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WHO concerned over COVID-19 health-care waste

In a new report, the agency calls for global action to deal with huge amounts of waste produced by personal protective equipment and other material. John Zarocostas reports from Geneva.

A WHO report published on Feb 1, has found serious shortfalls in COVID-19 health-care waste practices, following an analysis of waste generated through a UN initiative to supply countries with personal protective equipment (PPE) and diagnostic kits for their COVID-19 pandemic response. "Evidence on the amount of health care waste generated, the lack of resourcing to safely manage waste, and the incomplete attention to environmental and climate impacts demonstrates that a more holistic approach is needed" the report concluded.

WHO estimates that supplies dispatched between March, 2020, and November, 2021, included 1.5 billion units of PPE, weighing approximately 87 000 tonnes, more than 140 million test kits, with a potential to generate 2600 tonnes of general waste (mainly plastic), and 731 000 L of chemical waste. It also noted that over 8 billion doses of vaccine have been administered globally, producing 144 000 tonnes of additional waste.

Maria Neira, director of the Department of Public Health and Environment at WHO, said "COVID-19 has forced the world to reckon with the gaps and neglected aspects of the waste stream and how we produce, use and discard of our health care resources." The study did not consider COVID-19 commodities procured outside the UN system, nor COVID-19-related waste generated by the public, including medical masks.

However, a separate study published in November, 2021, showed that the pandemic has increased demand for single-use plastic and calculated that more than 8 million tonnes of pandemic-associated plastic waste

had been generated, with most of the excess waste coming from medical waste generated by hospitals. Another report by The Global Fund showed that every day disposable masks alone generate 1.6 million tonnes of waste.

"... 'health care waste management is an unsolved problem, but for which there are solutions'..."

Many waste facilities and countries, the WHO report notes, mistakenly classified 100% of COVID-19 health-care waste as hazardous, rather than the 10–15% typically generated from routine health services. In New Delhi, India, for example, classifying COVID-19 waste as infectious almost quadrupled waste volumes during the peak of the outbreak in May, 2021.

The WHO findings represent a setback in efforts to reduce greenhouse emissions in health care, which the report underscores is a "substantial contributor", accounting for approximately 4–5% of total emissions globally. "Significant change at all levels, from the global to the hospital floor, in how we manage the health-care waste stream is a basic requirement of climate-smart health care systems, which many countries committed to at the recent UN Climate Change Conference," noted Neira.

The report presents a set of recommendations, which include using eco-friendly packaging and shipping, safe and reusable PPE (eg, gloves and medical masks), recyclable or biodegradable materials, investment in non-burn waste treatment technologies (eg, autoclaves), and reverse logistics to support centralised treatment and investment in the recycling sector. For example, the study estimates that for

the UK, the carbon footprint of PPE could be reduced by 12% through manufacturing PPE locally, saving 12 491 tonnes of CO₂ equivalents over a 6-month period.

Experts stressed the investment needed to manage health-care waste, especially for poorer nations where there are big gaps in capacity, and hope the report will help generate more investment funds. Maggie Montgomery, technical officer with WHO's water, sanitation, hygiene, and health unit, and a lead author of the report told *The Lancet* that around 30% of health-care facilities globally do not segregate hazardous and non-hazardous waste, making recycling more difficult. In the least developed countries, 50% of facilities do not segregate waste, she noted, and less than a third of health-care facilities in these countries have a basic health-care waste management service.

Ruth Stringer, science and policy coordinator at Health Care Without Harm, told *The Lancet* "we do need people to pay attention and realise that health care waste management is an unsolved problem, but for which there are solutions, and there are very vulnerable people in the system." Waste workers in many low-income and middle-income countries "are also not properly trained, they're not properly protected", she said.

The WHO report recommends that regular health sector budgeting and external donor funding for PPE and other COVID-19 consumables "must include line items for support of waste personnel, training in hygiene and infection prevention and control, and operation and maintenance of waste infrastructure".

John Zarocostas

For the WHO report on COVID-19 waste see <https://www.who.int/publications/item/9789240039612>

For the Global Fund study see <https://www.theglobalfund.org/en/covid-19/news/2021-08-10-protecting-health-care-workers-with-personal-protective-equipment-ppe-working-paper/>

For the study of plastic waste related to COVID-19 see *PNAS* 2021; 118: e2111530118