

Study finds dirty air in California causes millions worth of medical care each year

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California's dirty air caused more than \$193 million in hospital-based medical care from 2005 to 2007 as people sought help for problems such as asthma and pneumonia that are triggered by elevated pollution levels, according to a new RAND Corporation study.

Researchers estimate that exposure to excessive levels of ozone and particulate pollution caused nearly 30,000 emergency room visits and [hospital admissions](#) over the study period. Public insurance programs were responsible for most of the costs, with Medicare and Medi-Cal covering more than two-thirds of the expenses, according to the report.

"California's failure to meet air pollution standards causes a large amount of expensive hospital care," said John Romley, lead author of the study and an economist at RAND, a nonprofit research organization.

"The result is that insurance programs -- both those run by the government and private payers -- face higher costs because of California's dirty air."

While much work has been done previously to catalog the economic impact of air pollution across California, the RAND study is the first to quantify the cost of hospital-based medical care to various payers caused by the failure to meet federal clean air standards across the state. More people in California live in areas that do not meet federal clean air standards than in any other state.

Romley said the findings show that private insurers, employers and public insurance programs all have a financial stake in improving California's air quality.

"These costs may not be the largest problem caused by dirty air, but our study provides more evidence about the impact that air pollution has on the state's economy," Romley said.

Researchers used records from air pollution agencies and hospitals to estimate how failing to meet federal and state standards for [particulate matter](#) and ozone would affect private and public insurer spending for hospital admissions for respiratory and cardiovascular causes, and emergency room visits for asthma throughout California from 2005-2007.

Researchers say the most common hospital-based medical care triggered by elevated air pollution levels are emergency room visits for asthma among children aged 17 and under, with more than 12,000 visits over the three-year study period.

The most costly conditions examined by researchers were hospital admissions triggered by air pollution for acute bronchitis, pneumonia and chronic obstructive pulmonary disease. Those conditions accounted for nearly one-third of the \$193 million in health care spending documented over the study period.

Nearly three-quarters of the health events identified by researchers were triggered by high levels of fine [particulate pollution](#) -- tiny pieces of soot that can lodge deep in lungs. The health events examined in the study were concentrated in the San Joaquin Valley and the four-county South Coast Air Basin.

The cost of treating health events caused by air pollution is equal to the

expense of providing flu vaccines to 85 percent of California children under age 15, according to the report.

Researchers say their study provides a conservative estimate about the costs of medical care triggered by [air pollution](#) because it does not include outpatient care provided in clinics or medical offices. Details about that type of [medical care](#) are not routinely reported to state agencies and thus could not be analyzed.

The study also includes case studies of individual hospitals in Fresno, Lynwood, Palo Alto, Riverside and Sacramento. That analysis demonstrates that costs and types of illness reported vary by region.

To conduct the study, researchers used epidemiological studies that link elevated pollution levels to respiratory and cardiovascular illnesses, and compared that information to pollution levels measured across the state from 2005 to 2007 by various public agencies. Researchers also reviewed detailed records hospitals report to the state about the patients they treat, the illnesses diagnosed and who pays for that care.

More information: The study, "The Impact of Air Quality on Hospital Spending," is available at www.rand.org .

Provided by RAND Corporation

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