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COVID-19: SOLID WASTE MANAGEMENT IN RESPONSE TO THE CRISIS

#MondeEnCommun

1. CONTEXT

It is essential for public health to ensure the continuity of **solid waste management services** in a safe and sustainable way, especially in case of sanitary emergency such as the Covid-19 crisis. Not only the situation can disrupt **the collection and treatment systems**, but also additional wastes caused by the emergency itself may be generated; these include **medical waste** that could potentially spread the virus and increase the gravity of the crisis.

In this particular period, many governments have decided to impose a partial or complete **lock down** to their population. Typologies of wastes collected are therefore changing at a large scale: most of the economic activities are slowed down or completely stopped while domestic waste production is increasing. Ratios of categories of waste to be collected and treated may be significantly modified.

Moreover, management of medical waste including potentially infectious materials is a **key element of crisis management**.

The French Code for Public Health defines these wastes as "wastes derived from diagnosis, follow-up and preventive, curative or palliative treatment, in human and veterinary health sectors".

Infectious medical wastes include waste containing microorganisms that may generate and spread diseases to humans, and all materials used in the medical sector.

Proper management of medical waste produced during the Covid-19 pandemic, either by health institutions, health professionals, or possibly infected people staying home must be **clearly defined, planned and implemented**, and target populations **must be sensitized**. Infectious waste management aims to avoid spreading the virus found in waste produced by the medical sector or in protective equipment (such as masks, single use tissues or gloves).



Rag-pickers recovering pieces of fabric at Koshe Reppi landfill (Ethiopia) © Didier Gentilhomme/AFD

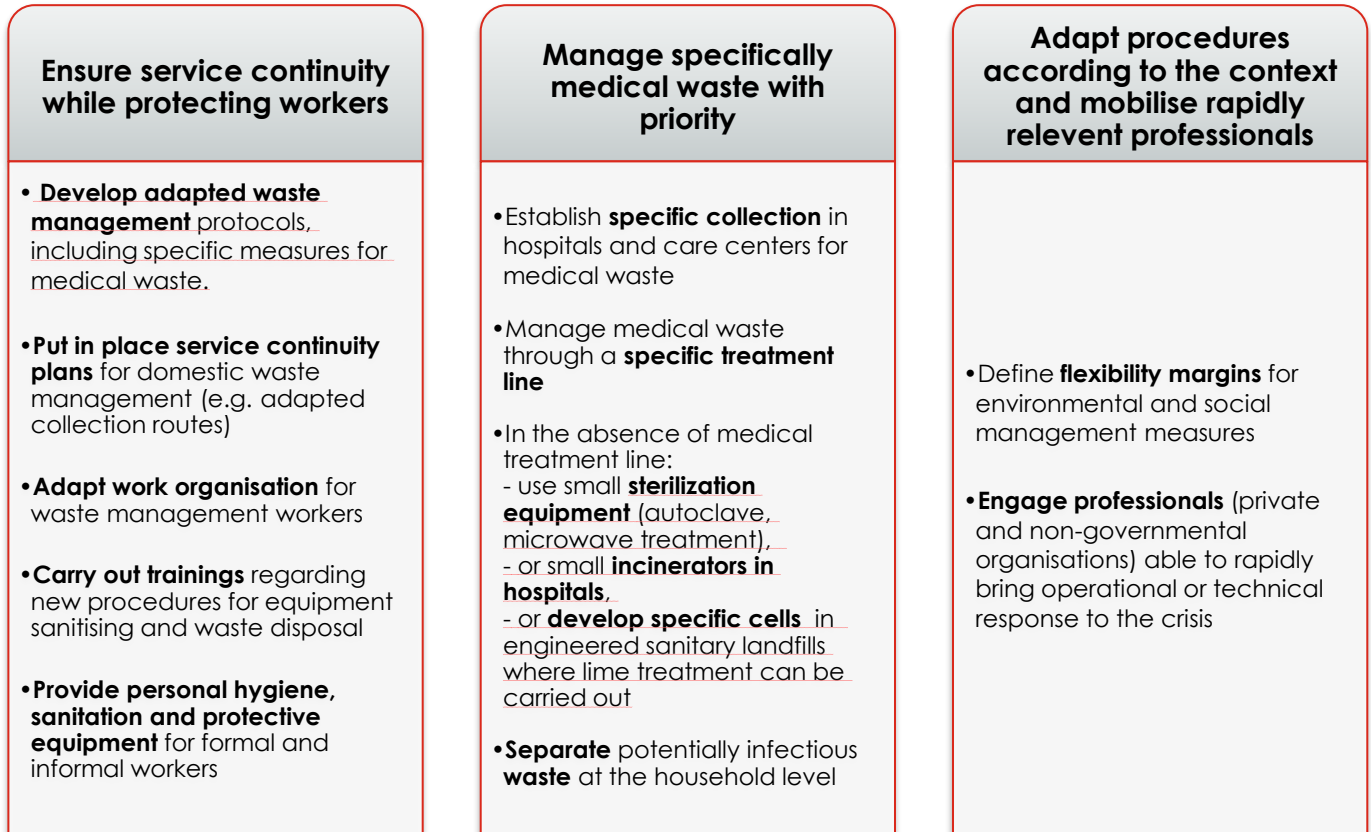
Professionals involved in waste collection and treatment are particularly exposed to the covid-19 with a higher risk of contracting and spreading the virus. Therefore, they need **to be aware of the risks and protected**. They will have to apply good practices and use appropriate equipment (single use protective equipment, distancing and all other recommended protective measures).

In this context, developing countries are more vulnerable as their solid waste management framework often lacks of structure and resources, and does not include specific measures for medical waste management.

Keeping in working order and reinforcing **waste collection and treatment services** for medical or domestic waste during a health crisis is essential, under confined conditions or not.

If solid waste are not properly treated, **serious risks** for health are to be feared, affecting more the population already impacted by the crisis.

2. MAIN RECOMMENDATIONS



ENSURE SERVICE CONTINUITY WHILE PROTECTING WORKERS

Guarantee continuity of solid waste collection and treatment services, and secure healthy and safe working conditions for workers (pre-collectors, collectors, sorters...). Related actions include:

- **Develop service continuity plans** for domestic waste while ensuring safety and sanitary conditions for the workers. This may involve a regional restructuring of the waste management framework (e.g. adapted collection routes). A medical **waste management protocol** and an action plan in case of contamination must be formalized for public service workers. Special attention should be paid to **sorting units** – they should be operating with specific procedures or temporarily shut down;

- **Clean and sanitize** regularly collection and transfer equipment (collection bins, collection and transfer trucks);
- Provide **training** to all workers about new processes for equipment cleaning and waste disposal;
- **Raise awareness and communicate** about individual good practices and protective measures (social distancing, washing hands...), provide **hygiene and sanitation equipment** (hand washing facilities, sanitizers) and **individual protective equipment** (masks, gloves...) for both formal and informal workers (with support from the civil society);



About **40% of health care facilities** in the world (Source: WHO) do not have an appropriate medical waste management system

MANAGE MEDICAL WASTE WITH PRIORITY AND SPECIFICALLY

- **Encourage populations kept at home and exposed to the virus, to isolate waste that may be contaminated** (masks, tissues, gloves, compresses, drug plates and medication, syringes) in a waterproof and closed disposable bag, and to discard it with ordinary waste.
- In countries with a medical waste management system (collection and treatment), use the usual infectious medical waste management system for **waste generated by Covid-19 infected (or likely to be infected) patients**.
- In countries with no medical waste management system:
 - o **Set up a selective collection for hospital waste.** Hospitals and care centers should develop particularly in times of crisis a management system for infectious waste (see 3. Medical waste management).
 - o **Process medical waste through a specific and emergency treatment line.** Hospitals should acquire chemical or steam sterilizers

(for waste disinfection) or dedicated incinerators. Authorities should use specific cells in sanitary landfills for infectious waste and use lime treatments for its stabilization.

- Develop specific **medical waste management systems for temporary infrastructure**, such as field hospitals.
- **Promote medical waste management projects or project components** (within waste or health projects) in future development plans.



About **15% of waste** (Source: WHO 2015) produced by health-care facilities are **infectious**.

ADAPT PROCEDURES ACCORDING TO THE CONTEXT AND MOBILISE RAPIDLY RELEVANT PROFESSIONALS

- Define **flexibility margins in environmental and social impact management procedures** for temporary emergency answers related to solid waste (site selection, public inquiries...)
- **Mobilise professionals in a position to suggest responses to the crisis. Private sector or civil society organizations** are able to intervene quickly on the ground and provide technical or operational consulting support.

Women in the front line

Women are at the forefront of the Covid-19 crisis response in many areas (health, personal care, assistance, trade...), therefore **they are more exposed and more vulnerable** to the pandemics than men, including in the waste management sector.

Within the household, their **role regarding domestic chores** (care for the sick, hygiene, waste disposal) usually leads them to handle potentially infectious waste produced by their family and closed ones.

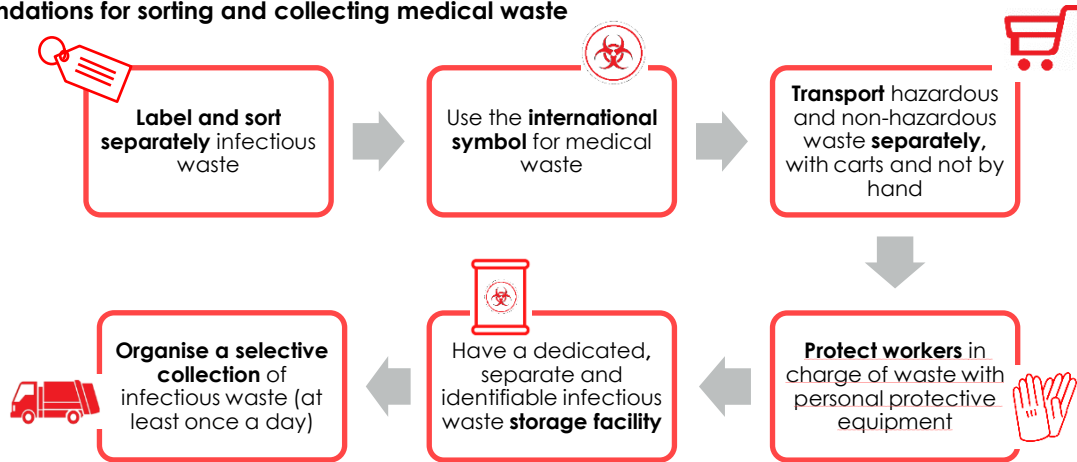
As for their role in the economy, many work in the **informal waste management sector**, collect potentially infectious waste, either on the streets or on the landfills (where waste is often unsorted). In many countries, women are in charge of **hygiene and cleaning tasks**, and it is estimated that cleaners in businesses, shops but also in hospitals are mainly women. These activities expose them all the more to the risk of contamination by the coronavirus.

It is therefore essential that women benefit primarily from **awareness-raising** actions (good practices, hygiene, new procedures, etc.) and from **suitable individual hygiene and protective equipment** (adapted size) **both in the formal or informal sector**.

Once the crisis is over, it will also be essential to consider **social support initiatives** for women involved in the waste management sector to mitigate the economic impact of the crisis, which should affect vulnerable populations even more.

3. MEDICAL WASTE MANAGEMENT IN HOSPITALS

Recommendations for sorting and collecting medical waste



Recommendations for the treatment of medical waste

| | |
|-------------------------------------|---|
| Steam treatment | <ul style="list-style-type: none"> •Used to disinfect and sterilize infectious waste •E.g. autoclave, micro-waves, friction heat treatment |
| Incineration | <ul style="list-style-type: none"> •High temperature dry oxidation (850 °C to 1100 °C) •Toxic equivalent emissions must be less than 0,1 ng (TEQ7)/m³ of dioxins and furans |
| Automated chemical treatment | <ul style="list-style-type: none"> •Use of disinfectant products •Careful attention must be paid to toxic effluents that may be produced |
| Biological treatment | <ul style="list-style-type: none"> •Use of enzymes to accelerate the destruction of organic waste containing pathogens |

TEMPORARY SOLUTIONS FOR TREATMENT AND EMERGENCY SITUATIONS

In a context of crisis such as Covid-19, many face a **lack of resources, time and access to modern technologies**. These situations exist in many developing countries and small-scale incineration can be a transitory response to an immediate requirement.

WHO recommends¹ to use single chamber, brick or drum

incinerators. However, **incineration of PVC plastics and other chlorinated waste** should be avoided, **as they could lead to the production of dioxins and furans**. For these, other types of treatment or landfilling in a specific cell would be more appropriate².

AFD funding for such equipment will be however subjected to a technical assessment and an environmental impact management plan in line with AFD's guidelines and international standards.

¹https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf;jsessionid=CC2B09C5F0965D821A699E20352AC5B8?sequence=1

² <https://www.unenvironment.org/news-and-stories/story/healthcare-waste-what-do-it>

4. PROSPECTS FOR CRISIS RESPONSES

In times of crisis, poor solid waste management may **increase the risks associated to the same crisis**, with impacts on health and on the environment. Governments must thus **include domestic and medical waste related issues** in their emergency plans, but also in future development strategies.

Short-term responses to the crisis must focus on managing the emergency, its implications for the waste sector and on protecting people. These measures must include the management of medical waste through a dedicated work chain, service continuity for household waste – which may including a regional restructuring of the sector, and adaptation of working methods to ensure safety and health to workers.

This increased sensitivity **for waste management, including hospital waste will have to materialize in the medium and long term**: more components related to these issues in development policies, new management plans for medical waste, and investments in specific waste treatment infrastructure.

As for projects under appraisal or ongoing, AFD has the possibility, at the request of its counterparts, to **mobilize financing or technical assistance in the solid waste management sector**, to focus on an emergency response to tackle the consequences of the crisis.

AFD Urban Development division remains at the disposal of municipalities and urban stakeholders and offers its **support** to meet emergency needs in the context of the Covid-19 crisis.



Recycling point in Fortaleza (Brazil) © Jorge Cardoso/AFD

5. OTHER REFERENCES AND RESOURCES

Some additional recommendations on medical waste management are mentioned in the links below. These links are indicative and non-exhaustive.

Safe management of wastes from health-care activities, World Health Organization (WHO)

https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf?sequence=1

Management of medical waste produced during the Covid-19 epidemic, by the High Council for Public Health, France

<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=782>

Trends in the municipal solid waste sector in Europe, ACR+

https://www.acrplus.org/images/project/Covid-19/ACR_2020_03_Waste_management_covid19_graph.jpg

Waste workers are protecting our communities during COVID-19, World Bank Blog

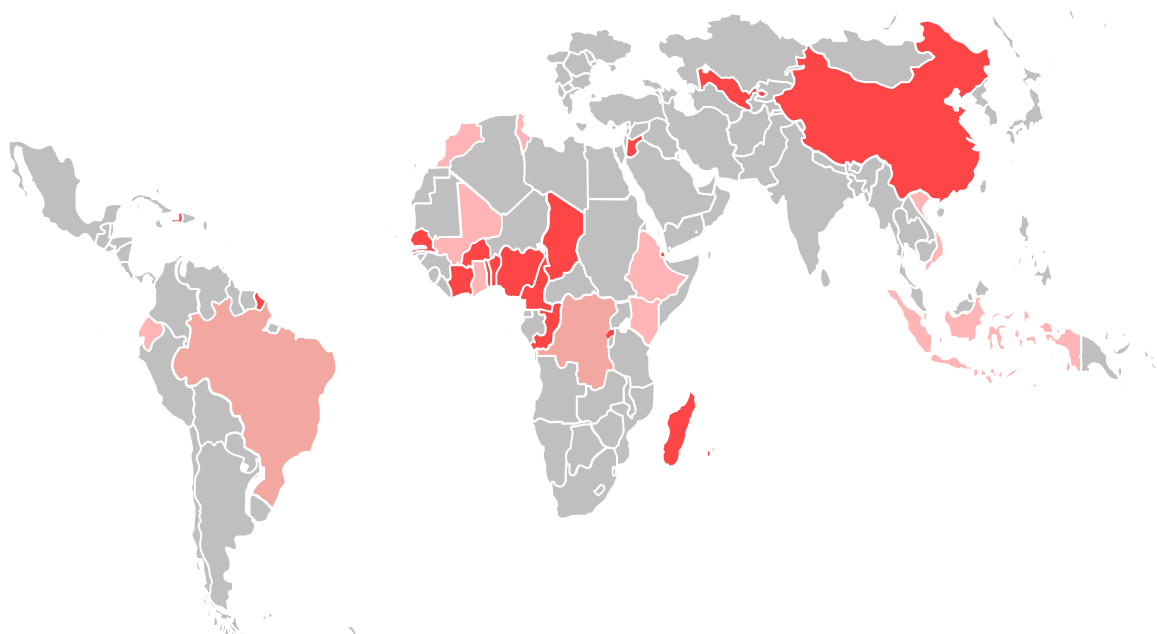
https://blogs.worldbank.org/sustainablecities/waste-workers-are-protecting-our-communities-during-covid-19?CID=WBW_AL_BlogNotification_EN_EXT%3Fcid%3DSHR_BlogSiteShare_EN_EXT

SOLID WASTE MANAGEMENT AT AFD

Since the early 2000s, the strong growth in waste generation, coupled with its social, environmental and climate consequences, has led AFD to propose its support to solid waste management projects.

From 2009 to 2019, AFD has committed funding to more than 70 projects in the waste management sector, representing almost €400 million - two thirds were engaged over the past 5 years only. Some ten projects are currently under preparation, for an estimated amount of €250 million.

AFD's strategy aims to improve the entire solid waste management chain. AFD proposes a differentiated response based on the maturity of local stakeholders in an integrated approach, including all stages of solid waste management: generation, pre-collection, collection, transport, disposal, recovery, even if the financing is only focusing on one link. This approach aims to (i) include all stakeholders, (ii) take into account informal workers for many in the sector are particularly vulnerable, (iii) strengthen governance, (iv) develop the human and financial capacities, and (v) maximize the positive impact on climate.



Countries of intervention of AFD in the solid waste management sector between 2009 and 2019 – Projects (dark red) and project components (light red)



Contacts:

AFD solid waste management team

*Deputy head of division: Hassan Mouatadid.
Project team leaders: Alexandra Monteiro, Mélanie Grignon,
Romain Dissaux, Antoine Buge.
Consultant: Marion Subtil.*