Spillover effects of uninsurance:
The effects of neighborhood levels of uninsurance on collective efficacy

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Extended Abstract

Introduction

The lack of health insurance is traditionally considered a problem faced by individuals or their families. However, because of the geographically bounded organization and funding of health care a rise in the level of the uninsured may create a spillover effect on everyone living in a community. In a speech to the American Medical Association on June 16, 2009, President Obama spelled out the logic of the community spillover effect of the uninsured: "Each time an uninsured American steps foot into an emergency room with no way to reimburse the hospital for care, the cost is handed over to every American family as a bill of about $1,000 that is reflected in higher taxes, higher premiums, and higher health care costs." The uninsured affect the health care system directly with uncompensated care that needs to be covered with governmental or private funds. A rise in the share of uninsured in a community may thus require higher taxes. Yet, the consequences of the growing proportion of people without health insurance may penetrate even deeper into a community's social fabric and common sense of purpose. While these spillover effects of the uninsured on communities constitute a crucial social and political issue, the Institute of Medicine recently noted that the processes by which the uninsured affect communities remain an unexplored field of inquiry (Institute of Medicine 2009).

At the most elementary level, the spillover effect is a matter of economics: uncompensated care needs to be absorbed somehow with public or private funds and will thus divert resources that could be used for other purposes. The impact of the rate of uninsured may then reverberate beyond health care to affect the social functioning of communities. Because communities differ greatly in the number of uninsured (Cunningham 2008), a collective decline in health insurance coverage will impact communities in different ways. A growing proportion of uninsured has been shown to affect communities at the level of *health care delivery*, which then may spill over to other community services and components. Research by health economists Mark Pauly and José Pagán has begun to document the magnitude of such effects. However, little is known about the effects of an increase in a vulnerable uninsured population on the broader *community structure* beyond health care delivery.

In this paper we extend the existing literature on spillover effects of uninsurance by examining the effects of uninsurance on other aspects of community life, including a *community's "collective efficacy"* to address common local social and economic problems (Sampson, Morenoff, and Gannon-Rowley 2002; Browning et al. 2008). Collective efficacy refers to the specific tasks undertaken or expected to be performed on the community's behalf and is itself related to a community's structural characteristics such as social relationships and institutional capacity (Sampson, Morenoff, and Earls 1999). While health access has been a rallying point for social mobilization in some instances (Steinberg and Baxter 1998), high levels of uninsured may also contribute to the stratification of a community and undermine a sense of common purpose (Kirby 2008).

Methods

Data

To examine neighborhood spillover effects of uninsurance on collective efficacy, we utilize data from Wave 1 (2000-2001) of the Los Angeles Family and Neighborhood Survey (L.A. FANS).

L.A. FANS was designed to examine neighborhood effects on the health and wellbeing of a random sample of children and families in Los Angeles County. The survey thus incorporates individual, family, and neighborhood level measures, where neighborhood is defined as a census tract. In Wave 1, L.A. FANS stratified Los Angeles County's 1652 census tracts into 3 strata: non-poor, poor, and very poor according to the percent in poverty in the 2000 Census. A total of 65 tracts were randomly sampled, including 20 very poor tracts, 20 poor tracts, and 25 non-poor tracts. Within each tract, 40-50 households were randomly sampled, with an oversample of households with children. One adult from each household was randomly sampled and invited to participate in an interview. A total of 3085 randomly selected adult (RSA) respondents were selected for interview; interviews were completed with 2620 (85%) RSAs.

Neighborhood-level effects of uninsurance

L.A. FANS collected detailed month-by-month event histories of insurance coverage for the 2 year period prior to interview for panel and new entrant RSAs. Using data from these event histories of insurance coverage, a neighborhood-level variable of uninsurance was constructed. The weighted proportions of RSAs who reported having no health insurance coverage during the month of January, 2000 was assigned to all individuals living within the same census tract. This variable captures the level of uninsurance within a tract at a fixed point in time.

Individual outcome measures

We examine the effect of neighborhood levels of uninsurance on residents' collective efficacy. Collective Efficacy was measured using three indices:

1) the item "People around here are willing to help their neighbors" which respondents rated 1=Strongly Disagree to 5=Strongly Agree (reverse coded);
2) a Collective Efficacy Index consisting of ten items measuring the extent to which neighbors were perceived as helpful, trustworthy, familiar, role models, and as having common values, which respondents rated 1=Strongly Disagree to 5=Strongly Agree;
3) a Frequency of Help from Neighbors Index consisting of three items, including "About how often do you and people in your neighborhood do favors for each other?", " When a neighbor is not at home, how often do you and other neighbors watch over their property?" and " How often do you and other people in the neighborhood ask each other advice about personal things such as child rearing or job openings?" which respondents rated 1=Never, 2=Rarely, 3=Sometimes, 4=Often; and 3) the number of neighbors talked to in the past 30 days (None, 1 to 2, 3 to 5, 6 or more).

Individual-level covariates

Individual-level covariates were included for age, race, sex, education level, marital status, US citizenship, family income (logged), and individual employment and insurance status at time of interview.

Neighborhood characteristics

To control for neighborhood composition in analyses, additional neighborhood-level variables were included from the 2000 Census and assigned to all residents of a census tract, including: median family income, the percentage of residents aged 0 to 4 and the percentage of residents over age 65, the percentage of residents who are foreign born, and ethnic group composition.

Data analysis

Two-level (level 1 = individuals, level 2 = census tract) random intercept models were conducted using *xt* protocols with maximum likelihood estimation in STATA 12.0 and included all

of the individual and neighborhood characteristics above. Two-level random intercept linear regression models were used to predict the collective efficacy index the neighbor help index.

Results

The percent uninsured varies substantially across tracts, from 0 to 87.9%. Notably, there are several tracts where more than 50% of residents have no health insurance at a given time. Five tracts had no residents who were uninsured in January of 2000. The mean level of uninsurance for was 32.6% (SD=21.6). Throughout the discussion of results below, we focus on the effects of neighborhood levels of uninsurance, however all estimates are presented in the full paper.

Do levels of neighborhood uninsurance affect individuals' collective efficacy?

Collective efficacy was measured using three indices, a single item from the Collective Efficacy Index measuring individual perceptions of neighbors' willingness to help each other, the full ten-item Collective Efficacy Index, and a three-item index of the frequency with which neighbors helped each other.

The overall mean on the single willingness to help item was 3.41 (SD=1.02) on a 5-point scale. Neighborhood-level means ranged from 2.49 to 4.18. In the full model that includes both individual and neighborhood-level covariates (see Table 2), there was significant variation between neighborhoods in levels of neighborhood satisfaction (χ^2= 25.52, p<0.000). In the full model higher levels of neighborhood uninsurance, neighborhood unemployment, neighborhood age structure and the percent foreign born are associated with lower neighborhood satisfaction, controlling for individual-level covariates. Analyses of the full ten-item Collective Efficacy Index (see Table 3) and the Frequency of Help from Neighbors Index (see Table 4) yield similar results: a negative effect of neighborhood uninsurance and neighborhood unemployment on collective efficacy resources among residents net of individual-level covariates. For both indices, likelihood ratio tests of the random effect component of the model are significant (χ^2= 14.96, p<0.000 - CEI; χ^2= 24.03, p<0.000 - FHNI), enabling us to reject the null hypothesis that these two indices of collective efficacy do not vary across neighborhoods.

Discussion

In this paper we examine the spillover effects of uninsurance and extend previous work that shows effects of neighborhood levels of uninsurance on individual health and access to quality health services for all neighborhood residents, not just the uninsured. In our examination of neighborhood spillover effects, we focus on additional areas of social life, including collective efficacy. Using three different measures of collective efficacy, we find strong support for a negative relationship between neighborhood levels of uninsurance and collective efficacy.