


Development of a comprehensive infection control program for a short-term shelter serving trafficked women

Erin Jones BSN, RN, Staff Nurse | Mallory Loomis BSN, RN, Staff Nurse | Shalise Mealey BSN, RN, Staff Nurse | Meagan Newman BSN, RN, Staff Nurse | Holly Schroder BSN, RN, Staff Nurse | Ashlynn Smith BSN, RN, Staff Nurse | Mihkaila Wickline, BSN, RN, Staff Nurse 

School of Health Sciences, Seattle Pacific University, Seattle, Washington

Correspondence

Mihkaila Wickline, School of Health Sciences, Seattle Pacific University, Seattle, WA.

Email: mihkaiwickline@gmail.com

Abstract

A shelter for trafficked women has unique infection control needs that require a comprehensive infection control plan, balancing the needs of infection prevention with respect for the vulnerable population served. Using a trauma-informed model and evidence from infection control in other shelter settings, a group of senior baccalaureate students developed a program in a short-term shelter for commercially sexually exploited individuals that included a written infection control manual, policies and procedures, and staff training. This partnership between academia and a nonprofit agency was an experiential service learning project in the domain of public health nursing, allowing students the opportunity to apply evidence toward a sustainable intervention for the agency.

KEYWORDS

baccalaureate nursing student, infection control, infection prevention, public health nursing practice, sex trafficking, shelter, trauma-informed care, vulnerable populations

1 | INTRODUCTION

While awareness of an international sex trafficking industry has recently garnered the media's attention, domestic sex trafficking has received less awareness. However, domestic sex trafficking is happening in communities all over the United States; currently more U.S. citizens are sex trafficking victims within the US than foreign nationals (Hornor, 2015). While not possible to get an accurate number of exploited individuals, estimates suggest sex trafficking to victimize between 100,000 and 300,000 minors in the United States annually (Titchen et al., 2015). The International Labor Organization suggests human trafficking to be a \$32 billion per year industry, with twice as many people trafficked today as during the African slave trade (Dovydaitis, 2010). In Seattle, hundreds of people are sold each night for sex; many of them are minors (Real Escape from the Sex Trade, 2015). In a 2014 Arizona State University study, 6,800 unique buyers soliciting sex in the Seattle area were identified on a single web site over a 24-hr period (Real Escape from the Sex Trade, 2017).

Vulnerable adults and children are solicited by sex trafficking bosses (frequently called "pimps") online and in the streets. Individuals involved in prostitution who are under the control of a pimp do not keep the money that they make. Many individuals trafficked into prostitution ("the life") did so because they lacked other options for meeting basic needs for food and shelter, and emotional needs for love and belonging (Hornor, 2015). Trafficked individuals have a higher risk of infectious disease because of their poor health status prior to being trafficked, limited access to health care, substandard living conditions, restricted access to hygiene, incomplete childhood vaccinations, and occupational exposure to infected persons (International Organization for Migration, 2009), placing agencies who host them in need of a comprehensive infection control program.

In Seattle, a limited number of organizations support individuals involved in the sex trafficking industry. Real Escape from the Sex Trade (REST) is a nonprofit organization that provides multifaceted support for individuals who have either been in or are currently in "the life." The mission of REST is to provide pathways

to freedom, safety, and hope for victims of sex trafficking and people involved in the sex trade through programs of prevention, intervention, and restoration (REST, 2015). In fiscal year 2017, REST connected with over 480 victims and survivors of sexual exploitation (REST, 2017). Some REST staff members (Peer Support Specialists) are women who have experienced “the life” themselves and therefore, can provide emotional and psychological support from a place of understanding.

2 | BACKGROUND

Reducing sexual exploitation is the cornerstone of REST’s foundation and the overall mission of the agency. REST provides guests with a safe place that is tailored to their specific needs and is built on a framework of trauma-informed care (TIC). Such care is focused on the individual and is delivered in a way that acknowledges that past traumas affect current health behaviors and health care decisions. Foundational to TIC is an emphasis on avoiding retraumatization (McNiel, Held, & Busch-Armendariz, 2014). TIC is care that is individualized, non-judgmental, empowering, integrated, holistic and allows for the recipient’s self-determination (International Organization for Migration, 2009). This care is rooted in the understanding that without healing, the memories of traumatic life experiences are stored as physiologic reactions that are triggered by stimuli that might seem unrelated to the original experience (Reeves, 2015).

Women involved in the sex trade frequently report feeling judged by health care and service providers, which adds to their trauma and leads to mistrust and a lack of willingness to reveal personal information about their lifestyle. The lack of such information can frustrate the diagnosis, treatment, or prevention of illness (Hom & Woods, 2013). Understanding the fragility of this population is crucial to the development of any program. A hallmark of the trafficked individual’s experience while victimized is a lack of control over her body. When providing services to trafficking survivors, the imbalance of power inherent in the service provider-survivor relationship should be addressed to avoid retraumatization over the past abuses of power (Reeves, 2015).

Sexual exploitation is typically not the only challenge for this population. Many women struggle with coexisting conditions such as chemical dependency, mental illness, chronic pain, malnutrition, dental disease, Post-traumatic Stress Disorder (PTSD), and sexually transmitted infections (McNiel et al., 2014). Most women have experienced childhood abuse, intimate partner violence, rape, assault, or homelessness. A holistic perspective that addresses an individual’s past trauma and focuses on meeting their safety, physical, mental, social, and spiritual needs can provide quality resources and care to this population.

Infection control for this population is important, especially for the new Emergency Receiving Center (ERC), a seven-bed short-term, low-barrier shelter for adult women within the REST facility that opened 6 months prior to the nursing students’ partnership with REST. The REST leadership asked the group to focus their project on the development of an infection control plan. Need for such a plan was a function of recent situations with possible lice, methicillin-resistant *Staphylococcus aureus* infections and influenza cases that had spread to staff. The small staff (14) providing 24/7 coverage for the shelter made staff absence due to illness a hardship for the organization.

A large proportion of the REST staff were social workers, with the skills to work effectively with this population, but without the medical knowledge to create an infection control program. Indeed, an older study of communicable disease transmission in domestic violence shelters found that most shelters were staffed by counselors, with minimal availability of health care workers (Gross & Rosenberg, 1987). Knowing that guests may be reluctant to seek medical care, even when experiencing the relative safety and support while a guest at REST, made it important for staff to understand infection prevention and control measures for everyone’s safety.

Lack of infection control knowledge and crowded space can increase risk of spreading various diseases, especially since this population has higher risk of infectious illness and may not be up to date with the latest preventive vaccines, further compounding risk (National Health Care for the Homeless Council [NHCHC], 2016). Although shelters are not expected to administer health care services in the traditional sense, there is clearly a role in identifying and triaging contagious individuals who require health support as well as in reducing contagious disease transmission within the shelter (Villeneuve,

1. On a scale of 1-5, (1 being little knowledge or comfort, 5 being extensive knowledge or comfort) how knowledgeable/comfortable do you feel regarding infection control?
2. What do you want to learn about regarding infection control (prevention and spread)?
3. What is your preferred learning style (visual, auditory, tactile, etc.)?
4. Do you have any personal health concerns related to infection control in your work setting?
5. What infection(s) do you perceived as the highest threat in this setting?
6. What infection(s) have you seen most commonly at REST or in this population?
7. What is your opinion regarding vaccinations? Did you get a flu vaccine last year?
8. Who have you found to be the most helpful in accessing care for your guests?
9. What do you feel is pertinent for us to know as we develop this program?
10. Do you have any other comments, questions, or concerns?

FIGURE 1 Survey questions

Respiratory

- Group A Streptococcal
- Conjunctivitis
- Mononucleosis
- Meningitis
- Common cold (coronavirus and rhinovirus)
- Influenza
- Tuberculosis
- Pertussis
- Rubeola
- Rubella
- Mumps

Skin and Scalp

- Pediculosis
- Bed bugs
- Ringworm
- Scabies
- HSV-1
- Varicella

- Shingles
- Impetigo
- MRSA

Gastrointestinal

- *E. Coli*
- *Clostridium difficile*
- Salmonella
- Norovirus
- Rotavirus
- Hepatitis A

Blood Borne

- Hepatitis B
- Hepatitis C
- Human Immunodeficiency Virus

Vector

- Zika virus
- West Nile virus

FIGURE 2 Infections included in the infectious disease identification table (IDIT)

2010). In general, service providers are responsible for preventing and controlling infectious diseases processes by using personal protective equipment (PPE), maintaining a clean environment, providing hand sanitizer for staff and guests, along with posting signage in high use areas about hand hygiene practice and cough etiquette (NHCHC, 2016). Infection control challenges identified in temporary shelters include lack of guidelines for service providers, inability of agencies to afford or obtain basic supplies, lack of training regarding basic communicable disease and infection control principles among agency staff, and lack of trained staff to conduct screening of clients prior to agency entry (Leung, Ho, Kiss, Gundlapalli, & Hwang, 2008). Inexpensive preventive measures have been identified to reduce infectious spread: strict handwashing, paper towel dispensers, specific diaper-changing areas, cohorting sick persons, and screening on entry for infectious symptoms to refer for diagnosis and treatment (Gross & Rosenberg, 1987). While REST had many of these needed tools and resources in place, additional support was requested.

Six undergraduate students and one faculty mentor from a baccalaureate nursing program made up the academic team that assisted REST in developing a comprehensive infection control program. The Service Learning course paired small groups of senior students in their final quarter of nursing school with nonprofit agencies serving marginalized populations where, over the 10-week partnership, students developed an evidence-based, sustainable project of the agency's choosing. The REST staff asked the team to develop a plan that would keep both themselves, the shelter and drop-in guests healthy

by reducing the spread of infections. Because infectious diseases can be highly stigmatizing in this population, the students' goal was to design an infection control program that allowed for the sensitive treatment of guests (International Organization for Migration, 2009). A hospital-like, isolation-based infection control program would not work for the guests of the REST shelter, as it could easily be viewed as judgmental. Traditional isolation practices, while they may limit the spread of infection, were too clinical for the REST staff and seemed to be in opposition to a trauma-informed model. As Reeves (2015) eloquently stated, "Trauma-informed care requires constant analysis of the health benefits versus the emotional costs of continuing health care procedures or health-promoting behaviors" (p. 702).

3 | ACTIVITIES

3.1 | Needs assessment

Prior to developing the program and identifying infectious disease targets, the team created a survey to determine REST staff's knowledge level about proper infection control protocol, common infectious diseases, perceived disease threats at the facility, and health concerns (see Figure 1 for the list of survey questions used). The 10-question survey had nine fill-in-the-blank answers for staff to provide detailed responses. The students created the survey based on the information needed to inform the project. The survey was reviewed by the faculty mentor for completion and readability, which

TABLE 1 Infectious disease identification table (IDIT) excerpt, not whole table

Disease can be fully treated without professional medical care						
Medical attention may be needed for Rx or depending on severity						
Guest needs to seek medical attention immediately						
Respiratory						
Disease Name	Transmission	Prevention	Symptoms	Infectious period	Treatment options	Special considerations
Common Cold (commonly caused by rhinovirus and coronavirus)	Person-to-person via <i>droplet transmission</i> , but it can also be transmitted through direct contact with infected persons and surfaces	Proper hand hygiene, disinfection of frequently touched surfaces, do not share utensils and cups with others, avoid touching eyes, nose, or mouth with unwashed hands	Sore throat, runny nose, cough, sneezing, headache, body aches	One day prior to symptom development up to 5–7 days after becoming sick	<i>Supportive care</i> , acetaminophen (OTC) for fever reduction	Infection is most common in winter and spring but can occur in any season. Possible complications include pneumonia and bronchitis. (CDC, 2017a; Passioli, Maggina, Megremis, & Papadopoulos, 2014)
Influenza virus (Flu)	Person-to-person via <i>droplet transmission</i> , but it can also be transmitted through direct contact with infected persons and surfaces	Annual flu vaccine, proper hand hygiene, disinfection of frequently touched surfaces, do not share utensils and cups with others, avoid touching eyes, nose, or mouth with unwashed hands	Fever, chills, cough, sore throat, runny or stuffy nose, muscle and body aches, headache, fatigue, vomiting, diarrhea	One day prior to symptom development up to 5–7 days after becoming sick	<i>Supportive care</i> , antiviral medications*(Rx)	*Antiviral medications are most effective when administered within 24 hr of the onset of symptoms. Possible complications include dehydration, pneumonia, sinus infection, ear infection, and <i>sepsis</i> (CDC, 2016b, 2017d)
Tuberculosis (TB)	Person-to-person via <i>airborne transmission</i> (speaking, coughing, sneezing, or singing <i>Mycobacterium tuberculosis</i> particles into the air that are then inhaled by another person)	Pre-exposure <i>prophylactic</i> medications for those who are at a higher risk of developing active TB infection (HIV, IV drug use, sickness with other diseases that suppress the immune system) Appropriate TB screening programs for early identification Early, effective treatment of TB +individuals to prevent spread Cough etiquette	Cough that lasts 3 weeks or longer, chest pain, bloody cough, cough with sputum (a mixture of mucus and saliva), weakness, fatigue, weight loss, no appetite, chills, fever, night sweats	Individual can be infectious throughout the entirety of an active TB infection although infectious risk decreases after >2 weeks on therapy	Combination antibiotic (Rx) regimen for 6–9 months with the following medications: isoniazid, rifampin, ethambutol, and pyrazinamide*	*Drug regimen is strict and needs to be fully completed. Latent TB disease occurs when a person has previously been infected with <i>Mycobacterium tuberculosis</i> but has no symptoms of disease and is not at risk of infecting others. Those with latent TB disease should seek medical attention to receive medications to prevent the development of active TB disease (CDC, 2016a)
Glossary						
Airborne transmission	Infection spread via inhalation of small airborne droplets that hang in the air like invisible smoke					
Droplet transmission	Infection spread via large droplets from coughing or sneezing or from being in close proximity for long periods of time; usually within 3 feet					
Fever	Temperature above 100.8°F (38.2°C)					
OTC	Over the counter, medication can be purchased at a drugstore					
Prophylactic/Prophylaxis	Action used to prevent disease					
Rx	Prescription					
Sepsis	Bacteria in the blood stream typically from another source, that causes a serious infection that presents with fever, fatigue, jaundice, malaise, hypotension					
Supportive care	Rest, intake of adequate amount of fluids, use of heating packs, ice packs, meeting nutritional needs, OTC pain or fever relievers, etc.					

was at a 5th grade level. Students distributed the survey to 14 REST administrators, case managers, peer support specialists, and shelter staff who were given 5 days to complete; 11 surveys were returned for a completion rate of 78.6%.

Survey results showed that while only 27% of staff felt they had less than sufficient knowledge or comfort about infection control,

all 11 respondents identified topics for the team to address to overcome specific knowledge gaps. Most infectious disease concerns among the staff pertained to skin- and scalp-related infections such as bed bugs, scabies, and abscesses, and blood-borne infections such as human immunodeficiency virus (HIV). Results also showed that most staff had not received a seasonal flu shot that season.

Overall, the survey provided the basis for the infectious disease identification table (IDIT), Infectious Diseases Picture Booklet, the REST Infection Control Training Module, Abscess Kits and environmental, hand hygiene, and food safety guidelines.

3.2 | Development of written tools

REST's need for a comprehensive, easy-to-read infection control resource was the primary motivation for the creation of the IDIT. The team exchanged ideas with REST staff about illnesses seen in the shelter and infections that were easily transmitted person-to-person within the shelter environment or had high risk for complications. The team expanded the list following a comprehensive review of the literature and divided the infectious diseases into categories based on affected body systems or mode of transmission; the list was narrowed following team discussion around mode of transmission and

likeliness of occurrence within the shelter environment. The team intentionally excluded diseases transmitted solely through sexual contact as the focus was on illnesses that could be spread by individuals who were following the shelter guidelines (no sexual contact was permitted inside the shelter). A final list of 31 infectious illnesses was transferred into a table format describing the technical and common disease names, mode of transmission, prevention techniques, symptoms, infectious period, treatment options, and special considerations. As much as possible, all information included in the IDIT used layman terminology. For a complete list of the included infections, see Figure 2.

While the table format provided a quick infectious disease information reference, two other features were added to enhance usability: colorcoding and a glossary. Each infectious disease within the table was assigned a color (green, yellow, or red) depending on the potential transmission threat to others and/or urgency of medical

Hand Hygiene Guidelines

Performing hand hygiene is the most effective way to reduce spread of infection.

It is important to use hand hygiene in these situations:

- Before handling food
- Before and after eating
- Before and after cleaning a wound
- Before and after smoking
- After using the bathroom
- After wiping nose, coughing, or sneezing
- After changing a diaper
- After touching garbage
- After contact with blood or bodily waste
- After handling soiled equipment
- Before putting on gloves
- After taking gloves off

Hand washing

- Rinse hands under warm water, lather your hands with soap (liquid or bar), scrub your hands for at least 20 seconds, rinse your hands well under warm water, and then dry your hands with a paper towel.
- Use soap and water if concerned for clostridium difficile.
- Use soap and water if hands are visibly dirty or greasy.

Alcohol-based hand rubs

- If soap and water are not available to clean your hands, use alcohol-based hand rubs
- Apply gel to palm, rub hands together to spread the gel including underneath the fingernails, and do not perform any activities until hands are dry (15-20 seconds).

Taken from CDC, 2017c

Guidelines for Safe Food Handling

Sanitizing Solutions

- Use unscented chlorine bleach
- To sanitize cutting boards, surfaces, etc. use one tablespoon (15mL) in 4 L of water
- To sanitize dishes, dishcloths, etc. use one teaspoon (5mL) in 4 L of water

Receiving food

- Refrigerate and freeze foods as soon as possible.
- Do not use cans that are swollen, dented, or badly rusted.
- Do not use unpasteurized milk or ungraded eggs.

Food storage

- If repacking food, always date and label them before putting them away.
- When restocking, put foods expiring earlier in the front and the foods expiring later in the back.
- Avoid using products that are expired.
- Store raw meats or poultry on a plate on the bottom shelf of refrigerator to catch liquids from meat.

FIGURE 3 Guidelines



- Always refrigerate meat, dairy, shelled eggs, etc. If these foods are unrefrigerated it will allow bacteria to grow quickly.

Food Prep

- Perform hand hygiene frequently before, during, and after handling raw foods, solid utensils, equipment, or garbage.
- Avoid cross contamination by washing and sanitizing (with chlorine bleach) cutting boards, surfaces, and utensils after each use.
- Do not use same plate for raw meat and cooked meat.
- Wipe up spills immediately, bacteria can grow very quickly.
- Defrost foods in the refrigerator, microwave, or run under cold water.
- Do not thaw and refreeze meats.

Taken from CDC, 2017e

Guidelines for the Environment

A clean environment lessens risk of infections being spread to guests and staff.

Beliefs

- A surface should be clean before being sanitized
- There should be a space for cleaning equipment that is kept clean. New cloths or mop heads should be changed after each use.
- Garbage should be stored and disposed of using proper methods. Sharps should be placed in sharps containers to prevent accidental needle stick injuries.
- Cleaning materials must:
 - be appropriate to task;
 - be stored in a safe place;
 - be selected based on effectiveness, acceptability, safety and cost; and
 - **not be mixed** unsafely with other types of cleaner (ex. Chlorine and toilet bowl cleaner can form a toxic gas when combined)
- Personal protective equipment (PPE), like gloves, should readily be available to use

Procedure

- Cleaning should be done from least to most dirty. Solutions should be replaced when they look too filthy and after a spill cleanup.
- The surfaces that are most cleaned are ones that are consistently being used (ex. Countertops, table tops, floors) and are frequently touched (ex. Phones, door knobs, bathroom fixtures, kitchen fixtures).
- Blood or body wastes should be cleaned with disposable products that should be thrown away immediately, never reused. The area should be cleaned with gloves and with proper cleaning materials and then sanitized appropriately. (see cleaning guidelines)

Products to be used

- Cleansing should be done with proper detergent and water is usually acceptable.
- Commercial household cleaners are acceptable to disinfect frequently used surfaces and should be used following the manufacturer's guidelines.
- When mixing non-commercial sanitizing solution, use unscented chlorine bleach:
 - For cleaning cutting boards, surfaces, mix one tablespoon (15 mL) in four liters (3.5 quarts) of water.
 - Or buy a commercial product that contains bleach such as Clorox 35309 Healthcare Bleach Germicidal Wipe (found on amazon)
- When to clean?
 - Cleaning schedules should be created per the type of surfaces that are being cleaned
 - Spills- cleaned right away
 - Surfaces used for food preparation or after changing an infant's diaper should be cleaned after each use
 - Kitchen, bathroom, playroom should be cleaned once a day.
 - Guest rooms, living rooms, often used appliances (stove, washer & dryer) should be cleaned weekly and as needed.
 - Mattresses, pillows, bed, bedroom furniture should be cleaned in between guest usage.
 - Children's toys cleaned once a week.

** If concerned about possible infection make sure to clean sooner than recommended, these are just guidelines to follow.*

- When is sanitizing (killing pathogens that you cannot physically see) indicated?
 - Food preparation surfaces
 - Diaper changing surfaces
 - Children's toys
 - For a spill clean-up

Taken from CDC, 2017b

FIGURE 3 (Continued)

attention needed to provide treatment. Infections with a green mark were either a low risk of transmission and/or treatable at the REST facility without the need for professional medical care. A yellow mark signified the need for professional medical attention, depending on severity. Infections with a red mark were a serious threat and needed immediate medical attention. A glossary with potentially confusing or uncommon terminology was created to correspond with bolded words within the IDIT. See Table 1 for an excerpt from the IDIT.

The team also put together an Infectious Diseases Picture Booklet that corresponded to the communicable diseases in the IDIT, with different disease stages presented photographically comparing the disease to others with a similar presentation. For example, there was a set of three photographs side by side that compare scabies, acne, and bug bites. This book was laminated, so the staff could do an actual comparison next to the guest's physical signs and effectively clean the book afterward.

Guidelines for hand hygiene, safe food handling, and environmental cleanliness (see Figure 3) were also provided. These guidelines were tailored to REST per their current food plan, the available resources, and the staff activities. Abscess Kits were created with easy-to-understand instructions on how to identify and treat abscesses and when to refer for medical care. The kits contain a two-page handout in color in addition to basic wound care supplies and instructions in their use. See Figure 4 for Abscess Kit supply lists. The team provided colorful, laminated hand hygiene signs to post in each bathroom and kitchen, and made the recommendation for more wall mounted hand gel dispensers in the shelter space to promote hand hygiene.

3.3 | Staff education

At the conclusion of the 10-week project, the students presented an educational session at REST. Since most the REST staff

- Gallon ziplock for all supplies
- Two-page, color teaching sheet
- Paper measuring tape
- Paper tape
- Length of Tubifast
- Thermometer
- 3 2X2 gauze pads
- 3 4X4 gauze pads
- Hand wipes

Optional:

- Mepilex or Mepilex Lite
- Antibiotic ointment
- Alcohol prep pads

FIGURE 4 Abscess Kit supply list

identified themselves as being visual learners, the team concluded that the creation of a PowerPoint presentation, called the REST Infection Control Training Module, would be a useful tool for staff learning. The educational session was 90 min of didactic and experiential learning attended by six key REST staff members (Executive Director, Director of Programs, Shelter Supervisor, Peer Support Specialist, and two Case Managers). The curriculum for this session included the chain of infection concept, disease transmission methods, proper hand hygiene practices, environmental hygiene guidelines, safe handling of food, use of personal protective equipment (PPE), how to use the Abscess Kits, and the importance of flu vaccinations. The team provided REST with a small supply of donated gowns and masks with face shields to add to their existing supply of gloves. Proper PPE use was demonstrated step-by-step for members of the staff present at the training session. In addition, a glow-in-the-dark lotion, GloGerm[®], provided a visual/tactile representation of how pathogens remain on hands despite the use of PPE and hand hygiene. Throughout the staff training, the students discussed the importance of considering individuals' need for comfort and inclusion while ill and balancing those needs with infection prevention. The goal of containing the spread of illness without shunning or shaming individuals was discussed, as well as maintaining confidentiality of a guest's infectious illness.

4 | OUTCOMES

To evaluate staff knowledge at the completion of the REST Infection Control Training Module, the team compiled a 10-question posttest, with answers found among the presented material. Staff was encouraged to use the handouts, notes, and other materials provided throughout the training session to complete the posttest. Overall, the staff provided evidence through the posttest that they had learned the material and informally told students that they intended to disseminate the learnings to other shelter workers. The leadership team felt more equipped to reduce infections and infectious spread in the shelter.

Nine months after implementation of the program, staff were surveyed to see if outcomes were met. REST's ERC Supervisor collated the responses and reported that staff were handing out the Abscess Kits to shelter and drop-in guests, referring to the handwashing signs, using the face masks when appropriate, giving guests information to handle potential infections, and using the IDIT when confronted with a potential infectious issue. The handwashing signs were noted to be particularly helpful in setting norms around hand hygiene, especially prior to food preparation. The offer from a local drugstore of 50 free flu vouchers was taken up by half of the staff, volunteers, and guests. Staff appreciated the Abscess Kits and used the kits to help a recent guest with an infected wound from a dirty needle before she accessed medical care. Staff expressed an interest in more training around infection control and prevention as well as scheduling a debriefing at

staff meetings when infectious issues arise in the shelter to share learnings.

A limitation of evaluating this project is that baseline data on the incidence of infectious diseases among REST guests or spread of infectious diseases among guests and staff in the 6 months preceding the partnership between REST and the students was not collected prior to implementing the program. This made it impossible to measure true impact of reduction in infectious spread of illness even if postintervention data had been collected. A recommendation for future programs in similar settings is the collection of baseline data on infectious disease incidence and spread as well as postintervention disease incidence.

The Service Learning course allowed students to meet learning objectives including effective team building, learning about a marginalized population, implementing an evidence-based project, managing a project timeline, meeting the needs of stakeholders as well as fine-tuning writing and presentation skills. The placement at REST allowed this group of students to have their eyes opened to the problem of commercial sexual exploitation in a profound way, and the team collectively stated that this would impact their nursing practice. The students viewed the opportunity to engage in a meaningful and timely project that improved care in a public health setting as work that was worthwhile of their efforts. As one student commented on a final evaluation, "I genuinely like our project, so the program development process has been very exciting and fulfilling!"

5 | CONCLUSION

Nurses play a vital role in developing population-based interventions for the health of the community. Prevention of infection is an important nursing outcome. Nonprofit organizations without a nurse on staff can benefit from innovative partnerships with nurses in academia, governmental agencies, or by recruiting nurses to serve as volunteers. The partnership between a nonprofit serving trafficked women and a small group of baccalaureate nursing students was successful for a mutually beneficial Service Learning project. The team of students experienced working with a vulnerable population and translating evidence into a sustainable intervention. Students learned new skills as this population-based nursing intervention was developed while keeping in mind the delicate balance between infection control principles and trauma-informed care. The community agency received education and tools to keep their guests, staff, and volunteers safer from the spread of infection. Such partnerships are an effective way to meet baccalaureate nursing learning objectives in a way meaningful for students and to engage the local community with higher education.

ORCID

Mihkaila Wickline  <http://orcid.org/0000-0001-9570-6273>

REFERENCES

- Centers for Disease Control and Prevention. (2016a). Basic TB facts. Retrieved from <https://www.cdc.gov/tb/topic/basics/default.htm>
- Centers for Disease Control and Prevention (2016b). Seasonal influenza: Flu basics. Retrieved from <https://www.cdc.gov/flu/about/disease/index.htm>
- Centers for Disease Control and Prevention. (2017a). Common colds: Protect yourself and others. Retrieved from <https://www.cdc.gov/features/rhinoviruses/>
- Centers for Disease Control and Prevention. (2017b). Disinfection and Sterilization. Retrieved from <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html>
- Centers for Disease Control and Prevention. (2017c). Hand Hygiene Guideline. Retrieved from <https://www.cdc.gov/handhygiene/providers/guideline.html>
- Centers for Disease Control and Prevention. (2017d). Key facts about seasonal flu vaccine. Retrieved from <https://www.cdc.gov/flu/protect/keyfacts.htm>
- Centers for Disease Control and Prevention. (2017e). Preventing Food Poisoning. Retrieved from <https://www.cdc.gov/foodsafety/prevention.html>.
- Dovydaitis, T. (2010). Human trafficking: The role of the health care provider. *Journal of Midwifery & Women's Health*, 55(5), 462–467. <https://doi.org/10.1016/j.jmwh.2009.12.017>
- Gross, T. P., & Rosenberg, M. L. (1987). Shelters for battered women and their children: An under-recognized source of communicable disease transmission. *American Journal of Public Health*, 77(9), 1198–1201. <https://doi.org/10.2105/AJPH.77.9.1198>
- Hom, K. A., & Woods, S. J. (2013). Trauma and its aftermath for commercially sexually exploited women as told by front-line service providers. *Issues in Mental Health Nursing*, 34(2), 75–81. <https://doi.org/10.3109/01612840.2012.723300>
- Hornor, G. (2015). Domestic minor sex trafficking: What the PNP needs to know. *Journal of Pediatric Health Care*, 29(1), 88–94. <https://doi.org/10.1016/j.pedhc.2014.08.016>
- International Organization for Migration. (2009). *Caring for trafficked persons: Guidance for health providers* [PDF file]. Geneva, Switzerland: International Organization for Migration. Retrieved from https://publications.iom.int/system/files/pdf/ct_handbook.pdf
- Leung, C. S., Ho, M. M., Kiss, A., Gundlapalli, A. V., & Hwang, S. W. (2008). Homelessness and the response to emerging infectious disease outbreaks: Lessons from SARS. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 85(3), 402–410. <https://doi.org/10.1007/s11524-008-9270-2>
- McNiel, M., Held, T., & Busch-Armendariz, N. (2014). Creating an interdisciplinary medical home for survivors of human trafficking. *Obstetrics & Gynecology*, 124(3), 611–615. <https://doi.org/10.1097/AOG.0000000000000419>
- National Health Care for the Homeless Council. (2016). *Prevention & response to infectious diseases within the homeless population* [PDF file]. Nashville, TN: National Health Care for the Homeless. Retrieved from https://www.nhchc.org/wp-content/uploads/2016/05/fact-sheet_infectious-diseases_hrsa-approved-final-version-1.pdf
- Passioli, M., Maggina, P., Megremis, S., & Papadopoulos, N. G. (2014). The common cold: Potential for future prevention or cure. *Current Allergy and Asthma Reports*, 14(413), 1–11. <https://doi.org/10.1007/s11882-013-0413-5>
- Real Escape from the Sex Trade. (2015). A holistic, end-to-end approach against the sex trade. Retrieved from <https://www.iwantrest.com/services>
- Real Escape from the Sex Trade. (2017). *REST Annual Report*. Seattle, WA: Author.



- Reeves, E. (2015). A synthesis of the literature on trauma-informed care. *Issues in Mental Health Nursing, 36*(9), 698–709. <https://doi.org/10.3109/01612840.2015.1025319>
- Titchen, K. E., Loo, D., Berdan, E., Rysavy, M. B., Ng, J. J., & Sharif, I. (2015). Domestic sex trafficking of minors: Medical student and physician awareness. *Journal of Pediatric Adolescent Gynecology, 30*(2017), 102–108.
- Villenave, R. (2010). Planning for infection prevention and control for shelters [PDF file]. Retrieved from <https://www.co.washington.or.us/Housing/upload/infectioncontrolmeasures2011standardopt4.pdf>

How to cite this article: Jones E, Loomis M, Mealey S, et al. Development of a comprehensive infection control program for a short-term shelter serving trafficked women. *Public Health Nurs.* 2019;36:53–61. <https://doi.org/10.1111/phn.12551>