

Medical Waste: implications for the new coronavirus pandemic scenario

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ABSTRACT

The new coronavirus pandemic directs us to focus on safe care of patients and healthcare professionals. At the same time, it brings important challenges beyond health care, such as demand and consumption of hospital supplies that, after disposal, give rise to Medical Waste, regulated by RDC 222/18 of ANVISA (*Agência Nacional de Vigilância Sanitária* – Brazilian National Health Surveillance Agency). ANVISA classifies them into infectious, chemical, radioactive, common, and sharps waste. Waste from services designed to treat this disease and those generated by suspected and confirmed patients must be classified as biological agents of risk class 3 and, at this moment, managed as infectious (A1) and have appropriate treatment before final disposal. New waste management practices and the position adopted by health institutions will affect all links in the health care chain. The main objective of this editorial is to guide the definition of new waste management flows and procedures for hospitals.

Keywords: Medical Waste; Sustainability Development Indicators; Coronavirus Infections.

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At this time of the COVID-19 pandemic, numerous institutions across the globe are focused on ensuring safe care for patients; protect health professionals; seek solutions for treatment; and break an aerosol and contact transmission chain. At the same time, it brings important challenges beyond health care, how to manage Medical Waste (MW) safely, protecting the workers who handle it and the environment.

This unusual world scenario has increased the need for care in health services in Brazil. Moreover, it brought a consequent and inevitable increase in demand and consumption of human and material hospital resources such as the number of beds, drugs, laboratory reagents, disposable personal protective equipment and everything that is necessary to assist suspected and confirmed patients.

Hospital supplies, when discarded, give rise to MW, which are regulated by RDC 222/18 of ANVISA⁽¹⁾. ANVISA classifies them as Group A, B, C, D and E. Those in Group A, infectant, sectioned between A1 to A5, are those with a possible presence of biological agents; those in Group B are wastes that contain chemical substances;

those in Group C are radioactive; those in Group D are common recyclable and non-recyclable waste equivalent to household waste; and Group E includes sharps.

The following steps are planned to handle MW: segregation, packaging, identification, internal transport, temporary storage, treatment, external storage, external collection and transport, and final destination⁽²⁾.

An hospitalized patient generates an average of 1.4 kg of waste/day, and the greater the complexity of care, the greater the volume of waste. Recently the Brazilian Association of Public Cleaning and Special Waste (*Associação Brasileira de Limpeza Pública e Resíduos Especiais*, abbreviated ABRELPE) estimated that the current measures of social isolation should increase solid urban waste generation from 15% to 25%. And hospital waste accounts for 10 to 20 times the amount generated, bringing reflexes to the entire production chain, such as increased consumption of material resources, with a consequent increase in the rate of generation of hazardous waste; decrease in recycled waste; differentiated transport; need for treatment before final disposal of a larger volume⁽³⁾.

The World Health Organization estimates that 75% to 90% of waste produced in health services is comparable to urban waste. They range from 10% to 25% of MW which are, in fact, considered "dangerous", and can represent a series of environmental and public health risks⁽⁴⁾.

COVID-19 can be classified as a biological agent of risk class 3; it is a transmission of high individual risk (which can spread from person to person) and moderate risk to the community and the environment⁽¹⁾. Therefore, all healthcare-associated infectious wastes from individuals suspected or confirmed of COVID-19 infection are classified in category A1. This means an increase in the amount of hazardous waste generated that exposes workers who handle them, inside and outside hospitals, to risk of contamination, if safety measures are not included in national contingency plans.

ANVISA issued Technical Note 04/2020⁽⁵⁾, updated on 05/08, on waste management from the health care of suspected and confirmed patients with COVID-19: all Group A1 wastes (Infectious Wastes) must be packed in red bags, but, exceptionally, during the pandemic, in

absence, milky white bags with the infective symbol may be used, which must be replaced when they reach 2/3 of their ability. Collectors must be made of washable material, resistant to puncture, rupture, leakage and tipping, with an opening cover without manual contact, with rounded corners. It is reinforced that hospital waste must be treated before the final environmentally appropriate disposal. Waste from Groups B and C must remain in the expected flow. During this period, all waste from Group D must be treated as infectious, so there is no common or recyclable waste. For Group E, collectors must be placed in a red or white bag with the symbol of infecting before disposal.

The pandemic causes the reclassification of MW flows related to the essentiality of its management. This has important implications in relation to the practices and procedures to be adopted in the various types of health organizations. MW management can suffer economic, political, technological and socio-cultural influences, due to differences between public and private hospitals and regional characteristics such as population size and installed resource capacity. These factors can directly reflect on

the consumption pattern; the volume generated; in the composition of the residual mass; in material waste rates; increasing disposable supplies; correct disposal behavior in situations of professional stress; and the final destination and waste treatment alternatives.

The policies and practices of each of the health institutions, considering the principles of safety and sustainability, will certainly have an impact on the protection of all links in the health care production chain. Internal handling workers and those responsible for external management are included, also involving those who work directly in collection, separation, and disposal of hospital waste. This last aspect is particularly relevant to Brazil, in which recycling cooperatives represent, in many cities, important actors in the chain of hospital recyclable waste. The global crisis triggered by COVID-19 puts us back in front of the 21st century maxim: the principle of thinking globally and acting locally.

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