

Healthcare and the Environment: Emissions and Effects of Surgical Models and their Material Use

The growing field of sustainability research endeavors to confront a fundamental challenge of our society- how do we streamline our current consumption while simultaneously ensuring we can achieve our future requirements? In no area is this more evident than US healthcare. Spending on healthcare has reached nearly 18% of the US GDP. The industry utilizes 73 trillion kWh of electricity and produces over 3.4 billion pounds of waste per annum, making the US healthcare sector one of the leading climate polluting industries, responsible for 8% of total US greenhouse gas emissions. It is imperative that sustainable models of healthcare be implemented as services expand to accommodate larger populations, longer human lifespans, increases in the burden of chronic conditions, and global climate change.

This presentation will cover the basics of sustainability and the environmental emissions quantification tool, Life Cycle Assessment (LCA), in the context of hospitals and operating rooms. Case studies applying LCA to hysterectomy in the US and cataract surgery in India will be discussed, including the efforts taken by study locations to minimize their material and environmental footprint. A more environmentally, socially, and financially sustainable healthcare model will only be possible through understanding the current systems of delivery and actively changing the direction of global medical practice.

Cassandra Thiel is a Fulbright-Nehru Fellow studying the life cycle impacts of cataract surgery at Aravind Eye Hospital in Pondicherry, India. As an NSF IGERT Fellow at the Mascaro Center for Sustainable Innovation, Dr. Thiel quantified the environmental impacts of hysterectomy and birth procedures at the University of Pittsburgh Medical Center. As a postdoctoral associate at the University of Pittsburgh, she analyzed green, high-performance buildings and taught a service-learning course for freshman engineers. Dr. Thiel obtained her BS in Civil Engineering from Michigan Technological University in 2009 and completed her PhD in Civil Engineering from the University of Pittsburgh in 2013.

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JHU Homewood Campus, Malone Hall room 328

Seminar is **FREE and open to the public**. For parking please see link for visitors at www.jhu.edu and select information on Homewood Campus.



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