

Respiratory risk from hospital cleaning fluids

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Cleaning fluids used in hospitals may pose a health risk to both staff and patients. A pilot study published in BioMed Central's open access journal *Environmental Health* has found that potentially hazardous chemicals are contained in a selection of agents used in several different hospitals.

The study was conducted at the University of Massachusetts Lowell Sustainable Hospitals Program (www.sustainableproduction.org) and led by Anila Bello. Other team members were Margaret Quinn and Don Milton, also from the University of Massachusetts Lowell, and Melissa Perry, from the Harvard School of Public [Health](#).

They investigated the cleaning materials and techniques used in six Massachusetts hospitals. Bello said, "Cleaning products may impact worker, and possibly patient, health through air and skin exposures. Because the severity of cleaning exposures is affected by both product formulation and cleaning technique, a combination of product evaluation and workplace exposure data is needed to develop strategies that protect people from cleaning hazards."

Cleaning products are complex mixtures of many chemicals including disinfectants, surfactants, solvents, and fragrances. These ingredients are representative of different chemical classes and have a very wide range of volatilities and other chemical properties. According to Bello, "The ingredients of concern identified in our study included quaternary ammonium chlorides or "quats" that can cause skin and respiratory

irritation. Some products contained irritant glycol ethers that can be absorbed through the skin, as well as ethanolamine - another respiratory and dermatological irritant. We also found several alcohols such as benzyl alcohol, ammonia and several phenols, all of which can exert harmful effects on the body”.

As well as the composition of cleaning agents, the authors found that the way the products were used affected exposure levels. Some tasks were associated with higher exposures than others; the most hazardous exposure scenarios occur when several cleaning tasks are performed in small and poorly ventilated spaces, such as bathrooms.

The authors conclude, “Hazardous exposures related to cleaning products are an important public health concern because these exposures may impact not only cleaning workers, but also other occupants in the building”

More information: Characterization of occupational exposures to cleaning products used for common cleaning tasks-a pilot study of hospital cleaners, Anila Bello, Margaret M. Quinn, Melissa J. Perry and Donald K. Milton, *Environmental Health* (in press)

Provided by BioMed Central ([news](#) : [web](#))

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