



## REDUCTION OF HEALTHCARE-ASSOCIATED INFECTIONS

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### Abstract:

*The project examined the goals and behavioral objectives for the health promotion program development intended for reduction of Healthcare-Associated Infections (HAIs). The goals of this health promotion plan were in line with the conceptual framework of the Healthy People 2020 regarding prevention, reduction and eventually eliminating HAIs. It was found that a properly implemented, the incidence of some HAIs could be decreased by 70 percent. The implementation of preventive measures could cut down medical cost by an estimated savings of \$25.0 billion to \$31.5 billion. Prevention and elimination of HAIs would have significant contribution to efforts directed toward provision of safe care environments for patients. It was recommended that health promotion plan would help to educate nursing staff of regarding strategies to reduce HAIs.*

### KEYWORDS:

Healthcare- Associated Infections, Nursing Staff, And Antimicrobial Medications.

### INTRODUCTION

The paper covers the goals and behavioral objectives for the health promotion program development intended for reduction of Healthcare-Associated Infections (HAIs). The data supporting health promotion plan, strengths and competencies of this group of healthcare workers are covered. In addition, barriers to behavior change and the support needed for this group to make the change are explained. According to Healthy People 2020 (2010), HAIs include catheter-associated urinary tract infections, surgical site infections, ventilator-associated pneumonia (VAP) and clostridium difficile (c-Diff) infections. The only means of acquiring HAI is through medical care. It is believed that educating nursing staff on the reduction and prevention of HAIs would go a long way in helping to improve overall patient care. Reduction of HAIs rates is a major component of health promotion and health education. These infections are usually caused by three common organisms. They are methicillin-resistant *Staphylococcus aureus*, multidrug-resistant gram-negative bacteria, and *Clostridium difficile* (CDC, 2011; Nguyen, 2009). It has been concluded that proper hand washing practices, cautious identification and utilization of antimicrobial medications are some of the best practices by a health care provider in preventing HAIs. Improper selection of antimicrobials has been shown to have a negative impact on patients' outcomes by increasing patients' risks of acquiring HAIs (Yokoe, Mermel, & Anderson, 2008; Nguyen, 2009).

### Goals And Objectives

The goals of this health promotion plan are in line with the objectives of the Healthy People 2020 (2010) regarding prevention, reduction and eventually eliminating HAIs. More specific to this health

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promotion plan is the desirable outcome of over 70 percent reduction in catheter-associated urinary tract infections, surgical site infections, ventilator-associated pneumonia (VAP) and clostridium difficile (c-Diff) infections; and 100% improvement in hand washing among nursing staff of Davidson County. Pender, Murdaugh & Parsons, (2011) recommended that the healthcare practitioner and the client should both determine the desired health outcomes of the health promotion-prevention plan. In this case, the nursing staffs will be included in the planning phase in order to enlist their full participation. This desirable outcome will be measured by evaluating knowledge increase among participants based on pre and post plan surveys. Nursing staff will be educated on this plan over a period of 6 months (from May 1st to October 1st). After this implementation period, both the healthcare practitioner and the nursing staff will both review the plan and evaluate progress.

#### **Review of Data and Target Population**

Odle, Davidson, Frey, & Longe (2009) defined HAIs as infections that have no connection with the original condition patients present with during a particular clinical encounter. HAIs first appear after the patient is admitted to a hospital, nursing home, or other health care facility. Usual causative agents for HAIs include bacteria, viruses, parasites, or fungi. To qualify for the diagnosis of HAIs, infections must manifest after 48 hours of hospitalization. Infections noted post discharge home from the hospital can be considered as having a nosocomial source if the patient acquires the cultured organisms during his or her hospital stay. Recent studies by the Center for Disease Control and Prevention (CDC) reported that HAIs account for one of the top ten leading causes of death in the United States. CDC's National Nosocomial Infections Surveillance (NNIS) System follows HAIs. HAIs were reported in about 10 percent of patients admitted to American hospitals and 30 percent of those admitted to intensive care units. The statistics gets even more distressing; about 1.9 million infections and 99,000 deaths related to HAIs in 2008 were reported. More saddening are the CDC findings confirming that almost a third of the reported HAIs could have been prevented.

According to Healthy People 2020 (2010), HAIs have been shown to be the most widespread complications of hospital care. Many recent studies suggest that if preventive measures are properly implemented, the incidence of some HAIs can be decreased by 70 percent. It has also been proven that the implementation of these preventive measures could cut down medical cost by an estimated savings of \$25.0 billion to \$31.5 billion. CDC (2011) estimated that about 1 out of 10 - 20 patients admitted to the hospital would be diagnosed with HAIs while receiving medical treatments. HAIs have posed major public health challenge in America and Canada. They constitute a growing problem around the world. Countries such as France, Italy and Switzerland have experienced more prevalence of HAIs in recent years. The incidence of HAIs in developing countries is even more alarming; about 3 or more times higher than that of North America and Europe (CDC, 2011; Nguyen, 2009).

The target audience for this health promotion program has been identified as nursing staff of Davidson County, Nashville, Tennessee. According to Healthy People 2020 (2010), several studies have shown that conformity with the implementation of best practices to prevent HAIs is increased when health care workers are properly educated. One of the best practices by a health care provider is being cautious in identifying and using antimicrobial medications. Improper selection of antimicrobials has been shown to have a negative impact on patients' outcomes by increasing patients' risks of acquiring HAIs (Yokoe, Mermel, & Anderson, 2008; Nguyen, 2009).

#### **Strengths and Competencies of Target Audience**

Pender et al. (2011) discussed that an individual's cultural orientation has a great impact on their system of health care practices. With this in mind, the planner and the nursing staff will work together in harmony in identifying areas that the nursing staffs are already utilizing the available evidence-based practices as well as areas where further improvement of HAIs reduction practices is needed. This plan will be developed based on the identified areas for improvements. Several reasons motivate patients to seek medical attention. I believe that it is very important to educate nursing staff because studies have shown that nurses are at the forefront of providing care to clients at the bedside and in the community (Piette, Bibbins-Domingo, & Schillinger, 2006). It is believed that targeting this segment of health care workers will not only reduce the occurrence of HAIs but will also lead to better patient outcomes which will eventually help increase patients' satisfaction. It is also believed that this topic will not be new to most of the nursing staff who will participate in this program since studies have shown that intense education regarding the prevention of HAIs have increased in the recent years. This is why the program developer will distribute pre-program surveys to assess the current knowledge of participants regarding the available evidence-based practices.

**Health Model**

After careful review of the health models discussed by Pender et al. (2011), the planner chose the Diffusion of Innovations Model. This model was developed by Everett M. Rogers for the purpose of disseminating health behavior interventions that have been successfully tested with conventional use. Although, critics of the Diffusion of innovations model have expressed that this model is a highly complex, adaptive process; hundreds of scholars and publications have applied this model to their practices successfully. Others applied and expanded Rogers' original principles of early adopters, early majority, and laggards (Fahey & Burbridge, 2008).

Pender et al. (2011) defined diffusion as a means of communicating new idea through certain mediums over a period of time among members of a social system. These definitions will be incorporated into the health promotion – prevention plan. Rogers' key contribution to the study of diffusion of innovations was the innovation/adoption cycle (Collins, 1996). In this cycle, a new product or innovation of any kind only initially appeals to a few individuals. These early adopters subsequently influence a larger group called the early majority, who in turn influence the late majority, and soon only a few laggards remain. Nursing staff members who readily embrace the innovation involved with this program will be identified and they will act as “resource” to others. This, in turn, will constitute a valuable step in enhancing the sustainability of this program. Such innovation will be addressed in the planning of this health promotion program.

**Benefits Of Changes In Health Behavior**

Pender et al. (2011) recommends the benefits of changes in health behavior that is being sought should be frequently reiterated by both the nurse and the client. In this program, the planner will incorporate the benefits of the changes in health behaviors into the program and post these benefits in strategic places such as the elevators, walkways, nurses' stations and break rooms. These benefits are categorized based on their individual and organizational impacts.

Firstly, on the individual level, nurses who are able to provide a safe care for their patients would feel competent about their nursing practice. Prevention and reduction of HAIs means fewer chances of these nursing staff members contacting these infections and further reducing the risks of transmitting the infections to their immediate family members and the community. Less risk of contacting these infections means less 'sick days' on the part of the nursing staff.

Secondly, on the organization level, Healthy People 2020 (2010) suggested that if preventive measures are properly implemented, medical cost by an estimated savings of \$25.0 billion to \$31.5 billion will be expected. Moreover, it has been reported that the Centers for Medicare and Medicaid Services (CMS) promulgated regulations in 2008 denying payment for selected conditions occurring during the hospital stay and are not present on admission. Three of the 10 hospital-acquired conditions covered by the new CMS policy involve healthcare-associated infections, (Ode et al., 2010) which are a common, expensive, and often preventable cause of inpatient morbidity and mortality. In view of this, there is no doubt that organizations whose nursing staff participates in this program would not only save money, but have improved patient outcomes and patient satisfaction. Likewise, Nguyen (2009) discussed that continued surveillance and proper control program will not only lead to decrease in HAIs but would also lead to better prioritization of resources and efforts to improve medical care.

**Barriers To Anticipated Changes**

Pender et al. (2011) discussed that all individuals experience barriers to change. While some of the barriers may be not anticipated; the authors warned that other barriers may be planned for. If planned for, barriers' negative impacts could be weakened significantly. The authors grouped these barriers into two main categories and for this health promotion program; the barriers will be grouped as such. These barriers to effective health behavioral change include internal conflicts and environmental factors. Firstly, for the nursing staff involved with this program, internal conflicts may include lack of motivation on the part of the nurses to adopt change. Moreover, lack of appropriate nursing care skills, nursing staffs' skepticism that the behavior can be successfully changed, fear of unknown and fear of possibly losing their job if it turns out that their current infection control practices do not fit in the organizational goals. Secondly, environmental factors may include patient's family interference, inadequate time to complete paper work due to workload of patient care, high patient - to - nurse ratio making infection control more challenging. These anticipated barriers will be incorporated in the planning of this health promotion program and their negative impacts will be weakened by identifying the support that is required to sustain the change.

**Supports**

The support that is required to sustain the change includes computerized feedback and assurance

that nursing staffs would have the privilege of being anonymous. It is believed that will likely increase motivation and dispel fear of possible loss of job. Nursing staff members will be encouraged to participate in the planning process so as to enlist their full cooperation in the implementation phase. Moreover, close attention will be paid to each nursing staff's cultural health practices. Once needs are recognized through the pre-program survey assessments, interventions that are most effective will be reinforced during the implementation phase. Another support that will be utilized for these anticipated changes are the early adopters who will be given special training and encouraged to act as resource persons to those who might fall into the categories of early majority, late majority and laggards. Additionally, posters will be placed in strategic places such as computer screen savers, break rooms, staff restrooms and nurses' station to serve as constant reminder to participants.

Finally, staff member will be encouraged to hold one another accountable for their actions. This will be achieved by expressing concerns when another nursing staff is noticed to be deviating from the evidence-based practices. For instance, a participant who observes another nursing staff about to take care of a patient without washing her hand will be encouraged to express concern. This could be achieved by politely reminding the non-compliant nurse about the importance of practicing evidence-based protocols. The planner of the program will serve as a consultant and advocate for these community-based health plans and interventions.

### Conclusions

Designing a health promotion program that will educate nurses on the importance of preventing, reducing and ultimately eliminating HAIs is considered imperative to healthcare delivery. Safe patient care has become a major part of nursing practice. Prevention and elimination of HAIs will have significant contribution to efforts directed toward provision of safe care environments for patients. With this project, the writer has explored the goals and behavioral objectives for the health promotion program development intended for reduction of HAIs. The data supporting health promotion plan, strengths and competencies of nursing staff were studied. In addition, barriers to behavior change and the support needed for nursing staff to make the change were explained. Health promotion plan are recommended to help educate nursing staff of regarding strategies to reduce HAIs.

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