

California county health programs yield high returns

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Return on investment in county public health departments in California exceeds return on investment in many other areas of medical care, according to a new study by a University of California, Berkeley economist.

In the study, highlighted by the *American Journal of Public Health* and published online on June 16 ahead of print publication, Timothy Brown, a health economist with UC Berkeley's School of Public Health, estimated from his analysis of data for the years 2001 through 2009 that each dollar that counties spent on public health programs in California returned \$67 to \$88 dollars of value in terms of improved health outcomes.

"The very large estimated return on investment for California county departments of public health, relative to the return on investment for selected aspects of [medical care](#), suggests that public health is a wise investment," Brown concluded. The study is the first to place a value on the overall health outcomes from such programs and to compare them to costs, Brown said.

Unlike medical care, which primarily focuses on treating disease, county public health departments focus on the prevention of disease. Brown also concluded that the return from Medicare's national investment in four major health conditions was far less than the return from county public health spending. For heart disease, Type 2 diabetes, stroke and breast cancer, Brown's review of the research literature revealed that returns on

Medicare expenses ranged from \$1.10 to \$4.80 per dollar spent.

Many innovations in medical care also have had a lesser impact than county public health expenditures, according to Brown. In a review of reported outcomes for innovations in medical practice, Brown found that researchers reported returns ranging from \$1.12 for bone marrow transplant for women with metastatic breast cancer, to \$38 for heart attack survivors taking beta-blockers.

"Information only recently became available that made it possible to calculate the average return on investment for public health programs in California," Brown said.

The new study is part of a larger project Brown has been leading to develop a health economics framework for determining return on investment in public health.

Public health departments regulate food service establishments, provide disease screening and treatment for communicable disease, offer prenatal care, regulate various aspects of the water supply, provide immunizations, and provide other services that can immediately improve population health, as well as improve population health over the longer term. Health departments also engage in activities that attempt to influence county populations to adopt healthier habits, which primarily affect population health over the longer term.

To understand the potential long-term health impacts of investment in public health, Brown and colleagues published two earlier studies that provided key information used in the return-on-investment calculations in this study. One study found that, on average, a single year of county public health spending continued to improve general health status in the population for over four years, ultimately improving the general health status of over 216,000 people.

A second study found that beyond its effects on general health status, the same single year of public health spending also saved the lives of over 29,000 people who otherwise would have died, with this effect playing out over a ten-year period.

To determine the monetary value of these changes in general health status, Brown used information from another study published as part of this project, in which the "subjective well-being valuation method" was used to determine the monetary value of improved general health status.

This method has previously been applied broadly to value things not normally bought and sold in a market, such as climate, air and noise pollution, risks for natural disaster, and proximity to waste facilities, coastlines, and transportation. It has also been applied to medical conditions, such as cardiovascular disease, migraine headaches, various chronic illnesses, mental health and chronic pain.

Conceptually, the method is not unlike the way a victim in an accident may be compensated for pain and suffering, Brown said.

"A decrease in general [health status](#) that reduces happiness is statistically valued by the amount of family income it would take to completely reverse this reduction in happiness, so that happiness is the same as it was before the decrease in [general health](#) status occurred," Brown stated in the study, which concluded that a year spent in good or excellent health instead of poor or fair health could be valued at \$41,654.

To estimate the value of avoided deaths, Brown used standard valuations of \$8.9 to \$9.6 million per life saved, taken from estimates used by the federal government.

Brown cautions that this study does not address the question of how to optimize public health expenditures among various programs, but notes

that other researchers have begun investigating the costs of foundational public [health](#) services at a county-wide level.

From Brown's perspective, "Investments in research must go hand-in-hand with investment in [public health](#) activities to obtain the long-term improvements in [population health](#) that we all work toward."

Provided by University of California - Berkeley

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