**CASE STUDY**

**THE AUDIT ON MEDICAL WASTEWATER TREATMENT SYSTEM OF THE CENTRAL HOSPITALS IN HANOI (2011 - 2015)**

1. **Executive summary**

Water pollution due to untreated medical wastewater does not only influence adversely on health life of human and creatures, but it also entails potential risks that lead to poverty and inhibits the progress of socio-economic development. The fact that the untreated medical wastewater contains a considerable amount of chemicals and harmful microorganisms that can penetrate into living body through foods and drinks as well as to be cause of infectious diseases. Therefore, inspecting and motoring activities related to management and operation of medical wastewater system in hospitals, which is identified as an indispensable part in improving the quality of water in many countries in the world.

With its mandates and functions, The State Audit Office of Vietnam (SAV) has conducted to audit activities related to the Medical Wastewater Treatment System of the Central Hospitals in Hanoi (2011 – 2015). The purpose of the audit is to evaluate the effectiveness and efficiency of investing, constructing, managing and operating the medical wastewater treatment system in Hanoi central hospitals. By its findings, SAV has made some recommendations to raise the awareness and responsibilities of stakeholders, which contribute significantly in minimizing the negative impacts of medical wastewater.

**2. Audit Purposes**

- To assess the efficiency of implementing the activities related to investing, managing and operating the medical wastewater treatment system by Ministry of Health with its objectives in the period of 2011 – 2015.

- To assess the degree of compliance of stakeholders in the process of investing, managing and operating the medical wastewater treatment system withits objectives in the period of 2011 – 2015.

**3. Audit methodology**

* To search and collect the information from mass communications;
* To analyze and review the policy documents, legislation, survey reports, other related documents;
* To visit sites and observing the activities related to management and operation of medical wastewater treatment system in hospitals like; inspection, supervision, operation process and record according to procedures/guidelines of hospital and producers;
* To interview managers or staffs related to managing and operating of the medical wastewater treatment system to identify difficulties in implementation process;
* To collect and test the sample of treated wastewater.

**4. Implementation**

An audit team was, comprise of a head of delegation and 11 auditors, divided into two groups. During the period of 60 days, the audit team has performed to audit activities related to Department of Planning and Finance, Agency of Administration of Environmental Health, Department of Medical Equipment and Works at Ministry of Health) and at 06 central hospitals in Hanoi.

**5. Audit results**

* Due to limited workdone on survey and examination before the construction of the medical wastewater treatment system, which results such as: (i) The current medical wastewater treatment systems at central hospitals did not meet the actual needs in quantity, scale and technology; (ii) the construction progresses of some medical wastewater treatment systems were delayed, because all the risks were not accounted for;
* Inspection and supervision weren’t performed adequately, which led to: (i) unperforming of the aggregating, monitoring, evaluating, and reporting the issues related to run the wastewater treatment system on time, which can become useful information to direct to agencies and counsel to senior administrators at Ministry of Health to launch overcoming measures; (ii) the medical wastewater treatment systems at some hospitals were being downgraded, but without any upgrade plan to ensure the quality of treated wastewater;
* Wastewater gathering and treatment activities at some hospitals were not performed strictly according to the wastewater treatment procedure; therefore, the quality of wastewater at those places did not meet the required national environmental quality standards. The results of wastewater samples testing at some hospitals have indicated the existing hazardous components in treated wastewater source before being discharged into nature, which is hamful to human health and creatures;
* Spreading and training activities for the medical wastewater treatment systems operating staffs were not focused yet. The medical wastewater treatment system was operated primarily by administrative staffs who have not possessed professional knowledge of wastewater treatment and have not been trained methodically as consequence of the wastewater treatment unregulated.

**6. Recommendations**

* In order to meet demands in both numbers and quality of medical wastewater treatment system and ensure the program’s objectives, authoritative bodies should strengthen surveying and evaluating the need of wastewater treatment at central hospitals in Hanoi before deploying projects;
* Authoritative bodies should strengthen inspecting and monitoring the operation of the medical wastewater treatment system in order to timely launch the overcoming measures;
* Authoritative bodies should procedure in place to operate medical wastewater treatment system effectively and efficiently. The procedure ensures medical wastewater treatment system meet the quality standards, it does not cause environmental pollution or influence negatively on society;
* Providing wastewater management staffs and specialized medical worker more trainings to enhance capability. Communicating the important of wastewater management to patient and society.

**7. Environmental affect**

* Medical wastewater has high concentration of suspended solids, low dissolved oxygen, and organic matters (characteristically by COD, BOD), especially contains abundant harmful microorganism, which causes infectious diseases, and negatively effects on human health and creatures.
* Performing an audit on medical wastewater treatment systems at central hospitals in Hanoi in the period 2011 to 2015 has shown shortcoming matters and made some recommendations related to inspecting, monitoring and regulating wastewater treatment activities at hospitals, which contribute significantly to raise the quality of water, improve the quality of life and human health.

**8. Experiences and Challenges**

* In Vietnam, Environmental Audit is a new field. Majority of auditors do not have a lot of knowledge, skills and experiences in this field. So that, it is very difficult in planning and conducting audits related to environmental field.
* Currently, without any environmental audit standards that have been established in line with the actual context in Vietnam. Most of the standards used for environment audits in general and audit of the medical wastewater treatment in particular was mainly based on INTOSAI and ASOSAI standards.
* Additionally, awareness of audited units on environmental audit are not high, so that it has become harder in communicating and coordinating effectively with them.