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Federal University of Rio de Janeiro State



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## INTEGRATIVE REVIEW OF THE LITERATURE

Controle da infecção hospitalar: função do enfermeiro

Nosocomial infection control: role of the nurse

Control de infecciones: el papel de la enfermeira

Gelson Garcia Dutra<sup>1</sup>, Mônica Pereira da Costa<sup>2</sup>, Eliel Ott Bosenbecker<sup>3</sup>, Lílian Moura de Lima<sup>4</sup>,  
Hedi Crescência Heckler de Siqueira<sup>5</sup>, Diana Cecagno<sup>6</sup>

### ABSTRACT

**Objective:** To know the scientific production of Brazilian nursing on the control of nosocomial infections in the last five years. **Method:** The selection of articles was performed in following bases: SCIELO, LILACS and BDENF, by observing the inclusion criteria: studies in humans, in the form of published scientific articles, available in Portuguese, having free access and a nurse among the authors. **Results:** The sample consisted of 22 articles. Two themes emerged from the analysis: Knowledge of hospital infections and the use of PP by health teams; role of nurses in hospital infection control and the strategies adopted. **Conclusion:** Analysis revealed the great responsibility the nurse has in relation to the prevention and control of hospital infections. It is emphasized that the commitment of nurses in relation to the work they have with the team which they manage reflects on the care provided and supports a form of assessment of quality of care. **Descriptors:** Nursing, Nosocomial infection, Prevention & control.

### RESUMO

**Objetivo:** Conhecer a produção científica da enfermagem brasileira sobre o controle de infecções hospitalares nos últimos cinco anos. **Método:** A seleção dos artigos foi realizada nas bases: SCIELO, LILACS e BDENF; observando-se como critérios de inclusão: estudos realizados com seres humanos, publicados no formato de artigos científicos, disponíveis no idioma português, livre acesso e possuir, entre os autores, um enfermeiro. **Resultados:** A amostra constitui-se de 22 artigos. Na análise emergiram duas temáticas: Conhecimento das infecções hospitalares e o uso de PP pelas equipes de saúde; Função do enfermeiro no controle das infecções hospitalares e as estratégias adotadas. **Conclusão:** Evidenciou-se a grande responsabilidade que o enfermeiro tem em relação à prevenção e controle das infecções hospitalares. Ressalta-se que o comprometimento do enfermeiro em relação às ações que desempenha com a equipe a qual gerencia se reflete no cuidado prestado e corrobora em uma forma de avaliação da qualidade da assistência prestada. **Descritores:** Enfermagem, Infecção hospitalar, Prevenção & controle.

### RESUMEN

**Objetivo:** Conocer la producción científica de la enfermería brasileña sobre el control de infecciones nosocomiales en los últimos cinco años. **Método:** Los artículos fueron seleccionados en bases: SCIELO, LILACS y BDENF bajo estos criterios de inclusión: estudios en humanos, en forma de artículos científicos publicados, disponibles en portugués, libre acceso y entre los autores un enfermero. **Resultados:** La muestra estuvo constituida por 22 artículos. Dos temas surgieron del análisis: conocimiento de las infecciones nosocomiales y uso de PP por los equipos de salud, el papel de los enfermeros en el control de infecciones hospitalarias y estrategias adoptadas. **Conclusión:** Se reveló la gran responsabilidad que el enfermero tiene en relación con la prevención y control de infecciones hospitalarias. Se enfatiza que el compromiso del enfermero en relación con las acciones que desempeña con el equipo que gestiona refleja la atención prestada y apoya una forma de evaluación de la calidad de la atención. **Descriptor:** Enfermería, Infección hospitalaria, / Prevención & control.

<sup>1</sup>Nurses graduates by Anhanguera/Pelotas. Rio Grande do Sul (RS), Brazil. <sup>2</sup>Nurses graduates by Anhanguera/Pelotas. Rio Grande do Sul (RS), Brazil. <sup>3</sup>Nurses graduates by Anhanguera/Pelotas. Rio Grande do Sul (RS), Brazil. <sup>4</sup>Nurse. Master of Science. Studente doctoral of Post Graduate Program of Nursing Federal University of Pelotas (PPGEnf-UFPEL). Rio Grande do Sul (RS), Brazil. Temporary professor Department of Nursing Federal University of Pelotas. <sup>5</sup>Nurse and Hospital Administrator. Doctor of Nursing by Federal University of Santa Catarina(UFSC). Professor of Post Graduate Program of Nursing Federal University of Rio Grande(FURG). Professor and researcher of College Anhanguera/Pelotas. Rio Grande do Sul (RS), Brazil. Leader of GEES. <sup>6</sup>Nurse, Master of Nursing. Studente doctoral of Post Graduate Program of Nursing Federal University of Rio Grande(FURG). Professor Department of Nursing Federal University of Pelotas(UFPEL). Rio Grande do Sul (RS), Brasil. Member of GEES.

## INTRODUCTION

**H**ospitalization often is inevitable to carry out health care. However, the user's exposure to this environment makes him susceptible to developing infectious processes for hospital microorganisms that are found in this place. To work around this situation, measures are necessary to make the hospital environment less harmful and the Hospital Infection (HI) can be prevented and/or controlled.

The HI is defined as an infectious syndrome acquired subsequent to hospitalization or outpatient procedure and it may be manifested after discharge and may also be related to a procedure performed during hospitalization and, or treatment. In the hospital environment, the concern for infection control should be primordial for the healthcare professionals, involving, steadily, all actions and proceedings to which the user is submitted.<sup>1</sup>

In Brazil, nosocomial infections represent a public health problem, as evidenced by the increase in treatment costs, interdiction of inpatient units and high number of deaths, which culminated in the interference of the government, through the Ministry of Health (MOH), to create specific measures to prevent and control it. In this sense, they were instituted health policies for the hospital area demanding the creation of the hospital infection control committee (HICC). The MS sets HICC as an advisory body to the ultimate authority of the institution and for enforcement of actions to control hospital infection.<sup>2-4</sup>

The Federal Law 9431 of 1997 established the obligation of the existence of HICC and a program to control hospital infections (HICP). Ordinance 2616 of 12 May 1998 establishes guidelines and standards for the prevention and control of nosocomial infections and defines the HICC shall be composed of health professionals, who have graduation-level, formally designated and divided into consultants members: physician services, nursing, pharmacy, laboratory, administration and executors, preferably a nurse and other graduate professional.<sup>3,5</sup>

Studies have indicated the need to recast the Brazilian legislation, which currently has been limited to the problem of infections in hospitals and do not represent the current reality in the public health system (Sistema Único de Saúde - SUS). They also shows the necessity of using a new definition for the problem that is treated as "infection related to health care (IRHC)" and not only as "hospital infection".<sup>4,6-7</sup>

It is for the HICC to develop, to program, to maintain and to evaluate the HICP by adapting it to the characteristics and needs of the institution; to develop epidemiological surveillance of nosocomial infections, education and training of teams and controlling the rational use of antimicrobials, germicides and medical and hospital supplies. As a provided performer of HICP the nurse plays a key role in the implementation of all measures which are necessary to control and change the nosocomial infection.<sup>3</sup>

In this context, it is highlighted that nursing staff have responsibility for the prophylaxis and control of nosocomial infections, for acting continuously in direct assistance to the user, performing invasive procedures potentially contaminated. Therefore, it is

necessary that the nurse is constantly in a continuous study in relation to the issue, to work with the healthcare team and users, and thus he can keep the focus on scientific knowledge, maintaining critical ethical and assistance to the user.<sup>2,8</sup>

A study in the ICU of a hospital in Fortaleza/Ceará, in order to meet the difficulties that health professionals are in control of IH, has pointed out that the main problems for infection control are the large number of patients admitted, inadequate physical space and heavy workload.<sup>9</sup>

An important aspect to consider in IH is the indiscriminate use of antibiotics, identified by studies for showing no relationship between the emergence of multidrug-resistant bacteria and the inappropriate or indiscriminate use of antibiotics, and its spread is directly related to the failure to achieve appropriate hygiene hands and the use of other precautions.<sup>10-1</sup>

The use of broad-spectrum antimicrobials, increasingly common, has contributed significantly to the emergence of multidrug-resistant bacteria. This process occurs primarily by the development of genetic traits responsible for resistance and after they are introduced into the environment via users, visitors, healthcare workers or contaminated materials. The multi-resistant pathogens spread in different ways and in addition to increasing the cost of treatment; they are responsible for most of the deaths associated with HI, especially in intensive care units (ICUs).<sup>10-1</sup>

For 70 years, antibiotics have been used to treat patients who have bacterial diseases. Since the 40s, these drugs contribute significantly to the reduction of mortality associated with bacterial diseases. Its use is efficient and beneficial when administered and inferred correctly, but the indiscriminate use, and for many years, changed the organisms for what antibiotics were prepared to fight against and they become less effective. Individuals affected by antibiotic resistant microorganisms remain in hospital longer; spending on treatment is increased; and they are more likely to death due to complications associated with infection.<sup>4</sup>

According to the World Health Organization (WHO), the rational use of drugs occurs when patients receive appropriate to their clinical needs in the correct dose medications, for an appropriate period of time and at an accessible cost.<sup>12</sup>

Given the above, it appears that nosocomial infections can occur by iatrogenic or assistance due to the emergence of multi-drug resistant bacteria, which emphasizes the importance of nursing activities in the control and prevention of IH. Thus, it is appropriate to conduct this study and it is believed that disclosure of results may provide subsidies for health professionals, particularly in nursing, sensitizing them to reflect on their care practice, seeking to improve it by exercising an effective, integral and humanized care, and thus favoring the prevention and control of IH through Standard Precautions (SPs). The SPs are understood as a set of measures that are aimed at reducing the risk of exposure of healthcare workers to accidents as well as minimizing the possibility of contamination of clients. It is believed that nurses have great concern with hospital infection and therefore often conducts scientific studies and publishes its findings on this topic and thus seeks to contribute to the profession and the care with user.<sup>6,13</sup>

Based on this context, the main objective is: "Knowing the scientific production of the Brazilian Nursing on the prevention and control of nosocomial infection and to identify the main issues addressed on the subject in the last five years."

## METHOD

In preparing this integrative review they were observed the proposed stages following the indicated steps: preparation of the research question, objectives, establishment of criteria for inclusion and exclusion of articles, defining the search for information in the selected articles, analysis of results, discussion and presentation of results.<sup>14</sup>

For the study it was made a survey of the scientific literature indexed in the databases of the Latin American and Caribbean Literature on Health Sciences (LILACS), Database of Nursing (BDENF) and the virtual library Scientific Electronic Library Online (SciELO), using the descriptors registered in Health Science (DeCS): nursing; infection control; Hospital infection; /prevention & control. As inclusion criteria, they were introduced: scientific articles published between the years 2006 and 2011; conducted with human beings; available in the Portuguese language; free access; and have at least one nurse between the authors.

During the search process, performed by means of the selected keywords, 315 articles dealing with the topic were identified, but only 50 articles met the inclusion criteria. At the end of the reading stage and after eliminating duplicates, 22 articles were considered suitable and relevant to the topic which constituted the study sample.

To collect data a specific instrument was elaborated, which included the following items: identification of the author (s), title, the journal it was published, year of publication, objective, methodological characteristics used by the authors, main results found. To facilitate the analysis a summary table with the captured data was prepared. After successive readings of the data, we sought the units of record, i.e., the main elements that stood out from the text. And the, the units of record were grouped on themes by constituting these categories: knowledge of IH and the use of standard precautions (SP) by health teams, and nurse's role in controlling the IH, and the strategies adopted.

## RESULTS E DISCUSSION

In the analysis of 22 articles, it was found that 19 were published in nursing journals, and 3 in journals of other areas of knowledge. Regarding authorship, 21 articles were produced by nursing professors, with participation of academics, and an article was written

by practicing nurses. As the year of publication, it was found that there was a predominance of publications in 2009 with 06 articles, followed by 2007 and 2010 with 4, 3 with 2008 and 2011, and 2006 with 2 ones. Regarding the methodology, 12 articles were quantitative, 5 articles in qualitative approach, 3 integrative reviews, 1 experience report, and 1 reflective study. The database with the highest number of publications was the LILACS with 18 articles, followed by SCIELO with 03 articles, and BDEF - 1 article.

Regarding the manifest content of the sample, it was found the publications of nurses about infection control focus on the following themes: Knowledge about IH and the use of SPs by health teams, comprising 15 articles; and the role of nurses in controlling HI and the strategies adopted, with 8 articles.

#### **Knowledge about HI and the use of SP by health teams**

Hospital infection is defined as infection acquired after hospitalization, it can be manifested during it or after discharge when related to a procedure performed in a hospital or with internment.<sup>1,6</sup>

In Brazil, only in recent years there has been concern by the authorities on this topic, evidenced by taking important steps such as the enactment of laws and ordinances regulating the measures that must be implemented for the control and prevention of HI as well as investments in training professionals for the use of SP which is understood as strategies with the intent of reducing risks of complications related to nosocomial infection in the daily work of health professionals. Thus, such measures include hand hygiene, use of gloves, apron, goggles, masks, proper disposal of needle stick, are fundamental to the control and prevention of HI.<sup>6,13</sup>

It is known that the hands of health professionals are important sources of contamination in the hospital environment. Several years ago, researchers demonstrated its relationship with the occurrence of infections in healthcare units, what indicate measures like hand washing for the effectiveness of combat HI's.<sup>16-9</sup>

However, studies show that professionals fail for various reasons in using these measures, making it more vulnerable to occupational hazards and contributing more significantly to increased rates of morbidity and mortality for HI's of assisted users. Some health professionals underestimate the risks they are exposed to and justified it because of overwork, emergency to perform procedures, loss of ability with the use of gloves, unforeseen situations, low-risk patients, forgetfulness and difficulty of access to personal protection equipment (PPE).<sup>9,11-9,20-1</sup>

Regarding institutions, aspects related to architecture and planning of spaces influence the adherence of SP, such as inadequate deployment of taps and sinks, and the difficulty of access to products for hand hygiene, corroborate the high rates of HI.<sup>2,18,22 to 3</sup>

As observed in the sample of this study, a standard precaution is essential for the control and prevention of HI. In general, professionals know the need and the effectiveness of such measures, but by behavioral, addictive and unsafe factors, they neglect and fail to meet the recommendations of regulatory institutions. Although aware, they are exposed to occupational hazards and contribute to malpractice in patient care, exposing them to pathogenic microorganisms, which reflects the current status of many health institutions, which are often forbidden by outbreaks of multi-resistant germs infections which are

preventable by simple measures, inexpensive and very effective, such as hand hygiene.<sup>11-3, 16-9, 20-5</sup>

#### **The role of nurse in controlling HI and the strategies adopted**

The role of nurses in infection control began with Florence Nightingale in the nineteenth century, through their actions with the hospitals in the Crimean War, which occurred between 1854 and 1856, that dramatically reduced the mortality of wounded soldiers. It was used hygiene and environmental control, revolutionizing the ways of care and affirming the need for nurses to adopt new habits for a more effective careful.<sup>25-6</sup>

From the articles studied 08 ones deal about the role of nurses in the control and prevention of HI, highlighting the need for them to keep up-to-date regarding the subject and enhancing the condition of educator and multiplier of good habits with the team under his supervision. It is inherent to the nurse the role of leadership and to create methods and establish routines that enhance their work by promoting a less iatrogenic assistance.<sup>16,25 to 9,30</sup>

According to data obtained from the sample, it is possible to realize that for the nursing can take over their function and develop habits of promotion and prevention of IH, as the use of SP, it is necessary that these professionals have a more committed to the training of health users of health services, especially those admitted to hospital. The higher education institutions (HEIs) play a fundamental role in this scenario, as they form professional and conduct. All they need to think of new ways of working content, encouraging critical and reflective reasoning of nurses, besides equipping their laboratories, so that the practices are carried out in the best possible conditions favoring learning and culminating in changing behavior.<sup>8,30</sup>

The code of nursing ethics points as a duty of the professional Nurse to ensure to the person, family and community free assistance of damage from malpractice, negligence or recklessness. It also highlights in its Articles 69 and 70 the responsibilities and duties of the nurse who should encourage, promote and create conditions for the technical, scientific and cultural improvement of the team under his guidance and supervision.<sup>31</sup>

The nurse, to be part of the healthcare team, regardless of composing team of CCIH, for the functions performed in the hospitals, should be able to develop surveillance actions of HI, and act as a multiplier of prevention. This activity is facilitated through the creation of internal protocols for the prevention and control of HI, which are posted at strategic locations, allowing the team is always in contact with various sources that reinforce the need to adopt appropriate behavior to minimize risks to occurrence of HI.<sup>8,11-8,29</sup>

The training of professionals involved in the work of the hospital infection control (CCIH) of health services commission is very important to achieving and encourage health teams to adopt responsible attitudes for the safe attending of care. This practice when performed properly promotes the adoption of effective measures for the prevention of IH and the interruption of a chain of irresponsible and misguided attitudes that put the health of assisted patients at risk.<sup>19,32</sup>

Researches show that continuing education is a key to reducing HI's factor, and that the performance of professional Nurse is essential to the success of the measures necessary to combat it. This fact is given for this professional maintain greater contact with other

professionals and to be present on all shifts, enabling better surveillance and monitoring cases.<sup>16,18,27</sup>

It is highlighted the importance of the nurse as encouraging the adoption of protective measures, such as SP. These attitudes, considered safe, provide assistance with less risk of damage for users as well as professionals who suffer the consequences of inappropriate actions, such as occupational exposure to biological material, often attributed to nonuse of EPI's.<sup>16-8, 23-9</sup>

## CONCLUSION

The objectives of this study were all achieved and the results of this study confirm the assumptions of this proposal. The data showed that the nursing scientific production on the theme allows us to highlight the concern of nurses in relation to the subject and emphasizes that the use of SP is essential to combat and control of HI.

The studies analyzed in the sample of this study confirm the growing concern of nursing professors to deepen the knowledge gained from academic and professional life and shows concern of this category in offering quality services.

It is noteworthy the emphasis on the theme denoting with it the great responsibility that the nurse has in relation to the prevention and control of HI. It is perceived the commitment of this professional with actions he performs, and his concern with the team he manages, since it is known that the results are reflected in the care given and corroborated in an assessment of the quality of care provided to the user.

It is emphasized that the nurse, regardless of being part of CCIH, is a key to the dissemination of knowledge, favoring that the daily and unrelenting stimuli promote the team with a spirit of solidarity, understanding and commitment to the provision of care that reduces the chances of occurrence of HI.

It is believed that continuing education of staff, using discussion and reflection group, is the best way so that there is a behavioral change of workers, enabling reduction of high rates of HI, and thus providing a more quality care and consequently professionals most recognized by the user and society in general.

It is noteworthy that health institutions need to enhance health professionals, including nurses, offering them adequate working conditions and times of meetings to update their professional knowledge. These attitudes are able to encourage the discovery of new ways of thinking and acting, encouraging the active participation of nursing staff, particularly nurses, to innovate, creating and adopting strategies to transform the behavior of the team, making them more efficient in the prevention and control of HI. This encouragement by health care institutions can become the institutions and the services more qualified and accredited.



Added to this, the expectation that, through the findings and discussion of this study, it can be possible to contribute to nursing practice more free from HI and strengthening the trajectory of quality care.

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Contact of the corresponding author:  
Gelson Garcia Dutra  
Rua Marcos Costa 214, bloco 1 apartamento 104.  
Fragata, Pelotas(RS), 96040-750.