What Factors Affect Health Care Expenditures and Health?

Victor Fuchs, Ph.D., conducts research on health economics and policy

SUMMARY

From 2002 to 2010, Victor R. Fuchs, Ph.D., a health economist with the National Bureau of Economic Research and Stanford University, studied:

- The factors that affect health care expenditures and health, including geographical differences in the use of medical care and death rates among older adults across the United States
- Policy solutions for covering the uninsured and reducing the high cost of health care

Results, Findings and Conclusions

- Fuchs published some 50 publications and made more than 60 presentations. The publications included many articles in leading journals such as Health Affairs, Journal of the American Medical Association and New England Journal of Medicine, as well as several book chapters.

Key Publications

Fuchs identified the following publications as key:

- "Government Payment for Health Care: Causes and Consequences." (New England Journal of Medicine\(^1\)) Fuchs noted:
  - Countries with national health insurance spend much less on health care than the United States. "The U.S. government, although it pays for almost 50 percent of health care, makes very little use of its power to restrain costs."
  - "...Americans wind up in the worst of all worlds, with government bearing a big part of the burden of paying for health care, with the concomitant large burden of taxes, but exercising very little control over the cost of care."

• "Eliminating ‘Waste' in Health Care" (Journal of the American Medical Association\(^2\)). Fuchs explores the challenges of identifying and eliminating waste in health care, noting that eliminating waste is more difficult than identifying it and concluding that, "There seems to be no alternative to relying on physicians to practice more cost-effective care.

• "Health Care Vouchers—A Proposal for Universal Coverage" (New England Journal of Medicine\(^3\)). Fuchs and co-author Ezekiel J. Emanuel, M.D., Ph.D., propose a voucher system for universal health care, which they describe as "an efficient, fair and relatively simple approach that might elicit broad support."

• "Area Differences in Utilization of Medical Care and Mortality among U.S. Elderly" (in Perspectives on the Economics of Aging\(^4\)). Fuchs and co-authors Mark McClellan, M.D., Ph.D., and Jonathan Skinner, Ph.D., noted these key findings for Whites ages 65 to 84 in 313 areas in the United States:
  — There is wide variation in the use of medical care across regions.
  — Use of medical care is strongly positively associated with mortality levels across areas ("areas with more sick elderly use more health care, other things being equal").
  — Variations in death rates across areas are not as large as variations in use, but they are still substantial.
  — Education, income, cigarettes, obesity, air pollution and the percentage of Black individuals in the population account for more than half of the variation in death rates across areas, but there are still substantial differences across regions that these variables do not explain.

**Funding**

The Robert Wood Johnson Foundation (RWJF) supported this project through two grants totaling $385,791.

**CONTEXT**

There are many key issues in health economics and health policy, including:

• The factors that affect (or are determinants of) health care expenditures and health

• The need to cover the uninsured and reduce the high cost of health care

**Determinants of Health Care Expenditures and Health**

Understanding the determinants of health care expenditures and health is crucial to developing effective health policy. This includes understanding the effects of medical innovations and nonmedical determinants (e.g., smoking, obesity, socioeconomic factors such as income and education, and where a person lives) on health care expenditures and on the length and quality of life.

One area where more research has been needed is the role of where a person lives—geography—on health care expenditures and health. Geographical differences in health care expenditures have been identified, but not fully explained. Understanding these geographical differences and their causes may suggest ways to limit expenditures and/or improve health outcomes.

**Covering the Uninsured and Reducing the High Cost of Health Care**

Two important and persistent problems of the U.S. health care system are:

- The large number of people who are uninsured. In 2004, 42.1 million Americans (14.6%) had no health insurance, and 51.6 million (17.9%) had been uninsured at some time during the year, according to the Centers for Disease Control and Prevention.\(^5\)

- The high cost of health care. In 2004, U.S. national health spending was nearly $1,900 billion, or 16 percent of the U.S. Gross Domestic Product (GDP), according to the Centers for Medicare & Medicaid Services.\(^6\) This is an increase from $724 billion (12.5% of GDP) in 1990 and $255.7 billion (9.2% of GDP) in 1980.\(^7\)

It was also higher than any other country in the Organization for Economic Cooperation and Development (34 countries, including the United States, from North and South America, Europe and the Asia-Pacific region), where health care expenditures as a share of GDP in 2004 ranged from 5.6 percent to 11.6 percent.\(^8\)

Without practical policy solutions, the continuation of these problems threatens the financial health of households, federal and state governments, businesses and nonprofit organizations, according to health economist Fuchs.

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\(^6\) NHE fact sheet: *Historical NHE, Including Sponsor Analysis, 2009, Table 1: National Health Expenditure Data*.

\(^7\) NHE fact sheet: *Historical NHE, Including Sponsor Analysis, 2009, Table 1: National Health Expenditure Data*.

Victor R. Fuchs and RWJF

Since its inception as a national philanthropy in 1972, RWJF has awarded many grants to Fuchs to study key issues in health economics and health policy such as the issues described above. Fuchs is the Henry J. Kaiser, Jr., professor of economics and health research and policy, emeritus, at Stanford University in Stanford, Calif. and a research associate at the National Bureau of Economic Research (a private, nonprofit, nonpartisan research organization that promotes understanding of how the economy works) in Cambridge, Mass.

Program officers at RWJF consider Fuchs one of the leading health economists in the United States, and the model for the Foundation's Investigator Awards in Health Policy Research program, which supports highly-respected and innovative scholars from a wide range of fields to undertake ambitious, cutting-edge studies of significant health policy challenges facing America. "He has repeatedly shown the ability to ask important questions and then conduct analyses to answer these questions," said RWJF Program Officer Robert Hughes, Ph.D.

RWJF first supported Fuchs with one of its "great men awards"—research initiated by eminent researchers, selected on the basis of their stature, that explored topics that could help the Foundation identify areas for its future work. The 'great men' had a permissive set of ground rules that allowed them creativity and wide-ranging explorations." With his awards, from 1972 to 1988, Fuchs "examined, among other topics, the economic measurement of health, the cost of health care, national health insurance, and improving health markets."

THE PROJECT

From 2002 to 2010, Fuchs expanded his earlier research under two grants from RWJF, focusing primarily on:

- The determinants of health care expenditures and health, including a study of the differences in use of medical care and death rates among older adults across metropolitan and nonmetropolitan areas of the United States.\(^\text{11}\)

- Policy solutions for covering the uninsured and reducing the high cost of health care related to the financing, organization and delivery of health care, and the interaction between these elements.\(^\text{12}\)

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\(^9\) See Program Results on ID# 020412 and ID# 035113.


\(^11\) Grant ID # 036497

\(^12\) Grant ID # 053966
The grants were structured to provide Fuchs with the flexibility to pursue the specific topics within these areas that he deemed most promising at the time.

**Methodology**

Fuchs employed a variety of research methods in his work:

- Methods for research on the determinants of health care expenditures and health included the collection and analysis of:
  - New data, including a survey of physicians on their opinions of the relative importance of specific medical innovations
  - Existing data such as Medicare claims and U.S. Census data. For more information, see Appendix 1.

- Methods to study policy solutions for covering the uninsured and reducing the high cost of health care included:
  - A literature review to identify the critical questions to be considered in making policy choices
  - Consultation with colleagues about practical policy options

**Other Funding**

The California HealthCare Foundation provided $24,920 to study death rates in California in comparison to the rest of United States.

**RESULTS**

- **Fuchs published some 50 publications and made more than more than 60 presentations about the factors that affect health care expenditures and health and policy solutions for covering the uninsured and reducing the high cost of health care.**

  The publications included many articles in leading journals such as *Health Affairs, Journal of the American Medical Association* and *New England Journal of Medicine*, and chapters in books published by the National Bureau of Economic Research, The Brookings Institution and the university presses of M.I.T., Johns Hopkins University and Duke University. Fuchs also contributed to about 12 health care blogs. See the *Bibliography* for details.

- **Fuchs also helped inform and influence key players in health care, including physicians, the academic medical community, other health care professionals (e.g., hospital CEOs), researchers, health policy experts, Congress and the general public.** "I believe our work influences the way in which the health care community thinks about problems," said Fuchs. In particular, Fuchs noted that he works closely with physicians, hospitals and some members of Congress.
Key Publications

Fuchs identified the following publications as key.

- "Government Payment for Health Care: Causes and Consequences." (New England Journal of Medicine\(^\text{13}\)). Fuchs explores fundamental differences between health care in the United States and in countries with national health insurance, and how these differences play out in terms of economics and health outcomes. Fuchs writes that:

  — Countries with national health insurance spend much less on health care, whether measured per capita or as a share of the GDP, than the United States. The United States spends 50 percent more than the next-highest spender and twice as much as the average country in the Organization for Economic Cooperation and Development.

  One explanation for the differences is that suppliers of health care goods and services (drug, device and equipment manufacturers, physicians and hospitals) have more influence over health policy in the United States than in other countries.

  — Another difference is that countries with national health insurance redistribute health care resources more than the United States. Access to care and sharing of costs (based on income) is more equitable in these countries.

  — "Because the governments in these countries pay for most medical care—usually 70 to 90 percent of total expenditures—they are in a good position to apply these cost-restraining measures ... The U.S. government, although it pays for almost 50 percent of health care, makes very little use of its power to restrain costs."

  — "Thus, in one sense, Americans wind up in the worst of all worlds, with government bearing a big part of the burden of paying for health care, with the concomitant large burden of taxes, but exercising very little control over the cost of care."

- "Eliminating ‘Waste' in Health Care." (Journal of the American Medical Association\(^\text{14}\)). Fuchs explores the challenges of defining, identifying and eliminating waste in health care. He provides definitions for two types of waste:

  — **Medical waste**: "Any intervention that has no possible benefit for the patient or in which the potential risk to the patient is greater than potential benefit."

  — **Economic waste**: "Any intervention for which the value of expected benefit is less than expected costs."


Identifying waste is a challenge for two reasons:

— There is little certainty in medicine. ("Physicians are usually dealing in probabilities.")

— Patients differ in unpredictable ways. ("The same drug given to patients with the same diagnosis often has different effects, ranging from rapid cure to serious adverse reaction.")

Fuchs notes that economic waste, which is "almost everywhere" in medical practice, must be considered in order to reduce costs on a large scale. Examples are excess screening, repeated testing and prescribing brand-name drugs when a generic medication would work as well or no drug would be best.

Eliminating waste, however, is more difficult than identifying it. Reasons for this include:

— "Every dollar of waste is income to some individual or organization."

— Lack of incentives for patients or clinicians to consider costs

After dismissing the notion of eliminating waste by making consumers more cost-conscious ("The idea of sick patients shopping for the lowest-price medical care—the way they buy automobiles—is a fantasy ….") Fuchs concludes that, "There seems to be no alternative to relying on physicians to practice more cost-effective care."

This would require providing physicians with:

- Timely and easily accessible information about effectiveness and costs of care.
- "Access to an infrastructure that provides specialized technology and personnel appropriate for cost-effective care, for example, a multidisciplinary, team approach to the care of patients with diabetes."
- "Incentives that reward cost-effective decisions."

- **"Health Care Vouchers – A Proposal for Universal Coverage."** *(New England Journal of Medicine)*<sup>15</sup>. Fuchs and co-author Emanuel outline a proposal for a voucher system for universal health care, which they describe as "an efficient, fair and relatively simple approach that might elicit broad support." The approach includes 10 key features:
  
  — Universality
  
  — Free choice of health plan
  
  — Freedom to purchase additional services
  
  — Funding by an earmarked value-added tax

— Reliance on a private delivery system
— End of employer-based insurance
— Elimination of Medicaid and other means-tested programs
— Phasing out of Medicare
— Administration under a federal health board
— Assessment of technology and outcomes through an independent institute for technology and outcomes assessment

For details on these key features, see Appendix 2.

• "Area Differences in Utilization of Medical Care and Mortality Among U.S. Elderly." (In Perspectives on the Economics of Aging16). Fuchs and co-authors McClellan and Skinner noted these key findings for Whites ages 65–84 in 313 areas in the United States:

— There is wide variation in the use of medical care across regions. Some regions vary along all dimensions of care (e.g., types of hospital care: surgical or medical, and types of physician services: treatment, evaluation and management, and diagnostic testing). In other regions, however, "there is much more diagnostic testing, even while per capita inpatient services are comparable to the national average."

— Use is strongly positively associated with death rates across areas—"in other words, areas with more sick elderly use more health care, other things being equal. There remains, however, substantial variation in utilization after controlling for factors such as education, income and mortality."

— Variations in death rates across areas are not as large as variations in use, but they are still substantial. The 10 percent of metropolitan statistical areas with the highest age- and sex-adjusted death rates have an average death rate that is 38 percent greater than the 10 percent of metropolitan statistical areas with the lowest death rates.

Use (especially for outpatient care) is significantly higher in metropolitan statistical areas with more than 500,000 people. The difference between the high and low utilization areas is 49 percent.

— Education, income, cigarettes, obesity, air pollution and the percentage of Black people in the population account for more than half of the variation in death rate across areas, but there are still substantial differences across regions that these variables do not explain. The death rates in Florida, in particular, are significantly below the national average.

AFTERWARD

Under a subsequent grant from RWJF, Fuchs is studying:

- Survival until age 70 across counties in the United States, emphasizing differences between Black and White people
- Barriers to the spread of more cost-effective care
- The effect of rising life expectancy on the age distribution of the population, and how this affects production and productivity

He has also completed a second edition of his book *Who Shall Live*, scheduled for publication in Spring 2011. The new edition includes a substantive introduction contrasting what has changed and what has stayed the same since the book's original publication in 1974.

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Grant ID # 036497, 053966  
RWJF Teams: Information and Coverage

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17 Grant ID# 067907, from 2010 to 2012
APPENDIX 1

Methods for Research on Differences in the Use of Medical Care and Death Rates Among Older Adults Across Metropolitan and Nonmetropolitan Areas of the United States

Fuchs and colleagues:

— Used 1990 U.S. Census Bureau data to:
  - Define 313 metropolitan and nonmetropolitan areas of the United States for use in the study.
  - Measure specific nonmedical determinants of health (e.g., smoking, obesity, and socioeconomic factors such as income and education) within each area.
— Counted the number of services received by Whites ages 65–84 residing within each area, using 1990 data from the Centers for Medicare & Medicaid Services (CMS)

The team excluded Blacks from the study because previous studies suggest that their use of medical care and death rates—which are significantly higher than for Whites—may be related to variables outside the parameters of the study.

APPENDIX 2

Detailed Features of Proposed Voucher System for Universal Health Care

● "Universality. Every American under 65 years of age would receive a voucher that would guarantee and pay for basic health services from a qualified insurance company or health plan. Participating health plans would have to offer guaranteed enrollment and renewal for the risk-adjusted value of the voucher, regardless of the patient's medical history. People who failed to enroll would be assigned to a health plan."

● "Free choice of health plan. Individuals and families would choose which basic insurance program or health plan they wanted among several alternatives."

● "Freedom to purchase additional services. People who wanted to purchase additional services or amenities, such as a wider choice of hospitals and specialists or more comprehensive mental health services, could do so with their own after-tax dollars."

● "Funding by an earmarked value-added tax. The funding for the vouchers would come from an earmarked value-added tax. Earmarking creates a direct connection between benefit levels and the tax level, serving as a cost control ‘rheostat.’ The value-added tax is based on personal consumption, which is closely related to long-term financial well-being, regardless of the source of income or wealth."
● "Reliance on a private delivery system. This proposal does not call for government health care and would not legislate changes in the current private delivery system."

● "End of employer-based insurance. By providing basic care for all Americans and eliminating tax benefits for health insurance premiums, employer-based insurance would probably fade away...."

● "Elimination of Medicaid and other means-tested programs. Since every individual and family would receive a voucher, there would be no need for Medicaid (except for nursing home coverage), the State Children's Health Insurance Program or other means-tested programs. ... Funding for long-term care, currently provided by Medicaid, would need to be continued."

● "Phasing out of Medicare. Although no one who is already enrolled in Medicare would be forced to change to the voucher system, Medicare would be phased out over time. People turning 65 would continue to be enrolled in the voucher system; there would be no new enrollees in Medicare ...."

● "Administration. Management and oversight would be the responsibility of a federal health board (modeled on the structure of the Federal Reserve System), with regional boards to manage and oversee various geographic regions."

  "The federal health board would define and periodically modify the basic benefits package and through its regional boards would be an active contractor with health plans, informing Americans about their health care options, reimbursing health plans, and collecting data related to patient satisfaction, the quality of care, and risk and geographic adjustments for payments ...."

● Assessment of technology and outcomes. An independent institute for technology and outcomes assessment would be established to assess "the effectiveness and value of various interventions and treatment strategies and disseminate information concerning outcomes of treatments delivered in regular practice."

  The universal benefits package would be similar to those large employers provide, with "inpatient and outpatient hospital services, visits to physicians' offices, well-child care and other preventive measures, mental health care, and tiered pharmaceutical benefits, typically with dollar limits."
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