

Health care accounts for 8 percent of US carbon footprint

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The American health care sector accounts for nearly a tenth of the country's carbon dioxide emissions, according to a first-of-its-kind calculation of health care's carbon footprint.

Published Wednesday in the [Journal of the American Medical Association](#), University of Chicago researchers used expenditures from different parts of the health care sector to measure the industry's potential effect upon global warming through the release of carbon dioxide and other greenhouse gases.

Health care in America, including activities such as hospital care, scientific research and the production and distribution of pharmaceutical drugs, was found to produce 8 percent of the country's total carbon dioxide output despite accounting for 16 percent of the U.S. gross domestic product. Jeanette Chung, PhD, a Research Associate in the Section of Hospital Medicine at the University of Chicago and the study's lead author, said that she hoped the study would draw the attention of the health care industry to its environmental impact.

"In this country, the primary focus is on issues surrounding patient safety, health care quality, and cost containment at this current point in time. The health care sector, in general, may be a bit slower than other sectors to put this on their radar screen," Chung said. "But given the focus on health care policy and environmental policy, it might be interesting - if not wise - to start accounting for environmental externalities in health care."

"The question is, are there large opportunities to improve efficiency in health care that can also have an impact on the environment?" said study co-author David Meltzer, MD, PhD, Chief of the Section of Hospital Medicine, Associate Professor in the Department of Medicine, the Harris School of Public Policy and the Department of Economics. "If one sector is very large, even if it's somewhat less carbon-intensive than others, simply the fact that it's large means it's a big target, and that's the case with health care."

Chung and Meltzer calculated the carbon footprint using 2007 health care spending and a model of environmental impact, called the environmental input-output life cycle assessment (EIO-LCA) model, developed by the Green Design Institute at Carnegie-Mellon University.

The study assessed direct environmental effects of health care activities as well as indirect effects capturing emissions generated in the production and distribution of commodities used by the health care sector. The EIO-LCA model was then applied to estimate the carbon intensity of each dollar of commodity produced by the health care industry, based on emissions of various greenhouse gases, including carbon dioxide, methane, nitrous oxide and chlorofluorocarbons.

The analysis found that hospitals were by far the largest contributor of carbon emissions in the health care sector, which the authors attributed to the high energy demands needed for temperature control, ventilation and lighting in large hospital buildings. Surprisingly, the second largest health care contributor to the overall carbon footprint was the pharmaceutical industry, a finding Meltzer attributed to the high costs of manufacturing and researching drugs combined with transportation costs associated with distribution.

Chung and Meltzer hoped that their analysis, published as a letter in the prestigious medical journal, would draw the attention of the health care

industry to areas where environmental improvements can be made.

"Obviously, health care and health is very highly valued; you're not going to shut down a hospital because of its environmental impact or not produce a drug that you think is going to save lives because of carbon output," Meltzer said. "But this reminds people in [health care](#) that we're not a trivial part of the issue."

Some measures hospitals can use to improve energy efficiency include creating recycling programs and purchasing goods and services from environmentally friendly suppliers, Chung suggested.

At the University of Chicago Medical Center, the Sustainability program managed by Mark Lestina has implemented a plastic recycling program that diverts more than 500 pounds of waste each day from landfills to recycling plants and ensured that 90 percent of cleaning supplies used by the hospital have Green Seal certification. Such efforts have reduced waste costs at the Medical Center from \$55,000 per month to \$35,000 per month, Lestina said, suggesting that reducing environmental impact can go hand in hand with reducing costs in a hospital setting.

"Sustainability does not necessarily just equal garbage and minimalization," Lestina said. "You're incorporating energy efficiencies, saving water, using less, re-using more and so on, and it almost always leads to lower costs."

Source: University of Chicago Medical Center

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