

Sarah Anderson, sanderson@ph.ucla.edu  
(310) 267-0440  
Dan Page, dpage@support.ucla.edu  
(310) 794-2265

For Immediate Use  
Nov. 19, 2003

## **UCLA-led Study Finds SARS Death Rate Doubles in Cities With Poor Air Quality**

A new study led by researchers at the UCLA School of Public Health associates air pollution with an increased risk of dying from Severe Acute Respiratory Syndrome, or SARS.

Published this week in the peer-reviewed journal *Environmental Health: A Global Access Science Source*, the study shows that patients with SARS are more than twice as likely to die from the disease if they come from areas of high pollution.

“Long-term and short-term exposure to air pollution has been associated with a variety of adverse health effects including acute respiratory inflammation, asthma and chronic obstructive pulmonary disease — and now SARS,” said Dr. Zuo-Feng Zhang, a professor of epidemiology at the UCLA School of Public Health and a leading scientist of the study. “Our findings suggest that caregivers need to pay close attention to exposure to pollutants in the living and working environments of SARS patients. These factors and others related to exposure to airborne toxins could leave some individuals at greater risk of death from the illness than others.”

Since November of 2002, 5,327 cases of SARS have been diagnosed in mainland China, and so far 349 patients have died from the disease. SARS death rates vary between regions of the country, with higher rates in the north of China.

A team of researchers from the UCLA School of Public Health, the Jiangsu Provincial Center for Disease Control and Prevention, and Fudan University School of Public Health investigated whether these differences could be explained by differences in air pollution levels.

Using publicly available SARS data, the researchers assessed the death rates of patients with SARS in five different regions of China. They used data published by the Chinese National Environmental Protection Agency to assess the air pollution levels in these different regions between April and May 2003, when the majority of SARS cases were diagnosed.

The researchers categorized the regions according to their level of air pollution. Guangdong, with an air pollution index of 75, was said to have a low level of pollution; Tianjin, with an air pollution index of more than 100, a high level of pollution; and Shanxi, Hebei and Beijing, moderate pollution levels.

## 2-2-2 SARS Death Rate Doubles in Polluted Cities

Mortality rates of patients with SARS increased as pollution levels increased. In regions with low air pollution, the death rate was 4.08 percent, whereas in areas with moderate or high air pollution levels, the death rates were 7.49 percent and 8.9 percent, respectively.

The researchers were unable to examine the socioeconomic status or the smoking habits of the SARS patients, nor did they consider the treatment that the patients were given. All of these may have contributed to the patients' outcome.

However, the two regions with the highest case fatality rates were Beijing and Tianjin. The researchers suspect that patients would probably have received better clinical support in these areas. If this is the case, then air pollution may play an even greater role in increasing death rates than their data suggests.

Other researchers involved in the study included Yan Cui and Roger Detels of the epidemiology department at the UCLA School of Public Health; John Froines of the Southern California Particle Center and Supersite, and UCLA School of Public Health; Jinkou Zhao and Hua Wang of the Jiangsu Provincial Center for Disease Control and Prevention in Nanjing, China; and Shun-Zhang Yu of the School of Public Health at Fudan University in Shanghai, China.

The UCLA School of Public Health is dedicated to enhancing the public's health by conducting innovative research, training future leaders and health professionals, translating research into policy and practice, and serving local, national and international communities. Detailed information about the school is available online at [www.ph.ucla.edu](http://www.ph.ucla.edu).