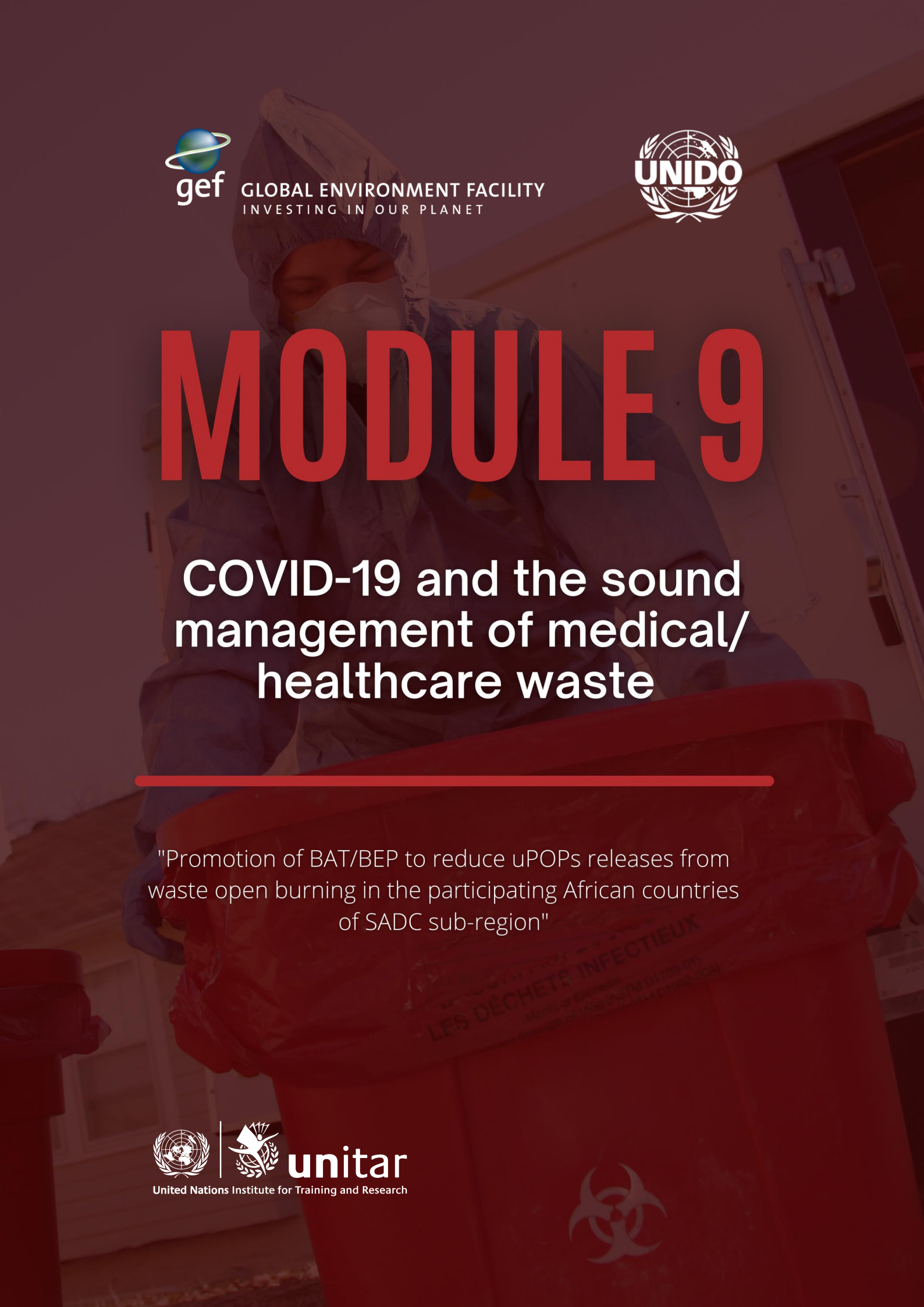

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MODULE 9

COVID-19 and the sound management of medical/ healthcare waste

"Promotion of BAT/BEP to reduce uPOPs releases from waste open burning in the participating African countries of SADC sub-region"

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TABLE OF CONTENTS

What is health-care sanitary waste?

All the waste generated within health-care facilities, research centers and laboratories related to medical procedures.

In addition, the same types of waste originating from minor and scattered sources, including waste produced in the course of health care undertaken in the home (e.g., home dialysis, self-administration of insulin, recuperative care).

10–25% of health-care waste is regarded as "hazardous" and may pose a variety of environmental and health risks.

Health care wastes are considered the second most hazardous wastes globally after radiation waste.

The management of health care waste is an integral part of a national health care system.

What are the main types of hazards associated with health-care waste?

- Sharps waste: biological (infectious risk)
- Infectious waste: biological (infectious risk)
- Pathological waste: biological (infectious risk)
- Pharmaceutical and cytotoxic waste: chemical risk
- Chemical waste: chemical risk
- Radioactive waste: chemical risk

How to set up a proper HCW Management Plan?

Knowing the types and quantities of waste produced in a health-care facility is the first step in safe disposal to estimate the required capacities for containers, storage areas, transportation, and treatment technologies. HCW quantity increases with national income:

- Developed countries generate on average up to 0.5 kg of hazardous HCW per hospital bed per day.
- Low-income countries generate on average 0.2 kg of hazardous HCW per hospital bed per day.

The main element of a HCW Management Plan is:

- ✓ Location and organization of per HCW type segregated collection and storage facilities
- ✓ Decide on containers specifications
- ✓ Required equipment (containers, trolley, storage areas…) and human resources needed to manage collection
- ✓ Responsibilities, duties, and codes of practice for:
  - The personnel of the hospital who generate HCW and are involved in the segregation, storage, and handling of HCW.
  - Attendants and ancillary staff who collect and handle HCW.
- ✓ Procedures and practices: for HCW segregation; monitoring of procedures…
- ✓ Training

HCW MANAGEMENT BEGINS WITH SOURCE SEGREGATION

Bins should be provided in all locations where HCW is generated to segregate at least the following categories:

- Sharps bins and needle/hub cutters
- High-risk waste: bins for infectious waste (such as cultures and swabs from infected patients) and high-risk pharmaceutical waste
- Low-risk waste bins for pathological waste (including samples from non-infected patients) and low-risk pharmaceutical waste
- General waste bins (for the other MSW and recyclable waste).

Main HCW treatment and disposal technologies

THERMAL TREATMENTS: Use heat to destroy pathogens.

- Low-heat (100-180°C): Autoclaving; Microwaving.
- High heat: small scale incinerators (the hazards from the non-controlled emissions of this type of equipment have been often observed and their use is non favoured by WHO); Energy from waste full scale incinerators in this case HCW is combusted in existing SWM facilities (favoured in high-income Countries).

CHEMICAL PROCESSES: Use disinfectants such as bleach (sodium hypochlorite). Chemical processes often involve shredding, grinding, or mixing to increase exposure of the waste to the chemical agent.

MECHANICAL PROCESSES: Include e several shredding, grinding, mixing and compaction technologies that reduce waste volume and can be coupled with disinfecting processes.

HCW properly treated in autoclaves, hybrid steam-based systems, microwave units, frictional heat systems, and dry heat systems:

1. Are sterilized or decontaminated to high disinfection levels

2. Have far fewer microorganisms or practically no microorganisms compared to household waste
3. Can be discarded with regular waste in a landfill.

ENCAPSULATION OF HCW in Low-Resource Settings: Processes where waste containers are filled, an immobilizing agent is added, and the containers are sealed.

Health and safety practices for health-care personnel and waste workers

Protection against personal injury is essential for all workers. HCW management policies should include provision for the continuous monitoring and enhancement of workers' health and safety.

It is appropriate to ensure adequate provision of PPE and then supervision for proper and consistent use.

The management of PPE waste during Covid-19

Most PPE - such surgical masks, gloves, disposable hospital gowns and aprons – used during the COVID-19 pandemic created a significant problem for WM because their amount increased significantly. **COVID-19 has multiplied by 10 the amount of hazardous healthcare waste.** But properly managed, Solid Waste and HCW were NOT found to be vectors of infection.

Service providers issued warnings and specifications to citizens and workers:

- The disposal of PPE into the bins for plastics recycling was prohibited.
- PPE can be segregated by disposing them only in bins for residual waste and incineration was favored (when facilities were already operating) over landfilling.
- Specific procedures were issues in all operating plant for workers protections.

COVID SELF-TEST KITS: WHAT TO DO WITH THE WASTE

Whether the result is positive or negative, the used items from each test – including the testing strip, swab and extraction tube – should be put in the small plastic bag that comes with the pack. This bag should then go straight into your normal rubbish bin.

The kits are not considered clinical waste requiring a special collection but they should be disposed with residual waste, they should not be recycled.

If a test result is positive, as well as following the reporting instructions included in the test kits, people should make sure they then treat their personal waste appropriately.

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