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Improving the Rate of Hand Hygiene Immediately Before and After Wound Care in the Street Nurse Microsystem

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Abstract

The street nurse team of Sacramento, CA provides many services to patients who are experiencing homelessness, including a substantial amount of wound care. While the street nurses were performing hand hygiene (HH) prior to and after wound care, they would often not be performing it immediately prior and post-wound care. Because the nurses hike to their patients (who are living on the streets or in out of the way camps) the street nurses would often perform hand hygiene while at their cars prior to going to the patient and again when they returned to their cars after performing wound care. When monitoring the amount of wound care done immediately pre- and post- wound care, the rate was only 20%. This project aims to increase the rate of hand hygiene by the street nurses to 90% by December of 2019 by making simple improvements to the street nurse work process. The results of the project showed a dramatic improvement in hand hygiene. Four weeks into the project, and the rate of hand hygiene is up to 90%. Other unexpected benefits to the program included increased patient education by the street nurses regarding wound care, an increased amount of hand sanitizer passed out to patients, and improved job satisfaction by the street nurses.

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Introduction

According to a 2019 point-in-time count, on any given night in Sacramento, CA there are approximately 5,570 people experiencing homelessness. Of those 5,570, 70% are unsheltered (sleeping outdoors, in cars, or abandoned buildings not suitable for human habitation) and 30% are sheltered (staying in shelters, couch surfing, or have access to other temporary housing) (Sacramento County, 2019). While there are many medical resources for people experiencing homelessness, including primary care clinics, no-cost immediate care clinics, mental health urgent care clinics, mobile clinics, and hospitals; there are very few medical resources that travel to the homeless. The WellSpace Health Street Outreach Nurses are an example of this type of resource. A microsystem that operates on a very large scale (the nurses travel all over Sacramento), the two-person street nurse team provides medical care on the streets of Sacramento. Comprised of two registered nurses, the street nurses provide "house calls for those without a home". Funded entirely by a grant from Sutter Health, with the goal of reducing patient Emergency Room (ED) visits and readmissions in order to save the Sutter Health care costs, the street nurses never charge the patients or insurance for any of their services. Since January of 2019 the street nurses have seen 406 patients and provided care that included transportation to primary care appointments, patient education, medication management, case management services and a large amount of wound care. When performing wound care, hand hygiene (HH) is key to preventing cross-transmissions, antibiotic resistance, and amputations (Lengerke, Kroning & Lange, 2017). When performed correctly, HH is the most effective preventative measure in reducing the spread of microorganisms that cause healthcare associated infections (Raymond,

2016). Despite the fact that the importance of HH is widely recognized in the medical community, there is a lack of HH compliance worldwide often caused by forgetfulness, fear of skin damage, lack of time, as well as scarce and inconvenient access to HH equipment (Raymond, 2016). The unique street nurse microsystem had its own barriers to proper HH, which set the stage for a change project to improve the street nurse work processes and their rate of HH.

Problem Description

Wound care is an important aspect of the street nurse role, as wounds are one of the major health conditions seen in people experiencing homelessness. One study found that 19.2% of people experiencing homelessness currently had a wound (Pennington, Coast & Kroh, 2010). Another study done in 2018 showed that 73% of those experiencing homelessness suffer from physical health problems including skin disease and musculoskeletal disease (Clanfield).

Prompt HH is a key component of evidence-based practice when it comes to performing wound care. Infection of wounds is a major source of healthcare associated infections, and HH may be the best way to prevent the spread of infection (Timmins, Riche, Saint-Jean, Tuck & Merry, 2018). By not performing HH immediately pre- and post- wound care, the street nurses were putting their patients who were already more prone to experiencing wounds at an increased risk for wound infections.

The street nurses faced multiple barriers when it came to performing prompt HH. The first barrier is that because the nurses spend so much time walking to get to their patients, they have to fit all of their supplies (medical supplies, wound care supplies, and case management resources) in one backpack. This meant that the backpacks were very full and heavy, because of this the street nurses would only have room for small portable bottles of hand sanitizer. The

second problem the street nurses faced was that often times patients would need hand sanitizer for themselves, which meant the street nurses would give away their hand sanitizer to patients. These factors lead to the nurses often not having hand sanitizer in their backpacks, so they would only perform HH at their cars where they would have a large bottle of hand sanitizer (see Appendix A for cause and effect diagram).

Available Knowledge

When searching for research to support this project, the original PICO question used was (P) Homeless patients receiving wound care (I) Increasing HH among street nurses (C) Lack of HH (O) Preventing infections. While there are many articles about hand hygiene and its role in preventing infections, there are much fewer when hand hygiene is specific to wound care and even fewer when the word homeless is included in the review. One explanation for this is that it would be impossible to know if an infected wound in a homeless patient is caused by lack of hand hygiene on the nurses' part, or by the unhygienic environment of the patient.

I ended up using two different PICO statements to find literature to support my project, as two different PICO statements yielded the best results. The first PICO statement used was (P) Infection (I) hand hygiene (C)low hand hygiene (O) Infection Prevention. The second PICO statement used was (P) homelessness (I) wound care in the community (C) acute wound care or inpatient wound care (O) treatment. By using two different PICO statements I was able to find articles pertaining to wound care, homelessness and the importance of hand hygiene for infection prevention in wound care. Literature search data was synthesized after utilizing CINAHL with the phrases that included homelessness, street medicine, and wound care. The search was filtered for peer-reviewed journal articles published after 2010. Using the Johns Hopkins Nursing Research Evidence Based Practice Appraisal Tool the studies accepted were rated as either Level

II or Level III with one study rated Level V (see Appendix B for John Hopkins Appraisal Tool). Results of the literature search are summarized in Appendix C.

There are many studies that discuss the importance of HH, despite the fact that HH is a vital part of wound care, and is key to preventing infection, literature shows that there is a lack of HH compliance worldwide. Research has showed that this lack of compliance is contributed to forgetfulness, fear of skin damage, lack of time, as well as scarce and inconvenient access to HH equipment (Raymond, 2016). An analysis of research related to homelessness and wound care showed that wounds are one of the major health conditions seen in the homeless. One study found that 19.2% of people experiencing homelessness currently had a wound (Pennington, Coast & Kroh, 2010). Infection is also more common in the homeless population, with rates of Streptococcus pyogenes infections being 100 times more likely for the homeless than the non-homeless. A 2019 study by Dauby et al. showed that skin abscesses were more frequent in the homeless population than the housed population.

Rationale

The rationale for this project was to improve the street nurse work flow in order to improve the rate of HH by the street nurses. Lewin's three stage theory on change (also known as the unfreezing-change-refreezing model) is the framework chosen for this project. Lewin's change theory is well suited to a small microsystem such as the street nurse microsystem. Developed by Kurt Lewin, the three-stage model of change consists of three stages: unfreezing, change, and refreezing. Using Lewin's theory, it is believed the project should be successful due to the fact that Lewin's theory allows for breaking down any resistance to change, implementing the change, and then maintaining the change. This project should be successful,

as there are very simple steps needed to increase the rate of HH in the street nurse team. This means Lewin's theory should be implemented quite easily.

Specific Project Aim

The specific aim of this project is to increase the rate of HH immediately before and after wound care by the street nurses to 90% by December of 2019. The baseline rate of HH is 20%.

Context

An assessment of the street nurse microsystem utilizing the Dartmouth Microsystem Assessment tool (see Microsystem Assessment, Appendix D) resulted in a few notable findings which included leadership of the street nurse program that struggles to support and empower the staff and a larger organization that isn't supportive of the street nurse microsystem. The assessment also showed that the street nurses collaborate well with an interdisciplinary team (Dartmouth Institute, 2001). A SWOT analysis was also done and can be viewed in Appendix E. Key findings of the SWOT analysis show that strengths of the micro system are that the two street nurses are highly motivated to improve patient care, and that they understand the importance of improving the rate of HH. Weaknesses of the microsystem include the fact that as there are only two street nurses, if one of them isn't on board with the change project, the rate of HH will be dramatically skewed (even if one of the nurses performed HH 100% of the time, if the other nurse didn't do it at all, the rate of HH would only be 50%).

As mentioned previously, the street nurse program is entirely funded by a grant from Sutter Health, with supplemental funding from private philanthropic donations. The street nurse program was funded by Sutter Health with the goal of reducing Emergency Department (ED) visits and readmissions. Data from the Boston Health Care for the Homeless Program (BHCHP) shows that patients experiencing homelessness have a higher health care cost and utilization rate

than the general population. Between 2013 and 2015, the total spending of 96 unsheltered homeless individuals cared for by BHCHP in the areas of medical, behavioral health, and prescription drugs was $32,331 per person per year (Boston Health Care for the Homeless Program, 2019). With healthcare costs for unsheltered individuals so high, improving the rate of HH can help the street nurses in their mission to reduce ED visits and readmissions.

Intervention

The interventions were the result of two PDSA cycles. In order for the street nurses to succeed in increasing the rate of HH to 90%, they had to implement three changes as part of their process improvement. The first change, made after the first PDSA cycle, was to switch from carrying one backpack full of all of their supplies (medical supplies, wound care supplies, and case management resources) to a backpack with medical supplies and case management resources and a separate caddy for wound care supplies. The caddy design is easy to carry, and allows for the nurses to keep a large pump hand sanitizer that is easy to access in it. The next change that needed to be implemented was a result of the second PDSA cycle, was carrying several small personal sized hand sanitizers (1 or 1.5 ounces) in their backpacks. These are given to patients along with wound care education. The final intervention that needs to be implemented is the HH process. The nurses will carry their backpacks and wound care caddies to see the patient. Once they arrive to perform wound care, they will lay down a disposable under-pad on the ground (or other available surface) and place their wound care caddy on the under-pad. They can then perform HH immediately before and after performing wound care. Once HH is done, the nurses can provide appropriate patient education regarding wound care, and give the patient their own hand sanitizer.

Measures

Three measures were created to assess successful implementation of the interventions to improve the rate of HH. The measures will be noted in the patient notes that the street nurses create for each patient encounter. One measure will track specifically if HH was performed immediately pre- and post-wound care, while the other two measures will track to see if the other changes in the process were implemented, namely the use of the wound care caddy and distribution of hand sanitizer to patients along with wound care education.

Ethical Considerations

This project was reviewed by faculty and was determined to quality as an Evidence-based Change in Practice Project, rather than a research project. Institutional review board (IRB) review is not required as it is not considered a research project (see Appendix F, Evidence-Based Change of Practice Project Checklist). The goal of the project was to improve the rate of hand hygiene immediately before and after wound care by the street nurse team.

When working with the homeless population, there are certain ethical principles that must be considered carefully. Just by working with such a vulnerable population that often times lacks resources and access to medical care means that the street nurses are focusing on the principle of justice. The healthcare system does not offer access to care in an equitable fashion, oftentimes the homeless face barriers that the housed do not. Without addresses to send appointment reminders to or phones to call for reminders, patients are less likely to attend appointments. Those experiencing homelessness are also often less likely to have IDs, or insurance cards (as these often get lost or stolen). Not having these items can mean the patients are denied treatment at a doctor's office. The street nurses never require that a patient need an ID or insurance; nor do they ever change the client for any service rendered.

When addressing a needed improvement in the street nurse wound care and hand hygiene process, it is important to consider the ethical principle of non-maleficence. As evidenced by the literature reviewed in this paper, hand hygiene is key in preventing infections, amputations, and cross-transmission. By working to improve their wound care process and HH rate, the nurses are practicing non-maleficence, or the idea of not doing harm to their patients. Knowingly continuing a practice that puts their patients at risk for an infection would be negligent of the nurses.

Another important ethical principle to consider when working with the homeless is the principle of autonomy. Often times in street nursing, the nurses have to accept the fact that they can give their patients the best care and education they have to offer, but often times patients will decline their services, or refuse to follow the nurse's professional opinion. When considering wound care, this means that even if the nurses give their patients education on proper wound care and HH, they patient might refuse to participate in their care. Even though the street nurses might disagree with their patients, and may feel frustrated at the fact that the patients won't listen to them, the nurses have to accept that the patients are individuals with free will who must be given the autonomy to make their own care decisions.

Results

As previously noted, data collected and calculated by the street nurses showed that the rate of hand hygiene immediately before and after wound care was only 20%. The project was implemented using two PDSA cycles (see PDSA cycles, Appendix G). At the end of the project, three different measures were used to track the success of the implementations. The three measures were the rate of HH immediately before and after wound care, whether or not the

wound care caddy was used when performing wound care, and if a personal hand sanitizer was given to the patient. The data was found using a retrospective chart review.

As a result of the interventions, the rate of HH increased dramatically. Four weeks into the project, and the rate of HH immediately before and after wound care had risen to 90%, meeting the project goal. The street nurses agreed to increase the goal to 100%.

The project evolved over time (See Appendix H, Project Charter), with changes made during two PDSA cycles. When first implemented, the street nurses only started using the wound care caddy, and were not passing out individual hand sanitizers. At that time the rate of HH was at 70%. The nurses were finding that they were often giving away their hand sanitizer, leaving them unable to perform HH after wound care until they got to their car. Following the second PDSA cycle, passing out the individual hand sanitizers was implemented in order to ensure the street nurses always had their own hand sanitizer on hand. Once the individual hand sanitizers were implemented, the rate of HH went up to 90%. There was a delay in ordering the hand sanitizers due to a clerical error, without this error the rate of HH would most likely have increased further.

When implementing this project, the unexpected benefit of increased patient education was noted. When the street nurses passed out hand sanitizer, they used the opportunity to discuss the importance of HH in preventing infection, and also were able to educate the patient on how to properly perform HH with hand sanitizer. Another added benefit was increased nursing satisfaction. While not directly measured, the street nurses both reported feeling much happier when using the wound care caddies, as the wound care caddies were much easier to organize, and the nurses reported a decrease in the amount of time it took to look for items, as well as a reported decrease in frustration at not being able to find wound care supplies.

Another unexpected benefit was that costs associated with the project were quite low. The only increase in cost came with the one-time purchase of a wound care caddy (one nurse already had a caddy at home she brought in to use), and the ongoing purchase of hand sanitizers.

Discussion

The interventions implemented by the street nurse team have shown great success in achieving the goal of increasing the rate of HH immediately before and after wound care to at least 90%. The other two measures of use of the wound care caddy and passing out individual hand sanitizer to patients have not only met their goals, but have created unexpected benefits in the street nurse microsystem.

Key findings include the need to think creatively when working in the field. While field nursing presents problems that most traditional microsystems doesn't have, such as lack of running water, and the need to carry all supplies in either backpacks or caddies, the problems are very solvable when a systematic approach is taken in a change project.

A surprising lesson learned was how excited the patients were to get their own hand sanitizers, and how enthusiastic they were about using them. Just giving the hand sanitizers to the patients, and have learning how to perform HH as the first step in wound care made the patients seem more receptive to doing their own wound care and learning how to do it properly.

The second lesson learned was how big a difference the changes implemented made on nurse satisfaction. The use of the caddy created a more efficient, less stressful process for the nurses, and also helped to lessen the weight of the backpacks that the street nurses carry, which the nurses reported resulted in a reduction of back and shoulder pain experienced by the nurses.

Conclusions

The street nurse team was created with the goal of keeping people who are experiencing homelessness out of the Emergency Room and from being readmitted to the hospital. By increasing and improving the HH process, the street nurses are more likely to prevent their patients going to the hospital due to infection. In addition to improving care, the street nurses have also seen unexpected benefits that have improved their job satisfaction. With little cost associated with the process changes, and with so many potential and realized benefits, this is project is highly sustainable in the long term.

Those experiencing homelessness are one of the most vulnerable patient populations. Providing these patients with consistent, high quality care helps to give these patients a sense of worth and helps to build their trust in a healthcare system that at times turns its back on this vulnerable population.

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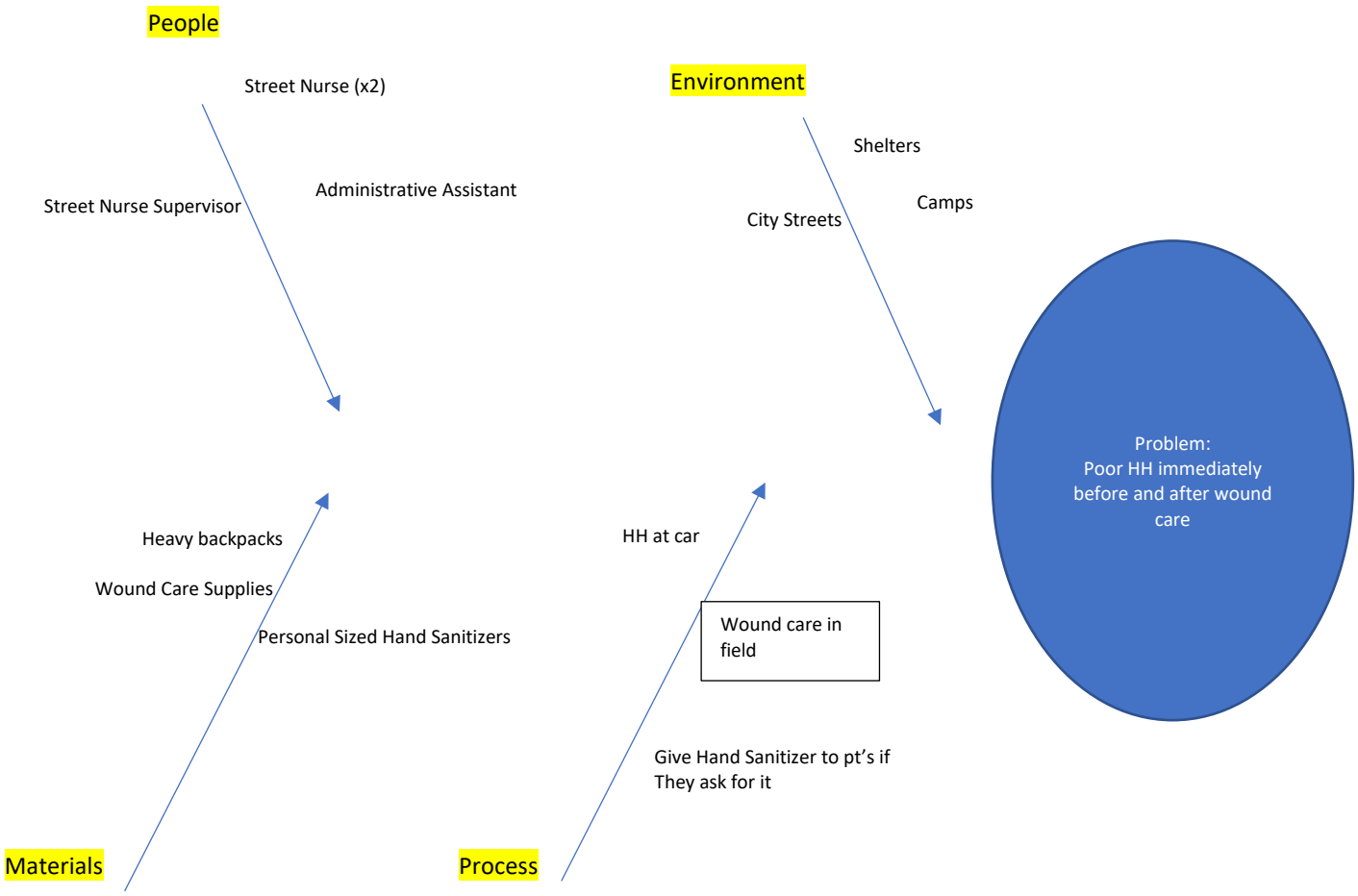
Appendix A

Cause and Effect Diagram



Appendix B

John Hopkins Research Evidence Based

Evidence Level and Quality:_____

Article Title:			Number:	
Author(s):			Publication Date:	
Journal:				
Setting:		Sample (Composition & size):		
Does this evidence address my EBP question?	☐Yes	☐No Do not proceed with appraisal of this evidence		
Level of Evidence (Study Design)				
A. Is this a report of a single research study? ***If No, go to B.***			☐Yes	☐No
1. Was there an intervention?			☐Yes	☐No
2. Was there a control group?			☐Yes	☐No
3. Were study participants randomly assigned to the intervention and control groups?			☐Yes	☐No
If Yes to all three, this is a Randomized Controlled Trial (RCT) or Experimental Study →	☐ LEVEL I			
If Yes to #1 and #2 and No to #3, OR Yes to #1 and No to #2 and #3, this is Quasi Experimental (some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, may have a control group) →	☐ LEVEL II			
If Yes to #1 only, OR No to #1, #2, and #3, this is Non-Experimental (no manipulation of independent variable, can be descriptive, comparative, or correlational, often uses secondary data) **or Qualitative** (exploratory in nature such as interviews or focus groups, a starting point for studies for which little research currently exists, has small sample sizes, may use results to design empirical studies) →	☐ LEVEL III			
NEXT, COMPLETE THE BOTTOM SECTION ON THE FOLLOWING PAGE, "STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION"				

Quality Appraisal of Research Studies			
• Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☐Yes	☐No	
• Was the purpose of the study clearly presented?	☐Yes	☐No	
• Was the literature review current (most sources within last 5 years or classic)?	☐Yes	☐No	
• Was sample size sufficient based on study design and rationale?	☐Yes	☐No	
• If there is a control group:			
o Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☐NA
o If multiple settings were used, were the settings similar?	☐Yes	☐No	☐NA
o Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☐NA
• Are data collection methods described clearly?	☐Yes	☐No	
• Were the instruments reliable (Cronbach's α [alpha] ≥ 0.70)?	☐Yes	☐No	☐NA
• Was instrument validity discussed?	☐Yes	☐No	☐NA
• If surveys/questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☐NA
• Were the results presented clearly?	☐Yes	☐No	
• If tables were presented, was the narrative consistent with the table content?	☐Yes	☐No	☐NA
• Were study limitations identified and addressed?	☐Yes	☐No	
• Were conclusions based on results?	☐Yes	☐No	

Quality Appraisal of Systematic Review with or without Meta-Analysis or Meta-Synthesis		
• Was the purpose of the systematic review clearly stated?	☐Yes	☐No
• Were reports comprehensive, with reproducible search strategy?	☐Yes	☐No
o Key search terms stated	☐Yes	☐No
o Multiple databases searched and identified	☐Yes	☐No
o Inclusion and exclusion criteria stated	☐Yes	☐No
• Was there a flow diagram showing the number of studies eliminated at each level of review?	☐Yes	☐No
• Were details of included studies presented (design, sample, methods, results, outcomes, strengths and limitations)?	☐Yes	☐No
• Were methods for appraising the strength of evidence (level and quality) described?	☐Yes	☐No
• Were conclusions based on results?	☐Yes	☐No
o Results were interpreted	☐Yes	☐No
o Conclusions flowed logically from the interpretation and systematic review question	☐Yes	☐No
• Did the systematic review include both a section addressing limitations and how they were addressed?	☐Yes	☐No

QUALITY RATING BASED ON QUALITY APPRAISAL

A **High quality:** consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence

B **Good quality:** reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C **Low quality or major flaws:** little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn

Appendix C

Literature Review Summary

Study	Design	Sample	Outcomes/Feasibility	Evidence Rating
Assadian, O. & Griessner, J. (2019). Use of medical gloves during wound care: blessing or curse? **Wounds UK**, 15(3).	Quasi-Experimental Study	Chicken breast inoculated with a Staphylococcus aureus strain, then the chicken breast was repeatedly touched using regular gloves and then with antimicrobial gloves. The gloves then touched various surfaces to examine cross-contamination.	Antimicrobial gloves reduce bacterial cross-contaminations of surfaces; however they did not completely eliminate cross-contamination, showing they are no substitute for proper glove technique and HH.	Level IIA
Bingham, J., Abell, G., Kienast, L., Lerner, L., Matuschek, B., Mullins, W…Kirk, J. (2016). Health care worker hand contamination at critical moments in outpatient care settings. **American Journal of Infection Control, 44, 1198-1202.**	Quasi-Experimental Study	17 health care workers from 4 outpatient wound care facilities were sampled during 46 patient care encounters to determine presence of health care-associated pathogens.	Healthcare workers acquired at least 1 pathogen on their hands during 28.3% of all patient care encounters. Hand contamination occurred in 19.6% of instanced where healthcare workers worse gloves during care compared with 14.6% while ungloved.	Level IIA

Clanfield, L. (2018). New resources support and inform homeless health and care home nursing. **Journal of Community Nursing, 32(1).**	Clinical Practice Guidelines	Review of resources available for community nurses who work with unhoused patients	Written by the Queen's Nursing Institute research officer, this work lists resources available for those who work with the homeless.	Level VA
Dauby, N., Deyi., V.Y.M., Delforge, V., Martiny, D., Mekkaoui, L., Hallin, M…Smeesters , P.R. (2019). Streptococcus pyrogenes infections with limited emm-type diversity in the homeless population of Brussels, 2016-2018. **International Journal of Infectious Diseases, 81, 52-56.**	Quasi-Experimental Study	61 patients who had a positive GAS culture at CHU Sanit-Pierre Hospital. Of those, 28 were homeless	48.3% of patients that had a positive GAS culture were homeless. The incidence rate was 100 times higher for homeless persons. Skin abscesses were more frequent in the homeless group as well (21.4% vs. 3.3%).	Level IIA
Lengerke, T.V., Kroning, B. & Lange, K. (2017). Patients' intention to speak up for health care	Qualitative Study	473 patients of eight diabetes outpatient clinics	Patients with higher education levels also had a higher intent to ask healthcare providers to perform HH, as well as a higher knowledge	Level IIIA

providers' hand hygiene in inpatient diabetic foot wound treatment: a cross-sectional survey in diabetes outpatient centers in Lower Saxony, Germany. *Psychology, Health and Medicine, 22*(10).			regarding the importance of HH.	
Lindberg, M., Lindberg, M. & Skytt, B. (2017). Risk behaviors for organism transmission in health care delivery: A two month unstructured observational study. International Journal of Nursing Studies, 70, 38-45.	Unstructured observational study/Qualitative Study	27 healthcare workers in two county hospitals were observed for 39 hours to track HH habits	In 39 hours of observation 497 errors regarding preventative hygiene occurred.	Level IIIA
Pennington, K., Coast, M.J. & Kroh, M. (2010). Health care for the homeless: A partnership	Qualitative Study	Statistics were collected on 151 individuals experiencing homelessness that were cared	Data gathered included demographics, and type of care given to patients (wound care, referrals for housing, case	Level IIIA

between a city and a school of nursing. **Journal of Nursing Education, 49(12).**		for by Project HOPE	management, or health agencies) and types of diagnosis made.	
Feleman, O., St. John, W. & Shaban, R.Z. (2015). Infection prevention and control in home nursing: Case study of four organizations in Australia. ***British Journal of Community Nursing, 20*(9).**	Qualitative Study	28 staff of four home health agencies across Australia were interviewed between 45 and 60 minutes each.	Community nurses and health workers face a variety of challenges regarding infection control, including the nature of the work environment, lack of access to appropriate infection control equipment, and the client's poor personal hygiene.	Level IIIB
Timmins, B.A., Riche, C.T., Saint-Jean, M.W., Tuck, J. & Merry, L. (2018). Nursing wound care practice in Haiti: facilitators and barriers to quality care. ***International Nursing***	Observational/Qualitative Study	15 health care providers on general surgery, orthopedic, and maternity units were observed, and 13 nurses, and 3 medical residents were interviewed.	Improvement in practice was found to be needed in: aseptic technique, HH, patient education, as well as assessments and documentation. 4 themes related to barriers and facilitators to performing quality wound care were found: 1) materials and resources; 2) nurse-to-patient ratios, workload and	Level IIIB

***Review*, 65, 541-549.**			support 3) roles and responsibilities of nurses; 4) knowledge and training of nurses	

Appendix D

Dartmouth Microsystem Assessment Tool

Clinical Microsystem Assessment Tool

Instructions: Each of the "success" characteristics (e.g., leadership) is followed by a series of three descriptions. For each characteristic, ***please check*** the description that ***best describes*** your current microsystem and the care it delivers *OR* use a microsystem you are *MOST* familiar with.

1. Leadership: The role of leaders is to balance setting and reaching collective goals, and to empower individual autonomy and accountability, through building knowledge, respectful action, reviewing and reflecting.	Leaders often tell me how to do my job and leave little room for innovation and autonomy. Overall, they don't foster a positive culture.	Leaders struggle to find the right balance between reaching performance goals and supporting and empowering the staff.	Leaders maintain constancy of purpose, establish clear goals and expectations, and foster a respectful positive culture. Leaders take time to build knowledge, review and reflect, and take action about microsystems and the larger organization.	Can't Rate
2. Organizational Support: The larger organization looks for ways to support the work of the microsystem and coordinate the hand-offs between microsystems.	The larger organization isn't supportive in a way that provides recognition, information, and resources to enhance my work.	The larger organization is inconsistent and unpredictable in providing the recognition, information and resources needed to enhance my work.	The larger organization provides recognition, information, and resources that enhance my work and makes it easier for me to meet the needs of patients.	Can't Rate
3. Staff Focus: There is selective hiring of the right kind of people. The orientation process is designed to fully integrate new staff into culture and work roles. Expectations of staff are high regarding performance, continuing education, professional growth, and networking.	I am not made to feel like a valued member of the microsystem. My orientation was incomplete. My continuing education and professional growth needs are not being met.	I feel like I am a valued member of the microsystem, but I don't think the microsystem is doing all that it could to support education and training of staff, workload, and professional growth.	I am a valued member of the microsystem and what I say matters. This is evident through staffing, education and training, workload, and professional growth.	Can't Rate
4. Education and Training: All clinical microsystems have responsibility for the ongoing education and training of staff and for aligning daily work roles with training competencies. Academic clinical microsystems have the additional responsibility of training students.	Training is accomplished in disciplinary silos, e.g., nurses train nurses, physicians train residents, etc. The educational efforts are not aligned with the flow of patient care, so that education becomes an "add-on" to what we do.	We recognize that our training could be different to reflect the needs of our microsystem, but we haven't made many changes yet. Some continuing education is available to everyone.	There is a team approach to training, whether we are are training staff, nurses or students. Education and patient care are integrated into the flow of work in a way that benefits both from the available resources. Continuing education for all staff is recognized as vital to our continued success.	Can't Rate
5. Interdependence: The interaction of staff is characterized by trust, collaboration, willingness to help each other, appreciation of complementary roles, respect and recognition that all contribute individually to a shared purpose.	I work independently and I am responsible for my own part of the work. There is a lack of collaboration and a lack of appreciation for the importance of complementary roles.	The care approach is interdisciplinary, but we are not always able to work together as an effective team.	Care is provided by a interdisciplinary team characterized by trust, collaboration, appreciation of complementary roles, and a recognition that all contribute individually to a shared purpose.	Can't Rate

6. Patient Focus: The primary concern is to meet all patient needs — caring, listening, educating, and responding to special requests, innovating to meet patient needs, and smooth service flow.	Most of us, including our patients, would agree that we do not always provide patient centered care. We are not always clear about what patients want and need.	We are actively working to provide patient centered care and we are making progress toward more effectively and consistently learning about and meeting patient needs.	We are effective in learning about and meeting patient needs — caring, listening, educating, and responding to special requests, and smooth service flow.	Can't Rate

 Side A ***Please continue on Side B***

Clinical Microsystem Assessment Tool - continued -

7. Community and Market Focus: The microsystem is a resource for the community; the community is a resource to the microsystem; the microsystem establishes excellent and innovative relationships with the community.		We focus on the patients who come to our unit. We haven't implemented any outreach programs in our community. Patients and their families often make their own connections to the community resources they need.	We have tried a few outreach programs and have had some success, but it is not the norm for us to go out into the community or actively connect patients to the community resources that are available to them.	We are doing everything we can to understand our community. We actively employ resources to help us work with the community. We add to the community and we draw on resources from the community to meet patient needs.	Can't Rate
8. Performance Results: Performance focuses on patient outcomes, avoidable costs, streamlining delivery, using data feedback, promoting positive competition, and frank discussions about performance.		We don't routinely collect data on the process or outcomes of the care we provide.	We often collect data on the outcomes of the care we provide and on some processes of care.	Outcomes (clinical, satisfaction, financial, technical, safety) are routinely measured, we feed data back to staff, and we make changes based on data.	Can't Rate
9. Process Improvement: An atmosphere for learning and redesign is supported by the continuous monitoring of care, use of benchmarking, frequent tests of change, and a staff that has been empowered to innovate.		The resources required (in the form of training, financial support, and time) are rarely available to support improvement work. Any improvement activities we do are in addition to our daily work.	Some resources are available to support improvement work, but we don't use them as often as we could. Change ideas are implemented without much discipline.	There are ample resources to support continual improvement work. Studying, measuring and improving care in a scientific way are essential parts of our daily work.	Can't Rate
10. Information and	A. Integration of Information with Patients	Patients have access to some standard information that is available to all patients.	Patients have access to standard information that is available to all patients. We've	Patients have a variety of ways to get the information they need and it can be customized to meet	Can't Rate

Information Technology: Information is THE connector - staff to patients, staff to staff, needs with actions to meet needs. Technology facilitates effective communication and multiple formal and informal channels are used to keep everyone informed all the time, listen to everyone's ideas, and ensure that everyone is connected on important topics. *Given the complexity of information and the use of technology in the microsystem, assess your microsystem on the following three characteristics: (1) integration of information with patients, (2) integration of information with providers and staff, and (3) integration of information with technology.*			started to think about how to improve the information they are given to better meet their needs.	their individual learning styles. We routinely ask patients for feedback about how to improve the information we give them.	
	B. Integration of Information with Providers and Staff	I am always tracking down the information I need to do my work.	Most of the time I have the information I need, but sometimes essential information is missing and I have to track it down.	The information I need to do my work is available when I need it.	Can't Rate
	C. Integration of Information with Technology	The technology I need to facilitate and enhance my work is either not available to me or it is available but not effective. The technology we currently have does not make my job easier.	I have access to technology that will enhance my work, but it is not easy to use and seems to be cumbersome and time consuming.	Technology facilitates a smooth linkage between information and patient care by providing timely, effective access to a rich information environment. The information environment has been designed to support the work of the clinical unit.	Can't Rate

 Side B

Appendix E

SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
-Motivated Nurses	-Poor management Support	-Increase funding	-Street Nurse office is moving to new/unknown area of town in 2020
-Nurses understand importance of HH	-Small unit means that nurses have a very large nurse/patient ratio (2 nurses for ~5,600 patients)	-Raise community awareness of importance of HH	-Grant funding could dry up at any time
-Small unit can make changes easier to implement		-Collaborate with other community providers including Kaiser hospitals and Mercy General Hospitals	
-Well funded via grants and private donations			
-Nurses are WTA certified			
-Strong relationship with Sutter Health and UCDMC			

Appendix F

Evidence-Based Change of Practice Project Checklist

STUDENT NAME: Amanda Ramos Sandoval

DATE:10/1/19 .

SUPERVISING FACULTY: Carla S. Martin .

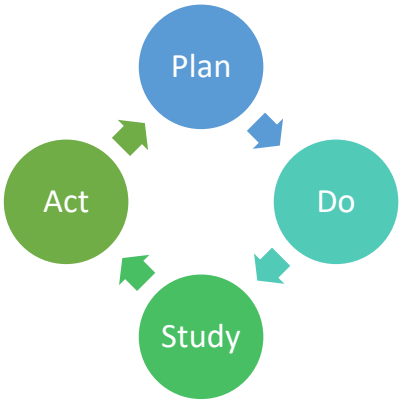
Instructions: Answer YES or NO to each of the following statements:

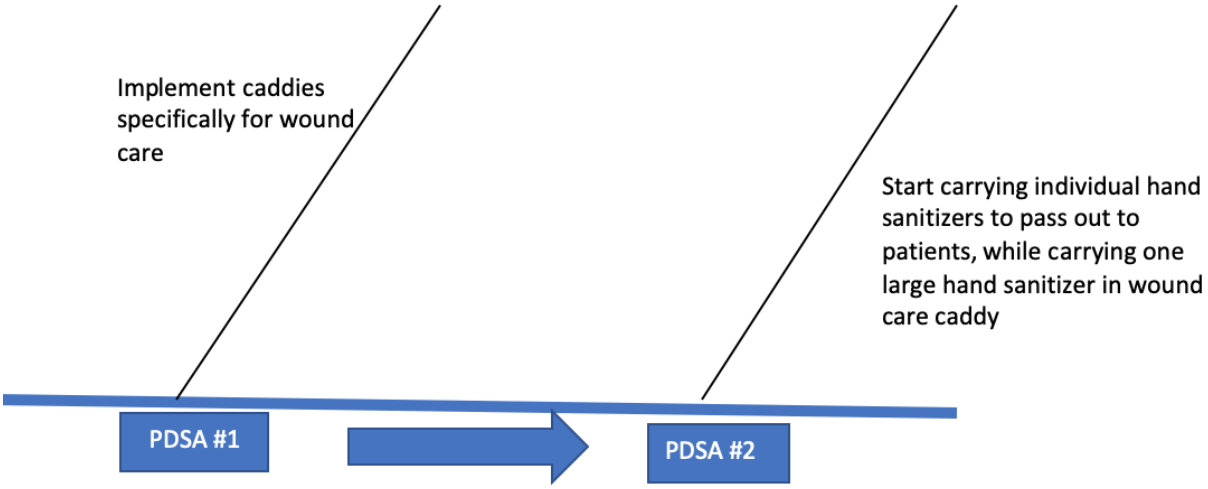
Project Title: Improving Hand Hygiene Immediately Before and After Wound Care in the Street Nurse Microsystem	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	X	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	X	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	X	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	X	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	X	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files. If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

Appendix G

PDSA Cycles





Appendix H

Project Charter

Improving the Rate of Hand Hygiene Immediately Before and After Wound Care in the Street Nurse Microsystem

Amanda Ramos Sandoval

University of San Francisco

School of Nursing and Health Professions

Project Charter

Title

Improving the Rate of Hand Hygiene Immediately Before and After Wound Care in the Street Nurse Microsystem

Global Aim

To increase the rate of hand hygiene in relation to wound care by changing the work process of the street nurse team of Sacramento, CA.

Specific Aim

To increase the rate of HH immediately before and after wound care by the street nurses to 90% by December of 2019. The baseline rate of HH is 20%.

Background

In January 2019 a point in time (PIT) count was conducted in Sacramento County to measure the amount of people experiencing homeless on any given night. The PIT found that there were 5,570 individuals experiencing homelessness, a 19% increase since 2017. The WellSpace street nurse team works in the field with people experiencing homelessness. While the two registered nurses of the street nurse team provide many medical and case management services, the service they provide the most of is wound care. This can be attributed to the fact that people experiencing homeless experience high rates of skin abscesses, 100 times the housed population (Dauby et al., 2019). Hand hygiene immediately before and after wound care is the best way to prevent the spread of infection (Lengerke, Kroning & Lange, 2017), however, working in the field creates a variety of challenges when it comes to hand hygiene, including lack of running water and a limited amount of space to carry supplies. The street nurse rate of hand hygiene immediately before and after wound care was only 20%.

Goals

The goal of this charter is to standardize and improve the rate of hand hygiene immediately before and after wound care by the street nurses in order to prevent cross-contamination, infection, antibiotic resistance and amputations by incorporating the following into practice:

1. Have nurses start using separate caddies for wound care supplies
2. Keep large hand sanitizer in wound care caddy, and carry several smaller sanitizers in backpacks to pass out to patients
3. When passing out individual hand sanitizers educate patient on importance of HH with wound care

Measures, Outcomes and Processes

Measure	Data Source	Target
Outcome		
Rate of HH immediately before and after wound care	Street Nurse Notes	90%
Processes		
Was the wound care caddy used?	Yes/No from Street Nurse Notes	90%
Was an individual sanitizer given to the patient?	Yes/No from the Street Nurse Notes	90%

Team

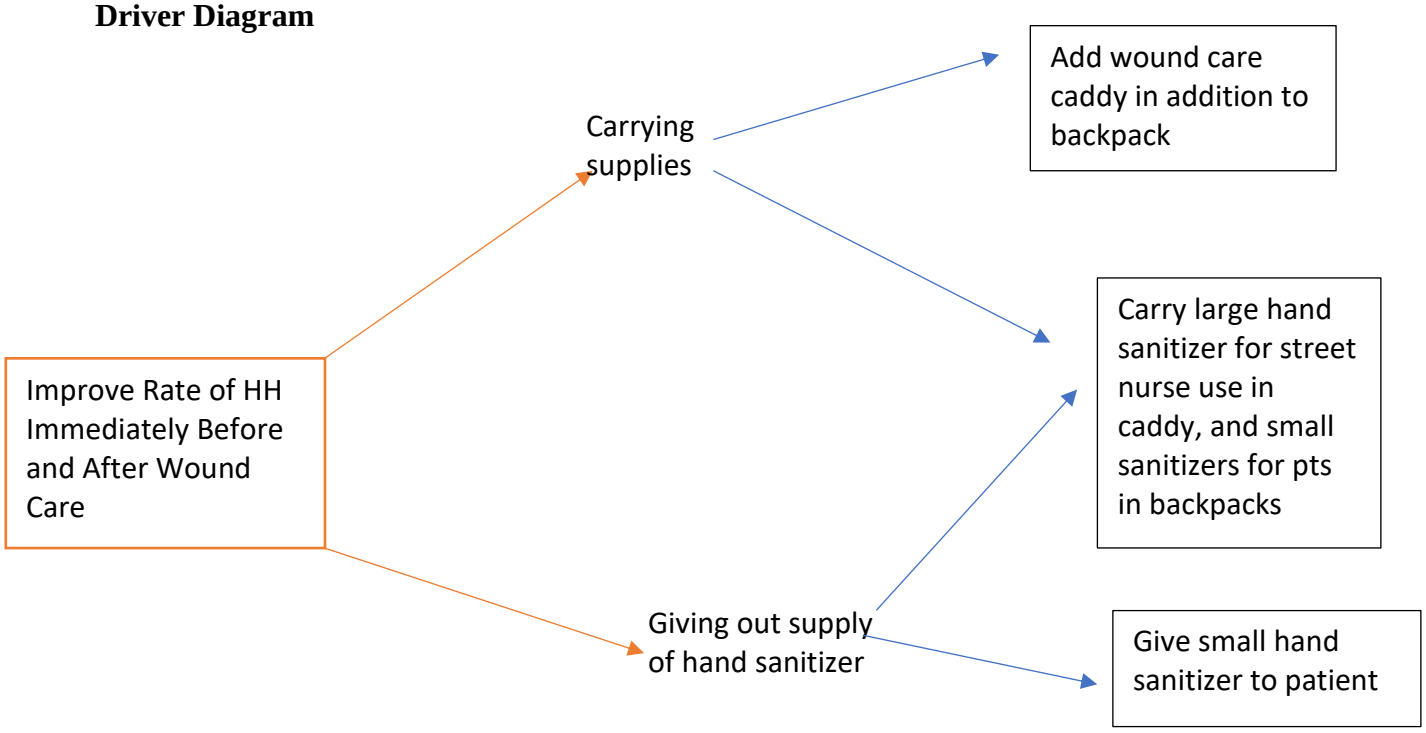
Street Nurse Supervisor: Gwen Jenkins, RN BSN

Street Nurse-Rennie Jemmings, RN

Street Nurse-Amanda Sandoval-RN, CNL

Administrative Assistant-Ger Xiong

Driver Diagram



Measurement Strategy

Background (Global Aim)

To increase the rate of hand hygiene in relation to wound care by changing the work process of the street nurse team of Sacramento, CA.

Population Criteria

Patients experiencing homelessness who receive wound care by the street nurse team

Data Collection Methods

The street nurses take notes on each patient interaction. While writing down these notes, the street nurses will make note of the occurrence of the three changes being implemented:

1. Did the nurses perform HH immediately before and after wound care
2. Was the wound care caddy used?
3. Was the patient given a small bottle of hand sanitizer along with wound care education?

Project Timeline

	07/19	08/19	9/19	10/19	11/19
Define Project					
Develop Aim					
Microsystem Assessment					
Develop Charter					
Create Measurement Outcomes and Processes					
Review Literature					
Identify Changes to Test					
Complete Charter					
Final Presentation					