

# First nationwide, small-area analysis study details US health spending by region

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A new study by researchers at Yale, Stanford, and Dartmouth provides the first nationwide, small-area analysis of the variation in spending by the three main funders of health care in the United States: Medicare,

Medicaid, and private insurers. The researchers' goal: to see whether there are regions that have low health spending by each of the three payers simultaneously or whether distinct factors drive health spending variation among the payers.

The study, published July 20 in *JAMA Network Open*, analyzes spending data for more than 100 million individuals and shows that while [health](#) spending per payer varies significantly across regions, there are almost no regions that have simultaneously low spending by Medicare, Medicaid, and private insurers or that have universally high spending across all three payers. In fact, the researchers found that distinct factors appear to be driving [regional variation](#) in health spending across each payer segment of the U.S. health system.

The finding has significant public policy implications because it suggests that policymakers should focus on payer-specific interventions that target individual sources of waste rather than searching for silver-bullet interventions, according to the researchers.

"In the past, policymakers have identified particular regions as having efficient health systems based solely on care delivered through Medicare," said study co-author Zack Cooper, an associate professor of health policy at the Yale School of Public Health and of economics in the Faculty of Arts and Sciences. "By analyzing data from all three dominant payers, we show that analysts cannot understand the overall performance of regions by studying only one payer or learn about a model for the country by studying one [region](#)."

"Our findings suggest that payer-specific factors drive health spending across and within regions, suggesting that policymakers should focus on payer-specific strategies to increase efficiency in the U.S. [health care](#) sector."

Olivia Stiegman, a pre-doctoral fellow for Yale's Department of Economics and Tobin Center for Economic Policy, and Chima D. Ndumele, an associate professor of public health at the Yale School of Public Health, are co-authors of the study. The other co-authors are Becky Staiger of the School of Medicine of Stanford University and Jonathan Skinner of Dartmouth College.

The United States spends about \$3.8 trillion annually on health care. By most accounts, its health care sector is inefficient compared to those of other developed countries. Medicare, Medicaid, and private insurers covered 14.2%, 19.8%, and 49.6% of the country's population in 2019, respectively.

The study found that only three regions nationwide were simultaneously in the lowest fifth of spending across the three payers: Boulder, Colorado; Bloomington, Illinois; and Olympia, Washington. Only four regions were in the highest fifth of spending simultaneously for the payers: the Bronx, New York; Manhattan, New York; White Plains, New York; and Dallas, Texas. What a region spent on the privately insured had a low correlation (21%) with what was spent in the region on Medicaid recipients and a 2% correlation with what was spent on Medicare recipients, the study found. There was also only a 16% correlation between what a region spent on the Medicaid program and what was spent on the Medicare program.

"What this tells me is that, in essence, we have multiple different health systems in the U.S.—the Medicare program, the Medicaid program, and private insurers," said Cooper. "This means that we are going to need payer-specific policies if we really want to move the needle on increasing the productivity of health care. We have a complex health system; this means we're going to need nuanced policy to be effective."

The study showed that the Medicaid and privately insured populations

exhibited more variation in spending across regions than did the Medicare population. This reflects the fact that prices for care paid for by [private insurers](#) and Medicaid are generally market-driven and vary substantially across regions, while the federally administered Medicare program relies on regulated payments to health care providers, the researchers suggested.

Notably, there was substantial correlation in the regional utilization of health care services across payers, according to the study.

"While spending may not be strongly correlated across the payers, the utilization of care is," said Jonathan Skinner, a research professor at Dartmouth College. "This finding demonstrates that health care services such as hospital days are determined at the regional level both by the underlying health needs of the population and by supply factors such as hospital beds and the supply of physicians."

The researchers also concluded that the factors causing the variation in spending are specific to each main payer. For private insurance, regions with [high prices](#) tend to have high spending. For Medicare, regions with higher spending have more specialist physicians per capita. For Medicaid, regions with higher spending have more hospital beds and births per capita, the researchers explained.

In February 2021, Cooper launched the 1% Steps for Health Care Reform Project jointly with Fiona Scott Morton, the Theodore Nierenberg Professor of Economics at the Yale School of Management. The project convened dozens of leading scholars and identified 16 targeted interventions—policies like increasing [organ donation](#), raising antitrust enforcement budgets, and decreasing home health fraud—each supported by a robust evidence base, which, if implemented collectively, would lower U.S. health spending by nearly 10%.

"These are the types of policies that will reduce health [spending](#)," said Cooper. "Nobody writes country music songs about incrementalism, but I think it's really going to be a long path of small steps that's going to make our health system more efficient."

**More information:** Zack Cooper et al, Geographical Variation in Health Spending Across the US Among Privately Insured Individuals and Enrollees in Medicaid and Medicare, *JAMA Network Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.22138](https://doi.org/10.1001/jamanetworkopen.2022.22138)

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