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NOTE PREVIEW ARTICLE

# SAFETY AND SUSTAINABILITY IN THE MANAGEMENT OF HEALTH WASTE IN HOSPITAL UNITS

## SEGURANÇA E SUSTENTABILIDADE NO GERENCIAMENTO DOS RESÍDUOS DE SAÚDE EM UNIDADES HOSPITALARES

## SEGURIDAD Y SOSTENIBILIDAD EN LA GESTIÓN DE RESIDUOS SANITARIOS EN LAS UNIDADES HOSPITALARIAS

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**ABSTRACT**

***Objectives:*** describing how works the waste management by the health team; correlating the practice of waste management by the health team in the light of the best scientific evidence; proposing a protocol directed to the practice of management and waste handling of health services for the hospital setting. ***Method:*** a translational, descriptive and exploratory research, in a University Hospital of Rio de Janeiro/RJ, and as participants the health team professionals working in waste management. The data will be produced through non-participant observation with semi-structured interview. ***Expected results:*** find the optimal implementation of the recommendations strictly according to the criteria established in the rules governing waste management of health services. However, after reading the findings, supporting the production of tools to guide and organize the waste management in the studied scenario. ***Descriptors:*** Health Waste; Health Services Waste Management; Patient Care Team.

**RESUMO**

***Objetivos:*** descrever como se realiza o gerenciamento dos resíduos pela equipe de saúde; Correlacionar a prática do gerenciamento de resíduos pela equipe de saúde à luz das melhores evidencias científicas; Propor um protocolo direcionado à prática de gerenciamento e manejo dos resíduos dos serviços em saúde para o cenário hospitalar. ***Método:*** pesquisa translacional, descritiva e exploratória, tendo como cenário um Hospital Universitário do Rio de Janeiro/RJ, e como participantes os profissionais da equipe de saúde que atuam no manejo de resíduos. Os dados serão produzidos por meio de observação não participante juntamente com entrevista-semiestruturada. ***Resultados esperados:*** encontrar a aplicação ideal das recomendações obedecendo rigorosamente os critérios estabelecidos pelas normas que regem gerenciamento de resíduos dos serviços de saúde. Não obstante, após a leitura dos achados, colaborar com a produção de instrumentos que norteiem e organizem o manejo de resíduos no cenário estudado. ***Descritores:*** Resíduos de Serviços de Saúde; Gerenciamento de Resíduos de Serviços de Saúde; Equipe de Assistência ao Paciente.

**RESUMEN**

***Objetivos:*** describir cómo será la gestión de residuos por el equipo de salud; correlacionar la práctica de la gestión de los residuos por el equipo de salud a la luz de la mejor evidencia científica; proponer un protocolo dirigido a la práctica de la administración y la gestión de residuos de servicios de salud para el ámbito hospitalario. ***Método:*** una investigación traslacional, descriptiva y exploratoria, con el trasfondo de un Hospital Universitario de Río de Janeiro/RJ, y como participantes los profesionales del equipo de salud que trabaja en la gestión de residuos. Los datos se producen a través de la observación no participante con la entrevista semi-estructurada. ***Resultados esperados:*** encontrar la aplicación óptima de las recomendaciones estrictamente de acuerdo con los criterios establecidos en las normas que rigen la gestión de residuos de servicios de salud. Sin embargo, después de leer los resultados, el apoyo a la producción de herramientas para orientar y organizar la gestión de residuos en el escenario estudiado. ***Descriptores:*** Residuos de los Servicios de Salud; Servicios de Gestión de Residuos de la Salud; Grupo de Atención al Paciente.

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## INTRODUCTION

The influence of the environment on human health has been an important consideration of nursing since its inception. Florence Nightingale had the perception that the environment could act as an ally or enemy health depending on how we use.[1] According to the World Health Organization (WHO), can be attributed to environmental exposure about a quarter of diseases affecting the world's population. The contribution made by the health industry is large and represents a value that exceeds the mark of 2,4 million tons of waste per year, and is characterized as a large consumer of energy. The responsibility of hospitals, therefore, goes beyond the physical limitations; these institutions should conduct safe practices to promote health not only of their patients and professionals, but also of the environment.[2]

In Brazil, the standardization of the management of Health Service Waste (RSS) is regulated by the National Health Surveillance Agency (ANVISA), through Resolution of the Board of Directors (DRC) n° 306/04,[3] and by the National Environment Council (CONAMA), with Resolution n° 358/05,[4] which defined these guidelines considering principles of biosafety, preservation of public health and the environment.

According to ANVISA, there are defined as RSS generators all services related to the care of human or animal health.[4] The classification of RSS is given, according to RDC 306/04 of ANVISA, in 5 main groups: Group A- biohazardous waste; Group B - waste with chemical risk; Group C - radioactive waste; Group D - Similar to domestic waste; Group E - sharps waste. And management includes the following steps: separation, packaging, identification, storage, collection, transportation, treatment and final disposal.[4]

The idea that all the waste generated in the hospital it is dangerous residue is erroneous, since most of the actual amount which corresponds to about 80%, is basically composed of residues that resemble those produced in households daily as paper, packaging material, food, etc., and is no risk in particular human and/or environmental health.

Among the various steps provided for in the waste management process, nursing is largely responsible for the generation and segregation, considered the first actions to be taken for the proper management thereof. As such, improper handling in the early stages involves the whole chain management, since segregate improperly will lead to a final destination of erroneous material, causing losses in various aspects such as reduced microbiological safety and increase the risk of industrial accidents. The waste management requires knowledge about the material that works, and preparation and involvement of professionals involved in the whole process. However, many health institutions neglect such care and devalue the deployment methods where the management is understood as part of a professional routine.

More significantly, in Brazil, more than 30.000 health units produce RSS and the issue of management is not resolved in most cities. In addition, some facilities are unaware of the amount and composition of waste they produce.[5] Thus, it is essential to foster discussions on this issue at an early stage of training of health professionals, in order to contribute to the formation of professionals with environmental responsibility and to realize the management actions as part of a systemic network that acquires even greater. It is essential to encourage the development of a safety culture focused on the RSS management within health units, which implies the permanent practice of an exercise in citizenship; including a multidisciplinary team, in order to analyze and evaluate the processes related to the management, seeking improvements and incorporation of new technologies and strategies.[6]

In this sense, the use of protocols and guiding instruments could guide health care teams in a variety of scenarios, since aggregate a set of structured recommendations that provide valid recommendations, based on a critical evaluation of the best available evidence, rather than opinions empirical and informal.[7]

Brazilian law provides that all RSS generating unit needs to develop the Waste Management Plan of Health Services (PGRSS) which aims to minimize the production thereof and to provide a safe route, also aimed at protecting workers and the preservation of environment.[8] Therefore, the development of protocols drivers to waste management work as a tool to help professional practice.

The good health of waste management in a hospital depends on good management, careful planning, good organization, adequate funding, full participation of trained staff as well as staff dedication.[9] Therefore, in this study we aim to awaken the professionals involved in the generation RSS and management for development and dissemination of a culture of safety and sustainability in health.

## OBJECTIVES

- Describing how to perform the management of RSS by the health team.
- Correlating the practice of waste management by the health team in the light of the best scientific evidence.
- Proposing protocols directed to the practice of management and waste management for the hospital setting.

## METHOD

### ♦ Type of Study

It is a translational, descriptive and exploratory research and the methodological framework to evidence-based practice. The overall purpose is to collect detailed information from the waste management process and evaluation of the conditions and current practices.

However, incentives for the improvement of nursing research, both individual as collaborative, have strongly propagated in order to optimize the excellence in health care and patient safety, confirming effective health policies. Subsidized studies on evidence, clinical trials, systematic reviews, convergent-care research, phenomenological studies and social representations have the same goal: to answer questions of professional practice, however, despite all the knowledge produced, there is a gap between them and the use of the results of research conducted in health services.

Translational research appears to try to break this gap and bring the researcher of the practice fields. Although the terminology is recent, the search results transfer notion is not. Discussions like this have been worked since the 1970s, in the United States and Brazil, the National Seminar on Nursing Research in the constant quest to understand how to incorporate research results from professional and clinical nursing practice.[10]

The first publication on the subject was broadcast in the editorial of the Journal of the American Medical Association (JAMA) in 2002, which states it is an essential tool for the improvement of human health. For researchers of health and public health services researchers, translational research is as ensuring that new treatments and knowledge gained through research, in fact, reach to patients or populations for which they are intended and implemented correctly.[11]

### ♦ Research Set

The research will be held in downtown hospital units, medium and high complexity and outpatient services of a university hospital located in the city of Rio de Janeiro (RJ). Such units were selected because they generate various wastes, considering the peculiarities of each service.

This institution is part of the Sentinel Hospital Network ANVISA and was selected as a center of excellence in academic education, supporting the improvement of numerous health professionals in the country; and contributing significantly to the production of knowledge and innovations in national and international scenarios.

### ♦ Research Participants

The population is composed of healthcare team professionals that handle waste from the assistance in the units. The sample will initially be composed of professionals from the multidisciplinary team operating in waste management, the research period and agree in writing, be observed and interviewed.

### Data Production

### ♦ First Stage

Will be held dense integrative review of the waste management situation, forms of management and segregation performed and recommended, including review of national and international consolidated literature in the knowledge area. Then we will have a synthesis of knowledge applied specifically to the role of health staff in waste management of health services, which will encourage the researchers in the following stages of data collection and analysis.

### ♦ Second Stage

For data collection will be held both observations following a script. The research team will request signing the informed consent form (ICF) to participate in the study, and will serve to explain and answer questions about the questionnaire, as well as record start and end of the process. Participants will be guaranteed voluntary participation and the anonymity of the respondents in all stages of the research. Also there will be a semi-structured interview to be applied as test (first time) and re-test (second phase) applied to each participant, as technical interposed observation.

This instrument will cover the research objectives and has a target to elucidate the perceptions that respondents have about the world, not imposed on them the worldview of the researcher.[12]

### ♦ Data Analysis

The compilation of data emanating from the interviews and observation, together with the synthesis of best evidence from the literature review, will allow the development of a driver flowchart (summary preview of the protocol) to be subjected to a validation process. It should participate in this testing phase the members of the healthcare team participants of the data collection stage.

The reliability of the information contained in comparative tests of validity of measures will be evaluated to identify the effectiveness/efficiency of the use of idealized flow chart. The comparison of the answers given in the test (first application of the questionnaire) and re-test (second application of the questionnaire) will be done by statistical analysis of parametric and nonparametric measures.

After the completion of these steps, the flowchart will suffer adjustments that should consider institutional, administrative and scientific, and only then take the methodological design and all scope that requires a clinical protocol.

The construction of the protocol will be followed by a testing using the Delphi method. A Delphi is the choice of an expert group to which ask the opinion on issues relating to future events. The evaluations of the experts are carried out in successive rounds anonymous whose goal is to reach a common denominator and at the same time provide the greatest possible latitude to participants. Therefore, the predictive power of Delphi is based on the systematic use of intuitive weighting issued by a group of experts. In essence, is through the question of participating experts with the help of successive questionnaires, thus revealing convergence of views and coming to consensus.[13]

### ♦ Ethical Aspects

This research has the approval of the Research Ethics Committee of EEAN/Hospital School São Francisco de Assis (HESFA) under CAAE: 30226214.3.0000.5238 and is under consideration by the Hospital Committee on screen, following the recommendations of Resolution 466/12. This project is part of Group Research and Extension Safety and Sustainability in Health (GPESEG) and has been developed by researchers in partnership with teachers undergraduate and graduate.

## EXPECTED RESULTS

Faced with characteristics linked to safety and health in sustainability in the hospital, it is expected that the results of this study related to the management of waste, find the ideal implementation of the recommendations strictly according to the criteria established by the rules applied to the waste management services health.

We believe that the proposed protocols that incorporate the best recommendations can contribute consubstantially to the practice of managing medical waste is safe and sustainable.

Studies of this nature generate potential impact on the quality of health care, establishing the scientific, ethical and legal commitment to ensuring the promotion of a greater good to the patient, professionals, the environment and the general population.

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