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National medical waste capacity assessment

**NO UNCONTROLLED DUMPING,
NO OPEN BURNING**

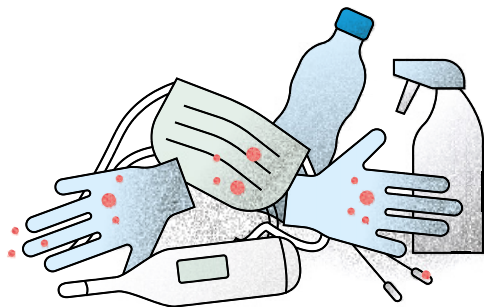
Protect the environment and our health

For more information visit unep.org or contact **Kevin Helps** (Head, GEF Unit, Chemicals and Health Branch, UNEP) kevin.helps@un.org

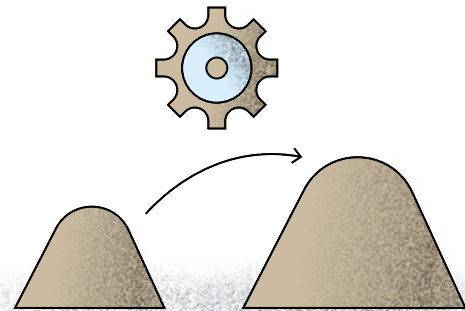
The Secretariats of the Basel, Rotterdam, and Stockholm Conventions recommend “To treat waste management, including medical, household and other hazardous waste, as an urgent and essential public service to minimize possible secondary impacts on health and the environment”.

Rolph Payet, Executive Secretary of Basel, Rotterdam, and Stockholm Conventions

The problem



Environmentally sound management of medical waste is one of the key challenges during normal times in many countries. During emergencies such as the COVID-19 pandemic, these challenges are magnified.



Any response by countries needs to be based on maximising the use of existing facilities.



Lack of data:

There is lack of sufficient data on medical waste amounts likely to be generated and on treatment infrastructure at national level, both of which are required for the government to develop strategies. Governments must also formulate a regulatory framework, support access to technology and, eventually, build capacity for environmentally sound management of waste in the future. This process should involve engagement among all stakeholders.



Lack of knowledge or capacity:

COVID-19 can lead to a rapid increase in the amount of medical waste generated. There is often a lack of knowledge or capacity to conduct assessments to provide an accurate forecast of the quantities of medical waste likely to be produced.



Lack of geographical identification:

It is critical to identify hot spots for medical waste generation and segregation points, and travel routes for transfer, storage, treatment and final disposal.

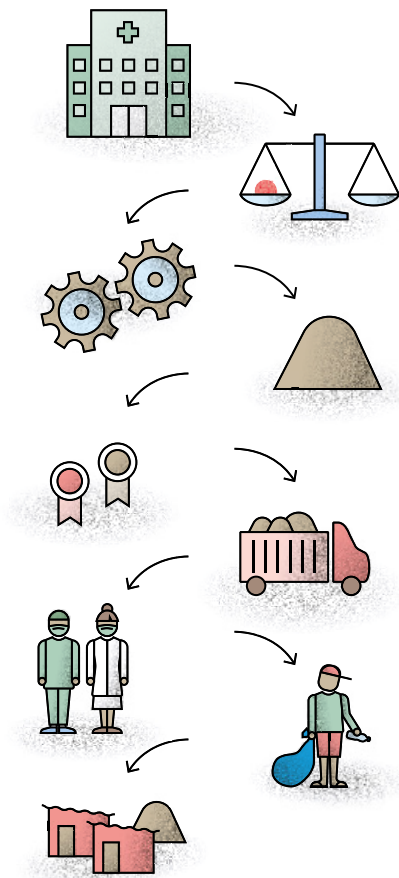


Disaster/conflict affected states and vulnerable humanitarian operations:

The situation is even more challenging in contexts where waste management is heavily dependent on the informal sector, which often employs some of the most vulnerable people (e.g., refugees, migrants, slum dwellers and the urban poor), as well as in informal settlements or in camps and camp-like settings.

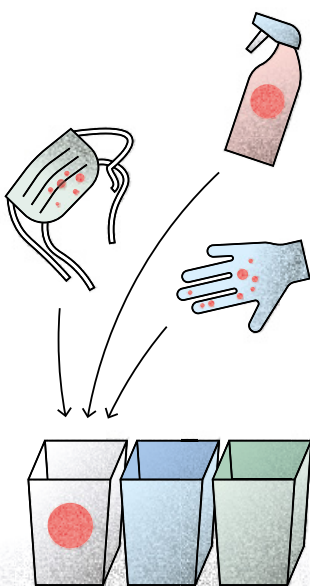
Guidance

To determine the readiness and capacity to manage a potentially significant rise in the production of COVID-19 wastes, an inventory of existing national medical waste policy, regulations, infrastructure and current level of usage should be conducted. This should include:



1. Identification of all **public and private medical health care facilities** including hospitals and medical clinics.
2. Confirmation of the existence of national legislation, policy and a health care plan, and/or procedures for medical waste management (including emergency response). Budget resources should be confirmed and allocated for implementing the plan. For more information, check the Factsheet on legislation.
3. Verification of **all medical waste solutions/technologies** that are currently operating in the country and each location where they operate. Solutions may include preferred technologies such as autoclaves, sterilization, commercial twin chamber incinerators engineered hazardous waste landfill (e.g. BAT/BEP), stop gap solutions such as De-Montfort Incinerators and barrel incinerators with air induction and possible other less suitable solutions/technologies (e.g. onsite pit burial). For more information, check the Factsheet on technologies.
4. Identification of excess (spare) waste treatment capacity for each medical waste solution/technology.
5. Validation of any **alternative medical waste solutions/technologies** that may be employed as temporary contingency during this period and their ease of implementation and use.
6. Scenario planning for management of COVID-19 waste volume (e.g., low, medium, high) based on projected waste volumes. This must be followed by the clarification of national solid waste collection systems.
7. Determination of the **number of current health care personnel and waste workers** available for medical waste operations, their level of knowledge for COVID-19 waste management and whether any specific training will be required.
8. Assessment of the informal waste management sector and its contribution to the overall national capacity, as appropriate.
9. Assessment of waste management capacities in humanitarian hotspots of displacement (camp and camp-like settings) and informal settlements, their connection to national/local services and any special requirements, as appropriate. For more information, check the Factsheet on disaster/conflict affected states and vulnerable humanitarian operations.

Facts



In normal situations, it is mandatory in all the countries that medical waste and other hazardous waste must be source segregated to avoid contamination, toxic exposure or injury.

In China, since the previous SARs outbreak, many cities introduced centralized collection systems for medical wastes with appropriate segregation, temporary storage prior to being sent for treatment/destruction including proper design of equipment and vehicles.

Multilateral Environmental Agreements, Treaties and Conventions such as Basel Convention, Stockholm Convention, Rotterdam Convention, Montreal Protocol, and London Convention asks for stopping illegal dumping and trade of hazardous wastes. To implement these treaties, a national inventory of COVID-19 wastes generated and the identification of suitable national waste management technologies are needed. To develop them, use the table at the end of this factsheet.

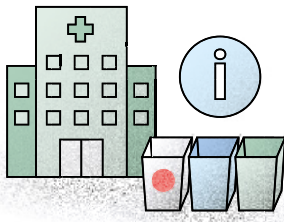
Over 3 billion people worldwide lack access to controlled waste disposal facilities.

Household wastes from persons undergoing quarantine and/or treatment should also be controlled and sent to healthcare facilities for safe disposal to prevent risk of cross-infection.

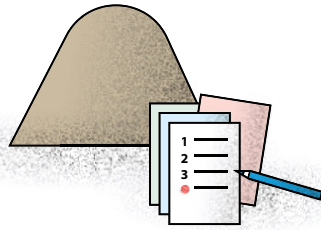
Hospitals and clinics should avoid the dumping or open burning of medical waste and should not add medical waste to municipal waste for disposal.

Some hospitals may have inefficient treatment or disposal systems which pose the risk of a negative impact on public health and environment, through possible releases of harmful chemicals (dioxins and furans), release of hazardous wastewater and chemicals into water bodies and soil.

Way forward



- 1 Based on UNEP guidance, develop a template and procedures for the **assessment of medical waste treatment capacity**. The goal is to gather information on medical waste generation at source points, and on the current collection, segregation, transfer, storage and treatment system including technologies.

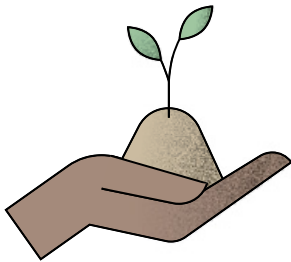


- 2 Develop a methodology for the analysis of the above data to **generate national inventories** and capacity assessment. This should include robust estimates and plausible projections and contingency planning.



- 3 Put in place capacity building **trainings** to develop national inventories of medical waste, to identify gaps in the current system for medical waste management, and to ensure improved operatorship of existing or planned waste solutions.

Resources



UNEP has been supporting over two decades on building local and national capacity on waste management.



UNEA-4 adopted a **resolution** on the sound management of chemicals and waste, including waste inventories, waste management system assessments and gap identification, target setting and the identification of suitable interventions through the facilitation of stakeholders' concerns (social, economic, and environmental) and the use of the Sustainable Assessment of Technologies for identifying the best technological solutions.



The resolution also emphasizes the cross-cutting nature of the issue in achieving relevant SDG targets and encourages countries to strengthen mainstreaming of chemicals and waste in national budgets and sector policies. For more information, check the [UNEP IETC Guidelines](#).

