

42 - BIOSAFETY AND MANAGEMENT OF SOLID WASTE FROM HEALTH SERVICES

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Introduction

Daily we produce large amounts of waste in our homes and the same happens in health facilities. According to the Resolution of the Collegiate Board of Directors (RDC) No. 306 of December 7, 2004, which provides for the Technical Regulation for the Management of Health Residues, define as solid waste producers of health services (RSS) all services related to human and animal health care. (BRASIL, 2004). RSS management is a set of management procedures, planned and implemented based on scientific and technical, normative and legal bases, with the objective of minimizing the production of waste and providing the generated waste with a safe efficient way, aiming at the protection of workers, the preservation of public health, natural resources and the environment. Management should cover all planning stages of physical resources, material resources and human resources training involved in the management of RSS. (PINHEIRO, ANDRADE, 2016)

Resolution No. 358/05 of the National Environment Council (CONAMA) also defines that solid waste from health services (SSR) is waste from all establishments involving human and animal health care, as well as the units furniture of attendance. The producers of RSS can be by laboratories, morgues, drugstores that provide basic health services such as blood glucose check and injectable drug application, pharmacies, veterinary clinics, dental clinics, hospitals, outpatient clinics, among others. (Brazil, 2005).

RSS can reach the environment and population health when inappropriately discarded due to pathogenic microorganisms such as the maintenance of different viable bacterial species and the effect can be avoided when there is adequate disposal. (GESSNER R, PIOSIADLO L, FONSECAR, LAROCCAL, 2013).

Health professionals are in constant contact with RSS, so it is extremely important that they know the biosafety norms established by Ordinance No. 485, of November 11, 2005, which defines the regulatory norm - NR 32, which proposes the basic guidelines for health and safety at work in health services and also establishes basic standards for the implementation of worker safety measures. Biosafety can be defined as a set of actions adopted and practicable for the prevention, reduction and elimination of risks inherent in the health and well-being of professionals working in research, teaching, production, handling and provision of health services human and animal, that when carried out do not generate biological, chemical, radioactive and ergonomic risks to the professional. (PINHEIRO, ANDRADE, 2016).

The importance of waste management of health services is evidenced from studies that prove the benefits that this procedure, when performed in accordance with current legislation, brings society, the environment and the entity itself. (DOI, MOURA, 2011).

Methodology

It is a study of a review of the narrative literature, which had a bibliographical survey through consultation in virtual libraries in health, database lilacs, scielo, scientific articles, ordinances and resolutions referenced thematic: Biosafety, Handling, Solid Waste Service Health, Safety at work. From the selection of bibliographic productions, inclusion criteria were observed: materials that were in the Portuguese language, which had full text access, that were field surveys, articles, projects, resolutions, case studies and reviews on the subject. Of the exclusion criteria, materials not included for development were those that had no relation to the issues of the theme, incomplete texts, foreign languages, duplicate articles, materials that did not address the target audience. Of the materials found that had relativity to the theme, 28 were analyzed and only 13 were included for the development of this work.

Results and discussion

Personal protective equipment (PPE) and other safety measures

The guarantee of the quality of life of the professional in relation to their work is based on the use of personal protective equipment (PPE), these should be used in the environment in which the work or task is carried out that can generate risks to the worker, your well-being. (PINHEIRO, ANDRADE, 2016). A Consolidação das Leis do Trabalho (CLT) garante que a empresa é obrigada a fornecer aos empregados gratuitamente cada EPI adequado e em perfeitas condições de uso. Caso não sejam fornecidos todos os equipamentos e acontecendo algum acidente no trabalho, a empresa será responsabilizada. Lembrando que é obrigação também do empregado a responsabilidade pelo uso e conservação de cada EPI. (RODRIGUES, 2016). The lack of job security causes accidents, and one of the classes directly affected is the garbage collection professionals, who are exposed to various risks in the course of their activities. This profession is almost always devalued and therefore does not raise the necessary concern about the security in which the trade requires. (PEDROSA, GOMES, MAFRA, ALBUQUERQUE, PELENTIR, 2010).

Accidents resulting from inadequate management of solid waste from health services are worrisome because they contain material that is likely to pose a health risk to professionals. For this reason, it is important to highlight the measures and techniques of bisexuality involved in the collection, transportation and disposal of these wastes, in order to reduce the incidence of risks, as well as to reduce the number of accidents at work with occupational risks. (PEDROSA, GOMES, MAFRA, ALBUQUERQUE, PELENTIR, 2010). Every professional responsible for cleaning should check for tetanus and hepatitis B vaccination, conduct a tuberculin test annually and be continuously trained on biosafety standards and protocols, and undergo a series of medical examinations (admission, periodic, return to work, change of function and resignation). (CAMARGO, MOTTA, LUNELLI, SEVERO, 2009).

The PPE's that should be used by professionals in their cleaning and waste management activities are: Helmet, Apron (cotton jacket); Activated charcoal mask and surgical mask; PVC boots, short and long (for washing), light-colored and non-slip soles; PVC gloves thick and long, non-slip; Acrylic goggles. The use of long pants and closed shoes is mandatory. Professionals

should maintain perfect personal hygiene (daily bathing, clean hair, hairstyles and nails, clean and trimmed nails and avoiding the use of adornments). (CAMARGO, MOTTA, LUNELLI, SEVERO, 2009).

Figura . Equipamentos de proteção individual

Equipamentos de proteção - Os equipamentos de proteção são todos os dispositivos destinados a proteger a saúde e a integridade física do trabalhador.

Os equipamentos de proteção devem ser utilizados pelos funcionários que manuseiam os resíduos e devem ser os mais adequados para lidar com os tipos de resíduos de serviços de saúde. Devem ser utilizados de acordo com as recomendações normativas do Ministério do Trabalho.



Source: Health Service Waste Management Manual (HSWMM) (BRAZIL, 2011)

Classification of solid waste from health services

According to RDC No. 306/04 and Annex I of Resolution 358/05, waste must be classified for segregation correctly, they are classified into groups: "Group A, Group B, Group C, Group D and Group E "(BRASIL, 2004).

Group A (potentially infective) - residues with the possible presence of biological agents that, due to their virulence or concentration characteristics, may present a risk of infection, such as:

A1. Crops and stocks of infectious agents from industrial and research laboratories; waste from the manufacture of biological products, other than blood products; (ERDTMANN, 2004).

A2. Carcasses, anatomical specimens, viscera and other residues from animals submitted to experimental procedures with inoculation of microorganisms, as well as their fodder, and the cadavers of animals suspected of being carriers of microorganisms of epidemiological relevance and risk of dissemination that were submitted or not to pathological anatomical study or diagnostic confirmation; (ERDTMANN, 2004).

A3. Anatomical parts of the human being, which have no more scientific or legal value, and / or when there is no prior request by the patient or his / her relatives; a fecundation product without vital signs, weighing less than 500 grams or stature smaller than 25 centimeters or gestational age less than 20 weeks, which have no more scientific or legal value, and / or when there is no prior request by the family; (ERDTMANN, 2004).

A4. Intravenous arterial line and dialyser kits, when discarded; air filters and gases from critical areas. Also, organ, tissues and organic fluids with suspected contamination with prion protein and solid residues resulting from health care of individuals or animals suspected of contamination with prions (disposable materials and instruments, clothing that had contact with the agents identified above); adipose tissue derived from liposuction, liposculpture or other plastic surgery procedure that generates this type of residue; containers and materials resulting from the health care process, which do not contain blood or body fluids in free form; carcasses, anatomical parts, viscera and other residues from animals not subject to experimentation procedures with inoculation of micro-organisms, as well as their fodder; corpses of animals from care services; Transfusion bags empty or with post-transfusion residual volume; (BRAZIL, 2004).

A5. Organs, tissues, organic fluids, piercing or scarifying materials and other materials resulting from the health care of individuals or animals, with suspicion or certainty of contamination with prions. (BRAZIL, 2004).

Group B (chemicals) - wastes containing chemicals posing a risk to public health or the environment, irrespective of their flammability, corrosivity, reactivity and toxicity characteristics, such as: hormonal products and antimicrobial products; cytostatics; antineoplastic agents; immunosuppressants; digitalis; immunomodulators; antiretrovirals, when discarded by health services, pharmacies, drugstores and distributors of drugs or seized and the residues and pharmaceutical inputs of the medicines controlled by Ordinance MS 344/98 and its updates; sanitizing waste, disinfectants, disinfectants; wastes containing heavy metals; laboratory reagents, including containers contaminated by them; effluents from image processors (developers and fasteners); effluent from autokmated equipment used in clinical analysis; other products considered to be hazardous (toxic, corrosive, flammable and reactive) (ERDTMANN, 2004)

Group C (Radioactive waste) - Any materials resulting from human activities containing radionuclides in amounts exceeding the disposal limits specified in the standards of the National Commission for Nuclear Energy (CNEN) and for which reuse is improper or unplanned; this group includes any materials from health research and teaching laboratories, clinical analysis laboratories, and nuclear medicine and radiotherapy services. (ERDTMANN, 2004).

Group D (common waste) - Wastes which do not present a biological, chemical or radiological risk to health or the environment and can be assimilated to household waste; toilet paper and diaper, sanitary napkins, disposable garments, patient food, material used in antisepsis and haemostasis of veniclerosis, serum equipment and the like not classified as A1; leftovers from food and food preparation; rest food of cafeteria; waste from the administrative areas; sweeping waste, flowers, pruning and gardens; and gypsum residues from health care. In this group may be the recycling of certain wastes, based on CONAMA Resolution no. 275/2001: I - blue: papers; II - yellow: metals; III - green: glass; IV - red: plastics; V - brown: organic waste. (ERDTMANN, 2004).

Group E (Sharpeners) - Sharpening or scarifying materials such as: razor blades, needles, scalpels, glass ampoules, drills, endodontic files, diamond tips, scalpel blades, lancets; capillary tubes; micropipettes; blades and coverslips; spatulas; and all glassware broken in the laboratory (pipettes, blood collection tubes), bags of incomplete collection, discarded at the collection site, when accompanied by a needle, regardless of the volume collected, and the like. (ERDTMANN, 2004).

Biosafety in the management of solid waste from health services

There may be several damages resulting from the poor management of health care waste, among them environmental contamination, the occurrence of work-related accidents - involving health professionals, public cleaners and waste pickers - and the spread of diseases for the general population, by direct or indirect contact through vectors. The issue of health care waste can not be analyzed only in terms of the transmission of infectious diseases. Other factors must also be contrasted with regard to the issue of health care waste other than the transmission of infectious diseases, for example, worker health and environmental preservation, should be taken into account and these biosecurity concerns. It is believed that proper waste management can contribute significantly to reducing the occurrence of work-related accidents, especially those caused by sharps. In this way, the percutaneous exposure of health care workers to biological materials could also be reduced, a measure in the context of biosafety that would have great value for occupational health. (GARCIA LP, ZANETTI-RAMOS, 2004).

The concern with the efficient management of the residues produced by the population has been growing since the

second half of the XX century, considering that the new patterns of consumption resulting from industrialization have led to the increase in the generation of waste superior to the absorption capacity of the nature. (GESSNER, PIOSIADLO, FONSECA, LAROCCA, 2013).

Health facilities are not usually biosafety sites, and residues are identified in inadequate packaging, mixed with other classes and types, waste materials and large volumes of contaminated waste. The problems related to this issue are complex, requiring not only a conscious positioning, but, above all, willingness to collaborate in its resolution. The inadequate management of the RSS has caused serious implications for the environment and health of the professional, making it necessary that the subjects participating in these spaces have a more comprehensive vision to face this problem. (CORRÊA, LUNARDI, DE CONTO, 2007).

Each RSS group, according to its characteristics, must obey a determined flow of correct management, from its packaging to final destination. Waste from Group A must be packed in a white trash can with lid and pedal, a white milky bag marked "Residue Infectant". Its external packaging must be in a proper place, identified, whose transport must be carried out in a special way and by trained professionals. The treatment must be done by means of autoclaving and only after that can be deposited in a municipal landfill. Group B represented by the symbol of toxic substance, it should appear on the red background label, black outlines and outlines, written: "Chemical Waste", if applicable, add the inscription "Sharpener".

For the packaging the chemical compatibility between the products must be observed. Group C, represented by the symbol of radioactive substance, yellow background label, black outlines and drawing, inscription: "Radioactive Reject", indicating the main risk, name of the radioactive element, decay time, generation date and name of the generating unit. When characterizing sharps, keep: sharps, more infectious or chemical residue. Group D must be conditioned according to the guidelines of the local urban cleaning services, using waterproof bags.

Group E, sharps must be discarded separately, at the place of their generation, immediately after use or need for disposal, in containers, rigid, resistant to puncture, rupture and leakage, with a lid, properly identified. (GESSNER, PIOSIADLO, FONSECA, LAROCCA, 2013).

CONCLUSION

It is important to idealize the focus of the research, to improve the knowledge of the garbage collection professionals regarding biosafety in their workplaces, and also to point out the problems of inadequate management of solid waste from health services and the damages caused to the health of the worker. Emphasize the safety protocols for professionals in the use of personal protective equipment (PPE) to minimize the risks to the physical integrity of workers.

The monitoring of precautionary measures, carried out through the improvements in the knowledge about the classification of the RSS is fundamental for the professionals who work in the health area, knowing what is handled is a factor that transmits security to the involved, it is notorious the importance of the companies which provide lectures, training courses, training and training to its employees. Each internal protocol of a company follows a legislative and administrative regulation, wide disclosure of its standards and precautionary measures are favorable points to the professionals in which they are benefited and the improvements are visibly perceived by the contractor, the positive result is a promotion of less risks of compliance with the use of individual and collective equipment, correct management, the applicability of learning to professionals results in less aggravating the health of RSS collectors.

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BIOSAFETY AND MANAGEMENT OF SOLID WASTE FROM HEALTH SERVICES

ABSTRACT

Introduction: The problems involving the management and biosecurity of solid waste from health services (SSR), formerly called hospital waste, are diverse and comprehensive, so we'll focus only on three topics of relevance: the use of PPE (of individual protection), the classification of these RSS, and the form of management. Objective: To approach the problems related to incorrect handling and lack of biosafety related to SSR, with the specific objectives of: highlighting the use of PPE for the safety of professionals, improving knowledge about SSR classification, and relevance of proper handling. Method: Characterized as narrative literature review, with theoretical reference taken from virtual databases (Scielo and BDNEF), projects and scientific articles, ordinances and resolutions referenced thematic: Biosafety, Handling, Solid Waste Health Service, Work safety. Results and Discussion: Keep professionals always up to date on standards, routines, classification, handling, as well as biosafety measures, thus minimizing possible work accidents. Conclusion: It is important to idealize the focus of the research, to improve the knowledge of the professionals of garbage collection regarding biosafety in their workplaces and also to point out the problems of the inadequate management of the solid residues of health services and the damages caused to the health of the workers, that behavioral attitudes be rethought, thus avoiding future harm to their health.

Keywords: Biosafety; Professionals; Hospital wastes; Handling.

BIOSÉCURITÉ ET GESTION DES DÉCHETS SOLIDES DES SERVICES DE SANTÉ

Résumé

Introduction: Les problèmes liés à la gestion et à la bisexualité des déchets solides des services de santé (SSR), anciennement appelés déchets hospitaliers, sont divers et exhaustifs, de sorte que nous ne nous concentrerons que sur trois sujets d'intérêt: l'utilisation des EPI. (Équipement de protection individuelle), la classification de ces flux RSS et le formulaire de gestion. Objectif: s'attaquer aux problèmes liés à la manipulation incorrecte et au manque de biosécurité liés à la RSS, avec des objectifs spécifiques: mettre en évidence l'utilisation des EPI pour la sécurité des professionnels, améliorer les connaissances sur la classification des flux RSS et la pertinence de la gestion. approprié. Méthode: Caractérisée comme une revue de littérature narrative, avec des références théoriques extraites de bibliothèques virtuelles (Scielo et BDNEF), de projets, d'études de cas et d'articles scientifiques, d'ordonnances et de résolutions portant sur le thème: biosécurité, manipulation, service de traitement des déchets solides, sécurité de travail. Résultats et discussion: Tenez les professionnels au courant des normes, des routines, de la classification, de la manipulation ainsi que des mesures de biosécurité, minimisant ainsi les risques d'accident du travail. Conclusion: Il est important d'idéaliser l'axe de la recherche, d'améliorer les connaissances des professionnels de la collecte des ordures en matière de biosécurité sur leur lieu de travail, ainsi que de souligner les problèmes de gestion inadéquate des résidus solides des services de santé et les dommages causés à la santé des travailleurs, que les attitudes comportementales soient repensées, évitant ainsi de futurs dommages pour leur santé.

Mots-clés: biosécurité; Les professionnels; Déchets hospitaliers; Manutention.

BIOSEGURIDAD Y MANEJO DE LOS RESIDUOS SÓLIDOS DE SERVICIO DE SALUD

RESUMEN

Introducción: Los problemas que involucran el manejo y la bisexualidad de los residuos sólidos de servicios de salud (RSS), antes llamados basura hospitalaria, son diversos y amplios, de modo que enfocamos solamente en tres tópicos de relevancia, que son: el uso de EPI's (Equipos de Protección Individual), la clasificación de esos RSS, y la forma del manejo. Objetivo: Abordar los problemas que ocurren en cuanto al manejo incorrecto y la falta de bioseguridad relacionados con los RSS, teniendo como objetivos específicos: resaltar la utilización de los EPI's para la seguridad de los profesionales, mejorar el conocimiento sobre la clasificación de los RSS, y la relevancia del manejo apropiado. En el presente trabajo se analizaron los resultados de la evaluación de los resultados obtenidos en el análisis de los resultados obtenidos en el estudio. del trabajo. Resultados y Discusión: Mantener a los profesionales siempre actualizados acerca de normas, rutinas, clasificación, manejo, así como las medidas de bioseguridad, minimizando así los posibles accidentes de trabajo. Conclusión: Importante idealizar el foco de la investigación, perfeccionar el conocimiento de los profesionales de recolección de basura sobre la bioseguridad en sus lugares de trabajo y también apuntar los problemas del manejo inadecuado de los residuos sólidos de servicios de salud y los daños causados a la salud de los trabajadores, que se repensan las actitudes comportamentales evitando de esa manera futuros agravios a la salud de los mismos.

Palabras clave: Bioseguridad; profesionales; Residuos hospitalarios; Manipulación.

BIOSSEGURANÇA E MANEJO DOS RESÍDUOS SÓLIDOS DE SERVIÇO DE SAÚDE

RESUMO

Introdução: Os problemas envolvendo o manejo e a bissegurança dos resíduos sólidos de serviços de saúde (RSS), antes chamados de lixo hospitalar, são diversos e abrangentes, deste modo iremos focalizar somente em três tópicos de relevância, que são: a utilização de EPI's (Equipamentos de Proteção Individual), a classificação desses RSS, e a forma do manejo. Objetivo: Abordar os problemas que ocorrem quanto ao manuseio incorreto e a falta de biossegurança relacionados aos RSS, tendo como objetivos específicos: ressaltar a utilização dos EPI's para a segurança dos profissionais, aprimorar o conhecimento sobre a classificação dos RSS, e a relevância do manejo adequado. Método: Caracterizado como revisão de literatura narrativa, com referencial teórico retirado de bibliotecas virtuais (Scielo e BDNEF), projetos, estudo de caso e artigos científicos, portarias e resoluções referenciados a temática: Biossegurança, Manuseio, Resíduos Sólidos de Serviço de Saúde, Segurança do trabalho. Resultados e Discussão: Manter os profissionais sempre atualizados a respeito de normas, rotinas, classificação, manuseio, assim como as medidas de biossegurança, minimizando assim os possíveis acidentes de trabalho. Conclusão: Importante idealizar o foco da pesquisa, aperfeiçoar o conhecimento dos profissionais de coleta de lixo a respeito da biossegurança em seus locais de trabalho e também apontar os problemas do manejo inadequado dos resíduos sólidos de serviços de saúde e os danos causados a saúde dos trabalhadores, que sejam repensadas as atitudes comportamentais evitando dessa maneira futuros agravos à saúde dos mesmos.

Palavras chave: Biossegurança; Profissionais; Resíduos hospitalares; Manuseio.