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### **Disposal, Treatment and Recycling of Medical Waste**

Management of medical waste is truly one of the most acute challenges for Ukraine today. Bio-medical waste (BMW) needs specific handling and treatment because of its highly toxic contents and fear of infection. The main medical waste sources are evident. They comprise hospitals (major sources) and smaller medical institutions such as health centers, health clinics, doctors' surgeries, laboratories, and veterinary practices.

Medical waste can be divided into three main categories. Category A, epidemiologically safe medical waste, includes food waste from all departments of the hospital, except for infectious disease department; waste that did not have contact with biological fluids of patients, infectious and skin-venereal patients. Category B, epidemiologically dangerous medical waste, includes the used medical instruments (sharp things: needles, syringes, scalpels and their blades, etc.); objects contaminated with blood or other biological fluids; organic medical wastes (tissues, organs, parts of the body, placenta, embryos, etc.); food waste from infectious departments. Category C covers toxicologically dangerous medical waste that may represent a chemical hazard.

Various technological processes are used nowadays for treatment and disposal of pathological and potentially infectious wastes. The main physical treatment methods are: sterilization with steam (autoclaves), microwave disinfection, thermal treatment, and sanitary landfill. For treating blood, urine, faeces and sewage chemical disinfection is used as the most efficient option. This method is also applied for the treatment of infectious pathogenic wastes.

The system of medical waste management in Ukraine has a lot of problems, despite the environmental legislation addressing the challenges. In practice everything may happen: used medical syringes, cotton wool, and other wastes are thrown together with household waste into conventional garbage containers. Homeless people and animals can be infected at the garbage dumps. Tuberculosis hospitals disinfect expectorants, but solutions are still drained into the sewage system and may appear in freshwater sources because of the lack or improper work of the sewage treatment facilities. Recycling or reduction of medical waste is not provided.

Thus, the solution of ecological and social problems related to medical waste treatment is possible at the state level by providing proper system of medical waste management which includes: proper medical waste sorting, collection, disposal and recycling; the use of the most efficient treatment technologies for potentially hazardous medical waste. Special attention should be paid to the formation of public ecological consciousness and creating conditions for implementation of rational management in accordance with the legislation of Ukraine.