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The Kindness Of Strangers: Community Effects On The Rate Of Employer Coverage

When it comes to employer-sponsored insurance, where you live matters.

by Richard Kronick, Todd Gilmer, and Thomas Rice

ABSTRACT: The rate of employer-sponsored insurance (ESI) varies greatly across states. We analyze the factors that account for that variation. We find that the likelihood that a worker is covered by ESI depends on workers’ own characteristics and also on those of other workers in the same metropolitan statistical area. Further, in almost all states the percentage of workers covered by ESI is close to the predicted level of coverage, which suggests that state policies that could affect insurance coverage have had little net effect on ESI rates. Hawaii is an exception: Its mandate on employers to offer coverage results in a rate of ESI that is much higher than expected.

There is much variation in the rate of employer-sponsored insurance (ESI) across the country. In states such as Massachusetts, Wisconsin, Ohio, and Minnesota more than 80 percent of workers are covered by ESI, while in Arizona and New Mexico only 63 percent of workers are covered.1 As shown in a 2003 paper by Yu-Chu Shen and Stephen Zuckerman, in the late 1990s geographic variation in the rate of ESI could largely be accounted for by geographic variation in demographic and employment characteristics.2 States with higher-than-average rates of ESI tended to be states with higher-than-average proportions of workers who were non-Hispanic white citizens, workers in large firms, full-time workers, and workers in states with high levels of unionization.

A curious finding in Shen and Zuckerman’s work is that in each of the five states that were predicted to have an ESI rate that was higher than the national average, the actual rate was even higher than predicted. Similarly, in three of the four states that were predicted to have an ESI rate that was lower than average, the actual rate was even lower than predicted. These findings suggest that there are systematic state (or local) effects on ESI that are not captured in the Shen and
Zuckerman model. It appears that the likelihood that a worker is covered by ESI may be affected not only by the worker’s own characteristics but also by those of other workers living in the same state. In this paper we refer to this contextual effect on coverage as “the kindness of strangers.”

The Shen-Zuckerman analysis uses data from the National Survey on American Families (NSAF) for 1997 and 1999 and presents results for only five high-coverage states and four low-coverage states. Our primary purpose in this paper is to extend the analysis to all fifty states. We seek to determine whether the likelihood that a worker is covered by ESI is systematically affected by the characteristics of other workers in the area. Our second purpose is to gain a better understanding of the mechanisms leading to the contextual effect.

Peter Cunningham and Paul Ginsburg provide a provocative discussion of contextual effects. In an analysis of the sources of variation in the rate of uninsurance across sixty U.S. communities, they found strong geographic effects on the rate of coverage: “Despite extensively controlling for a broad range of population, cost, and policy variables, there appear to be other important differences across communities and geographic areas that were not explicitly captured in the analysis.”

This conclusion followed from the finding that dummy variables for the nine geographic regions were highly significant in a model that predicted whether a person was insured. Even controlling for a wide variety of other factors, some regions simply appeared to have lower rates of insurance than others. The dummy variables for the nine regions accounted for approximately one-third of the “explained” difference in uninsurance across regions. Cunningham and Ginsburg speculate that differences across regions may be attributable to “cultural” factors predisposing an area toward health insurance coverage, and they comment extensively on the possibility that some areas have a “culture of offering” while other areas do not.

Cunningham and Ginsburg suggest that employers may be more likely to offer insurance in communities with large concentrations of high-technology industries or large universities. However, they do not relate their “culture of offering” hypothesis systematically to the characteristics of workers living in an area. They note that there appears to be a greater “culture of offering” in the Northeast and Midwest, but they do not attempt to either measure the strength of this culture (other than the use of the regional dummy variables), or to estimate whether its strength is related to the factors that are included in the empirical model. In this paper we provide new empirical results on contextual effects, and we consider further the mechanisms accounting for these effects.

**Data And Methods**

**Data.** We used data from the March supplements to the Current Population Survey (CPS) from various years. To increase the precision of the estimates of state-specific effects, we pooled data from the six surveys from 1996 through 2002.
We restricted the analysis to adult workers, ages 19–64, and excluded workers covered by Medicare, CHAMPUS (now TRICARE), or the Indian Health Service. We further restricted the sample to respondents in the outgoing rotation groups, because these are the only respondents for whom questions about union membership were asked. The final analysis sample included 103,402 respondents.

Methods. The main variable of interest is whether a worker was covered by an employer-sponsored plan at some point during the prior calendar year. We estimated two kinds of individual-level logistic regression models. In the first, we predicted the likelihood of coverage as a function of individual-level demographic and employment characteristics. Second, we added to the individual-level model a set of variables measuring the characteristics of the area where the worker lives.

We used the results from the individual-level model to compute the predicted level of ESI in each state. We compared predicted to actual ESI values at the state level to see whether we could replicate the Shen-Zuckerman result that states in which the predicted level is above the national average consistently have actual levels that are even higher than predicted. We conducted a similar analysis with the model that includes both individual- and community-level characteristics.

Individual-level characteristics. Following closely the Shen-Zuckerman model, we included individual-level variables measuring age, sex, family structure, race, ethnicity, citizenship, length of time in the United States, education, income, home ownership, self-employment status, size of firm, number of employers, part-time versus full-time work status, industry, union membership, and self-reported health status. The variables used in the model and the mean values of the independent variables are available as an online data supplement.

Community-level characteristics. We included a set of variables measuring the demographic and employment characteristics of the metropolitan statistical area (MSA) in which the respondent lives. Using the same CPS data that we used in the individual-level model, we computed, at the MSA level, the percentage of adults with various characteristics. Respondents who did not live in an MSA were assigned the value of the characteristic for all non-MSA respondents in the state where they live. The individual-level model included a large number of variables, and many of these variables were highly correlated at the community level—for example, at the MSA level, the percentage Hispanic and the percentage foreign-born were highly correlated. As a result, some of the parameter estimates in a model that included community-level variables measuring each characteristic in the individual-level model either were insignificant or were incorrectly signed. We pruned the community-level model by excluding some community-level characteristics that were highly correlated with each other and that produced unreasonable estimates (in either magnitude or direction). We could have made different choices in the pruning and obtained similar overall results. As a result, we do not make strong claims about the effects of each of the community-level factors in the model, but rather we focus on the aggregate effects of the community-level variables.
In addition to community-level factors that were simply aggregations of individual-level variables, we included three state-level factors that may affect the likelihood of ESI. First, we included a measure of the generosity of the state's Medicaid program. Second, we included a variable measuring the amount of bad debt and free care provided in hospitals in a state relative to the percentage of the state's under-age-sixty-five population that is uninsured. Third, although the direction of the relationship between health spending and coverage is not clear (some expect that states with higher health spending would have higher rates of coverage, while others expect the reverse), there are strong and competing hypotheses to suggest that the level of health spending may be related to the level of coverage. We used data from the State Health Accounts maintained by the Centers for Medicare and Medicaid Services (CMS) Office of the Actuary to estimate per capita health care spending on people under age sixty-five in each state in 1998.

Decomposition analysis. Also following closely the methods used by Shen and Zuckerman, we computed the contribution of each variable in the model to the difference between the level of ESI in a state and the average ESI level in the United States. For a characteristic to account for geographic variation in the rate of ESI among workers, two conditions must be met: First, it must be related to the likelihood that a worker is covered by ESI; and second, there must be variation across states in the distribution of that characteristic. If, for example, age is strongly related to ESI but the age distribution doesn't vary much across states, then age will not account for much of the geographic variation in ESI.

For each state and for each variable in the model, we computed the difference between the mean value of the variable among workers in the state and among those in the rest of the country, and we multiplied this difference by the marginal effect of the variable. The product is our estimate of the contribution of that variable to the difference between the level of ESI in the state and the U.S. average. For example, if workers who identify their ethnicity as Hispanic account for 22 percent of California workers and 7 percent of U.S. workers, and if the marginal effect of Hispanic ethnicity is to reduce the likelihood of ESI by five percentage points, then the greater proportion of Hispanic-identified workers among the California labor force would cause the rate of ESI in California to be 0.15 × 0.05 = 0.75 percentage points lower than the U.S. average.

Results

Approximately 80 percent of adult workers ages 19–64 are covered by ESI in many of the states of the Northeast and Midwest, while only 63 percent are covered in New Mexico, and approximately 67 percent in California, Florida, and Texas. ESI rates are much higher than the national average in the Rust Belt and in New England, and lower than average in the Southwest, Florida, and the Mountain states. A map showing the rate of ESI among adult workers in each state is
available as an online data supplement. Almost all of the individual-level variables in the logistic regression predicting the likelihood of ESI are statistically significant in the expected direction. The regression results are available as an online supplement. Income is by far the strongest determinant of ESI: Workers with incomes below 50 percent of poverty are forty-five percentage points less likely than workers with incomes above 500 percent of poverty to be covered by ESI. No other characteristic is nearly as influential as income, but a number of employment characteristics also have sizable effects on coverage. Controlling for family income and individual employment characteristics, there is a strong relationship between ESI and characteristics such as race, ethnicity, place of birth, and citizenship status.

In addition to individual-level characteristics, community-level characteristics have significant effects on the likelihood that a worker is covered by ESI. Although not all of the community-level characteristics in the model are statistically significant, workers who live in metropolitan areas with greater-than-average proportions of low-income adults, greater-than-average proportions of African Americans and Hispanics, greater-than-average proportions of workers in small firms, and lower-than-average proportions of workers in durable goods and public administration are less likely to be covered by ESI than similar workers living in areas with larger numbers of more “advantaged” workers. A worker living in an MSA in which each of the variables measuring the characteristics of people in the community is one standard deviation “above average” (that is, in the direction of increases in coverage) would be 3.5 percentage points more likely to have ESI than a worker with identical individual characteristics living in an “average” MSA.

Workers living in states with higher per capita health spending are more likely than workers in states with lower per capita spending to be covered by ESI. This result is similar to Cunningham and Ginsburg's finding, although at odds with the time-series result that health insurance coverage declines as per capita health care spending increases. Workers in states with high health care costs may be more worried about access to care in the event of illness than workers in areas with lower costs; alternatively, our cross-sectional finding may result from omitted variables for which the per capita health care spending variable serves as a proxy.

The generosity of state Medicaid programs does not appear to be related to the likelihood of ESI. This is consistent with the Shen-Zuckerman results, which find a somewhat perplexing curvilinear relationship between Medicaid generosity and ESI, although inconsistent with the time-series results in the literature on crowding out. Further work is needed to resolve the inconsistency between the cross-sectional and time-series results.

In addition to the logistic regression that includes both individual-level and community-level variables, we estimated a logistic regression that includes only the individual-level variables. We computed the average predicted value of ESI for workers in each state using each of the two regressions, and we display the pre-
dicted values in Exhibit 1, along with the actual level of ESI in each state. In Exhibit 1 the states are sorted in order of predicted ESI, where the predictions are made from the model using individual- and community-level characteristics.

The model using only individual-level characteristics as independent variables consistently underpredicts ESI in states that are expected to have higher-than-average levels of ESI and consistently overpredicts ESI in states that are expected to have lower levels. The correlation between the predicted value of ESI in a state and the difference between the actual and predicted values is 0.67 and highly significant. This finding is consistent with the Shen-Zuckerman result, and it indicates that there are systematic and important community-level effects that are not captured in the individual-level model.

The community-level variables we included in the model capture the systematic geographic component of error in the individual-level model. Including the community-level variables, states that are predicted to have high levels of ESI are as likely to have actual levels of ESI that are above the predicted value as they are to have actual levels below the predicted value; similarly, there is no pattern of systematic errors in prediction among states that are predicted to have low levels of ESI. The correlation between the predicted value of ESI in a state (where the prediction is made using both individual-level and community-level variables) and the difference between the actual and predicted values is not statistically significant at the 10 percent level.

As a second method of demonstrating that the community-level variables capture the systematic geographic component of error in the individual-level model, we included dummy variables for the nine census regions in the logistic regressions. When we included dummy variables for census regions in the model that includes only individual-level variables, the rate of ESI varies significantly across regions—a worker in New England is predicted to have an ESI rate approximately five percentage points higher than a worker with identical characteristics living in the West South Central, Mountain, or Pacific regions (Exhibit 2). However, when we included regional dummy variables in the model that includes both individual-level and community-level variables, their estimated coefficients were small and statistically insignificant.12

The model presented in Supplemental Exhibit 3 that includes both individual-level and community-level variables closely predicts the level of ESI in almost all states.13 In sixteen states, the difference between the actual and predicted levels of ESI is less than 0.5 percentage points; in an additional eight states, the difference is between 0.5 and 0.99 percentage points, and in nineteen states, it is between 1 and 2 percentage points. Only in eight states are the actual levels of ESI more than 2 percentage points different than the predicted value.14

Hawaii and Alaska are notable outliers: The model does not do a good job of predicting the level of ESI in these states. In Hawaii, 82.4 percent of workers have ESI—10.9 percentage points above the predicted level of 71.5 percent. The large
EXHIBIT 1
Actual And Predicted Rates Of Employer-Sponsored Insurance (ESI), By State

NOTES: Analysis is restricted to adults ages 19–64, in the outgoing rotation group, who worked at some point during the calendar year preceding the survey and who were not covered by Medicare, CHAMPUS (now TRICARE), or the Indian Health Service. N = 103,402.
disparity between actual and predicted is almost certainly a result of the mandate that employers in Hawaii offer insurance to employees. Although an analysis by Andrew Dick in 1994 suggested that the mandate did not have much effect on the level of coverage in Hawaii when first implemented, the level of ESI in Hawaii in 1995–2001 was much higher than would have been expected. In contrast, ESI in Alaska is much lower than expected; this may result from inadequate controls for seasonal work or from other factors not included in the model.

Decomposition analysis. The factors accounting for the high rate of ESI are similar across many of the states with a high level of predicted ESI; to simplify the presentation, we averaged results across a set of similar states.16

Community-level variables account for approximately one-quarter of the geographic variation in the rate of ESI (Exhibit 3). In the high-coverage states of New England and the upper Midwest, workers are, on average, 1.9 percentage points more likely than the average U.S. worker to be covered by ESI because of the characteristics of the communities in which they live. Conversely, in the low-coverage states of the Southwest and Mountain states, community-level variables are associated with a decline in ESI of 1.5 to 2.3 percentage points. An additional 10 percent of the geographic variation in the rate of ESI is accounted for by variation across states in the level of health care spending.

The remaining two-thirds of geographic variation in the rate of ESI is largely accounted for by individual-level factors. In the high-coverage states of the Northeast and Midwest, there are fewer low-income workers than the national average,
and higher levels of income account, directly, for approximately one-quarter of the elevated rate of ESI in these states (in addition, higher-than-average levels of income contribute to higher coverage indirectly, through the community-level effect). These states have a higher proportion of non-Hispanic whites than the national average, and this accounts for approximately 15 percent of the elevated rate of ESI. Somewhat surprisingly, higher-than-average levels of union membership contribute little to the high rate of ESI, although they may influence ESI indirectly to the extent that union activity influences wages.

While the individual-level factors accounting for high rates of coverage are quite similar across ten states with high rates, there are two distinct patterns

### EXHIBIT 3
Decomposition Of State Variation In Employer-Sponsored Insurance Coverage (ESI)

<table>
<thead>
<tr>
<th>NH, MA, RI, CT, PA, OH, IN, MI, WI, and MN</th>
<th>CA, AZ, TX, and FL</th>
<th>MT, WY, SD, and ND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage points</td>
<td>Percent</td>
<td>Percentage points</td>
</tr>
<tr>
<td>Difference from the rest of U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>7.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Predicted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted percentage-point difference that can be attributed to Demographic characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, family structure, health statusa</td>
<td>0.2</td>
<td>3</td>
</tr>
<tr>
<td>Race, ethnicity, and citizenship statusb</td>
<td>1.1</td>
<td>15</td>
</tr>
<tr>
<td>Socioeconomic characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family income</td>
<td>1.6</td>
<td>24</td>
</tr>
<tr>
<td>Education, home ownership</td>
<td>0.5</td>
<td>7</td>
</tr>
<tr>
<td>Individual employment characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-employment, firm size, and part-timec</td>
<td>0.4</td>
<td>6</td>
</tr>
<tr>
<td>Union membership</td>
<td>0.2</td>
<td>3</td>
</tr>
<tr>
<td>Industry mixd</td>
<td>0.3</td>
<td>5</td>
</tr>
<tr>
<td>Community-level characteristicsx</td>
<td>1.9</td>
<td>27</td>
</tr>
<tr>
<td>State-level characteristicsf</td>
<td>0.7</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>6.8</td>
<td>100</td>
</tr>
</tbody>
</table>


**NOTES:** Analysis is restricted to adults, ages 19–64, in the outgoing rotation group, who worked at some point during the calendar year preceding the survey and who were not covered by Medicare, CHAMPUS (TRICARE), or the Indian Health Service. N = 103,402. Decomposition results are computed separately for each state. Results are averaged for groups of states in which the results are similar.

- Includes age, sex, presence of children, whether the respondent is married, and health status.
- Includes indicators for African American, Asian, Mexican ethnicity, Central/South American ethnicity, other Hispanic, foreign-born citizen, foreign-born noncitizen, and length of time in the United States.
- Includes self-employment status, firm size (1–9, 10–24, 25–99, 100–299, 500–599, and 1,000+ workers), and indicators for part-time workers and full-time, part-year workers.
- Includes indicator variables for the industries shown in Supplemental Exhibit 3.
- Includes variables for the percentage of adults in the metropolitan statistical area (MSA) who are African American, Hispanic, and in families with incomes below 200 percent of poverty, and variables for the percentage of workers in firms with fewer than twenty-five employees, in durable goods or public administration, and who are union members.
- Includes per capita expenditures on people under age sixty-five, the ratio of bad debt and free care as a percentage of non-Medicare hospital services to the percentage of the under-age-sixty-five population that is uninsured, and a measure of the generosity of state Medicaid programs.
among states with low rates of coverage. In California, Texas, Florida, and Arizona, the most important individual-level factors accounting for low coverage rates are income and race/ethnicity. In contrast, in Wyoming, Idaho, South Dakota, and North Dakota, the population is predominantly non-Hispanic white, which should lead to an increase in ESI, but income is extremely low, and there are few jobs in large firms; this results in ESI rates far below the national average.

**Discussion And Conclusion**

We have presented two main empirical results. First, the likelihood that a worker is covered by ESI is affected not only by his or her own demographic and employment characteristics but also by the characteristics of other workers who live in the area. A worker with a given set of characteristics (age, race/ethnicity, income, family structure, size of employer, industry, health status, home ownership, and union membership) is approximately 3.5 percentage points more likely to be covered by ESI if he or she lives in an area, such as Wisconsin or Minnesota, with a large number of workers who have the kinds of characteristics that make them likely to be covered by ESI than if he or she lives in an area, such as California or Texas, with a large number of workers who are unlikely to be covered by ESI. There is a strong contextual effect on coverage rates.

Second, with the exception of Alaska and Hawaii, the rate of ESI in each state can be predicted quite accurately simply by knowing the demographic and employment characteristics of the workers who live in the state and of the communities in which they live. In most states, the difference between the actual and predicted rates of ESI is less than one percentage point, and in almost all states it is less than two percentage points.

- **Contextual effects.** The likelihood of ESI is clearly related to the characteristics of other workers in the same geographic area, but it is not clear why this is so. We have extended Cunningham and Ginsburg’s discussion of a “culture of offering” to show that this culture is directly related to the characteristics of workers and employers in an area, but we have not explained why these area characteristics matter.

There are three types of explanations for the strong contextual effect that we observe in the data. First, in areas in which large numbers are the types of people (well-educated, higher-income, native-born Anglos) who expect to have ESI, employers will be more likely to offer coverage than in areas in which large numbers are the types of people who are less likely to have ESI. Increases in the proportion of employers that offer coverage will reduce the search cost for a “marginal” worker—it will be easier for a worker to find an employer offering coverage in an area in which a larger proportion of workers expect to be covered than in an area in which the proportion of high-coverage types is lower. As a result of lower search costs, workers will be more likely to be covered if living in an area with other workers who are likely to have ESI than if living in an area with workers less likely to have ESI.
“The only effective action that any state has taken to significantly increase the level of ESI is to require employers to offer insurance.”

Second, there may be differences across areas in total compensation. In areas of the country with larger numbers of less-skilled and immigrant workers, total compensation for a worker with a given cash income and particular set of demographic and employment characteristics will be lower than in an area of the country with a generally more-skilled workforce. Workers may have less market leverage over employers if there are many other less-skilled workers in the labor force. States with large numbers of such workers tend also to be states with right-to-work laws and low levels of union activity, and this may contribute to lower levels of total compensation. If total compensation for a worker with a given set of characteristics is lower in areas with large concentrations of low-income workers, then the rate of ESI in these areas would be lower than expected based on the individual characteristics of workers (that is, even controlling for cash income, education, and other worker characteristics).

Third, workers’ preferences for coverage may be affected by the insurance status of other workers living in the geographic area. It is possible that workers living in areas with larger numbers of uninsured workers place less value on health insurance than workers in areas where more of their friends and neighbors are covered—perhaps it is socially more acceptable to be uninsured, or the safety net is better equipped to provide care if needed (in ways not captured by the safety-net variable included in our model). Workers in high-coverage areas may be willing to search longer for a job with coverage or more willingly trade off cash for benefits than workers in low-coverage areas.

We have demonstrated that contextual effects on ESI are systematic and strong, although we have not explained how they are created. Further work is needed to understand why the kindness of strangers is such an important influence on the rate of ESI.

**Accounting for state-level variation in ESI.** Although there are wide variations across states in the rate of ESI, almost all of the variation can be accounted for by the combination of individual characteristics and the contextual effect. Controlling for these factors, there is little variation left to be explained by other factors.

Hawaii provides a stark counterexample to the proposition that state-level factors have very little influence on the rate of ESI. Based on demographic and employment characteristics and the contextual effect, we would expect that 71.5 percent of workers in Hawaii would be covered by ESI, far below the actual level of 82.4 percent. Although our analysis has not directly connected Hawaii’s high level of ESI to Hawaii’s mandate on employers to offer insurance, it is hard to imagine why else the rate of ESI is so much higher than expected. But if Hawaii demonstrates the potential for state-level policies to affect the rate of ESI, it is notable as
an extreme outlier—in almost all states the actual rate of ESI is within one or two percentage points of the level that would be expected based on demographic and employment characteristics and the contextual effect.

In states other than Hawaii and Alaska, one of three things must be true: First, the state has not adopted policies that have significantly affected (either positively or negatively) the rate of ESI; second, the state has adopted some policies that have increased the rate of ESI and others that have reduced it, with the effects approximately canceling each other out; or third, states are, across the board, adopting policies that affect ESI, but these policies are strongly related to the variables that are included in the model.

While any of these three hypotheses is a theoretical possibility, we think that the first is most likely closest to the truth: Other than Hawaii, there is very little that states have done to move the rate of ESI either substantially above or below the rate that would be expected based on the demographic and employment characteristics of the people who live in the state. The only effective action that any state has taken to substantially increase the level of ESI among workers is to require employers to offer insurance. Other policies—such as reforming the small-group market or eliminating mandated benefits on insurance products—have had, at best, marginal effects on the level of ESI.

For the most part, state governments have played the hand that has been dealt them, taking the level of ESI among workers as an exogenous factor not much in their control. As noted by Shen and Zuckerman, to the extent that we expect state governments to fill in the coverage gaps for workers without ESI, the task with which the states are burdened is much larger in some states than in others.

This research was supported by a grant from the California HealthCare Foundation.

NOTES
4. Supplemental Exhibit 1 can be viewed online at content.healthaffairs.org/cgi/content/full/hlthaff.w4.328/DC2.
5. To measure variation across states in the generosity of public programs, we used data from the March Supplements to the CPS from 1996–2001, and we estimated state effects on the likelihood that a low-income adult (under 200 percent of the federal poverty level) not covered by private insurance would be covered by Medicaid, controlling for a wide range of demographic and employment characteristics. For the United States as a whole, 35 percent of low-income adults who are not covered by private insurance have public coverage (the remaining 65 percent are uninsured). The predicted public coverage level among low-income adults varies from a high of approximately 53 percent in Tennessee, Minnesota, and Vermont to a low of approximately 25 percent in Virginia and Alabama. Details on the method of measuring public program generosity are provided in T. Gilmer, R. Kronick, and T. Rice, “Children Welcome, Adults Need Not Apply,” Medical Care Research and Review (forthcoming).
6. We used 1999 data from the American Hospital Association to calculate the percent of non-Medicare hospital revenue in a state that is provided as bad debt or free care. For the United States as a whole, approxi-
approximately 11 percent of non-Medicare hospital revenue is bad debt or free care, and 17 percent of the under-age-sixty-five population is uninsured; our index of the relative availability of free care for the United States as a whole averages 0.63. The index ranges from a high of 1.1 in Arkansas and Louisiana, where the percent of non-Medicare services delivered as bad debt or free care is greater than the percentage of the under-age-sixty-five population that is uninsured, to a low of 0.28 in North Dakota and Washington, where there is very little bad debt and free care relative to the number of uninsured people.

7. For hospital, physician, and other professional, pharmacy, and home health services, we estimated spending on under-age-sixty-five, privately insured people in each state by subtracting Medicare and Medicaid spending from total spending and then subtracting the portion of out-of-pocket spending estimated to be accounted for by people over age sixty-five, where the elderly's out-of-pocket spending proportion is estimated from data from the Medical Expenditure Panel Survey (MEPS) and assumed to be constant across states. We divided estimated state-level spending on people under age sixty-five by the number of people in the state in that age group to estimate per capita spending per person under age sixty-five.

8. For each indicator (dummy) variable, we computed the marginal effect by predicting the probability of coverage twice for each of the 103,000 people included in the analysis: once under the assumption that the respondent had that characteristic, and once under the assumption that the respondent did not have it. The difference in probabilities, averaged over the 103,000 people in the sample, is our estimate of the marginal effect of the variable. For the interval level variables measuring area characteristics, we computed the probability of coverage for each person, first assuming that the variable is equal to the U.S. average and then assuming that it is equal to the average plus one standard deviation.

9. Supplemental Exhibit 2 can be viewed online at content.healthaffairs.org/cgi/content/full/hlthaff.w4.328/DC2.

10. Supplemental Exhibit 3 can be viewed online at content.healthaffairs.org/cgi/content/full/hlthaff.w4.328/DC2.


12. In the model including only individual-level variables, the weighted average regional effect is 1.4 percentage points. In the model including both individual and community-level characteristics, the weighted average regional effect is only 0.5 percentage points, indicating that these variables largely account for the observed regional differences in coverage rates.

13. See Note 10.

14. Excluding the outliers of Alaska and Hawaii, the weighted standard deviation of the state-level residual (that is, the difference between the actual and predicted levels of ESI in each state) is 0.012; the weighted standard deviation of the actual level of ESI is 0.057, which indicates that the factors included in the model account for most of the geographic variation in the level of ESI.


16. Complete results, by state, are available from the authors. Contact rkronick@ucsd.edu.

17. The decomposition results are computed separately for each state. In Exhibit 3 we present results averaged over groups of states because the sources of variation are similar for the states in each group.

18. The effect of income in our analysis is much greater than in the Shen-Zuckerman results. This is primarily because Shen and Zuckerman entered income as a single variable—implicitly assuming a linear relationship between income and probability of coverage—while our model uses a series of 0–1 indicator variables and more sensitively estimates the effects of income.

19. Some have argued that mandates to offer insurance may reduce the level of employment-increasing insurance coverage among workers who have jobs but reduce the number of workers overall. Our analysis does not directly address this controversy.