

# Infection control: nursing models and evidence-based practices research paper exa...

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Nursing care delivery models describe which roles the healthcare provider needs to perform, the responsibilities for treatment outcome, and which healthcare worker has the authority in decision-making. Examples of nursing care delivery models include primary nursing, team nursing, total patient care, functional nursing, and progressive patient care. Furthermore, each model can be modified to adapt it for different demands. For example, the partnership care delivery model is a modification of the primary nursing model, and modular nursing is a modification of the team nursing model.

According to a systematic review by Fernandez, Johnson, Tran, and Miranda (2012), team nursing proved to be the most effective model for decreasing medication errors, decreasing infection rates, and increasing patient well-being. Team nursing has several advantages that can help healthcare providers improve infection control. For example, all members in the team nursing model can participate in decision making and contribute to treatments with their special skills and expertise in different areas (Fernandez et al., 2012). The environment is also supportive for new and inexperienced nurses, which facilitates their learning (Fernandez et al., 2012). Because nurses in institutions that implement the team nursing model collaborate on creating care plans and follow predetermined policies, it is possible to develop effective infection control policies that all team members will follow and each team member can contribute to the implementation of evidence-based practices (EBP).

However, the team nursing model also has several disadvantages that can contribute to lower quality of infection control in healthcare facilities.

Because concept development in teams takes time, the personnel must

display high effort and consistency. Insufficient planning and poor communication can also reduce treatment quality and adherence to infection control standards. Therefore, addressing these weaknesses is essential for every healthcare institution that follows the team nursing model because steps in care delivery, unclear nursing roles, and poor communication can result in unsuccessful infection control implementation.

### **Association between Steps in Care Delivery and EBP**

The nursing process consists of assessment, diagnosis, planning, implementation, and evaluation. In each of those steps, nurses are responsible for implementing EBP practices that are associated with effective infection prevention and control. That can be done by implementing policies at an institutional level and behavioral influences on the individual level.

### **Assessment and Evaluation**

When gathering data and evaluating treatment progress, the nurses' responsibility is to perform tests relevant to the patients' condition. In some cases, palpation will be a necessary step to reaching the diagnosis and evaluating treatment effectiveness. According to evidence from studies assessing the risk of pathogen transmission via hands, nurses can acquire pathogens from patients by touching any area of the patients' skin or objects intact with their skin (Boyce & Pittet, 2002).

Using protective equipment and safety devices that adhere to quality standards is one of the main responsibilities of nurses for reducing the risks for infection (College Nurses of Ontario [CNO], 2009). However, protective equipment alone is not adequate without implementing hand hygiene

standards. According to Boyce and Pittet (2002), hand hygiene practices are relevant regardless of protective equipment quality. For example, the transmission of pathogenic organisms on the nurses' hands can result in subsequent transmission to medical equipment used to treat other patients (Boyce & Pittet, 2002). Therefore, using antiseptic agents after interactions with patients and objects from their immediate environment is critical for infection prevention (Boyce & Pittet, 2002).

Finally, each patient's background needs to be considered in the context of the practice setting. For example, nurses need to assess the patients' medical histories to determine immunization status and plan the treatment accordingly. With that approach, it is possible to improve infection prevention by protecting the patient, other patients, and the staff during care delivery (CNO, 2009).

## **Diagnosis and Planning**

When the diagnosis is reached, the nurses are required to have adequate knowledge of the patient's condition and plan accordingly. For example, if the nurse suspects higher possibilities of infection because of certain conditions or intake of immunosuppressant drugs during treatment, that information needs to be included in the diagnosis and used to plan care delivery. If a patient has high susceptibility to infections, the nurses will take appropriate actions, such as patient isolation and using additional precautionary measures when working with the patient.

## **Implementation**

Because the environment is consistently contaminated by the patients' flora, nurses must practice both environmental safety and hand hygiene when performing patient care. According to Boyce and Pittet (2002), a variety of care-related activities, such as taking the patient's pulse and blood pressure, are associated with the transmission of pathogens onto the healthcare providers. That puts the patients and the staff equally at risk for spreading infections and causing outbreaks during treatment implementation.

Hand hygiene, protective barriers, and medical equipment care are the major elements of infection prevention and control (CNO, 2002). However, low adherence rates in hand hygiene are common because nurses report lack of time, prioritizing patients' needs, lack of role models among superiors, lack of proper hand hygiene knowledge, and various other excuses (Boyce & Pittet, 2002). With low adherence rates in hand hygiene, the safety of protective barriers and medical equipment is also questionable.

Institutions can implement EBP for infection prevention and control by improving hand hygiene adherence through staff education. The staff needs to be informed that hand hygiene should be practiced after physical contact with patients or objects in their vicinity and glove removal (Boyce & Pittet, 2002). The selection procedure for hand hygiene agents also needs to be clear. For example, soap and water must be used when hands are visibly soiled while alcohol-based hand rubs should be used for routine decontamination (Boyce & Pittet, 2002).

## **Association between Nursing Roles and Providing EBP**

According to various epidemiologic studies, nursing assistants consistently showed lower adherence rates to hand hygiene standards than other nurses (Boyce & Pittet, 2002). The role of senior nurses is to adhere to infection control and prevention policies and serve as role models for the rest of the team. Organizational policies also need to make a distinction between role-specific procedures and general procedures that all employees must follow. Infection prevention and control should be the responsibility of all nurses, regardless of their role within the organization.

The team nursing model also has a significant disadvantage in defining individual roles because it opens the possibility of responsibility and care fragmentation. For example, one nurse may be responsible for routine care procedures while another nurse may administer pharmacological treatments to patients. However, daily team assignments in contemporary nursing models may vary significantly, which leads to reduced care continuity and does not allow the development of specific guidelines for implementing EBP. The introduction of EBP in nursing care delivery would require the time for testing, implementing, and evaluating new ideas, but without continuity in care, it is not possible to efficiently introduce EBP into clinical settings and revise those practices frequently (Retsas, 2008).

The implementation of EBP for nurses needs to be addressed at both organizational and individual levels. On the organizational level, lack of time and access to relevant journals are reported as the most significant barriers to EBP implementation in nursing (Retsas, 2008). On the individual level, nurses often do not feel that their skills and knowledge are adequate for

interpreting findings from scientific journals (Halcomb & Peters, 2009), so they rely mainly on personal experience and opinions of senior staff members when making decisions (Dalheim, Harthug, Nilsen, & Nortvedt, 2012).

## **Communication Strategies for EBP Implementation**

Aitken et al. (2011) managed to overcome those barriers with a multidimensional approach that included introducing journal clubs, group meetings, and EBP mentors in healthcare facilities simultaneously. In journal clubs, nurses could investigate latest research in their field and discuss their findings during group meetings. The EBP mentors were overlooking the implementation of EBP and assisted nurses in improving their skills and knowledge for investigating and interpreting evidence-based research results.

While Aitken et al. (2011) propose an intervention that can help individual nurses improve their inclinations towards EBP, Satterfield et al. (2009) proposed a transdisciplinary model that can be used to regulate EBP implementation at the organizational level. Although they have a different approach, communication is identified as a critical component for successfully integrating EBP in both models.

Organizations should support communication skill development among nurses because communication directly impacts treatment outcomes and patient safety. Communication is considered effective when a person has the ability to convey and receive information clearly. However, calm behavior during stress and mutual respect are also key factors for successful

communication (Robinson, Gorman, Slimmer, Yudkowsky, 2010). Therefore, organizations need to create an environment that supports mutual respect, especially because cultural diversity and differences can impact communication quality. Workplace conduct policies should also describe how calm behavior should be practiced in communication and during stressful situations. Information clarity is important, but that strategy alone is not effective unless organizations also address behavioral aspects of communication and promote mutual respect.

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