

NBER WORKING PAPER SERIES

MEDICAID: A REVIEW OF THE LITERATURE

Marianne P. Bitler
Madeline Zavodny

Working Paper 20169
<http://www.nber.org/papers/w20169>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
May 2014

This chapter was prepared for the Edward Elgar Handbook in Law and Economics Federalism Volume. We thank Kitt Carpenter, Jonathan Klick and Lara Shore-Sheppard for helpful comments. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2014 by Marianne P. Bitler and Madeline Zavodny. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Medicaid: A Review of the Literature
Marianne P. Bitler and Madeline Zavodny
NBER Working Paper No. 20169
May 2014
JEL No. I1,I13

ABSTRACT

We review the existing literature about the effects of the Medicaid program. We first describe the program's structure and how it has changed over time. We then discuss findings on coverage, crowd out, take-up and health. Finally, we look at effects of the program on non-health outcomes such as welfare use and labor supply, marriage and fertility, and savings.

Marianne P. Bitler
Department of Economics
University of California, Irvine
3151 Social Science Plaza
Irvine, CA 96297
and NBER
mbitler@uci.edu

Madeline Zavodny
Agnes Scott College
141 E. College Ave.
Decatur, GA 30030
mzavodny@agnesscott.edu

Medicaid is the public health insurance program for eligible low-income individuals and families in the United States. The program has grown considerably since it was created in 1965. Medicaid and the related Children's Health Insurance Program were projected to cover over 60 million people, almost one-fifth of the population, in fiscal year 2010 at a cost of \$427 billion. These numbers will surely rise as a result of the Affordable Care Act (ACA), the health insurance reform law passed in 2010, which among other changes allows states to expand Medicaid eligibility for adults to 138 percent of the federal poverty guideline.

Medicaid is jointly funded by the federal and state governments and is administered by states. States must follow certain federal mandates but also traditionally have had considerable leeway to determine eligibility and services. This creates cross-state variation that helps researchers identify the program's effects on people's behavior. Indeed, states are not even required to have a Medicaid program. Twenty-six states began offering Medicaid within the first year it was created, and 23 others plus the District of Columbia joined over the next few years. The holdout was Arizona, which created a Medicaid program only in 1982 (Gruber, 2003).

There are large differences across states in per-capita Medicaid expenditures. Expenditures per Medicaid beneficiary in fiscal year 2007 were \$8450 in New York and \$3168 in California, compared with an overall average of \$5163 (Gilmer and Kronick, 2011). These differences partly arise from the considerable discretion states have to set reimbursement levels to health care providers and to set eligibility rules. They also arise from differences in patterns of procedure use, outcomes and the underlying characteristics of populations, such as the percentages elderly and disabled (e.g., Fisher et al., 2003a, 2003b). The partisan make-up of the state legislature appears to affect state eligibility rules for children, with states with more Democrats in the legislature having more generous eligibility rules; political party of the

governor and partisan control of the legislature are not significantly related to program generosity, however (Baughman and Milyo, 2008).

This chapter provides an overview of the economics of Medicaid. After explaining how the program is structured, we briefly discuss the economics of health insurance and then delve into two key issues: take-up and crowd-out. The chapter then turns to the evidence on the effects of Medicaid on health and other behaviors. We conclude with some thoughts on the future of Medicaid and important areas for future research.

Program Structure

To be eligible for Medicaid, a person must meet resource and categorical restrictions. The resource restrictions include having income below a specified low threshold that varies with family size and composition. States determine the income thresholds, subject to minimums and maximums set by the federal government. Some states also impose a limit on assets, although few states consider assets when determining children's eligibility (Department of Health and Human Services, 2010). Prior to the implementation of the ACA, the categorical restrictions in most states limited eligibility to people who belong to one of several demographic groups: children, parents of dependent children, pregnant women, the blind and disabled and the elderly. There is also a "medically needy" program for people who would otherwise be eligible but whose incomes are too high to qualify for Medicaid unless their medical expenses are subtracted from their income. During the 2000s, a few states extended coverage to low-income, non-disabled non-elderly childless adults and/or parents.

The ACA encourages states to expand eligibility for Medicaid. Federal funding has been made available to states that expand eligibility to people with incomes below 138 percent of the

federal poverty level. This extends coverage to non-disabled, childless adults of working age with relatively low incomes, a group that previously had a very low rate of Medicaid eligibility. If all states choose to participate the ACA-related Medicaid expansions, up to 16 million additional people will become eligible for Medicaid by 2014. However, as of December 2013, 14 states were planning to participate in 2014, two at a later date and 23 had no plans to participate in the expansions, thus continuing the federalist nature of the current system (Kaiser Family Foundation, 2013).

Historically, Medicaid eligibility was limited to people receiving cash welfare benefits through the Aid to Families with Dependent Children (AFDC) or Supplemental Security Income (SSI) programs.¹ Welfare reform and other legislative changes during the 1980s and 1990s eroded the link between Medicaid and cash welfare programs. As Figure 1 shows, these changes led to a doubling in the percentage of the population covered by Medicaid at some point in a given year.

Medicaid eligibility was expanded dramatically for children and pregnant women beginning in the mid-1980s. The early phase of the expansions required states to cover several groups of poor pregnant women that did not meet the family structure requirements of the AFDC program. In the later phases of the expansion, states were first allowed to cover additional groups of low- and middle-income pregnant women and young children and then required to do so. For example, states were required to cover pregnant women and children under age 6 in families with incomes up to 133 percent of the federal poverty line by April 1990, and by July 1991 they were required to begin phasing in coverage for all children under age 19 in families with incomes up

¹ AFDC (reconfigured as Temporary Assistance for Needy Families (TANF) as part of the 1996 welfare reform law) provided monthly benefits to low-income families with minor children. SSI is a program administered by the Social Security Administration that pays monthly benefits to disabled, blind, and elderly (65 and older) individuals with low incomes and assets.

to 100 percent of the poverty line.² States also were given the option to extend coverage to pregnant women and children under age 6 in families with incomes up to 185 percent of the poverty line. States can extend coverage even further at their own expense.

As a result of the expansions, the fraction of all children aged 0-15 eligible for Medicaid increased from around 13 percent in 1983 to almost 31 percent in 1996. However, the fraction actually enrolled in Medicaid only increased from 13 percent to about 23 percent (Gruber, 2003). There are several potential reasons for such low take-up, as explored below. Another result of the expansions is that over one-third—and in some recent years over two-fifths—of births in the U.S. are covered by Medicaid each year.

There was considerable variation in the timing and extent of the expansions across states. For example, in July 1991, 29 states exceeded the required threshold of 133 percent of the poverty line for pregnant women and young children; six of those had expanded coverage just in the previous six months. Eligibility increases tended to be larger in the South, where states traditionally had very low income limits for AFDC eligibility, than in the Northeast and West, where AFDC programs tended to be relatively generous even before the expansions. In the mid-1990s, a number of states received waivers from the traditional AFDC program that gave them even more latitude to expand Medicaid eligibility. Finally, the formal delinking of cash welfare for families with children from Medicaid eligibility that came with federal welfare reform devolved even more flexibility to the states in determining eligibility.

The State Children's Health Insurance Program (SCHIP, later shortened to CHIP) was created in 1997 to provide public health insurance to children in families with incomes too high to be eligible for Medicaid but typically too low to afford private health insurance. States were allowed to provide coverage to uninsured children in families with incomes up to 200 percent of

² See Gruber (2003) for details on the expansions.

the poverty line or 50 percentage points above their threshold for traditional Medicaid. This led to considerable cross-state variation in program generosity. States also differ in the degree of cost-sharing and the types of services covered and in whether expansions were implemented through the state's traditional Medicaid program or not. When the program was reauthorized in 2009, the minimum eligibility threshold was set at 200 percent of the poverty line. Together, Medicaid and CHIP covered one-third of all children in the U.S. in 2009 (Kaiser Family Foundation, 2010a). As discussed below, crowd-out from private insurance is a major concern with regard to Medicaid and CHIP.

Partly as a result of the expansions, women of child-bearing age and children comprised about 70 percent of Medicaid recipients in 2009. However, the elderly and the disabled accounted for the majority of program expenditures, largely because of the high cost of long-term care. Medicaid covers a large share of the low income elderly and disabled. Nearly 8.8 million Medicare beneficiaries have incomes low enough to qualify for Medicaid. These people are called "dual eligibles." Medicaid covers these participants' Medicare premiums and cost-sharing and services not covered by Medicare, such as long-term care. In 32 states and DC, SSI beneficiaries are automatically eligible for Medicaid. In another seven states, SSI beneficiaries are eligible for Medicaid but must file a separate application. The remaining states have rules for Medicaid eligibility that differ from the eligibility rules for SSI.

Another important component of Medicaid eligibility involves citizenship or legal residency.³ Before welfare reform, most documented legal residents were eligible for safety net programs like Medicaid on the same terms as U.S. citizens. Unauthorized immigrants were typically ineligible for all benefits except emergency Medicaid. Emergency Medicaid includes

³ Bitler and Hoynes (2013) survey immigrant eligibility for Medicaid and SCHIP as well as other safety net programs.

coverage for emergency medical conditions that can last for a limited period and can include pregnancy and limited post-partum care. The passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) and the Illegal Immigration Reform and Immigrant Responsibility Act in 1996 rescinded many benefits for documented (legal) immigrants. At the same time, responsibility for deciding eligibility for various immigrant groups shifted considerably to the states. Many states have chosen to cover both permanent residents and qualified alien immigrants as well as those permanently residing under color of law (e.g., New York). Federal law has since changed, allowing more groups of non-citizens to be covered. Medicaid participation declined among immigrants relative to U.S. natives after welfare reform (Watson 2010).

A number of states have obtained what are termed section 1115 research and demonstration waivers that allow them to explore other ways of broadening coverage as well as to explore effects of other changes to Medicaid rules. For example, in addition to expanding eligibility, states can explore using different rules in different parts of the state, giving different benefits to different groups, restricting access to different providers or mandating use of managed care and changing reimbursements. However, states cannot alter some aspects of the program, such as services for pregnant women and children. States also can get family planning waivers to expand provision of family planning services to populations not otherwise eligible for Medicaid or SCHIP (e.g., Kearney and Levine, 2009). These experiments or pilots must not reduce access or quality of care, and they must be budget neutral. This is the authority under which Arizona first implemented a Medicaid program, which was in place from 1982 to 2006. This is also the same demonstration program through which the state of Massachusetts implemented parts of its health care reform.

Costs, Reimbursement and Managed Care

Medicaid accounts for about one-sixth of all health care spending, making it a large item in federal and state budgets. Indeed, Medicaid represents the largest transfer of funds from the federal government to the states. The federal government shares from a minimum of 50 percent to a maximum of 83 percent of Medicaid costs with states. The matching rates—called the “Federal Medical Assistance Percentage,” or FMAP—were temporarily increased during 2008-2011 because of the economic downturn.

States have engaged in a variety of creative tactics to increase federal funding and reduce their own financial contribution to their Medicaid program. These tactics involve taxes on health care providers; intergovernmental transfers (IGTs) from publicly-owned providers to state or local governments; upper payment limits (UPLs), in which providers receive payments in excess of costs and then make IGTs back to the state; and disproportionate-share hospital (DSH) payments, which are federal funds given to states to allocate to hospitals that serve disproportionate numbers of low-income patients (the ACA reduces DHS payments, under the rationale that places that expand Medicaid to adults under 138 percent of the poverty level will need less reimbursement for uncompensated care for the uninsured).⁴ A study offers this example: a state receives \$10 million revenue from a hospital via a tax (or via an IGT if it is a public hospital). The state then makes a \$12 million DSH payment to the hospital. If the state has a 50 percent FMAP, the state gets \$6 million in federal matching funds. In the end, the hospital has netted \$2 million, the state has netted \$4 million and the federal government has paid \$6 million, only one-third of which actually went to the hospital (Coughlin, Ku and Kim, 2000).

⁴ Practically, this provides additional financial incentive for states to adopt the Medicaid expansion. States that do not adopt the expansion not only forgo almost 100 percent federal funding, but do so in the context of reduced DHS payments.

The fact that states have considerable discretion over their Medicaid program creates room for such shenanigans to occur. In response, the federal government has imposed restrictions aimed at ending such tactics and has cut the size of the DSH program (and will do so more as ACA is implemented). This is important since research indicates that DSH funding is associated with reduced mortality if states are not able to expropriate it (Baicker and Staiger, 2005).

In an effort to control Medicaid program costs, states impose caps on how much they will reimburse health care providers. These caps vary greatly across states. Medicaid reimbursement levels fell in inflation-adjusted terms over 2003-2008, and Medicaid reimbursement levels were only 72 percent of Medicare reimbursement levels in 2008 (Zuckerman, Williams and Stockley, 2009). Low reimbursement levels have made some health care providers unwilling to treat patients covered by Medicaid. Twenty-eight percent of physicians surveyed in 2008 reported their practices were not accepting any new Medicaid patients (Boukus, Cassil and O'Malley, 2009). Medicaid reimbursement levels appear to affect participants' access to doctors (Shen and Zuckerman, 2005) and to dentists (Buchmueller, Orzol and Shore-Sheppard, 2013).

Many states also have turned to managed care programs as a way to control costs.⁵ Medicaid managed care programs either pay a fixed monthly fee to a managed care provider (called "capitated" plans because costs are made on a per patient basis) or combine a fixed fee to a primary care provider with fee-for-service payments to other providers (called "primary care case management"). About 70 percent of Medicaid recipients receive some or all of their Medicaid-covered services through managed care (Kaiser Family Foundation, 2010a). There is considerable variation across states. In some states, the vast majority of Medicaid recipients are enrolled in managed care while two states (Alaska and Wyoming) do not have a Medicaid

⁵ Another reason cited for implementing managed care is that it enables enrollees to improve their health outcomes by being part of a health care system that encourages preventive care and improves access to primary care.

managed care program at all. Mandatory managed care requires one of two kinds of waivers, either the 1115 research and demonstration waivers described above or a section 1915(b) freedom of choice waiver.⁶ As early as September 1995, 42 states and the District of Columbia had implemented 1915(b) waivers (Rowland and Hanson, 1996).

Findings are mixed about the extent to which mandates to move Medicaid recipients to managed care plans reduce expenditures (Duggan, 2004; Duggan and Hayford, 2013; Herring and Adams, 2011) and about the extent to which the move to managed care has affected utilization (Howell et al., 2004; Baker and Afendulis, 2005; Bindman et al., 2005; Currie and Fahr, 2005; Kaestner et al., 2005). Until recently, most Medicaid managed care was provided to women and children. Some studies project big cost savings from shifting the aged and disabled Medicaid populations to managed care, although research on the cost savings regarding the disabled is mixed (e.g., Lo Sasso and Freund, 2000; Coughlin, Long and Graves, 2008/2009; Burns, 2009). We discuss impacts on health below.

Long-term care accounts for over one-third of total Medicaid spending. Medicaid covers institutional services in residential facilities, including room and board, at Medicaid-certified nursing homes, which provide skilled nursing care, rehabilitation and long term care and predominately serve the aged and younger individuals with physical disabilities, and at other institutions that serve individuals with mental retardation and developmental disabilities. Since 1983, Medicaid has provided some long-term care via home and community-based services in some states through what are termed home and community-based service waivers.

Finally, Medicaid subsidizes hospitals that serve a large share of low-income patients (e.g., the uninsured or those with Medicaid) under the DSH program. Funds are allocated to

⁶ Introduced in the Omnibus Budget Reconciliation Act of 1981, section 1915(b) waivers allow states to implement mandatory managed care for a subset of the state or a subset of the state's Medicaid beneficiaries.

states, which then distribute them to qualifying hospitals. The 2010 health insurance reform law will reduce DSH payments during 2014-2020.

Overview of the Economics of Health Insurance

Like markets for other forms of insurance, the market for health insurance involves two classic asymmetric information problems: adverse selection and moral hazard. Adverse selection arises when people who expect to have higher-than-average health care costs are more likely to seek health insurance. This is a problem if insurers cannot charge higher prices to policyholders who are likely to have higher claims. Moral hazard arises when having health insurance changes people's choices in ways that increase health care costs. For example, people with insurance might visit the doctor for minor ailments because they know the insurer bears part of the cost of the visits.

Because Medicaid must cover all individuals and families that meet the eligibility requirements, the program experiences adverse selection. The population eligible for Medicaid is also likely to be adversely selected—in worse health than others—given the positive relationship between health and income in the U.S. This is part of why Medicaid is publicly funded: the people it covers would not be able to pay the premiums of actuarially-fair private insurance plans, insurance that charged them fees that covered their expected claims. Medicaid therefore subsidizes—typically at a 100 percent rate—their health insurance. The subsidy is designed to ensure that certain groups have health care coverage and therefore access to health care. This may be socially optimal since some health care involves positive externalities, benefits to people besides the recipients themselves. These positive externalities are thought to be particularly large for children and pregnant women, the groups that were the focus of the Medicaid expansions

during the 1980s and 1990s. Research on Wisconsin's Medicaid program that included premiums and copays for relatively high-income participants suggests that participation and health care visits are very responsive to such costs (Dague, 2013).

In theory, the fact that Medicaid makes health care essentially free for participants should create moral hazard as well. However, not all providers accept Medicaid patients, and seeking health care requires spending time and effort in addition to (usually) money. These factors may limit the extent to which Medicaid patients consume "too much" health care. It is also not clear that Medicaid patients receive the same quality of care as privately-insured patients. This is another asymmetric information problem—health care providers are better informed than patients in general, and perhaps even more so than Medicaid patients. Medicaid patients then will receive the optimal quantity and quality of care only if providers are concerned about providing it, either because of professional ethics or because of regulations or other forces.

It is difficult to assess whether Medicaid participants receive the same quality of health care as other patients. Medical care is a credence good—its quality often cannot be measured either before or after it is received. Even if research shows differences in medical care or health outcomes between Medicaid participants and other people, the source of those differences may be unclear. There are likely to be differences between Medicaid participants and other people that researchers cannot observe that would result in differences in medical care and health outcomes regardless of the quality of care. Studies on the effects of Medicaid therefore tend to focus on relatively simple outcomes that would respond quickly to the availability of health insurance, such as the likelihood that a young child made a well-child visit in the last year or that

a pregnant woman received prenatal care during the first trimester, rather than on more complex health outcomes.⁷

How Medicaid structures its payments to providers may affect participants' medical care and health outcomes. Providers who are paid a flat fee per Medicaid patient—the capitated managed care model—may not be willing to take on relatively unhealthy patients, or perhaps any Medicaid patients at all if payments are too low. However, capitated models should create incentives for cost-effective preventative care, conditional on a provider being willing to take on a patient. Medicaid managed care programs based on a fee-for-service model, in contrast, may create incentives for providers to supply services that are relatively profitable even if they are not cost-effective. Research shows that financial incentives tend to affect providers in the ways predicted by economic theory (e.g., Adams, Bronstein and Florence, 2003; Quast, Sappington and Shenkman, 2008). Interestingly, Garthwaite (2012) shows that the introduction of SCHIP led to both a decrease in hours spent by pediatricians on patient care and an increase in the share of physicians participating in the program.

An additional consideration is that states have flexibility to set provider reimbursement levels. Levels are almost always set lower than Medicare or private reimbursement levels, and this is often cited as a reason for providers to stop accepting Medicaid patients. Yet the evidence is not as damning as one might expect. Cunningham and May (2006) report that 85 percent of physicians were serving Medicaid patients in 2004-2005. Zuckerman et al. (2004) report that in 2001, 54 percent of all physicians and 67 percent of specialists were accepting most or all new Medicaid patients.

⁷ A further challenge we discuss below is that health itself likely does not respond right away to the availability of health insurance.

Medicaid also has the power to affect prices for prescriptions. Since a large number of people obtain pharmaceutical coverage from Medicaid, this suggests the program can influence prices. Medicaid uses the average private sector price to decide what it will pay, which gives drug makers an incentive to increase private prices if Medicaid will be a large purchaser (Duggan and Scott-Morton, 2006). The federal structure of the Medicaid program may reduce its power to influence prices for other aspects of health care, however, since states differ in their reimbursement rates to providers and coverage of some services.

Economic theory also predicts that targeted programs like Medicaid affect participants' behavior along other dimensions. People may change their behavior in order to qualify for the program. For example, families may work less in order to keep their income below the program threshold, women may opt not to marry, and the elderly may spend down their assets in order to be eligible for Medicaid. The empirical evidence on these theories is discussed below.

Government transfer programs like Medicaid affect the general population, not just participants and providers. Transfer programs are funded via taxes, which distort people's behavior. However, targeted programs like Medicaid cost less than universal programs that cover the entire population. There is an efficiency tradeoff—targeted programs may create more behavioral distortions since people change their behavior to be eligible, but they require less tax revenue than a universal program would and hence create fewer tax-related distortions. An additional inefficiency with regard to Medicaid involves crowd out, displacement from private insurance to public insurance.

Crowd-out

Individuals and families may opt not to have private health insurance if they are eligible for Medicaid or may drop existing private insurance if they become eligible for public insurance. This is termed “crowd-out” in the economics literature.⁸ People covered by Medicaid typically have far lower out of pocket health care costs than people with private health insurance since Medicaid is highly subsidized. From a broader perspective, however, crowd-out does not necessarily confer any savings; it transfers costs from certain individuals and families (and possibly their employers) to taxpayers without necessarily improving health. Indeed, if Medicaid recipients receive worse medical care, crowd out may be a public health concern as well as a fiscal problem. On the other hand, to the extent that the transfers are welfare enhancing for low-income families by freeing up funds otherwise used for health insurance and societal preferences put more weight on income to the bottom of the distribution than on income accruing higher up, crowd-out could be welfare enhancing.

Findings on the extent of crowd-out are mixed. In the first and seminal paper in this literature, Cutler and Gruber (1996) estimate that the crowd-out rate was almost 50 percent during 1987-1992: For every two people who took up Medicaid as a result of the expansions, one person dropped or did not take up private coverage. In a now standard approach, this paper used survey data on income and demographics for a national sample of children and state rules concerning eligibility to simulate state eligibility rates. This approach avoids endogeneity problems associated with modeling take up of private or public insurance as a function of family’s own Medicaid eligibility. If a researcher simply regressed outcomes on own eligibility (as imputed by the researcher), a host of issues could arise. First, there could be measurement

⁸ Crowd-out also can occur if employers do not provide employer-sponsored health insurance because a large proportion of their employees have other options, such as Medicaid.

error because none of the survey data sets typically used to assess these questions contains all of the information needed to determine eligibility and there is reporting error in existing survey measures.⁹ Secondly, there is the concern that even though a researcher controls for observable factors that determine eligibility, there might still be unobserved factors that are associated with both take-up and health. Finally, there are concerns with reverse causality: Families with sick children may have lower income and qualify for Medicaid because of the illness.

Subsequent research reports a wide range of estimates of the extent of crowd-out. Studies report crowd-out rates ranging from 0 to 60 percent (e.g., Dubay and Kenney, 1996; Blumberg, Dubay and Norton, 2000; Shore-Sheppard, 2000; Lo Sasso and Buchmueller, 2004; Ham and Shore-Sheppard, 2005; Gruber and Simon, 2008; Shore-Sheppard, 2008). Estimates differ because of different data sets, different control variables and different time periods; research that examines the sensitivity of crowd-out estimates to data, specifications and time periods seems warranted; recent work by Shore-Sheppard (2008) is an important step towards understanding the role of specification and time-period differences.¹⁰

Crowd-out can occur among employers, who subsidize most of the private health insurance in the U.S., as well as among families. Research looking at firm- as well as family-level decisions finds that expanded Medicaid did not affect whether employers offer insurance to workers but may have changed the probability that firms offer family coverage (Shore-Sheppard, Buchmueller and Jensen 2000).

The issue of crowd-out extends beyond Medicaid and CHIP. The 2010 Affordable Care Act was scheduled to expand Medicaid coverage to all non-elderly people with incomes up to

⁹ The instrumental variable strategy Cutler and Gruber (1996) and subsequent research uses cannot solve the measurement error problem if instrumenting for a binary variable.

¹⁰ Recent work using administrative data from Wisconsin by Dague et al. (2012) suggests crowd out between 4 and 18 percent for children and parents. Shore-Sheppard's preferred estimates suggest little crowd-out and indicate that the lack of inclusion of age-specific trends drives this difference from Cutler and Gruber's findings.

133 percent of the poverty line, require people to have health insurance or pay a fine and set up state-run health exchanges. The Supreme Court ruled that this expansion of Medicaid is optional, and only 28 states have announced plans to expand Medicaid in this fashion. It will be interesting to see how many newly-eligible people drop private coverage for Medicaid in expansion states and how many employers stop making health insurance available to their employees and their families as more options open up via the Medicaid expansion and the exchanges.

Take-up

Take-up is the extent to which people who are eligible for a program actually enroll in the program and receive program benefits. As with many other public assistance programs, take-up of Medicaid is incomplete. Using an updated version of the method in Currie and Gruber (1996a, 1996b) and Gruber and Yelowitz (2000), Gruber (2003) reports that, take-up was quite high for children aged 0-15 during the early 1980s but fell as the program expanded. This is not surprising since the expansions extended eligibility to those with higher incomes and better access to private insurance.

There are several potential reasons for incomplete take-up of Medicaid. First, not all eligible people may be aware that they are eligible.¹¹ In fact, Sonier, Boudreaux and Blewett (2013) project that a large share of the increase in participation in Medicaid under the ACA will come from this already eligible population (a so-called “welcome-mat” effect), based on findings that the Massachusetts Health Reform led to a large increase in Medicaid enrollment among those previously eligible. Those who are aware of their potential eligibility for Medicaid may

¹¹ For example, Aizer and Currie (2004) find that among immigrant women, greater use of public prenatal care by women of the same background (ethnicity and race) is associated with more own use but that much of this association goes away once they control for the hospital of delivery, casting some doubt on whether it is driven by information sharing.

face barriers to enrolling in the program. Beyond paperwork hurdles, participating in a means-tested program may involve stigma (Moffitt, 1983). Immigrant families may also be concerned about whether applying for Medicaid will trigger removal of any unauthorized family members or harm their ability to naturalize or sponsor relatives to immigrate. Heightened federal immigration enforcement appears to have “chilled” Medicaid participation among children in immigrant families, even when the children are U.S. citizens (Watson, 2010).

Another possible reason for low take-up is perceived low quality of Medicaid. The fact that some health care providers do not accept Medicaid because of low reimbursement rates further reduces people’s incentive to enroll in the program. In addition, eligible individuals and families have relatively little incentive to apply for Medicaid until they need medical care.

However, medical care providers, especially hospitals, have an incentive to enroll eligible patients who do not have private health insurance to ensure that they get paid. Some eligible people therefore get enrolled in Medicaid at the time care is rendered. As noted by Aizer (2003), this means that the population enrolled in Medicaid tends to be less healthy than the population eligible for Medicaid. This can lead to biased estimates of the effect of Medicaid on health unless studies correct for the fact that individuals are more likely to be enrolled in Medicaid if they have needed medical care.

Researchers have taken advantage of the expansions to inform estimates of take-up. For example, Ham, Ozbeklik and Shore Sheppard (2011) find average effects of the expansions on take-up that differ somewhat across demographic groups. Estimates range from 0.41 for whites to 0.62 for non-whites, and also vary in other predictable ways, with higher rates for more disadvantaged groups.

Take-up appears to affect estimates of the effect of the Medicaid expansions. Card and Shore-Sheppard (2004) take advantage of law changes that required states to make low-income children born after a particular date or of a particular age eligible for Medicaid. Using a regression discontinuity approach that compared children on either side of these age cutoffs, they find evidence of smaller effects of the Medicaid expansions on children's coverage than Currie and Gruber (1996a) and Cutler and Gruber (1996). They attribute the difference to very low take-up rates among the newly eligible.

Effects on Health

Lack of health insurance is likely to increase mortality and morbidity since the uninsured are less able to afford medical care, on average. However, it is difficult to determine the true effect of health insurance on people's health because of adverse selection. Most economics studies use quasi-experimental techniques to reduce the bias created by adverse selection in estimates of program effects. These studies rely on cross-state variation in policies or changes in policies within states—so-called “natural experiments” or quasi-experiments—to identify the effects of health insurance. Only a few studies use true experiments in which some individuals were randomly assigned health insurance coverage while others were not. Research on the effects of Medicaid on health relies on cross-state or within-state variation since to date only the Oregon Health Insurance Experiment randomized control trial has been run to evaluate the effects of Medicaid.

Studies on the effects of Medicaid on health face several challenges. One challenge is creating the correct counterfactual and comparison group: would Medicaid participants have no insurance or private insurance if they were not covered by Medicaid? The true answer is likely

some of each, which implies that Medicaid may benefit some groups—people who would otherwise have no insurance—more than others—people who are crowded out of private coverage. Studies that report null effects of Medicaid therefore may be capturing offsetting effects on different groups.

Data limitations are another challenge. Studies often use data sets that lack information on individuals' insurance coverage, which makes it impossible to estimate the structural effect of Medicaid coverage on health outcomes. Alternatively, data sets with good measures of health outcomes, health care coverage and health care utilization often lack good measures of income, which are necessary to impute eligibility for Medicaid. Research that uses instruments for simulated eligibility—the approach pioneered by Cutler and Gruber (1996) for studying the effect of the Medicaid expansions on health insurance coverage—identifies only the local average treatment effect, or the effect of Medicaid among individuals made eligible by the expansions, not the effect of extending Medicaid eligibility to a random person or even the average effect of eligibility. Studies frequently report reduced-form effects that give the relationship between a measure of Medicaid eligibility—not actual Medicaid participation—and health. Although their results are indirect evidence on Medicaid's effects, reduced-form studies avoid the selection bias that can plague some structural studies. Controlling for selection into Medicaid requires being able to identify at least one exogenous factor that affects individuals' decision whether to take-up Medicaid coverage. Few data sets or research strategies meet that challenge. Thus, both reduced-form and the more structural studies have limitations. In practice, there are few structural papers in this literature.

Finally, studies that rely on cross-state differences or within-state changes in Medicaid policy implicitly assume that these differences or changes are exogenous. This may not be the

case (e.g., Baughman and Milyo, 2008). Although states may be unlikely to change Medicaid eligibility based on health outcomes, they can and do change Medicaid eligibility rules as economic conditions change, and those changes in economic conditions do affect health outcomes. Studies therefore face difficulty isolating the impact of changes in Medicaid on health outcomes.

Health Outcomes among Children

Research indicates that being eligible for Medicaid increases children's access to medical care. For example, the eligibility expansions that occurred between 1984 and 1992 decreased the probability that a child went without a doctor's visit during the last year by one-half and increased the probability that a child visited a doctor's office in the last two weeks by two-thirds (Currie and Gruber, 1996a). Increases in Medicaid eligibility resulted in more hospitalizations of children as well, particularly for conditions for which hospitalization could not be avoided by obtaining appropriate primary care (Currie and Gruber, 1996a; Dafny and Gruber, 2005). However, Medicaid may reduce child hospitalizations for ambulatory-care-sensitive conditions, which tend to be avoidable with appropriate primary care (Kaestner, Joyce and Racine, 2001; Aizer, 2003, 2007; Dafny and Gruber, 2005). This suggests that Medicaid may increase use of preventative care.

Medicaid eligibility may improve children's health as well. The Medicaid expansions are associated with reductions in child mortality (Currie and Gruber, 1996a; Meyer and Wherry, 2012). However, there is less evidence of a positive impact on morbidity. One study concludes that Medicaid's impact on health outcomes may occur only over time by putting children on a better health trajectory as they age (Currie, Decker and Lin, 2008).

Looking at the rollout of Medicaid during the late 1960s and early 1970s, Almond, Decker and Simon (2012a) find that Medicaid availability is associated with an increase in non-white fertility. In a second paper, Almond, Decker and Simon (2012b) find that Medicaid increased hospital use among children in families with little education and for unmarried mothers. Medicaid availability does not appear to have affected maternal mortality or early childhood mortality, however. Using a slightly different strategy and leveraging the relative increase in the share of the population who became covered with the introduction of Medicaid, Goodman-Bacon (2013) finds that the program's introduction is associated with reductions in child and infant mortality among non-whites.

Studies have reached mixed conclusions about the effect of Medicaid managed care versus traditional fee-for-service care on infant and children's health. It is important for research that examines voluntary managed care plans to control for potential selection of healthier people into such plans, which would bias results towards finding pro-health effects. Research therefore tends to focus on mandatory managed care plans. Managed care is associated with less emergency room usage and more outpatient and specialist visits (Baker and Afendulis, 2005; Garrett, Davidoff and Yemane, 2003), which suggests increased preventative care. Troublingly, managed care is associated with higher incidence of low birth weight, prematurity and neonatal death in a California study, perhaps because it lowered the likelihood a mother received prenatal care during the first trimester of the pregnancy (Aizer, Currie and Moretti, 2007). Other research, however, finds that managed care did not adversely affect infant health outcomes in some other states (e.g., Conover, Rankin and Sloan, 2010; Levinson and Ullman, 1998).

Health Outcomes among Infants and Pregnant Women

There is a sizable literature on the effect of Medicaid on health outcomes related to pregnancy and birth since pregnant women and infants were a target of the eligibility expansions of the late 1980s and early 1990s. Findings are mixed. Several national-level studies find that Medicaid eligibility improved prenatal care and some birth outcomes (e.g., Currie and Gruber, 1996b; Dubay et al., 2001) while others find little effect (e.g., Dave et al., 2010/2011). Studies of specific states also find little effect of Medicaid on prenatal care and birth outcomes (e.g., Epstein and Newhouse, 1998; Piper, Ray and Griffin, 1990). The results may be mixed because of differences in study methodology and study populations. For example, it appears to matter whether studies examine potential eligibility for Medicaid versus actual Medicaid enrollment. Whether Medicaid is compared to no insurance or to private insurance also seems to affect results. Medicaid eligibility appears to reduce the quantity and intensity of care during childbirth compared to private insurance but improve it relative to no insurance (Currie and Gruber, 2001). More recent variation driven by welfare reform-induced declines in cash welfare participation may have reduced use of prenatal care, offsetting some of the expansion effects (Currie and Grogger, 2002).

The literature is more conclusive that Medicaid managed care does not improve prenatal care. On balance, studies suggest that managed care delays the start of prenatal care (e.g., Aizer, Currie and Moretti, 2007; Kaestner, Dubay and Kenney, 2005). However, managed care may reduce smoking rates among pregnant women and repeat C-section rates (Howell et al., 2004).

Medicaid's effect, if any, on birth outcomes has the potential to matter well beyond infancy. Increases in Medicaid and CHIP eligibility are associated with increases in test scores

later in childhood, probably by improving health status at birth (Levine and Schanzenbach, 2009).

Health Outcomes among Non-elderly Adults

Other than pregnant women, there is little research on the effects of Medicaid on non-elderly adults' health outcomes.¹² This is not surprising since non-elderly adults are eligible for Medicaid only if they meet the resource and categorical restrictions, which has largely limited the eligible population to very low-income parents (often mothers) of dependent children and the blind or disabled. The late 1980s and early 1990s expansions increased cancer-screening rates among mothers and reduced the fraction of parents who reported they needed to see a doctor but did not because of cost (e.g., Busch and Duchovny, 2005). Research also indicates that Medicaid increases access to care for mothers relative to not having any insurance but not relative to private insurance (e.g., Long, Coughlin and King, 2005). One early study that examined effects of cutbacks in Medicaid (known as MediCal in California) in the early 1980s, when a number of medically indigent adults lost their benefits, found evidence of worse health outcomes (Lurie et al., 1984). States that extended eligibility to low-income, non-disabled childless adults during the 2000s saw a decrease in mortality and an improvement in self-reported health relative to neighboring states that did not expand eligibility (Sommers, Baicker and Epstein, 2012).

There is a larger literature on the effects of Medicaid managed care on adults' health outcomes. This literature has focused on the likelihood of using an emergency room or of seeing a health care provider in the last year. Some of this research does not distinguish between

¹² Dague et al. (2013b) study the expansion of a state public insurance program to childless adults who had high rates of chronic illness but were otherwise much like the population to be covered by the ACA-related Medicaid expansions. They find that expanded eligibility led to increases in outpatient care and emergency room use but a decrease in preventable hospitalizations.

Medicaid recipients who voluntarily enrolled in managed care versus those who had no choice as part of their Medicaid coverage. That makes it difficult to evaluate the results given the possibility of selection bias, as discussed earlier. On balance, research suggests that managed care may reduce the likelihood of visiting an emergency room visits and may increase the likelihood of having seen a health care provider in the last year (Hurley, Freund and Paul, 1993; Rowland et al., 1995; Garrett and Zuckerman, 2005). There are few rigorous studies of the effect of Medicaid managed care on adult health outcomes other than those related to provider access.

An exciting recent study examines the effects of becoming eligible to participate in Medicaid via a lottery (Finkelstein and Baicker, 2011, Finkelstein et al., 2012, Baicker, Taubman et al., 2013, Taubman et al., 2014). In 2008, Oregon used a lottery to randomly offer Medicaid to a subset of a population of childless adults aged 19-64. The lottery was implemented in a way that allowed researchers to examine the health effects of Medicaid participation among a more randomly selected group of adults who had access to Medicaid (won the lottery) and did not have access (lost the lottery) than usual studies of program participants and non-participants. Data was collected from other sources to add to the administrative data. The findings are striking: Winning the “Medicaid lottery” is associated with a large increase in health care utilization (including emergency rooms) and to some extent with an improvement in self-rated health and mental health and increased rates of diabetes detection and management but not with an improvement in measured physical health outcomes.

Health Outcomes among Elderly Adults

Research consistently indicates that “dual eligible” elderly have worse health status and greater health service usage than elderly people who participate only in Medicare (Pezzin and Kasper,

2002). However, Medicaid eligibility and enrollment is likely endogenous with respect to health outcomes since the poor tend to have worse health. The fact that Medicaid has far more extensive coverage of long-term care than Medicare likely makes endogeneity bias worse for studies of the elderly than for studies of children and non-elderly, non-disabled adults. Because there have been relatively few changes in Medicaid eligibility for the elderly, researchers have had little opportunity to take advantage of natural experiments that would help identify the health effects of Medicaid among the elderly. However, there have been changes in Medicaid rules regarding long-term care that researchers have exploited. Results suggest that Medicaid policies have little effect on whether the elderly enter a nursing home instead of receiving care at home (e.g., Norton and Kumar, 2000; Grabowski and Gruber, 2007).

Effects on Other Behaviors

Welfare Participation and Labor Supply

Before the welfare reforms of the late 1990s, participation in the main cash welfare program—Aid to Families with Dependent Children—conferred automatic eligibility for Medicaid. For families with young children, the health care coverage associated with Medicaid might quite realistically have created a substantial incentive to participate in welfare. It is a challenge to separate the effects of Medicaid from those of AFDC since most individuals participated in both. Early studies in this literature, such as Blank (1989) and Winkler (1991), found little effect of Medicaid on welfare participation.¹³ Moffitt and Wolfe (1992) use longitudinal data from the Survey of Income and Program Participation and model the value associated with Medicaid with a family-specific proxy for health care expenditures. They find

¹³ See Currie and Madrian (1999) for a more general discussion of the difficulties of looking at effects of health insurance on labor market outcomes. For a more thorough discussion of the older literature on Medicaid, see Moffitt (1992).

large and significant effects of Medicaid on welfare participation, with the effects concentrated among those with high expected health care expenditures.

As with the question of insurance coverage and crowd-out, the more recent literature uses variation in Medicaid eligibility parameters associated with the expansions of the late 1980s and early 1990s to examine effects on welfare participation. Yelowitz (1995) takes advantage of the fact that these expansions decoupled eligibility for Medicaid from eligibility for AFDC for families with children, creating a notch in families' budget constraints for families with no other access to health insurance coverage. Using data from the Current Population Survey, Yelowitz finds that the expansions, as parameterized by the difference in the percent of the poverty level at which eligibility for AFDC and Medicaid differed, led to a large and significant increase in AFDC participation. Ham and Shore-Sheppard (1995) look at the same question, with a more flexible specification that allows the thresholds for Medicaid and AFDC to have their own effects and that incorporates more institutional features to calculate AFDC eligibility calculation. They find no impact of the expansions on AFDC receipt and are able to reject the specification used by Yelowitz (1995). Results from the Oregon "Medicaid lottery" indicate that Medicaid participation increases receipt of food stamps but had little impact on receipt of other government benefits (Baicker et al., 2013).

Studies have also used the expansions to examine effects on labor supply. Yelowitz (1995) finds that the expansions of the late 1980s and early 1990s led to an increase in labor supply while Ham and Shore-Sheppard (2005) find that no effect on labor supply. Dave et al. (2013) find a negative effect of the expansions on employment among women who recently gave birth. After Tennessee disenrolled a large number of childless adults from its public health insurance program in 2005, employment and job search increased among childless adults in the

state relative to other Southern states (Garthwaite, Gross and Notowidigdo, 2013). Results from the Oregon “Medicaid lottery,” in contrast, do not indicate a significant effect of Medicaid participation on employment or earnings (Baicker et al, 2013; Finkelstein et al., 2013). Meyer and Rosenbaum (2001) look at the combined effects of a host of social programs (such as AFDC, Medicaid and welfare reform waivers) and the tax system (the Earned Income Tax Credit on the labor supply of single mothers, incorporating various incentive effects. They find that Medicaid had little impact on labor supply while the tax system had the largest impact.

Several studies use the staggered introduction of Medicaid across states over time in the late 1960s and early 1970s to look at the effect of Medicaid on AFDC participation and labor supply. Decker and Selck (2012) find that the introduction of Medicaid explained about 10% of the increase in AFDC caseloads. Using individual data, they find the increase occurred because of an increase in take-up, not because of an increase in eligibility or a decline in labor force participation. Strumpf (2011) also finds no effects on labor supply.

Another mechanism through which Medicaid can affect labor supply is job lock. Job lock posits that access to employer-provided health insurance induces employees to stay at employers they otherwise would have left. Hamersma and Kim (2009) look at the effect of Medicaid expansions of parental coverage and find that expanded eligibility reduces job lock among unmarried women, with few other effects.

Marriage and Fertility

Medicaid also may affect marriage and fertility behavior. Until the expansions, Medicaid was tightly linked to participation in cash welfare programs, the largest of which—Aid to Families with Dependent Children, or AFDC—was largely restricted to single mothers. Economic theory

therefore predicts that AFDC and Medicaid reduced the incentive to marry and increased the incentive to have children. Research on the introduction of Medicaid during the late 1960s and early 1970s finds evidence of the predicted positive effect on single motherhood (Decker, 2000). The 1980s and 1990s Medicaid expansions, in contrast, decoupled Medicaid from AFDC and therefore increased Medicaid eligibility for two-parent families. This had a positive effect on marriage rates (Yelowitz, 1998). The expansions also may have increased birth rates because they reduced the cost of health care for pregnant women and children, but recent research finds there was little effect on fertility (DeLeire, Lopoo and Simon, 2011; Zavodny and Bitler, 2010), while some older work finds some impacts (e.g., Joyce and Kaestner, 1996).

Medicaid also can affect via fertility through its coverage of family planning services, including contraceptives and abortion. Expanding women's eligibility for family planning services reduces births by increasing contraceptive use (Kearney and Levine, 2009). States can opt to cover abortion in Medicaid at their own expense. Such coverage is positively associated with abortion rates and negatively associated with birth rates (Zavodny and Bitler, 2010).

Savings

Medicaid may affect people's savings behavior. There are several reasons to expect Medicaid to reduce how much money people save. First, like any insurance program, Medicaid reduces the need for precautionary savings to cover uncertain health care expenses. Second, Medicaid imposes asset tests for eligibility. Until the mid 1980s, there was an asset cap of \$1000 for AFDC eligibility, which also conferred Medicaid eligibility. While that cap has been dropped, Medicaid continues to impose asset limits for dual eligibles. This gives elderly and disabled people with low incomes an incentive to not exceed those limits. However, Medicaid may boost

savings among some recipients by freeing up money that they otherwise would spend on health insurance and health care.

One difficulty with estimating the effect of Medicaid on savings is that Medicaid eligibility is endogenous with respect to savings, particularly when asset limits are in effect. Gruber and Yelowitz (1999) therefore use an identification strategy similar to Currie and Gruber (1996a, 1996b) to simulate Medicaid eligibility in order to examine its relationship with savings during the late 1980s and early 1990s. They conclude that Medicaid eligibility substantially reduced families' level of assets and the likelihood that a family had any assets at all. Gittleman (2011) reports that some of Gruber and Yelowitz's results are sensitive to the choice of cohort and empirical model. Gross and Notowidigdo (2011) find that the Medicaid expansions were associated with a decrease in personal bankruptcies but had no effect on business bankruptcies. Using data from the Oregon Health Insurance Experiment, Finkelstein et al. (2012) find that one year of access to Medicaid for low-income adults without children lead to a statistically significant decline in the presence of medical debt and both medical and overall collections, but no significant effect on overall bankruptcy or a summary measure of overall access to credit.

The adverse effect on savings is likely to be concentrated in the middle of the income and wealth distributions. People with very low incomes and wealth typically do not have enough assets to be concerned about Medicaid's asset limit. If faced with an adverse health event, their assets are likely to quickly fall below Medicaid's limit. People with very high incomes or wealth are unlikely to ever qualify for Medicaid coverage and are likely to have private health insurance. Consistent with this, Maynard and Qiu (2009) find evidence that Medicaid has a strong negative effect on savings for households in middle of the wealth or income distributions.

Medicaid may have particularly large effects on savings among the elderly because it has considerably more extensive coverage of long-term care than Medicare. However, research suggests that these effects are fairly small. For example, Gardner and Gilleskie (2006) report that doubling the asset limit for nursing home coverage would increase the percentage of elderly with positive assets by about 1 percentage point and would increase average assets by less than 10 percent.

Medicaid's coverage of long-term care may affect the market for long-term care insurance as well. Long-term care insurance is implicitly a form of savings. Very few people buy long-term care insurance, partly because such insurance tends to be expensive and not actuarially-fairly priced. The existence of Medicaid and the implicit tax it levies on private long-term care insurance further reduces the incentive to purchase such insurance. Brown and Finkelstein (2011) provide an overview of research in this area. They conclude that Medicaid does reduce the market for long-term care insurance. As with savings, however, the effect appears to be relatively small.

Conclusion

What the future holds for Medicaid depends heavily on politics and the macroeconomy. In the wake of the 2007-2009 recession, high unemployment boosted the number of people eligible for Medicaid at the same time as tax revenues shrank. Fiscal woes motivated a number of Republican governors and members of Congress to press for changes to the 2010 ACA that would allow states to drop Medicaid enrollees without forfeiting federal funds. Several states have moved toward making cuts that do not put federal funds at risk. A few governors have even threatened that their states might stop participating in the program altogether.

The joint federal-state structure of Medicaid gives rise to striking differences across states. The federal government provides more generous matching funds to poorer states, but states still must bear a share of Medicaid costs. Poorer states therefore tend to have less generous Medicaid programs: lower provider reimbursement rates, coverage of fewer health care services and lower eligibility thresholds. This results in considerable differences in access to care across states and limits the ability of the federal government to help states deal with the effects of regional business cycles on Medicaid spending.

The existing federal-state structure of Medicaid does have some advantages. It allows for experimentation across states. Such experimentation can reveal cost-effective programs that other states then adopt. In addition, researchers have long relied on variation across states to examine the effects of Medicaid and other public policies.

We conclude by highlighting some important avenues for future research. Assessing the effects of ACA-related expansions on health, labor market outcomes and other behaviors among previously underserved groups (non-disabled, childless adults working age with relatively low incomes) is clearly a critical research area. Here, variation will come from several sources. First, there will be cross-state variation in Medicaid eligibility generosity for childless adults (and some for parents as well) since not all states are participating in the expansions (and even among the expanders, the timing is not uniform). Secondly, regardless of whether they have expanded Medicaid or not, states are now required to use a new version of countable income for determining eligibility—modified AGI—and to use a consistent income disregard (5 percent). This movement to a considerably more uniform system creates cross-state variation that researchers can couple with over-time variation in how and when states implement the expansions and make other changes to their Medicaid systems.

Another critical need is for more randomized control trials that examine the effects of Medicaid on health and other outcomes. The Oregon Health Insurance Experiment offers an excellent model of how to design such studies. More such experiments in other areas are needed and their results are likely to be of great interest to researchers and policymakers alike.

Another hole in the literature is systematic reviews of existing studies of Medicaid, particularly those that evaluate managed care. A large literature examines the consequences of the shift to managed care from fee-for-service on providers' decision-making and Medicaid participants' health outcomes. This literature indicates that reimbursement structure affects providers' decision-making but is mixed on whether the shift to managed care has improved health outcomes. In addition, more research on the cost effectiveness of managed care is needed. One study concludes that managed care actually increases government spending, not lowers it, and does so without improving health outcomes (Duggan 2004). This is an important and disturbing possibility given that states continue to look to managed care to reduce Medicaid costs.

References

- Adams, E. Kathleen, Janet M. Bronstein and Curtis S. Florence. 2003. "The Impact of Medicaid Primary Care Case Management on Office-Based Physician Supply in Alabama and Georgia," 40 *Inquiry* 269-82.
- Aizer, Anna. 2003. "Low Take-Up in Medicaid: Does Outreach Matter and for Whom?" 93 *American Economic Review Papers & Proceedings* 238-41.
- Aizer, Anna. 2007. "Public Health Insurance, Program Take-Up and Child Health," 89 *Review of Economics and Statistics* 400-15.
- Aizer, Anna, and Janet Currie. 2004. "Networks or Neighborhoods? Correlations in the Use of Publicly-Funded Maternity Care in California," 88 *Journal of Public Economics* 2573-85.
- Aizer, Anna, Janet Currie and Enrico Moretti. 2007. "Does Managed Care Hurt Health? Evidence from Medicaid Mothers," 89 *Review of Economics and Statistics* 385-99.
- Almond, Douglas, Sandra Decker and Kosali Simon. 2012a. "The Impact of Medicaid's Introduction on Birth Rates," Mimeo, Department of Economics, Columbia University.
- Almond, Douglas, Sandra Decker and Kosali Simon. 2012b. "The Impact of Medicaid's Introduction on Use of Health Care and Health Outcomes," Mimeo, Department of Economics, Columbia University.
- Baker, Laurence, and Christopher Afendulis. 2005. "Medicaid Managed Care and Health Care for Children," 40 *Health Services Research* 1466-88.
- Baicker, Katherine, Amy Finkelstein, Jae Song and Sarah Taubman. 2013. "The Impact of Medicaid on Labor Force Activity and Program Participation: Evidence from the Oregon Health Insurance Experiment," NBER Working Paper 19547.
- Baicker, Katherine, and Douglas Staiger. 2005. "Fiscal Shenanigans, Targeted Federal Health Care Funds, and Patient Mortality," 120 *Quarterly Journal of Economics* 345-86.
- Baicker, Katherine, Sarah Taubman, Heidi Allen, Mira Bernstein, Jonathan Gruber, Joseph Newhouse, Eric Schneider, Bill Wright, Alan Zaslavsky and Amy Finkelstein. 2013. "The Oregon Experiment-Effects of Medicaid on Clinical Outcomes," 368 *New England Journal of Medicine* 1713-1722.
- Baughman, Reagan, and Jeffrey Milyo. 2008. "How Do States Formulate Medicaid and SCHIP Policy? Economic and Political Determinants of State Eligibility Levels," Mimeo, Department of Economics, University of Missouri.

- Bindman, Andrew, Arpita Chattopadhyay, Dennis Osmond, William Huen and Peter Bacchetti. 2005. "The Impact of Medicaid Managed Care on Hospitalizations for Ambulatory Care Sensitive Conditions," 40 *Health Services Research* 19-38.
- Bitler, Marianne, and Hilary Hoynes. 2013. "Immigrants, Welfare and the U.S. Safety Net," in David Card and Steven Raphael, ed., *Immigration, Poverty and Socioeconomic Inequality*. New York: Russell Sage Foundation.
- Blank, Rebecca. 1989. "The Effect of Medical Need and Medicaid on AFDC Participation," 24 *Journal of Human Resources* 54-87.
- Blumberg, Linda, Lisa Dubay and Stephen Norton. 2000. "Did the Medicaid Expansions for Children Displace Private Insurance? An Analysis Using the SIPP," 19 *Journal of Health Economics* 33-60.
- Boukus, Ellyn, Alwyn Cassil and Ann S. O'Malley. 2009. "A Snapshot of U.S. Physicians: Key Findings from the 2008 Health Tracking Physician Survey," Data Bulletin Results from HSC Research no. 35. www.rwjf.org/files/research/hscbulletin35sept2009.pdf, accessed April 15, 2012.
- Brown, Jeffrey R., and Amy Finkelstein. 2011. "Insuring Long-Term Care in the United States," 25 *Journal of Economic Perspectives* 119-42.
- Buchmueller, Thomas C., Sean Orzol and Lara D. Shore-Sheppard. 2013. The Effect of Medicaid Payment Rates on Access to Dental Care Among Children. NBER Working Paper 19218.
- Burns, Marguerite. 2009. "Medicaid Managed Care and Cost Containment in the Adult Disabled Population," 47 *Medical Care* 1069-76.
- Busch, Susan H., and Noellia Duchovny. 2005. "Family Coverage Expansions: Impact on Insurance Coverage and Health Care Utilization of Parents," 25 *Journal of Health Economics* 876-90.
- Card, David, and Lara Shore-Sheppard. 2004. "Using Discontinuous Eligibility Rules to Identify the Effects of the Federal Medicaid Expansions on Low-Income Children," 86 *Review of Economics and Statistics* 752-66.
- Conover, Christopher, Peter Rankin and Frank Sloan. 2001. "Effects of Tennessee Medicaid Managed Care on Obstetrical Care and Birth Outcomes," 26 *Journal of Health Politics, Policy, and Law* 1291-324.
- Coughlin, Teresa, Sharon Long and John Graves. 2008/2009. "Does Managed Care Improve Access to Care for Medicaid Beneficiaries with Disabilities? A National Study," 45 *Inquiry* 395-407.

- Coughlin, Teresa, Leighton Ku and Johnny Kim. 2000. "Reforming the Medicaid Disproportionate Share Hospital Program," 22 *Health Care Financing Review* 137-57.
- Cunningham, Peter, and Jessica May. 2006. "Medicaid Patients Increasingly Concentrated Among Physicians," Tracking Report No. 16, Center for Studying Health System Change.
- Currie, Janet, Sandra Decker and Wanchuan Lin. 2008. "Has Public Health Insurance for Older Children Reduced Disparities in Access to Care and Health Outcomes?" 27 *Journal of Health Economics* 1407-652.
- Currie, Janet, and John Fahr. 2005. "Medicaid Managed Care: Effects on Children's Medicaid Coverage and Utilization of Care," 89 *Journal of Public Economics* 85-108.
- Currie, Janet, and Jeffrey Grogger. 2002. "Medicaid Expansions and Welfare Contractions: Offsetting Effects on Prenatal Care and Infant Health," 21 *Journal of Health Economics* 313-35.
- Currie, Janet, and Jonathan Gruber. 1996a. "Health Insurance Eligibility, Utilization of Medical Care, and Child Health," 111 *Quarterly Journal of Economics* 431-66.
- Currie, Janet, and Jonathan Gruber. 1996b. "Saving Babies: The Efficacy and Cost of Recent Changes in the Medicaid Eligibility of Pregnant Women," 104 *Journal of Political Economy* 1263-96.
- Currie, Janet, and Jonathan Gruber. 2001. "Public Health Insurance and Medical Treatment: The Equalizing Impact of the Medicaid Expansions," 82 *Journal of Public Economics* 63-90.
- Currie, Janet, and Brigitte Madrian. 1999. "Health, Health Insurance, and the Labor Market," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics Volume 3*. Amsterdam: Elsevier.
- Cutler, David, and Jonathan Gruber. 1996. "Does Public Insurance Crowd Out Private Insurance?" 111 *Quarterly Journal of Economics* 391-430.
- Dafny, Leemore, and Jonathan Gruber. 2005. "Public Insurance and Child Hospitalizations: Access and Efficiency Effects," 89 *Journal of Public Economics* 109-29.
- Dague, Laura. 2013. "Effects of Medicaid Premiums and Copayments on Insurance Coverage, Utilization, and Health: A Regression Discontinuity Approach," *Journal of Health Economics*, forthcoming..
- Dague, Laura, Thomas DeLeire, Donna Friedsam, Lindsey Leininger, Sarah Meier and Kristen Voskuil. 2012. "What Fraction of Medicaid Enrollees Have Access to Private Insurance? Estimates from Administrative Data," Mimeo, Bush School, Texas A&M University.

Dave, Dhaval, Sandra Decker, Robert Kaestner and Kosali Simon. 2010/2011. "The Effect of Medicaid Expansions on Health Insurance Coverage of Pregnant Women: An Analysis Using Deliveries," 47 *Inquiry* 315-30.

Dave, Dhaval, Sandra Decker, Robert Kaestner and Kosali Simon. 2013. "The Effect of Medicaid Expansions in the Late 1980s and Early 1990s on the Labor Supply of Pregnant Women," NBER Working Paper 19161.

Decker, Sandra, and Frederic Selck. 2012. "The Effect of the Original Introduction of Medicaid on Welfare Participation and Labor Supply," 10 *Review of Economics of the Household* 541-56.

DeLeire, Thomas, Lenard Lopoo and Kosali Simon. 2011. "Medicaid Expansions and Fertility in the United States," 48 *Demography* 725-47.

Department of Health and Human Services. 2010. "Connecting Kids to Coverage: Continuing the Progress," 2010 CHIPRA Annual Report.
www.insurekids.gov/professionals/reports/chipra/2010_annual.pdf, accessed 4/12/2012.

Dubay, Lisa, Theodore Joyce, Robert Kaestner and Genevieve Kenney. 2001. "Changes in Prenatal Care Timing and Low Birth Weight by Race and Socioeconomic Status: Implications for the Medicaid Expansions for Pregnant Women," 36 *Health Services Research* 373-98.

Dubay, Lisa, and Genevieve Kenney. 1996. "Revisiting the Issues: The Effects of Medicaid Expansions on Insurance Coverage of Children," 6 *The Future of Children* 152-61.

Duggan, Mark. 2004. "Does Contracting Out Increase the Efficiency of Government Programs? Evidence from Medicaid HMOs," 88 *Journal of Public Economics* 2549-72.

Duggan, Mark, and Tamara Hayford. 2013. "Has the Shift to Managed Care Reduced Medicaid Expenditures? Evidence from State and Local-Level Mandates," 32 *Journal of Policy Analysis and Management* 505-535.

Duggan, Mark, and Fiona Scott-Morton. 2006. "The Distortionary Effects of Government Procurement: Evidence from Medicaid Prescription Drug Purchasing," 121 *Quarterly Journal of Economics* 1-30.

Epstein, Arnold, and Joseph Newhouse. 1998. "Impact of Medicaid Expansions on Early Prenatal Care and Health Outcomes," 19 *Health Care Financing Review* 85-99.

Finkelstein, Amy, and Katherine Baicker. 2011. "The Effects of Medicaid Coverage," 365 *New England Journal of Medicine* 683-5.

Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph Newhouse, Heidi Allen, Katherine Baker and the Oregon Health Study Group. 2012. "The Oregon Health Insurance Experiment: Evidence from the First Year," 127 *Quarterly Journal of Economics* 1057-106.

Fisher, Elliott, David Wennberg, Therese Stukel, Daniel Gottlieb, F.L. Lucas and Etiole Pinder. 2003a. "The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality and Accessibility of Care," 138 *Annals of Internal Medicine* 273-87.

Fisher, Elliott, David Wennberg, Therese Stukel, Daniel Gottlieb, F.L. Lucas and Etiole Pinder. 2003b. "The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care," 138 *Annals of Internal Medicine* 288-98.

Gardner, Lara, and Donna Gilleskie. 2006. The Effects of State Medicaid Policies on the Dynamic Savings Patterns of the Elderly," NBER Working Paper 12208.

Garthwaite, Craig. 2012. "The Doctor Might See You Now: The Supply Side of Public Health Insurance Expansions," 4 *American Economic Journal: Economic Policy* 190-215.

Garthwaite, Craig, Tal Gross and Matthew Notowidigdo. 2013. "Public Health Insurance, Labor Supply, and Employment Lock," NBER Working Paper 19220.

Garrett, B., Davidoff, A, and Yemane, A. 2003. "Effects of Medicaid Managed Care Programs on Health Services Access and Use," 32 *Health Services Research* 575-94.

Garrett, Bowen, and Stephen Zuckerman. 2005. "National Estimates of the Effects of Mandatory Medicaid Managed Care Programs on Health Care Access and Use, 1997-1999," 43 *Medical Care* 649-57.

Gilmer, Todd, and Richard Kronick. 2011. "Differences In The Volume of Services and in Prices Drive Big Variations in Medicaid Spending among US States and Regions," 30 *Health Affairs* 1316-24.

Gittleman, Maury. 2011. "Medicaid and Wealth: A Re-Examination," 11 *B.E. Journal of Economic Analysis and Policy*.

Goodman-Bacon, Andrew. 2013. "Public Insurance and Mortality: Evidence from Medicaid Implementation," Mimeo, Department of Economics, University of Michigan.

Grabowski, David, and Jonathan Gruber. 2007. "Moral Hazard in Nursing Home Use," 26 *Journal of Health Economics* 560-77.

Gross, Tal, and Matthew Notowidigdo. 2011. "Health Insurance and the Consumer Bankruptcy Decision: Evidence from the Expansion of Medicaid," 95 *Journal of Public Economics* 767-78.

Gruber, Jonathan. 2003. "Medicaid," in Robert A. Moffitt, ed., *Means-Tested Transfer Programs in the United States*, Cambridge, MA: National Bureau of Economic Research.

Gruber, Jonathan, and Kosali Simon. 2008. "Crowd-out 10 Years Later: Have Recent Public Insurance Expansions Crowded Out Private Health Insurance?" *27 Journal of Health Economics* 201-17.

Gruber, Jonathan, and Aaron Yelowitz. 1999. "Public Health Insurance and Private Savings," *107 Journal of Political Economy* 1249-74.

Ham, John, and Lara Shore-Sheppard. 2005. "The Effect of Medicaid Expansions for Low-Income Children on Medicaid Participation and Private Insurance Coverage: Evidence from the SIPP," *89 Journal of Public Economics* 57-83.

Ham, John, Serkan Ozbeklik and Lara Shore-Sheppard. 2011. "Estimating Heterogeneous Take-up and Crowd-Out Responses to Marginal and Non-Marginal Medicaid Expansions," NBER Working Paper 16112.

Hamersma, Sarah, and Matthew Kim. 2009. "The Effect of Parental Medicaid Expansions on Job Mobility." *28 Journal of Health Economics* 761-70.

Herring, Brad, and E. Kathleen Adams. 2011. "Using HMOs to Serve the Medicaid Population: What are the Effects on Utilization and Does the Type of HMO Matter?" *20 Health Economics* 446-60.

Howell, Embry, Lisa Dubay, Genevieve Kenney and Anna Sommers. 2004. "The Impact of Medicaid Managed Care on Pregnant Women in Ohio: A Cohort Analysis," *39 Health Services Research* 825-46.

Hurley, Robert E., Deborah A. Freund and John E. Paul. 1993. *Managed Care in Medicare: Lessons for Policy Design*. Ann Arbor, MI: Health Administration Press.

Joyce, Theodore, and Robert Kaestner. 1996. "The Effect of Expansions in Medicaid Income Eligibility on Abortion," *33 Demography* 181-92.

Kaestner, Robert, Lisa Dubay and Genevieve Kenney. 2005. "Managed Care and Infant Health: An Evaluation of Medicaid in the US," *60 Social Science and Medicine* 1815-33.

Kaestner, Robert, Theodore Joyce and Andrew Racine. 2001. "Medicaid Eligibility and the Incident of Ambulatory Care Sensitive Hospitalizations for Children," *52 Social Science and Medicine* 305-13.

Kaiser Family Foundation. 2010a. *Medicaid and Managed Care: Key Data, Trends and Issues*. Washington, DC: Kaiser Family Foundation. <http://www.kff.org/medicaid/upload/8046.pdf>

Kaiser Family Foundation. 2013. *Status of State Action on the Medicaid Expansion Decision, as of December 11, 2013*. Washington, DC: Kaiser Family Foundation. <http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/>

- Kearney, Melissa S., and Phillip B. Levine. 2009. "Subsidized Contraception, Fertility, and Sexual Behavior," 91 *Review of Economics and Statistics* 137-151.
- Levine, Phillip B., and Diane Schanzenbach. 2009. "The Impact of Children's Public Health Insurance Expansions on Educational Outcomes," in David Cutler, Alan Garber, and Dana Goldman, eds., *Frontiers in Health Policy Research, Vol. 12*. Berkeley, CA: Berkeley Electronic Press.
- Levinson, Arik, and Frank Ullman. 1998. "Medicaid Managed Care and Infant Health," 17 *Journal of Health Economics* 351-68.
- Long, Sharon, Teresa Coughlin and Jennifer King. 2005. "How Well Does Medicaid Work in Improving Access to Care?" 40 *Health Services Research* 39-58.
- Lo Sasso, Anthony, and Thomas Buchmueller. 2004. "The Effect of the State Children's Health Insurance Program on Health Insurance Coverage," 23 *Journal of Health Economics* 1059-82.
- Lo Sasso, Anthony, and Deborah Freund. 2000. "A Longitudinal Evaluation of the Effect of Medi-Cal Managed Care on Supplemental Security Income and Aid to Families with Dependent Children Enrollees in Two California Counties," 38 *Medical Care* 937-47.
- Lurie, Nicole, Nancy B. Ward, Martin F. Shapiro and Robert H. Brook. 1984. "Termination from Medi-Cal—Does It Affect Health?" 311 *New England Journal of Medicine* 480-84.
- Maynard, Alex, and Jiaping Qiu. 2009. "Public Insurance and Private Savings," 24 *Journal of Applied Econometrics* 282-308.
- Meyer, Bruce D., and Dan T. Rosenbaum. 2001. "Welfare, The Earned Income Tax Credit, and The Labor Supply of Single Mothers," 116 *Quarterly Journal of Economics* 1063-114.
- Meyer, Bruce D., and Laura R. Wherry. 2013. "Saving Teens: Using a Policy Discontinuity to Estimate the Effects of Medicaid Eligibility," NBER Working Paper 18309.
- Moffitt, Robert A. 1983. "An Economic Model of Welfare Stigma," 73 *American Economic Review* 1023-35.
- Moffitt, Robert. 1992. "Incentive Effects of the U.S. Welfare System: A Review," 30 *Journal of Economic Literature* 1-61.
- Moffitt, Robert, and Barbara Wolfe. 1992. "The Effect of the Medicaid Program on Welfare Participation and Labor Supply," 74 *Review of Economics and Statistics* 615-26.
- Norton, Edward, and V. Kumar. 2000. "The Long-Run Effect of the Medicare Catastrophic Coverage Act," 37 *Inquiry* 174-87.

- Pezzin, Liliana E., and Judith D. Kasper. 2002. "Medicaid Enrollment and Elderly Medicare Beneficiaries: Individual Determinants, Effects of State Policy, and Impact on Service Use," 37 *Health Services Research* 827-47.
- Piper, Joyce M., Wayne A. Ray and Marie R. Griffin. 1990. "Effects of Medicaid Eligibility Expansion on Prenatal Care and Pregnancy Outcome in Tennessee," 264 *Journal of the American Medical Association* 2219-23.
- Quast, Troy, David E. Sappington and Elizabeth Shenkman. 2008. "Does the Quality of Care in Medicaid MCOs vary with the form of Physician Compensation?" 17 *Health Economics* 545-50.
- Rowland, Diane, and Kristina Hanson. 1996. "Medicaid: Moving to Managed Care," 15 *Health Affairs* 150-2.
- Rowland, Diane, Sara Rosenbaum, Lois Simon and Elizabeth Chait. 1995. *Medicaid and Managed Care: Lessons from the Literature*. Washington, DC: Kaiser Commission on the Future of Medicaid.
- Shen, Yu-Chu, and Stephen Zuckerman. 2005. "The Effect of Medicaid Payment Generosity on Access and Use among Beneficiaries," 40 *Health Services Research* 723-44.
- Shore-Sheppard, Lara. 2000. "The Effect of Expanding Medicaid Eligibility on the Distribution of Children's Health Insurance Coverage," 54 *Industrial and Labor Relations Review* 59-77.
- Shore-Sheppard, Lara. 2008. "Stemming the Tide: The Effect of Expanding Medicaid Eligibility on Health Insurance Coverage," 8 *B.E. Journal of Economic Analysis & Policy*.
- Shore-Sheppard, Lara, Thomas Buchmueller and Gail Jensen. 2000. "Medicaid and Crowding Out of Private Insurance: A Re-Examination Using Firm-Level Data," 19 *Journal of Health Economics* 61-91.
- Sommers, Benjamin D., Katherine Baicker and Arnold M. Epstein. 2012. "Mortality and Access to Care among Adults after State Medicaid Expansions," 367 *New England Journal of Medicine* 1025-1034.
- Sonier, Julie, Michel Boudreaux and Lynn Blewett. 2013. "Medicaid 'Welcome-Mat' Effect of Affordable Care Act Implementation Could Be Substantial," 32 *Health Affairs* 1319-1325.
- Strumpf, Erin. 2011. "Medicaid's Effect on Single Women's Labor Supply: Evidence from the Introduction of Medicaid," 30 *Journal of Health Economics* 531-48.
- Taubman, Sarah, Heidi Allen, Bill Wright, Katherine Baicker, Amy Finkelstein and the Oregon Health Study Group. 2014. "Medicaid Increase Emergency Department Use: Evidence from Oregon's Health Insurance Experiment," 343 *Science* 263-268.

U.S. Census Bureau. various years. *Statistical Abstract of the United States*. Washington, DC: U.S. Department of Commerce.

U.S. House of Representatives, Committee on Interstate and Foreign Commerce, Subcommittee on Health and the Environment. 1976. *Data on the Medicaid Program: Eligibility, Services, Expenditures Fiscal Years 1966-76*. Washington, DC: U.S. Government Printing Office.

Winkler, Anne. 1991. "The Incentive Effects of Medicaid on Women's Labor Supply," 26 *Journal of Human Resources* 308-37.

Yelowitz, Aaron S. 1995. "The Medicaid Notch, Labor Supply, and Welfare Participation: Evidence from Eligibility Expansions," 110 *Quarterly Journal of Economics* 909-39.

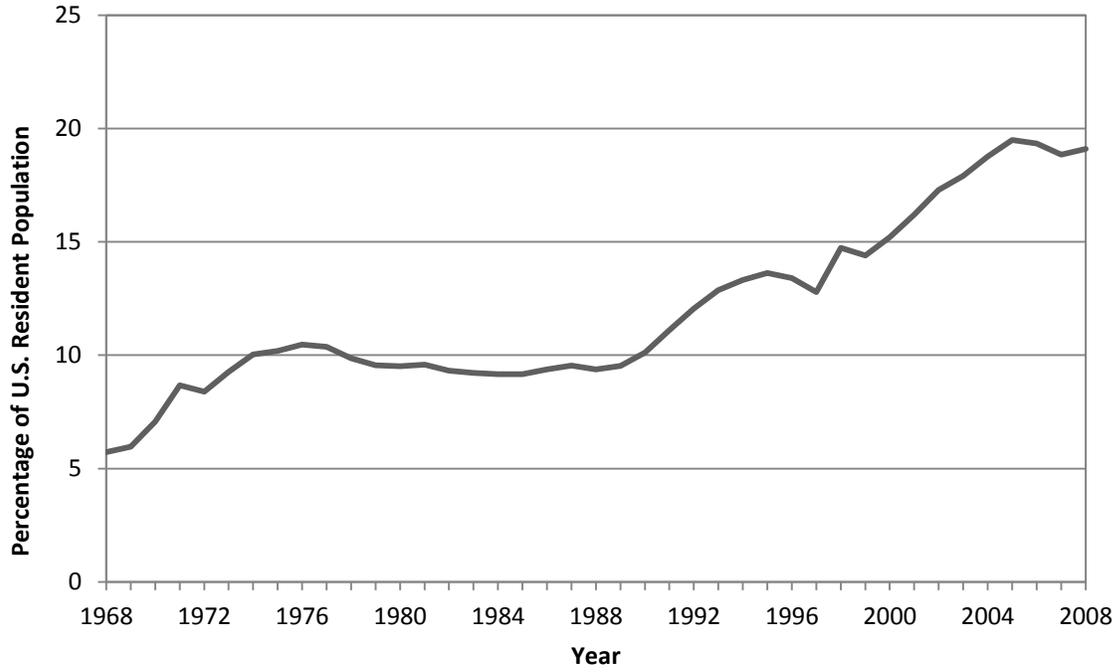
Yelowitz, Aaron S. (1998). "Will Extending Medicaid to Two-Parent Families Encourage Marriage?" 33 *Journal of Human Resources* 833-65.

Zavodny, Madeline, and Marianne Bitler. 2010. "The Effect of Medicaid Eligibility Expansions on Fertility," 71 *Social Science and Medicine* 918-24.

Zuckerman, Stephen, Joshua McFeeters, Peter Cunningham and Len Nichols. 2004. "Changes in Medicaid Physician Fees, 1998-2003: Implications for Physician Participation," *Health Affairs* Supplementary Web Exclusives W-3-398-84.

Zuckerman, Stephen, Aimee Williams and Karen Stockley. 2009. "Trends in Medicaid Physician Fees, 2003-2008," 28 *Health Affairs* 510-9.

Figure 1. Medicaid Recipients as a Percentage of the U.S. Population, 1968-2008



Sources: Medicaid Data from US House of Representatives (1976), Gruber (2003) and U.S. Census Bureau (various years); population data from www.census.gov.