

## The Nurse's Role In The Epidemiological Surveillance Of The Surgical Site: Integrative Review

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### ABSTRACT:

**Background** Epidemiological surveillance is defined as a set of measures that inform, detect or prevent any alteration factor that determines and conditions individual or collective health on September 19, 1990, guaranteed by Law n.º 8.080. The role of the nurse in the operative area is to identify problems to promote the health of patients.

**Objective:** To analyze the performance of nurses focused on epidemiological monitoring, work in the surgical center and the results of activities to promote this sector.

**Materials and Methods:** This is an integrative review study that refers to a method that allows the synthesis of several published studies and allows general conclusions about a specific research area, carried out from October to September 2019, available electronically in texts complete in Portuguese, English and Spanish in the aforementioned databases such as LILACS, SCIELO, BDNF, MEDLINE. For the development, an integrative review process was used, an approach that allows the synthesis of multiple published studies and allows general conclusions about specific areas of research. Conducted between August and November 2019, the survey covered publications such as scientific articles, interpreting the results and presenting a combined view.

**Results:** The strong focus of the nursing team on the epidemiological care of the surgical center was confirmed by the analysis of the articles received, therefore, in the surrounding environment, in all articles, they emphasized the importance of the role of the nurse, to monitor, think and act, recognizing the difficulty that many nurses have in incorporating knowledge and attention to assess prominent risks.

**Conclusion:** There was a need to guide the care team in deepening the research work and in facing professional deficiencies related to production, in order to provide efficient care and, possibly, use accessible, systematic and humanized dynamics and services.

**Keywords:** Epidemiological surveillance, nurse, operating room, systemic complications.

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Date of Submission: 08-04-2023

Date of Acceptance: 21-04-2023

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### I. Introduction

As we evolve in the use of technologies, the number of demands for prevention and the use of equipment in hospitals increases (JUNIOR, EUGENIO, 2014). Among some of the main causes of factors that affect the safety of the patient and the professionals of the multidisciplinary team, there is the use of electromedical equipment (EEM), because inaccuracies in the way the equipment is used, they prove to be dangerous, in addition, error in medication dosage, not activating vital signs monitoring equipment, infections in the hospital and others (JUNIOR, EUGENIO, 2014).

In view of this, there is a need for support for multidisciplinary teams regarding safety in the performance and quality of the job offered to patients, it is essential to highlight three factors that cause this differential, such

as: the training of teams, support from trained technicians and the recurring maintenance of equipment used (JUNIOR, EUGENIO, 2014).

The presence of the nursing professional then becomes essential in terms of management, control, surveillance and care provided to the patient, to be vital for the purposes of epidemiological surveillance in the hospital, an important support for a work carried out free of risks (JUNIOR, EUGENIO, 2014).

Seen from other perspectives, there are opinions that approach the use of technology in the hospital environment as a potential risk for adverse effects: it makes health care complete and effective, but less safe, this point became targeted after the publication of the report '*Toerrishuman*', by the Institute of Medicine, bringing adverse effects as a problem in the care and safety provided to the patient (ALMEIDA RAQUEL, 2018).

In favour of reducing risks and preventing adverse events, the World Health Organization (WHO) conducted processes to the so-called global challenges, highlighting the promotion of safe surgeries and in 2004, the Patient Safety Program was created (ALMEIDA RAQUEL, 2018).

Around 14.0% of surgical patients suffer some type of damage in one of the operational phases. In Brazil, frequent preventable adverse events are pertinent to the surgery itself and/or anesthesia (ALMEIDA RAQUEL, 2018).

When it was found that nearly seven million surgical patients suffer complications each year and one million die during or shortly after surgery, surgical safety has emerged as a global public health concern (ALMEIDA RAQUEL, 2018).

In addition, when delving into the subject, one sees the importance of using the checklist method, the full completion of the tool is recommended by the World Health Organization in order to ensure the confirmation of all the determining steps to have a surgery safe (ALMEIDA RAQUEL, 2018).

The World Health Organization (WHO) found the interaction between the multidisciplinary team itself to be a critical point for safety in the surgical procedure, involving anesthesiologists, surgeons, nurses, among other professionals rigid in their collaboration in the work environment (LOURENÇÃO, 2018).

In the evidenced context, it is noticed that although the surgical procedures have the purpose of saving lives or of improving the quality of life of the patient, the adverse effects that can be presented during, or soon after the actions taken, can cause negative effects, irreversible (LOURENÇÃO, 2018).

Among adverse effects (AE), health care-associated infections (HAI) stand out, which affect about 1.7 million people worldwide, causing about 100,000 deaths each year. They refer to infections acquired by patients as a result of procedures and health care, from basic, complex and efficient primary care (GEBRIM CYANÉA, 2014).

In this context, IRAS, with emphasis on surgical site infections (SSI), which according to studies represent 31%, aiming at the safety of the surgical patient, the SSI adds an important portion to the WHO program "Safe Surgery Saves Lives" (GEBRIM CYANÉA, 2014).

The problem in question is to identify the role of nurses in epidemiological surveillance actions in the surgical center, to analyze the role of nurses working in the scenario of epidemiological surveillance in adult health actions, in the hospital nucleus, with a focus on the surgical center. Thus, the PVO strategy is used: P — Surgical site infections; V — Preventive actions carried out by the nursing professional; O — Results obtained by epidemiological surveillance actions.

## **II. Materials and Methods**

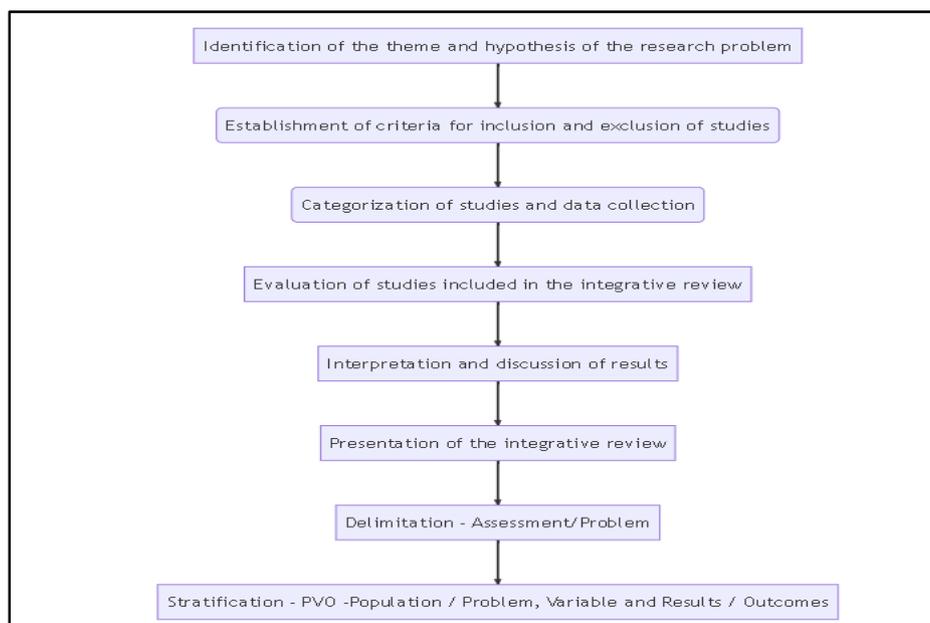
The methodology of an Integrative Review of research, which refers to a method that allows the synthesis of multiple published studies and enables general conclusions regarding a private area of study (GIL, 2010).

The research was carried out from August to November 2019, covering publications such as scientific articles, selected from five databases:

1. (VHL) Virtual Health Library;
2. (LILACS) Latin American and Caribbean Literature in Health Sciences;
3. BDENF (Nursing Database);
4. MEDLINE (International Health Sciences Literature);
5. (SCIELO) Scientific Electronic Library.

Filters published in the period (2014–2018), available electronically in full text, using the Boolean operator AND between the descriptors, in Portuguese, Spanish and English, according to the Health Sciences Descriptors - DeCS, were added.

The integrative review took place according to the phases in the flowchart:



Source: Authors: Based on (De Oliveira et al., 2018).

### III. Results

**Table 1: Distribution of the number of studies found and selected in the SciELO Database, according to the search strategies with Boolean operators. São Paulo, 2019.**

SEARCH	TOTAL ARTICLES WITHOUT FILTER	TOTAL ITEMS WITH FILTER
	<b>SCIELO</b>	
Nursing AND surgical center	143	48
nursing AND epidemiological surveillance	75	20
nursing AND epidemiological surveillance AND surgical center.	1	0
<b>TOTAL ARTICLES</b>	219	68
<b>LILACS</b>		
Nursing AND surgical center	749	152
nursing AND epidemiological surveillance	152	37
nursing AND epidemiological surveillance AND surgical center.	4	3
<b>TOTAL ARTICLES</b>	905	192
<b>BDENF</b>		
Nursing AND surgical center	695	134
nursing AND epidemiological surveillance	104	22
nursing AND epidemiological surveillance AND surgical center.	2	1
<b>TOTAL ARTICLES</b>	801	157
<b>PUBMED/ MEDLINE</b>		
Nursing AND surgical center	8064	365
nursing AND epidemiological surveillance	964	93
nursing AND epidemiological surveillance AND surgical center.	6	0
<b>TOTAL ARTICLES</b>	9034	458

**Table 02-Characterization of selected articles according to title, year of publication, place of study, design and level of scientific evidence. São Paulo-SP, Brazil, 2019.**

Nº	Article title	Year	Study location	Outline	Level of evidence
1	Attitude of operating room nurses towards the systematization of perioperative nursing care.	2017	Campinas	Cross-sectional, descriptive study	
2	Knowledge of surgical center nursing professionals about hypothermia in cancer surgical patients	2017	São Paulo	Descriptive exploratory, cross-sectional, field study with a quantitative approach	
3	Quality indicators in nursing with an emphasis on the surgical center: an integrative literature review	2016	Bauru	Integrative Review	
4	Permanent education in surgical center nurse training: integrative review Use of scenarios for patient safety education in the surgical center	2017	São Paulo	Integrative Review	
5	Permanent education in surgical center nurse training: integrative review Use of scenarios for patient safety education in the surgical center	2017	São Paulo	Descriptive Study	
6	Incidence and risk factors for surgical site infection in general surgery	2016	Minas Gerais	Non-concurrent cohort study	
7	Applicability of the safe surgery checklist in hospital surgical centers	2016	Alagoas	Quantitative research	
8	Distractions and interruptions in the operating room: perception of nursing professionals	2018	Minas Gerais	Exploratory qualitative study	
9	Development of the nursing diagnosis risk for pressure ulcer	2015	Rio Grande do Sul	Integrative Review	
10	Attitudes of operating room nurses towards the systematization of perioperative nursing care	2017	Campinas	Cross-sectional, descriptive study	
11	The work process of nurses in hospital epidemiology centers	2015	Paraná	Exploratory and qualitative study	
12	Good practices for patient safety in the operating room: nurses' recommendations	2018	Santa Catarina	Quantitative, descriptive and exploratory research	
13	Patient safety culture in a surgical center: a nursing view	2018	Piauí	Cross-sectional and analytical study	
14	Surgical center: nurses' challenges and strategies in managerial activities	2016	Rio Grande do Sul	Exploratory, descriptive study with a qualitative approach	
15	Cancellation of elective surgeries in a Brazilian public hospital: reasons and estimated reduction	2016	Botucatu	Quantitative, descriptive and retrospective study with secondary data	
16	Surgical safety checklist: benefits, facilitators, and barriers in the nurses' perspective	2018	Paraná	Cross-sectional study	
17	Surgical count process: evidence for patient safety	2016	Minas Gerais	Cross-sectional study	
18	The work process of nurses in hospital epidemiology centers	2014	Paraná	The study had a qualitative approach exploratório.	

#### IV. Discussion

The surgical center is one of the hospital sectors of high complexity, presenting itself as dynamic, but hostile, in order to create a “barrier” between the multidisciplinary team and between the patient, leaving the work robotic and not always humanized. Faced with this problem, the role of nursing is to guide assistance and care plans, using dynamic and achievable resources, based on the precepts of the nursing process (NP), this is a systematic and humanized instrument, it is elaborated from five phases, on the nursing history, nursing diagnosis, planning, implementation and evaluation (RIBEIRO, 2017).

According to the World Health Organization (WHO), one out of every ten patients in the world is a victim of adverse events and medical errors during the phase in which they need health care and assistance,

therefore, patient safety education involves the development of learning experiences and the use of scientific evidence, which can determine deviations and points that need to be improved in the assistance provided by the multidisciplinary team. Furthermore, teaching about patient safety in schools and care facilities is relatively new and involves strategies that go beyond the traditional learning method (BOHOMOL, 2017).

The introduction of the NP in the care processes occurs when the Systematization of Nursing Care (SAE) is carried out, the unions of both concepts end up making the care of the nursing team efficient, in addition to being the north of care for the patient.

In the surgical environment, the NP is given Systematization of Perioperative Nursing Care (SAEP), a tool for the patient to have comprehensive and humanized care, avoiding possible risks and medical errors that may be offered from the moment he undergoes surgery (RIBEIRO, 2017).

The SAEP consists of five stages: visit by the nursing team in the preoperative period, perioperative care planning, implementation of specified care and care, evaluation of care provided, and reformulation of care according to the results achieved. Difficulties are observed for the implementation of SAEP, as well as the lack of training of the nursing team to perform the NP, lack of mastery in anamnesis and physical examination, lack of a determining hospital protocol, lack of a structured organization, administrative and assistance functions without being in conversation, scarcity of resources, lack of planning, excessive routine at the surgical site, among other aggravating factors (RIBEIRO, 2017).

Hypothermia is one of the factors that need to be observed in the surgical site, since during the first hours of application of general anesthesia, the patient's body temperature usually decreases between 0.5 and 1.5 °C, which can cause systemic complications, as well as such as: hyperactivity of the nervous system, vasoconstriction, increased oxygen consumption, decreased blood clotting, reduced platelet function, increased blood loss and a possible need for blood transformation. The patient admitted to the operating room needs his internal body temperature to be constant, so that his metabolic functions are preserved during constant monitoring of the patient to prevent hypothermia (SOUZA, 2017).

From this perspective, it is important that the nursing team promotes the implementation of interventions that are effective in the treatment and prevention of hypothermia in the patient, reducing the complications that may be associated with it, generally using active warming strategies (it is a method of heated forced air system or heated water circulation systems) or passive (such as, for example, thermal insulation, blankets or others), which should be used during the perioperative period to ensure quality care for the patient in question. Thus, it is important to have an understanding of the pathophysiology, possible complications and forms of prevention, so that the nursing professional can perform his role in the best possible way, bringing safety and comfort to the patient (SOUZA, 2017).

The quality of health care is constantly discussed by professionals in the area, one of the biggest challenges pointed out is excellence in the demand for care provided, improving the quality of care is generally considered by nurses to be a difficult and exhausting process, it is necessary to identify the factors that intervene directly and indirectly in the work processes, being able to observe which actions and new implementations help in the improvement of the conditions of provision of care services to the patient. From this point of view, in the surgical site, the important quality indicators to be observed are those related to the Systematization of Perioperative Nursing Care (SAEP), preoperative nursing visit (VPOE), skin injury (LP), falls, infections in surgical site (ISC) and nursing records (AMARAL, 2017).

Thus, it is observed that the participation of the nurse manager in the process of analyzing the quality and productivity in the provision of services in the surgical center is of paramount importance, with the purpose of detecting abnormalities or activities that are not concomitant with the standards required by the health unit. In question, bringing security to the multidisciplinary team and patient admitted with constant monitoring and making comparisons with other incident cases in the hospital, in order to present other perspectives and possible improvements in health care. From the SAEP, which understands and covers the OPV, the nurse is able to know the patient in the surgical center in advance, giving him a better preparation, allowing him to draw up a care plan and provide the necessary information to the patient and his accompanying person before the procedure is performed, this allows for less anxiety and stress coming from the patient (AMARAL, 2017).

Important points to be frequently observed by nurses are PI, which the patient is exposed to with complications during electrosurgery that can cause burns, possible explosions between mixtures of combustible elements and interference in equipment and pacemakers. The positioning of the patient during the surgical act must be done correctly in order to avoid possible complications, such as, for example, falls, in addition, SSI is a recurrent indicator that can happen due to technical failures in the surgical processes, compromising the recovery and postoperative period of the patient. In view of the various risks presented, constant vigilance is considered the role of nurses and the multidisciplinary surgical team, in order to maintain planning actions and prevention of interferences during the anesthetic-surgical process, some of the difficulties to maintain a standard of excellence

in this care, is that according to studies, only about 54% of nurses collect and analyze indicator data, a way to standardize this care and facilitate its implementation is through the use of computerized systems (AMARAL, 2017).

## V. Conclusion

In order to comply with the new requirements in the hospital environment, it is necessary to rethink the work processes, aiming at comprehensive care aimed at the patient, encompassing the spheres of planning, education and continuous training, health education in the nursing team has the responsibility of always being training, being consistent with the improvement of techniques and new technologies presented.

The development of the nursing team is the responsibility of the continuing education nurse, one of the alternatives presented in some private hospitals is distance education (EaD), an important tool, as learning takes place in the unit itself, for nurses from CC, one of the negative points of EaD teaching, is the intense surgical schedule, the difficulty of getting some fit and the difficulty of using the media.

One of the strategies adopted for patient safety at the surgical site and to improve the quality of care provided by health services was the adoption of a checklist, known as the checklist method. to be observed in the patient, helping to reduce the occurrence of risks and harm to the patient. Idea adopted by the World Health Organization (WHO), this tool is generally used primarily in safety measures in the intraoperative phase, but adequate in the pre and postoperative phases, application of the checklist method is low cost and very easy, usually being the responsibility of the nurse, but any health professional who participates in the surgical team can carry out the checklist.

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Jefferson Carlos de Oliveira1." The Nurse's Role In The Epidemiological Surveillance Of The Surgical Site: Integrative Review." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 28(4), 2023,pp.29-36.