The Health Care Safety Net and Crowd-Out of Private Health Insurance

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ABSTRACT

There is an extensive literature on the extent to which public health insurance coverage through Medicaid induces less private health insurance coverage. However, little is known about the effect of other components of the health care safety net in crowding out private coverage. We examine the effect of Medicaid and uncompensated care provided by clinics and hospitals on insurance coverage. We construct a long panel of state-level data on hospital uncompensated care and free and reduced price care offered by Federally Qualified Health Centers. We match this information to individual level data on coverage from the Current Population Survey for two distinct groups: children aged 14 and under and single, childless adults aged 18 to 64. Our results provide mixed evidence on the extent of crowd-out. Hospital uncompensated care appears to have some crowd-out effect for children and health center uncompensated care appears to crowd-out private coverage for adults.

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1. Introduction

An issue that has attracted a great deal of attention in recent years is whether changes in Medicaid eligibility and the recent State Children's Health Insurance Program (SCHIP) expansions have crowded-out private employer-provided health insurance coverage (e.g., Cutler and Gruber 1996; Dubay and Kenney 1997; Blumberg, et al. 2000; Yazici and Kaestner 2000; Lo Sasso and Buchmueller 2002). Less well understood, however, is the role of the health care safety net in affecting low-income workers' decisions to accept employer-provided health insurance for themselves and their families. From the standpoint of low-income workers, a more dependable safety net may induce individuals to accept employment without health insurance or decline employer-provided coverage for themselves or their dependents, particularly in the face of rising health insurance premiums and rising cost-sharing. A recent study by the Commonwealth Fund examining uninsured workers supports these contentions, suggesting that the uninsured often believe they can "get around insurance" by going to free clinics (Perry, Kennel, and Castillo 2000, pg. 17).

From the standpoint of small employers, the availability of safety net health care services may induce firms, particularly smaller firms, firms hiring predominantly low-wage, low-skill workers, or firms in economically depressed areas, not to offer health insurance to workers. Recent data from the Medical Expenditure Panel Survey (MEPS) from the Agency for Healthcare Research and Quality (AHRQ) suggest that in 1998 only 54.7% of employees in low-wage establishments were offered insurance and only 29.9% of employees took up coverage in these firms (AHRQ, 2000). Further, recent data from a national employer survey indicate that among small firms (3-199 employees) only 35% of firms with a large fraction of low-wage employees offered health insurance (Kaiser Family Foundation and HRET 2000). This occurred

despite the fact that the offer rate among all small firms rose from 59% to 67% between 1996 and 2000. Moreover, evidence from the Survey of Income and Program Participation (SIPP) suggests that among persons who lose health insurance coverage, 60% indicated that the reason for losing coverage is that insurance is too expensive and they cannot afford health insurance. Thus, it is clear that among low-income workers and small, low-wage firms, health insurance coverage decisions may respond strongly to financial conditions. It is these workers and firms for whom community safety net services may represent a viable alternative to traditional coverage options.

Data from the Census Bureau indicate that in 2001 there were 41.2 million people lacking health insurance. While many of these people may be eligible for public programs, this number represents the individuals most at risk of using safety net health care services should they become ill. Recent studies have suggested that the care provided by health care safety net providers has grown in recent years. For example, 41% of 8.3 million Federally Qualified Health Center (FQHC) patients in 1998 were uninsured, and between 1990 and 1998 FQHCs witnessed a 60% increase in the number of uninsured patients (Bureau of Primary Health Care 1990, 1998). In 2000 nearly $21 billion in uncompensated care was provided by short-term general non-federal hospitals.

Few studies have attempted to relate private insurance take-up to characteristics of local health care markets. The prior studies in this area suffer from notable shortcomings, including measurement problems that did not allow for precise measures of the safety net in a particular area, the inability to deal adequately with endogeneity concerns, and short time periods of analysis.

Our study uses data from March Current Population Survey (CPS) Annual Demographic File for the years 1991 to 2001 to measure health insurance coverage over the years 1990 to 2000. The CPS data are combined with detailed measures on local health care facilities to examine the link between safety net characteristics and private health insurance coverage. Our primary safety net measures include total hospital uncompensated care (UC) derived from the American Hospital Association's annual survey of hospitals and UC provided by FQHCs (both per population under age 65).

Unfortunately, a higher fraction of the population not covered by health insurance may mean that a higher fraction of care provided at hospitals and clinics goes unpaid and is classified as uncompensated care. Thus, we must instrument for the potential endogeneity of our safety net measures. As instruments we include the generosity of the state disproportionate care (DSH) programs and presence and size of state UC pool arrangements. In addition, we include measures of state and local tax appropriations paid to hospitals and federal, state, and local grant dollars paid to health clinics. We include a number of potentially relevant state political economy variables including state budget surplus, party affiliation of the governor and the upper and lower houses of the state legislature, and presidential voting behavior. All of these instrumental variables can plausibly be argued to affect the willingness of health care providers to provide uncompensated care, but not directly affect the willingness of individuals to forgo health insurance for themselves and their dependents. However, whether these variables are correlated with unobserved determinants of coverage rates will be an issue we discuss.

2. Prior Literature

Rask and Rask (2000) conducted two separate analyses to examine the role of public hospitals and public programs in health insurance coverage decisions. First, they used the 1987 National Medical Expenditure Survey (NMES) data to examine how the presence of public hospitals affected health insurance coverage. They found that among individuals with income between 100 and 200 percent of the poverty line, the presence of a public hospital crowded out nearly 11 percent of persons who would otherwise be privately insured. Among middle-income individuals (income between 200 and 400 percent of the poverty line), public hospitals crowded out nearly 4 percent of persons who would otherwise be privately insured. The second component of their study used data from the 1989 and 1992 National Health Interview Survey (NHIS) to measure the effects on health coverage of residing in a state with an uncompensated care funding pool and of AFDC and Medicaid program characteristics. The authors found that uncompensated care funds were associated with a higher rate of uninsurance and lower rates of Medicaid and private insurance.

Their analysis, while the first of its kind and innovative in many respects, is weak for several reasons. First, the authors did not have access to the geographic location of the NMES respondents. The authors were only able to match their data to a rough indicator for proximity to a public hospital. Moreover, without geographic identifiers the authors were unable to control for other state characteristics that can affect health insurance coverage; they were similarly unable to control for Medicaid eligibility. As a result, their findings regarding the impact of public hospitals on health insurance coverage call for more convincing evidence. Second, in their analysis using the NHIS, the presence of an uncompensated care reimbursement fund provides no information on the generosity of statewide support of safety net providers and

safety net care in general. These uncompensated care funds are present in only a handful of states and they differ sharply in their size. Finally, by covering the period 1987-1992, the study misses several key policy changes that have potentially had a dramatic effect on safety net providers. These include the dramatic increase in the Medicaid disproportionate share program, the SCHIP, and welfare reform, all of which were likely to result in changes to provider, employer, and employee behavior.

Research by Herring (2001) uses cross-sectional data from the 1996-1997 Community Tracking Study (CTS) to examine the effect of self-reported access to charity care on health insurance coverage. To measure the extent of local charity care services, the author uses the metropolitan statistical area (MSA)-level average among the uninsured for the question concerning whether the uninsured person had cost-related difficulty obtaining health care. While this measure of access to charity care does incorporate all potential sources of care individuals may receive (indeed it is positively correlated with hospital charity care provision and FQHC concentration), it does not present a readily interpretable policy "lever" and it is likely to incorporate a lot of other factors not related to safety net services, such as health status. The author attempts to instrument for the potential endogeneity of the access measure by relying on "social capital" variables, but none of the variables are directly related to the incentives that providers have to actually provide uncompensated care to poor uninsured individuals. Herring finds that access to charity care is negatively associated with private health insurance coverage of low income individuals.

3. Theoretical Considerations

Hospitals and clinics provide uncompensated care because it is part of their mission and they face statutory requirements to provide care in certain circumstances. However, funding from various sources—federal, state and local governments and foundations—can at the margin encourage hospitals and clinics to provide safety net care. These governmental levers are important tools in insuring that care is provided for those without insurance. By making it less costly to provide uncompensated care, these government transfers are expected to induce greater provision of uncompensated care.

The provision of uncompensated care by health centers and hospitals then in turn affects individual and firm decisions. Safety net care can affect individual decisions to take up employer offered insurance as individuals weigh the attributes and costs of alternative health care arrangements. Employer provided health insurance is likely to have greater costs than Medicaid or safety net care both in terms of premiums and out of pocket costs such as deductibles and co-payments. However, it may have more favorable attributes such as shorter waiting times and more sure receipt of care. A more extensive safety net, provided by health clinics and hospitals, may induce individuals to conclude that the cost of employer provided coverage is too high.

The firm offer decision also depends on safety net care. Firms must aggregate the preferences of their workers. Firms must decide whether the health benefits they provide allow them to lower their offered wages enough to pay for the firm share of premiums. They must weigh how the tax advantages and lower group cost of providing health insurance affect the willingness of workers to accept lower wages. This willingness is affected by income and other determinants of employees demand for health care. Thus, the insurance offer rate and the rate of

insurance coverage will depend on the characteristics of people in the geographic area from which the firms hire. The willingness of workers to accept lower wages in exchange for health insurance will also depend on the other health care options available to workers. Those other options include safety net care at clinics and hospitals. The extent of this safety net will then likely affect the decision of firms to provide health insurance as well as the terms under which this insurance is offered.

4. Institutional Background

The health care safety net in the US represents a patchwork of providers that is supported by a diverse and often haphazard array of funding mechanisms. The fraction of Americans without health insurance in 2001 is little changed at 14.6% from the 14.8% recorded in 1987. However, in the intervening years, the fraction spiked to 16.3% in 1998. The uninsured, as well as many under-insured and Medicaid insured patients, often depend on safety net providers to meet their health care needs. During this period of change in the number of uninsured persons in the 1990s, health care industry restructuring and changes in the public financing of health care providers may have significantly affected safety net providers.

A. Safety Net Providers

Defining what is encompassed by the health care safety net is a challenge. In a recent report issued by the Institute of Medicine (IOM) on the health care safety net (IOM, 2000), the IOM committee used a general approach, defining the safety net as "providers that organize and deliver a significant level of health care and other related services to uninsured, Medicaid and

other vulnerable patients." This definition, however, does not lend itself to the measurement of the extent of safety net care that is provided.

Urban public hospitals devote a large fraction of their health care provision to Medicaid and uninsured populations (Baxter and Mechanic 1997). Approximately 70% of urban public hospital inpatient days in 1995 were for Medicaid or self pay patients. Public hospitals also provide a large volume of outpatient services to safety net populations. 77% of their outpatient and emergency room visits were for Medicaid (34%) and self-pay (43%) patients.

Academic Health Centers (AHCs) also provide a large amount of care to safety net populations (Mann et al. 1997). In their markets, AHCs provide 37% of uncompensated (hospital) care and 31.5% of Medicaid (hospital) care, while only representing 7.3% of hospitals. For public AHCs (3.5% of hospitals) the corresponding figures are 26.2% of uncompensated care, 19.8% of Medicaid (Reuter and Gaskin, 1997). While private not for profit (NFP) hospitals vary significantly in their roles as safety net providers, as a group these hospitals also form an important part of the safety net. In 1994, private NFPs (not including private AHCs) provided close to 50% of all uncompensated hospital care and over 50% of all Medicaid hospital care. Given the large amount of uncompensated care that is provided throughout the hospital industry, it is clearly not appropriate to use arbitrary classifications of hospitals by public status or teaching status alone to determine safety net health care provision (Zuckerman et al. 2001).

In a study of how safety net hospitals fared between 1990 and 1997, Zuckerman et al. (2001) identified three groups of safety net hospitals based on whether they contribute a high fraction of the market's total uncompensated care or whether a high fraction of the hospital's costs are uncompensated or both. Hospitals displaying both attributes remained the most important providers of uncompensated care and, despite experiencing stagnant growth in

admissions and losses in the number of births relative to non-safety net hospitals, virtually never closed. Hospitals with high market share continued their important role, but did reduce the share of the uncompensated care they provided relative to non-safety net hospitals. These facilities also appeared to be the most attractive merger partners, indicating that hospital involvement as a substantial market provider of indigent care is not a barrier to merger. Hospitals that had a high ratio of UC to costs were generally smaller and most at risk of closing.

FQHCs have a clear mission to serve the poor (Hawkins and Rosenbaum, 1998). Based on year 2000 data, nearly 4 million of FQHCs' 9.6 million patients are uninsured (almost 10% of all uninsured), while another 3.2 million are Medicaid recipients (approximately 10% of all Medicaid recipients). Of the nearly 40 million patient encounters occurring at FQHCs, half are for primary care visits with an MD physician.

Safety net providers generally offer a combination of comprehensive medical care and "enabling" services, such as language translation and transportation, which target the needs of those likely to require safety net health care (IOM 2000). Safety net providers also offer specialized services; in 1997, National Association of Public Hospital (NAPH) members represented 17% of hospital beds in the markets, but provided more than 25% of neonatal intensive care beds, 66% of burn care beds, 33% of pediatric intensive care beds, 45% of Level 1 trauma center visits, and 24% of emergency department visits (NAPH 1999).

B. Safety Net Policies and Market Forces

A number of policy and market factors have affected the environment in which safety net providers operate. Medicaid disproportionate share payments to hospitals increased dramatically in the early 1990s from $1.4 billion in 1990 to $17.5 billion in 1992 (Coughlin, Ku, and Kim

2000). Since the late 1980s, private HMO market shares have risen from 19 to 35% in 2001 (Foster Higgins/Mercer 1998, 2003). Since the 1994, Medicaid managed care has risen from 14 to 57% of beneficiaries. Welfare reform and the Balanced Budget Act (BBA) of 1997, which ushered in the SCHIP expansions, have transformed Medicaid eligibility and provider reimbursement policies.

Federal and state subsidy programs for health care providers are intended to make up the difference between payments safety net providers receive and the costs incurred through caring for the uninsured. DSH payments are the primary method for states to subsidize hospitals. Although the DSH program was enacted in the early 1980s, states were slow to capitalize on the program until the late 1980s when individual states began to develop creative methods to use the DSH program to increase their Medicaid funding (Fishman and Bentley 1997). Other states quickly copied the approaches of pioneers and DSH payments to states grew dramatically. The federal government passed reforms in 1991 and 1993 to attempt to control the growth in DSH payments. DSH payments leveled off after 1993 and subsequently fell after 1996 from around $18 billion to around $15 billion where they have remained since. However, state responses to the 1993 reforms varied considerably (Coughlin and Liska 1998). Some states increased the number of types of providers to whom they made DSH payments, including mental health providers, for example. Other states were unable or unwilling to spend their full DSH allotments. For example, Colorado intentionally kept its DSH spending low to avoid the possible need to make up for lost federal DSH payments should the federal government cut DSH funding (Coughlin and Liska 1998). Michigan, by contrast, reduced DSH payments because prior to the 1993 reforms the state was retaining federal DSH revenues as general revenues instead of using them for safety net providers (GAO 1994). In addition, Ku and Coughlin (1995) have shown

that states vary dramatically in the fraction of federal DSH dollars that are actually provided to hospitals versus other state spending priorities.

Closely related to state DSH programs are state uncompensated care pool systems, which are designed to reimburse hospitals that provide a large fraction of care to the uninsured. During the 1990s, five states had UC pool systems (Massachusetts, New York, New Jersey, Maryland, and Virginia). The presence of a UC pool was used as an independent variable in the previously mentioned study by Rask and Rask (2000) and found to significantly affect the provision of UC, at least cross-sectionally.

FQHCs have historically been financed through cost-based reimbursement from Medicaid, federal grants from the Bureau of Primary Health Care (BPHC), and in some cases state and local subsidies. Some evidence suggests that cost-based reimbursement has allowed FQHCs to expand their provision of health care to the uninsured through cost-shifting (Ku, Wade, and Dodds 1996). The BBA and its subsequent refinement, the Benefits Improvement and Protection Act (BIPA) of 2000, introduced the gradual faze-out of cost-based reimbursement. Federal grants to FQHCs have grown steadily throughout the 1990s from roughly $550 million in 1990 to $925 million in 1999 (National Association of Community Health Centers 1999).

State and local funding for the safety net is highly variable across the country (Meyer et al. 1999), and often can be used to make up for low federal subsidies (Norton and Lipson 1998). Local sources of non-operating revenues for hospitals and other safety net providers are widely variable, but can be aided by a few factors. One factor is ability of the county to have taxing authority and the willingness to use discretionary funds to support safety net providers (Meyer et al. 1999). The same is true for city-based public health departments. Many communities such as

New York and Los Angeles have a long history of supporting safety net institutions, while others are less supportive (Baxter and Mechanic 1997).

Growing use of managed care in Medicaid heightens competition among providers over Medicaid patients, which represents a potential threat to safety net providers because Medicaid revenues often comprise an important portion of total revenues for safety net providers and have historically helped such providers cross-subsidized health care to the uninsured (Norton and Lipson 1998). Although some studies have shown that some safety net providers fared better than anticipated after increases in Medicaid managed care (Hoag, Norton, and Rajan 2000), other studies have been indicated mixed successes on the part of safety net providers in response to the Medicaid managed care pressures (North and Lipson 1998). Campbell and Ahern (1993) also found that California hospitals with greater Medicaid and Medicare contractual allowances (i.e., lower payment rates), provided less uncompensated care. Davidoff, et al. (2000) found that higher Medicaid managed care penetration was associated with lower UC for private NFP hospitals.

Similar to the Medicaid market, private purchasers of health care have aggressively pursued cost reductions through capitated managed care contracts. Studies have indicated that increasing private HMO penetration has been associated with increased price-based competition. Such competition potentially threatens the private pay patient base, which is frequently used to subsidize the cost of treating the uninsured (Norton and Lipson 1998). In addition, price competition in the private payer realm can make Medicaid reimbursement rates look relatively more attractive, which can heighten competition for Medicaid patients among safety net providers (Fishman and Bentley 1997). Studies have suggested that increased private HMO

penetration have been associated with relatively greater reductions in patient volumes at hospitals serving predominantly safety net populations (Gaskin 1997).

5. Data and Methods

We combine information from four large datasets as well as several smaller datasets to produce our estimates. We focus on a long time period, the years 1990-2000, during which there were substantial changes in our key safety net measures. The study focuses on two distinct groups that could plausibly have their health insurance decisions affected by the health care safety net: children 14 and under and separately on single, childless adults aged 18-64.[1]

A. Health Insurance Coverage Data

We rely on the health insurance coverage data from the Current Population Survey because it is the only data source with comparable questions asked over the time period we analyze. The CPS also provides a very large sample with good geographic detail facilitating our analysis of local health care safety nets. In the March Annual Demographic File, the CPS reports responses to questions about coverage through various sources for the previous year. We use the files for survey years 1991-2001 to obtain data for the reference years 1990-2000. The data allow us to examine whether respondents had health insurance coverage of any type, as well as whether the coverage was public, or private, and whether private coverage was employer or union provided.

[1] One advantage of an analysis of children is that Cutler and Gruber (1997) found that fairly straightforward methods like those that we employ here yielded very similar estimates to their later approach that accounted for the Medicaid coverage of the entire family.

B. Geographic Unit of Analysis

We use the state as the unit of analysis for the health care safety net. State policies have a strong influence on providers through a variety of mechanisms. Within federal guidelines, states set Medicaid eligibility and provider reimbursement rates for Medicaid services. State governments set DSH policies that can offset to varying degrees the impact of indigent care provision. States also provide the regulatory environment that can affect provider decision regarding care provision.[2]

C. Hospital Safety Net Care

Data on hospitals come from the American Hospital Association's Annual Survey of hospitals for the years 1990-2000. Because of the confidential nature of the financial measures, individual hospital values are aggregated to the state level. All short-term, general, non-federal hospitals are included in the state-level variables. We measure uncompensated care (UC) as the sum of bad debt, which is defined as, "the provision for actual or expected uncollectibles resulting from the extension of credit," and charity care, which is defined as, "health services that were never expected to result in cash inflows… [which] results from a provider's policy to provide health care services free of charge to individuals who meet certain financial criteria." Uncompensated care is reported on the basis of forgone revenue, at "list" price. Because of contractual arrangements, hospitals rarely receive the full charged price for services, thus list

[2] It could be argued that metropolitan statistical areas might provide a more sensible geographic unit. Only hospitals and clinics within a reasonable traveling distance from a family constitute the local health care safety net. For this reason, we have conducted some analyses using MSA data. However, only a subset of MSAs can be analyzed given the difficulties of linking data to MSAs not defined by counties, changes in MSA definitions over time, and AHA confidentiality restrictions which eliminate certain MSAs. The results do not suggest a simple story, but we hope to be able to report on them in the future.

price does not reflect the true cost associated with providing the services. To correct for this, we convert hospital UC values from charges to expenses by multiplying by a hospital specific ratio of costs to charges (RCC): [total expense – bad debt expense]/[Gross patient revenues + other operating revenues].[3] All of our dollar figures for safety net care and relevant instruments are in real terms and are per state resident under age 65.[4]

We are concerned about the potential endogeneity of hospital uncompensated care. If fewer people are covered by health insurance in a state, then a higher fraction of services provided by hospitals might go unpaid, and thus be classified as uncompensated care. Thus, we also consider variables that could be used as instruments for hospital safety net care. We use as instruments two measures of financial support for safety net hospitals. The first variable is Medicaid Disproportionate Share dollars per capita for the state in which the hospital is located. The DSH program supported hospitals and clinics providing a disproportionate share of Medicaid and uncompensated care. The nature and history of the DSH program was described in more detail in Section 4.

The second instrument is a measure of hospital tax appropriations. From the AHA Annual Survey we obtained annual tax appropriations received by hospitals within the state for the years 1990-2000. This measure reflects payment received by hospitals from state and local governments. In the year 2000 among short-term general non-federal hospitals, 59% of all public hospitals reported some tax appropriations, while roughly 22% of non-profit hospitals and 41% of for-profit hospitals received some tax appropriations. In 2000 hospitals reported a total

[3] As a check on this specification we also use an alternative formulation of the RCC: Net patient revenue/Total gross patient revenue.

[4] We constructed a state-specific medical price CPI to adjust dollar values for inflation. Further details are available in the Data Appendix.

of $2.8 billion in tax appropriations, of which over 90% was distributed to public hospitals. Public hospitals received in aggregate approximately $2.5 billion in tax appropriations, for an average of just over $14 million per hospital for the 178 public hospitals that reported some tax appropriations. By contrast, for-profit hospitals received a total of $62 million in tax appropriations for an average of just over $320,000 per hospital for the 193 for-profit hospitals that reported some tax appropriations. Not-for-profit hospitals reported a total of $192 million in tax appropriations, for an average of $500,000 per hospital for the 385 not-for-profit hospitals that reported some tax appropriations.

D. Community Health Centers

We incorporate information on UC provided by FQHCs during the years 1990-2000. The primary data sources we use are the Bureau Common Reporting Requirements (BCRR) data (for the years 1990-1995) and the Uniform Data System (UDS) files (for the years 1996 to 2000). UDS and BCRR data are provided by grantees of several primary care system development programs administered by the Bureau of Primary Health Care. The program we are most interested in is the Community Health Center Program (Section 330 of the Public Health Service Act).[5] Centers report extensive information on the number and types of people who receive services at the center. The data also contain extensive financial information on types of expenditures and sources of revenue.

[5] The BCRR and UDS also include information about the Health Care Services for the Homeless Program and the Migrant Health Center Program. In addition, BCRR includes information about the Family Planning Program and the National Health Service Corps, while the UDS includes information about the Public Housing Primary Care Program.

The key variables we extract are the dollar value of sliding payment scale adjustments (discounts) provided by a center and the dollar value of bad debt written-off by a center. These variables are then summed and calculated on a per capital basis for the state. The resulting variable, which we call center uncompensated care is the key clinic safety net variable that we use. All variables (except for number of centers) are also adjusted at the center level to exclude migrants, homeless, and users 65 or older.[6]

As with hospital uncompensated care, we are concerned about the potential endogeneity of center uncompensated care. If fewer people are covered in a state, then a higher fraction of services provided by centers might go unpaid, and thus be classified as uncompensated care. Thus, we also consider variables that could be used as instruments for center safety net care. Our two instruments are: 1. federal grants provided to health centers, and 2. state, local and private grant support for centers. Both variables are obtained from the UDS and BCRR data.

E. Medicaid and SCHIP

We control for Medicaid/SCHIP eligibility for children in our analyses because eligibility for public insurance may affect private coverage through the same mechanisms described above for safety net care. There is an extensive literature examining the effect of public eligibility on private coverage. We are also interested in the effect of the safety net on coverage of any kind, and Medicaid/SCHIP is a key determinant of any coverage. Because our adult subsample is

[6] For each center, we have information on the proportion of all users who are migrants, homeless and older than 65. All variables of interest are multiplied by the proportion of users in a given center that are not migrants, homeless, or older than 65. In the BCRR data years (1990 to 1995) family planning information is sometimes included along with other program information in the financial data. Where possible, we proportionately reduce financial flows by the fraction of users who use family planning services. Financial information is reported at the center level, not the site level. In the small share of cases where sites are in other states, we proportionately adjust the financial data.

generally unlikely to be Medicaid eligible, we exclude public coverage as a dependent variable and Medicaid eligibility as an independent variable in the adult regressions.

We calculate an indicator variable for Medicaid/SCHIP eligibility using a long and detailed eligibility calculator that accounts for the Medicaid expansions, waivers, SCHIP provisions, and other features of that Medicaid and SCHIP eligibility. Following much of the literature (Cutler and Gruber, 1997; Currie and Gruber, 1996a, 1996b; Ham and Shore-Sheppard, 2002, and others), we are worried about the potential endogeneity of individual eligibility. Eligibility is a function of family income and family structure, which are likely to have independent effects on health insurance offers and takeup. Thus, we instrument an individual's actual eligibility with a simulated eligibility measure.

We calculate two different simulated eligibility measures, one based on a national sample of family characteristics, and a second based on a state specific sample of family characteristics. The first measure, which we call national simulated eligibility, is similar to that used in most past work. The second measure, which we call state-level simulated eligibility, which uses a distribution of family characteristics (income in particular) that varies across states, but not over time, should better reflect that the wage and income distributions are very different across states. For example, incomes are much higher in New York State than in Texas, and accounting for this difference can substantially affect the calculated fraction of a state's population affected by a Medicaid expansion. We also make some potential improvements over past simulated eligibility measures. In particular, we will account for the fact that it is uncommon for parents to receive the AFDC/TANF child care deduction.

For national simulated eligibility we use the family incomes (and other characteristics) for a random sample of 5000 children of a single year of age (0 to 14) from the entire urban U.S.

and the entire sample period 1990-2000 (with dollar values indexed by the CPI-U). We then use our eligibility calculator to determine the Medicaid/SCHIP eligibility of each of these children as it would have been in each of the years 1990-2000 in each of the 51 states. The calculated mean eligibility for a given age, state and year is merged into our dataset and matched by age*state*year to individuals in the dataset.

For state-level simulated eligibility we use the state level distribution of income (and other characteristics) for all families with children under 18. We sample up to 500 children from the entire period 1990-2000 from each state. We then use our eligibility calculator to determine what the Medicaid/SCHIP eligibility of each of these children would have been in that state in each of the years 1990-2000 if the child were a given single year of age, 0 to 14. The calculated mean eligibility for a given age, state and year is merged into our dataset and matched by age*state*year to individuals in the dataset.

F. Other Individual and State Controls

We control for a number of other individual and state characteristics in our regression estimates. These characteristics include age, race, education (of each parent for the children), work status (number of working parents for children), and whether the individual (or parent) works for a large firm. In addition for the child regressions we include type of family (only mother present, only father present) and family size.

We include as controls several characteristics of areas that vary by state and year including the state-level unemployment rate and per capita income. We also include the private HMO penetration rate and the state Medicaid managed care rate. Both of the variables are described in detail in the data appendix.

We also construct a number of political economy measures intended for use as instruments in our regression models. These variables include the percentage of the state population voting Democratic (with linear time trends between presidential election years), indicator variables for Democratic control of the governorship and the upper and lower houses of the state legislature. Finally, we include a measure of the state budget surplus per capita to control for the potential flexibility that states might have regarding funding safety net care.

6. Econometric Estimates

We analyze a large repeated cross-section sample of children from the CPS over the 1990-2000 period. Our main specification is a linear probability model for various types of coverage with controls for Medicaid eligibility, safety net variables, other state variables, demographic variables, and other characteristics. Our main specification can be written as:

$$COVERAGE_{ist} = \alpha + \beta_1 CENTER\_UC_{st} + \beta_2 HOSPITAL\_UC_{st} + \beta_3 PUBLIC\_ELIGIBILITY_{ist} + \beta_4 STATE_s + \beta_5 YEAR_t + \beta_6 X_{ist} + \beta_7 Z_{st} + \varepsilon_{ist} .$$

Here $COVERAGE_{ist}$ is an indicator variable for health insurance coverage of a given type for child i in state s and year t. Our main measures of coverage are private health insurance coverage and any health insurance coverage. $CENTER\_UC_{st}$ is one of our measures of the health center safety net provided at the state level. In most cases, the measure is sliding discounts plus bad debt write-off per capita for the state and year. $HOSPITAL\_UC_{st}$ is one of our measures of the hospital safety net care provided at the state level. In most cases this measure is charity care plus bad debt per capita, adjusted for the difference between hospital list and actual prices, for

the state and year. $PUBLIC\_ELIG_{ist}$ is Medicaid or SCHIP eligibility. X includes individual characteristics (and family characteristics for children). Z includes the state by year level variables including unemployment rates and per capita income.

We will generally include state indicator variables when we use state simulated Medicaid eligibility, but report some estimates without them. We do not include state*year interactions because with them our safety net variables would not be identified. The results in Cutler and Gruber (1997) suggest that this identifying restriction is not too worrisome as they found that adding state*year interactions had little effect on their estimates (p. 406). Like all of the previous work in this area, we use linear probability models. However, we have explored the sensitivity of our estimates and examined how well the linearity assumption seems to approximate the data.[7]

A. Descriptive Statistics

Tables 1 through 3 report descriptive statistics for the data we use. Table 1 reports overall means for our insurance coverage and policy variables over the 1990-2000 period, along with standard deviations and the range of the variables. We have over 362 thousand children ages 14 or less in our child dataset and over 293 thousand adults in our unmarried, childless adult

[7] Ham and Shore-Shepard (2002) found little difference between linear probability model estimates and logit derivatives when estimating similar, but simpler, models of insurance coverage. We have done some explorations of relaxing the linearity assumption. In particular, we have tried discretizing variables where it is sensible and adding squares of the remaining continuous variables. For the safety net variables and some other continuous variables we included (variable-overall mean)^2 so that the coefficient on the linear term retained its interpretation as the marginal effect at the means. We then added interactions of most of the discrete variables and many of the continuous variables. The interactions included interactions of components of X and Z with each other, Year*X, Year*Z, Age*X(except for age), Age*Z, Census region*X, Census region*Z. We examined how the fraction of out of unit interval predictions changed for our key estimates and how the coefficients on the safety net variables changed as we made the specification progressively less parametric. These explorations did not suggest that the simpler linear probability model estimates were badly biased.

dataset. Overall, nearly 14 percent of children have no health insurance coverage and 67 percent have private coverage. Just over 20 percent of children have public health insurance coverage, while 36 percent of children are eligible for Medicaid. For adults, 27 percent of unmarried childless adults aged 18 to 65 have no insurance while nearly 64 percent have private coverage.

Hospital uncompensated care averages $90 per capita. Center uncompensated care is on average much lower, at nearly three dollars per capita, though it is above $20 dollars per capita in some states. Sources of support for hospitals and clinics include state and local tax appropriations for hospitals, which on average is $18 per capita. Federal grant support for FQHCs is nearly $4.50 per capita, while state/local and private/other are smaller, averaging $1.80 and $0.47 per capita, respectively. Federal and state DSH spending is nearly $70 per capita and exceeded $500 per capita in one state (New Hampshire, 1992-1994). UC pool spending is $10 per capita, but as mentioned earlier is non-zero in only five states.

Table 2 reports how the means of our key variables change over time. The fraction of children without any health insurance coverage rises over time before falling at the end of the period. The fraction with private coverage has a less pronounced fall and more pronounced rise at the end. Some of the rise in coverage at the end of the sample is due to a change in question wording (see Nelson and Mills, 2001). We include year indicators in all of the regressions below so that the effect of this wording change should be sharply reduced. Over our period, Medicaid eligibility rises sharply from 27 percent of children 14 or under to nearly 50 percent. The fraction of unmarried, childless adults without health insurance remains relatively constant in the mid-to-high 20 percent range. Similarly, private health insurance for the adults dipped during the 90s but is virtually unchanged in 2000 relative to 1990 at 65 percent.

Hospital UC increases slightly in the early 1990s, but falls on average in the late 1990s. By contrast, FQHC UC increases throughout the 1990s a total of roughly 50 percent. Hospital tax appropriations fall by nearly 50 percent over the period. There is a vary sharp rise in Medicaid Disproportionate Share (DSH) spending apparent in the early 1990s while UC pool expenditures fall throughout the period. Federal grant support for FQHCs generally falls over the period, while state and local support for health centers rise more steadily. Our simulated eligibility variables match trends in estimated eligibility for the sample of children. Both Medicaid managed care penetration and private HMO penetration increase sharply over the 1990s. With the economic expansion of the second half of the 1990s, state budget surpluses increase and unemployment falls. The fraction of the state population voting for Democratic presidential candidates increases somewhat over the period, but the overall fraction of the population living in states with Democratic state legislatures and governors falls.

Table 3 reports the mean and standard deviation for individual and family characteristics for our two samples. About one quarter of the sample of children is in single-mother families. Nearly ninety percent of the children live in families with at least one employed adult, and a bare majority have two employed adults in the family. Over 60 percent of children are in families with at least one family member working in a large firm, defined as 100 or more employees. Among the unmarried, childless adult sample, slightly over 60 percent work full-time with an additional 20 percent working part-time.

B. Estimates Assuming Exogenous Uncompensated Care

Table 4 reports our first set of regressions that show the determinants of uninsurance, any private coverage, and public coverage for children. These regressions take our uncompensated

care variables to be exogenous and we do not instrument for these variables here. Since we have stronger beliefs about our Medicaid eligibility variable being endogenous (because it is a function of income and family status), we instrument for Medicaid eligibility. When we do not include state indicators in these specifications, our simulated eligibility measure is national-level simulated eligibility. State-level simulated eligibility is a function of the state family composition and earnings distribution and thus is likely correlated with the error term unless state indicators are included. Medicaid eligibility has a predictable impact on insurance coverage.

In the estimates without state fixed effects the main source of identifying variation for the uncompensated care variables is differences across states in their usual level of uncompensated care. The estimates taking the uncompensated care variables to be exogenous provide an important baseline. We expect that to some extent safety net care will be mechanically greater where fewer people are covered by insurance and thus fewer have their care paid for by insurance. We also think that government entities supporting the safety net would feel that there is greater need when there are more uncovered children. However, there are uncovered children in all states, so it is not clear how powerful the latter effect will be. Nevertheless, because of the first mechanical relationship we expect that safety net care will be greater in areas with lower child coverage, all else equal. Thus, we expect that the estimates taking uncompensated care to be exogenous will imply that safety net care is associated with lower overall insurance as well as lower private insurance. We begin by taking these estimates as an upper bound on the magnitude of potential adverse effects of the provision of safety net care on coverage.

The estimates of the effect of hospital and center UC in Table 4 suggest crowd-out of both public and private coverage and an overall increase in uninsurance for children associated

with hospital UC, but less consistent results for center UC. Focusing on the estimates in the first and second columns, a fifty percent (approximately one standard deviation) increase in hospital UC is predicted to increase uninsurance by between 1 and 1.7 percentage points. We focus on the effect of a fifty percent increase in uncompensated care to provide an easily interpretable scaling of the coefficients. The largest crowd-out effect in the private coverage estimates of column three suggests that a fifty percent increase in hospital uncompensated care would reduce private coverage by just over one percentage point. Interestingly, the impact of hospital UC on public coverage is negative and significant for children, suggesting that a fifty percent increase in UC is estimated to decrease public coverage of children by 1.2 to 1.4 percentage points.

The estimated effects of centers associated with a fifty percent increase in uncompensated care are much smaller. A fifty percent increase in center uncompensated care is predicted to lead to a small increase in the likelihood of no insurance coverage. The 95 percent confidence interval for the effect of center uncompensated care rules out a crowd-out effect of even one tenth of a percentage point. However, the private coverage regression without fixed effects suggests that center UC may have a negative impact on private coverage. A fifty percent increase in center UC is predicted to decrease private coverage by 3 tenths of a percentage point. Thus, the estimates that take uncompensated care to be exogenous suggest that hospital and center UC may have a significant effect on at least some measures of coverage.

In Table 5 we present comparable regression estimates for the adult sample. Because public enrollment is quite rare for unmarried, childless adults between 18 and 64 years of age, we do not examine public coverage as an outcome variable. For obvious reasons we do not include Medicaid eligibility in the adult regressions. Hospital UC effects are smaller for adults relative to children: a fifty percent increase in hospital UC is predicted to increase uninsurance by 3 to 6

tenths of a percentage point. In the case of the estimate with state fixed effects, a 95 percent confidence interval does not rule out a decrease in uninsurance or no effect. For private coverage, hospital UC has virtually no discernable effect on coverage. Center UC is more consistently statistically significant. The effect sizes are larger for adults than for children: a fifty percent increase in center UC is predicted to increase uninsurance by 3 to 4 tenths of a percentage point and decrease private coverage by 4 to 6 tenths of a percentage point. We now turn to the first stage regressions that are behind the 2SLS estimates in the paper.

C. The Determinants of Uncompensated Care and Medicaid Eligibility

Because of concerns about the potential endogeneity of the uncompensated care measures, we report below specifications where uncompensated care is treated as endogenous and is instrumented. As discussed earlier, there are several determinants of center uncompensated care that we believe are potentially uncorrelated with unmeasured determinants of coverage. In particular, center UC provision is likely to be influence by federal grant support for centers as well as state, local, and other grants to centers. The determinants of hospital uncompensated care that we include as instruments are tax appropriations for hospitals, federal DSH dollars, and state UC pool expenditures. We also include several political economy measures such as the state budget surplus/deficit per capita because the availability of funds may affect the support that is available for centers and hospitals as well as the willingness of the state to expand Medicaid. In addition, we include indicators for Democratic voting and Democratic control of the state government as instruments because they may reflect the degree of support for programs and providers that provide indigent health care.

Tables 6 and 7 report the first stage regressions for the child and adult samples that show the determinants of uncompensated care and Medicaid eligibility (in the case of the children). The UC first stage regressions are very similar for adults and children, hence we only discuss the results for children. There are a number of interesting results in the first stage. First consider column two of Table 6, which reports the determinants of hospital uncompensated care with state fixed effects included. Simulated Medicaid eligibility has a negative and statistically significant coefficient that suggests that when Medicaid eligibility is higher it leads to less hospital uncompensated care. As suggested earlier, this result might be expected because when Medicaid eligibility is higher it is more likely a low-income patient will have their bills paid through Medicaid rather than have them end up as uncompensated care. The magnitude of the estimated effect is moderately sized, as a ten percentage point increase in eligibility is estimated to decrease hospital uncompensated care by roughly two percent. Tax appropriations are estimated to have a strong effect on hospital uncompensated care. For every dollar provided by states and localities, uncompensated care rises 32 cents.[8] Grant support for health centers is not associated with significantly more uncompensated care by hospitals, providing some suggestive evidence for the validity of it as an instrument. If grant support were capturing the unmeasured need for the safety net because coverage is low, we would expect health center grant support to predict hospital UC. Similarly, hospital tax appropriations do not contribute to higher center UC (column 4). Again, this evidence suggests that hospital tax appropriations do not capture the unmeasured need for the safety net, suggesting that it may be a valid instrument. Democratic control of the lower house of the state legislature is associated with higher hospital UC provision.

[8] This result raises the question of where the other 68 cents goes, which is an interesting issue that we hope to take up in future research.

Higher Medicaid managed care penetration is associated with lower hospital uncompensated care. There are at least two possible explanations for this result. First, Medicaid managed care may imply a leaner and more competitive health care market. The resulting lower profits may lead to less uncompensated care as there are fewer opportunities to pay for the care through cross-subsidization. Second, higher Medicaid managed care penetration seems to be associated with higher Medicaid takeup, as we will see below and was found by Currie and Fahr (2002). Higher Medicaid takeup could then mean less uncompensated care through the mechanical argument given above.[9]

The significant determinants of center uncompensated care are state DSH funds and center support from state and local sources. State DSH programs do not directly support health centers, so this result is surprising. The significance of state and local support was expected. Surprisingly, federal grant support has no effect on UC provision by centers. It is not clear how the grant support is spent, but our results do not suggest that these monies are used to subsidize the provision of UC to the uninsured. Also significant is Democratic control of the upper house of the state legislature. Private HMO penetration has a negative impact on center UC, which could suggest a relationship similar to that described above regarding Medicaid managed care penetration.

One other result, or non-result, is worth mentioning. The unemployment rate and per capita income are not determinants of hospital and center safety net provision even though they are associated with uninsurance. This result suggests that need (the uninsurance rate) may not be

[9] Currie and Fahr give reasonable arguments why Medicaid managed care is endogenous and use as instruments whether a state has a waiver allowing a managed care mandate and the fraction of the population subject to a mandatory managed care enrollment rule. We have calculated these variables for our sample and years and not found significantly different results when treating penetration as endogenous.

the main determinant of safety net provision, but instead it is other factors such as local political leadership or local tastes for support for the safety net.

The determinants of Medicaid eligibility are mostly not surprising. The coefficient on state simulated eligibility is almost exactly one and is very precisely measured. Higher unemployment increases eligibility, which is expected given that the simulated eligibility calculation uses a distribution of income and other family characteristics that does not vary over time. Higher UC pool expenditures is associated with lower Medicaid eligibility, which could suggest that states with UC pools could be applying more resources to supporting the pool than to expanding eligibility, all else constant. Higher Democratic voting is associated with higher Medicaid eligibility. The family structure and education variables have the expected signs and have strong and precisely estimated effects [not displayed].

D. Estimates Taking Uncompensated Care to be Endogenous

Our first set of estimates that take uncompensated care to endogenous are reported in Table 8, for children. Because the state earnings distribution is incorporated in the instrument, we believe that it is important to control for state fixed effects with this instrument. We also consider estimates that rely mostly on the differences in the safety net across states for their identifying variation. These estimates do not include state fixed effects and use national-level simulated eligibility as an instrument. For private coverage we focus on the estimates in columns three and four. We contrast results with and without fixed effects (but with controls for unemployment, per capita income, and managed care penetration). The estimates without fixed effects suggest that a fifty percent increase in uncompensated care at hospitals and centers would decrease private coverage by 1.4 and 0.1 percentage points, respectively.

When we control for state and year, the identifying variation in the fixed effects estimation comes from changes in uncompensated care within states over time. Using 2SLS and including state fixed effects leads the standard errors on the uncompensated care measures to rise substantially. While the hospital uncompensated care coefficient now has a positive sign suggesting no crowd-out, the standard error on the coefficient is large enough that we cannot rule out substantial crowd-out. The center uncompensated care coefficient is unchanged, but the standard error is larger in the fixed effects model. As observed in Table 4, we still see that hospital UC is associated with a reduction in the probability of public coverage, suggesting a fifty percent increase in hospital UC would cause an .8 to 1.4 percentage points decrease in public coverage. However, the larger point estimate has a 95 percent confidence interval that includes substantial crowd-in of public coverage.

The adult regressions treating UC as endogenous are displayed in Table 9. In contrast to the child regressions, but in the spirit of the adult regressions in Table 5, we see that hospital UC does not have a statistically significant effect on uninsurance or private coverage, with or without state fixed effects. The center UC coefficients in the fixed effects regressions suggest that a fifty percent increase in center UC is associated with a 1.5 percentage point increase in uninsurance among single, childless adults which a comparable decrease in private coverage. The effect size is two to three times higher than previous estimates observed, but nonetheless implies an elasticity of private coverage relative to center UC of roughly –.05, which is relatively tiny.

7. Discussion and Conclusions

There is an extensive literature on the extent to which public health insurance coverage through Medicaid induces less private health insurance coverage. However, little is known about

the effect of other components of the health care safety net in crowding out private coverage. We examine the effect of Medicaid and uncompensated care provided by clinics and hospitals on insurance coverage. We construct a long panel of state-level data on hospital uncompensated care and free and reduced price care offered by Federally Qualified Health Centers. We match this information to individual level data on coverage from the Current Population Survey. Our results provide mixed evidence on the extent of crowd-out. Hospital UC appears to have some crowd-out effect for children, but the degree of precision in the estimates is lacking in our best controlled regression specification. However, FQHC UC does appear to substantially crowd-out private coverage for single, childless adults.

Less crowd-out for hospital uncompensated care may be plausible given that most hospital uncompensated care pays for big ticket items rather than more routine care that individuals may think of when making coverage decisions. Most of the arguments about the exogeneity of our uncompensated care measures suggest that our estimates should overstate the extent of crowd-out. Similarly, the likely potential endogeneity concerns about our instruments would also suggest that we should overstate the extent of crowd-out. That we do not find strong evidence of crowd-out suggests that the effects may be small if present. Further study of the determinants of uncompensated care provision is called for, and would shed light on the validity of potential instruments for uncompensated care.

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Data Appendix

Family characteristic variables used in simulated eligibility calculations:

The family characteristics that we take from the sample used to simulate eligibility are number of parents in family, number of children under 18, family income minus welfare income (this is equal to earned plus unearned income minus public assistance income), family earnings, and an indicator for whether either spouse in a two parent family worked more than 1200 hours in previous year (which is used to calculate eligibility for AFDC-UP).

Sources of other explanatory variables:

We obtain several state level variables by aggregating county level data from the Area Resource File (ARF). We use the ARF to obtain the population under 65, the unemployment rate, and per capita income.

Private and Medicaid HMO Penetration:

The private HMO penetration rate by county for the years 1990-2000 is provided by InterStudy Publications. Interstudy conducts primary survey research, surveying all full-service HMOs twice each year. The survey instrument, known as the InterStudy National HMO Census, collects data on key personnel, enrollment by product type, plan name and address, provider contract information, and many other topics. The methodology to derive county-level estimates of HMO enrollment is described in detail in Wholey et al. (1995). We aggregate the county information to the state level.

The state Medicaid managed care rate is derived using administrative data from the Centers for

Medicare and Medicaid Services (CMS). Using enrollment data in managed care plans and total Medicaid enrollment, we can calculate average Medicaid managed care penetration from 1990 to 2000.

State-Specific Medical Price CPI

We used the regional medical CPI collected by the Bureau of Labor Statistics, but benchmarked it to allow for state differences with the Geographic Practice Cost Index (GPCI).

Table 1: Descriptive Statistics, Insurance Coverage and Policy Variables 1990-2000

	Mean	Standard Deviation	Range
Endogenous Variables			
No insurance coverage-Children	0.139		
Private health insurance coverage-Children	0.673		
Public health insurance coverage-Children	0.203		
Medicaid eligibility-Children	0.359		
No insurance coverage-Adult	0.271		
Private health insurance coverage-Adult	0.637		
Real state level hospital UC per capita	89.563	44.399	25.93 – 464.99
Real state level FQHC UC per capita	2.834	2.431	0 – 23.13
Exogenous Variables†			
Real state level hospital tax appropriations per capita	17.981	25.561	0 – 260.61
Real state level FQHC federal grants per capita	4.446	2.601	0 – 16.34
Real state level FQHC state and local grants per capita	1.824	1.770	0 – 14.08
Real state level FQHC other revenue per capita	0.473	0.480	0 – 5.80
Real DSH spending per capita	68.240	69.783	0 – 593.19
Real UC pool expense per capita	10.355	30.311	0 – 226.79
Simulated Medicaid eligibility (State)	0.361	0.129	0.09 – 1.0
Simulated Medicaid eligibility (National)	0.358	0.128	0.09 – 1.0
State Medicaid managed care penetration	0.301	0.280	0 – 1
Private HMO penetration rate	0.239	0.148	0 – 0.653
Real state budget surplus per capita ($1000)	429.472	523.956	–801.94 – 7284.44
Fraction voting Democratic in state	0.468	0.082	0.263 – 0.852
Democratic control of upper house legislature	0.499		
Democratic control of lower house legislature	0.635		
Democratic governor	0.411		
Unemployment rate	5.696	1.617	2.2 – 11.4
Real per capita income ($1000)	23.785	4.545	13.16 – 41.45

Sample sizes are 363,622 for children, 293,350 for adults. Data are from 1991-2001 CPS March Annual Demographic File representing insurance coverage years 1990-2000. All per capita variables constructed using state population under 65 years of age.

† Except for simulated eligibility, descriptive statistics displayed for adult sample; child sample means of policy variables are similar.

Table 2: Descriptive Statistics for Policy and Coverage Variables Over Time

Variable†	1990	1992	1994	1996	1998	2000
No health insurance coverage-child	0.132	0.127	0.139	0.147	0.159	0.123
Private health insurance coverage-child	0.711	0.686	0.651	0.652	0.665	0.682
Public health insurance coverage-child	0.154	0.172	0.238	0.229	0.203	0.222
Medicaid eligibility-child	0.268	0.322	0.345	0.357	0.400	0.488
No health insurance coverage-adult	0.261	0.276	0.270	0.272	0.280	0.254
Private health insurance coverage-adult	0.655	0.631	0.637	0.627	0.630	0.654
Real state level hospital UC per capita	87.416	90.275	92.520	89.605	87.247	85.625
Real state level FQHC UC per capita	2.416	2.448	2.517	2.890	3.266	3.748
Real state level hospital tax appropriations per capita	23.159	17.832	19.370	17.720	15.126	12.310
Real state DSH per capita	5.714	105.279	91.765	71.107	63.446	54.336
Real UC pool expense per capita	17.115	14.411	10.327	7.806	7.267	6.415
Real state level FQHC federal grants per capita	4.971	4.994	5.070	3.938	3.844	4.281
Real state level FQHC state and local grants per capita	1.553	1.682	2.035	1.858	1.846	2.428
Real state level FQHC other grants per capita	0.419	0.580	0.667	0.292	0.310	0.573
Simulated Medicaid eligibility (state)	0.276	0.326	0.345	0.357	0.425	0.474
Simulated Medicaid eligibility (National)	0.277	0.322	0.340	0.351	0.429	0.475
Real state budget surplus per capita ($1000)	374.564	258.555	392.710	577.076	827.966	809.790
Fraction voting Democratic in state	0.447	0.433	0.466	0.496	0.489	0.484
Democratic control of upper house legislature	0.651	0.523	0.462	0.440	0.413	0.415
Democratic control of lower house legislature	0.830	0.768	0.448	0.438	0.586	0.565
Democratic governor	0.552	0.519	0.523	0.282	0.266	0.325
Medicaid managed care penetration	0.067	0.132	0.202	0.377	0.501	0.538
Private HMO penetration rate	0.175	0.184	0.224	0.294	0.309	0.307
Unemployment rate	5.609	7.512	6.110	5.479	4.641	4.053
Real per capita income ($1000)	32.353	29.699	28.590	28.465	29.649	30.429

Sample sizes are 363,622 for children, 293,350 for adults. Data are from 1991-2001 CPS March Annual Demographic File representing insurance coverage years 1990-2000. All per capita variables constructed using state population under 65 years of age.

† Except where indicated, descriptive statistics displayed for adult sample; child sample means of policy variables are similar.

Table 3: Descriptive Statistics, Socio-Demographic Characteristics, Child and Childless, Unmarried Adult Samples, 1990-2000

Variable	*Child Sample*	*Adult Sample*
Female	0.491	0.442
Non-white	0.185	0.308
Age	6.672	33.147
	(4.275)	(13.324)
Mother only present	0.230	---
Father only present	0.041	---
One worker in household	0.370	---
Two workers in household	0.534	---
Full-time worker	---	0.625
Part-time worker	---	0.190
At least one person in household works for large (100+ employees) firm	0.612	0.460
High school graduate	---	0.305
Some college	---	0.311
College graduate	---	0.197
Mother's education: high school graduate	0.341	---
Mother's education: some college	0.265	---
Mother's education: college graduate	0.185	---
Father's education: high school graduate	0.257	---
Father's education: some college	0.191	---
Father's education: college graduate	0.201	---
Sample size	363,622	293,350

Data for children aged 14 or less and unmarried, childless adults aged 18-64 from 1991-2001 CPS March Annual Demographic File representing insurance coverage years 1990-2000. Standard deviations in parentheses.

Table 4: Child Sample, Any coverage, private coverage, and public coverage 2SLS regressions, UC Exogenous

	Uninsurance		Private Coverage		Public Coverage	
	No FE	**State FE**	**No FE**	**State FE**	**No FE**	**State FE**
Medicaid eligible	–0.090***	–0.048***	0.027	0.021	0.083***	0.034**
	(0.018)	(0.014)	(0.016)	(0.014)	(0.022)	(0.013)
Hospital UC/pop	0.00039***	0.00024**	–0.00023***	0.000001	–0.00026***	–0.00032***
	(0.00006)	(0.00010)	(0.00006)	(0.00009)	(0.00005)	(0.00010)
FQHC UC/pop	0.001*	0.001	–0.002***	–0.002	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
HMO penetration rate	0.077***	–0.032	–0.084***	–0.002	0.028*	0.073***
	(0.017)	(0.021)	(0.023)	(0.026)	(0.015)	(0.027)
MMC penetration	–0.023***	–0.010	0.019*	–0.004	–0.001	0.0002
Rate	(0.008)	(0.007)	(0.010)	(0.008)	(0.008)	(0.008)
Per capita income	–0.005***	0.005***	0.006***	–0.003*	0.001	–0.003
($1000s)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Unemployment rate	0.005***	0.004**	–0.013***	–0.009***	0.006***	0.001
(%)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Female child	0.000	0.000	0.002*	0.002*	–0.004***	–0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dad only present	–0.001	0.011*	0.135***	0.130***	–0.138***	–0.146***
	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)
Mom only present	–0.101***	–0.097***	0.026***	0.020***	0.106***	0.106***
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Dad high school	–0.128***	–0.114***	0.178***	0.170***	–0.046***	–0.056***
graduate	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Dad some college	–0.075***	–0.062***	0.182***	0.174***	–0.086***	–0.093***
education	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)
Dad college	–0.161***	–0.148***	0.214***	0.209***	–0.063***	–0.074***
education	(0.006)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)
Mom high school	–0.105***	–0.092***	0.242***	0.236***	–0.117***	–0.128***
graduate	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)
Mom some college	–0.184***	–0.168***	0.254***	0.247***	–0.078***	–0.092***
education	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)
Mom college	–0.131***	–0.112***	0.307***	0.298***	–0.161***	–0.175***
education	(0.007)	(0.005)	(0.006)	(0.006)	(0.007)	(0.005)
1 working parent	0.099***	0.105***	0.220***	0.223***	–0.291***	–0.301***
	(0.008)	(0.007)	(0.008)	(0.008)	(0.011)	(0.010)
2 working parents	0.080***	0.094***	0.291***	0.291***	–0.336***	–0.355***
	(0.011)	(0.009)	(0.010)	(0.010)	(0.013)	(0.011)
Parent(s) work for	–0.122***	–0.116***	0.168***	0.164***	–0.042***	–0.046***
large firm (100+)	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)	(0.003)
Urban residence	–0.001	–0.006**	0.020***	0.021***	–0.029***	–0.023***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Nonwhite race	0.027***	0.028***	–0.107***	–0.112***	0.084***	0.091***
	(0.004)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)

Regressions include age dummies, year dummies, and state fixed effects (where indicated). Regressions treat Medicaid eligibility as endogenous instrumenting with national-level simulated eligibility for the no state-FE regressions and. N=363,622; coverage years 1990-2000 for children 14 and under. Regressions control for state-year clustering. Huber-White standard errors in parentheses. *** indicates p<0.01, ** indicates 0.05<p<0.01, * indicates 0.10<p<0.05.

Table 5: Single Childless Adult Sample, Uninsurance and private coverage, OLS regressions, UC Exogenous

	Uninsurance		Private Coverage	
	No FE	**State FE**	**No FE**	**State FE**
Hospital UC/pop	0.00013**	0.00007	–0.00003	0.00001
	(0.00006)	(0.00009)	(0.00005)	(0.00009)
FQHC UC/pop	0.003***	0.002	–0.004***	–0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
HMO penetration rate	0.091***	0.018	–0.068***	–0.044**
	(0.022)	(0.025)	(0.020)	(0.022)
MMC penetration Rate	–0.045***	–0.015**	0.034***	0.008
	(0.009)	(0.007)	(0.009)	(0.007)
Per capita income	–0.006***	–0.0004	0.005***	0.001
($1000s)	(0.001)	(0.002)	(0.001)	(0.002)
Unemployment rate	0.011***	0.002	–0.011***	–0.001
(%)	(0.002)	(0.002)	(0.002)	(0.002)
Nonwhite race	0.117***	0.108***	–0.138***	–0.133***
	(0.003)	(0.003)	(0.003)	(0.003)
High school graduate	–0.069***	–0.067***	0.132***	0.130***
	(0.004)	(0.004)	(0.003)	(0.003)
Some college education	–0.156***	–0.157***	0.252***	0.252***
	(0.004)	(0.004)	(0.003)	(0.003)
College education	–0.217***	–0.216***	0.335***	0.334***
	(0.005)	(0.005)	(0.004)	(0.004)
Female	–0.039***	–0.038***	0.032***	0.032***
	(0.002)	(0.002)	(0.002)	(0.002)
Urban residence	–0.013***	–0.018***	0.032***	0.033***
	(0.003)	(0.003)	(0.003)	(0.003)
Works full-time	0.029***	0.026***	0.260***	0.262***
	(0.004)	(0.004)	(0.004)	(0.004)
Works part-time	0.102***	0.101***	0.112***	0.112***
	(0.004)	(0.004)	(0.004)	(0.004)
Works for large firm (100+)	–0.162***	–0.160***	0.159***	0.157***
	(0.003)	(0.003)	(0.003)	(0.003)

Regressions include age dummies, year dummies, and state fixed effects (where indicated). N=293,350; coverage years 1990-2000 for unmarried, childless adults aged 18-64. Regressions control for state-year clustering. Huber-White standard errors in parentheses. *** indicates $p<0.01$, ** indicates $0.05<p<0.01$, * indicates $0.10<p<0.05$.

Table 6: Child Sample, First stage OLS regressions of determinants of UC and eligibility

	Hospital UC		Center UC		Medicaid Eligibility	
	No FE	**State FE**	**No FE**	**State FE**	**No FE**	**State FE**
Simulated eligibility	–66.445***	–16.577***	–0.849*	–0.287	0.989***	0.999***
	(7.714)	(4.156)	(0.434)	(0.303)	(0.018)	(0.016)
Hospital tax appropriation	0.987***	0.321**	0.025***	–0.002	0.00022***	–0.00015
per capita	(0.071)	(0.139)	(0.004)	(0.010)	(0.00007)	(0.00016)
UC Pool expense per capita	0.371***	0.083	0.002	–0.006**	0.00001	–0.00035***
	(0.071)	(0.102)	(0.002)	(0.002)	(0.00004)	(0.00011)
State DSH per capita	0.051***	0.011	0.005***	0.003***	–0.00004*	–0.00003
	(0.018)	(0.020)	(0.001)	(0.001)	(0.00002)	(0.00003)
FQHC federal grants	1.614***	1.036	0.572***	0.041	–0.00004	0.0011
per capita	(0.469)	(0.992)	(0.051)	(0.071)	(0.00066)	(0.0015)
FQHC state/local grants	–0.732	0.587	0.342***	0.362***	0.0014	–0.0005
per capita	(0.523)	(0.491)	(0.059)	(0.063)	(0.0010)	(0.0012)
FQHC other grants per	1.763	–3.699	0.832***	0.104	–0.005	–0.004
Capita	(2.494)	(3.170)	(0.218)	(0.150)	(0.004)	(0.003)
State surplus per capita	–2.745	1.947	0.035	–0.063	–0.008***	0.002
($1000s)	(1.696)	(1.567)	(0.117)	(0.101)	(0.002)	(0.003)
Fraction voting Democratic	112.709***	–61.813*	–5.135***	–2.065	–0.044	0.187***
for president (state)	(24.827)	(32.529)	(1.616)	(2.486)	(0.031)	(0.064)
Democratic upper house	9.887***	–0.196	–0.425***	0.257**	–0.004	0.011***
	(2.565)	(2.119)	(0.113)	(0.105)	(0.003)	(0.004)
Democratic lower house	7.823***	4.119**	0.075	0.072	0.000	0.004
	(2.436)	(1.689)	(0.137)	(0.113)	(0.003)	(0.003)
Democratic governor	3.380	–1.805	0.072	0.025	–0.005*	–0.004
	(2.062)	(1.440)	(0.113)	(0.084)	(0.003)	(0.003)
HMO penetration rate	–55.641***	22.083	0.775	–3.308**	0.091***	0.003
	(9.917)	(14.599)	(0.939)	(1.431)	(0.021)	(0.026)
Medicaid managed care	0.675	–12.123***	1.403***	0.191	0.000	–0.002
penetration	(4.576)	(3.875)	(0.285)	(0.233)	(0.007)	(0.007)
Per capita income ($1000s)	–0.215	–1.711*	0.085**	–0.120	–0.006***	0.008***
	(0.549)	(0.972)	(0.043)	(0.100)	(0.001)	(0.002)
Unemployment rate (%)	1.161	1.633**	–0.341***	–0.109	0.004***	0.006***
	(0.759)	(0.802)	(0.067)	(0.071)	(0.001)	(0.002)

Regressions also include demographic variables, age dummies, year dummies, and state fixed effects (where indicated). N=363,622; coverage years 1990-2000 for children 14 and under. Regressions control for state-year clustering. Robust standard errors in parentheses. *** indicates p<0.01, ** indicates 0.05<p<0.01, * indicates 0.10<p<0.05.

Table 7: Unmarried, Childless Adult Sample, First stage OLS regressions of determinants of UC

	Hospital UC		FQHC UC	
	No FE	**State FE**	**No FE**	**State FE**
Hospital tax appropriation	1.122***	0.433**	0.026***	0.004
per capita	(0.085)	(0.169)	(0.005)	(0.012)
UC Pool expense per capita	0.374***	0.096	0.002	–0.005*
	(0.069)	(0.098)	(0.002)	(0.003)
State DSH per capita	0.043**	0.013	0.005***	0.004***
	(0.021)	(0.021)	(0.001)	(0.001)
FQHC federal grants	1.831***	0.804	0.556***	0.001
per capita	(0.641)	(1.518)	(0.066)	(0.096)
FQHC state/local grants	–0.979	0.734	0.393***	0.376***
per capita	(0.657)	(0.603)	(0.070)	(0.066)
FQHC other grants per	1.516	–7.144*	0.820***	0.078
Capita	(2.999)	(4.293)	(0.253)	(0.182)
State surplus per capita	–0.004*	0.003*	0.000	0.000
	(0.002)	(0.002)	(0.000)	(0.000)
Fraction voting Democratic	124.123***	–79.546**	–6.037***	–0.624
for president (state)	(28.831)	(38.570)	(2.053)	(2.918)
Democratic upper house	8.751***	–0.656	–0.481***	0.290***
	(2.954)	(2.496)	(0.138)	(0.111)
Democratic lower house	5.748**	5.589***	0.039	0.129
	(2.839)	(1.866)	(0.153)	(0.121)
Democratic governor	3.812	–2.080	0.072	0.009
	(2.380)	(1.622)	(0.119)	(0.102)
HMO penetration rate	–54.744***	41.780**	–0.110	–6.255***
	(12.786)	(18.949)	(1.578)	(2.220)
Medicaid managed care	–1.757	–14.981***	1.490***	0.049
penetration	(5.287)	(4.573)	(0.330)	(0.275)
Per capita income ($1000s)	–0.535	–1.881	0.099**	–0.062
	(0.632)	(1.151)	(0.045)	(0.103)
Unemployment rate (%)	1.357	1.923*	–0.315***	–0.088
	(0.966)	(1.002)	(0.082)	(0.087)

Regressions also include demographic variables, age dummies, year dummies, and state fixed effects (where indicated). N=363,622; coverage years 1990-2000 for children 14 and under. Regressions control for state-year clustering. Robust standard errors in parentheses. *** indicates $p<0.01$, ** indicates $0.05<p<0.01$, * indicates $0.10<p<0.05$.

Table 8: Child Sample, Any coverage, private coverage, and public coverage 2SLS regressions, UC Endogenous

	Uninsurance		Private Coverage		Public Coverage	
	No FE	**State FE**	**No FE**	**State FE**	**No FE**	**State FE**
Medicaid eligible	–0.077***	–0.047***	0.016	0.021	0.085***	0.035**
	(0.017)	(0.014)	(0.017)	(0.015)	(0.022)	(0.015)
Hospital UC/pop	0.00045***	0.00010	–0.00032***	0.00025	–0.00017***	–0.00031
	(0.00009)	(0.00032)	(0.00010)	(0.00038)	(0.00006)	(0.00033)
FQHC UC/pop	0.001	–0.001	–0.001	–0.001	0.001	0.006*
	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.003)
HMO penetration rate	0.078***	–0.037	–0.087***	–0.001	0.034**	0.085***
	(0.018)	(0.024)	(0.023)	(0.029)	(0.015)	(0.027)
MMC penetration	–0.021**	–0.011	0.015	–0.001	0.002	0.0001
Rate	(0.009)	(0.008)	(0.010)	(0.009)	(0.008)	(0.0090)
Per capita income	–0.006***	0.005***	0.006***	–0.002	0.0003	–0.003
($1000s)	(0.001)	(0.002)	(0.001)	(0.002)	(0.0006)	(0.002)
Unemployment rate	0.005***	0.004**	–0.013***	–0.010***	0.006***	0.001
(%)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Female child	0.000	0.000	0.002*	0.002*	–0.004***	–0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dad only present	0.001	0.011*	0.134***	0.130***	–0.137***	–0.146***
	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)
Mom only present	–0.102***	–0.097***	0.027***	0.020***	0.106***	0.106***
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Dad high school	–0.126***	–0.114***	0.176***	0.170***	–0.045***	–0.056***
graduate	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Mom high school	–0.073***	–0.062***	0.181***	0.174***	–0.086***	–0.093***
education	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)
Dad some college	–0.158***	–0.148***	0.211***	0.209***	–0.062***	–0.074***
education	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)
Mom some college	–0.103***	–0.092***	0.240***	0.236***	–0.117***	–0.128***
education	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)
Dad college	–0.181***	–0.168***	0.252***	0.247***	–0.078***	–0.092***
education	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)
Mom college	–0.128***	–0.112***	0.305***	0.298***	–0.160***	–0.174***
education	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)
1 working parent	0.103***	0.106***	0.217***	0.222***	–0.290***	–0.301***
	(0.008)	(0.007)	(0.008)	(0.008)	(0.011)	(0.010)
2 working parents	0.086***	0.095***	0.286***	0.291***	–0.335***	–0.355***
	(0.010)	(0.009)	(0.011)	(0.010)	(0.013)	(0.011)
Parent(s) work for	–0.121***	–0.116***	0.166***	0.164***	–0.042***	–0.046***
large firm (100+)	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)	(0.003)
Urban residence	–0.001	–0.006**	0.020***	0.021***	–0.030***	–0.023***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
Nonwhite race	0.025***	0.028***	–0.106***	–0.112***	0.083***	0.091***
	(0.004)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)

Regressions include age dummies, year dummies, and state fixed effects (where indicated). Regressions treat Medicaid eligibility as endogenous instrumenting with national-level simulated eligibility for the no state-FE regressions and state-level simulated eligibility for the state-FE regressions. 2SLS models instrument UC with real state hospital tax appropriations per capita, real state DSH dollars per capita, real federal grant dollars for FQHCs per capita, real state/local grant dollars for FQHCs per capita, real other grant dollars for FQHCs per capita, real state budget surplus per capita, fraction voting Democratic in state, Democratic party control indicators for governor and upper and lower houses of state legislature, and real UC pool dollars per capita. N=363,622; coverage years 1990-2000 for children 14 and under. Regressions control for state-year clustering. Huber-White standard errors in parentheses. *** indicates $p<0.01$, ** indicates $0.05<p<0.01$, * indicates $0.10<p<0.05$.

Table 9: Single Childless Adult Sample, Uninsurance and private coverage, 2SLS regressions, UC Endogenous

	Uninsurance		Private Coverage	
	No FE	**State FE**	**No FE**	**State FE**
Hospital UC/pop	0.00002	–0.00021	0.00004	0.00003
	(0.00008)	(0.00036)	(0.00007)	(0.00026)
FQHC UC/pop	0.004***	0.011***	–0.005***	–0.012***
	(0.001)	(0.003)	(0.001)	(0.003)
HMO penetration rate	0.082***	0.090*	–0.062***	–0.104**
	(0.022)	(0.051)	(0.020)	(0.042)
MMC penetration Rate	–0.049***	–0.019**	0.036***	0.008
	(0.010)	(0.008)	(0.009)	(0.008)
Per capita income	–0.005***	–0.002	0.005***	0.002
($1000s)	(0.001)	(0.003)	(0.001)	(0.002)
Unemployment rate	0.012***	0.003	–0.012***	–0.001
(%)	(0.002)	(0.002)	(0.002)	(0.002)
Nonwhite race	0.118***	0.108***	–0.139***	–0.133***
	(0.003)	(0.003)	(0.003)	(0.003)
High school graduate	–0.069***	–0.067***	0.132***	0.130***
	(0.004)	(0.004)	(0.003)	(0.003)
Some college education	–0.156***	–0.157***	0.252***	0.252***
	(0.004)	(0.004)	(0.003)	(0.003)
College education	–0.217***	–0.216***	0.335***	0.334***
	(0.005)	(0.005)	(0.004)	(0.004)
Female	–0.038***	–0.038***	0.032***	0.032***
	(0.002)	(0.002)	(0.002)	(0.002)
Urban residence	–0.012***	–0.018***	0.032***	0.032***
	(0.003)	(0.003)	(0.003)	(0.003)
Works full-time	0.029***	0.026***	0.260***	0.262***
	(0.004)	(0.004)	(0.004)	(0.004)
Works part-time	0.101***	0.101***	0.112***	0.112***
	(0.004)	(0.004)	(0.004)	(0.004)
Works for large firm (100+)	–0.162***	–0.160***	0.159***	0.157***
	(0.003)	(0.003)	(0.003)	(0.003)

Regressions include age dummies, year dummies, and state fixed effects (where indicated). N=293,350; coverage years 1990-2000 for unmarried, childless adults aged 18-64. 2SLS models treat UC as endogenous, instrumenting with real state hospital tax appropriations per capita, real state DSH dollars per capita, real federal grant dollars for FQHCs per capita, real state/local grant dollars for FQHCs per capita, real other grant dollars for FQHCs per capita, real state budget surplus per capita, fraction voting Democratic in state, Democratic party control indicators for governor and upper and lower houses of state legislature, and real UC pool dollars per capita. Regressions control for state-year clustering. Huber-White standard errors in parentheses. *** indicates $p<0.01$, ** indicates $0.05<p<0.01$, * indicates $0.10<p<0.05$.