REVIEW ARTICLE

CONTEXTUAL ANALYSIS OF THE ROLE OF THE HEALTHCARE-ASSOCIATED INFECTIONS CONTROLLER

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Highlight:
(1) Pictogram of the Levels of Action of the Healthcare-Associated Infection (HAI) Controller.
(2) Expansion of knowledge on strategies to engage professionals in HAI control.
(3) Nurses' autonomy in the prevention and control of preventable infections.

ABSTRACT

This study aims to critically analyze the contextual aspects of the role of the Healthcare-Associated Infections (HAIs) Controller. It is a contextual analysis of the role of the HAI Controller, based on the perspective of Hinds, Chaves, and Cypress, and operationalized through a scoping review. The search resulted in a final sample of 58 studies. The following contextual levels were identified: metacontext (standards, resolutions, laws, and global, international, and national public policies related to the theme); general context (responsibilities of HAI Control); specific context (strengths and challenges of HAI Control); and immediate context (the role of the HAI Controller and their specific actions). Identifying the interactive levels of context enabled a comprehensive reflection on how the role of HAI controllers is directed toward reducing preventable infections through prevention and control measures, addressing various aspects of both the environment and safe practices, ultimately improving the quality of patient care.

Keywords: cross infection; infection control; nursing; delivery of health care.

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INTRODUCTION

To effectively promote individual health and well-being, it is necessary to continuously evaluate the quality of healthcare services. This ensures improved care delivery and enhances patient safety. However, it is important to highlight that several adverse events affect the quality and safety of care, with Healthcare-Associated Infections (HAIs) representing a significant example[1].

HAI formerly known as Hospital-Acquired Infections, have acquired new significance through studies that have clarified these infections – previously defined as infectious syndromes – can be acquired not only in hospital settings but also in other healthcare environments, such as outpatient clinics, long-term care institutions, dialysis centers, and dental offices[2].

HAI have significant impacts, including prolonged patient hospitalization, increased healthcare costs, and, in severe cases, death. Annually, approximately 1.5 million people are affected by these infections, making them a major public health challenge worldwide. In this regard, the Brazilian Ministry of Health implemented the Hospital Infection Control Programs (PCIH in Portuguese) as a strategy to reduce HAI and to promote the quality of prevention and control efforts for these adverse events[3].

In addition to the PCIH, the mandatory establishment of the Hospital Infection Control Committee (CCIH In Portuguese) was enacted through Federal Law No. 9.431 of 1997. The CCIH is defined as an advisory body to the institution's highest authority and is responsible for implementing hospital infection control measures[4].

Ordinance No. 2.616/1998 regulates the composition of the CCIH, stating that it must be composed of healthcare professionals with higher education degrees. Controllers are responsible for reducing HAI[5].

The same ordinance designates nurses as preferred participants and active implementers of the CCIH guidelines. Nurses play a fundamental role within their nursing teams, continuously providing direct patient care and performing invasive and potentially contaminating procedures. Therefore, these professionals carry increased responsibility for infection prevention and control[5].

For nurses to collaborate effectively with the healthcare team and patients, they must remain continuously updated – both on the topic of HAI and on their role as controllers—grounding their actions in scientific knowledge. However, despite the importance and regulatory framework guiding the nurse's role in HAI prevention and control, the concept remains insufficiently clear to institutions, managers, and even to the professionals themselves who are responsible for these actions[6].

Given that nurses require knowledge of this topic to promote patient health, to explain and manage the outcomes of their care, and that contextual interaction facilitates understanding of phenomena – from a broad and comprehensive meaning to a more specific one – this study aims to critically analyze the contextual aspects of the role of the HAI Controller.

MATERIALS AND METHODS

This is a contextual analysis of the role of the HAI Controller, conducted from the perspective of Hinds, Chaves, and Cypress[7]. The analysis was operationalized through a scoping review, following the recommendations of the Joanna Briggs Institute Manual[8]. For the analysis, the four interactive levels of context (immediate, specific, general, and metacontext) were used. These levels are distinct from one another to facilitate the understanding of phenomena, ranging from a highly specific to a more comprehensive meaning.

The search was conducted in September 2022, following a research protocol that involved the following steps: formulation of the research questions; identification of relevant studies in electronic

data sources using keywords; selection of studies according to eligibility criteria; data extraction; synthesis of the results obtained; and reporting of the results. It is important to highlight that, initially, the literature revealed a lack of review studies on the contextual analysis of the role of the HAI Controller.

For this stage, the PCC strategy was applied – Population (healthcare professionals), Concept (Controller), and Context (HAI at a global level). By correlating the key topics with the proposed objective, the following guiding question was established for this scoping review: What are the contexts in which a HAI Controller operates?

To comprehensively map the published studies on the topic, as well as materials from the gray literature, three phases were followed according to the strategy recommended by the adopted methodological framework: 1. Preliminary search in relevant data sources; 2. Analysis of keywords in titles and abstracts and of the indexed terms used; 3. Backward search among the references of the selected studies.

Initially, a preliminary search was carried out in the SCOPUS (Elsevier) and U.S. National Library of Medicine (PubMed) databases and in the Google® Scholar search engine. Then, the following descriptors were defined: "Hospital Infection; Cross Infection," "Infection Control," "Nursing," and "Delivery of Health Care," based on consultation of the Descritores em Ciências da Saúde (DeCS) and Medical Subject Headings (MeSH).

Subsequently, data were collected from the following electronic data sources: Latin American and Caribbean Health Science Literature Database (LILACS), SCOPUS (Elsevier), PubMed, and the Cumulative Index to Nursing, accessed via the Federated Academic Community (CAFe) through the CAPES journal portal. Although initially included in the protocol, the Allied Health Literature (CINAHL) database presented access issues and was excluded from data collection.

The Boolean operator AND was used for the following combinations: 1. (Hospital Infection; Cross Infection) AND (Infection Control); 2. (Infection Control) AND (Nursing); 3. (Infection Control) AND (Nursing) AND (Delivery of Health Care). Subsequently, a search was conducted on Google® Scholar using the following strategy: "nosocomial infection" AND "Infection Controller"; "Infection Control" AND "Nursing." It is noteworthy that the advanced search strategy was applied to all combinations.

The extraction of information from the selected articles was carried out using a script that included data listed for the characterization of the studies and items related to the contextual analysis of the role of the HAI Controller, such as publication identification, methodological aspects, and elements related to contextual analysis.

For study selection, the following inclusion criteria were established: studies addressing the context of the role of the HAI Controller, available in full text, free of charge, within the selected data sources, with no time restrictions, and written in English, Portuguese, or Spanish. For data mapping and extraction, a data collection instrument was used, containing the following items: title of the publication, type of material, data source, authors, country, language, year of publication, objective, methodology, approach, population, sample, main limitations, and key results regarding the metacontext, general context, specific context, and immediate context of the HAI Controller's role.

As a selection strategy, a preliminary screening of the studies was conducted, with titles and abstracts read by a pair of reviewers on separate computers, without communication, at the same time, guided by the described search protocol. This was followed by a detailed reading of the full texts. Duplicate articles were removed and counted only once. When there was disagreement between reviewers, it was resolved by consensus. It is noteworthy that the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guided the entire reporting of results to ensure greater scientific rigor in the review.

Through the search combinations in the selected data sources, 1,719 studies were identified. Of these, 360 articles were read in full, and 302 were excluded for not meeting the eligibility criteria. No additional articles were included after the backward search. Thus, 58 studies comprised the final review sample, as shown in the selection flowchart (Figure 1).
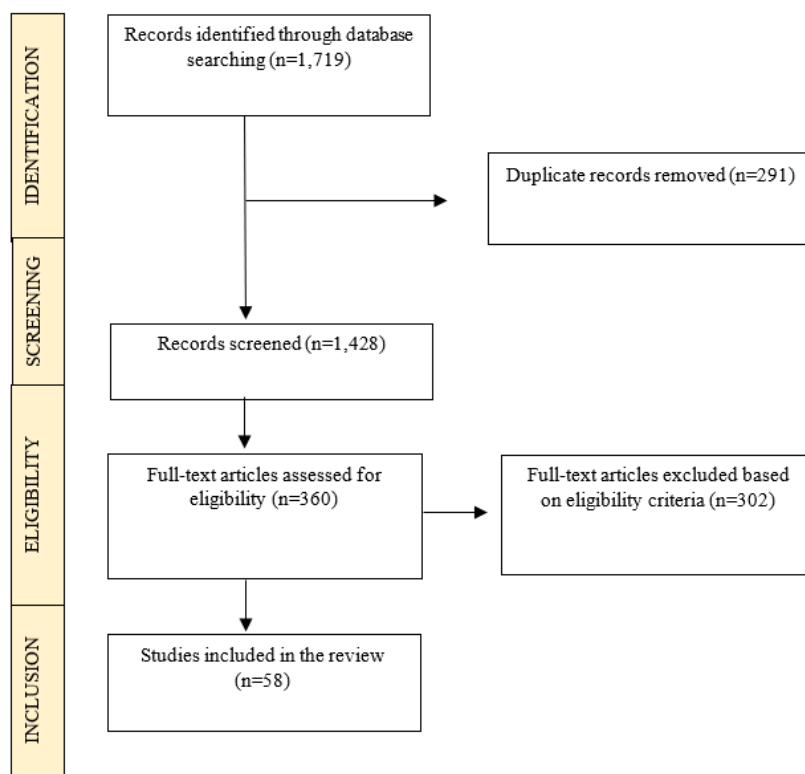

Figure 1 – Study selection flowchart adapted from the PRISMA-ScR model, Natal-RN, Brazil, 2023.

Source: Prepared by the author, 2023.

The results obtained from the review were presented according to the categories defined based on the contexts identified using the framework of Hinds, Cypress, and Chaves. For this analysis, the metacontext was considered to include global, international, and national standards, resolutions, laws, and public policies related to the theme. The general context referred to the responsibilities of HAI Control. The specific context addressed the strengths and challenges of HAI Control, and the immediate context depicted the role of the HAI controller and their specific actions.

RESULTS

Based on the search conducted in the data sources and according to the inclusion and exclusion criteria, a total of 58 articles were obtained. Regarding the characterization of the selected studies and their methodological design, there was a predominance of cross-sectional studies (17.24%), followed by descriptive studies (17.2%) and integrative reviews (12.07%), with a notable emphasis on the qualitative approach (67.24%). In terms of the year of publication, the year 2020 stood out (15.5%), followed by 2017 and 2016 (8.6% each). Regarding the country of origin, Brazil was predominant (96.5%). As for the most prevalent language, Portuguese was the most frequent (96.5%).

To facilitate not only the structural understanding of the concept but also the comprehension of the specificities of each context, the relationship between the contextual levels and their subthemes was synthesized and visually represented in Figure 2.
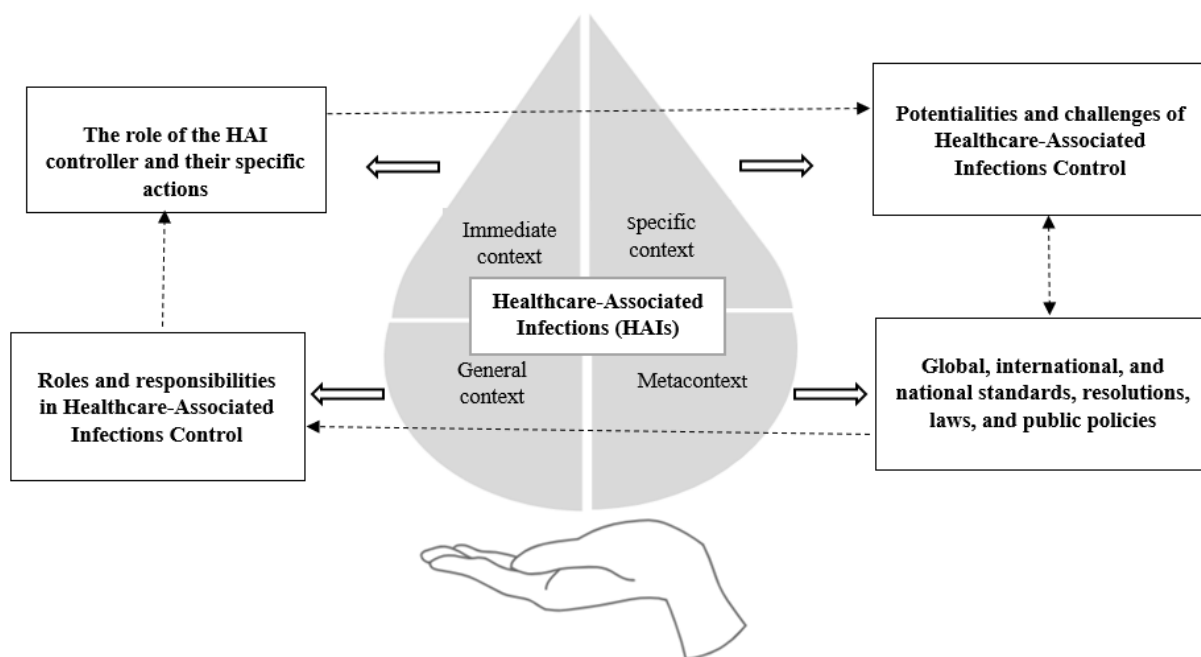
Figure 2 – Pictogram of the contextual relationships in the role of the HAI Controller. Natal/RN, 2023.

Source: Prepared by the author, 2023.

Chart 1 provides a summarized representation of the findings within the interactive contextual levels identified from the literature.

Metacontext
• Ordinance No. 196/83 from the Ministry of Health: Recommendation for the creation of the Hospital Infection Control Committee (CCIH) with passive surveillance
• Ordinance No. 930/92: Expansion of the activities to be carried out by the CCIH, such as active case finding
• Federal Law No. 9.431/97: Makes the existence of the Hospital Infection Control Program (PCIH) mandatory in all hospitals
• Ordinance No. 2.616/98: Definition of Hospital Infection Control

General context
• Development of internal protocols for the prevention and control of HAI
• Epidemiological surveillance
• Adoption of appropriate precautions in the infectious disease control
• Delivery of healthcare activities in accordance with the CCIH

Specific context	
Strengths:	
• Patient safety • Quality of care • Autonomy and improved communication among the multidisciplinary team	• Standardization of materials and supplies • Optimization of cost/benefit ratio • Detection of infection cases and/or risk factors
Challenges:	
• Lack of information and knowledge among staff • Work overload among professionals • Fragmentation of patient care	• Negligence by professionals regarding hand hygiene • Lack of materials and supplies

Immediate context	
• Diagnose and report Healthcare-Associated Infection cases • Identify risks of Healthcare-Associated Infections • Inspect the correct application of aseptic techniques • Evaluate and guide the implementation of isolation measures • Introduce measures to prevent the spread of microorganisms	• Serve as a link among all hospital sectors as a disseminator of infection prevention and control actions • Conduct health surveillance activities in hospital sectors to identify HAI-related issues • Develop preventive or corrective measures • Report notifiable diseases

Chart 1 – Representation of the contextual levels related to the role of the HAI Controller, Natal-RN, Brazil, 2023.

Source: Prepared by the author, 2023.

Metacontext: global, international, and national standards, resolutions, laws, and public policies addressing the control of HAI

Federal Law No. 8.080/1990, which outlines the conditions for the promotion, protection, and recovery of health, as well as the organization and operation of related services, includes the control of HAI within the scope of epidemiology[9].

The formal implementation of specific programs for the control and prevention of HAI began in the United States in the mid-20th century as a result of a legal case in which, for the first time, not only the healthcare professional but also the hospital was held responsible for the occurrence of HAI[10].

In 1946, the Centers for Disease Control and Prevention (CDC) was established in Atlanta, United States. The organization of epidemiological surveillance for HAI began in 1986 with the implementation of the National Nosocomial Infections Surveillance (NNIS), a CDC surveillance system. From this, it was identified that HAI increase a patient's hospital stay by at least four days and result in additional costs for healthcare institutions. In response to this issue, PCIH were developed[11].

In 2002, the CDC published a hand hygiene guideline, assigning all healthcare professionals the responsibility of incorporating hand hygiene into their routine care practices. This measure is considered extremely important, as it is supported by scientific evidence and plays a crucial role in infection control and prevention[12].

In 2005, the NNIS method was expanded and revised, resulting in the creation of the National Healthcare Safety Network (NHSN). This new approach included criteria for monitoring infections related to invasive devices such as mechanical ventilation, central venous catheters, and indwelling urinary catheters. Additionally, components for surgical surveillance, dialysis surveillance, and safety protocols for healthcare professionals were added[13].

In Brazil, the first initiatives began in the 1970s, when the former National Institute of Social Security proposed the creation of CCIH in hospitals accredited by the institute(14).In the 1980s, there was significant growth in hospital infection control and prevention, driven by government actions. One of the first measures was the regulation of Ordinance No. 196/83 by the Ministry of Health, which recommended the establishment of CCIH in each hospital. However, the epidemiological surveillance process was passive, relying on physician notification, which resulted in underreporting. At that time, there was no legal requirement for the implementation of PCIH in Brazilian hospitals[15].

However, it was only in 1984 that the first legislation on the subject gained prominence, following the death of the newly elected president Tancredo de Almeida Neves, which was linked to a surgical infection. This event brought greater visibility to the issue and emphasized the importance

of training healthcare professionals, in addition to highlighting diagnostic criteria and active patient surveillance methodologies[16].

In 1992, the Ministry of Health issued Ordinance No. 930/92, replacing Ordinance No. 196/83, which updated the activities to be carried out by the CCIH, including the active search for hospital infection cases, the creation of the Hospital Infection Control Service (SCIH in Portuguese), and the recommendation that PCIRAS implement active rather than passive surveillance of these infections[17].

It was only in 1997 that the Ministry of Health enacted Federal Law No. 9.431, which made the existence of PCIH mandatory in all Brazilian hospitals. This law established epidemiological surveillance for the identification of HAI cases in order to determine their causes and enable the proposal of measures for prevention and reduction of occurrence rates[17,13].

The following year, the Ministry of Health published Ordinance No. 2.616/98, replacing the previous one, and it remains in effect to this day. This new ordinance not only provided a definition for Hospital Infection Control but also recommended the implementation of an active and continuous surveillance system, based on legislation and the priorities of each institution and its target population[13].

Since 1999, the national coordination of hospital infection control and prevention has been the responsibility of the National Health Surveillance Agency (ANVISA), an autonomous agency linked to the Ministry of Health, with support provided to state health departments[18].

One of the most recent government initiatives was the creation of the National Commission for the Prevention and Control of Healthcare-Associated Infections (CNIRAS in Portuguese), through Ordinance No. 1218/12. CNIRAS aims to advise the Collegiate Board of ANVISA in the development of guidelines, standards, and measures for the prevention and control of HAI, as well as to identify weaknesses in hospital infection control and prevention programs[19].

According to the current ordinance, it is preferable that one of the members of the CCIH be a nurse. This preference is based on the recognition of the central role played by this professional within the CCIH and their broad technical-scientific knowledge, which enables them to act as a liaison among various healthcare professionals. This role facilitates the development of actions outlined in the PCIH[20].

General context: responsibilities of Healthcare-Associated Infection Control

By analyzing the past, it is possible to understand and recognize the impact of infections throughout history, where progressive knowledge has contributed to current control measures. In a historical retrospective on infection control, the contribution of Semmelweis in 1847 stands out, as he popularized the practice of handwashing among healthcare professionals, which resulted in a significant reduction in maternal mortality from puerperal fever. Later, in 1865, Joseph Lister emphasized the importance of handwashing, disinfecting instruments, and sterilizing surgical fields as measures to reduce infections during his surgeries. In nursing, the prevention and control of infections in the hospital environment emerged in the 19th century with Florence Nightingale, who implemented individualized care, patient isolation, and a reduction in the number of beds per ward, among other measures, to reduce hospital contamination[21].

Currently, the control of HAI is considered an essential topic in ongoing discussions about care quality and patient safety in healthcare services. Infection control consists of a set of actions implemented with the aim of reducing the incidence and preventing HAI[22].

The existence of preventable infections, accounting for approximately 30%, imposes an ethical, technical, and social responsibility on healthcare teams and institutions to provide appropriate conditions for prevention. This stands out as one of the fundamental aspects of the entire process.

Infection control is intrinsic to care, encompassing both the care provided by professionals and the organization of the healthcare institution. Team training and the maintenance of good working conditions play a crucial role in the prevention and control of infections[23].

It is important to emphasize that hospital infection control involves, above all, the individual responsibility of each professional in carrying out their activities within the hospital environment, maintaining consistent adherence to prevention, control, information, and ongoing education measures on the subject. The necessary precautions to avoid the spread of infections are of vital importance and require the adoption of preventive actions not only in physical terms but also by the entire multidisciplinary team[24].

The ideal structure for the control of HAI should consider the characteristics, needs, and resources of each institution, ensuring that the infection control team has sufficient authority to manage an effective program. To enhance the effectiveness of this control, several procedures are required, such as epidemiological surveillance; recognition of the importance of all body fluids, secretions, and excretions in the transmission of hospital pathogens; the adoption of appropriate precautions for the control of airborne, droplet, and direct contact-transmitted infectious diseases; and the implementation of care practices in accordance with the recommendations of the CCIH[25].

It is essential to emphasize that the prevention and control of HAI must be considered priorities in all healthcare delivery contexts. To facilitate this activity, it is crucial to develop internal protocols for the prevention and control of HAI, which should be posted in strategic locations, and to keep the team continuously informed about the importance of adopting appropriate behaviors to minimize the risks of hospital-acquired infections[26].

Infection control actions should be based on the epidemiology of infections within the hospital. However, this process must ultimately support the development of internal mechanisms for infection prevention and control, guided by ongoing professional education initiatives, rather than being limited to surveillance activities alone. The success of the CCIH is believed to depend on the support of hospital leadership and the active participation of professionals committed to ensuring patient safety during hospitalization[24].

Studies indicate that reducing HAI to preventable levels depends on four strategic pillars of action: adherence to evidence-based practices through education, implementation, and investment; increasing sustainability through financial incentives and reinvestment in successful strategies; closing knowledge gaps to address emerging threats through basic, epidemiological, and translational research; and data collection to guide prevention efforts and measure progress achieved[27].

Each of these strategies and tools, legally and historically established by the relevant infection control regulations, is presented in the following table (Chart 2), ranging from the most comprehensive to the most specific levels of responsibility and action.

Acronym	Definition
IH:	Infections acquired by patients who are hospitalized or have been discharged but present infection symptoms 48 to 72 hours later.
IRAS:	Infections acquired through healthcare delivery, whether during outpatient procedures or hospital admission.
CIH:	A set of actions implemented to reduce the incidence and prevent Healthcare-Associated Infections.
PCIH/PCIRAS:	The foundational program for developing the actions carried out by SCIH/SCIRAS to reduce the incidence and severity of HAI.
SCIH:	Executing member responsible for carrying out the activities defined by the CCIH.

SCIRAS:	Executing member responsible for carrying out the activities defined by the CCIRAS.
PCIH/PCIRAS:	The foundational program for developing the actions carried out by SCIH/SCIRAS to reduce the incidence and severity of HAI.
CCIH:	Body responsible for the creation, implementation, regulation, and supervision of measures for the prevention and control of hospital infections.
CCIRAS:	Body responsible for the creation, implementation, regulation, and supervision of measures for the prevention and control of Healthcare-Associated Infections.

Acronym Legend (Portuguese to English):

PCIH – Hospital Infection Control Programs in Portuguese

PCIRAS – Healthcare-Associated Infection Control Programs in Portuguese

SCIH – Hospital Infection Control Service

SCIRAS – Healthcare-Associated Infection Control Service

CCIH – Hospital Infection Control Committee

CCIRAS – Healthcare-Associated Infection Control Committee

IRAS – Healthcare-Associated Infections (Portuguese acronym)

IH – Hospital Infections (Portuguese acronym)

CIH – Infection Control (Portuguese acronym)

Chart 2 – Characterization of acronyms related to infections, Natal-RN, Brazil, 2023.

Source: Prepared by the author, 2023.

Specific context: strengths and challenges of HAI Control

According to the guidelines of the Ministry of Health, the Infection Control Program in healthcare services is synonymous with quality control aimed at ensuring patient safety and quality of care. According to the European Centre for Disease Prevention and Control (ECDC), approximately 20% to 30% of HAI are considered preventable through control programs[1].

The activities carried out by the hospital infection control team involve strategies to improve service quality, and when properly implemented, they enable the promotion of effective measures for the prevention of hospital infections. This activity within healthcare institutions aims to evaluate the structure in which care is provided, how it is delivered, and the outcomes of that care, as evidenced by increases or decreases in hospital infections[28].

HAI control allows professionals to become familiar with all processes and activities related to infection control. Through their professional qualifications, combined with experience, they gain the autonomy to take responsibility for most actions, while still respecting the specificities of each profession[28].

Thus, it becomes essential for the multidisciplinary team to work collaboratively, combining their specific expertise to build a broader understanding of the most effective procedures for preventing HAI. Furthermore, the team becomes better prepared to discuss cases, identify nonconformities, implement corrective and preventive measures, assess risks and consequences to patients, and remain more vigilant in preventing new cases[22].

Administrative support in institutional decision-making is essential for the effective performance of HAI control activities. Decisions in this area should involve and respect the CCIH, as this increases the likelihood of success and the effective implementation of actions. Effective hospital management requires coordinated work among the technical, clinical, and administrative sectors. The success of HAI control depends not only on administrative backing but also on the active participation of professionals committed to ensuring patient safety[29].

Considering the types of infections and the possibility of preventing some cases, healthcare services prioritize the prevention and control of infections associated with care delivery. When

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the transmission of microorganisms occurs through exogenous mechanisms, it can be classified as an adverse event and may negatively impact the quality of care. Other reasons to prioritize the prevention and control of HAI include legal proceedings against institutions and the potential exposure of healthcare professionals to sanctions under professional codes of ethics and regulatory bodies[11].

Hand hygiene is considered the most impactful and scientifically proven measure for infection prevention. For this reason, it has been recognized as one of the main pillars of infection prevention and control in healthcare services, including those related to the cross-transmission of multidrug-resistant microorganisms[29].

The implementation of HAI control enables coordinated efforts with the internal accident prevention committee, the detection of hospital infection cases and their risk factors, the standardization of materials and supplies – aiming to optimize the cost-benefit ratio of infection control measures in relation to available technologies – and collaboration with the pharmacy for antimicrobial standardization. It also supports quality control committees through epidemiological indicators and integrates with hospital administration, thereby assisting in decisions regarding the appropriateness and prioritization of technology investments[2].

Research shows that the reduction of these infections can reach up to 70.0% when healthcare institutions and professionals understand the severity of infections and take responsibility for implementing infection control programs. In this way, HAI control has supported discussions on institutionalizing initiatives focused on patient safety and reducing infection cases, prompting studies on related topics such as accidents and prevention strategies to improve the quality of care[2].

However, despite advances in the field, persistent and increasing failures continue to impact the quality and safety of healthcare practices, thus requiring changes in behavior and professional attitudes. Even with significant progress in hospital infection prevention and control, improvements in epidemiological surveillance methods, and advances in asepsis, disinfection, and sterilization techniques, the number of infections continues to rise and constitutes a serious public health problem[22].

Among the identified challenges, the lack of basic information and updates on HAI prevention methods and techniques, epidemiological surveillance, and notification systems stands out. These challenges are often exacerbated by factors such as insufficient time due to accumulated workloads, limited administrative support, or a lack of specific training. The fragmentation of the multidisciplinary team across patient care activities, dividing responsibilities by specialty, was also identified as a potential challenge. An insufficient number of professionals and work overload were further cited as barriers that hinder adherence to preventive practices. One of the greatest challenges in preventing HAI is the lack of engagement among healthcare professionals in adopting the habit of handwashing before and after providing patient care – a practice that is infrequently performed, whether due to heavy workloads, lack of infrastructure, insufficient supplies, or other reported reasons[30].

Studies highlight that the lack of information or basic updates on cross-infection prevention methods and techniques, epidemiological surveillance, and notification systems; the lack of time due to the accumulation of responsibilities among HAI control professionals; the absence of administrative incentives; and limited specific training are additional contributing factors to this challenge. Among the hospital units at highest risk for HAI, the Intensive Care Unit (ICU) stands out, as it houses critically ill patients who are frequently subjected to invasive procedures, making them more susceptible to this type of infection[26].

For the CCIH team, the current COVID-19 scenario highlighted the urgent need to understand just how vulnerable the healthcare workforce and the structural network of Brazil's Unified Health System (SUS in Portuguese) truly were. It also required a proactive approach to monitor, encourage, and redefine strategies aimed at minimizing exposure and enhancing individual protection measures

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for healthcare workers. In this context, despite the existence of simple, well-known, and globally proven effective actions for infection control – as well as frequent educational efforts targeting professionals – what has been observed is a persistent inability to translate these practices into reality, with low adherence by the healthcare team as a whole to these measures[14].

Immediate context: the role of the HAI controller and their specific actions

The multidisciplinary team plays a fundamental role in the prevention of HAI, highlighting the importance of adopting standardized preventive measures, staff training, and continuing education in care delivery. It is important to emphasize that HAI control involves how each professional performs their activities in patient care, maintaining continuous adherence to prevention, control, information, and ongoing education regarding the subject[25].

Thus, HAI controllers become direct implementers of public policies related to PCIH. In accordance with Ministry of Health Ordinance No. 2616/1998, they must carry out prevention and control measures within healthcare services and form a multidisciplinary team that operates within CCIH, including professionals from nursing, medicine, microbiology, pharmacy, and hospital administration. The HAI controller plays a critical role in the daily execution of infection prevention and control activities within healthcare services[29].

As infection control professionals and active members of the SCIH, these professionals perform essential activities in HAI control, such as diagnosing and reporting hospital infection cases; identifying hospital infection risks; inspecting the correct application of aseptic techniques; assessing and guiding the implementation of isolation measures; introducing strategies to prevent the spread of microorganisms; acting as liaisons among all hospital sectors to disseminate infection prevention and control measures; conducting health surveillance within hospital departments to identify problems related to HAI and develop appropriate preventive or corrective actions; and reporting notifiable diseases, among other responsibilities[30].

To implement HAI control measures, it is essential for the controller to be knowledgeable about infection prevention strategies, to identify risks, and to establish preventive measures, particularly by identifying and applying specific actions for infections associated with invasive devices and procedures, as well as by recognizing early signs and symptoms of infection[28].

The activities performed by HAI controllers include planning, implementing, and evaluating infection control techniques; providing ongoing education for healthcare professionals on antimicrobial use; ensuring adequate staffing to reduce the spread of resistant bacteria and alleviate workload; and conducting surveillance of patients suspected or at risk of contamination by resistant microorganisms. This work also requires appropriate techniques and effective communication among laboratories, care teams, and the infection control committee[24].

It also includes the implementation of contact isolation for patients colonized or infected with resistant microorganisms, the use of Personal Protective Equipment (PPE), surface disinfection, and the maintenance of a database identifying colonized patients. This strategy facilitates the immediate identification of such patients in the event of readmission through effective communication between the infection control committee and the care team regarding the possibility of colonization/infection and the importance of proper hand hygiene. This measure is fundamentally based on the fact that healthcare professionals are frequently involved in the spread of resistance[16].

At the community level, during access to healthcare services, emphasis is placed on basic measures, guidance, and education on topics that will undoubtedly have a considerable impact on individual health. At the hospital level, from the time of admission, patients should receive guidance on personal hygiene, minimizing visits to other patients, avoiding movement between wards, and, in the case of being a carrier of resistant microorganisms, adopting basic measures to prevent transmission,

such as remaining confined to their bed, not sharing personal items, and encouraging the care team to practice hand hygiene before delivering care[24].

Keeping HAI under control is a constant challenge. Professionals often find themselves in a solitary struggle against something that exceeds their individual capacities, given the complexity of the role of hospital infection controller. It is important to emphasize that infection controllers are responsible for establishing institutional policies to prevent and control infections; however, the success of the program depends on the involvement of all professionals engaged in hospital care delivery[29].

The role of the nurse stands out, as they are on the front lines of the care process and are in a position to initiate leadership strategies essential for implementing planned actions. Infection control nurses independently seek to enhance their knowledge to ensure the effectiveness of infection control efforts. Studies show that these professionals act with responsibility and, despite the difficulties, have earned the respect of the multidisciplinary care team and hospital administrators. This conduct has created opportunities for them to be publicly recognized by society as hospital infection control specialists[30].

CONCLUSION

Through this study, it was possible to analyze the context of the role of the HAI controller. In this regard, the following interactive levels were identified: the metacontext, which encompasses global, international, and national standards, resolutions, laws, and public policies related to the topic; the general context, which involves the responsibilities of HAI Control; the specific context, which addresses the strengths and challenges of controlling these infections; and the immediate context, which refers to the role of the HAI controller and their specific actions.

The identification of these interactive contextual levels allowed for an exploration of the knowledge available in the literature regarding strategies to engage professionals in the control and prevention of HAI. It also enabled a broad reflection on how the actions of HAI controllers are oriented toward reducing preventable infections through prevention and control strategies, addressing various aspects such as the care environment, safe practices, and improvements in the quality of patient care. In this way, the findings further underscore the urgent need to develop the concept of the HAI Controller.

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