



Community-Acquired Infections Vs. Healthcare-Associated Infections-Hais as the Main Cause of Death in ICUS, Care and Procedures

Délio Tiago Martins Malaquias¹; Juliana Fontes Beltran Paschoal¹; Camila Santos da Costa¹; Thiago Augusto Rochetti Bezerra¹; José Carlos Ferreira da Silva¹; Gustavo Lopes dos Santos¹; Rayssa Prince Cardoso¹; Thayná Bezerra de Souza¹; Thalia da Silva Corrêa¹; Catarina Canaes Cação¹; Anderson Camacho de Souza¹; Enzo Zago Chagas¹; Pietro Gabriel Rabello Dixini¹; Wellington da Silva Pereira da Cunha¹; Silvia de Oliveira Guion¹; Guilherme Henrique Fiaschi Tomé¹; Giovanna Vetter Paulino¹; Israel Syllas Santos Rocha¹; Andreza Spinola Zapparoli²; Karen Miyamoto Moriya²; Rafael Pinheiro do Nascimento²

¹ Medical Student. University of Ribeirão Preto. Guarujá São Paulo, Brazil. Intensive Care and Palliative Care Academic League. University of Ribeirão Preto. Guarujá, São Paulo, Brazil.

²Medical student. July 9th University. São Paulo, Brazil.

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ABSTRACT

Introduction: It has been reported that the incidence of nosocomial infections in the intensive care unit (ICU) is about 2 to 5 times higher than in the general hospital population. The increase in morbidity and mortality associated with health service infections in the ICU is a matter of great current concern. Aim: The aim of this study was to carry out an observational study and literature review on the main origins of community-acquired infections and health service-related infections (HAIs) as the main cause of death in ICUs, care and procedures. Literature Review: Although advances in modern medicine are eradicating illness and disease, today's healthcare facilities, including hospitals, continue to struggle to reduce or eradicate the many types of hospital-acquired infections (HAIs). The pathogens that cause HAIs, such as bacteria, viruses and fungi, are introduced into the healthcare clinic environment by infected individuals or equipment. Therefore, the best way to prevent the spread of an HAI infection is to separate sick people from healthy people and ensure high levels of sanitation and hygiene in all facilities. Final considerations: Based on the results, it can be concluded that the work of the entire healthcare team is of fundamental importance to the institution in implementing operational programs that contribute to adherence to the recommended infection control measures.

Keywords: Hospital-acquired infections, community-acquired infections, hospital sanitation and hygiene.

INTRODUCTION

Biologically speaking, hospitals are already a place that can pose a risk to health, as they are home to a number of multidrug-resistant microorganisms. In this context, the increase in the number of hospital stays causes a rise in the cost of these patients to the public purse, and the rate is higher in the Intensive Care Unit (ICU), which is why this service is often the epicenter of the infection problem in a hospital. [1]

A nosocomial infection is defined as an infection that is not present or incubating when the patient is admitted to hospital or another healthcare facility. [1]

It has been reported that the incidence of nosocomial infections in the intensive care unit (ICU) is around 2 to 5 times higher than in the general hospital population. [2]

The increase in morbidity and mortality associated with nosocomial infections in the ICU is a matter of great current concern. Serious medico-legal issues also arise in this context, as the patient or their family sometimes blame the hospital staff for the infection and demand compensation. [3]

It has been reported that in hospitals with an effective nosocomial infection surveillance program, infection rates can be reduced by around a third. [4]

Infection is a common complication in health care and has an enormous social, economic and human impact, as well as being a cause for concern among health institution administrators and health professionals, and representing a public health problem. [5]

Therefore, actions can be taken to minimize exposure to hospital-acquired infections through professional care geared towards this vulnerability. Caring for hospitalized patients can minimize their length of stay, favoring their physical and social recovery, insofar as it reduces their length of stay, their return to familiar social life, their autonomy and their well-being. [5]

Community-acquired infection is an infection that has been detected or is incubating at the time of the patient's admission, as long as it is not related to a previous stay in the same hospital. [6]

Community infection that is associated with a complication or extension of the infection already present on admission, Infection in a newborn acquired via the trans-placental route, Infection in a newborn with a ruptured pouch. [6]

The aim of this work is to conceptualize the various types of hospital and community infection, as well as their forms of prevention.

METHODOLOGY

The methodology used was a literature review. A literature review is a meticulous and wide-ranging analysis of current publications in a given area of knowledge. This type of research aims to put the researcher in direct contact with the existing literature on a subject.

The research was carried out by means of an electronic search for scientific papers published on the Scielo (Scientific Electronic Library Online) and Lilacs (Latin American Health Sciences Literature) websites and Pubmed. Health terminologies consulted in the Health Science Descriptors (DeCS/BIREME) were used: medicine, community/hospital infection and intensive care unit.

The inclusion criteria were: original article, published in Portuguese and English, freely available, in full, on the subject, in electronic format and published in the last ten years (2014-2024). The exclusion criteria were: studies that were not published in the established period and did not have the full text, totaling 25 articles.

LITERATURE REVIEW

1. CLASSIFICATION OF INFECTIONS

In 1988, the US Centers for Disease Control and Prevention (CDC) published the first version of the definition of hospital-acquired infections. Changes that have occurred since the first publication; Changes the term from "Nosocomial Infection" to infection related to health services "IRAS"; Exclusion of criterion 1 of clinical sepsis (effective in the National Healthcare Safety Network [NHSN] since January 2005 and corroborated in 2008); The term clinical sepsis is restricted to patients <1 year; Laboratory-confirmed bloodstream infection (LCBI) criteria 2c and 3c are modified and criteria 2b and 3b are excluded; The description of surgical site infection (SSI) has been extended to primary and secondary sites if there is more than one surgical incision. [7-8]

1.1 Healthcare-related infection " HAI"

This is any infection acquired after the patient has been admitted to hospital and which manifests itself during hospitalization, or even after discharge, when it can be related to hospitalization or hospital procedures. When the incubation period of the microorganism is unknown and there is no clinical evidence and/or laboratory data of infection at the time of admission, a hospital-acquired infection is considered to be any clinical manifestation of infection that presents itself 72 (seventy-two) hours after admission. [7-8].

1.2 Healthcare-Associated Infections (HAIs)

Healthcare Associated Infections "HAIs" first appear 48 hours or more after hospital admission. [9-10]

HAIs can occur in different areas of healthcare settings, such as hospitals, long-term care facilities (LTCFs) and outpatient settings, and can appear after discharge, within 30 days. [11]

Any infection is considered nosocomial if the patient has been hospitalized in an acute care hospital (ACH) for two or more days in the 90 days prior to infection, or resides in a nursing home or LTCF, or has received recent intravenous therapy or wound care in the 30 days prior to the current infection. [12] HAIs can also include occupational infections that affect the staff of healthcare facilities. HAIs are not related to the disease for which the patient is hospitalized, but occur in healthcare facilities. [12]

The number of nosocomial infections appears to be increasing for a number of reasons, e.g. hospitals caring for an increasing number of patients, increasing antibiotic resistance, transfer of pathogens from medical staff to patient or from the environment to the patient, non-compliance or lack of sanitation protocols, little emphasis on prevention. [12]

HAIs affect 3.2% of all hospitalized patients in the United States of America (USA) in 2019, and 6.5% in the European Union/European Economic Area (EU/EEA) and, worldwide, approximately 10% of patients acquire an HAI, resulting in prolonged hospital stays, increased healthcare costs and significant morbidity and mortality. [13] The pathogens responsible for nosocomial infections include bacteria, viruses and fungi. The prevalence of infections caused by microorganisms varies depending on the location of the healthcare facility, the healthcare setting and the patient population. [14]

Due to the excessive and irresponsible use of antibiotics, resistant bacteria have emerged. These multidrug-resistant (MDR) bacteria are one of the complications of HAIs. [15]

Studies have shown that almost 20% of all bacteria recorded are MDR [13]. Vancomycin-resistant Enterococci (VRE) and methicillin-resistant *Staphylococcus aureus* (MRSA) are the main Gram-positive pathogens of concern, while *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Enterobacter* spp. are the main Gram-negative resistant pathogens. [16 -17-18].

In the case of MRSA, the main mode of transmission is from the contaminated hands of healthcare workers to patients. [19]

MRSA currently accounts for more than 50% of *S. aureus* strains isolated from hospitalized patients in the USA and causes approximately 50% of all nosocomial *S. aureus* infections [18].

The SCOPE project (Surveillance and Control of Pathogens of Epidemiologic Importance) concluded that Gram-positive bacteria have highly variable growth and resistance patterns and were responsible for 62% of all CLABSI in 2021 and 76% in 2021, in an upward fashion. [18]

Carbapenem resistance has been found in many Gram-negative species, including both Enterobacteriaceae (e.g. *Escherichia coli*, *Enterobacter* spp., *Serratia* spp.), called carbapenem-resistant Enterobacteriaceae (CRE), and non-fermenters (e.g. *P. aeruginosa* and *Acinetobacter baumannii*), but *K. pneumoniae* is the most frequent species. [22]

In the European Union (EU), it is estimated that more than 4 million patients contract a nosocomial infection every year, of which around 37,000 die as a result. [12]

In Europe, the most common HAIs are caused by around ten bacterial species (FIGURE 1) [8];

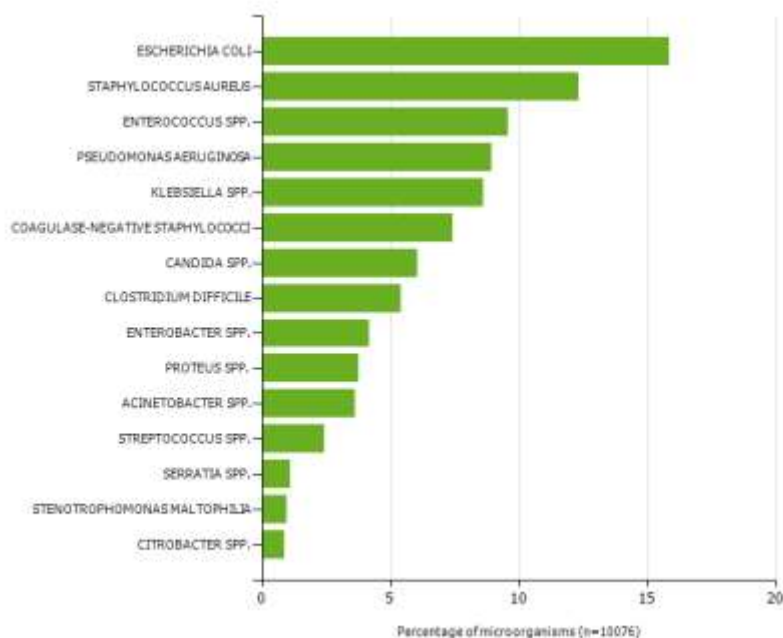


Figure 1. Representation of the most common bacterial isolates responsible for HAIs in the EU. Adapted from [7].

In Europe, HAIs result in costs of more than 7 billion euros per year. For example, one study showed that in Germany, HAIs can generate additional costs of 5823 to 11 840 euros (7453 to 15 155 dollars) per infected patient. [10]

The incidence of the different types of HCAI varies from country to country, depending on the development of the medical system. In Europe, it is estimated that around 80,000 hospitalized patients have at least one HCAI on any given day and that HCAs cause 16 million additional hospital days every year. [12]

The prevalence of HAIs in high-income countries is 7.5%, although others have recorded rates of 5.7-7.1%, while in low- and middle-income countries, the prevalence rate varies between 5.7% and 19.2%. [10]

Among European hospitals, the prevalence of at least one HCAI varied according to the care setting: 4.4% in primary care hospitals, 7.1% in tertiary care hospitals, 19.2% in ICUs; and 3.7% in LTCFs [29]. In the EU, around 8.9 million separate episodes of HCAI occur each year in hospitals and long-term care facilities, of which 4.5 million in hospitals and 4.4 million in long-term care facilities. [8]

Point prevalence surveys of HAIs from 2016 to 2017, including 28 countries in Europe, showed that 6.5% of patients in ACH and 3.9% of patients in LTCF had at least one HAI and the total number of residents with at least one HAI on a given day in LCTF was estimated at 129,940 [21].

The most frequently reported type of HCAI in ACHs and LTCFs was respiratory tract infections, with a ratio of 21.4-33.2%. [20]

The infections responsible for HAIs were UTIs (18.9%), SSIs (18.4%), CLABSI (10.8%) and gastrointestinal infections (8.9%), with CDI accounting for 44.6% of the latter and 4.9% of all HAIs. [20]

Thirty percent of ICU patients have at least one HAI. In low- and middle-developed countries, the frequency of HAIs in the ICU is at least two to three times higher than in developed countries, and the frequency of device-associated infections is thirteen times higher than in the USA. [5]

According to one study, the percentage of pneumonia or lower respiratory tract infections ranged from 12.0% to 36.3%. 36 countries in Latin America, Asia, Africa and Europe, between 2014 and 2019, was 6.8 events per 1000 central line days. [12]

The ADR rate observed in HAIs was 31.6% in ACH and 28.0% in LTCF. In a recent publication, more than 425,000 HAIs caused by AMR microorganisms occur every year in the EU. [20]

Attributable deaths in the EU due to AMR bacteria have been estimated at 33 110 per year. [19]

Enterococcus spp. especially *E. faecium* and *E. faecalis* have also received special attention due to their ability to acquire MDR against many antimicrobial agents used in clinical practice and to establish life-threatening infections in patients living with cancer or chronic diseases [5]

In a 5-year study carried out, *E. faecium* showed high resistance rates against imipenem (86.7%), ampicillin (84.5%) and ampicillin/sulbactam (82.7%), while *E. faecalis* showed the highest resistance rate against streptomycin (67.7%) and gentamicin (59.3%). [14]

Millions of antibiotics are prescribed to patients every year, but it is estimated that around 50% of these are not needed. [16]

Pharmacists and clinical pharmacists can be involved by monitoring antimicrobial stewardship programs to limit inappropriate antibiotic use and help prevent the spread of resistant pathogens. [18]

A meta-analysis evaluating the number of deaths attributable to CRE infections concluded that 26-44% of deaths were attributable to carbapenem resistance [23].

Gram-negative bacteria caused 22% of CLABSI in 2020 and 14% in 2021. These infections can be complicated by CDI [25].

Although advances in modern medicine are eradicating illness and disease, today's healthcare facilities, including hospitals, continue to struggle to reduce or eradicate the many types of hospital-acquired infections (HAIs). The pathogens that cause HAIs, such as bacteria, viruses and fungi, are introduced into the healthcare clinic environment by infected individuals or equipment. Therefore, the best way to prevent the spread of an HCAI infection is to separate sick people from healthy people and ensure high levels of sanitation and hygiene in all facilities. [15]

1.3 Classes of HCAI

There are four main classes of HCAI, each of which can pose a potentially lethal threat to the patients who contract them;

1.3.1 Central line bloodstream infections (CLBI)

A "central line" infection occurs when a catheter - a narrow tube - is inserted into a vein near the heart to administer drugs or collect blood (FIGURE 2).

Infections occur when pathogens enter the vein through the catheter, either because the tube itself is contaminated or because the skin through which the catheter needle passes is not sterile. CLBI infections cause thousands of deaths every year and cost billions of dollars in unnecessary medical care. [5]

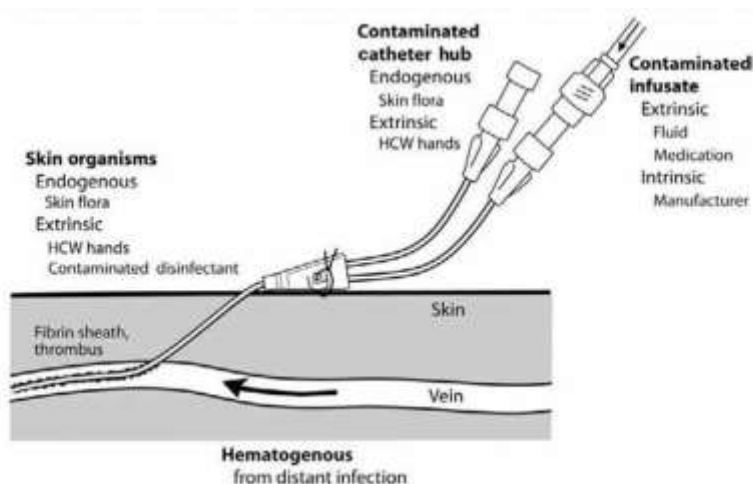


Figure 2. Infection of the blood that is associated with the use of a central line (central venous catheter). [5]

1.3.2 Ventilator-associated pneumonia (VAP)

Thousands of patients need the assistance of a mechanical ventilator to breathe. Ventilators placed over the mouth or nose, or through a small hole in the throat, force air into the patient's airways. When these machines are contaminated, they can also transmit pathogens that may be present in the operation of the device or that are picked up from the environment before the ventilator tube is inserted (FIGURE 3). [12]

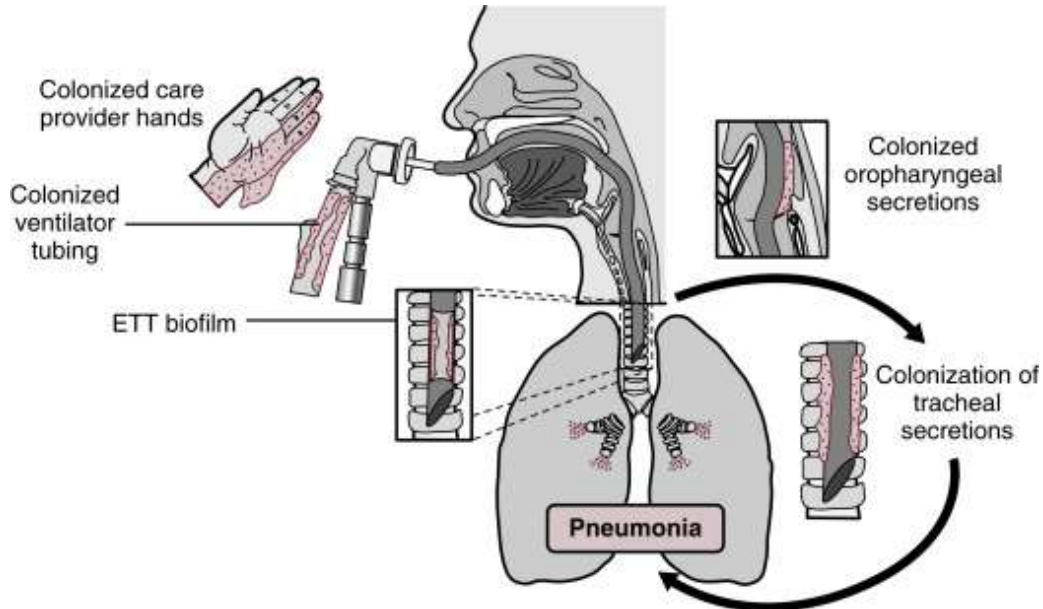


Figure 3 - Pathogenesis of ventilator-associated pneumonia. Colonization of the upper airways can originate from the caregiver's hands, the ventilation equipment, oropharyngeal secretions or a biofilm inside the endotracheal tube (ETT). Finally, the pathogenic organisms spread to the trachea, where the population expands and moves down into the small airways and lung parenchyma, causing pneumonia. [12]

1.3.3 Catheter-associated urinary tract infections (CAUTI)

Infections caused by pathogens can occur in any part of the urinary tract, including the bladder, urethra, kidneys and ureters. Catheters inserted to relieve pressure on the bladder and urinary system cause around 75% of all hospital-acquired urinary tract infections. [5]

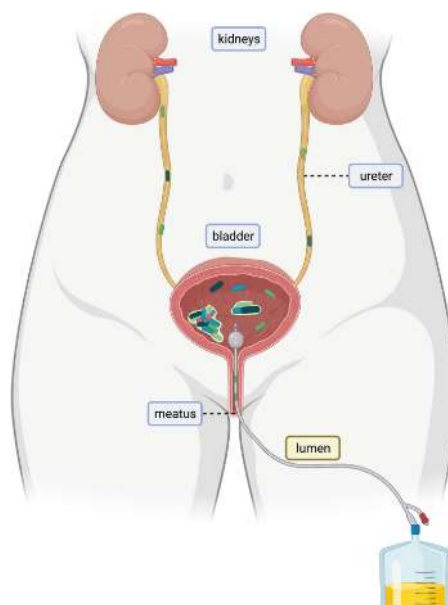


Figura 3. Inhibiting host-protein deposition on urinary catheters reduces associated urinary tract [5]

1.3.4 Surgical site infections (SSI)

Any incision on the body can cause an infection. Sometimes these are superficial and limited to the skin. Other times, infections can develop deep within the body when pathogens are introduced through the surgical procedure. [5-15]

To combat the growing number of HAIs, the Centers for Disease Control recommend that all healthcare facilities assess contamination risks and establish comprehensive infection prevention controls in all places where pathogens can grow. [5-15]

1.4 Brazilian legislation on hospital-acquired infections

In Brazil, hospital infection control began to be improved through Ministry of Health Ordinance 196/83 and outlined by Law 9431/97, which obliges hospitals to maintain a Hospital Infection Program (PCIH) and create a Hospital Infection Control Commission (CCIH). The Hospital Infection Control Program was revoked and replaced by Ordinance MS 930/92. [1- 5-13]

Currently in force is Ordinance 2616/98, which revoked the previous Ordinance. [1- 5-13]

This Ordinance also sets out the general criteria that help define hospital-acquired infections. The criteria listed by the Ministry of Health are:

- ✓ When, in the same topography in which a community infection was diagnosed (a community infection is one that has been confirmed or is incubating at the time of the patient's admission, provided that it is not related to a previous admission to the same hospital), a different germ has been isolated, followed by a worsening of the patient's clinical conditions;
- ✓ When the incubation period of the microorganism is unknown and there is no clinical evidence and/or laboratory data of infection at the time of admission, a hospital-acquired infection is defined as any clinical manifestation of infection that occurs 72 (seventy-two) hours after admission;
- ✓ Hospital-acquired infections are also defined as those manifested before 72 (seventy-two) hours of hospitalization, when associated with diagnostic and/or therapeutic procedures carried out during this period;
- ✓ Infections in newborn babies are hospital-acquired, with the exception of those transmitted transplacentally and those associated with a ruptured pouch of more than 24 (twenty-four) hours;
- ✓ Patients admitted from another hospital with an infection are considered to have a hospital infection from the hospital of origin. For the hospital where they are admitted, it is considered a community infection.

Brazilian legislation, through RDC 50/2002, establishes the minimum actions to be taken in order to reduce the incidence of healthcare-related infections and the standards and physical design of healthcare facilities. These normative instruments reinforce the role of hand washing as the most important action in the prevention and control of infections in health services. The World Health Organization (WHO), through the Global Alliance for Patient Safety, has also dedicated efforts to preparing guidelines and strategies for implementing measures aimed at adherence to the practice of hand washing. [1- 5-13]

1.5 Community infection

This is an infection that has been detected or is incubating at the time of the patient's admission, provided that it is not related to a previous stay in the same hospital. [12]

“Community-acquired infections” (CAI) occur in all parts of the world and can be caused by various types of pathogens. Many factors, such as climate change, an ageing population and the ease of global travel, have contributed to the widespread exposure of the world's population to diseases caused by CAIs. [12]

Pathogens spread these infectious diseases through air, food, insects and even sexual activity. When people with an HAI enter a healthcare facility, their condition threatens everyone in the hospital. [12-14]

For healthcare professionals who are tasked with preventing the transmission of any disease, it is extremely important to identify and contain community-acquired illness before it can spread to an already vulnerable population. [16]

Many pathogens are responsible for causing HAIs. Viruses, protozoa, bacteria and fungi exist in all regions. Unclean water is a frequent source of HAIs and microbes ingested by drinking contaminated water or eating food washed in contaminated water can cause debilitating diarrhea, blindness and death. Insects are also carriers of HAI. Mosquitoes transmit infectious diseases such as malaria, yellow fever and the recently discovered Zika virus. Ticks, phlebotomes, fleas and triatomines can also transmit diseases, picking up the disease from an infected host and transmitting it by biting and injecting the virus into an uninfected host. [12]

Among humans, transmission of avian influenza viruses often occurs through contact with infected tissue or blood. Unprotected sexual contact causes the AIDS virus and some strains of hepatitis. [18]

1.6 Common symptoms

HAIs can affect any part of the body. Lung and respiratory infections, such as pneumonia, are relatively common in people with compromised immune systems who come into contact with an HAI pathogen. Infections of the urinary tract, skin and digestive tract are also commonly caused by pathogens picked up from the environment or through contact with an infected person. [21]

1.7 Drug-resistant HAIs

For decades, the medical community has treated all types of HAI with antibiotics, regardless of whether the cause is a bacterium or a virus. Unfortunately, this practice has resulted in the development of drug-resistant CAIs over time. The emergence of these drug-resistant CAIs now makes it much more difficult to slow down or stop the transmission or treatment of the disease, because there are no longer any effective drugs available for this purpose. [12]

1.8 Preventing the transmission of a respiratory virus

Since drugs no longer work with some of these viruses, preventing transmission is now considered the best course of action when it comes to a virus. [15]

Keep sick people away from healthy people. Recent reports show that up to 90% of workers who miss days at work due to infectious diseases, such as the flu, have contracted the disease through contact with an infected coworker. [12]

Fever screening is essential for workers at risk of infection, such as those working in hospitals, clinics or other places where sick people congregate. Studies have shown that this inexpensive procedure detects not only symptomatic individuals, but also those who do not yet have symptoms. [12]

The use of tools to avoid exposure is recommended. Face masks and gloves are barriers to germs and can prevent wearers from contracting the disease from the patient they are working with. [20-23]

Train all workers on best practices for HAI control, including proper sterilization techniques for sites and equipment, effective sanitation practices and consistent use of preventative measures such as masks, gowns and gloves. [10-15]

1.9 Effective strategies for preventing hospital-acquired infections

The fight against hospital-acquired infections is daily and fundamental to safe, quality healthcare. To raise awareness among health authorities, directors of institutions and health workers about the importance of infection control, Law 11.723 was passed in 2008, decreeing May 15 as National Hospital Infection Control Day. [1]

Prevention measures should be adopted in all types of care facilities, such as hospitals, places for the care of chronically ill patients, or in home care. The National Health Surveillance Agency (ANVISA) developed the National Program for the Prevention and Control of Healthcare-Related Infections (PNPCIRAS) with the aim of reducing the national incidence of HAIs. [5]

1.9.1 HAI Prevention Measures:

- ✓ Obsession with hand hygiene;
- ✓ Use the correct disinfectant to clean surfaces and equipment;
- ✓ Apply standard precautions in contact with patients;
- ✓ Education and constant reinforcement of all staff;
- ✓ Maintain adequate nurse/patient ratio;
- ✓ Continuous monitoring and surveillance of infection.

This is a relevant topic that needs to be addressed in healthcare facilities. This is because it is a major challenge, mainly due to the ability of this problem to increase the mortality rate of patients and the acquisition of diseases resulting from work activities by staff. [5]

This is all the more worrying because it is a place with a lot of circulation, which increases the presence of microorganisms, both on surfaces and in the air, making this control even more difficult. [1]

1.9.2 Frequent hand washing

The routine in a hospital involves contact with surfaces, products, secretions and other components that may be contaminated. For this reason, it is very important to sanitize your hands frequently, as this practice considerably reduces the levels of infectious diseases and other problems. [1]

It's important to bear in mind that healthcare professionals use their hands a lot during care. Therefore, the quality of the service and the safety of staff and patients depend on their constant asepsis. In this case, you can use degerming soap, 70% alcohol or another substance that can prevent contamination by germs, bacteria and other microorganisms. In addition, gloves must be worn carefully to ensure maximum protection. [1]

1.9.3 Wearing appropriate PPE

The hospital environment involves various risks, especially biological risks caused by contact with fungi, bacteria and other agents capable of causing infection. Day-to-day life also involves risks caused by handling chemicals, body fluids and contact with infected people. [1-13]

Therefore, when caring for patients and performing other duties, it is essential to use Personal Protective Equipment (PPE). Among the most commonly used in a hospital unit are [1-13]:

- ✓ masks: use when coming into contact with patients, for various types of procedures. They should be discarded after use;
- ✓ gloves: should be used for general procedures and also need to be disposed of;
- ✓ goggles: these should be used to protect employees' eyes from secretions during procedures. They should be cleaned and sterilized after use;
- ✓ aprons: the use of appropriate clothing protects employees from splashes and contaminants. They must be discarded or sanitized after use;
- ✓ caps: their main purpose is to protect against contaminants and to prevent hair from falling out during procedures. They should also be discarded.

1.9.4 Sterilize materials after each use

Just as hand washing is a fundamental practice, materials must also be sterilized. This is because there is no point in cleaning your hands thoroughly and neglecting the materials that will be used throughout the procedures, regardless of what they are [1-13].

Generally, all healthcare facilities need to have a Materials and Sterilization Center (MEC), which is a sector responsible for improving hospital infection prevention by practicing sterilization techniques, creating an aligned performance with the nursing team. In this case, the aim is to disinfect non-disposable equipment from bacteria, viruses and fungi [1-13].

1.9.5 The phases of this process include:

- ✓ Forwarding to the purge: area created to receive soiled material;
- ✓ Equipment preparation: stage responsible for identifying, inspecting, selecting and packaging for the next phase;
- ✓ Sterilization: this is the time to clean materials using chemical or physical means, respecting the period and aggressiveness classes of each one;
- ✓ Distribution of equipment: after being properly sanitized, the items must be sent to the departments where they will be used. [1-13]

1.9.6 Use disposable materials during care

Disposable materials considerably reduce the risk of hospital contamination. They also help protect staff and reduce the spread of various pathogens. Among the most common disposable items in hospitals are: gloves, caps, syringes, needles, gauze, masks, among others. [1-13]

As well as using disposable items, you need to be aware of how to dispose of them properly after use. For this reason, separate sharps, contaminants and other hospital waste from ordinary waste for proper disposal. [1-13]

1.9.7 Maintaining contact precautions

Just as the primary measures are essential, maintaining contact precautions is another effective precaution to ensure the mitigation of hospital-acquired infections. Thus, the measure should be applied to all patients, both those accommodated in rooms and in isolation. [1-13]

Therefore, gloves, masks, aprons and proper clothing should be worn. Also, avoid sharing materials and prevent transmission by droplets expelled by coughing, talking, breathing, among others that can happen through close contact with the patient. In the most serious cases, use PFF2 masks, which are filtering facepieces. [5]

In situations where the patient needs to be isolated, they should be kept in a private room with an appropriate ventilation system, keep the door closed at all times and wear masks and gloves when entering the room. [1-13]

1.9.8 Respect local cleaning protocols

Each healthcare facility has an appropriate cleaning protocol, created with the aim of providing safety for patients and staff. Nowadays, every active employee needs to respect technical and ethical standards, as a way of ensuring that hospital infection prevention achieves the expected results. [1-5-13]

That's why it's necessary to pay attention to hygiene regulations, standards of conduct in the workplace and the guidelines given by department managers. In this way, it is possible to maintain quality and safe work. [1-5-13]

Final considerations

There is no doubt about the importance of adopting measures to prevent hospital-acquired infections. After all, through well-planned actions, it is possible to prevent the spread of contaminating agents and thus guarantee the safety and physical integrity of staff and patients. These measures must be respected by everyone, since commitment and engagement are indispensable factors in achieving the expected results

Based on the results, it can be concluded that the work of all healthcare professionals is of fundamental importance to the institution in implementing operational programs that contribute to adherence to the measures recommended for infection control.

The studies analyzed state that the healthcare team is considered to be primarily responsible for prevention and ICH. It is clear that correct grooming and aseptic techniques are essential for proper control of HI.

In practice, health professionals recognize these challenges and suffer the conflict arising from the difficulties encountered in controlling infections. However, these difficulties should not become impeding factors, but rather trigger the search for different actions to improve infection control.

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