

PROJECT UPDATE

Demonstrating and Promoting Best Techniques and Practices for Reducing Healthcare Waste to Avoid Environmental Releases of Dioxins and Mercury

PROJECT SUMMARY

The goal of this project is to demonstrate best environmental practices and best available techniques for healthcare waste to avoid dioxin and mercury releases in eight countries: Argentina, India, Latvia, Lebanon, Philippines, Senegal, Tanzania, and Vietnam. The project facilitates the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs).

PROJECT OBJECTIVES

1. Establish model facilities and programs to exemplify best practices in healthcare waste management.
2. Deploy and evaluate commercially available, non-incineration healthcare waste treatment technologies appropriate to the needs of each country.
3. Develop, manufacture and deploy affordable, small-scale non-incineration technologies for use in sub-Saharan Africa.
4. Introduce and evaluate the use of mercury-free devices in model facilities.
5. Establish or enhance training programs to build capacity for the implementation of best practices and technologies both within and beyond the model facilities and programs.
6. Review and update relevant policies.
7. Disseminate project results and materials to stakeholders and hold conferences or workshops to encourage replication.
8. Make project results on demonstrated best techniques and practices available for dissemination and scaling-up regionally and globally.

INTRODUCTION

The global project officially began in August 2008. However, except in Latvia and Tanzania, national projects were delayed in starting the implementation phase. Many of the countries are now conducting baseline assessments and some advances have been made on national policies. Achievements to date include: the development of guidance documents and tools, a pilot demonstration of a non-incineration treatment technology in Tanzania, engineering designs of appropriate technologies for sub-Saharan Africa, three national mercury conferences, and the creation of the global project website www.gefmedwaste.org.

GUIDANCE DOCUMENTS & TOOLS

An important outcome of this project is a set of guidance documents and tools to help healthcare facilities adopt best practices and techniques for healthcare waste management (HCWM). Among the completed guidances and tools are:

- [Individualized Rapid Assessment Tool](#) – to rapidly assess HCWM in a healthcare facility and to prioritize interventions
- [Recommended Elements of a Model Facility Policy on Healthcare Waste Management](#) – to define the HCWM responsibilities of the healthcare institution, management, and staff
- [Guidance on Conducting a Baseline Assessment of a Healthcare Facility](#) – to establish initial measures in order to quantify improvements in waste reduction, training, inventory control, segregation, collection, storage, and treatment, as well as worker safety, mercury use, and cost savings

- [Guidance on Estimating Baseline Dioxin Releases](#) – to estimate releases of dioxins and other POPs from healthcare facilities
- [Notes on Selecting Mercury Reduction Activities](#) – to assist facilities in prioritizing mercury reduction activities based on overall environmental impact, energy use, cost, and other factors
- [Core Competencies Related to Healthcare Waste Management](#) – to define standards as the basis for training curricula, professional development, and accreditation.

In relation to technical guidance documents, Global Project Team members participated in:

- * Revision of the World Health Organization’s main reference document *Safe management of wastes from health-care activities* (scheduled for release in 2010)
- * “Pharmaceuticals and the Environment” - US EPA-funded project to investigate treatment technologies for pharmaceutical waste
- * Meetings of State and Territorial Association for Alternative Treatment Technologies (STAATT), a group that sets international guidelines on microbial inactivation efficacy of medical waste treatment technologies.

TREATMENT TECHNOLOGY DEVELOPMENT

The GEF project entails the demonstration of non-incineration technologies and the design and manufacture of affordable, appropriate technologies for developing countries. The achievements so far are:

- [Pilot Project in Tanzania to Demonstrate an Autoclave-Shredder System](#) - An imported device sterilization autoclave (shown in the photo) and a shredder were adapted for use in treating sharps and other infectious wastes at Bagamoyo District Hospital. The results were presented at the WHO Safe Injection Global Network meeting December 2009 (see also [“Testing a Waste Treatment Autoclave at a Hospital in Tanzania: A Technical Brief”](#)). The pilot project was done in cooperation with the Health Ministry, Bagamoyo District Council,

Health Care Without Harm, ToxicsLink, AGENDA, and John Snow, Inc.

Since the hospital shifted from an old incinerator to the autoclave-shredder system in October 2008, an estimated 3.8 g I-TEQ of dioxins and furans have been eliminated. After the results were presented to



Tanzania’s Chief Medical Officer, the Ministry of Health expressed interest in expanding the system to all district hospitals in the country.

- **Needs Assessment Regarding HCWM in Africa** – A [preliminary needs assessment for Africa](#) was completed on May 2009. Prepared by AGENDA, the report surveyed the number, types, and sizes of health facilities in Africa, waste generation rates, existing policies and practices regarding HCWM, equipment costs, and land disposal issues. The information guided the design of new technologies.
- **New Technology Designs at the University of Dar-es-Salaam** – An [international committee of 25 advisors](#) from 16 countries was created with expertise in waste management, engineering, manufacturing, ergonomics, worker safety, infection control, sanitation, environmental regulation, medical/nursing practice, and hospital services, among others. The committee assisted in developing criteria for screening conceptual designs.

The University of Dar es Salaam’s College of Engineering and Technology and the Chief Technical Advisor drafted designs of small-scale non-incineration treatment technologies and auxiliary equipment appropriate for use in sub-Saharan Africa. The designs were reviewed by the international advisory committee and technical engineering drawings are currently being made.

NATIONAL ACTIVITIES & MODEL FACILITIES

- **Inception Meetings** – Project inception meetings took place in Latvia, Tanzania and Philippines in 2008; Argentina and Senegal in 2009; and Vietnam in February 2010. Inception meetings for India and Lebanon are expected in the first half of 2010.
- **Latvia** – The project team in Latvia has completed a review of their national policies, a needs assessment of their HCWM training programs, and a preliminary assessment of their two model facilities (Rezekne and Ventspils hospitals) and two central treatment facilities (SIA Lautus and BAO). They are currently conducting detailed baseline assessments at the two model facilities. The project is developing protocols for microbiological testing of treatment technologies at both central facilities.



A barcode-based healthcare waste tracking system is being explored for the large-scale rotating autoclave (see photo) at the SIA Lautus central facility. A proposal to require HCWM training as part of

re-certification of health professionals is being presented to the Ministry of Health and the Ministry of Education and Science. Joint trainings of health, veterinary, environment, and occupational safety inspectors in aspects of HCWM are being proposed.

- **Ongoing Baseline Assessments** – In addition to Latvia, Argentina and Senegal are conducting baseline assessments of their model facilities. In Argentina, these include an urban pediatric teaching hospital in Buenos Aires and smaller hospitals in the south and central parts of the country. In Senegal, the model facilities are a large tertiary hospital in Dakar and a district hospital and health post in the rural areas.

- **Other National Activities** – India, Lebanon, and Philippines have been engaged in meetings with stakeholders to discuss detailed work plans for 2010. India is working on a hospital in a low-income area and a central treatment facility in Tamil Nadu. Lebanon is using the rapid assessment tool to rank health facilities. The Philippines is working with an urban hospital in the capital and a provincial hospital. Vietnam has put together the management team and is in the process of hiring technical assistants.



Latin American Mercury Conference in Buenos Aires

MERCURY

- **Regional and National Mercury Conferences** – Project partner Health Care Without Harm (HCWH) and Global Project Team members presented at regional and national conferences on Mercury in Health Care in [Argentina](#) (see photo), [India](#) and the [Philippines](#). The conferences were organized by HCWH in collaboration with the World Health Organization and United Nations Environment Program.
- **Mercury-Free Health Care Initiative** – The project is collaborating with the global Mercury-Free Health Care Initiative of HCWH and the World Health Organization.
- **New Resource** – A narrated slide presentation on [“Mercury: Its Properties, Sources, and Health Effects”](#) was completed.
- **Philippines** – Project partners in the Philippines assisted the Department of Health in the development of [Administrative Order 21](#) on the gradual phase-out of mercury thermometers in all hospitals by 2010.

NATIONAL TRAINING PROGRAM

- **Draft Curriculum** – A draft “gold standard” curriculum for training healthcare waste management coordinators and master trainers was developed based on a [compilation of existing training materials from around the world](#), the updated WHO reference document, core competencies, and effective teaching methods used by the School of Public Health (a project partner) of the University of Illinois at Chicago. The comprehensive curriculum is being reviewed by WHO, HCWH, and international experts.

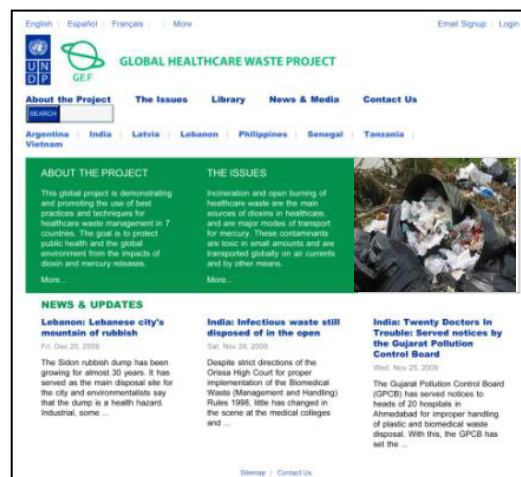
NATIONAL POLICIES AND ACTION PLANS

- **Latvia** – Having completed its review of national policies, the project team in Latvia is exploring ways to enhance the country’s national policies, including waste classifications, practical guidelines, provisions for veterinary waste and pharmaceutical waste, training requirements, and providing experts to assist the national legislature.
- **Vietnam** – The Chief Technical Advisor, supported by WHO, assisted the Ministry of Health in revising the national guidelines for HCWM and developing a detailed national action plan for healthcare waste.
- **Senegal** – Project partners in Senegal and the Global Project Team participated in the presentation of the national action plan for HCWM and in facilitating [Presidential Decree 2008-1007](#) regulating healthcare waste management.

GLOBAL DISSEMINATION

- **Presentations** – Global Project Team members gave presentations about the project at international conferences in Botswana, Cuba, Japan, Kyrgyzstan, Mexico, Uganda, United States, and at the following key meetings:
 - * June 20-22, 2007 – International WHO Meeting on Healthcare Waste, Geneva, Switzerland

- * October 24-26, 2007 – [UNEP/HCWH conference - First Southern African Conference on Promoting Alternatives to Mercury in the Healthcare Sector](#), Johannesburg, South Africa
 - * October 13-15, 2008 - [Safe Injection Global Network \(SIGN\)](#), Moscow, Russia
 - * May 4-8, 2009 - Stockholm Conference of Parties COP-4, Geneva, Switzerland.
- **Translations** – Guidance documents and tools have been translated into French and Spanish for use in project countries. The Stockholm Convention and key WHO documents are also available on the website in Arabic and Russian.



Project Website Homepage

- **Website** – The project website was launched in April 2009. It contains information about the project, the Stockholm Convention, dioxins and POPs, mercury, alternatives to incineration, guidances, toolkits, news on healthcare waste, and links to other resources. Project-related materials have been disseminated by NGO partner websites ([Health Care Without Harm](#) and the [UIC GeoLibrary](#)).

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