GoodRx Health

How to Cut Down On E-waste in Healthcare


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Published on November 4, 2022

Key takeaways:

- E-waste, or electronic waste, is made up of electronic devices that are no longer useful. Healthcare organizations generate a wide variety of e-waste.
- E-waste is a major source of soil and water contamination and also poses significant risks to the workers who take these devices apart for recycling and disposal.
- Healthcare organizations can reduce their consumption of e-waste and become more sustainable in several ways, including by making responsible purchasing decisions, extending the life of their electronics, and ensuring proper disposal.

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E-waste is a growing problem globally. According to a 2019 UN report, the world generates more than 50 million tons of e-waste annually, at a value of $62.5 billion. Out of that, only 20% was properly recycled, and the remainder was trashed or recycled improperly, harming both people and the environment.

There isn't a lot of information available on how much of the world's e-waste is generated by healthcare facilities, but in 2021 the global medical equipment market was worth $149 billion, and all that equipment will eventually need to be replaced. It is critical, and central to the mission of healthcare organizations, to pave the way to a more sustainable future for electronics.

There are several things healthcare organizations can do to reduce their production of e-waste and move toward more sustainable use of electronics.

What is e-waste?

According to the Environmental Protection Agency, electronic waste, often referred to as e-waste, is made up of electronics that have reached the end of their useful life and are donated, recycled, or thrown away.

E-waste includes items common to many businesses and households, such as cell phones, printers, scanners, computers, and even electric vehicles. Healthcare settings also have many types of specialized equipment, such as MRI machines, X-ray machines, and lab equipment. Even small items like blood pressure monitors, EKG monitors, and personal devices used for secure messaging contribute to the sector's e-waste.

Data regarding the amount of e-waste produced specifically by healthcare is not available, but overall roughly 20 kilograms of e-waste is produced per person annually in the United States.

What harm does e-waste cause?

The environment

Electronic waste is filled with heavy metals and toxins, such as mercury, cadmium, nickel, chlorofluorocarbons (CFC), polycyclic aromatic hydrocarbons (PAH), and polybrominated diphenyl ethers (PBDEs).

These chemicals can leach out during disposal or improper recycling and they cause significant water and soil pollution, harming plants and wildlife. Many contaminants accumulate in animals that people depend on as a food source, like fish, making them unsafe to consume. When e-waste is burned, as is often the case with improper recycling, chemicals end up contaminating the air and harming the health of people and wildlife.

Human health

All this environmental damage also comes with significant costs to human health. Discarded electronics are often shipped from countries with strong regulations for worker and environmental safety to countries with little to no regulation for disposal. These electronics are then often broken down by workers wearing no personal protection, sometimes working over an open fire or using acid baths.

These practices lead to chronic illness and disability among exposed workers, and sometimes even death. Exposure to the toxic metals in electronics can damage nearly every organ in the body and can also affect neonatal development, leading to birth defects, altered immune function, and even a weakened vaccine response.

Researchers have found improper handling of e-waste to be associated with acute conditions, like cough, chest pain, stomach discomfort, and headache, as well as chronic conditions, such as miscarriage, altered thyroid function, and cancer.

How can healthcare organizations reduce the impact of e-waste?

One way for an organization to work toward reducing the harmful effects of e-waste is to think about e-waste reduction throughout the entire lifestyle of electronic devices. It's important to think not just about disposal but about purchasing and use as well.

Purchasing

The first place to reduce healthcare e-waste is in the purchasing process, by buying electronics that have a lower environmental footprint. One of the mostly widely established standards is the EPEAT registry.

EPEAT evaluates devices on multiple fronts, including materials selection, supply chain greenhouse gas emissions, product longevity, energy conservation, and end-of-life management, which includes disposal and the environmental impacts of the product after its useful life has ended. Currently, EPEAT covers computers, displays, imaging equipment, mobile phones, photovoltaic modules and inverters (PVMI), televisions, and servers.

The organizations Healthcare Without Harm, Hospitals for a Healthy Environment, and the Computer Take Back Campaign have also worked together to develop guidelines that go beyond EPEAT. These guidelines cover packaging, the use of PVC, product take-back programs, occupational standards, and the use of environmentally sensitive materials.

Use

One of the most effective ways to reduce e-waste is to extend the lifespan of electronics.The EPA offers a guide to extending the life of electronics, which covers assessment, maintenance, and education. While the guide focuses primarily on computers, many of the tips could be applied to other devices as well.

Helpful tips from the EPA guide include:

- **Evaluate your organization's IT needs.** Not every employee has the same needs for graphics or processing speed. In the healthcare setting, for instance, the medical quality department might need its computers updated frequently to process large amounts of data, but employees writing marketing materials, who primarily use word processing software, could go much longer before needing an update.
- **Evaluate the average lifespan of electronics at the organization.** As part of this assessment, the organization can look into ways to extend the lifespan of that equipment. Changes to policies, procedures, contracting, and even organizational culture can influence how often equipment needs to be replaced.
- **Stay on top of maintenance and prevention.** Maintaining the security of devices, including by updating operating systems and programs, will prevent them from being slowed down by viruses and malware. Also, having too many programs installed can slow a computer down, so getting rid of unnecessary and unauthorized programs and changing program settings so they don’t start automatically can help computers stay fast longer. Regularly cleaning equipment and defragmenting hard drives can also extend the lifespan of devices.
- **Extend usefulness.** Replacing damaged peripherals, such as keyboards and mice, installing new cables and connectors, and adding memory are a few ways to extend the lifespan of a computer that might otherwise be replaced.
- **Educate users.** Educating staff on the importance of reducing environmental waste can help an organization reach its goals. Staff members can help maintain equipment by reducing clutter around

computers, deleting cookies and temporary files, and protecting devices by plugging them into a surge protector.

Disposal

If equipment is still usable but needs repairs, it might be possible to donate it. The MedSurplus Alliance works with healthcare organizations to donate quality, used medical equipment to hospitals and clinics in developing countries. In 2021, the group donated 4.5 million pounds of medical equipment to recipient organizations around the globe. There are also local organizations doing this kind of work. In King County, Washington, for instance, the company 1 Green Planet offers hospitals free pickup and recycling of computers. It is possible there is a company offering a similar service in your area.

One significant concern regarding e-waste in the healthcare setting, however, is data security. Many devices used in the healthcare setting store patient information, so it's important to ensure any company you are working with is able to handle that information properly.

The bottom line

Healthcare organizations require a lot of electronics to provide great patient care, but they have a responsibility to ensure that these devices don't don't cause harm after they are no longer needed. E-waste is a threat to the environment and to health, and by making responsible decisions throughout the lifecycle of their electronics, healthcare organizations can be advocates for positive change.

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