Beyond Health Effects? Examining the Social Consequences of Community Levels of Uninsurance Pre-ACA

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Abstract

The lack of health insurance is traditionally considered a problem faced by individuals and their families. However, because of the geographically bounded organization and funding of healthcare in the United States, levels of uninsurance in a community may affect everyone living there. Health economists have examined how the effects of uninsurance spillover from the uninsured to the insured, negatively affecting healthcare access and quality for the insured. We extend research on uninsurance into the domain of sociologists by theorizing how uninsurance might exacerbate social inequalities and undermine social cohesion within communities. Using data from the Los Angeles Family and Neighborhood Survey, we show that individuals living in communities with higher levels of uninsurance report lower social cohesion net of other individual and neighborhood factors and discuss implications for implementation of the Affordable Care Act.

Does gaining access to health insurance have effects beyond individual health and healthcare outcomes? The Patient Protection and Affordable Care Act (ACA) can be viewed as a natural experiment of the far-reaching effects that expanded and gaining access to health insurance might have not only for individual health but also for community life. The direct and indirect health effects are straightforward. By 2017, the ACA will expand access to health insurance for more than 24 million uninsured Americans (Congressional Budget Office 2015).[1] Existing research linking a lack of health insurance to poorer health outcomes, decreased access to care, and lower quality of care suggests that ACA stands to improve the health of the uninsured (Kaiser Family Foundation 2013). Further, the ACA will likely increase the financial stability of uninsured individuals and their families who pay higher costs compared with the insured (Hadley 2003; see also

Busch, Golberstein, and Meara 2014). In addition to these direct effects on the uninsured, the ACA's expansion of insurance beneficiaries is likely to produce indirect effects on cost and quality of care for the already-insured population. A growing body of economic and health policy research suggests that high concentrations of uninsured in a community can negatively affect healthcare access and quality for the insured (Daysal 2012; Gresenz and Escarce

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2011; Pauly and Pagán 2007), making the ACA's health insurance expansion likely to indirectly benefit the insured.

As sociologists, we are interested in broadening the conversation around the effects of the ACA to include consideration of the potential social effects of this massive health legislation. Although most of the anticipated effects of the ACA identified in political and academic discussions have been health related, the ACA may also affect broader community-level social processes, such as social cohesion. To address whether the effects of ACA may go beyond health and shape the ways people interact with others, we need a better understanding of the relationship between insurance and social life prior to the implementation of the ACA. We develop a conceptual framework for examining the *social spillover* of uninsurance—or the indirect effects of uninsurance beyond health and healthcare on social life. Using data from the Los Angeles Family and Neighborhood Survey (LAFANS), we demonstrate that prior to the enactment of ACA, individuals living in communities with higher levels of uninsurance report lower levels of social cohesion net of other individual and neighborhood factors. We also estimate how the cohesiveness of communities might change post-ACA by estimating the effects of an ACA-type intervention on perceptions of social cohesion. As a novel approach to understanding why health insurance matters for Americans, these findings have important implications not only for ongoing debates around ACA implementation but also for our broader understanding of the relationships between health policies and social life.

BACKGROUND

Spillover Effects of Uninsurance on Healthcare Access and Quality

While the lack of health insurance is traditionally considered a problem facing individuals and their families, the geographically bounded organization and funding of healthcare make it possible for the uninsured to have a broader impact, affecting everyone living in a community or health market. At the most elementary level, the spillover effect is a matter of economics: the costs of care to the uninsured in emergency and urgent care settings are mostly uncompensated and must be absorbed with public and/or private redistributions of funds. Among hospitals in California, where we focus our analysis, the cost of providing care to the uninsured prior to ACA accounted for 3% to 7% of total operating costs

annually, with county hospitals and community clinics incurring the largest revenue losses (California Healthcare Foundation 2010). In order to reduce the costs of uncompensated care provided to the uninsured, healthcare providers may try to lower their exposure to an uninsured population by reducing, dropping, or redistributing staff and services disproportionally used by the uninsured, such as emergency care or substance abuse care (Brown and Stevens 2006; Cunningham, Bazzoli, and Katz 2008). Providers might also attempt to generate or expand services targeted to the insured, shift costs to the insured by increasing fees, or attempt to otherwise alter the insurance status composition of their patient pool in order to gain access to state and federal funds.

These provider strategies affect access to healthcare, quality of care, and trust in healthcare providers for *all* members of a community, not just the uninsured (Gresenz and Escarce 2011; Pagán, Balasubramanian, and Pauly 2007; Pagán and Pauly 2006; Pauly and Pagán 2007). Additionally, provider strategies to reduce exposure to the uninsured may have real consequences for the individual health outcomes of the insured. While research by McMorrow (2013) has found inconsistent effects of uninsurance rate on the insured across some health outcomes, Daysal (2012) finds that California hospitals servicing a higher proportion of uninsured patients have 3% to 5% higher mortality following myocardial infarction among insured patients compared with hospitals servicing fewer uninsured patients, controlling for individual health status and past diagnoses. Similarly, Escarce, Edgington, and Gresenz (2014) find that a higher uninsurance rate has an adverse effect on the probability that insured adults with hypertension receive antihypertensive treatment and achieve blood pressure control.

Beyond Health Effects?

Given the strain that uninsurance places on individuals, providers, and healthcare markets, the consequences of uninsurance are likely to go beyond health and healthcare and impact the social lives of individuals and communities. In a 2003 report on community levels of uninsurance, the Institute of Medicine (IOM) acknowledged that in addition to thinking about the economic effects of uninsurance, researchers also needed to consider how uninsurance might "strain social relationships among community members and local institutions" (IOM 2003:133). Research on the social spillover effects

of uninsurance remains in its infancy and has yet to present a clear or consistent theoretical framework. Our first aim in this paper is thus to bring together research in this area, distill the key pathways of influence, and link them to the sociological literature.

Researchers examining links between uninsurance and community social life tend to highlight one of two pathways of influence: (1) higher burdens of uncompensated care generate competing interests and goals within a community, which contributes to the breakdown of social cohesiveness, trust, and reciprocity among community members; and (2) higher costs to the uninsured and their families contribute to increased social and economic inequality, which promotes class differentiation, social distance, and community disengagement (see Figure 1). We develop these two theories in more detail below.

Competing interests and institutions. Much of the existing literature examining social spillovers of uninsurance focuses on the emergence of *competing interests and institutions* in communities experiencing high or very high levels of uninsurance. Since communities vary in the number of uninsured and have different resources at their disposal (Cunningham 2007), communities may adopt different strategies of resource allocation in order to absorb the costs of providing healthcare to the uninsured. While some communities may attempt to raise new funds to cover the uninsured (e.g., through taxation), other communities may attempt to redistribute existing funds or services. Yet, as Brown and Stevens (2006) observe, "improving coverage and care for the uninsured is inescapably an exercise in redistribution from the haves to the have-nots" (p. 151), and the interests of the uninsured are often pitted against those of other groups in political battles over budgets. Additionally, attempts to cover the uninsured through redistribution of new or existing funds may run into political barriers or be forced to compete with other public services, such as education and law enforcement (Brown and Stevens 2006).

Such contentious trade-offs between healthcare and other public services may undermine residents' feelings of connection to a community, mutual trust, and collective efficacy (Browning et al. 2008), or perceptions that community members can and will intervene to effectively address common local social and economic problems (Sampson, Raudebusch, and Earls 1997). As Brown and Stevens (2006) demonstrate through their case

studies of programs intended to expand coverage to the uninsured in Birmingham, Alabama, and Alameda County (Oakland), California, debates around the provision of care for the uninsured may become even more contentious when they intersect with racial and class divides that have historically limited access to insurance and healthcare institutions among African Americans and Latinos. In communities where local government and the private sector have failed to adequately cover the uninsured, local institutions, such as churches and schools, may develop their own programs to address the needs of the uninsured with varying success (Timmermans, Orrico, and Smith 2014). Thus, while healthcare access may become a rallying point for social mobilization in some communities (Steinberg and Baxter 1998), the literature above suggests that high community levels of uninsurance may also decrease effectiveness and support of local government, decrease residents' feelings of cohesiveness and collective efficacy, and generate perceptions that local institutions are not serving the needs of residents.

Social and economic inequality. A second pathway through which uninsurance has been found to affect social life is via the exacerbation of *social and economic inequality*. Research by Kaplan and colleagues (1996) suggests that levels of uninsurance may contribute to stratification and income inequality within a community. Most directly, uninsured individuals and families pay higher out-of-pocket expenses for healthcare, aggravating existing inequalities in income and wealth among community residents (IOM 2003; Seifert and Rukavina 2006). At the neighborhood level, higher levels of income inequality are associated with lower levels of civic engagement and trust among residents (Kawachi et al. 1997). As stratification scholars have demonstrated (Schwartz and Mare 2005), status distinctions become starker and more socially meaningful as inequality increases, making it more difficult for individuals to form and maintain social relationships across status groups.

Additionally, due to strong links between private health insurance and full-time, nonmenial employment and between public programs for the uninsured and lower-quality care, health insurance constitutes both a marker of social status as well as a nonmaterial asset that stratifies residents within communities on the basis of their access to healthcare. Kim, Haney, and Hutchinson (2012) examine the effects of exclusion from healthcare among Korean Americans, one of the most highly uninsured
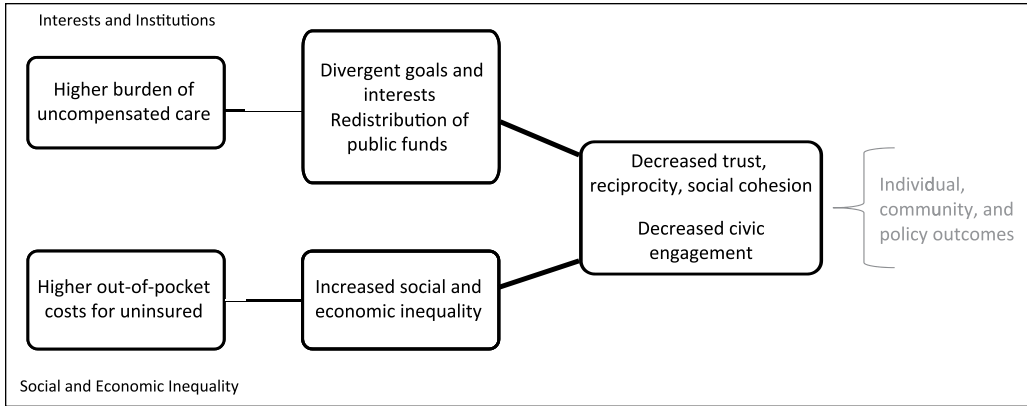
Figure 1. Effects of Uninsurance on Communities and Social Life.

population groups among Asian Americans. In their qualitative investigation, the authors find not only that exclusion from healthcare has effects on individual health behaviors and healthcare seeking but also that uninsured individuals experience a sense of devaluation relative to other U.S. citizens. In twin top-down and bottom-up processes, exclusion and disenfranchisement by the state and healthcare institutions foster avoidance and feelings of disconnection, discouragement, and resentment at the bottom.

Becker (2004, 2007) and Horton (2004) take this premise further in their multiple analyses of healthcare exclusion of uninsured ethnic minorities and immigrant groups in the United States. Becker's work in particular repeatedly suggests that individuals and groups that are excluded from the U.S. healthcare system because they are uninsured or underinsured with high-deductible, catastrophic plans frequently experience poorer-quality care, discrimination, and depersonalization when they do seek care, which respondents view as an assault on their personal dignity. Other recent research on how being uninsured negatively affects patient–provider interactions and potential future interactions supports these findings (Allen et al. 2014).

Implied in each of these works is the IOM's (2003) notion that access to healthcare and health insurance are part of an implicit social contract between employers and workers and between the state and citizens. The lack of uninsurance "represents a breach of that social contract" and, when "experienced by large numbers of individuals in a community, may erode the social bonds that define and nurture functioning, healthy communities, as uninsured persons are made aware of their lesser claim on services and resources that are generally valued as essential to a dignified and secure life" (IOM 2003:133). Phrased another way by Faden and Powers (1999):

> In addition to the stress, powerlessness and social disrespect that have been shown to be associated with poorer health status, [uninsured individuals'] awareness of their disadvantaged social status has the potential to undermine self-respect and their sense of themselves as the moral equals of the more fortunate members of society. (P. 3)

At the same time, the converse can also be observed: where local municipalities and state governments have made a concerted effort toward including marginal populations into the healthcare system, various kinds of respondents—marginalized populations, service providers, and city officials—describe these reforms as important not just for providing access to care but are motivated by broader concerns around fostering connectedness, collaboration, and feelings of a shared fate (Marrow 2012; Marrow and Joseph 2015). Moreover, in some healthcare settings, the provision of supportive, consistent, and nonjudgmental care has been shown to promote feelings of belonging, dignity, and self-efficacy among marginalized patients (Timmermans and McKay 2009). Thus, like inequalities in wealth and income, inequality in access to health insurance and healthcare may contribute to national and local processes of identity formation, class differentiation, and social distance; at the same time, efforts to reform healthcare toward universal access and quality may improve feelings of belonging and connectedness among previously excluded groups.

Limitations of Previous Research

Research on the spillover effects of uninsurance has propelled the field forward toward thinking more broadly about the effects of health policies on individuals and communities. However, it is not without its limitations. First, although uninsurance has been shown to undermine individual and community social outcomes in preliminary qualitative and cross-sectional quantitative research, one of the key concerns that repeatedly surfaces in discussions of the social consequences of uninsurance is that scholars have yet to account for compositional differences across communities and selection processes that might contribute to both higher levels of uninsurance *and* poorer social outcomes in the same place. Accounting for such differences across individuals and communities is important because we know that the kind and quality of an individual's social ties are influenced by both individual-level characteristics (such as gender, age, income, education, and marital status) as well as contextual or community-level characteristics (such as the age, racial-ethnic, and income composition and residential stability; Sampson 1991).

To address this limitation, we expand on previous observational studies of the effects of community levels of uninsurance on social life by leveraging new longitudinal data from LAFANS. Unlike most other survey data on health, LAFANS was designed specifically to address the effects of neighborhood and social context on households and individuals. We use LAFANS to examine whether *social cohesion*, as measured by residents' perceptions of their ability to trust and rely on neighbors and feelings of shared values, varies systematically across neighborhoods with different levels of uninsurance after controlling for other potentially confounding individual- and community-level characteristics.

The second limitation of previous research is that community-level variables are often measured at relatively high levels of aggregation (e.g., the state, county, or metropolitan statistical area) and thus encompass very heterogeneous areas. This is problematic because, like spillover effects of uninsurance on healthcare costs, quality, and access, any social spillovers of uninsurance are most likely be felt and observed at the local level and may be washed out at higher levels of aggregation. To better approximate local communities, sociologists studying neighborhoods tend to focus instead on smaller units of analysis—most frequently census tracts or census block groups as appropriate (Sampson, Morenoff, and Gannon-Rowley 2002:445). Although there are limitations associated with defining census tracts as neighborhoods (see discussions by Grannis 1998; Lee et al. 2008; Logan 2012; Macintyre, Ellaway, and Cummins 2002), census tracts are commonly used as a special entity to approximate neighborhoods due to the availability of sociodemographic data at this level and reasonable overlap with individuals' subjective experiences of neighborhoods (Sampson et al. 2002). Thus, the use of census tracts as the unit of analysis best represents the scale for the processes we think may be at work in creating *social* spillover effects of uninsurance. An additional analytical advantage of defining the neighborhood as the census tract is that we are able to supplement LAFANS data with census tract-level data from the U.S. Census for neighborhoods in Los Angeles. Because different aggregations of the same spatial data can produce different results, we replicated our analyses using the eight service provider areas (SPAs) in Los Angeles County with only slight attenuations in the magnitude of area effects on uninsurance (data not shown). As a unit of analysis, however, SPAs may be too large to capture the community-level effects that we hypothesize; Los Angeles County SPAs are quite large in both land area and population, with six of the eight having populations larger than some U.S. states.

Los Angeles is a particularly compelling metropolitan area in which to conduct this research because it features a high burden of overall uninsurance as well as wide variation in insurance composition across relatively small geographical areas. In 2003, about one-third of Los Angeles County's 10 million non-elderly inhabitants were uninsured (30.2%; Cunningham 2007). Across Los Angeles County's 25 assembly districts, however, the uninsured rate among the non-elderly population ranged from 19% to 44% in 2005, with the highest rates concentrated in downtown, southern, and eastern Los Angeles (Yu et al. 2007). Additionally, Los Angeles County has consistently had low job-based insurance coverage over the past decade (Lavarreda et al. 2012), allowing us to disentangle competing effects of unemployment and access to health insurance. We turn now to a more detailed description of the data.

DATA AND METHODS

Individual-level Data: LAFANS

To examine the social consequences of uninsurance, we utilized data from two waves of LAFANS, a multistage probability sample of adults in Los

Angeles County fielded from 2000 to 2002 and again from 2006 to 2008. LAFANS was purposefully designed to examine neighborhood effects on the health and well-being of a random sample of adults and children in Los Angeles County. These data have been used to examine a broad array of pathways and outcomes, including neighborhood and household effects on health and mortality (Bjornstrom 2010; Bjornstrom 2011; Cohen et al. 2006) and healthcare access and utilization (Chi and Carpiano 2013; Prentice 2006).[2]

Sampling. LAFANS respondents were drawn from a stratified sample of 65 census tracts in Los Angeles County according to 1990 Census tract boundaries, with an oversample of poor and very poor tracts. Within each tract, 40 to 50 households were randomly sampled, and one adult from each household was randomly selected and invited to participate in an interview. Of the 3,085 randomly selected adults (RSAs) invited to participate, 2,620 (85%) completed a Wave 1 interview. As part of the LAFANS interview, respondents were also administered an event history calendar that captured health insurance histories that were used to estimate tract-level rates of uninsurance (see next section). Of 2,620 RSAs who completed or partially completed the adult interview, 2,520 (96%) also completed the Wave 1 event history calendar.

At Wave 2, 1,775 (64%) panel RSAs were relocated and 1,251 (47%) were administered a second adult questionnaire and event history calendar covering the period between the first and the second interview.[3] Due to sample attrition and differences in missing data across individuals and items, our final sample of panel respondents still living in the 65 LAFANS sample tracts was 1,195. Sample attrition was largely explained by respondent relocation out of Los Angeles County and ineligibility at Wave 2 due to death, disability, or institutionalization. On average, respondents who were lost to follow-up scored slightly lower on the social cohesion items at Wave 1 compared with respondents who were reinterviewed at Wave 2 ($t = -2.07$, $p \leq .05$). This is consistent with the expectation that individuals with stronger ties to a neighborhood are more likely to remain in that neighborhood and more likely to be able to be recontacted by researchers over time. This difference in social cohesion between reinterviewed participants and participants who were lost to follow-up suggests that estimates of social cohesion are likely to be inflated due to right-censoring of individuals at the lower end of the scale.

In order to account for differential in- and out-migration between waves, LAFANS interviewed

200 (57%) new-entrant RSAs at Wave 2. Data collected from new entrant RSAs were utilized in estimates of tract-level uninsurance at Wave 2 discussed below but were otherwise not included in panel analyses since they did not participate in a Wave 1 interview. Additional information about LAFANS, including data collection procedures, survey instruments, and retention, can be found at www.lasurvey.rand.org and in Peterson et al. (2004).

Measures. Table 1 presents unweighted descriptive statistics for individual-level data from the LAFANS panel data set. At Wave 1, RSAs were administered a questionnaire, which included a series of items to measure social cohesion. Social cohesion was measured using a five-item scale based on items from the Project on Human Development in Chicago Neighborhoods survey (Earls and Buka 1997), measuring the extent to which respondents perceived neighbors as helpful, trustworthy, and having common values. This scale reflects the cognitive elements of social capital that pattern interactions and promote social cohesion within a neighborhood and is the average of five items rated from "strongly disagree" to "strongly agree" on a five-point Likert scale.[4] The five items include: (1) "This is a close-knit neighborhood," (2) "People around here are willing to help their neighbors," (3) "People in this neighborhood generally don't get along with each other," (4) "People in this neighborhood do not share the same values," and (5) "People in this neighborhood can be trusted." The scale has been demonstrated to have high internal consistency and to be predictive of health outcomes across diverse population groups (Bjornstrom and Kuhl 2014; Buka et al. 2003). Negative statements have been reverse coded here such that higher scores correspond to perceptions of greater social cohesion. Scale scores have been centered on the mean in all analyses below.

In the analyses conducted below, we also included several individual-level characteristics associated with social cohesion, social trust, and social capital (Alesina and La Ferrara 2000). These included the demographic characteristics age, race, sex, education level, marital status, foreign birth, family income (top coded at $300,000 and logged), and employment status.[5] We also included dummy variables indicating whether the respondent has a relative who lives in the same neighborhood and whether a member of the household has experienced theft or property damage (e.g., to home or car) while living in the neighborhood as a measure of neighborhood safety. Due to the strong links in

Table 1. Descriptive Statistics for Individual-level Data, Panel Respondents Only, Los Angeles Family and Neighborhood Survey Wave 1 (2000–2002) and Wave 2 (2006–2008), Unweighted.

Individual Characteristics	Wave 1		Wave 2	
	n (Mean)	% (SD)	*n* (Mean)	% (SD)
Age				
18 to 29	254	22.0	40	5.2
30 to 44	546	47.3	262	34.3
45 to 64	291	25.2	371	48.6
65+	64	5.5	91	11.9
Female	712	61.7	469	61.4
Race-ethnicity				
White	324	28.1	235	30.8
Latino	641	55.5	415	85.1
African American	113	9.8	65	93.6
Asian	77	6.7	49	6.2
Foreign born	604	52.3	391	51.2
Married	605	52.4	435	56.9
Education				
Less than high school	402	34.8	244	31.9
High school degree	525	45.5	349	45.7
College degree or more	228	19.7	171	22.4
Family income (median, in thousands)	(38.5)	(13.9)	(51.8)	(48.2)
Self-rated health	(3.43)	(1.1)	(3.37)	(1.2)
Has relative(s) living in neighborhood	454	39.3	279	36.5
Household member experienced theft while living in neighborhood	529	45.8	393	51.4
Uninsured	394	34.1	238	31.2
Unemployed	229	19.8	250	32.7
Five-item Social Cohesion Scale	(3.4)	(.7)	(3.4)	(.6)
This is a close-knit neighborhood.	(3.2)	(1.1)	(3.2)	(1.1)
People around here are willing to help their neighbors.	(3.7)	(.9)	(3.8)	(.9)
People in this neighborhood generally don't get along with each other.	(3.6)	(1.0)	(3.6)	(1.0)
People in this neighborhood do not share the same values.	(3.1)	(1.1)	(3.1)	(1.0)
People in this neighborhood can be trusted.	(3.4)	(1.0)	(3.5)	(1.0)
N	1,155	100.0	764	100.0

Note: SD = standard deviation.

the literature linking individual health and social capital (e.g., Kawachi et al. 1997), we also included self-rated health, rated on a five-point Likert scale from "poor" (1) to "excellent" (5), and a dummy variable indicating whether the respondent was uninsured at time of interview. Although other work has not demonstrated links between health insurance status and social outcomes, we retained health insurance status in the model because individual-level analyses revealed substantial differences in social cohesion scores between the insured and the uninsured net of other individual characteristics (data not shown).

Neighborhood-level Estimates of Uninsurance

To create census tract-level estimates of uninsurance for LAFANS data, we began with the detailed event histories of health insurance coverage in the
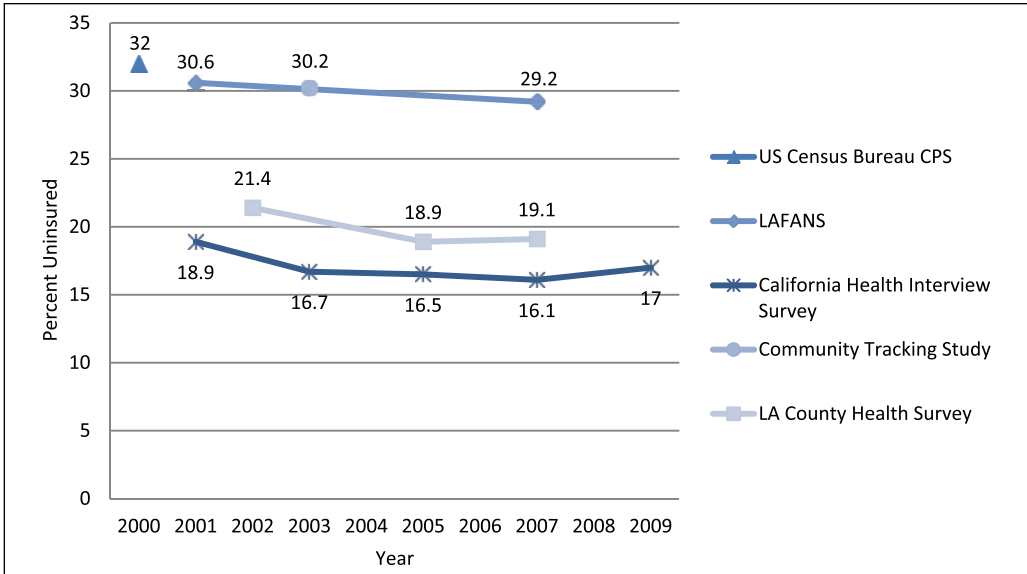
Figure 2. Uninsurance Estimates for Los Angeles County.
Source: California Health Interview Survey (CHIS; 2012), Cunningham (2007), Los Angeles County Department of Public Health (2007), Yu et al. (2007).
Note: Estimates from CHIS and the Los Angeles County Health Survey, all years, are estimates of "currently uninsured." All other estimates, including Los Angeles Family and Neighborhood Survey (LAFANS), are for uninsured at any time in past 12 months and are thus appropriately higher than estimates of the currently uninsured during any given survey period.

year prior to interview for RSAs ages 18 to 64.[6] For comparability with other estimates, individuals were categorized as uninsured if they reported not having health insurance at any time in the year prior to interview. Following Yu and colleagues (2007:732–33), we then modeled the probability of being uninsured controlling for key predictors of insurance coverage: gender, race-ethnicity, nativity, employment status, household income, and poverty status. Next we merged the predicted probabilities derived from LAFANS data with data from the 2000 U.S. Census to predict the number of uninsured in each census tract.

At the census tract level, there was substantial variance in uninsurance rates. Consistent with wide variation in small-area estimates of uninsurance in the past 12 months across Los Angeles County assembly districts (Yu et al. 2007), our estimates of tract-level uninsurance using LAFANS ranged from 11.5% to 52.0% at Wave 1 and from 8.0% to 46.5% at Wave 2. The mean rate of uninsurance across the 65 LAFANS sample tracts was 28.7% (standard deviation [*SD*] = 10.9) at Wave 1 and 26.9% (*SD* = 10.3) at Wave 2. At the county level, where we had comparable estimates (see Figure 2), our estimates of Angelinos experiencing a period of uninsurance

during the past 12 months using Wave 1 (30.6%) and Wave 2 (29.2%) of LAFANS were consistent with county-level estimates of uninsurance in the last 12 months from the Current Population Survey (32%; Yu et al. 2007) and the Community Tracking Study conducted in 2003 (30.2%; Cunningham 2007). Additionally, our estimates were appropriately higher than county-level estimates of the "currently uninsured" from the California Health Interview Survey (CHIS), a statewide telephone survey conducted in 2001 (18.9%) and 2007 (16.1%).

Importantly, there was very little mobility into or out of uninsurance in this sample, and the average duration of uninsurance for panel RSAs reporting no insurance was 5.8 person-years (*SD* = 2.78; see Appendix A, available in the online version of the article, for additional detail on these analyses). This suggested that a majority of individuals reporting no insurance were *chronically uninsured* rather than transitioning into and out of uninsurance on a temporary basis due to fluctuations in employment, income, or family composition. We expect that this was the result of the higher concentration of noncitizens in Los Angeles County relative to California and the United States as a whole.

Table 2. Descriptive Statistics for 65 Los Angeles Family and Neighborhood Survey (LAFANS) Sample Tracts, U.S. Census.

Variable	2000		2007	
	Mean	SD	Mean	SD
% Uninsured[a]	28.7	10.9	26.9	10.3
Median family income (thousands, in constant 2000 dollars)	44.9	27.6	50.7	26.5
% In poverty	22.9	13.9	21.3	11.8
% Unemployed	5.6	3.4	13.2	5.8
Age Structure				
% Under age 5	8.5	2.6	7.7	2.3
% Over age 65	8.4	4.9	9.4	5.0
Racial-ethnic Composition				
% African American	8.3	10.0	7.9	8.6
% Latino	55.1	29.6	59.2	29.9
% White	23.8	25.6	22.8	25.5
% Foreign-born	40.2	15.4	39.5	13.8
% In same dwelling past 5 years	51.2	5.8	61.1	9.1
Gini coefficient[a]	.425	.080	.350	.138

[a]Estimated using LAFANS and U.S. Census data.
Note: SD = standard deviation.

Additional Neighborhood-level Characteristics

Community characteristics also influence how much people trust and interact with each other. To control for variation in neighborhood composition across LAFANS sample tracts, we constructed measures from the 2000 and 2010 U.S. Census. All census data were mapped onto the 1990 Census tracts used by LAFANS using tract relationship files from the U.S. Census assuming a homogeneous geographic distribution of population within tracts. We used linear interpolation to estimate characteristics annually for all tracts in Los Angeles County between the 2000 and 2010 Census dates. Table 2 presents summary statistics for tract characteristics for the 65 LAFANS sample tracts in the years 2000 and 2007 based on census data.

Consistent with research on neighborhood effects (Browning and Cagney 2002), we conducted a factor analysis of 11 variables, generated annually, to address collinearity of neighborhood social and economic characteristics, including demographic characteristics, income characteristics, and residential mobility. Factors were derived using principal component factoring with orthogonal rotation. Factor loadings for all variables listed below generally exceeded .75. The first factor, consistent with a typical measure of *Latino immigrant concentration*, was dominated by high factor loadings for percentage Latino (.92), foreign-born, and under age five. The second factor, consistent with measures of *neighborhood disadvantage*, had high factor loadings for percentage African American (.94), receiving public benefits, below the poverty line, and unemployed. A third factor, *residential stability*, had high factor loadings on the percentage occupying the same dwelling for the past five years (.94), median family income, and percentage over age 65. Factor scores were generated annually for each of the three factors, weighting each variable by its factor loading. Loadings were highly consistent across years.

To test for multicollinearity among neighborhood-level characteristics used in the analysis, we examined the variance inflation factor (VIF) and tolerance scores for all combinations of neighborhood-level characteristics. All variable combinations yielded VIFs below 10 and tolerance scores below 1.000, suggesting that multicollinearity is not unacceptably high in these analyses. We are further reassured that the coefficients and standard errors for neighborhood-level characteristics are highly consistent across the analyses presented below. Serious problems would manifest themselves here with sign changes, null results across all variables, or large fluctuations in parameter estimates.

Analyses

To examine how community levels of uninsurance affect individuals' perceptions of social cohesion, we used LAFANS panel data to fit a three-level random intercept regression model with maximum likelihood estimation with observations nested in individuals nested in census tracts. We included a random intercept for census tract that allowed us to adjust for unobserved characteristics across neighborhoods. The random intercepts allow for the possibility that the mean social cohesion score was systematically higher or lower among some communities. Following Rabe-Hasketh and Skrondal (2008), we tested the random intercept model against a traditional one-level model without the random intercept. The null hypothesis—that a traditional one-level model would fit the data best—was consistently rejected at the significance level $p \leq .001$, suggesting that the inclusion of the random intercept significantly improved the fit of the base and individual-level models. The variance of the random intercept is presented for each model at the bottom of each results table. All models also included year dummies to account for variation over time. Analyses were conducted in Stata 13 using the appropriate LAFANS panel weights and clustered standard errors that adjust for oversampling of poor and very poor tracts, subgroup oversampling, panel attrition, and out-migration.

Following these models, we considered how communities might change post ACA by examining the effects of an ACA-type insurance expansion on LAFANS adult respondents. To conduct this counterfactual analysis, we began by estimating the change in insurance coverage for those who would become eligible for Medicaid or who would gain access to subsidies to buy insurance on the California exchange. Eligibility for state and federal public programs as well as for self-purchase subsidies was determined by ACA criteria in 2014 and LAFANS Wave 2 age, household income, household composition, and citizenship status. Small, local, and county programs, which vary widely in accessibility across Los Angeles County and which may provide services to individuals without citizenship documentation, were not included as new coverage options; thus, estimates of actual increases in eligibility for public programs were likely a lower bound. All individuals who would be eligible were assumed to adopt coverage in this estimation.

After estimating changes in individual coverage, we reestimated community levels of uninsurance and regressed these estimates on social capital scores using the same procedure as above to obtain new predicted values for the outcome variable. These new values reflected the effect of being "treated" by ACA at Time 2. We then used difference-in-difference estimation, which measures the difference in outcome over time for the treatment group (with ACA) compared to the difference in outcome over time for the untreated group (as observed). This method netted out the change in the outcome variable that would have occurred without treatment to obtain a better estimate of the treatment effect. However, this estimation did not account for other factors that might have indirectly affected the outcome of interest through other pathways, like out-of-pocket spending on healthcare, which may also change post-ACA.

RESULTS

In this paper we examine the effects of community uninsurance on social cohesion, a key outcome theorized to be negatively affected as communities face the challenges of higher burdens of uninsured. In the analyses presented below, we find that community levels of uninsurance do exhibit a consistent, negative effect on social cohesion, as measured by residents' feelings of trust and obligation to neighbors, after accounting for other potentially confounding individual and community characteristics. Table 3 presents the regression coefficients and standard errors of a series of models testing the effects of community levels of uninsurance on social cohesion scores. Below we describe each of these models and their findings.

Social Cohesion

In bivariate analyses (Model 0) we find strong evidence of a negative association ($b = -.024$, $SD = .012$) between residents' perceptions of social cohesion and community levels of uninsurance, with a standard deviation (11%) increase in community levels of uninsurance predicting a 4.5% (roughly one quarter of a standard deviation) decrease on the social cohesion scale. Across the range of community levels of uninsurance observed in the 65 LAFANS sample tracts (min = 11.1%, max = 53.9%), this corresponds to over two-thirds of one point (one full standard deviation), or an 18%, difference in social cohesion scores.

Model I serves as the baseline model controlling for individual characteristics. In this model, several variables associated with social cohesion in the literature are included, and respondent age and

Table 3. Regression Coefficients and Standard Errors for Mixed-effects Regression Analyses Predicting Social Cohesion, Los Angeles Family and Neighborhood Survey Panel Data Wave 1 (2000–2002) and Wave 2 (2006–2008).

	Model				
	0	I	II	III	IV
Variable	β (SD)	β (SD)	β (SD)	β (SD)	β (SD)
Time-varying Neighborhood Characteristics					
% Uninsured	−.024*	—	—	−.025*	−.028*
	(.012)			(.011)	(.013)
Latino immigrant concentration		—	−.121*	—	−.183*
			(.058)		(.060)
Disadvantage		—	−.083	—	−.148
			(.106)		(.102)
Residential stability		—	.021	—	.016
			(.072)		(.079)
Income inequality (Gini)	—	—	—	—	—
Time-invariant Individual Characteristics					
Female		.074	.075	.072	.072
		(.048)	(.049)	(.049)	(.049)
Race-ethnicity					
White (reference)		—	—	—	—
Latino		−.024	−.027	−.023	−.026
		(.097)	(.100)	(.098)	(.100)
African American		.047	.043	.042	.043
		(.128)	(.127)	(.125)	(.126)
Asian/Pacific Islander		−.090	−.090	−.089	−.092
		(.126)	(.125)	(.125)	(.125)
Foreign-born		−.015	−.016	−.016	−.016
		(.071)	(.072)	(.071)	(.071)
Time-varying Individual Characteristics					
Age					
18 to 29 (reference)		—	—	—	—
30 to 44		.038	.033	.037	.026
		(.087)	(.087)	(.084)	(.083)
45 to 64		.099	.099	.094	.088
		(.088)	(.088)	(.085)	(.085)
65 and older		.153	.156	.132	.130
		(.102)	(.103)	(.100)	(.100)
Married		.193***	.194***	.186**	.190**
		(.059)	(.060)	(.060)	(.060)
Education					
Less than high school (reference)		—	—	—	—
High school degree		.039	.038	.044	.049
		(.084)	(.086)	(.084)	(.085)
College degree or more		−.073	−.078	−.067	−.063
		(.096)	(.096)	(.094)	(.094)
Family income (logged)		.035*	.035*	.036*	.035*
		(.016)	(.016)	(.016)	(.016)

(continued)

Table 3. (continued)

	Model				
	0	I	II	III	IV
Variable	β (SD)	β (SD)	β (SD)	β (SD)	β (SD)
Self-rated health		.079**	.078**	.073*	.072*
		(.030)	(.031)	(.031)	(.031)
Has relative(s) who lives in neighborhood		.112†	.115†	.127*	.127*
		(.059)	(.060)	(.058)	(.059)
Household robbed in past year		−.216***	−.217***	−.224***	−.228***
		(.068)	(.067)	(.066)	(.065)
Uninsured		.118	.120	.119	.123
		(.077)	(.078)	(.077)	(.077)
Unemployed		.031	.025	.031	.027
		(.058)	(.058)	(.055)	(.056)
Observations	1,919	1,919	1,919	1,919	1,919
N	1,193	1,195	1,195	1,195	1,195
Tracts	65	65	65	65	65
% Of variance between tracts		41.1	38.2	22.7	31.9
% Of variance between individuals		50.4	50.6	50.8	51.1
Log likelihood		−50318.6	−50279.1	−50164.8	−50111.3

Note: All models include year fixed effects and random intercepts for tract and ID. *SD* = standard deviation.
†$p < .1$, *$p < .05$, **$p < .01$, ***$p < .001$.

marital status significantly predict variation on the social cohesion scale. In this model, wealthier ($p < .05$) and married ($p < .001$) respondents report higher social cohesion. Additionally, individuals who report being in better health and have at least one relative who lives in the same neighborhood report higher levels of social cohesion ($p < .05$). Meanwhile, individuals living in households where they or another member has experienced theft or property damage are less trusting and reliant on neighbors ($p < .001$). The effects of these individual characteristics are consistent when neighborhood characteristics are introduced in Model II.

In Model II, the three factor variables representing Latino immigrant concentration, neighborhood disadvantage, and residential stability are included along with individual covariates. In Model II, *Latino immigrant concentration* significantly predicts social cohesion scores, with an increase in immigrant concentration being associated with a decrease in social cohesion. This is consistent with the mixed findings on levels of social cohesion in immigrant enclaves, which may be more cohesive for individuals living in a neighborhood populated by co-ethnics (Almeida et al. 2009) and less cohesive for others due to higher poverty rates overall (Ross and Mirovsky 2001).

Recalling the variables that loaded highly on this factor, neighborhoods with higher immigrant concentrations also have a higher percentage of residents who are under age five, in poverty, Latino, and foreign-born, suggesting that other social and structural elements of Latino immigrant destination tracts besides racial-ethnic and nativity composition may affect how residents perceive their neighborhood and interact with other residents.

Model III estimates the effects of individual-level variables and percentage uninsured in the absence of other community-level variables. This model is highly consistent with the null model and Model I. Model IV presents the fully adjusted model. Net of individual- and community-level variables, *percentage uninsured* exerts a significant negative effect on individuals' perceptions of social cohesion. Predicted scores were estimated using the mean tract intercept ($M = .0176$) and are presented with 95% confidence intervals across percentage uninsured with observed scores in Figure 3. After adjusting for individual and community characteristics, we find a 34% decrease, or about a 1.2 standard deviation change, in social cohesion scores when moving from a tract with the lowest levels of uninsurance to one with the highest levels of uninsurance.
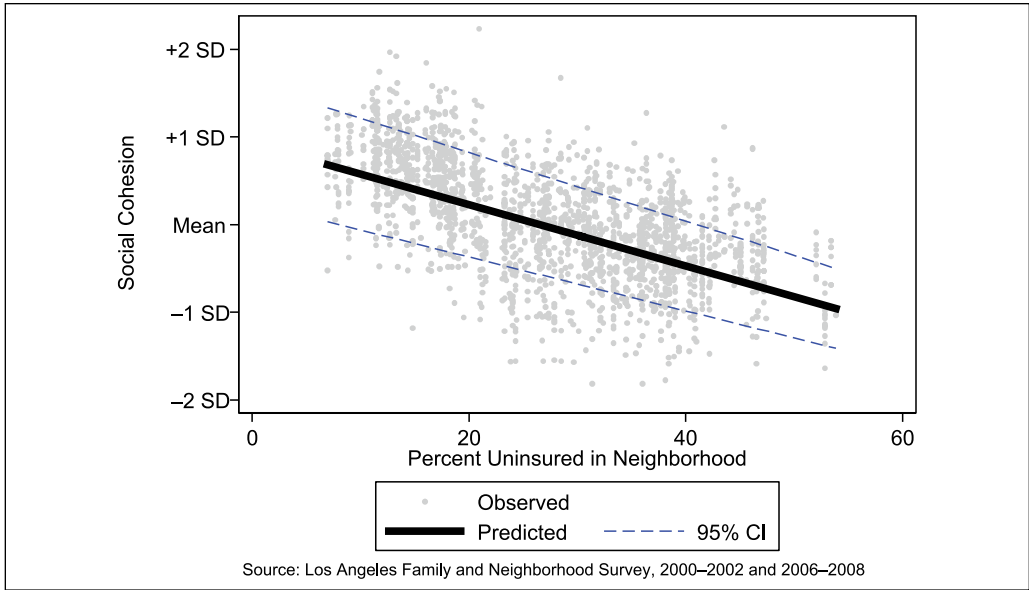
Figure 3. Predicted Social Cohesion by Percentage Uninsured in Neighborhood.

Across all models, the effect sizes and standard errors for individual- and community-level variables are generally highly consistent and in the expected direction. When individual covariates are included in Model I, 15% of the tract-level variance in social cohesion scores is explained by the addition of individual-level covariates, suggesting that a portion of the variance in social cohesion between tracts is accounted for by compositional differences across tracts over time. Across all models, the percentage of the variance in social cohesion scores over time due to unobserved differences across individuals is consistent at about 50%. When only individual-level characteristics are included in the model (Model I), 41% of the variance in social cohesion scores is accounted for by unobserved differences between tracts. The variance due to unobserved characteristics of neighborhoods decreases as community-level characteristics are added in Models II and III, from 41% to 38% when community-level characteristics are included in Model II and to 31% when the *percentage uninsured* is included in Model IV. This set of analyses using panel data from LAFANS demonstrates that community levels of uninsurance exhibit a consistent, negative effect on residents' perceptions of social cohesion over time.

Given attention in the literature to differential effects of community uninsurance for insured versus uninsured individuals, we also tested the inclusion of an interaction effect between individual insurance status and *percentage uninsured*; this effect was significant, with the insured being more negatively affected as percentage uninsured in a tract increased, but did not significantly improve the fit of the model. We therefore do not include the interaction here for ease of interpretation.

Based on our hypothesis that high levels of uninsurance may increase social and economic inequality in a neighborhood, we considered the inclusion of Gini coefficients at the tract level to assess the extent to which income inequality may be operating as a mediating variable between social cohesion and percentage uninsured. In this analysis (data not shown), the introduction of the Gini coefficients does not attenuate the effect of percentage uninsured or improve the fit of the model. However, we have concerns about the reliability of the Gini coefficients we were able to estimate given data limitations. This is also inconsistent with preliminary analyses we have conducted using other national-level data sources. Thus, future research on the social spillovers of uninsurance should pursue this line of inquiry further.

ACA Counterfactual Analysis

We can use these data to statistically examine how communities in Los Angeles might have changed if an ACA-type expansion in insurance coverage had
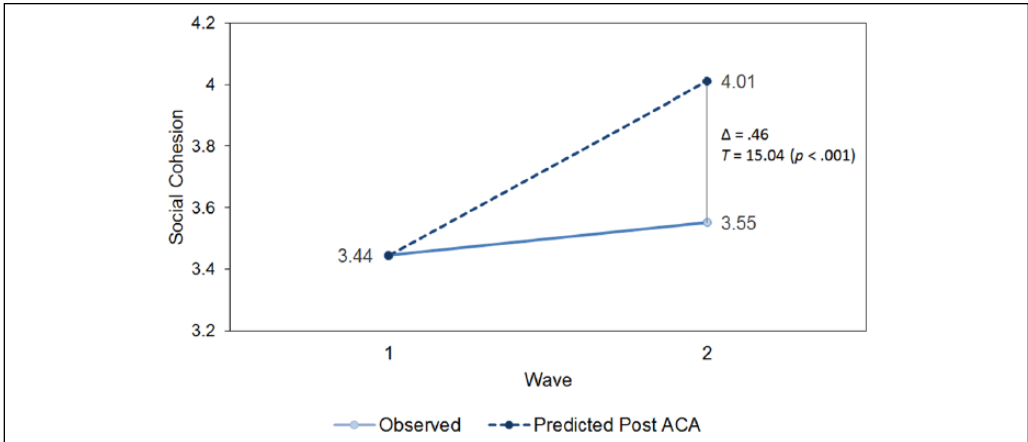
Figure 4. Estimated Mean Social Cohesion for Los Angeles Family and Neighborhood Survey Sample Tracts before and after Affordable Care Act Implementation.
Note: Estimates adjust for individual- and tract-level variables included in Model IV of Table 3.

occurred in Los Angeles County between 2001 and 2007 using a difference-in-difference model. After estimating which participants would become eligible for Medicaid and for California state and federal subsidies to buy insurance on the private exchange under 2014 ACA eligibility criteria, we find that estimates of changes in the insurance composition of LAFANS sample tracts due to an ACA-type intervention would have produced roughly a one-half-point increase in perceptions of social cohesion at Wave 2 on average ($\Delta = .46$; $p < .001$), or roughly two-thirds of a standard deviation increase (see Figure 4). This is an effect large enough to suggest that an ACA-type intervention may improve other aspects of individual and community social life as well as linked outcomes, such as individual and community health.

DISCUSSION

While spillover effects of uninsurance on communities constitute a crucial social and political issue, the IOM noted in 2009 that this field of inquiry remains in its infancy (p. 91ff). Existing research has focused primarily on effects of spillovers from the uninsured to the insured in the areas of healthcare access and quality. We extend research on the spillover effects of uninsurance into the purview of sociologists by examining other aspects of social life that may be affected by high levels of uninsurance prior to and after ACA implementation. We focus specifically on a dimension of social capital: social cohesion, operationalized as perceptions of trust, sharing, support, and obligation among community

residents. Overall, we observe a consistent, negative association between community levels of uninsurance and social cohesion using panel data from Los Angeles: lacking health insurance is bad not only for one's health but also for community life. We show that residents of communities with higher levels of uninsurance report significantly less social cohesion net of other individual factors, like income, health, and perceived safety, and neighborhood factors, like demographic composition, poverty concentration, and residential stability. This effect is consistent across multiple analyses and extends previous qualitative and cross-sectional studies documenting the existence of negative social spillovers of uninsurance for communities by leveraging new, longitudinal data specifically designed to examine social and neighborhood contextual effects. These data allow us to better account for potentially confounding factors at the individual and community level, such as the age, racial-ethnic, nativity, and income composition of communities.

Importantly, we observe a substantial effect of uninsurance on social cohesion using the LAFANS data: more than a standard deviation decrease in residents' perceptions of the trustworthiness, reliability, and obligation to neighbors when we compare a neighborhood at the lowest level of uninsurance with a neighborhood at the highest level of uninsurance. However, these data are representative only of Los Angeles County, a metropolitan area with a large unauthorized immigrant population that is excluded from most insurance benefits and that therefore relies heavily on local safety-net providers.

Additionally, the results suggest that the *insured* have much to gain from the expansion of insurance benefits under the ACA. Given previous research on the economic spillovers of uninsurance, we expect the expansion of public coverage through state Medicaid programs and private insurance through state and federal exchanges to increase healthcare access for both the uninsured and the insured currently living in communities with very high levels of uninsurance. However, discussion of the potential social benefits of ACA for individuals and communities has been noticeably absent from debates around ACA implementation. We demonstrate here that the expansion of health insurance benefits under the ACA has the potential to reverberate beyond healthcare access and improve community functioning by promoting social cohesion among residents regardless of insurance status. As a counterfactual, we also estimate the effects of an ACA-type intervention on perceptions of social cohesion and show that changes in the insurance composition of LAFANS sample tracts after Wave 1 would have significantly increased individuals' perceptions of social cohesion in their neighborhoods at Wave 2 data collection, five years later.

These findings speak not only to contemporary policy debates but also to the need for ongoing engagement by sociologists with the social consequences of uninsurance. As elements of ACA are increasingly implemented and scaled up over the next few years, scholars may perceive additional research on the uninsured as no longer relevant to the larger policy concerns of the country. Yet, we argue that the social consequences of uninsurance will remain important for two reasons. First, like the period following the implementation of Social Security and Medicare, ACA is likely to remain contested for several years to come. While pundits contend that it is unlikely ACA legislation will be entirely repealed, elements of the act have been stalled, blocked, left unimplemented, or revised through state and federal processes. Each of these policy developments may have the potential to counter or reinforce the spillover effects of expanding insurance. Thus, there remains a need to consider the effects of the ACA's insurance expansion, the variability of those effects across states and communities, and the various pathways by which those effects manifest themselves.

Second, a substantial minority of Americans will remain uninsured following implementation of ACA. Due to the Supreme Court's decision to allow states to opt out of Medicaid expansion, an estimated 30 million Americans will remain uninsured in 2016 (Nardin et al. 2013). Contrary to popular perception, only 20% of these uninsured will be ineligible due to unauthorized legal status. Post-ACA, uninsured individuals are more likely to live in states and communities that historically lack good access to care, have poorer health outcomes, and have substantial racial and economic inequality. At the community and state levels, many of the uninsured post-ACA reside in low-income minority communities, concentrating any spillover effects in communities that have fewer resources and less political will to compensate for the uninsured. To this end, any social or economic spillover effects will be disproportionately felt by the already disadvantaged.

Finally, this research contributes more broadly to an expanded view of health as pertaining solely to healthcare services or public health interventions. As private foundations, such as the Robert Wood Johnson Foundation, gear up to promote a "culture of health" in order to foster health as a priority across various social institutions (Lavizzo-Mourey 2014), our examination of the social spillover effects of healthcare legislation demonstrates that leveling access to healthcare also pays social dividends.

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NOTES

1. Reductions will vary geographically due to differences in the size and composition of the uninsured population and state-level decisions affecting the implementation of the act.
2. For a complete listing of papers using these data, please see http://lasurvey.rand.org/pubs/.
3. This includes 33 individuals who were selected as a Wave 1 randomly selected adult but were not interviewed.

4. This paper focuses on the formation and consequences of social cohesion at a micro (household/individual) level by making use of a research instrument designed to capture differences in trust and reciprocity at this level. This approach has been used in other work using LAFANS data (Bjornstrom and Kuhl 2014). Within sociology, however, there is ongoing debate concerning the appropriate unit of analysis at which to measure dimensions of social capital, including social cohesion (Portes 2000). Commonly, so-called structural aspects of social capital are measured at the group level, while "cognitive" aspects, such as those measured in this paper, are measured at smaller units of analysis, including the individual level (see discussions in Carpiano 2006; Mitchell and Bossert 2007; National Research Council 2014).

5. LAFANS allowed respondents to identify with multiple racial groups but also asked respondents who selected multiple groups to indicate with which racial group they "best" identified. The "best" race of the respondent was also recorded by the interviewer. In this paper we follow work by Jarvis (2012), who has integrated these multiple sources of information on race for individuals who selected multiple racial-ethnic categories or did not provide this information. To increase cell size, we collapsed the Asian and Pacific Islander categories. There were very few respondents who identified as Native American or "other" race; thus we limited the analysis to white, Latino, African American, and Asian/Pacific Islander categories.

6. Due to limited available data on uninsurance, unemployment is occasionally used to instrument uninsurance rates (Sabik 2012). We have not used this method due to consistently low rates of job-based coverage in Los Angeles County over the past decade (Lavarreda et al. 2012). The correlation of neighborhood uninsurance with U.S. Census unemployment rates in 2000 for LAFANS sample tracts at Wave 1 was $r = .11$.

SUPPLEMENTAL MATERIAL

Additional supporting information is available in the online version of the article.

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