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# Nurse's performance in hospital infection control and patient safety

Desempenho de la enfermera em el control de infecciones hospitalarias y la seguridad del paciente

Atuação do enfermeiro no controle de infecção hospitalar e segurança do paciente

## ABSTRACT

This is an update article with the objective of highlighting the role of nurses in controlling hospital infection and patient safety, highlighting the fundamentals that guide the understanding of this phenomenon of indisputable epidemiological importance for health care. Method: This study is the result of a bibliographic investigation, where the knowledge produced on the theme was identified and analyzed through systematic literature review. Result: The nurse's important role in the development of infection prevention and control actions is highlighted as a strategy for implementing effective patient safety. Conclusion: The identified aspects are considered to contribute to reflections in the health care area, since they point out aspects of hospital infection control policies and practices with the potential to subsidize the integrality of patient safety.

**DESCRIPTORS:** Hospital Infection; Prevention; Nurses; Patient Safety; Epidemiological Surveillance.

## RESUMEN

Este es un artículo de actualización con el objetivo de resaltar el papel del enfermero en el control de la infección hospitalaria y la seguridad del paciente, destacando los fundamentos que orientan la comprensión de este fenómeno de indiscutible importancia epidemiológica para la atención de la salud. Método: Este estudio es el resultado de una investigación bibliográfica, donde se identificó y analizó el conocimiento producido sobre el tema mediante revisión sistemática de la literatura. Resultado: Se destaca el importante papel del enfermero en el desarrollo de acciones de prevención y control de infecciones como estrategia para implementar medidas efectivas y la seguridad del paciente. Conclusión: Se considera que los aspectos identificados contribuyen a las reflexiones en el área de la salud, ya que señalan aspectos de las políticas y prácticas de control de infecciones hospitalarias con potencial para subsidiar la integralidad de la seguridad del paciente.

**DESCRIPTORES:** Infección hospitalaria; Prevención; Enfermera; Seguridad del paciente; Vigilancia epidemiológica.

## RESUMO

Trata-se de um artigo de atualização com objetivo destacar a Atuação do Enfermeiro no Controle de Infecção Hospitalar e Segurança do Paciente, evidenciando os fundamentos que norteiam a compreensão deste fenômeno de indiscutível importância epidemiológica para assistência à saúde. Método: Este estudo é resultado de uma investigação bibliográfica, onde identificou-se e analisou-se o conhecimento produzido sobre a temática através da revisão sistemática da literatura. Resultado: Evidencia-se o importante papel do enfermeiro no desenvolvimento das ações de prevenção e controle de infecção como estratégia de implementação de medidas eficazes na segurança do paciente. Conclusão: Considera-se os aspectos identificados contribuem para reflexões na área da atenção à saúde, uma vez que apontam aspectos das políticas e práticas de controle de infecção hospitalar com potencial de subsidiar a integralidade da segurança do paciente.

**DESCRIPTORES:** Infecção hospitalar; Prevenção; Enfermeiro; Segurança do Paciente; Vigilância Epidemiológica.

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## INTRODUCTION

Great scientific and technological advances have occurred, and, however, nosocomial infection (NI) continues to constitute a serious threat to the safety of hospitalized patients, contributing to raise morbidity and mortality rates, increasing hospitalization costs through the prolongation of hospitalization, permanence and expenses with diagnostic procedures, not neglecting the patient's time away from work.<sup>1</sup>

According to the Ministry of Health<sup>2</sup>, nosocomial infection is defined as that acquired after the patient's hospitalization and manifests itself during hospitalization or even after discharge, when it can be related to hospitalization or hospital procedures. Hospital infections are also considered to be those manifested before 72 hours of hospitalization when associated with diagnostic and/or therapeutic procedures performed during this period.

The risk of infection associated with healthcare in some developing countries is up to 20 times higher than in developed countries. Patient safety is defined as the act of avoiding, preventing or improving adverse outcomes or injuries arising from the medical, hospital and home care process.<sup>1</sup> The issue is a serious global public health problem. Data indicate that, in developed countries, one in 10 patients is harmed when receiving hospital care.

Epidemiological surveillance is necessarily associated with practical action. The Hospital Infection Control Commission (CCIH - Comissão de Controle de Infecção Hospitalar) must have not only records of obtaining and calculating fees, but also evidence of contemporary interpretations of fees and analysis for action - when appropriate. The CCIH aims to maintain infection rates at the values considered accepted by the Ministry of Health, strictly following specific rules and ordinances of the Health Surveillance, promoting infection prevention actions.

Thus maintaining the quality of services offered to the population and the safety of their patients.<sup>2</sup>

The study's problem is due to the fact that HI is a public health issue and has, in most cases, a preventable character, considering that from simple actions, such as hand washing, to more complex actions. It involves ethics and professional responsibility towards your actions, aiming at maintaining/restoring the health of others. Therefore, we sought to gather information in order to answer the following research problem: What is the importance of the nurse's role in controlling hospital infection and patient safety.

In this sense, the epidemiological surveillance of HI is represented by the active, systematic and continuous observation of its occurrence and distribution among patients, whether hospitalized or not, events and conditions that affect the risk and aims at the timely execution of prevention and control actions.<sup>3</sup>

About 5% of patients admitted to general hospitals contract infection during hospitalization in developed countries.<sup>4</sup> In Brazil, although there are no national statistics that reveal the real magnitude of the problem, it is estimated that between 6,5% and 15% of hospitalized patients contract one or more episodes of infection (Ministério da Saúde, 1985), and that between 50.000 and 100.000 annual deaths are associated with its occurrence.<sup>5</sup>

Nursing plays an important role in infection control because it maintains greater contact with patients performing preventive and safety activities in all sectors, also participating in the training of health professionals and contributing to academic training, providing valuable collaboration to the CCIH.

In order for the work to be performed with the competence, agility and responsibility that the function requires, nursing professionals follow managed care protocols, well-described procedures and routines, which guarantees the quality of care work and provides a

safe environment for the professional and for the patient. The central objective is to identify the role of nurses in controlling hospital infection and patient safety.

The actions aim to reduce cases of nosocomial infections, the great villains of patient safety. Anvisa's goal is to reduce national infection rates by 30%, within three years. It is estimated that, in Brazil, the rate of nosocomial infections reaches 14% of hospitalizations. According to WHO data, around 234 million patients are operated per year worldwide. Of these, one million die from hospital infections and seven million have complications in the postoperative period. In Brazil, in recent years, the most extensive scientific events and the societies of specialists in the field of HI have been demanding new practices, both for their control and prevention, as well as for their evaluation and qualification. One of the effective measures to prevent infections and provide safety to patients and ensure that everyone is well informed about the care to be taken.<sup>6</sup>

## METHOD

It is a bibliographic study, which covers all bibliography already made public in relation to the topic of study, from single publications, magazines, books and research. Its purpose is to put the researcher in direct contact with everything that has been written on a given subject.<sup>7</sup>

Our research addresses the issue from the 1960s to the 21st century. The interest in carrying out the present study reports the relevance of hospital infection related to health care, contextualizing the interface between infection and patient safety and pointing out the role of nurses in this context.

The literary review was carried out in the period of October 2018, in the SciELO (Scientific Electronic Library Online) databases, in which 20 publications were analyzed, all of which were complete articles, made available onli-

ne, published in the national literature in the last ten years. In the selection of articles for analysis, the following descriptors were used: Infecção Hospitalar, Prevenção, Segurança do Paciente, Enfermeiro, Vigilância Epidemiológica; Among the inclusion criteria, articles based on scientific evidence, having been published in the stipulated period for the study and addressing the theme of nosocomial infection, Nurse and Patient Safety, articles with an empirical content were excluded.

The review was structured through the following path: objective of the review, search in the databases, establishment of inclusion and exclusion criteria for the works by reading the abstracts, searching the texts in full, defining the data to be collected from the selected productions, data extraction, analysis, presentation and discussion of results. It is considered that the identified aspects contribute to the reflections in the health care area, since they point out aspects of hospital infection control policies and practices with the potential to subsidize comprehensive care.

## RESULTS

From the analysis process of the articles found, five thematic axes emanated, including the concept of HI, the professionals' understanding of the term, as well as about HICC, highlighting the role of the nurse, in addition to the responsibility of health professionals regarding the control of nosocomial infection, as well as its prevention and the need to adapt the curriculum in relation to the topic in question.

## DISCUSSION

### Assistance x hospital infection

It is necessary to consider that IH is not any infectious disease, but due to the evolution of care practices forged in the care model with a curative characteristic, in which invasive procedures for both diagnosis and therapy predomina-

te. Thus, it is not a purely biological and universal phenomenon, but a historical and social one.<sup>6</sup>

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began to develop a formal system for the conquest of a distinct knowledge, grounded actions, conquering for nursing its original importance, that of restoring health through the use of cleaning, clean air, heat, diet and rest, that is, control actions over the environment. These are fundamental factors in preventing the control of nosocomial infections.<sup>3</sup>

Historically, in Brazil, the demand for the control and prevention of Health Care-Related Infections (HCRI), initially called hospital infection (HI), occurred in the mid-1970s, on the recommendation of the Ministry of Social Security and Assistance (MPAS - Ministério da Previdência e Assistência Social), from professionals who already studied and dealt with this type of occurrence in the country, and who had created the first HI Control and Prevention Commissions (CCIH - Comissões de Controle e Prevenção de IH) in the hospitals where they worked. This demand was largely due to the change in health policy in the period of the military dictatorship when curative assistance became dominant, with the proliferation of hospitals and their eminently interventional practices in the biological body.<sup>1</sup>

Biosafety consists of a set of prevention, reduction or elimination of risks that may compromise the health of people, the environment or the quality of the work carried out.<sup>8</sup> It is a functional and operational process of great importance in health, as it addresses not only Infection Control measures to protect the health care team and users, but also has a consistent role in promoting health awareness and preserving the environment in relation to the handling and disposal of chemical, toxic and infectious waste, reducing health risks and occupational accidents.

Only in 1997 did the Ministry of Health make the existence of a program for the control and prevention of these infections in hospitals (PCIH) mandatory, by Law No. 9431/1997, in force. It is extremely important to raise the gene-

ral awareness of all hospital employees through Education and Guidance in the practice of aseptic techniques, reaching from the cleaning servant to the General Administration. Success in prophylaxis and infection control depends on the permanent and systematic effort of all hospital personnel and not only of the C.C.I.H., in isolation, as this is a difficult job that requires the continuous and efficient collaboration of all.<sup>9</sup>

Effective measures must be taken to reduce and eliminate infections, providing greater safety to patients, visitors and hospital staff. Some general preventive measures for the prevention of HAIs are hand hygiene and training of the multidisciplinary team for general preventive measures. From 1999, with the creation of ANVISA, an autarchy linked to the Ministry of Health, the national coordination of control and prevention of these infections became its responsibility, with support to the State Secretariats.

To date, hospital infection rates of only 4 Brazilian hospitals are known, ranging from 4,1 to 13,2%. Behavior change, in the sense of rationalizing procedures and improving norms and routines, expresses an indispensable condition for infection control, requiring the motivation of professionals, promoting debates, training, and dissemination of information. These measures should generate improvements in the quality of care and decrease costs and infections arising from hospital practice, both for professionals and for patients and their families.<sup>10</sup>

### Hospital infection control and patient safety

With the participation of state health watchdogs, class councils, professional associations and government agencies, they came together to learn about the initiatives of Anvisa and the Pan American Health Organization (PAHO/WHO) to improve patient safety in services of health.<sup>6</sup>

In 2013, Ordinance No. 529<sup>11</sup> was published, instituting the National Patient Safety Program, with the general

objective of contributing to the qualification of health care in all health establishments in the national territory, which provides for actions aimed at preventing and controlling the HCRI

in the country. Undoubtedly, there is still much to be done in the area of prevention and control of HCRI, and its future is open, considering the new possibilities in relation to the current movements of quality and patient safety.

As the Nursing Service represents more than 50% of hospital staff, it is advisable to have a full-time Nurse representative to act as one of the executive and supervisory members of the Commission. In this sense, hand hygiene is an essential procedure. Our process is based on the recommendations of the WHO, which considers the need for hand hygiene, by all health professionals, at five different times, including before and after any contact with the patient. Approximately 20% to 30% of HAIs are considered preventable through intensive hygiene control programs, according to the European Center for Disease Prevention and Control - ECDC.<sup>12</sup>

### Nurse's performance in hospital infection control

The nurse is considered as a fundamental member of the Hospital Infection Control actions in the institutions, which is a great responsibility for these professionals who work in the infection control service, as they must justify their existence in the Hospital Infection Control Commission, due to their competence in performing its functions and not just by the force of a legal device. Keeping hospital infections under control is an ongoing challenge. Thus, professionals go into a battle, often solitary, of something that is below their possibilities, given the complexity of being a hospital infection controller.<sup>13</sup>

As Fernandes and Fernandes<sup>14</sup> explain, the participation of nurses officially in the scenario of the control of nosocomial infections was based on the English experience that led this professional as a nosocomial infection controller. However, when observing the history of nursing, one perceives the nurse involved in infection control since Nightingale.

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Nightingale demonstrated the effectiveness of cleaning and controlling the environment, proposed the isolation of patients, separating the most critical; tried to clean the materials. She introduced hygiene and sanitization of the environment as prophylactic measures of nosocomial infection. Another fundamental contribution of Nightingale was in the field of epidemiological research, as she was in the habit of recording her observations in great detail, allowing the analysis of the evolution of patients and the identification of risk factors.<sup>15</sup>

The role of nurses at the CCIH is of great importance, as they have the responsibility in their actions to attend not only directly to the patient, but also to other professionals in other areas having to ascertain the correct

actions performed by them. Their actions are dependent and related, as they routinely inspect, in all sectors, the development of the work of health professionals, elaborate and update the standard procedures, carry out epidemiological surveillance, among other functions.

## CONCLUSION

The importance of the CCIH and the nurse in hospital institutions is historically proven, with this, the dissemination of activities, their purpose and importance are a new perspective for the actions to be planned for the coming years in the search for prevention, infection control and safety of the patient. Improving the safety of health care reduces illness and damage, decrea-

ses treatment and/or length of hospital stay, improves or maintains the patient's functional status, and increases their sense of well-being.

It is possible to conclude that all the methods and techniques approached, however simple and elementary they may be, are of paramount importance in this effort to fight infections. The literature addresses, it is relevant to pay attention to the fact that in health care, at any time, whether in prevention, treatment or protection and rehabilitation, the patient must be seen as an integral being. Nursing professionals take into account the needs of the population and the rights to care, focused on the person, family and community, and defend health care, free of damage and risks that can be prevented, and that is accessible to the entire population. ■

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