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HEALTH INSURANCE AND VULNERABLE POPULATIONS

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Health Insurance and Vulnerable Populations

Our charge is to consider the causes of lack of insurance coverage for vulnerable populations. This is a daunting task for many reasons--not least because there are as many kinds of vulnerability as there are bad things that happen to human bodies or to human life. Although the term "vulnerable population" conjures images of a discrete and insular minority, every person's vulnerability to illness, injury, and disease makes health insurance necessary and possible for the vast majority of the U.S. population.

Consistent with the ambiguities of "vulnerable populations," a Medline search on this term yielded 191 entries that survey the continent encompassed by that term. A casual list includes: children of immigrants,^{1, 2} parents of immigrants,³ undocumented or recently-documented immigrants,⁴ AFDC/TANF recipients,⁵ families ineligible for welfare,⁶ unattached adults who are ineligible for public cash aid, men and women with psychiatric and substance abuse disorders or developmental disability,^{7, 8} race/ethnic minorities,² prison inmates and current or former offenders,^{6, 9} residents of rural areas,¹⁰ residents of inner-city communities,¹¹ individuals with chronic illnesses,⁸ the disabled poor, the elderly, the near-elderly, foster children, and children with special health care needs.¹²⁻¹⁴ Foreign populations noted in the same Medline search include residents of Cuba, Iraq, Guatemala, and other nations subject to U.S. economic sanctions.¹

The diversity of vulnerable populations highlights the many meanings of the term. The range of potential definitions calls into question "vulnerable populations" as an organizing principle of policy analysis. If so many groups are vulnerable, for so many reasons, does the idea of "vulnerability" really provide insight into public policies towards insurance coverage?

In our view, it does. The construct of "vulnerable populations," though admitting many interpretations, highlights an important set of issues for the design and management of health insurance, as well as the essential linkages between health insurance and social policy.

¹ While the literature features a diversity of groups under the heading "vulnerable," some analysts have been much more restrictive. For example, the papers in a 1988 edited collection entitled *The Vulnerable* focused solely on comparing the elderly and children along many dimensions of well-being (Palmer, Smeeding, Torrey, 1988).

Roadmap of this Paper

To clarify the issues relevant to diverse populations, we start by defining the vulnerable, and by considering components of vulnerability pertinent to health policy and health insurance: Who are the disparate groups identified as vulnerable by health policy analysts and public health researchers? What distinctive features of these groups are pertinent to health insurance coverage? We follow this with a brief discussion of public sector responses to these forms of vulnerability. Public programs were often created to address the vulnerabilities and to serve the specific vulnerable groups we've identified. At the same time, these programs create additional complexities for understanding the situations faced by those with vulnerabilities.

The next section presents the basic demographics of health insurance coverage. Using the 1996 National Health Interview Survey, this section examines the prevalence of uninsurance for the vulnerable population groups, and presents multivariate models to identify risk-factors for lack of coverage. This discussion highlights the basic patterns identified by previous researchers in a common dataset and provides a framework to consider the shortcomings of non-structural, descriptive models as guideposts for public policy.

In the following section, we review the literature on vulnerable populations to consider causes of lack of coverage, focusing on the crucial structural factors that underlie economic decisionmaking. We discuss several vulnerable groups: people with low incomes, children, members of racial/ethnic minorities (including immigrants), individuals facing the challenges of chronic disease, the near-elderly who are approaching retirement age, and individuals with psychiatric and substance use disorders.

These disparate groups raise different concerns for public policy, health insurance, and the healthcare delivery system. Yet each raises important challenges to the traditional system of private, employer-based coverage. The difficulties vulnerable populations encounter in obtaining health insurance have multiple origins -- some result from market failures that preclude private insurance against important vulnerabilities individuals confront. Other difficulties, in contrast, arise from the limited economic resources held by members of the vulnerable populations. An important theme for health insurance policy involves the intersection of these vulnerabilities, the possibilities for private insurance coverage, and the role of public programs.

The last section concludes the essay by considering unsettled questions and puzzles.

What is vulnerability?

A starting point for defining health-related vulnerability is the concept of need. Social consensus may fray at the margin when one asks which medication or service is most efficacious or cost-effective for a particular diagnosis. Yet few would dispute the basic argument that lack of financial resources should not block access to widely-accepted treatment that significantly extends life or relieves morbidity. This goal of providing treatment and preventive interventions is only partly based on observed consumer demand for health services. Health care may be the most prominent "merit good" -- a good for which social altruism includes a desire that all citizens receive a certain minimum level.¹⁵ Health care is not the only such good. In-kind subsidies for housing, preschool education, and food are often justified in similar terms.¹⁶ Yet the fundamental nature of health for individual well-being has led policymakers to pay special attention to the distribution of health-status and to the distribution of health care services across the population. Labeling health care a merit good does not imply a particular institutional arrangement to provide insurance coverage or to provide health care services. But it does indicate the social consensus in favor of assuring access to some minimal quality and quantity of services for every member of American society.¹⁷

The core idea underlying vulnerability is that individuals face significant obstacles to the receipt of medical treatment and preventive services, as well as obstacles to obtaining health insurance coverage. For example, 27 percent of families in which all family members are uninsured report that they had delayed or not received needed health care, compared to only 8 percent of those with all family members insured. Similarly, 15 percent of Hispanic families reported delaying or not receiving care, compared to 11 percent for whites and 10 percent for blacks.

Differences in use of care are not simply a function of insurance status, but also occur among those who have the same insurance coverage. So, a simple comparison of 1987 expenditure levels for Medicare beneficiaries shows average spending of \$4,316 for whites compared to \$4,049 for blacks; \$4,523 for high school graduates compared to \$4,959 for college graduates, and \$3,648 for those who are poor, compared to \$4,661 for those with high income. Much health services research on vulnerable populations has focused on understanding the

nature of the access and utilization barriers faced even by individuals with insurance coverage. Our focus here is on how vulnerable populations face barriers to insurance coverage itself.²

The obstacles to health insurance coverage can arise from many factors, but several prove especially important for the populations of concern in this paper:

- medical and social needs that hinder access to traditional insurance markets
- general economic disadvantage, including both low income and limited access to employment-related health insurance
- discrimination based on race, ethnicity, language, or citizenship status
- impaired decision-making and proxy decision-making.

To clarify these issues, consider an informal model of the factors affecting the demand for medical services and health insurance.³ We can posit that consumers demand for medical services can be represented through a demand equation:

$$\text{Demand}_{\text{Care}} = f(\text{Health Status, Income, Direct Costs, Indirect Costs, Knowledge, Social Norms, X})$$

while insurance demand is derived from their demand for care and other factors:

$$\text{Demand}_{\text{Insurance}} = f(\text{Demand}_{\text{Care}}, \text{Price, Income, Alternative Sources of Care, Information, Risk Preferences, X})$$

Medical services are supplied by medical providers:

$$\text{Supply}_{\text{Care}} = f(\text{payment rates, input costs, provider norms, X})$$

where X in each equation represents other factors, including individual-specific preferences.

In this simple model, consumer demand for medical care is a function of health status, income, the direct costs of paying for care, the indirect costs (such as transportation or time costs) associated with obtaining care, knowledge about medical care and health, and the relevant social and cultural norms of one's communities. Demand for insurance is derived from the demand for medical care, plus additional factors, including the price of insurance, income, the availability of alternative sources of care (such as the availability of uncompensated care from local providers), the level of available information, and consumer risk preferences. The supply of

² These estimates are from the 1987 Medical Expenditure Survey. We thank Jose Escarce for providing these figures and for suggesting this point.

³ We thank Barbara Wolfe for suggesting this model.

medical care services is related to insurance payment rates, the relevant input costs, and provider norms concerning treatment.

The most basic vulnerability is the existence of ill-health, disease, and disability. Insurance starts with the presence of risk, and then spreads the financial burdens of these risks. In the model above, demand for care is related to health status, and this demand for care motivates the purchase of insurance. Hence the problem of adverse selection in voluntary insurance markets. Although health status and the existence of disease underlie consumer demand for medical care and health insurance, those who are less likely to need medical care may act on this knowledge as well, and therefore not purchase coverage.

This differential motivation for insurance purchase presents important difficulties for risk-pooling within an unregulated insurance market. In extreme cases the insurance market may unravel completely. Even in less extreme cases, insurers respond to this asymmetric information by imposing restrictions on insurance policies in terms of waiting periods, pre-existing condition exclusions, and cost sharing requirements that impede consumers in poor health from obtaining insurance.

A second vulnerability arises from economic disadvantage. Families with low incomes are less able to buy insurance, and are less able to purchase care directly. The problems of low income for medical care and health insurance are multifaceted. The problem is, in the first instance, one of constrained resources, and competing priorities in low-income households for purchasing other necessities. Second, the primary mechanism for obtaining health insurance for those under age 65 is through employment-provided coverage. But many low-income Americans have a weak connection to stable jobs, and the jobs that low-income workers do hold often not provide health benefits.¹⁸ Moreover, when health benefits are offered, they may require premiums, especially to obtain coverage for dependents. People with low incomes may place a higher value on purchasing other goods and services, and are especially price-sensitive in their purchase of health coverage. Economic disadvantage can also be caused by poor health, which can hinder subsequent labor market performance, thereby limiting income and access to employment-linked health insurance. From the perspective of individual consumers, the lack of health insurance increases the direct costs for obtaining medical services. The indirect costs of medical services include the costs of transportation and the time costs for obtaining services,

which may also be important for the economically disadvantaged in geographically isolated areas.

A third type of vulnerability arises from race, ethnicity, language, and citizenship status. In part, the disadvantages associated with race and ethnicity are due to poverty and low income. Yet these categories are also distinct from economic need, raising both the issue of potential discrimination, as well as issues concerning information, cultural norms, and cross-cultural difficulties that may impede access to medical services and health insurance. Discrimination based on race/ethnicity poses complex barriers to insurance coverage and to the effective use of the health care delivery system. Real and perceived discrimination has many effects for the individual and for health care providers. This issue has received increasing research attention, especially regarding medical encounters for African-American patients. For many reasons, Hispanic/Latino citizens, non-citizens, and recent citizens are the largest single population of uninsured men, women, and children in the U.S.¹⁹ In addition, for members of many ethnic groups, language barriers and complex barriers associated with immigration status pose significant barriers to the take-up of nominally-provided public coverage, and create difficulties for obtaining appropriate medical services.

A fourth aspect of vulnerability concerns individuals' ability to act as effective agents on their own behalf. Although one usually assumes that individuals are the best judges of their well-being, competent decisionmakers, and able to negotiate with and advocate for themselves or their children, this assumption comes into question for several populations of greatest policy concern. Individuals with psychiatric disorders, cognitive impairment, or substance use disorders face important barriers to effective and informed decision-making. They are unlikely to be sophisticated consumers, and may be unaware of entitlements to health insurance coverage. Individuals experiencing social stigma and those with social and economic disadvantages are also likely to be less effective agents within the health care delivery system. Moreover, social stigma associated with welfare and other means-tested programs often impedes individuals from applying for the programs for which they are eligible.

Ill health, disease, and disability interact with many of these concerns to create especially significant vulnerability for individuals experiencing chronic illness. Chronic conditions limit access to insurance, and often limit individuals' ability to act on their own behalf. Adding to these burdens, chronic disease often creates additional needs for both formal and informal

caregiving. The severely disabled must often rely on others for basic activities of daily living, creating another important vulnerability for policy.

These characteristics of vulnerability create dependence: a reliance on family and other caregivers, on medical providers and social service organizations, and on government programs for economic support. Some vulnerabilities are common. Many people face the risks of illness and may have insufficient financial resources to pay for needed services. Many individuals face potential discrimination. Children rely on their parents as proxy decision-makers, and every person faces the risk of at least temporary loss of cognitive faculties, as well as the long-term risk of developing cognitive and physical disabilities.

Along each dimension, if the limitations are severe enough, we can classify a person as being a member of a particular "vulnerable" population. Although many people face a single challenge due to chronic illness, low-income, or other challenges, the vulnerable populations frequently face multiple challenges, often in different domains of personal well-being or social functioning. These vulnerabilities affect how patients obtain medical care services and purchase health insurance, as well as the ways that the supply of services responds to these consumer demands.

1516171819 Program responses to needs and vulnerability

Under appropriate competitive conditions, insurance markets provide for efficient resource allocation. They do not, however, provide a vehicle to address distributional concerns that are central public policy goals. Some market failures arise because markets are missing. As Richard Zeckhauser has noted, many of life's most important lotteries are run before one is born. One cannot buy insurance against the possibility that one will be born mentally retarded, for example.²⁰ Competitive markets do not normally provide cross-subsidies across different risk-classes of health insurance consumers. An uncoordinated market will not, therefore, protect chronically-ill consumers from the burden of actuarially-fair premiums. Competitive markets also fail to address important traditional externalities such as infectious disease transmission or the social costs that attend substance dependence and abuse.

These familiar market failures create a need for public action, and there is a history of such responses: the needs of vulnerable populations have long been the focus of public and private interventions. Public programs include the creation of hospitals for the mentally ill,

programs to provide medical and preventive services, as well as income transfer and social insurance programs. Alongside these public responses to vulnerability is a rich history of involvement by voluntary and non-profit organizations. Non-profit Blue Cross and Blue Shield plans were central to the 20th century development of health insurance. Partly for historical reasons, and partly as a result of deliberate public policy, many safety-net providers that serve vulnerable populations operate under non-profit and public ownership. In many different ways, the history of health insurance and related programs shows that the problems of vulnerable populations have drawn forth many kinds of programs, institutions, and interventions.

The main federal and federal-state programs that currently provide health insurance are Medicare, Medicaid, and the State Children's Health Insurance Programs. More than 80 percent of Medicare recipients are over the age of 65. However, five million Medicare beneficiaries are of working age, making Medicare a prominent source of coverage across the adult population. More than 90 percent of under-65 Medicare beneficiaries are eligible by virtue of disability. A smaller number are Medicare eligible through the end-stage renal disease program or are eligible as widows or widowers of Medicare beneficiaries.²¹

Medicaid serves a more varied range of recipient groups, including families receiving cash welfare benefits, people with disabilities who receive federal Supplemental Security Income (SSI), and children in low-income families. Medicaid also serves certain persons with high medical expenses, some of whom live in the community, and many others who are residents of nursing homes.

Important expansions of means-tested insurance programs occurred during the 1980s and 1990s, which were largely directed towards children. The most important of these requirements were mandates enacted as part of the Omnibus Budget Reconciliation Acts (OBRA) of 1989 and 1990, which required that the states extend Medicaid eligibility to all children under the age of six with family income below 133 percent of the poverty line, as well as children born after September 30, 1983, with family income below 100 percent of the poverty line.

The 1997 Balanced Budget Act supplemented these Medicaid expansions with the creation of grants to the states to fund State Children's Health Insurance Programs (SCHIP). These programs are targeted at those families with children whose incomes are just above the Medicaid income thresholds of 100 or 133 percent of poverty. States are granted flexibility in implementing these programs, and can choose not only the upper income limits (typically around

300 percent of poverty), the nature of premiums and cost sharing requirements, and the administrative form of these new programs.^{22, 23}

Finally, an important related program is welfare. In 1996, Congress enacted and Bill Clinton signed the welfare reform law that repealed Aid to Families with Dependent Children (AFDC), replacing it with Temporary Assistance to Needy Families (TANF) block grants to the states. While there had been proposals to include Medicaid as part of these welfare block grants, this alternative was rejected. Instead, the legislation preserved Medicaid as a federal-state entitlement and explicitly maintained for the Medicaid program both the pre-welfare reform, AFDC-related eligibility rules for adults in families with dependent children, as well as the implementation schedule for the child-related expansions established in 1989-90.

These government programs are an important part of the current approach for providing health insurance for the vulnerable. Potential recipients face decisions regarding whether to enroll in programs. Recipients' behavior while enrolled affects their further eligibility for insurance coverage. Welfare reform also changed the complex policy and administrative relationships across programs. Even before welfare reform, public insurance programs reflected significant institutional complexity inherited from the history of policy enactments. The range of American social welfare programs includes health insurance programs that may overlap with each other, as well as various cash assistance, social policy, employment and training, etc. programs that may serve, separately, the needs of vulnerable groups. Because eligibility for one program might be conditioned on eligibility for another, or non-eligibility for a related program, the programs can serve as enrollment vehicles for each other. For example, cash assistance has traditionally been the main outreach vehicle to enroll low-income women and children into Medicaid programs.

A second complexity emerges from the overlapping medical and social needs of vulnerable populations. Many private or public interventions address one need of vulnerable individuals. This existing patchwork of organizations and programs form the environment in which health insurance policy occurs. This patchwork arose due to historical accident, the dynamics of competing funding streams, the unique political, social, and health circumstances facing particular populations.

Governmental programs are created and administered through political decision-making. The political economy of this process is therefore important to the provision of health coverage.

Some vulnerable populations, such as children with special health care needs, command committed activists who elicit sustained policy attention. Other populations are less influential. Indeed, the reasons for their health-related vulnerabilities may be associated with political disadvantage, and these disadvantages may affect program decisionmaking.^{24, 25} Many programs serving the vulnerable are federal-state programs. Thus, intergovernmental relations and the dynamics of fiscal federalism have important implications for the access of the vulnerable groups to government-provided health insurance and medical services. Policy initiatives by one level of government to expand access to medical services can bring perverse consequences by creating altered incentives by other levels of government.

Who are “the vulnerable?”

With this framework in place, we can more narrowly identify particular groups that are exemplars of these problems of vulnerability. These vulnerable populations include:

- people with low incomes
- children
- racial/ethnic minorities, and immigrants
- individuals with chronic disease
- near-elderly
- individuals with psychiatric or substance abuse disorders

Each group has a characteristic combination of the vulnerabilities discussed above. For those with low incomes, the primary vulnerability is economic disadvantage, in which job insecurity and low income hinder market health insurance coverage for low-income workers. While children typically obtain insurance through parental employment, these policies do not necessarily cover them. Children are also dependent on parents and guardians to serve as proxy decisionmakers. Of course, low-income children share the additional difficulties faced by those with low incomes. For racial and ethnic minorities, the issues include general economic disadvantage, discrimination, language competence, immigration status and program eligibility. Those with chronic disease face the general difficulties of obtaining insurance because they are less likely to be employed, and the special difficulties that come with the combination of poor health and low income. The near elderly are experiencing the age-related rising incidence of acute and chronic illness at the same time that the employment connection for insurance

coverage weakens with retirement, widowhood and divorce. Those with mental illness and substance use face potentially impaired decisionmaking and the general problems that insurance markets face when the risks are chronic and observable.

How prevalent is insurance coverage within these vulnerable populations?

The pattern of health insurance coverage illustrates the challenge facing policymakers seeking to assist vulnerable populations. In confronting the broad empirical literature that scrutinizes health insurance within these important populations, a useful starting-point is to examine uninsurance in these populations within a unified, dataset.

The 1996 National Health Interview Survey (NHIS), health insurance supplement, is well-suited to this task. NHIS provides a large, high-quality, nationally representative sample of Americans. For more than two decades, NHIS has been administered to examine the “amount and distribution of illness, its effects in terms of disability and chronic impairments, and the kinds of health services people receive.” The 1996 NHIS supplement is especially pertinent, because it explores the socio-demographic, economic, regional, and health factors associated with health insurance coverage.

Table 1 shows the prevalence of public, private, and uninsurance coverage among NHIS respondents below the age of 64. We focus on the below-65 population because almost all Americans over the age of 65 receive Medicare coverage.

	Men 17-64	Women 17-64	Children 1-16
Native-born non-Hispanic white	13.4%	10.6%	8.5%
African-American	21.3	17.2	11.0
Hispanic/Latino	35.2	29.2	21.6
Recent Immigrant	43.8	40.4	29.3
Asian	18.6	18.0	13.8
In poverty	43.5	30.8	18.4
Self-reported “poor health”	17.6	17.5	11.7
Health limitation in school or work	16.6	13.6	7.3
Age 55-64	9.1	10.9	-----

Table 1: Lack of Insurance Coverage in the 1996 National Health Interview Survey

As shown in the table, Hispanics and recent immigrants are the most likely groups to experience low rates of insurance coverage. African-Americans are somewhat more likely than other Americans to obtain insurance coverage. Men and women between the ages of 55 and 64 experienced no higher prevalence of uninsurance than was observed in the general population age 17-54.

The NHIS allows a simple statistical analysis that replicates in simple form the results of many existing analyses of insurance coverage that use representative survey datasets. Much available research by health policy analysts and public health researchers identifies demographic correlates of health coverage. Income, education, and stable connection to the paid labor market are identified as critical risk-factors for health insurance coverage. Univariate analysis is commonly used to document patterns of insurance status. Health policy analysts are aware of the pitfalls of such descriptive statistics, and so multivariate analysis is increasingly common.

A common multivariate approach would be to estimate the logistic regression specification (1) below:

$$\Pr[Ins = 1] = \frac{\exp[x\beta_1 + \alpha_1 Y + \gamma_1 Emp + \pi_1 H]}{1 + \exp[x\beta_1 + \alpha_1 Y + \gamma_1 Emp + \pi_1 H]} \quad (1)$$

Here the variable *Ins* is a dummy variable set to 1 if an individual has health insurance coverage, and is zero otherwise. The variable *x* is a vector of personal characteristics, *Y* is income. *Emp* is employment status measured in hours of paid employment. *H* is a measure of health endowment such as the presence or absence of chronic illness.

Table 2 shows basic regression results, broken out separately for children, for men, and for women.⁴ The left-most column shows results for NHIS children. Children in southeastern states have significantly higher rates of uninsurance than found in the other three regions. African-American children have slightly lower uninsurance rates than non-Hispanic whites, a difference which may reflect higher take-up for public insurance coverage. Hispanic/Latino children and immigrants have substantially lower rates of insurance coverage than observed within other groups.

The same column also shows the effect of poor health and of health-related limitations in school or work. Both of these factors are associated with increased probability of health insurance coverage. Disability-based eligibility criteria for public programs, along with increased demand for coverage among individuals with health difficulties, may explain the negative relationship between health status and insurance coverage.

The next column shows results for young men and adults between the ages of 17 and 64. As with children, adults in the southeast have higher prevalence of uninsurance than is found in other regions. Income and education are strong protective factors; while marriage is also associated with modestly higher rates of insurance coverage. Again Hispanic/Latinos and immigrants face sharply higher rates of uninsurance. Hispanic/Latinos represented almost one-fourth of all uninsured individuals among both children and adults.

Independent of education and income, unemployment is a strong risk-factor for uninsurance. Non-disabled adult men with incomes above the poverty line, generally ineligible for public insurance programs, are the group most dependent on employer-based coverage. As with children, poor health and health limitations are correlated with insurance coverage. The

⁴ NHIS is a stratified, weighted sample. In estimating these regression coefficients, we use the STATA 6.0 routine SVYLOGIT to accommodate weighting, clustering, and design effects.

near-elderly are also more likely than other adults to report insurance coverage. Whether these patterns reflect greater demand for health coverage in these demographic groups is not clear in this analysis. Results for women are similar.

These results suggest that uninsurance is primarily an economic problem—one most prevalent among near-poor, primarily young-adult workers. Consistent with this, Shi finds a striking gradient in insurance coverage on the basis of income. 39 percent of individuals with hourly wages below \$5 lacked insurance coverage. 29 percent of individuals with hourly wages between \$5.00 and \$9.99 also lacked coverage. Less than 3 percent of individuals with hourly wages above \$20 were similarly uninsured.⁷

Based upon these logistic regressions alone, it would be hard to understand why, for example, individuals between 55 and 64 years of age would be identified as a group requiring special intervention. As discussed below, this argument is incomplete, because the social and health consequences of uninsurance depend both upon its prevalence and the consequence to the individual of lacking insurance coverage. Individuals age 55-64 are more likely than other Americans to have insurance coverage. Yet because many near-elderly individuals experience declining health status, men and women age 55-64 are more likely than younger individuals to experience the dual challenge of poor health status and the lack of insurance coverage.

A second striking pattern concerns the proportion of individuals with low incomes or with disabilities who obtain health coverage from public rather than private sources. Among individuals who describe their mental health as “excellent,” only 7.4 percent obtained insurance from public sources, with 76 percent obtaining private insurance coverage. Yet among individuals who describe their mental health as “poor,” 41.3 percent obtained public insurance coverage, and only 27 percent obtained private insurance coverage. Similar results pertain if one examines individuals with ADL/IADL deficiencies or who experience cognitive limitations. Although most Americans obtain private insurance coverage, a sizable minority experiencing chronic conditions obtain coverage outside of the private, employer-based market.

The need for structural models

Following public health research practice, we report our results in the form of adjusted odds ratios, which are somewhat more readily interpreted than raw logit coefficients.

The above analysis is similar to much of the available research by health policy analysts and public health researchers identifies demographic correlates of uninsurance. This literature identifies low income and education and marginal connection to the paid labor market as critical risk-factors for lack of insurance coverage. Univariate analysis is commonly cited in reports concerning health insurance status. Health policy analysts acknowledge the pitfalls of such descriptive statistics, and so multivariate analysis is an increasingly common approach. Yet nonstructural models—those which do not consider simultaneous causation or do not carefully consider the constraints facing poor households—are vulnerable to problems of their own, even when a long list of factors are considered in a multivariate framework.

The reduced-form equation (1) is non-structural in the sense that the resulting coefficients do not reflect causal parameters that arise from consumer preferences or from the production technology of health insurance coverage. In particular, equation (1) reflects both supply-side and demand-side variables, and therefore yields no straightforward interpretation based upon either side of the insurance market. Individuals with health challenges may have higher demand for health insurance coverage, but may have greater difficulty obtaining coverage. The estimated coefficient π_1 represents the combination of these different factors. For example, individuals who know that they are eligible for public insurance may wait to enroll in public programs until they are in acute need, thus introducing a negative correlation between health and health insurance coverage.²⁶

The regression coefficients (1) also do not admit causal interpretation when health endowments influence income and employment. Suppose, for example, that equations (2) and (3) below capture the determinants of income and employment.

$$Y = x\beta_2 + \gamma_2 Emp + \pi_2 H + \varepsilon_2 \quad (2)$$

$$Emp = x\beta_2 + \pi_3 H + \varepsilon_3 \quad (3)$$

If the error terms ε_2 , and ε_3 are correlated with unobserved factors associated with the purchase of insurance coverage, direct estimation of equation (1) will yield inconsistent estimates. Some individuals are more economically debilitated than others by the same physical condition. Such heterogeneity may reflect unmeasured differences in disease severity, individual differences in responding to the challenges of chronic illness, or differences in local economic opportunities for disabled individuals to obtain gainful employment given a specific health

concern. Individuals facing employment barriers due to psychiatric disorders may face related barriers to insurance coverage.

Health Insurance Decisionmaking and Vulnerable Populations

As just discussed, many uninsured Americans are members of one or more of the vulnerable population groups. In this section, we endeavor to provide an analysis of the underlying reasons for the existence of noncoverage. As we have just argued, there is a need for the analysis of the lack of health insurance to be more firmly grounded in models of decisionmaking. Accordingly, our survey of the literature will highlight the descriptive background and the key structural issues relevant to the analysis of health insurance and vulnerable populations.

Health Insurance and Low-Income Americans

The first vulnerable population of interest consists of Americans with low incomes. Their access to health insurance or lack of health insurance is related to their access to health insurance through employment, their ability to purchase nongroup coverage, and their access to, and use of, government programs such as Medicaid and CHIP. Each of these issues applies to the general population. However, these issues have special importance, and raise special concerns, for many low-income populations.

In the nongroup market, people lacking health insurance can purchase insurance policies. While these policies frequently carry high load factors and often impose restrictions such as pre-existing condition exclusions and waiting periods, they are an option. One structural feature of health insurance is the stark nature of the purchasing decision. While deductibles and coverages may differ, creating an array of possible insurance policies, there is a limited range to this variation. In the end, many consumers face the choice between purchasing an offered policy or having no policy at all, even if they would prefer something in between.

An important component of the uninsurance puzzle is the fact that many of the uninsured, especially those with low incomes, choose not to purchase these policies. Several studies indicate that substantial subsidies may be required to achieve a high take-up of insurance among low-income consumers.^{27, 28} Moreover, some of the overall trend in uninsurance is linked to the rising costs of medical care and to declining real wages, at least until the mid-1990s. (On declining real wages, see Katz and Murphy (1992).²⁹) The former trend increased the price of

health insurance, while the latter trend reduced the income available to purchase coverage. Given the high income--elasticity of demand for insurance coverage,²⁷ the impacts of rising medical costs and falling real wages may have been felt most strongly among low-income workers—the group which experienced the largest decline of health insurance coverage during the 1980s and 1990s.³⁰⁻³²

These issues return in the context where most Americans under age 65 receive their insurance: through employment-related benefits plans. Here, the decision to offer insurance is nominally made by the employer (or is a result of collective bargaining). Yet the employment connection to health insurance can break down for low-income workers for several reasons: the jobs that they do hold will often not provide health benefits and these health benefits plans require employees to pay premiums, especially to obtain coverage for dependents. Moreover, many low-income Americans are employed part-time, in jobs that generally lack health insurance benefits. Such individuals may have a weak and episodic connection to jobs in the paid labor force.

Just as in the case of non-group coverage, the ultimate decisionmakers are the low-income workers. The offering and take-up of employment related insurance is a result of employer decisions that respond to employee demand concerning the types of compensation packages that they desire. The structural issues just identified are important again: the decision is for a discrete insurance plan, often a single plan adopted to match the demand of the "typical" employee, which may not be optimal from the point of view of individual low-income workers.³³ Low-income workers--facing tight budget constraints and perhaps contemplating the purchase of benefit packages suited to more affluent workers--may decline employer coverage or to decline family-related coverage for their dependents. ²⁶

The final important structural issue concerning insurance coverage arises from the availability and desirability of means-tested public insurance, primarily Medicaid and SCHIP, and the availability of safety net providers and uncompensated care. The availability of both the means-tested programs, and in practice, the likelihood of using safety net providers are differentially important for low-income Americans.

Not all of those who are eligible for means-tested programs actually enroll in these programs: take-up rates are frequently estimated to be in the range of 40 to 60 percent. The determinants of this low take-up are not fully understood. Many concrete barriers to program

participation have been identified through both qualitative and survey research: burdensome enrollment processes,³⁴ language barriers and fear of immigration sanctions,^{4, 35, 36} perhaps rationing of nominally-available benefits by street-level bureaucrats,³⁷ incorrect eligibility determination by officials,³⁸ recipient ignorance about program rules and eligibility requirements.³⁹

Welfare and Medicaid stigma has also been identified as potential barriers to program enrollment.⁴⁰ Although a well-elaborated theoretical literature explores the linkage between social norms and program participation,⁴¹ efforts to measure the prevalence and implications of welfare stigma have reached contradictory conclusions.³⁹ Efforts by many states to distance the CHIP program from Medicaid suggest that state policymakers are concerned about stigma as an obstacle to program participation.

The belief that public insurance is low-quality may also influence take-up and the perceived tradeoffs between public and private coverage.⁴² Medicaid managed care arrangements, which integrate recipients into “mainstream” health care plans, may alter recipients’ perceptions of Medicaid stigma, though these effects have not been evaluated. Recent accounts of CHIP outreach efforts report consternation among potential recipients who discover that they have instead been enrolled in Medicaid. Concerns that Medicaid recipients may be treated poorly by providers have been cited as one reason for such reactions. On the other hand, surveys of recipients and potential recipients indicate largely favorable opinions about the Medicaid program.^{43, 44} Consumer ignorance about Medicaid benefits is a long-standing concern.⁴⁵

A second issue concerns the relationships between programs, such as the relationship between Medicaid and cash assistance programs such as TANF or SSI. Medicaid coverage for low-income families with children was traditionally linked to the old Aid to Families with Dependent Children program (AFDC). Federal policymakers, when enacting the federal welfare reform law of 1996 chose not to include Medicaid in the welfare-related block grants to the states. Indeed policymakers preserved adult Medicaid coverage by continuing to use pre-reform eligibility policies, supplemented by transitional Medicaid coverage for those leaving welfare for work. Federal policy also continued the phased implementation of federal mandates on the states to cover children under age 18 living in families with incomes below the poverty line and

children under age 6 with incomes below 133 percent of the poverty line. Nevertheless, implementation of welfare reform has resulted in not only declines in welfare receipt, but also declines in Medicaid receipt.^{21, 24, 34, 36} (Ku and Bruen, 1999 (?); Klein and Fish-Parcham, 1999; Pulos and Denker, 1999; Ku and Garrett, 2000; Ellwood & Irvin, 2000—Karl can you add these?). Survey data reveal that many families leaving welfare are eligible for Medicaid benefits but do not receive them.⁴⁶ Specific state welfare-related policies appear to affect both TANF and Medicaid enrollment, despite statutory guarantee of Medicaid coverage.⁴⁷ These effects are not limited to adults who might have received welfare benefits but extend to children as well.^{34, 48}

Welfare reform creates special problems for specific populations: sanctioned individuals or those now ineligible for public aid, immigrants, individuals with mental health and substance abuse problems who are more likely than others to fail work requirements or to otherwise receive sanctions. Existing evidence suggests that although poor children have rather high insurance rates, former AFDC/TANF recipients often lack coverage.⁴⁶ The large decline in welfare caseloads has led to reduced Medicaid enrollments,^{34, 36} which creates a strong need for alternative methods of outreach and enrollment for poor and near-poor children and adults in low-income families.

As policymakers seek to provide cash assistance to a narrower population over a shorter period of welfare receipt, and as policymakers seek to provide coverage to employed populations with incomes near or exceeding twice the poverty line, new strategies for outreach and enrollment need to be developed. Despite many programmatic innovations in enrollment procedures and outreach, obstacles to take-up remain a critical gap in existing research. Indeed, there has been to date only limited research about the relative effectiveness of these outreach efforts, and little research that situates these enrollment decisions in the context of the choices faced by low-income families.

A third cause of low take-up has received less systematic attention. Individuals who know that they are eligible for public insurance may wait to enroll in public programs until they are in acute medical need. Existing studies of Medicaid-eligible children indicate that non-enrolled children are slightly more healthy than their Medicaid-recipient peers.²⁶ Individuals

may also assume that they will receive medical services even if they lack insurance coverage,⁴⁹ or that they could enroll in the event of an adverse health event.

Rask and Rask (2000) find a negative correlation between proximity to a local public hospital and reduced probability of private insurance coverage among those with incomes between 100-200% and 200-400% of the poverty line.⁵⁰ On the other hand, Davidoff and Garrett (2001) find little evidence that the availability of safety-net providers displaces Medicaid coverage. One complication, noted by both sets of authors, is that safety-net providers help individuals to enroll in Medicaid and other public programs, creating mechanical “enrollment effects” that may counteract or mask individuals’ decision to forego coverage in favor of access to free care.

Whether, in fact, uninsured individuals reliably obtain care remains a subject of research investigation. Some commentators suggest that cost pressures associated with managed care have reduced treatment access, though little reliable data are available to scrutinize this concern. Recent data from the Community Tracking Study suggest that increased managed care penetration is associated with reduced levels of physician charity care and reduced access to care for the uninsured.⁵¹

Eligible families also face choices between public and private insurance coverage. The experience from the Medicaid expansions highlights the importance of crowd-out in shaping the impact and cost-effectiveness of expanded public provision. Although the size of this effect is open to debate,^{42, 52} economic principles suggest that subsidized public insurance will reduce demand for otherwise similar individual or employer-based coverage. Many uninsured individuals are employed or otherwise face opportunities to purchase private coverage.⁴² Efforts to expand public coverage will therefore affect many potential recipients who have, or who might have, alternative sources of coverage.

Finally, the quality of public insurance may influence both take-up among the uninsured and decisions between public and private coverage. At least two related aspects of the quality of public insurance programs for low-income Americans have been explored : the willingness of medical providers to participate in Medicaid, as well as the quality of medical care provided under the program. Both are influenced by reimbursement policy.

Several studies examine provider decisions to participate in the Medicaid program.^{53, 54} Expanded eligibility would have little practical impact for health care access when Medicaid reimbursement rates are below prevailing market prices for these services. Data collected from the 1980s and early 1990s indicates that Medicaid reimbursement rates, though lower than those for patients with private insurance, increased in many states at the same time as expanded eligibility. For example, Dubay and colleagues (1995) found that the expansions were not accompanied by increased physician participation in some of the states they investigated, with low reimbursement rates being a major perceived barrier to taking on Medicaid patients.⁵⁵

Reimbursement rates also influence quality of care. Dubay and colleagues (1995) found that an increasing proportion of patients with financial coverage for care allowed many publicly-funded clinics and hospitals were able to expand the services offered to women during prenatal care and/or introduce new prenatal care clinics.⁵⁵ Currie, Gruber, and Fischer^{16, 56} found that increased reimbursement rates were associated with statistically significant reductions in infant mortality. Schlesinger and Kronebusch report that lower reimbursement rates to physicians reduced the adequacy of prenatal care and were associated with an increase in the incidence of low birth weight, possibly because lower reimbursement rates lead to reductions in the amount of time spent with patients, thereby reducing quality of care.⁵⁴

Other presenters in this symposium consider the more general relationships between health status and health insurance coverage. We note, however, that the financial consequences of public insurance are substantial for low-income households. For a family of four in the non-group market, a 1998 General Accounting Office study identifies a "medium" annual premium of \$7,352. This is equivalent to \$3.68 per hour for full-year, full-time workers. This is approximately the same as annual food expenditure among families with annual incomes below \$20,000.⁵⁷ Even the cheapest plans, for healthy individuals living in parts of the U.S. with the lowest health care costs, command premiums exceeding \$3,000 per year. The financial value of Medicaid and CHIP coverage, which provide more comprehensive coverage than many private plans, may be larger. During the 1990s, expanded health insurance subsidies played an important role in increasing incentives for employment among current and former recipients of AFDC/TANF.⁵⁸

More generally, health insurance subsidies are the largest single category of public aid provided to poor and near-poor families. In fiscal year 1998, the federal government provided \$277 billion in means-tested assistance to disadvantaged families. \$72 billion was the provision of actual cash aid to disadvantaged families. \$92 billion was for means-tested food, housing, education, job training, energy assistance or other services.⁶ The largest single category, \$113 billion, was for means-tested medical benefits. (This latter figure does not include the state component of Medicaid spending, and also excludes services provided by the Veterans' Administration).

In the wake of welfare reform, health insurance subsidies are widely considered to be the most politically sustainable transfers to poor households in the U.S. Subsidies for health services are a particularly important source of economic support to politically marginal or unpopular populations that otherwise face economic need. Health insurance, whatever its impact on public health and on the health status of covered individuals, is therefore a major component of public policies designed to reduce poverty and inequality.

Health Insurance and Children

Children are dependent on their parents for many things. Their characteristic vulnerabilities are associated with their developmental and health-related needs in combination with their decisionmaking and economic dependence on their parents. Children are not considered to be competent to make most of the important decisions for their lives. This dependence is especially important for medical decisionmaking, and is also important given the central role of parental decisions in obtaining private or public insurance coverage. For most decisions and for most parents, as a society, we assume that parents are competent proxy decisionmakers, able to internalize the consequences of decisions for the well-being of their children, and to make decisions on their behalf.

Children are also economically dependent on their parents. They often depend on their parents' access to employer-based policies (which may or may not cover dependent children) in their receipt of health insurance coverage. As discussed above, adults may have several reasons not to purchase employer-based coverage. Most employment-related plans provide the possibility of family coverage, but many of these plans require the employee to pay an additional

⁶ All figures from the 2000 *Overview of Entitlements*, Appendix K.²¹

premium for family coverage. The result is less than full take-up of insurance coverage. (Some children may be eligible for coverage through a second parent, and as discussed below, for public insurance coverage.)

Low-income families, in such circumstances, face competing demands that may lead families to forego insurance coverage. Such decisions may be especially common for children's insurance coverage. Because most children are healthy, few need health services, and the services needed by most children are relatively inexpensive. For many children, health care utilization is confined to infrequent outpatient visits, which can be paid for out-of-pocket, and which might not be reimbursed under insurance policies with deductibles. Available alternative sources of medical care, including free and uncompensated services from physicians, hospitals, and clinics may reduce the incentive to enroll in insurance plans.

Low-income families can also obtain public insurance. Starting in the mid-1980s, the federal government created options and imposed mandates on the states to expand Medicaid eligibility for children in low-income families. The Medicaid expansions created the potential for increasing coverage of poor children. Yet parents faced new incentives concerning the purchase of private insurance with the creation of this new public coverage. Parents could now drop the private, often employment-related insurance coverage, at the same time that they enrolled their children in Medicaid. It is possible that this "crowd out" effect -- or the substitution of public insurance for private coverage one would otherwise obtain -- might constitute much of the net effect of the new program, leaving the rate of uninsurance unchanged. Many analysts agree that there has been substitution, even while they disagree on the size of the net effects.^{42, 52, 59-61}⁶²

As discussed above, take-up rates for means-tested programs are often modest.^{42, 48, 63,}
⁶⁴ Research on this issue has largely examined individual-level determinants of program participation. Most commonly, analysts have hypothesized that take-up and program participation are affected by knowledge of eligibility, perceptions about the program, welfare stigma, administrative procedures, and the experiences of potential recipients as they navigate the bureaucratic enrollment process.^{43, 44, 65} Moreover, welfare reform has had an important impact on Medicaid caseloads, including impacts on children's Medicaid enrollment.

Supplemental Security Income (SSI) is a second program of importance for the coverage of children. The 1990 Supreme Court decision *Sullivan vs. Zebley* relaxed criteria for children to

become SSI-eligible. Between 1991 and 1996, low-income children could have qualified for SSI benefits in two ways: first by having a specific qualifying medical impairment, or second by having a disability determined within an individualized functional assessment (IFA).^{21, 38, 66} Over that period, child SSI enrollment tripled. In September 1990, 294,000 children received SSI aid. Six years later, more than 950,000 children received SSI aid. Partly as a result of this rapid caseload increase, the IFA process became increasingly controversial, particularly when used to establish eligibility based upon attention deficit hyperactivity disorder or other behavioral disorders that seriously limit a child's ability to perform age-appropriate activities.

The 1996 welfare reform eliminated the IFA process for children. It also removed any reference to maladaptive behavior as a qualifying disability. The Social Security Administration was required to conduct eligibility redetermination proceedings for all children deemed eligible on the basis of the IFA procedure or as a result of maladaptive behavior. New SSI applicants must now have specific qualifying diagnoses, or experience impairments that exceed at least one specific qualifying impairment. Between September 1996 and December 1999, child SSI caseloads fell to 847,000. The relative contribution to this change that can be attributed to welfare reform is not currently known.

Declining child caseloads have attracted controversy. SSI reform has substantial implications for under-insurance and for child disability policy that go beyond the boundaries of this essay. However, existing evidence suggests that changes in SSI eligibility are unlikely to have a large impact on the overall number of children receiving insurance coverage. Social Security Administration analysis suggests that fewer than 100,000 children ultimately lose SSI eligibility as a result of welfare reform.⁶⁷

Moreover, because SSI already requires low family income, many children removed from the SSI program were eligible for other cash aid. The most extensive analysis, Garrett and Glied (2000), highlights the interplay between the traditional SSI program and AFDC.⁶⁶ Within states that offer high benefits, most SSI-eligible children have traditionally also been eligible for AFDC aid. Even when children are not AFDC/TANF-eligible, children who are income-eligible for SSI are generally income-eligible for Medicaid or for CHIP coverage in most states.

Health Insurance and Racial/Ethnic Minorities

As discussed above, racial and ethnic minorities in the U.S. are more likely to be uninsured than are whites.⁶⁸⁻⁷¹ Multivariate analysis, however, shows that for African-Americans, this difference is due to lower socio-economic status. For Hispanics, on the other hand, the differences in the prevalence of insurance persist.⁷²⁻⁷⁵⁷⁶ This difference is particularly large among those with low wages: According to one analysis of 1998 insurance in California, 60 percent of Hispanics earning less than \$7 per hour had no health insurance. Among workers with the same wages, 26 percent of whites, 46 percent of blacks, and 41 percent of Asians were similarly uninsured.⁷⁷ Much of the increase in uninsurance during the early 1990s was among Hispanics.^{71, 78}

One reason for high rates of uninsurance among Hispanic/Latinos is the large proportion of recent immigrants within this group. One-third of Hispanic Americans, and two-thirds of Asian-Americans are foreign-born.⁴ The 1997 National Survey of America's Families examined insurance status for persons with incomes below 200 percent of the poverty line. Among adults, these data indicate that 58.2 percent of noncitizens, 41.6 percent of naturalized citizens, and 33.7 percent of citizens were uninsured. Contrasts between citizens and non-citizens were more stark among children: 53.7 percent of non-citizens, 33.1 percent of citizen children with non-citizen parents, and 18.5 percent of citizen children whose parents were also citizens, lacked insurance coverage. More generally, immigrants face many difficulties in obtaining jobs, insurance, and access to medical services and these difficulties are felt across the age spectrum.^{4, 79-82}

The underlying structural explanations for these differences have not been carefully analyzed. One would expect African-Americans and Hispanic/Latinos to have lower rates of individual and employer-based insurance coverage than do non-Hispanic whites due to the lower average income within the two minority groups.⁸³

Second, minority workers may face social and economic disadvantages that reduce their attractiveness to employers. Minority workers may be more likely to have suffered from inadequate education, or may have English language difficulties which reduce their potential productivity. But wage rates are constrained to be at least equal to the legal minimum wage. Since providing health insurance is not required, one result is that these workers will be more

likely to receive compensation packages that lack fringe benefits such as health insurance or retirement benefits.

The third reason is labor market discrimination. While such discrimination against minority workers should be penalized by competitive markets, there is no guarantee that markets will be sufficiently competitive to eliminate historical patterns of discrimination, especially when these patterns are reinforced both by social and community norms that perpetuate cultural, racial, and ethnic stereotypes, as well as inadequate educational opportunities for members of minority groups.⁸⁴

In addition to direct discrimination in hiring and promotion, a nondiscriminatory sorting process may lead members of minority groups into industries and occupations that are less likely to offer health benefits because the typical worker in these sectors has a lower demand for health insurance. Because racial and ethnic minorities may be a small fraction of the workforce in specific workplaces, and because decisions about health insurance coverage are made for the employment group as a whole, their lack of access to health insurance is determined by the median preferences of the other workers in those industries and occupations.

Fourth, more subtle forms of discrimination may emerge in insurance markets. This explanation is more familiar in the context of automobile and property insurance, where premium levels and coverage availability is often related to neighborhood and location. These practices may be based on observable cost differences by geographic area. But given the patterns of residential segregation by race and ethnicity in the U.S., they are also consistent with discriminatory "redlining." It is not clear to what extent these patterns have emerged for health insurance. Medical care costs vary by geographic location, both regionally, as well as between central cities, suburbs, smaller cities, and rural areas. Members of minority groups may simply tend to live in places with high medical costs, and thereby face high insurance premiums.

The main alternative to employment-related insurance is insurance from public programs. Three aspects of the policy and administration of public insurance programs may take on a racial component. The first concerns the administration of enrollment. Members of racial and ethnic minorities may elect not to pursue enrollment because they believe that they will be treated badly during the enrollment process or because they, as members of disadvantaged groups, are especially sensitive to welfare-related stigma. There is also the possibility of individual

discrimination by case workers and administrative staff. Language barriers are potentially an issue in this process.^{85, 86} For example, analyses of Medicaid outreach and enrollment efforts during the 1980s suggest that attention to language issues was important to increase take-up and to improve the timeliness of prenatal care receipt.

At a larger policy level, legal changes concerning immigrant eligibility for public insurance that differentially affect recent immigrants, and therefore especially affect insurance access for certain ethnic groups. Immigrants are ineligible for many federal entitlements that confer legal or *de facto* Medicaid eligibility.⁸⁷ The 1996 welfare reform imposed a number of new restrictions on program eligibility for immigrants. With the specific exception of emergency Medicaid, illegal aliens are barred from participation in Federal assistance programs that had statutory provisions for noncitizens. These include TANF, SSI, Food Stamps, housing aid, and other important means-tested programs. The 1996 legislation also imposed more stringent treatment of immigrant sponsors to restrict immigrant participation in Federal means-tested programs. Sponsors face new responsibilities to provide financial support for immigrants; while the deeming periods for specific programs such as SSI were increased.²¹

The welfare reform act gave states the option to establish a 5-year waiting period before legal immigrants admitted after August 1996 can receive non-emergency Medicaid coverage. After the five year period expires, the income of an immigrant's sponsor, as well as the immigrant's own income, are counted in eligibility determination for cash assistance and for Medicaid. Undocumented children are also ineligible for SCHIP aid.⁸⁸ More recent controversial measures such as California's Proposition 187 may pose special access barriers, though the impact of this legislation is currently unknown.

Finally, policy and administration for the Medicaid and SCHIP programs are the responsibility of state governments. Policymaking in state governments occurs in a context of state-level politics, which is strongly affected by public opinion, interest group activity, the availability of economic resources, and the actions and preferences of state policymakers. Moreover, racial and ethnic minorities live disproportionately in the southeast and southwest, in states that also tend to be the most restrictive with respect to program eligibility. These restrictions may be a result of state-level politics. Although the mechanism is currently unclear,⁸⁹ a higher percentage of racial and ethnic minorities in a state appears to reduce the

level of public spending at both the state and local levels.⁹⁰ Related findings on the political economy of education spending suggest similar effects.²⁵

Health Insurance and Chronic Illness

Within the baseline model of a competitive insurance market, individuals use insurance to pool risks with others who, *ex ante*, share similar health risks. *Ex post*, once health risks are realized, individuals with chronic illness or injury are charged an actuarially fair premium to obtain health insurance coverage. Absent transaction costs, given full information about the health status of individual consumers, competitive insurance markets charge each individual her actuarially fair premium. Competitive markets do not cross-subsidize individuals with diagnosed chronic illnesses.

Given information asymmetries regarding consumer risk, adverse selection may prevent insurance markets from insuring some risks. The presence of consumers who have high but hidden expected costs can alter the content of insurance in other ways, as well. Insurers face strong incentives to design plans that are attractive for healthy consumers but that are undesirable from the perspective of consumers who have high expected expenditure.⁷

When expected expenditure is known, this information allows for efficient pricing. Given modifiable risk-factors such as tobacco use, actuarially fair premiums may create desirable incentives to reduce behavioral risk. However this information can also produce substantial welfare losses that arise from missing markets. Within an uncoordinated private market, individuals cannot buy insurance against the possibility that they will be born with “uninsurable” ailments or that they will be uncovered as high-risk.²⁰ Actuarially fair premiums for children and adults with chronic or acute illness, for individuals with chronic psychiatric and substance use disorders, and for other vulnerable populations are often quite high.^{13, 95-99}

Given the possibility of public subsidy, one might address these concerns through risk-adjustment and accompanying subsidies for individuals facing high expected expenditure.¹⁰⁰⁻¹⁰⁴ When the characteristics associated with high expenditure are easily observed, such subsidies are sometimes provided. Risk-contracted HMOs within the Medicare program are provided with

⁷ The implementation of carveouts to control high-expenditure categories is a second strategy to ameliorate adverse selection concerns. Such measures are sometimes criticized as creating barriers to insurance coverage and creating incentives for under-provision of appropriate care.⁹¹⁻⁹⁴

an age-adjusted premium subsidies designed to promote coverage choice for older beneficiaries. Subsidies for outlier expenditures have also been proposed to address the needs of high-expenditure individuals. Van de Ven and Ellis consider different risk-adjustment strategies to address these concerns.¹⁰⁵

In practice, however, many vulnerable populations pose difficult challenges to risk-pooling in standard health insurance markets. Vulnerable populations are internally diverse, with costs and utilization that vary markedly among nominally similar individuals.^{13, 106, 107} The performance of risk adjustment systems has not been carefully evaluated, though recent studies have contributed to a growing literature.^{96, 97, 102, 108}

Many public insurance programs employ primitive risk-adjustment algorithms that raise important possibilities for adverse selection in capitated plans. Among children with special health care needs, for example, costs vary widely even among those with the same nominal diagnoses for Title V and other programs.^{13, 109} Individuals with high previous expenditure have high expected expenditures in subsequent periods.¹⁰⁴ From a payer perspective, vulnerable populations are often unattractive customers. Existing risk-adjustment methodologies are at an early stage within the general population, and are especially challenged in addressing specific subpopulations of clinical and policy interest.¹⁰⁸ Populations such as HIV patients and those with mental or behavioral health needs pose especially prominent concerns for non-coverage, and have prompted efforts to develop feasible risk-adjustment.^{105, 108, 110}

Given this discussion, a critical question for policy concerns the number of individuals who lack coverage because they experience chronic illness or other “uninsurable” risk. Medical underwriting and other practices that lead to lack of coverage or high premiums for chronically-ill individuals appear widespread within the individual insurance market, and within some segments of the group market.¹¹¹ Such concerns contributed to passage of the 1997 Health Insurance Portability and Accountability Act (HIPAA). HIPAA limits medical underwriting of continuously-insured individuals who change group plans. HIPAA prohibits insurers from imposing within-group underwriting to exclude individuals due to chronic illness. HIPAA also requires insurers who offer small-group coverage to make such policies available to all small employers.(Matthews 1997)

The impact of HIPAA on coverage for chronically-ill individuals remains unknown. HIPAA allows significant leeway for group insurers to cap lifetime payments for specific illnesses. HIPAA does not apply to uninsured individuals.^{112, 113} HIPAA does not require insurance plans to provide mental health coverage or other categories that may be especially important for chronically-ill individuals. HIPAA requires individual policies to be provided on a guaranteed-renewal basis without preexisting condition exclusions. However, the act does not regulate actual premiums; nor does it provide public subsidies for individuals with high expected health care costs. Cantor and colleagues, examining data from the 1993 Robert Wood Johnson Foundation Employer Health Insurance Survey, document that medical underwriting was allowed in 35 percent of establishments with fewer than 50 workers, and in one-fifth of larger firms. Yet only 5 percent of employers reported that some workers or dependent were actually excluded from coverage.¹¹⁴

¹⁰⁸A surprising research gap concerns the proportion of uninsured Americans who are “medically uninsurable,” that is who cannot obtain coverage due to a chronic health problem. Despite a large research literature concerning the uninsured, the proportion who lack coverage due to a specific illness appears currently unknown. Reisine and Fifield (1995) report patterns of insurance coverage among patients with rheumatoid arthritis. 21 percent of patients reported some insurance limitation due to arthritis as a preexisting condition. 11 percent had been denied insurance.¹¹⁵ More recently, Stroup, Kinney, and Knieser (2000) examine the impact of chronic illness on insurance coverage among both healthy and chronically ill Indiana residents.¹¹³ 215 out of 457 respondents were drawn from a “cancer sample” that included women with breast cancer and men with testicular cancers from local registries. This sample was therefore not representative of the broad population or of the population of individuals with serious chronic illness. The authors report that a chronic illness increases the probability of uninsurance by 2 to 8 percentage points across the pertinent sample.

Nationally-representative data from the National Health interview study provide further clues. Within these data, 0.94 percent of uninsured adult respondents--an estimated 263,000 people--report that they cannot obtain insurance coverage due to a health problem. More than 60 percent of uninsured individuals reported that they had no insurance coverage because coverage

was too expensive or they could not afford it. 9 percent reported that coverage was not offered by their employers.

The National Health and Nutrition Examination Study (NHANES) III includes a detailed questionnaire (and medical examination) concerning respondents' health status. In particular, NHANES asks respondents whether they had ever been told by a doctor that they have cancer, diabetes, or other serious ailments. NHANES III also investigates respondents' insurance status and asks respondents the primary reason for their lack of coverage. Within the NHANES, 2.2 percent of uninsured individuals report that they were refused insurance due to a health concern. Among those refused, 39 percent reported a specific chronic illness. 23 percent of those refused due to ill-health reported a diabetes diagnosis. 9.6 percent reported history of stroke, and 9.4 percent reported a diagnosis of asthma.

Although the medically uninsured are a small proportion of the uninsured, many uninsured individuals experience significant illness. NHANES data indicate that 2 million uninsured individuals have been told by a doctor that they arthritis. 1.8 million have asthma, and 1.3 million have chronic bronchitis. 613,000 uninsured individuals have been told by a doctor that they have diabetes; while 615,000 have been told that they have a cancer diagnosis.

Health Insurance and the Near Elderly

As documented in the empirical analysis of the NHIS presented above, Americans aged 55 to 64 are more likely than others to obtain insurance coverage. These results match previous empirical analyses using other datasets. Most recently, Monheit and colleagues (2001) analyze 1996 data to document that 86.7 percent of workers age 60-64 had some form of insurance coverage.¹¹⁶ Near-elderly individuals display the highest prevalence of coverage in any age group of adult workers. Glied and Stabile (1999) note significant declines in health insurance coverage for the near-elderly between 1989 and 1997. Such adverse trends highlight the near-elderly as an important focus for public policy.

Despite this high rate of insurance coverage, individuals within this age-group experience several challenges that make coverage a special concern. Individuals age 55-64 are five times as likely as individuals age 25-34 to report that they are in "Poor" health and have approximately twice the expected health care expenditure.¹⁸ Monheit and colleagues report that women out of the workforce and in less-than-excellent health displayed lower rates of insurance coverage than

were found among other near-elderly individuals. Among workers age 55-64, 22.7 percent of female workers in less-than-excellent health reported lack of insurance coverage, compared with 15.8 percent of comparable men.¹¹⁶ Although adverse health status was a risk-factor for uninsurance among women, it had no statistically or practically significant effect among men.

Because near-elderly individuals may experience important life transitions such as declining health status, early retirement, or changes in household composition, several studies suggest that near-elderly individuals are more affected than are younger individuals by preexisting condition clauses in employer-based policies or by measures that influence portability of coverage.¹¹⁷

Sloan and Conover (2000) also explore these concerns, using 1992 and 1994 data from the Health and Retirement Study for individuals between 51 and 64 years of age.¹¹⁸ These authors find that individual and spousal employment, work disability, and education were the most important determinants of insurance coverage. Controlling for these factors, measures of health and functional status was not associated with lower probability of insurance coverage, but were associated with the receipt of public rather than private coverage.

We examined insurance patterns more closely within the 1996 NHIS. Table 3 examines the interaction between coverage and health risk. In particular, it shows the result of a logistic regression analysis in which the dependent variable is the lack of insurance coverage combined with self-reported poor health or an academic or work limitation.

These results show noteworthy differences from the patterns reported in the analysis of simple uninsurance reported in Table 2. Particularly among women, individuals between 55 and 64 are more likely than others to experience the dual concern of uninsurance and health risk. Although the near-elderly are only 6 percent of uninsured individuals in the NHIS sample, they are 24 percent of those who are both uninsured and experience health limitations. In multivariate models, much of this near-elderly effect is concentrated among those who are unemployed or otherwise have tenuous attachment to the labor market. In contrast to this pattern, Hispanic/Latinos, and immigrants, who are a large component of the uninsured population, do not display a high prevalence of these dual risks.

Health Insurance and Psychiatric Disorders

Psychiatric disorders are among the most common forms of acute and chronic illness in the American population. As documented in the National Comorbidity Study (NCS), half of non-institutionalized U.S. adults ages 15-54 satisfy DSM-IV screening criteria for lifetime occurrence of at least one psychiatric disorder. 30 percent satisfy screening criteria for at least one disorder within the previous 12 months. 14 percent of the population indicated histories of three or more comorbid disorders.¹¹⁹ Severe psychiatric disorders are less prevalent. Regier and colleagues estimate that approximately 1 percent of the U.S. population suffer from schizophrenia or bipolar disorders.¹²⁰ Narrow and colleagues indicate more than twice this prevalence of severe mental illness (SMI), using United States Senate Appropriation Committee definitions.¹²¹

Although severe mental illness is unusual, it poses several distinct challenges to both research and practice concerned with health insurance coverage. First, the strong stigma associated with psychiatric disorders plays an important role in public policy,¹²² in providers' ability to recognize psychiatric disorders and to refer patients to appropriate care,¹²³ and in individuals' willingness to seek care or to take up pertinent public assistance.¹²⁴ Within the National Comorbidity Study, less than 40% of individuals who have satisfied lifetime screening criteria for psychiatric disorders have received professional treatment. Kessler and colleagues (2001) report very similar patterns among those experiencing SMI. Less than 20% of respondents with recent disorders received treatment during the previous year. Equally striking are the patterns among severely mentally ill individuals. Among SMI respondents surveyed in the Healthcare for Communities survey, 59 percent obtained no outpatient care.¹²⁵

Indeed, one feature of their illness is that individuals with psychiatric disorders may be unable to act as effective agents on their own behalf. Within the SMI population, a patient's "need" for mental health services can be inversely related to their "demand" behavior. For example, suicidal ideation and danger to self/others from alcohol use were *negatively* related to receipt of mental health services.¹²⁵ While there is little research on this point, this failure to seek services probably extends to seeking out and participating in public programs, including SSI and Medicaid. Moreover, low patient demand for mental health services reduces the perceived desirability of health insurance itself, which may affect overall coverage rates within this population.

Second, individuals with clinically significant psychiatric disorders are frequently unemployed, out of the labor force, or employed in low-wage positions that may not offer health insurance coverage. Economic disadvantage is especially common among those who satisfy criteria for SMI. Although precise criteria for SMI vary,¹²¹ individuals with bipolar disorder or schizophrenia would be among those identified as experiencing significant severe and chronic disorders that require ongoing care.

McAlpine and Mechanic provide a recent summary of health care utilization, insurance coverage, and the social circumstances of the non-institutionalized SMI population.¹²⁵ Adults experiencing severe mental illness have significantly lower household incomes than other Americans. 69 percent of SMI individuals are unmarried. Nonwhites and those with less than a high school education are also over-represented within the SMI population. In particular, these authors find that 20 percent of individuals with severe mental illness, and 18.4 percent of individuals with non-SMI psychiatric disorders, were uninsured. 45 percent of SMI individuals, and 25 percent of those with non-SMI psychiatric disorders, received some form of public insurance coverage.

Among SMI individuals, insurance coverage is associated with significantly higher use of specialty mental health care. Given the non-experimental nature of the available data, the causal foundation of this relationship is undetermined. Individuals who seek or receive specialty care may be subsequently referred to social services and enrolled in public insurance. Public insurance plays an important role in health coverage for individuals with severe psychiatric disorders. Many of these individuals satisfy eligibility criteria for SSI or for Social Security Disability Income (SSDI), and can therefore receive public health insurance coverage. 1.25 million Americans between the ages of 18-64 receive health coverage through SSI eligibility for psychiatric diagnoses. An additional 900,000 people receive SSI coverage by reason of developmental disability.²¹

Third, individuals with psychiatric and substance use disorders confront significant public policy shifts that influence insurance coverage. Until 1996, individuals could also qualify for federal disability programs through a diagnosis of alcohol or illicit substance use (“drug and alcohol addition,” or DA&A) disorders.^{126, 127} At that time, approximately 209,000 individuals received SSI or SSDI benefits through the DA&A program. However, Public Law 104-121 removed individuals from the rolls for whom drug addiction and alcoholism (DA&A) were

material to the determination of disability.⁶⁷ Between December 1996 and January 1997, 103,000 of these individuals were removed from public aid.

Many recipients who did remain on the assistance rolls were recertified due to qualifying psychiatric diagnoses.⁶⁷ Swartz and colleagues¹²⁸ surveyed 204 randomly selected former recipients in the Chicago area. One year after disenrollment, 107 of these individuals reported monthly legal earnings below \$500 and received no cash public assistance. 69 respondents re-qualified for public assistance based upon medical or psychiatric impairment, while 28 reported monthly earnings of at least \$500. (See also Pollack et al. 2002.¹²⁷)

The health insurance status of former DA&A recipients was not reported in the above study. National patterns of health insurance coverage among former DA&A recipients is currently unknown. Some former recipients may receive health insurance coverage through General Assistance and other state-level programs, though these heterogeneous programs have received limited policy analysis.^{129, 130}

Fourth, public-sector mental health services, including substance abuse treatment, are often financed outside of the Medicaid or private insurance market. Such services are financed through state funds, and through federal funding streams such as the Substance Abuse Prevention and Treatment block grant.¹²⁴ The impact of block grant funding for treatment access has received little research attention.¹³¹⁻¹³⁴ The interaction between block grants and other forms of public or private insurance coverage has received little research attention—an interaction that is not considered in setting budget allocations across localities.¹³⁴ The role of public-sector mental health services in gaining access to other health services has likewise received little systematic attention, although the analysis by Friedmann and colleagues^{135, 136} of the linkage between substance abuse treatment and other forms of health care is an exception.

Challenges:

This essay identifies many particular findings concerning specific vulnerable populations, but we also encounter common concerns that recur among many otherwise disparate risk-groups. Some of these challenges concern data quality and questions for academic research. Others involve the impact of policy initiatives within a federalist system. Still others involve competing priorities in expanding health insurance coverage to best improve population health.

Inadequacy of data regarding many vulnerable populations

Within the past decade, many population-based surveys have examined health status, health insurance coverage, and health care expenditure across the U.S. population. Such surveys include the Current Population Survey, the National Health Interview Survey, National Survey of American Families, Survey of Income and Program Participation, and others. Because of differences in survey methodology and sampling, these surveys yield somewhat different estimates of the population that lacks health insurance coverage.⁷⁷ Yet virtually every survey provides limited coverage of the small but important populations that comprise the most vulnerable segment of the U.S. population. The Institute of Medicine (2000), and more recently the National Research Council (forthcoming), note that existing population-based surveys provide poor coverage of individuals at highest-risk for HIV disease or who use illicit substances.¹³²

Public health policymakers express increasing concern that existing nationally-representative surveys examine non-institutionalized populations, and thereby overlook critical populations in a variety of settings. Patients in inpatient psychiatric facilities are outside the sample frame of such studies. The two million men and women under correctional system supervision poses especially important concerns for public policy and public health. However, this group is beyond the scope of such surveys as the National Comorbidity Study and the Behavioral Risk Factor Surveillance System that seek to scrutinize sensitive concerns.

Through the exclusion of institutionalized populations, through the use of telephone surveys, and through sampling strategies that frequently exclude individuals in greatest need, existing data sources provide poor coverage of the population of individuals receiving residential substance abuse or mental health treatment, who experience severe psychiatric disorders, or who are incarcerated. Each of these populations is of great public health importance and experiences high prevalence of adverse outcomes.¹³³

In many areas, data regarding insurance status of vulnerable populations is haphazardly collected as the incidental by-products of clinical or social services rather than as part of a concerted strategy of population-based surveillance. If health care utilization is influenced by the availability of insurance coverage, clinically-based data systems may be biased.

In similar fashion, available data regarding chronic illness or behavioral risks is generally based upon self-reported behaviors in national surveys that do not provide adequate coverage for men and women at greatest risk. A few population-based surveys such as the National Health and Nutrition Examination Study do include medical examinations and provide blood sera, but these surveys do not adequately sample the high-risk groups of greatest policy importance. As a result of these data limitations, the circumstances, and even the absolute size of many vulnerable populations remains imperfectly known.¹³⁷

The interaction between public insurance and other funding streams that provide health care

Many vulnerable populations receive health care services that are financed outside the traditional sources of public or private coverage. The interaction between health insurance coverage and other funding streams is imperfectly known. For example, uninsured adults who require substance abuse treatment frequently receive services through the substance abuse prevention and treatment (SAPT) block grant. These services are largely designed for adults who lack pertinent health insurance coverage, and totaled \$1.5 billion in fiscal year 2000. Yet the impact of SAPT on expanding treatment access for uninsured individuals is unknown and virtually unstudied.^{131, 133}

One pertinent concern for policymakers concerns the substitutability or complementarity of insurance coverage with traditional safety-net providers. Given the complex financial arrangements to support these organizations, efforts to expand health insurance coverage may bring unanticipated effects. The literature regarding the impact of federal mandates provides two examples of such effects. Duggan (2001) examines the impacts of increased disproportionate share hospital (DSH) payments.¹³⁸ He finding that the increased subsidies had little impact on the public hospitals that have the greatest share of indigent patients. Because public hospitals face a soft budget constraint, the incidence of state or federal subsidies falls on the marginal source of funds that support hospital operations. Virtually the entire benefit associated with increased DSH subsidies was captured by local governments, which reduced their subsidies to public hospitals by approximately \$1 for every \$1 in additional DSH funds.

Baicker (1997) finds that increased state expenditures for Medicaid were associated with reduced expenditures for AFDC and other programs targeted to poor individuals.¹³⁹ Given the soft budget constraints faced by many safety-net providers, and given the complex interplay

across different levels of government, understanding the true incidence of health insurance policy initiatives is a high priority for economics and political scientists examining the political economy of expanded coverage.

Supply-side responses to expanded coverage

In addition to such budgetary effects, policies to expand insurance coverage may alter incentives to health care providers and thus produce unanticipated effects. During the 1980s and 1990s, the number of deliveries and the proportion of Medicaid-insured pregnant women more than tripled.¹⁴⁰ The health impact of such policies has been the subject of considerable debate. Many state-level studies find little impact on prenatal care adequacy or the incidence of low birth weight.¹⁴¹⁻¹⁵⁰ At the same time, several authors suggest that Medicaid expansion reduced infant mortality by improving access to advanced technologies such as neonatal intensive care.^{142, 143, 151}

Whatever the health impact for specific infants, Medicaid expansion greatly reduced the proportion of live deliveries to uninsured women.¹³⁸ Within 5 years, Medicaid payments thereby subsidized what had traditionally been the largest single category of charity care.¹⁵² Expanded eligibility for Medicaid-funded prenatal care, labor and delivery, and postnatal services therefore had a substantial impact on health care providers.

Although more generous Medicaid policies subsidized traditional providers, such policies also increased competition for profitable classes of Medicaid patients. As Medicaid has acquired a larger market share of deliveries, and as Medicaid reimbursement rates converge with those of private payers in many states, providers who have not traditionally served low-income populations have chosen to enter the Medicaid market.¹⁵³ Gaskin and colleagues provide evidence that the resulting competition has harmed traditional safety-net institutions as they lose low-risk Medicaid patients to other providers.¹⁵⁴ Because safety-net providers sometimes use Medicaid funds to cross-subsidize services for uninsured or under-insured individuals, this competition brings important public health implications. Most recently, analysts have considered the role of Medicaid in providing potentially undesirable incentives for less-advanced facilities to enter the market for neonatal intensive care.¹⁵⁵

Priority-setting in expanding insurance coverage

Social decisions about insurance coverage may be made on the basis of many priorities--priorities which suggest different appropriate target groups for expanded coverage. Average cost, political feasibility, and norms of self-sufficiency are one set of pertinent criteria, which have animated past efforts to expand coverage among pregnant women, infants, poor and near-poor children. If one were to allocate resources based upon infectious disease prevalence, based upon the marginal impact on population health, or based upon the externalities associated with poor health status, smaller but more severely-disadvantaged populations such as adults with mental and behavioral health disorders may receive higher priority.

Many of the analyses summarized in this paper suggest another criterion in setting priorities for expanded insurance coverage: populations challenged by both poverty and chronic illness. Although each of these factors is a source of vulnerability, the interplay between poverty and chronicity creates special vulnerability that does not arise from either factor alone. Individuals with psychiatric or substance use disorders, low-income children with special health care needs, current and former welfare recipients, face economic challenges that increase the need for health insurance coverage, that hinder individuals in their ability to obtain insurance coverage, and that hinder these individuals in their ability to use available coverage to maximum advantage.

The structure of public insurance seeks to accommodate the social, economic, and medical challenges facing populations that confront these dual concerns. Increasingly, public insurance seeks to link health care delivery with other components of the safety net. Children with special health care needs have many medical and non-medical needs that, in practice, are often addressed through health insurance systems. Title V care coordination services and Medicaid subsidies in school settings play an important role in securing educational services.^{14, 156-159} Individuals with psychiatric disorders receive similar case management to secure cash assistance and social services.^{94, 160} The content of insurance packages for particular populations is beyond the scope of the current essay. The pertinent point here is that insurance is increasingly integrated with educational, rehabilitative, and social services designed to address medical and non-medical needs. Lack of insurance coverage therefore deprives individuals of the most prominent point of entry in receiving services to meet medical and social needs.

The linkage between low-income and health insurance is influenced in a second way, by economic realities of chronic illness. Poor health hinders labor market performance, and thereby hinders access to health insurance and medical services. Such factors appeared most pronounced among the near-elderly, among whom women wage-earners with self-reported adverse health status were substantially less likely than were more healthy female workers.

Conclusion

This essay examines health insurance coverage for vulnerable populations. In many ways, this essay is a catalogue of unsettled questions regarding critical populations of social and public health concern.

For some populations, such as near-poor children eligible for but not receiving Medicaid or CHIP, the critical questions concern take-up: How much do eligible families really value these benefits? How can public insurance programs replace traditional cash assistance programs as vehicles of outreach and enrollment? For other populations, such as recent or undocumented immigrants, the critical questions concern more complicated policy barriers to the receipt of health care services.

Other populations face special vulnerability due to chronic illness. Children with special health care needs are costly consumers for health insurance plans, and require multidisciplinary responses to meet medical and social needs. The ability of public payers to accomplish adequate risk-adjustment and to monitor quality become essential matters even when children obtain nominal coverage. Individuals with chronic illness also face significant problems of under-insurance that raise policy concerns. The ability of public insurance to protect these individuals from hardship remains unproved.

More severely disadvantaged populations raise more difficult questions. The most widely-used data and models in policy analysis concern non-institutionalized, generally-employed populations. Data are much less complete, and of unknown quality, regarding individuals experiencing SMI or severe substance use disorders. How large are these populations? How well do public insurance programs address their needs? If uninsured individuals receive services through the substance abuse prevention and treatment block grant, through non-Medicaid state funding for psychiatric care, or through other funding streams, does this assure access to appropriate care?

Despite gaps in the available data, existing research does provide useful policy insights. These data provide ample warning that one should not oversell the possibilities for improved health status and individual well-being that can be assured through expanded health coverage. Expanded coverage is unlikely to eliminate high rates of excess mortality and morbidity that arise from multiple causes and require multi-faceted interventions.

At the same time, existing data suggest that coverage provides important benefits to the intended beneficiaries and to the broader society. Expanded coverage provides an important subsidy to the economically disadvantaged. It increases health care utilization among poor and near-poor children, and within several other important groups. Health insurance entitlement security is central to the delivery of social, educational, and rehabilitative services to many disadvantaged populations. Expanded coverage also provides financial support to safety-net providers that accept primary responsibility to serve the most disadvantaged segments of the U.S. population.

Health policy analysts who favor expanded social provision aspire to a comprehensive and straightforward set of interventions that provide secure insurance coverage to Americans in the greatest need. As in the case of income support, the desire for simplicity must be balanced against the particularity of specific populations, and against the institutional complexity of existing interventions that currently address their social, economic, and health needs. Designing health insurance coverage that builds upon the incomplete, but essential patchwork of existing interventions remains a central challenge in serving the most vulnerable segments of the American population.

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Table 2: Probability of Uninsurance in the National Health Interview Survey, 1996 Wave, Logistic Regression Model

	Children age 0-16 Adjusted Odds Ratio [95% CI]	Women age 17-64 Adjusted Odds Ratio [95% CI]	Men age 17-64 Adjusted Odds Ratio [95% CI]
South	(reference)	(reference)	(reference)
West	0.697 [0.596, 0.814]	0.868 [0.762, 0.991]	0.851 [0.745, 0.971]
Northeast	0.516 [0.428, 0.622]	0.526 [0.451, 0.614]	0.799 [0.687, 0.908]
Midwest	0.481 [0.404, 0.574]	0.633 [0.552, 0.726]	0.618 [0.538, 0.710]
High school dropout	(reference)	(reference)	(reference)
High school graduate	----	0.699 [0.618, 0.789]	0.693 [0.614, 0.783]
College graduate	----	0.504 [0.420, 0.605]	0.501 [0.425, 0.590]
African-American	0.709 [0.404, 0.574]	0.922 [0.801, 1.061]	0.937 [0.808, 1.087]
Asian	1.145 [0.782, 1.692]	0.932 [[0.672, 1.292]	0.800 [0.574, 1.116]
Hispanic/Latino	1.588 [1.384, 1.823]	1.497 [1.319, 1.701]	1.611 [1.420, 1.828]
Non-Hispanic White	(reference)	(reference)	(reference)
Married	----	1.078 [0.956, 1.215]	0.849 [0.751, 0.960]
Unmarried	----	(reference)	(reference)
Recent Immigrant	2.04 [1.620, 2.574]	2.818 [2.297, 3.457]	2.281 [1.875, 2.775]
Log(family income)	0.774 [0.691, 0.866]	0.608 [0.549, 0.672]	0.497 [0.442, 0.559]
Top-coded income (over \$50,000)	0.115 [0.087, 0.150]	0.278 [0.230, 0.336]	0.385 [0.325, 0.455]
Poor health	0.533 [0.236, 1.204]	1.037 [0.759, 1.417]	0.821 [0.571, 1.180]
Work or school health limitation	0.575 [0.264, 1.250]	0.675 [0.538, 0.849]	0.501 [0.391, 0.642]
Poverty	0.926 [0.746, 1.149]	0.889 [0.730, 1.083]	0.964 [0.789, 1.177]
Unemployed	----	1.899 [1.49, 2.42]	3.076 [2.444, 3.872]
Age 6 and younger	(reference)	---	---
Age 7-10	1.155 [0.985, 1.355]	---	---

Table 2 (cont.)

	Children age 0-16 Adjusted Odds Ratio [95% CI]	Women age 17-64 Adjusted Odds Ratio [95% CI]	Men age 17-64 Adjusted Odds Ratio [95% CI]
Age 11-16	1.410 [1.223, 1.624]	---	---
Under age 25	----	1.147 [0.959, 1.372]	1.312 [1.083, 1.591]
Age 25-34	----	1.322 [1.129, 1.546]	1.873 [1.598, 2.196]
Age 35-44	----	1.109 [0.948, 1.297]	1.269 [1.078, 1.492]
Age 45-54	----	(reference)	(reference)
Age 55-64	----	0.859 [0.707, 1.045]	0.785 [0.632, 0.974]
Estimated Population	54,791,305	71,762,297	69,657,211

Table 3: Probability of Poor Health Status and Uninsurance in the National Health Interview Survey, 1996 Wave

	Children age 0-16 Adjusted Odds Ratio [95% CI]	Women age 17-64 Adjusted Odds Ratio [95% CI]	Men age 17-64 Adjusted Odds Ratio [95% CI]
South	(reference)	(reference)	(reference)
West	1.285 [0.366, 4.64]	0.796 [0.512, 1.238]	0.504 [0.291, 0.874]
Northeast	2.083 [0.357, 4.616]	0.485 [0.279, 0.844]	0.703 [0.416, 1.188]
Midwest	1.262 [0.251, 6.340]	0.627 [0.392, 1.002]	0.639 [0.375, 1.089]
High school dropout	----	(reference)	(reference)
High school graduate	----	0.969 [0.670, 1.402]	1.630 [1.086, 2.447]
College graduate	----	0.959 [0.462, 1.992]	0.577 [0.243, 1.372]
African-American	1.374 [0.352, 5.366]	1.178 [0.772, 1.799]	1.385 [0.907, 2.116]
Asian	(insufficient observations)	1.079 [0.337, 3.454]	(insufficient observations)
Hispanic/Latino	1.759 [0.598, 5.169]	1.958 [1.308, 2.930]	1.123 [0.692, 1.823]
Non-Hispanic White	(reference)	(reference)	(reference)
Married	----	1.200 [0.787, 1.830]	1.217 [0.801, 1.849]
Unmarried	----	(reference)	(reference)
Recent Immigrant	2.204 [0.599, 5.169]	1.126 [0.529, 2.399]	1.352 [0.473, 3.864]
Log(family income)	0.875 [0.258, 2.967]	0.660 [0.481, 0.907]	0.579 [0.445, 0.748]
Top-coded income (over \$50,000)	0.07 [0.008, 0.613]	0.570 [0.282, 1.150]	0.519 [0.215, 1.253]
Poverty	0.689 [0.06, 7.918]	0.716 [0.396, 1.295]	0.956 [0.554, 1.646]
Unemployed	----	2.525 [1.197, 5.324]	3.937 [2.004, 7.735]
Age 6 and younger	(reference)	---	---
Age 7-10	1.303 [0.366, 4.64]	---	---
Age 11-16	0.725 [0.203, 2.586]	---	---
Under age 25	----	0.650 [0.290, 1.458]	2.126 [0.887, 5.096]

Table 3 (cont.)

	Children age 0-16 Adjusted Odds Ratio [95% CI]	Women age 17-64 Adjusted Odds Ratio [95% CI]	Men age 17-64 Adjusted Odds Ratio [95% CI]
Age 25-34	----	0.730 [0.403, 1.322]	2.697 [1.521, 4.780]
Age 35-44	----	0.977 [0.607, 1.573]	1.476 [0.884, 2.464]
Age 45-54	----	(reference)	(reference)
Age 55-64	----	0.937 [0.591, 1.484]	0.712 [0.408, 1.24]
Estimated Population	53,038,493	71,762,297	67,360,710