Maudie Mkandawire

 Nightingale College

 BSN 355

 Prof. Linda Benson

**Objective**

 The topic for my capstone proposal is hospital acquired infections, also known as

Nosocomial infections. These types of infections include CAUTI, (catheter acquired UTI),

ventilator associated pneumonia, central line associated infections and surgical site infections.

My proposal question is how do we as nurses decrease the incidence of hospital acquired

infections. My objective is increasing the awareness of staff and decreasing the rate that these

infections occur. Preventing the spread of these viruses, bacteria and fungus would be a good

start. It is obvious that if a patient is admitted without the infection but is tested positive for it

during their hospital, there was a mode of transmission involved be it direct or indirect.

According to the CDC, there is a chain of infection. It begins with a reservoir - the habitat in

which the agent normally lives, grows, and multiplies. Reservoirs include humans, animals, and

the environment. Next loop to the chain of infection is a port of exit, this is the route the

pathogen leaves its host. Direct transmission includes direct contact (skin to skin, kissing and

through sex) or droplet spread (from coughing and sneezing). Indirect transmission includes

airborne transmission.

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 **Background Analysis**

The reason I chose this topic for my capstone project is because I work in a hospital and I

noticed we have a lot of in-services and team huddles around infection control. We have an

infection control lady that comes through the unit every day and she goes to each room looking

at a few things. I once asked what she is looking for and she said “I look for

the following (i) if it is a shared isolation room, are the “bugs” the same. Meaning the patients

have the same or compatible bugs of infection, (ii) if there is someone a nurse or CNA in the

room, I look to make sure they are gowned up appropriately. (iii) If the patient has a foley or

central line, taking note of that to discuss with the Dr for the possibility of them being

discontinued and lastly, I check fingernails of the employees that do direct patient care”. At my

hospital there is a zero tolerance for direct care employees to have acrylic nails. According to an

article titled Banning artificial nails from health care settings, “it has been increasingly

evident that artificial nails worn by health care workers can contribute to health care

associated infections. Compared with natural nails, artificial nails have a higher rate of

colonization with gram-negative flora and yeast (Saiman, L et al). For there to be so much

emphasis on the control and reduction in nosocomial infection I figured it has to be important

and it was a topic I wanted to research.

 **Literature Review**

Healthcare or hospital acquired infections, simply known as HAI or HCAI, are infections

that patients acquire during their hospitalization. According to the authors of Cost-effectiveness

of interventions to reduce the risk of healthcare-acquired infections in middle-income countries,

“Hospital-acquiredinfection (HAI) contribute to prolonged hospital stays and account for a

substantial economic burden to healthcare systems” (Gamalathge, Kularatna, Carter,

Senanayake, and Graves 2019). These infections can be caused by bacteria, viruses, or they can

be fungal. These infections can be catheter associated infections (CAUTI), central line

associated, this would affect the bloodstream, and ventilator associated infection- that can lead to

pneumonia. Patients are also susceptible to surgical site infections post-surgery. The purpose of

this paper is to find ways to reduce the incidence of HAI’s. A literature review was conducted

using both electronic and manual resources. I also utilized the Center for Disease Control and

Prevention website. The literature review examined different ways to reduce the

occurrences of HAI’s. According to the CDC (Center for Disease Control), among some of those

solutions are handwashing, creating an infection control plan, making sure staff use gloves (and

use them correctly), providing infection control education (some people think if they wear gloves

and perform care, they can wash their hands with the gloves still on and therefore they are

disinfecting the gloves), provide PPE (and enforce with staff as well as visitors), educate on

respiratory hygiene/cough etiquette, device reprocessing and sterilization of reusable devices

(CDC, 2016) Handwashing is the single most important tool used to prevent the spread of

nosocomial infections. It seems basic to discuss but there is a technique to the madness. First wet

the hands thoroughly running water, lather up with soap and scrub palms, in between fingers,

nail beds, to the wrist, repeat vigorously for at least 20 seconds and rinse off. Alcohol-based

hand sanitizer (ABHS) effectively kills most germs carried on the hands of healthcare workers.

The literature has shown that the primary ways to prevent hospital acquired C. diff infections are

by thorough caregiver handwashing between patients, limiting antibiotic use, isolating patients

with known C. diff infection, effective cleaning of patient rooms using a spore killing cleaner,

and preventing cross contamination by appropriately cleaning equipment between patients and

wearing personal protective equipment (PPE) (CDC, 2012). Catheter-associated blood stream

infections. Central lines are catheters that end in a great vessel such as the aorta, vena cava,

subclavian, or femoral veins and are used for blood withdrawal, hemodynamic monitoring, or

infusions (CDC, 2018).

Catheter-associated urinary tract infections are the most frequent HAI. In the hospital setting, in

order to reduce infections in the category, the infectious control department needs to make sure

that if there is no medical need for a catheter then it needs to be removed. There are guidelines as

to what constitutes a medical need. For instance, if the patient has a neurogenic

bladder, then a catheter is required (because without it the patient can’t void). An ICU patient

requiring accurate input and output results is considered a medical need. What is not a medical

need would be “it’s the patient’s preference, so they do not have to get up each time they need to

void” (CDC, 2018).

 **Strategy**

 The strategies I will use are (1) in-services for the staff, (2) spot checks, (3) reward

system, (4) weekly line audit (foley and central line IV’s). **In-services**; there is always a

revolving door of new staff coming in as new hires and there are seasoned staff set in their ways

and have become lazy for lack of a better word. The new staff may not have previous hospital

experience and therefore do not know their role in stopping the transmission of infections so they

can benefit from in services as well as 1:1 education if need be. Seasoned staff may cut corners

and sometimes those corners can be the reason infections spread. WHO (World Health

Organization published an article titled Prevention of Hospital Acquired Infections: A Practical

Guide, in which they discuss the roles of different hospital staff from the doctors, management,

food service, nursing staff, laundry, maintenance, pharmacists and infection control staff. In it,

under the role for nursing staff, some of the responsibilities are maintaining hygiene, consistent

with hospital policies and good nursing practice on the floor, monitoring aseptic techniques,

including handwashing and use of isolation, and reporting promptly to the attending physician

any evidence of infection in patients under the nurse’s care. **Spot checks**, with this strategy I

would recruit staff on each shift to spot check their co-workers. If they see staff or family going

into an isolation room and don’t gown up with PPE gear say something, each encounter is a

chance for education. If they see staff not foaming in and out of patient’s rooms- say something.

Like the saying goes “I am my brothers’ keeper”. Once these offenders get written up and it

goes in their employee folder, it may be a wakeup call to do better. **Reward system**, this is a

piggyback from spot checks. If someone is caught doing the right thing to help stop infection,

they need to be recognized. Lastly, **weekly line audit**, this would give the team a chance to go

through every patient with a foley or central line and determine if there’s medical need for this

line, if there isn’t, it needs to be discontinued. If a patient has a neurogenic

bladder, or is incontinent and being treated for a stage 4 sacral wound, these would make a foley

necessary. If a patient is on TPN or multiple antibiotics these would necessitate need for a central

line.

 **Budget**

 The budget for this project is minimally $200 and this is for miscellaneous expenses. The

director of nursing has agreed to allow me to utilize all company equipment for this project. My

approach was to educate staff via in-services (company pays for employee’s time). In the in-

services I will provide literature with a variety of data. Paper, printer, stapler and all related items

are free of charge

 **Evaluation and Outcome**

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| Objective of Project  | Outcome of Objectives | Evaluation of Objectives |
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| Decrease the incidence of CAUTI | There was a significant decrease in CAUTI, implanted removal of all unnecessary lines | Comparing stats prior to implementation against current stats |
| Decrease incidence of VAP | No change noted | Comparing stats prior to implementation against current stats |
| Decrease incidence of Central line HAI’s | There was a significant decrease in CAUTI, implanted removal of all unnecessary lines | Comparing stats prior to implementation against current stats |
| Decrease incidence of wound site HAI’s | No change noted | Comparing stats prior to implementation against current stats |

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