Does the Lack of Health Insurance Within a Community Impact the Health Outcomes of Residents With Insurance?

Spillover effects of community uninsurance on awareness, treatment and control of hypertension

SUMMARY

Researchers at the University of California, Los Angeles, School of Medicine and RAND Corporation looked at how the lack of health insurance within a community influences the health of residents who have insurance.

Specifically, they assessed the impact of community uninsurance rates on awareness, treatment, and control of hypertension among the insured.\(^1\) José J. Escarce, MD, PhD, and Carole Roan Gresenz, PhD, co-directed the project.\(^2\)

The study was motivated by previous findings that a high uninsurance rate reduces access to—and satisfaction with—health care among the insured. Does this so-called “spillover effect” extend beyond access and satisfaction and adversely impact actual health outcomes? The purpose of this new study was to find out.

Key Findings

As noted in the article in *Medical Care*:\(^3\)

- **A higher community uninsurance rate decreases the chances of treatment for high blood pressure.** A 10 percent increase in the community uninsurance rate:

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\(^1\) The team defined the community uninsurance rate as the number of individuals under 65 in a metropolitan area who reported being uninsured area divided by the area’s total under-65 population.

\(^2\) Jose J. Escarce, MD, PhD, is a professor of medicine, David Geffen School of Medicine, University of California, Los Angeles. Carole Roan Gresenz, PhD, was a senior economist at RAND at the time this study was conducted. She is now an adjunct at RAND and a professor in the Department of Health Systems Administration at Georgetown University in Washington.

— Reduces the probability of receiving antihypertensive medication by 4.2 percentage points among all insured hypertensive adults (those aware and unaware they have the condition).

— Reduces the probability of receiving antihypertensive medication by 5.5 percentage points among insured hypertensive adults aware of their condition.

- **A higher community uninsurance rate decreases the chances of blood pressure control.** A 10 percent increase in the community uninsurance rate:

  — Reduces the probability of blood pressure control by 6.8 percentage points among insured adults who have hypertension and are aware of their condition.

- **The community uninsurance rate has no effect on whether people with hypertension are aware that they have the condition.**

**Funding**

The Robert Wood Johnson Foundation (RWJF) funded the project from July 2011 through March 2013 with a $222,672 grant\(^4\) to the David Geffen School of Medicine, University of California, Los Angeles.

**CONTEXT**

Earlier research demonstrated that living in a community with a large population of uninsured residents can have negative consequences for insured individuals. One such study—conducted by Escarce and Gresenz with RWJF funding in 2009-2010—concluded that as community uninsurance rates increase, insured individuals are less likely to have a usual source of care, to receive needed care, and to be satisfied with their care.\(^5\)

Building on this earlier work, Escarce and Gresenz designed a new study to find out if the influence of community uninsurance rates went beyond access and satisfaction and adversely affected treatment and health outcomes among the insured.

“That is where the rubber meets the road,” says Escarce. “If the changes [in uninsurance rates] don’t affect people’s health in any meaningful way, then it probably doesn’t matter very much that they have less access and less satisfaction.”

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\(^4\) ID# 69075

\(^5\) RWJF grant ID# 65198 ($190,414, January 1, 2009 to June 30, 2010). Gresenz CR and Escarce JJ. “Spillover Effects of Community Uninsurance on Working-age Adults and Seniors: An Instrumental Variables Analysis.” *Medical Care*, 49(9): e14-21, 2011. Full text available online. Also see the Program Results Report.
Why would the lack of insurance by some community residents have any bearing on the insured in that community? What is the mechanism for this so-called spillover effect? There is at this point no certain answer, only speculation.

One possibility, says Escarce, is that physicians may tend to provide one level of care to all of their patients regardless of circumstances—not, as he puts it, a Hyundai level for the uninsured and a Cadillac level for the insured. In communities with more uninsured patients and, thus, more uncompensated care, that may mean a lower level of care all around, he suggests.

**RWJF’s Interest in This Area**

One of RWJF’s strategic objectives is to ensure that 95 percent of all Americans have health care coverage by 2020. Confirming the link between a community’s uninsured rate and the insured population’s health outcomes could help demonstrate the benefits of increasing health insurance coverage for everyone and garner increased support for efforts to reach the 2020 goal.

**THE PROJECT**

Researchers assessed the spillover effects of a community’s uninsurance rate on the awareness, treatment, and control of hypertension among the community’s insured adults. Commonly called high blood pressure, hypertension is a chronic condition that can lead to a stroke, heart attack, and other serious diseases.

**Methodology**

The team’s main data source was the National Health and Nutrition Examination Survey (NHANES) conducted continually by the National Center for Health Statistics to assess the health status of the U.S. population.\(^6\)

NHANES is unique in that it collects information from a nationally representative sample of adults through not only interviews but also physical examinations and laboratory analysis of blood samples.

Thus, NHANES data enable investigators to identify individuals who have certain health conditions, including hypertension, but do not know it, and to assess whether the conditions are well controlled.

From the National Center for Health Statistics the research team obtained restricted-use geocoding that identified the survey subjects by counties and census tracts. The research

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\(^6\) The NHANES series began in the 1960s. This study used data from the 1988–1994 survey (known as *NHANES III*) and from the 1999–2000 survey (the *Continuous NHANES*).
team merged that data with census and other data to identify the uninsured percentage, poverty rate, physician supply, and other characteristics of those localities.

The team analyzed the full data file at the Census Research Data Center at UCLA.

The Study Sample

The sample of NHANES subjects analyzed by the team consisted of 7,213 non-pregnant adults (20 years or older) who:

- Had hypertension
- Had private insurance or, if age 65 or over, Medicare coverage, and
- Lived in a metropolitan area for which there was reliable uninsurance rate data.

Of the total 7,213 hypertensive subjects, 75.1 percent were aware of their condition and 24.9 percent were unaware; 66.5 percent were treated, and 41.8 percent were controlled, the team reported. The uninsurance rates for subjects’ communities ranged from 3.7 percent to 39.3 percent, with a mean of 15.0 percent.

A Change in Plans: Reducing the Scope of Study

The researchers initially planned to assess the impact of uninsurance on diabetes care as well as on hypertension. However, they found that that the number of NHANES subjects with diabetes was too small to permit meaningful analysis. A further barrier was the limited availability of lab results from blood drawn while the subject was fasting—a condition necessary for the diabetes analysis.

As a result, the team limited its assessment to hypertension.

FINDINGS

In a report to RWJF and the article in Medical Care, the research team reported the following:

- A higher community uninsurance rate decreases the chances of treatment for high blood pressure. A 10 percent increase in the community uninsurance rate:
  - Reduces the probability of receiving antihypertensive medication by 4.2 percentage points among all insured hypertensive adults (including both those aware and unaware of their condition).

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Subjects were classified hypertensive is they had an average blood pressure reading of 140 or higher systolic or 90 or higher diastolic, or they reported a previous diagnosis of hypertension and used an antihypertensive medication.

See footnote 3, page 1 of this report.
— Reduces the probability of receiving antihypertensive medication by 5.5 percentage points among insured hypertensive adults aware of their condition.

- **A higher community uninsurance rate decreases the chances of blood pressure control.** A 10 percent increase in the community uninsurance rate:
  
  — Reduces the probability of blood pressure control by 6.8 percentage points among insured adults who have hypertension and are aware of their condition.

- **These trends are similar when the findings are broken out by age, although the impact of the community uninsurance rate is diminished among seniors with Medicare coverage.**
  
  — A 10 percent increase in the community uninsurance rate reduces the probability of receiving treatment for hypertension by:
    
    - 7.8 percentage points among working-age, privately insured adults.
    - 2.4 percentage points among seniors with Medicare coverage.
  
  — A 10 percent increase in the community uninsurance rate reduces the probability of hypertension control by:
    
    - 9.8 percentage points among working-age, privately insured adults (according to one of two estimation approaches used by the research team).
    - The unemployment rate had no statistically significant effect on control of hypertension among seniors with Medicare coverage.

- **The community uninsurance rate has no effect on whether people with hypertension are aware that they have the condition.** “That is not surprising,” Escarce says of this finding.

  People with hypertension can become aware of their condition at any point after developing it, he says. Thus, “awareness is built up over a number of years” and is not likely to depend on the level of health care being received at any one particular time.

**Limitations**

The researchers identified these study limitations:

- The team used blood pressure readings taken on one day (the day of the NHANES exam) to classify subjects as hypertensive and assess control of their hypertension. Additional measurements on different days could have altered those determinations.

- The sample was limited to individuals residing in larger metropolitan areas.
• Rates of community uninsurance were measured at the level of the metropolitan area, rather than in a smaller geographic area, such as a neighborhood. Spillover effects could potentially be greater within a more local setting.

**Policy Implications**

This study, according to team members, is the first to demonstrate that the rate of community uninsurance has an adverse effect on the treatment and control of a major, chronic health problem among insured individuals.

That finding, they assert, is particularly relevant as the Affordable Care Act (ACA) is implemented. Noting that the new health care law was designed to dramatically reduce the percentage of the population without coverage, Gresenz says, “Our research suggests that if that happens, it could have positive spillover effects on the health care outcomes of insured individuals. It is really important to think about not just the (ACA’s) effects on the uninsured, but also how it affects the insured,” she adds.

**LESSONS LEARNED**

1. **The NHANES datasets have enormous potential to be used creatively in health services research.** “While these datasets are commonly used in epidemiologic research, we believe that they are underused in health services research,” write the project directors in a report to RWJF.

   Because NHANES data can help answer important questions about the prevalence, treatment, and control of medical conditions, “their unique features can be a treasure trove for understanding the impact of contextual factors on the health and health care” of the U.S. population, they write.

**AFTERWARD**

The researchers intend to follow up with additional dissemination efforts. They also have voiced interest in undertaking research to identify the mechanisms responsible for the spillover effects of uninsurance rates.

The resulting insights, the team told RWJF, could not only help providers improve their quality of care but also “go a long way toward making the existence of these effects nearly irrefutable. It seems likely to us that skeptics about these spillover effects will remain as long as the mechanisms are not demonstrated directly.”
BIBLIOGRAPHY

(Current as of date of the report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

Article

Escarce JJ, Edington SE and Gresenz CR. “Spillover Effects of Community Uninsurance on Awareness, Treatment and Control of Hypertension Among Insured Adults.” Medical Care, 52(7), 626–633, July 2014.