

Strategy Guidance: Solid Waste Management Response to COVID-19

Background

As the COVID-19 pandemic is disrupting the lives of people across the globe, it is also affecting waste management. With lock-downs and physical distancing, there are challenges with the disruption or failure of urban basis services, including **the collection, treatment and disposal of waste**, which is **essential for hygiene** and public health. The changes to daily routines are altering the amount and type of waste generated from households and public spaces, and with potential threats from infectious and medical waste including masks, and used tissues, contaminating the municipal waste stream. These changes are also causing temporary stoppages of some waste value chain activities (e.g. recyclables are not purchased by recyclers), impacting upon livelihoods of the most vulnerable (e.g. waste pickers) as well as material recovery. There is a need to adequately and safely dispose of the collected waste from households and medical facilities dealing with COVID-19 treatment. Therefore, municipalities need to:

- ▶ Continue their waste management services.
- ▶ Make **temporary changes in their waste management operations** using existing resources and find quick-win solutions for maintaining continuity in operations as well as efficiency.
- ▶ Take the lead in **mitigating risks to people involved** formally and informally in the city's **waste management operations and those benefiting from such services**.

Although several guidelines exist about the treatment of waste from healthcare facilities (see references below), there is a lack of guidance on how to adapt regular municipal waste management services to a pandemic situation. The present guidelines seek to address this and support decision makers in developing a solid waste management response strategy to the COVID-19 situation.

Critical waste management areas requiring attention with COVID-19



10 point strategy for solid waste management operations in the context of COVID-19

1. Map sources of waste generation to identify changes in waste amounts/flows and increase efficient use of resources including

- Places generating COVID-19 affected health care hazardous waste (e.g. hospitals, home care centres, testing labs, quarantine camps).
- Places where waste generation has decreased due to preventive measures, such as schools, commercial complexes, public places.
- Places** where there is **fly-tipping**

2. Separate infectious waste in households

- a) Ideally, **all potentially infectious waste** should be put in a bag (double if possible) and sealed. It needs to be handled as residual waste, not meant for material recovery. A **coloured bag could be assigned** for potentially infectious waste.
- b) If it is not possible to separate potentially infectious waste from other waste, then all waste from that household should be placed in a bag (double if possible) and sealed, that should be handled as residual waste.
- c) It is also recommended to distribute waste bags to households, especially in low income and informal settlements.
- d) Waste reduction should be promoted through the 5Rs (Rethink, Refuse, Reuse, Reduce Recycle).

3. Maintain and expand waste collection services

- a) **Human and financial resources, as well as assets for waste collection** must be reassigned based on the mapping of waste generation sources (point 1).
- b) Regular and increased waste collection services should be offered to identified COVID-19 sources, especially hospitals.
- c) The frequency and coverage of waste collection must be increased in communities with common collection points and high population density, especially informal settlements. A designated helpline could be established to improve waste collection services and provide information on waste schedules, special services and directives.
- d) Close contact between people must be reduced during waste collection especially in door to door collection.

4. Ensure safe waste treatment and disposal

- a) **On-site temporary storage and thermal treatment of potentially infectious waste** from all the identified sources in the city needs to **be enforced**.
- b) If thermal treatment for infectious waste is not possible, adequate and safe sanitary landfill measures must be put in place. For the duration of the pandemic, the collected waste should be put in separate cells, covered at least daily with locally available material and access limited to a few personnel. See video guidance from ISWA: "[How to Dispose of Healthcare waste in Landfills](#)".
- c) Materials going to multi-material recovery plants should also be stored temporarily on-site, if possible for 72 hours (this span is suggested based on current studies and will be referred and re-adjusted based on new developments).
- d) The collected materials can be recycled after storing them for an appropriate time, depending on the material and the latest data on survival time of the virus. Stay updated on the virus survival time on different surfaces (e.g. online COVID-19 resource centres) and adapt measures accordingly.
- e) **Temporary permits** should be given to waste collectors **for storing the collected waste before treatment** as well as to waste treatment plants.

5. Protect waste workers, formal and informal

- a) **All workers, formal and informal, must be trained on the risks** and hazards associated with the exposure to the virus, as well as on appropriate workplace protocols to prevent/reduce the likelihood of exposure and infection. The training session could for example include mock drills.
- b) **Basic hygiene measures**, such as regularly washing hands, need to be promoted and means provided. A **regular health check-up** (e.g. daily body temperature check) system should be established for the workers too.
- c) Strategies to reduce human interaction and ensure distance between workers at work should be put in place and work shifts could be revised.
- d) **Safe work practices, personal protective equipment (PPE)**, such as puncture-resistant gloves, face and eyes protection, need to be provided, as well as training on appropriate removal and disposal or maintenance of the same ([WIEGO recommendation for waste worker](#))
- e) Considerations must be made to **support livelihood loss of informal waste workers** by coordinating with local waste pickers association, NGOs and other relevant groups to purchase basic necessities, such as hygiene kits and food stock.

6. Regularly communicate with citizens and stakeholders

- a) **The new collection schedule and other related changes** in cities' waste management system must be **communicated** through radio, newspapers, social media and other channels.
- b) Citizens should dispose of waste as per guidelines provided by the city.
- c) Disposal must be in designated places only, to avoid formation of uncontrolled dumpsites and to enable emergency teams to effectively maintain hygiene within city. Fines could be associated with illegal dumping too.

7. Engage with stakeholders

- a) **Engage and consult with waste stream stakeholders, formal and informal**, to identify roles and responsibilities to coordinate on strategies for safe waste collection and treatment, and improve response plan.
- b) **Coordinate with informal workers** to maintain and expand collection services in low income areas and take advantage of the situation to **strengthen the informal sector**.
- c) **Collaboration must be explored** between NGOs and waste management operators? for corporate social responsibility funds/initiatives, particularly in the context of providing access to PPE kits for the waste workers and spreading awareness.

8. Accelerate procurement procedures

- a) Safety equipment for workers should be purchased and distributed, including to informal workers as quickly as possible if possible.
- b) **Additional storage bins** and collection trucks should be contracted/rented if needed. Coordination among neighbouring wards to improve efficiency should be promoted.
- c) Central and state funds must be reviewed for possibilities to divert money from existing programmes to push activities related to COVID-19.

9. Apply national and international guidance for health care and medical waste

- a) **National medical waste handling guidelines must be followed.**
If no guidelines exist, the international guidelines by WHO should be applied ([Safe management of wastes from health-care activities](#)).
- b) Collected medical waste must be incinerated. Other treatment options for health care waste could be referred to at [UNEP's compendium of technologies](#).

10. Design scenarios and contingency plans

- a) **Learn from other countries** on COVID-19 progression/patterns and consider them in each phase of the planning process.
- b) Risk assessments associated with failure of continued service (e.g. **staff and equipment shortage**, closure of recycling, waste treatment and disposal units) must be carried out.

GOOD TO KNOW



- **Waste management must be considered as an essential service.**
- *Scientists have found that COVID-19 was detectable up to 4 hours on copper, up to 24 hours on cardboard and up to 2 to 3 days on plastic and stainless steel.*
- *Potentially infectious waste is considered all items that can have a high viral load, such as gloves, tissues, handkerchiefs, diapers, masks, used items from persons with COVID-19 and similar.*
- *The information on COVID-19 is regularly updated, keep track of new developments!*

Case studies

The above 10 point strategy should guide decision makers in addressing solid waste management challenges and develop a holistic response. The following case studies are for reference purposes.

ITALY

The above 10 points should guide decision makers in addressing the affected solid waste management areas and develop a holistic response. The following case studies are for reference purposes.

Type 1: *Municipal waste generated by households **with** COVID19 positive people in isolation or people in mandatory quarantine*

- ▶ It should be classified as infectious medical waste (hazardous)
- ▶ The management procedures should comply with by law regulations for such waste stream (operations run by specialized companies, a collection using standardized bags, sterilization, specialized treatment plants, etc.)
- ▶ There are no separate collections and all fractions/types of waste are collected as residual waste
- ▶ The waste has to be placed in a first bag, then in a second before putting the bag outside the house for collection daily
- ▶ If possible, a bin or container with a pedal is used for the waste bags.
- ▶ The bags have to be tied (with string or adhesive tape) using single-use gloves, and the bags are not pressed with hands.
- ▶ Do not allow pets get close to waste bags.
- ▶ Deliver the waste for collection according to the system in place.
- ▶ If the person in isolation/quarantine cannot deliver the waste for the collection service, the local authority must set up a specific service with specialized staff

*Type 2 - Municipal waste generated by households **without** COVID19 positive people in isolation or people in mandatory quarantine*

- It is collected complying with the separate collection system in place
- Tissues, masks, single-use gloves (**potentially infectious**) have to be included in the residual waste stream which has to be delivered through 2 bags closed with string or adhesive tape
- It is highly recommended that workers comply with the work safety rules set up by the Health Ministry, use PPE, clean PPE and overalls frequently, replace single use gloves if there is a risk of contamination and sanitize vehicle cabins
- Instructions for older persons' caregivers are to not deal with typology waste 1, they can deal with typology waste 2, adopting specific prevention measures in accordance with the directive of the city
- The residual waste treatment must comply with the local rules, prioritizing incineration plants (if any).

ESTONIA

- Waste from infected/quarantined and non-infected people to be collected separately, placed in a plastic bag, sealed and disposed as mixed municipal waste.
- No source separation of waste during the infection period in households with suspected/positive cases.
- Collected waste from non-infected people only to be treated and separated after a waiting period of at least 72 hours.
- Cash payments to be avoided, disinfectant to be used regularly to clean the ID card reader, card payment terminal and other heavily used surfaces.

INDIA

- Bags of general waste to be handled as per solid waste management rules.
- Bags of COVID-19 waste, including biomedical waste, to be packed in double-layered yellow bags marked COVID-19.
- Special PPE for staff managing collection and handling this waste announced; include three-layer masks, splash-proof aprons/gowns, nitrile gloves, gumboots and safety goggles.
- Special vehicles designated for COVID-19 waste announced; should be sanitized with sodium hypochlorite or any appropriate chemical disinfectant after every trip.
- Common biomedical waste treatment facilities asked to operate extra hours and existing hospital facilities may be used for disposal of COVID-19 waste in case treatment facilities are not available. Additionally, household waste incineration plants asked to incinerate COVID-19 waste in case quantities rise.
- Citizens quarantined at homes asked to contact local bodies to get waste collected.
- A separate team of workers to be engaged in door-to-door waste collection, waste deposition centres and quarantine homes, who are trained on sanitization, collection of biomedical waste and precautionary measures to handle biomedical waste.

GERMANY

- ▶ All waste to be provided in securely closed bags.
- ▶ Handkerchiefs, tissues and similar wastes, as well as waste items from which food was eaten, to be disposed as residual waste.
- ▶ Limited source separation of waste by households with suspected/positive cases. However, glass and deposit packaging, as well as electrical and electronic waste, batteries and chemicals have to be disposed of separately as usual after the removal of the quarantine/the recovery from COVID-19.
- ▶ Other households to continue the separation of waste as before, to avoid exceeding the capacities of waste incineration plants.
- ▶ Infected households need to store residual waste bags in rooms inaccessible to other people/animals as long as possible (e.g. on the balcony) and to take them out only shortly before collection.

TURKEY

- ▶ PPE of waste collection staff to be improved by local governments.
- ▶ Waste collection frequency to be increased.
- ▶ Citizens to tightly close waste bags and to ensure that cutting/piercing objects do not damage the bags.
- ▶ Household wastes originating from the quarantine zones to be managed as medical waste and disposed of in medical waste sterilization facilities.

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