

**GOVERNMENT OF SAINT VINCENT AND THE GRENADINES**  
**OECS Regional Health Project**  
**Terms of Reference**  
**SVGRHP-C-IC-6**

**Consultancy for the Development of Health Care Waste Management System (HWMS)**

## **1. BACKGROUND INFORMATION**

The Government of Saint Vincent & the Grenadines has received funding from the International Development Association (The World Bank) for the implementation of the [OECS Regional Health Project](#). The objective of the project is to improve the preparedness capacities of health systems for public health emergencies in the OECS region, including St. Vincent and the Grenadines. The project is being implemented by the Public Sector Investment Programme Management Unit (PSIPMU) in the Ministry of Finance, Economic Planning and Information Technology on behalf of the Ministry of Health, Wellness and the Environment (MoHWE).

Under the project, the National Biomedical Waste Management Plan for St. Vincent and the Grenadines will be updated to include, the development of the Health Care Waste Management System (HWMS), capacity building for health care workers through occupational health and safety training, including exposure to diseases, medical waste and the use of equipment with the potential to radiation exposure.

The OECS Regional Health Project is also implemented by Dominica, Grenada, and St. Lucia, while the Caribbean Public Health Agency Ltd. (CARPHA) and the OECS Commission implement the regional activities for the project. The project consists of four components as follows:

- Component 1: Improved Health Facilities and Laboratory Capacity
- Component 2: Strengthening Public Health Surveillance and Emergency Management
- Component 3: Institutional Capacity Building, Project Management and Coordination
- Component 4. Contingency Emergency Response Component (CERC)

Under Component 3, the project aims to improve the management of biomedical waste, an upgrade to the existing procedure.

The management of biomedical waste is guided by the National Biomedical Waste Management Plan (2002) which outlines the protocols and procedures for the different types of waste generated. On a national level, biomedical waste management is generally under the principal authority of the MoHWE working closely with other relevant ministries. According to the national solid waste management regulations, the onsite management of biomedical waste which entails the collection, storage, sterilisation, and training of personnel is by law the responsibility of the occupier of the premises on which biomedical waste is generated<sup>1</sup>. The Central Water and Sewerage Authority (CWSA) is charged with establishing facilities for the incineration of biomedical waste and the disposal of the residual ash which can be discharged through a private

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<sup>1</sup> National Solid Waste Management Regulations (SRO 11 of 2006)

contractual arrangement<sup>2</sup>.

## Technical Background

According to the WHO<sup>3</sup>, waste and by-products from the health sector cover a diverse range of materials, as the following list illustrates:

- Infectious waste - waste contaminated with blood and other bodily fluids (e.g. from discarded diagnostic samples), cultures and stocks of infectious agents from laboratory work (e.g. waste from autopsies and infected animals from laboratories), or waste from patients with infections (e.g. swabs, bandages and disposable medical devices);
- Pathological waste - human tissues, organs or fluids, body parts and contaminated animal carcasses;
- Sharps waste: syringes, needles, disposable scalpels and blades, etc.
- Chemical waste – for examples are solvents and reagents used for laboratory preparations, disinfectants, sterilant and heavy metals contained in medical devices (e.g. mercury in broken thermometers) and batteries;
- Pharmaceutical waste: expired, unused and contaminated drugs and vaccines;
- Cytotoxic waste – waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment and their metabolites
- Radioactive waste – products contaminated by radionuclides including radioactive diagnostic material or radiotherapeutic materials; and
- Non-hazardous or general waste: waste that does not pose any particular biological, chemical, radioactive or physical hazard.

Health-care waste contains potentially harmful microorganisms that can infect hospital patients, health workers and the general public. Other potential hazards may include drug-resistant microorganisms which spread from health facilities into the environment. Adverse health outcomes associated with health care waste and by-products also include:

- a. Sharps-inflicted injuries;
- b. Toxic exposure to pharmaceutical products, in particular, antibiotics and cytotoxic drugs released into the surrounding environment, and to substances such as mercury or dioxins, during the handling or incineration of health care wastes;
- c. Chemical burns arising in the context of disinfection, sterilization or waste treatment activities; air pollution arising as a result of the release of particulate matter during medical waste incineration; thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators; and radiation burns.

The project may create an increase in use and scope of health services, resulting in additional sources of medical waste which may need proper treatment and disposal. This is also the case for work during emergency response or epidemics, and particularly in light of the ongoing

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<sup>2</sup> Waste Management Act (31 of 2000)

<sup>3</sup><http://www.who.int/mediacentre/factsheets/fs253/en/>

COVID-19 pandemic and vaccine deployment efforts. The health and safety of health care workers could be affected by waste management practices as well as by hygiene conditions, isolation and storage procedures for bio infectious, radiologic or genotoxic waste. Such risks may also affect the nearby communities.

## **2. OBJECTIVE**

The objective of the consultancy is to improve the management of medical waste generated at public and private health care facilities in order to minimize risk to health care workers and the general public.

These Terms of Reference lay out the scope, activities and deliverables for development of the HWMS, which will be consistent with World Bank Group Environmental Health and Safety Guidelines for Health Care Facilities.<sup>4</sup> The HWMS will be adequate to the scale and type of activities and identified hazards for the country and will be implemented and operated by the MoHWE.

## **3. DURATION**

It is expected that the consultancy will last a period of four months to produce the deliverables listed in section 7.

## **4. GENERAL REQUIREMENTS**

The Consultant is expected to conduct a preliminary evaluation and verification of current health care waste management, identifying infrastructure and capacity needs, developing written protocols and procedures for health care waste management, and providing training and outreach programs. These activities will be consistent with the National Solid Waste Management Regulations and will be used to update the National Biomedical Waste Management Plan (2002).

The Client the PSIPMU, will be contractually responsible for the Consultants' assignments, working with the Project Coordinator, however the Consultant will work closely with the MoHWE, the office of the Chief Environmental Health Officer and the Solid Waste Management Unit within the CWSA.

The MoHWE and the CWSA will provide access to the necessary data and information required to develop the system. Technical guidance and input will be provided by other units, heads of programme and other government agencies that work with the MoHWE in the area of waste management and disposal.

The consultant will be required to conduct a thorough technical analysis of feasible systems. He /she will widely consult with the relevant stakeholders, review existing documents, coordinate data/information collection and conduct literature review to prepare the HWMS.

## **5. SCOPE OF SERVICES**

### **Task 1 –Evaluate Current Health Care Waste Management**

This task is to establish baseline information on the current status and characteristic of health care waste management. Data on the number and type of generators, volumes and types of waste for various facilities, number and registration of transporters, status of landfill operations,

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<sup>4</sup>[http://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/ehs-guidelines](http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines)

functioning of autoclave(s) and incinerator(s), etc. will be generated by the consultant based on interviews, field exercises and site visits. Any emissions to air, water or soil must be considered, as well as compliance with national law and best practice.

With regards to health care worker protection and community health and safety, the Consultant will assess current practice for occupational health and safety, including training, use of protective equipment, isolation and segregation of wastes, and other factors that could affect exposure to infections or diseases, exposure to wastes or hazardous materials, radiation, and fire safety.

The following specific activities are considered under Task 1:

- (a) Participate in an inception meeting (or meetings) with the MoHWE Project Coordinator, the Safeguards supporting specialists, Milton Cato Memorial Hospital Administration CWSA, and other relevant government ministries, agencies and personnel to discuss the methodology, work plan and clarify key issues;
- (b) Conduct a literature review of the legislative and administrative framework, past reports and studies, including hospital and clinic management procedures and safety plans from laboratories, to determine measures/recommendations that have been implemented and current deficiencies;
- (c) Provide an inventory of existing health care facilities in the country, with location, services offered, estimates of medical wastes generated at each site, and those anticipated from the new Public Health Laboratory and Emergency Operating Centre building, as well as a description of on-site storage and disposal methods, and other information pertinent to the HWMS.
- (d) Conduct an audit of the medical waste collection, storage, transport and disposal mechanisms for the major hospitals and public and private (at least two) health care facilities and laboratories to establish baseline information on current status of the health care waste management system in the country. The audit will also identify significant environmental, social, health and safety risks associated with medical wastes (solid and liquid) and provide feasible recommendations or mitigation measures to reduce or prevent the medical waste risks identified. This audit should address the following, but not be limited to:
  - waste minimisation and separation
  - Storage requirements
  - Type of treatment
  - Collection and transportation equipment
  - Method of disposal
  - Health and safety protocols for entities and personnel

As part of the work, the consultant will evaluate the adequacy of existing waste (solid and liquid) management regulations, procedures and guidelines and provide corresponding recommendations to address any legislative gaps required to implement the HWMS.

## **Task 2 – Identify Infrastructure and Capacity Needs**

Considering the baseline information collected under Task 1, the Consultant will evaluate the adequacy of the existing physical infrastructure available in primary health care facilities and associated facilities in terms of location and size of areas where wastes are stored, temperature and condition of wastes, segregation and isolation of wastes. In addition, the consultant will evaluate black and grey water waste management system with special emphasis on septic tank, leach field, cesspool, sewer system, package treatment plant, and to determine the level of treatment currently done and make proposal as the that with is needed. The consultant will also evaluate level of training and capacity of all stakeholders directly involved in the management of biohazard medical waste, these include health care workers, laboratory workers, landfill workers, waste transporters and others. Based on the evaluation, the consultant will provide recommendations for improvements.

The consultant will also evaluate the technical capacity of health care and laboratory workers (public and private), landfill workers, and waste transporters to implement and adhere to health care waste management best practices, procedures and regulations. Based on the technical gaps identified, the Consultant will provide recommendations for improvements through training and capacity building.

## **Task 3 - Develop Protocols and Procedures**

The consultant will prepare a formal set of protocols and procedures that will constitute the HWMS to be implemented by the MoHWE. The HWMS will integrate the following:

- a. National Biomedical Waste Management Plan (2002)
- b. WBG EHS Guidelines for Health Care Facilities<sup>5</sup>
- c. Environmental Services Act No 14 of 1991 and the Solid Waste Management Act No 31 of 2000
- d. WHO guidelines for management of solid health care waste at Primary Health Care Facilities<sup>6</sup> and at facilities related to COVID-19 management<sup>7</sup>
- e. St. Vincent and the Grenadines Public Health Act
- f. Solid Waste Management Act No. 31 of 2000 and Regulations (SRO 11of 2006)
- g. Draft Safety Plan of Public Health Laboratory and Emergency Operating Centre (if available)
- h. Any other Acts or Plans
- i. Any relevant regulations/protocols instituted for the government for Covid-19 pandemic
- j. Other relevant WHO, PAHO, or related guidance<sup>8</sup>

The HWMS procedures must address waste minimization, on-site handling, collection, transport and storage; transport to external facilities and disposal options such as reuse, recycling and heat

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<sup>5</sup> [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/ehs-guidelines](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines)

<sup>6</sup> [http://www.who.int/water\\_sanitation\\_health/publications/manhcwm.pdf](http://www.who.int/water_sanitation_health/publications/manhcwm.pdf)

<sup>7</sup> <https://apps.who.int/iris/handle/10665/331499>

<sup>8</sup> <http://health.gov.vc/health/index.php/covid-19-protocols-documents>

treatment before final disposal at the landfill. The HWMS shall be prepared in collaboration with the MOHWE and CWSA subject to their review and approval.

The roles, responsibilities and duties of MOHWE and health care facility operators will be included, and an assessment made of capacity gaps to implement the program, with corresponding recommendations for training and capacity building. Additionally, the Consultant will develop cost estimates and identify and recommend human resources to implement the HWMS.

#### **Task 4 - Provide Training and Outreach**

The Consultant will prepare a presentation on the results of Tasks 1-3 and deliver it to MoHWE as part of a one-day workshop/seminar, which will include training and instruction on the HWMS. All training materials will be provided to the MoHWE for subsequent delivery to each of the 33 primary health care facilities in the country.

## **6. INPUTS**

### **The Client**

All available plans, reports, etc. of the proposed plans that might be necessary, applicable and already in the Client's possession for the execution of the services required under these TOR. The Client will not be responsible for data collection of any type.

The Client shall liaise with other ministries, departments, and authorities, etc. to introduce the Consultant. The Consultant however shall be fully responsible for collecting data, information, etc. from these agencies,

The Client will assist the Consultant in obtaining visas, work permits, driving licenses, car registration, etc. and any other formalities found necessary for the Consultant's personnel entering or leaving SVG for the purpose of carrying out the services.

The Client will coordinate the administrative/logistical arrangements for the presentation of the first Draft of the HWMS by the Consultant

### **The Consultant**

The Consultant will be required to undertake the various activities outlined in Section 5 of these TOR. The Consultant will provide the office space, manpower, transportation, equipment and software required to carry out the assignment and be responsible for obtaining all additional information for the execution of the services necessary for the project.

## **7. DELIVERABLES**

At the end of the assignment the Consultancy is expected to produce the following results:

### **Deliverable 1: Inception Report developed and submitted for the approval of the Project Coordinator**

The consultant is expected to engage in an initial briefing with the Project Coordinator, the staff of the MOHWE and other key stakeholders to discuss the scope of the work to be undertaken,

and any other pertinent issues. The report will include a work plan, the template/structure of the HWMS, and the methodology for developing the system.

**Deliverable 2: Interim reports as follows:**

Interim 1 Report - Findings of the assessment of current practice

Interim2 Report – Recommendations for infrastructure and capacity needs

Interim 3 Report – the draft HWMS

Interim 4 Report – Presentations and Training Materials

Each of the interim report listed above shall be provided in draft form, to which MoHWE through the PSIPMU will provide comments within 2 weeks. The final version of each of the deliverables will then be resubmitted by the consultant taking into account and addressing the comments provided. The submission must be a comprehensive report comprising the work conducted by the Consultant, the challenges encountered, and actions taken to address the challenges. The deliverable for each task should be set out as an Annex to report.

**Deliverable 3: A Final Report** will take into account and address the comments provided in response to the interim reports under Deliverable 2. The report will include the final training manual developed and results from the training sessions conducted.

All reports and outputs shall be submitted to the Project Coordinator in electronic form by email. In addition, two (2) hard copies of the report shall be submitted to the Project Coordinator, who will be responsible for approving all reports.

**8. QUALIFICATIONS AND EXPERIENCES**

- Minimum of a Master’s Degree in Environmental Management, Environmental Engineering or a similar field of study.
- At least 10 years of experience in the field of environmental assessment, environmental management, or environmental supervision, with direct and relevant project experience in medical waste planning and/or management.
- Demonstrated experience in developing HWMS with at least one (1) previous project completed within the last five (5) years
- Proven leadership skills, including the ability to set priorities, manage time effectively, and contribute to a team environment of respect, recognition, and mutual accountability
- Excellent spoken and written English skills
- Excellent communication skills
- Experience working with Caribbean countries will be an asset.