance to post-intervention compliance. The project manager expected a significant change in the level of CLABSI incidences at the end of the project. However, it is also important to witness clinically significant changes as a result of the reduction of CLABSI in ICU patients due to increased hand hygiene competency among the ICU employees. The significant clinical change was demonstrated by a reduction in CLABSI incidences and improved hand hygiene compliance outcomes demonstrated through practice improvement in the HAIs data. These outcomes are favorable in terms of patient outcomes as well as organizational outcomes.

One case of CLABSI was identified during the pre-implementation phase among 17 central Venous lines in March 2022. The hand hygiene compliance during the pre-implementation phase was 67% among 67 observations over 4 weeks. The goal of the project was to reduce the CLABSI incidence through increased hand hygiene compliance among SICU employees. The project was effective in terms of no CLABSI incidence in the post-implementation phase. Even though the hand hygiene compliance was increased to 80% among 136 observations, compliance with the hand hygiene was much lower than expected compliance. The DNP project manager only visited the facility once a week to collect data, engage with personnel, and answer questions, which could have been a barrier to optimal compliance. Employee involvement could have also been a stumbling block to achieving optimal compliance. Compliance would need to be monitored on a daily basis by management to ensure long-term viability.

A two-tailed independent samples t-test was conducted as the statistical procedure to examine whether the results of the intervention between the pre-project implementation and post-project implementation have a significant change.

Assumptions

The pre-project implementation and post-project implementation groups were tested using Levene's test to see if the number of infections varied equally. Based on an alpha value of 0.05, F (1, 103) = 2.21, p =.140, the result of Levene's test for the number of infections was not significant. This finding implies that the number of infections' variance may be equivalent for each pre-and post-project implementation group, showing that the assumption of homogeneity of variance was met.

Statistical Results

Based on an alpha value of.05, t(1) = 10.43, p =.061, the outcome of the two-tailed paired samples t-test was not significant, indicating that the null hypothesis could not be rejected. The difference between the mean of Hand Hygiene compliance and the mean of CLABSI incidence was not significantly different from zero, according to this finding. Table 1 summarizes the findings. Figure 1 shows a bar plot of the mean values.

Table 1

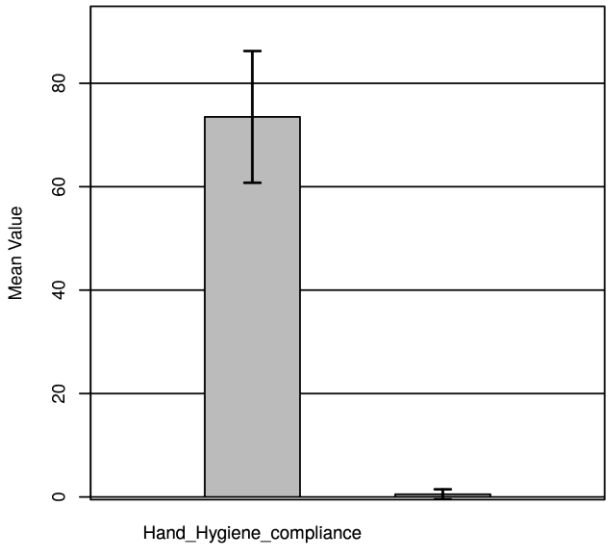
Two-Tailed Paired Samples t-Test for the Difference Between Hand_Hygiene_compliance and CLABSI incidence

Hand_Hygiene_compliance		CLABSI incidence				
M	*SD*	*M*	*SD*	*t*	*p*	*d*
73.50	9.19	0.50	0.71	10.43	.061	7.37

Note. N = 2. Degrees of Freedom for the *t*-statistic = 1. *d* represents Cohen's *d.*

Figure 1

The means of Hand_Hygiene_compliance and CLABSI incidence with 95.00% CI Error Bars



Impact

The change project had projected to decrease the CLABSI among the ICU patients through effective hand hygiene practices among the SICU employees. The change project was also meant to increase the hand hygiene compliance of employees to at least 90%. The CLABI incidence was 1 during the pre-implementation period with a hand hygiene compliance of 67%. The Post-implementation hand hygiene compliance was 80 % with zero CLABSI incidences. Even though the hand hygiene compliance increased to some extent, the outcome did not match the projected compliance rate of 90%. The project was not successful in obtaining desired hand hygiene compliance among the employees.

The project manager provided education to the SICU staff on the overview of the evidence-based project. This included details on the current hand hygiene compliance as well as CLBSI incidences statistics accompanied with education on the proposed intervention. This practice change did not require additional financing or budgeting. Even though the staffs were highly receptive to the project in the beginning, the change project stumbled through a few

concerns. Some of the concerns included staff's compliance with hand hygiene, compliance only when monitored and staff's perception of the overall change project as additional work.

Several limitations were identified upon the completion of the change project. Hand hygiene compliance was monitored only among nurses who were taking care of patients with central lines. The change project did not include monitoring nurses who did not have central line patients on their assignment. This limited the overall hand hygiene compliance in the department as all the nurses were not included in monitoring and audit. Another limitation of the study was lacking clear criteria to differentiate whether a CLABSI occurred from the lack of hand hygiene-related factors. Another limitation was the lack of continuous monitoring and audit of hand hygiene practices among staff. The nurses were only monitored for random hours on random days of the week. This left majority of the hours unaccounted for. Another limitation of the change project is related to the fact that CLABSI is not solely related to a lack of hand hygiene compliance among the staff. Several patient-related factors increase the risk of increased CLABSI incidences which contradicts the findings of this change project. Further studies on additional CLABSI risk factors can be useful in examining the multifactorial correlation.

To ensure the sustainability of the EBP change, the infection control team will continue with implementation and evaluation. The infection control team will be prepared to conduct periodic hand hygiene monitoring in conjunction with periodic staff teaching to keep them informed of the current protocol and statistics. The SICU manager will stay informed of the ongoing project evaluation by regularly auditing the staff's compliance with the new practice. The infection control manager is expected to ensure the education material prepared on hand hygiene and CLABSI matches the updated practice and protocol.

Future considerations on this change project may include discussing the impact that the direct observation and periodic education on hand hygiene compliance among staff had on

nursing satisfaction. The majority of the nurses were highly receptive to the education as well as audit while some expressed the perception of direct observation being compelling.

The overall outcome of the change project was positive in preventing CLABSI incidence. However, compliance with hand hygiene was much lower than expected. One of the barriers to this outcome could be the lack of a 24-hour surveillance system to monitor staff's compliance without having to have a project manager present at the site to directly monitor and audit staff. The fact that staff was monitored by the project manager for only a few hours on a random day or night shift excluded a significant period without monitoring and audit. To maintain sustainability, monitoring of compliance would need to continue through daily audits by discussing a twenty-four-hour surveillance system.

Dissemination Plan

Dissemination of this project was initiated by the project manager after the completion of implementation and data analysis. The EBP project results were disseminated via face-to-face meetings utilizing a PowerPoint presentation among involved stakeholders. The stakeholders included the SICU manager, infection control manager, preceptor, and nursing staff involved with the change project. The stakeholders were able to engage in question-answer sections relating to the change project as needed.

As a part of the DNP student scholarly project, this project will be available at the University of Saint Augustine for Health Sciences Library Scholarship and Open Access Repository (SOAR) with the motto of sharing the results among faculty and students. The project results will also be disseminated externally to the University of St. Augustine through an oral presentation. I also plan on uploading a copy of the completed change project to the Doctor of Nursing Practice repository for colleagues or anyone with a similar interest in the subject matter for review (Doctoral Project Repository,2022). The project manager will explore the potential opportunity to submit the poster presentation to the Association for Professionals in

Infection Control and Epidemiology for the annual conference if applicable. The proposal with be submitted to the American Journal of infection control if appropriate.

Conclusion

This evidence-based practice (EBP) project proposal intends to address incidences of CLABSI in the intensive care unit of the selected hospital. This EBP project aims to reduce the incidence of CLABSI through the implementation of a hand hygiene initiative to increase hand hygiene awareness and practice among all the healthcare workers involved in patient care. This proposal entails a detailed discussion of the significance of the practice problem; PICOT (population, intervention, comparison, outcome, time) question. This project will be guided by the Johns Hopkins Nursing EBP model and Lewin's change theory. The change project was initiated with the identification of the practice gap/problem related to handwashing compliance and CLABSIs based on the EBP model. A thorough and relevant search of the literature evidence guided the foundation of the change project. Relevant stakeholders were identified, and an implementation plan was developed with a timeline and budget to guide the implementation process. The evaluation and dissemination plans were identified for execution.

References

Acharya, R., Mishra, S. B., Ipsita, S., & Azim, A. (2019). Impact of nursing education on CLABSI rates: An experience from a tertiary care hospital in eastern India. *Indian Journal of Critical Care Medicine*, *23*(7), 316–319. https://doi.org/10.5005/jp-journals-10071-23205

Agency for Healthcare Research and Quality (2017). *Estimating the additional hospital inpatient cost and mortality associated with selected hospital-acquired conditions*. https://www.ahrq.gov/hai/pfp/haccost2017-results.html

Aloush, S. M., & Alsaraireh, F. A. (2018). Nurses' compliance with central line associated blood stream infection prevention guidelines. *Saudi Medical Journal*, *39*(3), 273+. https://link.gale.com/apps/doc/A534632296/AONE?u=lirn55718&sid=ebsco&xid=a30a84b1

Burnes, B. (2020). The origins of Lewin's three-step model of change. *Journal of Applied Behavioral Science*, *56*(1), 32–59. https://doi.org/10.1177/0021886319892685

CHI ST Vincent. (2021). *News (Media Center) - CHI St. Vincent, Arkansas*. https://www.chistvincent.com/about/news/7

Chi, X., Guo, J., Niu, X., He, R., Wu, L., & Xu, H. (2020). Prevention of central line-associated bloodstream infections: A survey of ICU nurses' knowledge and practice in China. *Antimicrobial Resistance and Infection Control*, *9*(1), NA. https://link.gale.com/apps/doc/A642288098/HRCA?u=lirn55718&sid=bookmark-HRCA&xid=9539e7dc

Curlej, M. H. (2016). One rural hospital's experience implementing the society for healthcare epidemiology of America guidelines to decrease central line infections. *Journal of Trauma Nursing*, *23*(5), 290–297. https://doi.org/10.1097/JTN.0000000000000235

Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2022). Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model and guidelines. 4th ed. Indianapolis, IN: Sigma Theta Tau International

Doctoral Project Repository (2022)– *Doctor of Nursing Practice, Inc. and the DNP Online Community*. https://www.doctorsofnursingpractice.org/doctoral-project-repository/

Esposito, M. R., Guillari, A., & Angelillo, I. F. (2017). Knowledge, attitudes, and practice on the prevention of central line-associated bloodstream infections among nurses in oncological care: A cross-sectional study in an area of southern Italy. *PLOS ONE*, *12*(6). https://doi.org/10.1371/journal.pone.0180473

Gilmartin, H. M., Sousa, K. H., & Battaglia, C. (2016). Capturing the central line bundle infection prevention interventions. *Nursing Research*, *65*(5), 397–407. https://doi.org/10.1097/NNR.0000000000000168

Guest, J. F., Keating, T., Gould, D., & Wigglesworth, N. (2019). Modelling the costs and consequences of reducing healthcare-associated infections by improving hand hygiene in an average hospital in England. *BMJ Open*, 9(10). https://doi.org/10.1136/bmjopen-2019-029971

Haddadin Y, Annamaraju P, Regunath H (2021). *Central line associated blood stream infections*. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK430891/

Jock, L., Emery, L., Jameson, L., & Woods, P. A. (2016). Journey to zero central line-associated bloodstream infections: An intensive care unit's story of sustained success and quality improvement. *Journal of the Association for Vascular Access, 21*(2), 76-80. http://0b32qfdcp.mp02.y.http.dx.doi.org.prx-usa.lirn.net/10.1016/j.java.2016.03.002

Likosky D. S. (2014). *Clinical microsystems: A critical framework for crossing the quality chasm*. The journal of extra-corporeal technology. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4557508/

Luzum, M., Sebolt, J., & Chopra, V. (2020). Catheter-associated urinary tract infection, Clostridioides difficile colitis, central line–associated bloodstream infection, and

methicillin-resistant staphylococcus aureus. *Medical Clinics of North America*, 104(4), 663–679. https://doi.org/10.1016/j.mcna.2020.02.004

McCalla, S., Reilly, M., Thomas, R., & McSpedon-Rai, D. (2017). An automated hand hygiene compliance system is associated with improved monitoring of hand hygiene. *AJIC: American Journal of Infection Control*, *45*(5), 492–497. https://doi.org/10.1016/j.ajic.2016.12.015

Myatra S. N. (2019). Improving hand hygiene practices to reduce CLABSI rates: nurses education integral for success. *Indian Journal of Critical Care Medicine. 23*(7), 291–293. https://doi.org/10.5005/jp-journals-10071-23200

Ojanperä, H., Kanste, O. I., & Syrjala, H. (2020). Hand-hygiene compliance by hospital staff and incidence of health-care-associated infections, Finland. *Bulletin of the World Health Organization*, *98*(7), 475–483. https://doi.org/10.2471/BLT.19.247494

Omar, I., Shirazy, M., Omar, M., & Chaari, A. (2020). Controlling nosocomial infection in adult intensive treatment unit: A quality improvement project. *International Journal of Risk & Safety in Medicine*, *31*(4), 267–273. https://doi.org/10.3233/JRS-190028

Osuala, E., & Oluwatosin, O. (2017). Infection control by nurses in selected hospitals in Anambra State, Nigeria. *Tropical Journal of Medical Research*, *20*(1), 53. https://link.gale.com/apps/doc/A477729258/HRCA?u=googlescholar&sid=bookmark-HRCA&xid=812c2e94

Papay, N. M. (1970, January 1). *Improving central line-associated bloodstream infection rates with supplemental hand hygiene education*. Dissertation Abstracts International: Section B: The Sciences and Engineering. https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/pt/covidwho-1050946

Prasad, P., Brown, L., Ma, S., McDavid, A., Rudmann, A., Lent, D., Reagan-Webster, P., Valcin, E. K., Graman, P., & Apostolakos, M. (2021). “if The glove fits”: Hospital-wide universal gloving is associated with improved hand hygiene and may reduce clostridioides difficile

infection. *Infection Control & Hospital Epidemiology*, *42*(11), 1351–1355. https://doi.org/10.1017/ice.2020.1422

Reynolds, S. S., Woltz, P., Keating, E., Neff, J., Elliott, J., Hatch, D., Yang, Q., & Granger, B. B. (2021, April 26). *Results of the chlorhexidine gluconate bathing implementation intervention to improve evidence-based nursing practices for prevention of Central Line Associated Bloodstream Infections Study (changing baths): A stepped wedge cluster randomized trial - implementation science*. BioMed Central. https://doi.org/10.1186/s13012-021-01112-4

Stroever, S., Boston, K., Ellsworth, M., Cuccaro, P., & McCurdy, S. (2020). Qualitative process evaluation of a central line-associated bloodstream infection (CLABSI) prevention team in the neonatal intensive care unit. *AJIC: American Journal of Infection Control*, *48*(9), 987–992. https://doi.org/10.1016/j.ajic.2019.12.020\

Stevens, V., Geiger, K., Concannon, C., Nelson, R. E., Brown, J., & Dumyati, G. (2014). Inpatient costs, mortality and 30-day re-admission in patients with central-line-associated bloodstream infections. *Clinical Microbiology and Infection : The official publication of the European Society of Clinical Microbiology and Infectious Diseases*, *20*(5), O318–O324. https://doi.org/10.1111/1469-0691.12407

Swanson, S., Baken, L., & Bor, B. (2020). Implementation of a hospital-wide electronic hand hygiene monitoring program reduces healthcare-acquired infections in a level I trauma hospital. *American Journal of Infection Control*, *48*(8), S55.https://doi.org/10.1016/j.ajic.2020.06.028

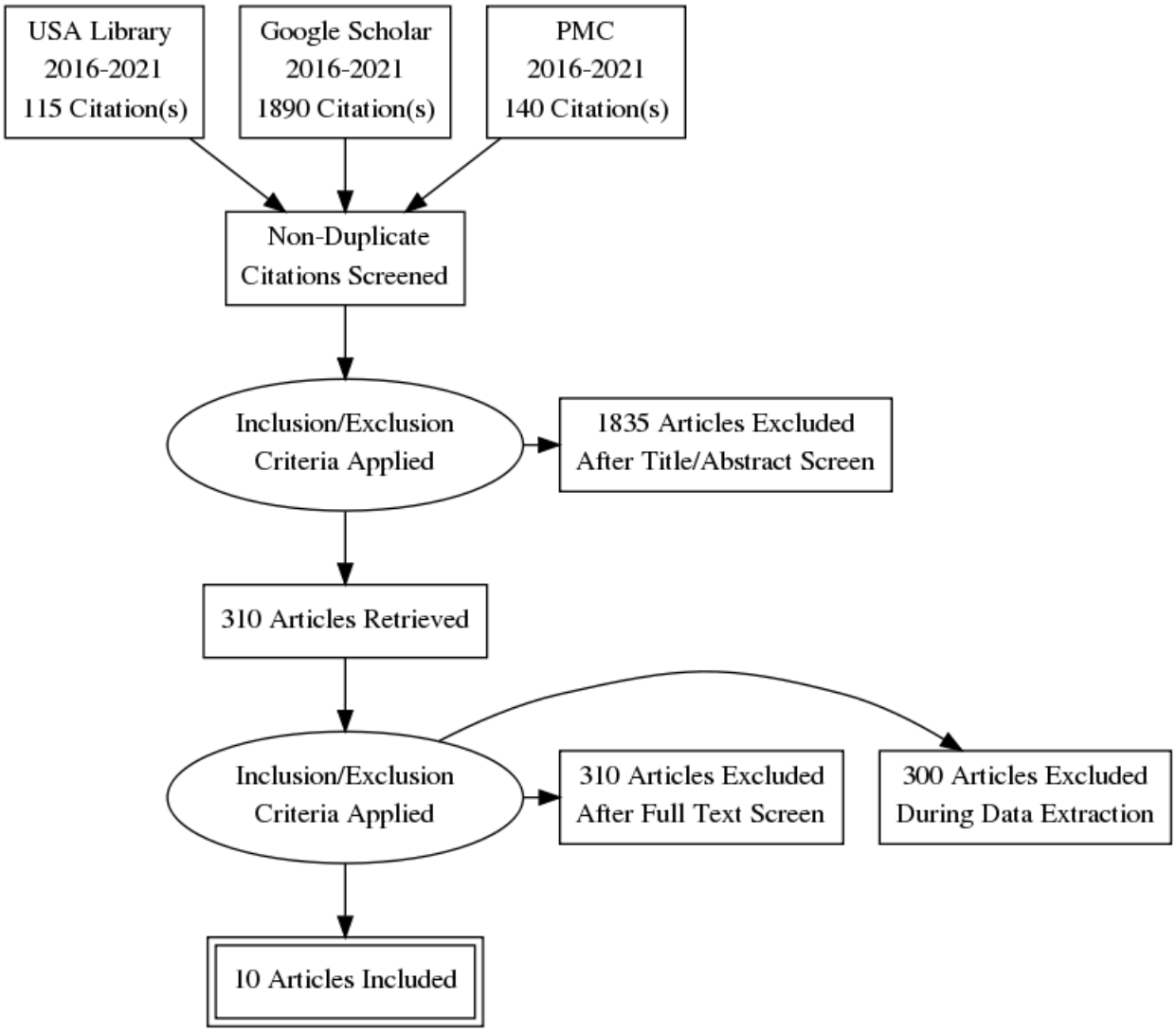
Vera, D. (2021). 2022 EBP models and tools. *Johns Hopkins Medicine.* https://www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html

Wojciechowski, E., Murphy, P., Pearsall, T., French, E., (May 31, 2016). *A case review: Integrating lewin's theory with Lean's system approach for change*. Online journal of issues in nursing. https://pubmed.ncbi.nlm.nih.gov/27854425

World Health Organization. (2022). *Hand hygiene tools and resources*. World Health Organization. https://www.who.int/teams/integrated-health-services/infection-prevention-control/hand-hygiene/monitoring-tools

Appendix A

Prisma Diagram



Appendix B

SWOT Analysis

Appendix C

Budget

EXPENSES		**REVENUE**	
Direct	30	Billing	0
Salary and benefits	0	Grants	0
Supplies	0	Institutional budget support	0
Services	0		
Statistician	0		
Indirect	0		
Overhead	0		
Total Expenses	$30	Total Revenue	0
Net Balance			

Appendix D

Summary of Primary Research Evidence

Citation	**Design,** **Level** **Quality** **Grade**	**Sample** **Sample size**	**Intervention** **Comparison**	**Theoretical** **Foundation**	**Outcome** **Definition**	**Usefulness** **Results** **Key Findings**
Acharya et al., 2021	Quasi experimental study, Level II, Good Grade: B	34 Nurses	Educational program and objective assessment.	N/A	Reduced CLABSI occurrence.	There was a significant reduction in CLABSI rates i.e., 8.6 post workshop with a total catheter day 1870
Curlej & Katrancha, 2016	Quantitative, descriptive retrospective study, Level II, Good, Grade B	Any patient with a CLABSI infection admitted to the hospital July 2007 to June 2010	SHEA implementation	N/A	Reduced CLABSI occurrence	CLABSI rates showed a downward trend
Esposito et al, 2017	Cross sectional study, Level III, low quality, Grade C	The target group was all 472 nurses working in oncology and outpatient chemotherapy	Delineate the knowledge, attitudes, and behavior among nurses regarding the prevention of central line-	N/A	Increased hand hygiene awareness resulting in compliance and decreased	Educational interventions should be implemented to address the gaps regarding knowledge and practice regarding the prevention of CLABSIs and to ensure that nurses use evidence-based prevention interventions.

		units, involved in the care of patients with CVC, in the selected 16 hospitals.	associated bloodstream infections (CLABSIs) and to identify their predisposing factors		CLABSI occurrence	
Swanson et al., 2020	Direct observational study, Level II, Good, Grade B	Selected staffs in a 353-bed Level I trauma hospital	observations of their peer's hand hygiene compliance	N/A	The hospital wide CLABSI decreased by 36.2% a	hand hygiene compliance monitoring system is useful in reducing CLABSI
McCalla et al., 2017	Retrospective cohort study, level II, good, grade B	Employees at community hospital in northeast US	Hand hygiene compliance system	N/A	Reduced CLABSI occurrence.	Hospital met its compliance goals (95%+) with decreased CLABSI incidence.
Prasad et al., 2017	Quasi experimental study, Level II, Good Grade: B	Employees at the University of Rochester Strong Memorial Hospital	hospital-wide universal gloving protocol	N/A	Reduced CLABSI rates	Reduced CLABSI rates
Papay, 2020	Quasi experimental study, Level II, Good Grade: B	Employees in Medical surgical unit	Educational session for all healthcare providers	The Ajzen theory of planned behavior	Reduced CLABSI rates	Hand hygiene compliance of 93%
Ojanperä et al., 2020	Cross sectional study, Level III, low	Employees at tertiary care teaching hospital	Longitudinal internal audit survey	N/A	Reduced HAIs	Increased hand hygiene compliance by doctors and nurses led to decreased HAIs

	quality, Grade C					
Guest et al. 2019	Cross sectional study, Level III, low quality, Grade C	4473 Healthcare employees in NHS hospital	Audit with performance feedback	Decision model	Reduced HAIs	If the introduction of the electronic audit and feedback system into current practice in a hypothetical general hospital in England can improve hand hygiene compliance among front-line HCPs leading to a reduction in the incidence of HCAIs by ≥15%, it would potentially afford the NHS a cost-effective intervention
Stevens et al., 2014	Retrospective cohort study, level II, good, grade B	398 patients at a tertiary-care academic medical center	Generalized linear models with log link and gamma distribution	N/A	CLABSI leads to increased treatment costs	CLABSI was associated with significantly higher adjusted in-hospital mortality and total and variable costs than those for patients without CLABSI.

Legend:

CLABSI- Central Line-Associated Bloodstream Infection

CVC- Central Venous Catheter

SHEA- Society for Healthcare Epidemiology of America

HAIs- Hospital Acquired Infections

HCP- Health Care Providers

Appendix E

Project Schedule

	NUR7801								NUR7802								NUR7803							
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Meet with preceptor	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Prepare project proposal	Y	Y	Y	Y	Y	Y	Y	Y																
Stakeholders meet and collaborations	Y	Y	Y	Y			Y	Y																
Review project goals, timeline, roles and responsibilities and expectations									Y	Y	Y													
Submit project proposal for approval									Y	Y														
Meet with Patient Care Managers to discuss hand washing tool									Y															
Initial data collection and									Y	Y														

	NUR7801								NUR7802								NUR7803							
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Inservice																								
Project implementation												Y	Y	Y	Y									
Post intervention Data collection												Y	Y	Y	Y									
Outcome analysis																Y	Y							
Disseminate findings to stakeholders																		Y	Y					
Develop sustainable plans																				Y	Y			
Project Completion																						Y	Y	

Appendix F

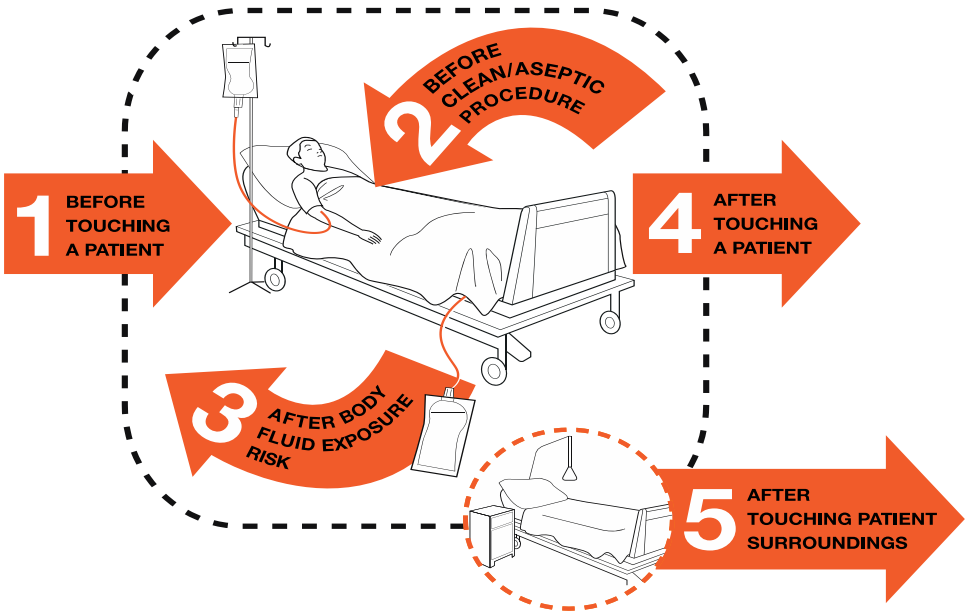
Hand Hygiene Audit Tool

Date	Unit	Room Number	Shift	Employee's Designation	Hand washing performed prior to entering patient room with central line

Appendix G

Educational Handout

Your 5 Moments for Hand Hygiene



1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching him/her.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3	AFTER BODY FLUID EXPOSURE RISK	WHEN?	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
4	AFTER TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

World health organization (2021)

Appendix H

Project Site and College Approvals

CHI St. Vincent
Imagine better health.℠

300 Werner Street
Hot Springs, AR 71913

P 501.622.1000
F 501.622.1199
CHISt Vincent.com

To whomever it may concern,

We hereby give permission to Bindu Paudel to complete her Reducing the Incidence of CLABSI Through Hand Hygiene DNP project at the CHI ST Vincent hospital located in Hot Springs, AR.

Sincerely

Teresa Lambert

Teresa Lambert

VP Pt Care Services/ACNO

CHI ST Vincent Hot Springs

UNIVERSITY of ST. AUGUSTINE for HEALTH SCIENCES

Doctor of Nursing Practice Program Evidence-Based Practice Review Council 1 University Blvd.
St. Augustine, FL 32086

February 8, 2022 Dear Bindu Paudel,

Your proposal titled “Reducing the Incidence of CLABSI through Hand Hygiene in ICU Patients” has been reviewed by the University of St. Augustine for Health Sciences Doctor of Nursing Practice Evidence-Based Practice Review Council (EPRC). The project was determined to not meet the requirements for research as defined in the Federal Register.

Your proposal reflects an evidence-based practice change project and is approved. The proposal must be implemented as submitted (changes are not permitted). You may proceed to obtain approvals from the facility where the project will be implemented as soon as the primary course faculty member has reviewed and approved all facility application materials. Implementation may not begin until you have submitted the EPRC approval letter and the facility approval letter to NUR7802 and are notified in writing by practicum course faculty that you may implement the project.

Questions regarding the USAHS approval process should be addressed to Dr. Sarah Cartwright at scartwright@usa.edu. Questions regarding the facility approval process should be addressed to course faculty.

Sincerely,

Sarah M. I. Cartwright, DNP, MSN-PH, BAM, RN-BC, CAPA, FASPAN Evidence-based Practice Review Council Chair
DNP Program Director
School of Nursing

University of St. Augustine for Health Sciences

Sarah McCartwright, DNP, MSN/PH, RN-BC, CAPA, FAAPAN