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EDITORIALS

Talking trash

Five steps to a greener future for healthcare organisations

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The health of the environment is critical to the health of populations. Healthcare, however, is not known for environmental sustainability. In addition to concerns about energy and fresh water consumption, landfill waste poses a particular challenge. Hospitals in the US produce over 13 kg of waste every day for each staffed bed.[1] The UK NHS generates 1% of all domestic waste in the UK[2] and discards over 63 000 metric tons of waste each year.[3] Landfill waste adversely affects human health[4 5] and accelerates climate change by releasing greenhouse gases, including methane and carbon dioxide, during decomposition.[6] Despite their critical role in managing healthcare resources, clinicians are rarely engaged or poorly trained in efforts to minimise hospital waste.

The prevailing view that most hospital waste needs special handling is incorrect. All hospital waste falls into one of several categories—hazardous items including cleaning agents and chemotherapeutics; regulated medical waste, which is contaminated with body fluids; and solid waste. In a typical hospital, 85% of all waste is classed as solid waste, 10-15% is regulated waste, and the remainder (usually less than 5%) is hazardous waste.[7] Some solid waste can be recycled, but the amount of recycling varies widely. For example, the University of Michigan Health System is consistently recognised for sustainability and recycles just 15.7% of its annual 8500 metric tons of solid waste, whereas the widely regarded leader on waste management in US healthcare, Kaiser Permanente, recycles 36% of its trash.[8]

Other industries may provide useful benchmarks to help the healthcare sector better reduce, reuse, and recycle. For example, the automotive manufacturing and hotel industries also have large physical infrastructure, labour forces, and resource needs. Historically, neither of these industries is famous for environmental stewardship, but both have made substantial improvements in reducing and recycling waste. General Motors (GM), also based in Michigan, instituted "zero waste" initiatives that reduced 73% of non-recyclable waste by 2010.[9] Cardboard packaging is recycled into acoustic padding for cars and shipping pallets into wood beams for home construction.[9] Today, the company claims to recycle or reuse 85% of its overall manufacturing waste and reports 131 landfill-free facilities.[9]

In the hotel industry, Scandic Hotels operate 224 hotels across Europe. In 1996, the chain prioritised sustainability and implemented a computerised tracking and reporting system to standardise data on resource use and waste production.[10] Scandic Hotels reduced unsorted waste by 48% and produces less than 0.5 kg of waste per guest per night.[11] These comparisons across industries may be imperfect but serve to illustrate the margin by which the best in healthcare trail others.

Healthcare systems have tackled other population health challenges such as patient safety, access, and cost reduction. Borrowing from quality improvement, we propose five key principles to accelerate efforts to reduce hospital waste.

We must start by measuring the problem more accurately and reproducibly. Disposal costs typically are based on weight so trucks are weighed before and after loading, but hospitals could develop systems to undertake upstream measurements—quantifying, characterising, and differentiating waste from operating rooms, food services, and other sources before it's all combined. Furthermore, hospitals should try to capture data on the carbon footprint of external processes such as the production and transportation of food and supplies.

Next, we must develop meaningful, standardised metrics to enable comparisons within and across organisations. Hospitals should agree on standard definitions and individually determine average waste per patient per day for both inpatient and outpatient settings, much like other industries standardise waste per vehicle or waste per guest per night.

Organisations in the healthcare sector should seek partnerships with innovators and experts in sustainability from across industry, learning from others who have already managed to reduce waste without adversely affecting their clients or core businesses.

Reducing consumption is an essential but often overlooked component of any strategy to cut waste. Numerous levers are

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available. For instance, healthcare systems exert substantial buyer power over organisations in the supply chain and should leverage this power to improve packaging to help reduce consumption, simplify recycling, and enable composting. Additionally, clinicians can modify behaviour by considering the impact of discretionary tests, procedures, and drug use from the standpoint of waste production and other environmental concerns such as antimicrobial resistance.

Finally, sustainability is cultural, and clinicians should be leaders in waste reduction and sustainability efforts in their workplaces. Clinicians are well placed to identify opportunities for improvement, engage other staff at all levels, and develop solutions that truly transform the way healthcare does business.

Population health depends on the health of the environment, so caring for the environment by reducing waste should be a key priority for all healthcare professionals.

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