



شعوب متمكنة.
أمم صاعدة.



جمهورية مصر العربية
وزارة البيئة



مشروع إدارة المخلفات
الطبية والإلكترونية

HEALTHCARE WASTE MANAGEMENT IN EGYPT

Dr. Sherif Elnagdy

The Technical Officer

The Medical Waste Component

The Medical and E-waste Management Project



The Current Situation Of Healthcare Waste Management In Egypt



Assessed Healthcare Facilities (HCFs) segregate their health care waste into three categories only:

- **GENERAL WASTE** placed in **BLACK BAGS**
- **INFECTIOUS WASTE** placed in **RED BAGS**
- **SHARP WASTE** placed in **SAFE BOXES**



- While the following waste streams are ignored:
 - Chemical wastes (including cytotoxic drugs).
 - Anatomical waste
 - Infectious waste containing polyvinyl chloride (PVC).



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)

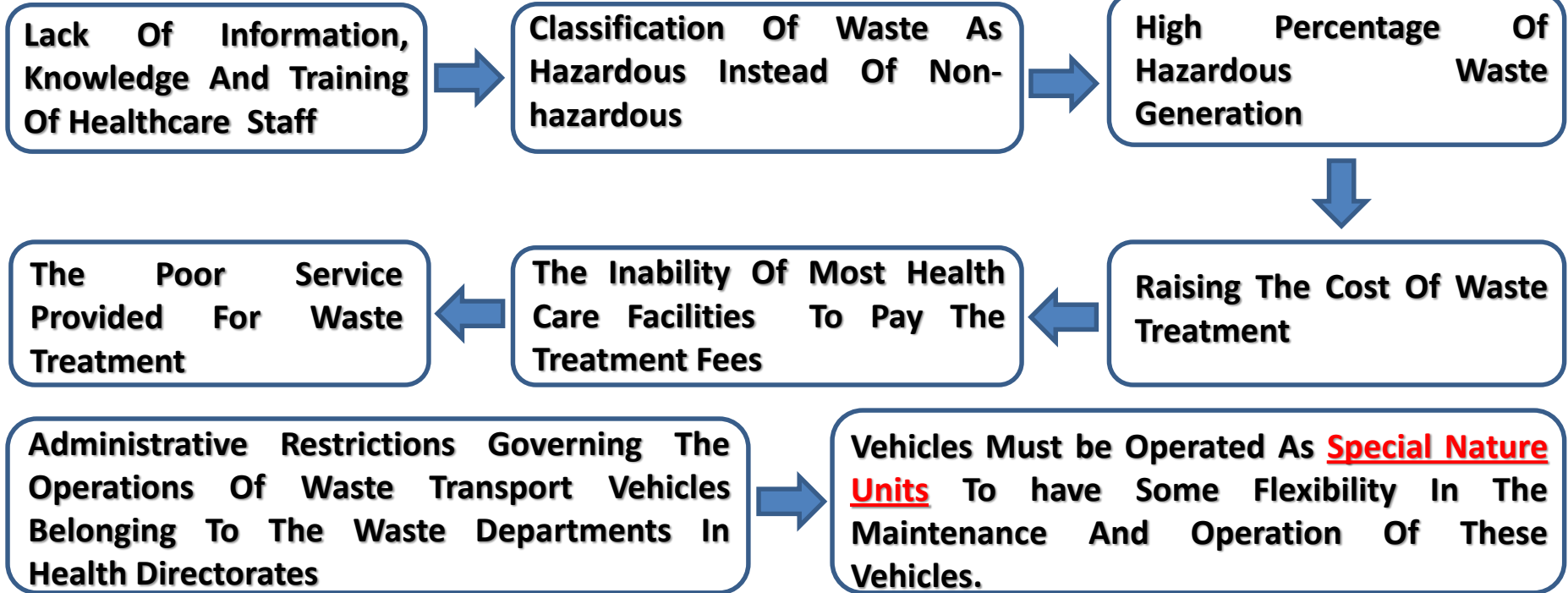
- The separation of waste is **NOT SIGNIFICANT**, as it was found that from **13%-40%** of the general waste bags that were examined contained hazardous waste, and that from **49%-67%** of the infectious waste bags were found to have general waste in them.
- The percentages of hazardous waste generation to the total waste generated daily in the Health Care Facilities under study ranged between **51%-71%**.
- This is a very high percentage, especially when compared to international averages and best practices values ranging between **10-25%**.



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)

**The Overall Evaluation Of The Implementation Of
The Healthcare Waste Sound Management
System In The Health Facilities**



**Based On The Global Environment Facility Guidelines Document
On Conducting A Basic Evaluation Of Health Care Facilities.**



44%-76%



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)

- Incinerators currently used in the hazardous medical waste treatment systems lack the simplest means of controlling emissions of air pollutants, and their design is very simple (primitive).
- It consists of an oven (two combustion chambers and a thermometer). Plus, it has no automatic means of controlling or maintaining a full combustion.
- The total actual treatment capacity available in all treatment technologies in all directorates (governorates) is **not sufficient** to treat all the hazardous waste generated at some times.



The Current Situation Of Healthcare Waste Management In Egypt (Cont.)

The amount of emission for this type of incinerator
in term of quantity of dioxins / furans released per tons of
waste is

**3000 higher than the amount released by high technology
incinerator**

(3000 $\mu\text{gTeq/ton}$ instead of 1 $\mu\text{gTeq T}$)

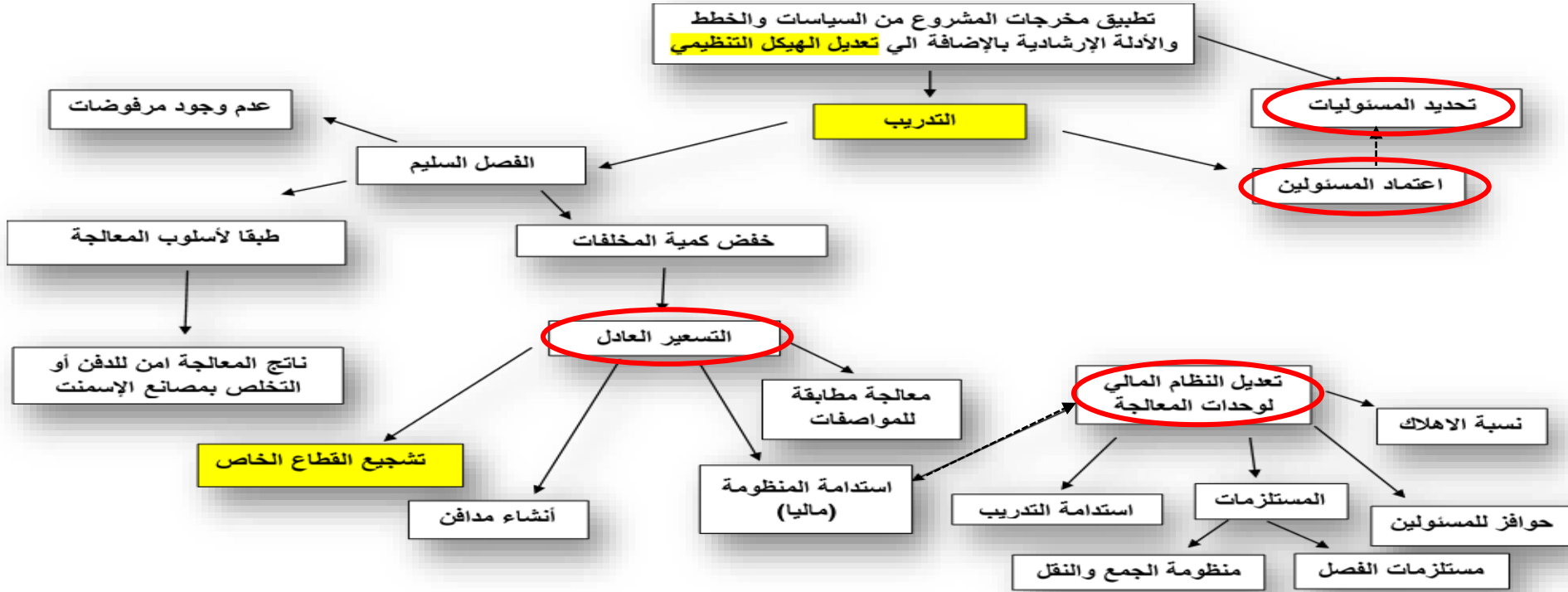
but may be as much as

40000 times higher in case of absence of minimal (APCS)

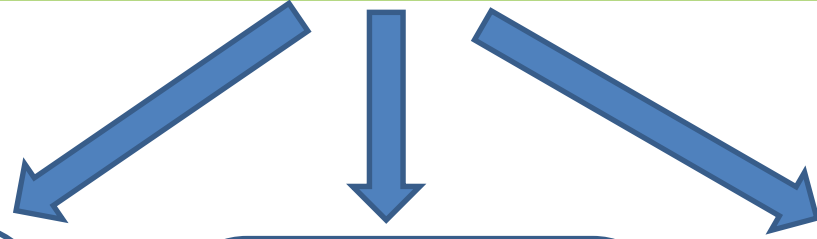
Air Pollution Control System



Strategy to develop the hazardous medical waste management system



Strategy to develop the hazardous medical waste management system



**Assigning A
Dedicated Waste
Management Officer
for Every Healthcare
Facility From Its
Employees**

**Applying Fair
Pricing For
Hazardous Medical
Waste Treatment
and Transportation**

**Amending The
Financial System For
Treatment Units
Contained In
Minister Of Health
Decision No. **753** Of
2015**



Strategy to develop the hazardous medical waste management system (Cont.)

Rapid interventions to reform the hazardous medical waste treatment system in terms of technologies used and treatment capacity

Encouraging The Private Sector To Invest In HCWM Field

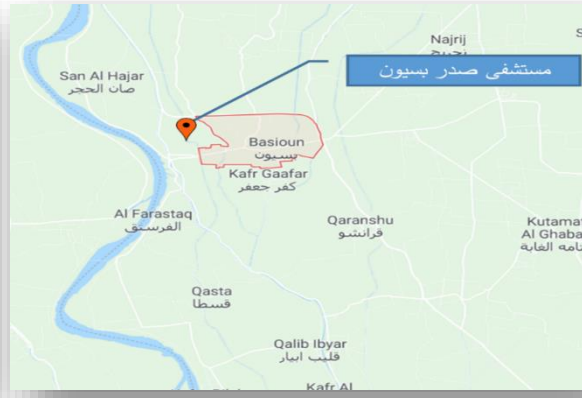
Providing Funding For The Ministry Of Health And Population Through Loans To Replace And Renew Incineration Waste Treatment Technology With Hybrid Autoclaving Technology



The Project Achievements

The Central Treatment Facility (CTF)

- Technical and financial support were provided for the supply and installation of a **Central Treatment Facility (CTF)**, for treatment of hazardous healthcare waste (HCW), using Hybrid Autoclaving technology, in Gharbia Governorate (Sadr Bassion Hospital).
- The CTF operation organizational structure was set, along with the qualifications and responsibilities of the proposed operating staff in this structure



The Project Achievements (Cont.)

Training and Capacity Building

- A specialized training program for staff in the field of healthcare waste management (HCWM) was developed according to the training modules produced by the WHO.
- Two trainings for trainers were conducted for **115** Trainees from **15** Governorates.
- A Multiple choice questions bank was developed to be the passing exam for the HCFs staff to be officially endorsed by the MoHP as trainers or officers
- Development of E-Learning Platform for providing the Training Modules materials, for healthcare waste management Staff and Officers



The Project Achievements (Cont.)

Training and Capacity Building (Cont.)

Training and capacity building of **598** trainees from four model healthcare facilities (HCFs) affiliated to the MoHP (Zagazig General Hospital, Bilbees General Hospital, Al-Menshawey General Hospital and Al-Mahalla General Hospital) and one model HCF affiliated to Cairo University Hospitals (The Obstetrics and Gynecology Hospital) to qualify their staff to implement the best environmental practices in the HCWM.



The Project Achievements (Cont.)

Training and Capacity Building (Cont.)

- A training plan was developed for HCWM staff in the HCFs in Gharbia, Sharkia and Dakahlia (other than the 5 model HCFs in which the capacity building trainings took place already) under the supervision of the Preventive Medicine & Training and Research Sectors of the MoHP and with technical and financial support from the project, with the help of the trainers who were endorsed by the MoHP.
- A training plan was developed for HCWM staff in the HCFs of the MoHP in the rest of the governorates during 2020 under the supervision of the Preventive Medicine & Training and Research Sectors of the MoHP and with technical support from the project, with the help of the trainers who were endorsed by the MoHP.



The Project Achievements (Cont.)



Training and Capacity Building (Cont.)

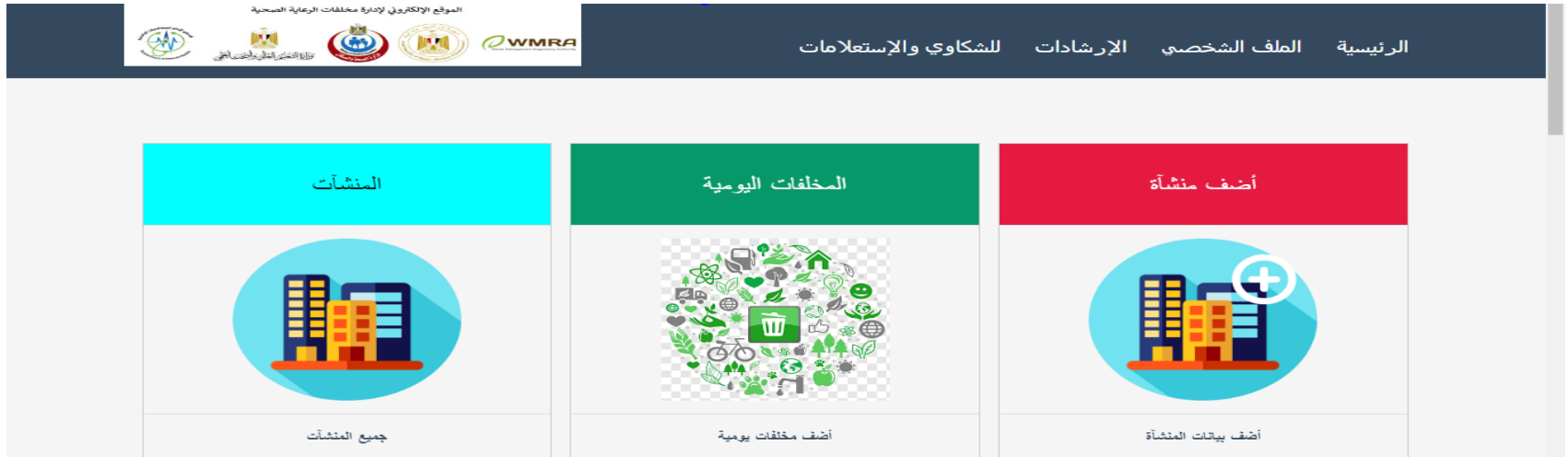
- Coordination with the Preventive Medicine & Training and Research Sectors of the MoHP, to:
 - Conduct training programs at the National Training Institute (NTI) of the MoHP
 - Arrange for the certification and endorsement system of the trainees who will pass the exam developed by the project.



The Project Achievements (Cont.)

Hazardous Healthcare Waste Database

- Development of an Electronic Website for Management of the Healthcare Waste of the Healthcare Facilities in Egypt which will be used by the HCFs officers to submit data related to the Healthcare waste management in their Healthcare Facilities.



The Project Achievements (Cont.)

Hazardous Healthcare Waste Management

- Set qualifications, duties and performance indicators of the HCWM Officer in HCFs.
- Set specifications for supplies, consumables and tools, necessary to follow the green procurement principle and replace mercury-containing devices with alternative equipment free of it, in accordance with the issued updated HCWM guidelines and plan at the five model HCFs and these supplies are currently being purchased.
- Studying laws and ministerial decrees that govern HCWM and identifying weaknesses and gaps to be rectified.
- Signature of a memorandum of understanding between the MoE and the Ministry of Higher Education and Scientific Research to adopt the principle of raising awareness among HCFs staff regarding the hazards of improper management of HCW



The Project Achievements (Cont.)

Healthcare Waste Management Documents



- a Preliminary Concept Paper for the MoHP to adopt a training sustainability plan in the field of HCWM, encourage the private sector participation in the HCWM system, and reorganize the organizational structure of the HCWM administration in the MoHP.



The Project Achievements (Cont.)

Healthcare Waste Management Documents (Cont.)

Segregation of waste according to the Healthcare Waste Management Guidelines 2020

- a. Segregation and packing should be done at the nearest point of the waste generation.
B. The process of segregation and packaging in bags or packs should be according to this color guide:

No.	Type of waste	Color of the container characteristic of the waste type	Type of container
1	Infectious waste without plastic (PVC)	Transparent red	Transparent plastic bag
2	Infectious waste containing plastics (PVC)	Transparent yellow	Transparent plastic bag
3	Sharp waste and objects	Yellow (recommended to be transparent)	Non-perforated plastic box (preferably transparent)
4	Chemical, pharmaceutical and toxic cellular waste	Opaque blue	Bucket or container or box
5	Anatomical waste	Opaque red	Red double bags placed in a dark red container
6	Non-hazardous municipal waste	Transparent black	Transparent plastic bag



The Project Achievements (Cont.)

Healthcare Waste Management Documents (Cont.)

Hazardous waste treatment by shredding, sterilization or incineration according to the Healthcare Waste Management Guidelines 2020.

No.	Type of waste	Treatment methods and alternatives
1	Infectious waste without plastic (PVC)	<ul style="list-style-type: none">• Incineration in incinerators currently in use.• Shredding and sterilization.
2	Infectious waste containing plastics (PVC)	<ul style="list-style-type: none">• Incineration in incinerators that comply with applicable laws and regulations in terms of gas emissions.• Shredding and sterilization.
3	Sharp waste and objects	<ul style="list-style-type: none">• Incineration in incinerators currently in use.• Shredding and sterilization.
4	Chemical, pharmaceutical and toxic cellular waste	<ul style="list-style-type: none">• Return the material to the supplier.• Fixing and solidification and then deep burial.• Incineration in incinerators that comply with applicable laws and regulations in terms of gas emissions.
5	Anatomical waste	<ul style="list-style-type: none">• Incineration in incinerators currently in use (if such wastes are not recognizable).• Shredding and sterilization (in case the waste is unrecognizable).• Burial in cemeteries (if such waste can be identified).



In This Way, We Protect The Environment From The Gas Emissions Due To The Improper Management Of The Health Care Waste

An Example Recommended To Be Repeated In All Egyptian Governorates

To Achieve The Main Goal Of The Project

Preserving The Health Of The Egyptian Citizen

A Right Life Health And Environment



Thank you



مشروع إدارة المخلفات
الطبية والإلكترونية

