Evaluation Of Heavy Elements in Health Institutions' Water Treatment Systems.

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- **Abstract:** The study's main goal is to assess the concentrations of heavy elements in hospital waste water treatment systems. Some hospitals have various treatment systems whose goal is to lower the toxicity of heavy metals in waste from hospitals to urban sanitation systems. Pollution of the environment is a big worry for all countries around the world. International organizations are working to achieve environmental stability, especially as technological advancement occurs. The study collected (48) samples of sewage water for hospitals at (8) hospitals in the following locations (Najaf... Karbala... Babylon... Ramadi... Fallujah) before the start of the study. to look at the most hazardous heavy metals before and after treatment, an atomic emission spectrometer was used to measure the heavy metals, which revealed the most dangerous components. (AS..Hg...Cu. Cd. Pb), where the average value of elemental arsenic (As) after treatment was (0.0109125ppm), and the average value of elemental mercury (Hg) after treatment was (0.0109125ppm) (0.010447). ppm), average cadmium (CD) after treatment (0.0064 ppm), average copper (Cu) after treatment (0.0071 ppm), and average lead (Pb) value following the procedure was (0.010525 ppm). The relevance of hospital treatment systems and their critical role in reducing infection rates is highlighted by the findings removing heavy hazardous components from waste and reducing pollution The findings revealed that the elements were in accordance with the Iraqi Ministry of Health and Environment's determinants, with the exception of the element mercury, which was higher than the specified level in all hospitals, and thus was used in dental fillings, as well as the fact that some medicines contained percentages of elemental mercury. Where there are studies that did not address many treatment systems and show their importance and role, such as The researcher (Waad Muhammad Ali Abbas) in (2002) conducted a study on (System of Sequential Dose Basins (SBR) for the treatment of hospital water wastes The researcher (Yasser Jassem) in 2013 studied (the performance of the oxygen/anaerobic bio-membrane (SAM) sequestration agent system in hospital wastewater treatment and reuse).

- **Keywords:** Hospital, Waste water treatment systems, Pollution, International organizations