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The dangers of incinerating medical waste

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The medical waste incinerator that my hospital uses has just been closed due to environmental concerns. What are the problems with incineration?

Medical waste incinerators nationwide have been closing in response to community concerns about pollution and as a result of Environmental Protection Agency (EPA) regulations first issued in 1997. With Earth Day, April 22, this month, it's an ideal time for the health care industry to address its impact on the environment.

Hospitals in the United States generate a staggering four billion pounds of waste each year. The hospital waste stream is composed of solid waste, infectious or "red bag" waste, and hazardous waste, including mercury. Some facilities also produce radioactive waste.

Traditionally, most hospitals incinerated their own waste. Changes in the amount and toxicity of that waste over the past several decades have created a threat to public health. In the last 30 years, the amount of medical waste has grown tremendously with the increased use of disposable goods. At the same time the toxicity of the waste has increased because polyvinyl chloride (PVC) plastic, which now comprises more than 25% of hospital plastics waste, creates many toxins during both the manufacturing and disposal processes.

Plastics are used everywhere in health care. Millions of iv bags and tubing, urinary drainage bags, respiratory tubing, suctioning items, dialysis tubing, and packaging materials are used and thrown away in hospitals nationwide each day. PVC plastic is nearly 57% chlorine by weight. When the chlorine in PVC plastic is incinerated, dioxins are produced. Dioxins are waste by-products, toxic in such small quantities that they are measured in parts per trillion. Research has linked dioxins with cancer, reproductive and developmental problems, chloracne, and endocrine and immune disorders.

Dioxin is a public health problem. The EPA recently reassessed dioxin and reported that it's 10 times more toxic than previously believed. Medical waste incineration is a leading source of dioxin in the environment, an important reason for all health care professionals to think seriously about what they can do to change this. The ANA's Pollution Prevention Kit for Nurses, for example, includes a model state regulation that nurses, working with lawmakers through their SNA, can use to help legislate strict standards on the release of dioxin in the environment.

The closure of medical waste incinerators across the country is good news for the environment and for public health. There are alternatives to incineration of medical waste, including autoclaving, microwaving, chemical treatment, and others. The important point to remember is that the volume and toxicity of medical waste must be reduced. Waste does not, nor will it ever, disappear—whatever comes into your hospital eventually goes out as waste, so the problem must be addressed through environmentally preferable purchasing as well as through alternative disposal methods.

## References

1. Gerwig K. White paper on waste management . Paper presented at the Setting Healthcare's Environmental Agenda Conference; Oct 16 2000; San Francisco (CA).
2. Montague P. Incineration of infectious waste. Rachel Environ Health Wkly 1998 Jun 20; No. 82. <http://rachel.enviroweb.org/rhwn082.htm>.

## Resources

- ANA's Pollution Prevention Kit for Nurses: Call (800) 637-0323 or go to [www.nursesbooks.org](http://www.nursesbooks.org) and enter Pub#9811LA. Search the publications catalog alphabetically under A for the title.
- EPA reassessment of dioxin: [www.epa.gov/ncea/dioxin.htm](http://www.epa.gov/ncea/dioxin.htm).
- For more information about PVC plastic and its health effects, order "First Do No Harm"(video) and "Neonatal Exposure to DEHP and Opportunities for Prevention"(report) by Mark Rossi. Available free from Health Care Without Harm. Contact Jolie Patterson at [hcwh@chej.org](mailto:hcwh@chej.org) or (703) 237-2249. The video is available at [hcwh@chej.org](mailto:hcwh@chej.org) . The Rossi report is available online as an Adobe Acrobat file at [www.noharm.org](http://www.noharm.org) under "Library"; scroll down to 12 July 2000 for the report.
- Health Care Without Harm: [www.noharm.org](http://www.noharm.org)
- To find alternative products: [www.sustainablehospitals.org](http://www.sustainablehospitals.org) (The Sustainable Hospitals Project at the University of Massachusetts at Lowell)
- Hospitals for a Healthy Environment— The Environmentally Preferable Purchasing Work Group: [www.geocities.com/EPP\\_how\\_to\\_guide/](http://www.geocities.com/EPP_how_to_guide/)
- The Nightingale Institute for Health and the Environment: [www.nihe.org](http://www.nihe.org)
- To learn what the ANA is doing, go to [www.nursingworld.org/rnnoharm](http://www.nursingworld.org/rnnoharm).

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