The failure of prenatal care policy for the poor

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Prologue: The 1980s witnessed a troubling rise in infant mortality rates in the United States, reversing a decades-long decline. Overall, the U.S. infant mortality rate ranks behind those of many other wealthy, developed nations; moreover, for minority populations and in certain regions of the country, the rates more closely resemble those of the Third World. By mid-decade, Congress had begun to act on the advice of numerous expert panels that convened to address infant mortality and related issues. A series of expansions of Medicaid eligibility began, the most recent of which was passed into law with the 1990 budget reconciliation legislation. In this article, Mark Schlesinger and Karl Kronebusch explore the extent to which policymakers may have “thrown out the baby with the bathwater” in attempting to improve infant mortality rates. They examine the links between low birthweight, infant mortality, and economic status. They charge that requiring states to expand Medicaid eligibility, while resulting in only minor improvements in access to care, may actually “create counterproductive side effects that could outweigh the benefits of increased eligibility.” They write, “Piecemeal reforms hold benefits that are more illusory than tangible... [P]olicymakers must recognize how current efforts to hold down health care costs through cutting Medicaid reimbursements and promoting competition are likely to spill over to reduce the adequacy of care to our most vulnerable citizens.” Schlesinger, an economist, received his doctoral degree in economics from the University of Wisconsin. He is a lecturer in public policy at the John F. Kennedy School of Government, Harvard University; assistant professor of health policy at Harvard Medical School; and assistant director of the Center for Social Policy at the Kennedy School. Kronebusch, who holds a master’s degree in public policy from the Kennedy School, is currently pursuing doctoral studies there.
One of the most glaring failures of the American health care system has been its persistently high rates of infant and maternal mortality. Despite our national wealth and technically sophisticated medical care, infant mortality rates in the United States are almost twice as high as in Sweden and Japan and a third higher than in most other countries of comparable economic development. Infant and maternal mortality disproportionately burdens those groups already most disadvantaged. Infant mortality rates for blacks are nearly double those for whites.\(^1\) The maternal mortality rate for black women nationwide is almost four times that for white women.\(^2\)

The 1980s were troubling times for those concerned with poor birth outcomes in the United States. The trend in infant mortality rates, declining since World War II, flattened out by mid-decade. The proportion of women with no prenatal care or care only in the third trimester of pregnancy has risen since 1980. These trends captured national attention. Over the past several years, numerous expert commissions and panels have recommended improving access to prenatal care.\(^3\) Even before these reports were published, policymakers had acted. Beginning in 1984, Congress initiated a series of expansions of Medicaid eligibility for pregnant women and infants. Some of these expansions were mandated nationwide; others were left to the discretion of states.\(^4\)

At the time, this seemed a sensible policy response. High rates of infant and maternal mortality result in part from inadequate prenatal care.\(^5\) But these Medicaid reform efforts so far have yielded rather unimpressive improvements. While seven states will meet the Surgeon General’s 1990 goals for reducing low birthweight, an equal number are moving in the wrong direction, with rising numbers of low-birthweight infants.\(^6\) These disappointing results have led some observers to question whether access-promoting programs were a sound strategy at all, given the limited ability of the medical care system to deal with threats to pregnancy that are in large part social or economic in origin. Though we share this caution, we believe that it represents an overly pessimistic reading of the benefits of improving prenatal care, which may often include access to nutrition programs such as Women, Infants, and Children (WIC) as well as other nonmedical interventions. Recent failures to improve birth outcomes stem more, in our assessment, from poor strategic decisions about how government should intervene to enhance prenatal care.

We argue here that requiring the states to expand Medicaid eligibility not only is likely to yield small improvements in access, it may well create counterproductive side effects that could outweigh the benefits of increased eligibility. Moreover, these Medicaid-based strategies have focused exclusively on access, ignoring threats to the adequacy of prenatal
care. These threats are likely to be exacerbated by the changing nature of local markets for health care services, changes that are themselves partially the unintended results of other public policies.

The Context For Prenatal Care Policy

Over the past five years, there has been bipartisan consensus in Washington that infant mortality and low birthweight were problems meriting additional government attention. There has been less agreement on the form that these policies should take. One approach relies on expanding Medicaid, which already covers a substantial number of low-income women during pregnancy. Historically, it has been instrumental in increasing access to care for many low-income households. But Medicaid has some serious and growing liabilities as a method of improving prenatal care. Many states have not adjusted Aid to Families with Dependent Children (AFDC) eligibility to account for inflation over the past decade. Thus, more than half of all women living in poverty are not eligible for Medicaid until they become pregnant (and know it), substantially delaying prenatal care. As eligibility levels for nonpregnant women have eroded in the past ten years, these delays have affected more Medicaid-covered pregnancies. In addition, states have increasingly begun to enroll Medicaid-covered women in health maintenance organizations (HMOs). This process adds to the delays in obtaining prenatal care.

Medicaid payments to providers also vary by state. States that pay physicians at lower rates have much lower levels of program participation. This can further delay the start of prenatal care, as women search for providers who will treat them. In states where Medicaid payments are particularly limited, physicians may prefer to treat uninsured women over Medicaid enrollees, since even if many uninsured women fail to pay their bills fully, their payments may exceed Medicaid levels, with much less paperwork and fewer administrative requirements.

A second approach to enhancing prenatal care would build on state-level programs developed for maternity care for women with neither private insurance nor Medicaid coverage. Originally funded through the Sheppard-Towner Act of 1921 and Title V of the Social Security Act, state-based programs emphasize increasing system capacity; improving institutional practices to make care more accessible; identifying women in need of prenatal care through hotlines, community outreach, and similar intervention; and providing social support services, case management, and client follow-up.

These programs (now funded primarily out of the Maternal and Child Health block grant) differ from state to state in their range of services and
extent of case management. However, virtually all programs try to reach potential clients through a variety of means and to encourage follow-up of missed appointments and coordination with programs such as WIC. Evaluations have been generally favorable, though the reported effects are inconsistent: Some programs seem to improve access without affecting birthweight, others improve birthweight without promoting access. Recent research suggests that these programs also may be facing increased difficulties. Outreach workers appear to be having greater problems identifying women at risk for inadequate prenatal care and bringing them into the service system. This may relate to the changing nature of pregnancy-related risks, including growing problems of substance abuse. Providers, deterred by the high costs of malpractice insurance, are becoming less willing to treat these high-risk women.

Thus, Congress's choice of prenatal care policy was a decision between two approaches, each of which had some serious limitations. But the actual decision was in large part shaped-and its eventual effectiveness circumscribed-by other ongoing changes in the goals and nature of health policy making at the federal level.

"Micro-incrementalism" in health policy. The process and structure of government in the United States has long favored incremental reforms over more systemic changes. Looming federal deficits have exacerbated this bias in recent years. The recent practice of enacting substantive legislation under the auspices of the budget reconciliation process has added to the pressure. Packaged together with scores of other amendments on other topics, health reforms inevitably get less considered attention than if they were a part of freestanding legislation. With limited time to consider health reform legislation, Congress naturally tends to favor changes to existing programs such as Medicaid.

A federal initiative that builds on existing state maternal and child health programs would require at least determining new standards for programs in all states. In contrast, Medicaid already exists in all states, as do standardized criteria for eligibility. Medicaid expansion, moreover, requires fewer federal dollars because the states bear part of the cost. Thus, it is not surprising that Congress chose reforms that expanded Medicaid eligibility.

Budget-based reforms also led to "micro-incrementalism," which encouraged changes in existing programs that were themselves piecemeal. Although few in Congress might have believed that mandated eligibility expansion would be in itself a panacea, legislators clearly perceived it to be a way of "chipping away" at the problem, of dealing with easier issues first and saving more difficult ones, such as state variations in provider payment, for later reform efforts. However, tinkering with programs in
this fashion all too often produces unintended and counterproductive outcomes. For instance, as the federal government mandates expanded eligibility under Medicaid, it forces the states to assume a share (ranging from 30 to 50 percent) of the additional costs. Some states have sufficient revenues to pay readily for this additional spending. But others, with tighter budget constraints, may seek ways of complying with federal mandates without increasing the overall cost of their Medicaid programs. The option that immediately presents itself is simply to cut back the generosity of provider payments, an option that could significantly affect the care that Medicaid beneficiaries receive.

**Competition and the politics of privatization.** Officials in the Reagan administration strongly favored policies to make the health care system more price-competitive. A preference for market-oriented policies favored the Medicaid approach over state programs promoting prenatal care. The traditional Medicaid program fits the “voucher” models favored by most advocates of the market—it provides patients with a credit they can exchange for services but leaves them to choose their own provider. Recent reforms in several states where HMOs competitively bid to provide services to Medicaid recipients also fit conveniently with federal initiatives to increase competition.

Procompetitive policies may also have directly affected the accessibility of prenatal services in local health care markets. First, by characterizing health care as a business, market-oriented policies undermined the more traditional view of health care as a community responsibility. In so doing, they reduced the legitimacy of government-owned and operated health care facilities. As a result, a number of cities closed their public hospitals. Between 1977 and 1987, there was a 17 percent reduction in the number of government-operated general hospitals.

Second, to the extent that these policies were actually successful at increasing the intensity of competition in local health care markets, they may have either enhanced or inhibited access for low-income patients. To the extent that health care providers act as profit maximizers, increased competition should enhance access. As additional providers compete for a fixed number of privately insured women, more will be forced to consider other types of patients, including those covered by Medicaid and those without any insurance. But many of the providers of services for low-income communities may not act to maximize profits, instead treating some unprofitable patients by cross-subsidizing their care from other sources. When these providers face additional competition for privately insured patients, it reduces their surplus and thus their ability to cross-subsidize care.

**Role of this study.** This study develops a set of empirical models that
assess the relative merits of the Medicaid strategy in the current policy environment and estimates the magnitude of the various possible side effects. A study of this sort requires data and a strategy of analysis that differs from most prior studies of prenatal care. Despite extensive research on the effectiveness of prenatal care for reducing low birthweight and subsequent developmental disorders, there is relatively little published research on the factors that influence access to prenatal care. For the most part, these studies have been limited to either small samples at a single site in a single city, or aggregate statistics and outcomes at the county level. The first set has focused on the effects of characteristics of individual women; the second, on characteristics of communities and local health care systems. These studies have provided important insights into the process of seeking prenatal care. But the bifurcation between the two types of studies has made it impossible to identify the relative importance of individual factors versus community characteristics. The small number of studies that include both types of data have been based on natality surveys. Because these have no information about either barriers to care, knowledge about prenatal services, or insurance coverage, they provide little insight about the relative effectiveness of different types of government interventions.

Though limited, our knowledge about the policy-relevant factors that affect access to prenatal care vastly exceeds our understanding of the factors that influence the adequacy or content of that care. Indeed, defining appropriate care has only recently become a focus for policymakers’ attention. Nonetheless, it is apparent that the content of prenatal care depends on providers’ decisions, which may be shaped by a variety of external incentives and constraints.

For example, though past studies generally suggest that access to prenatal care under both Medicaid and state outreach programs depends on the generosity of payments to providers, the consequences of less generous payments for the adequacy of that care have received little attention. Similarly, there has been little study of the relative quality of prenatal care in various treatment settings. Although it is sometimes assumed that office-based, private physicians provide the highest-quality care, there are no published assessments of this hypothesis, and the evidence from other types of health care is far from conclusive.

To explore these issues, it is essential to have data on prenatal care that reflect the attitudes and circumstances of individual women and yet are drawn from a number of sites, to allow for variation in the characteristics of provider payment and local health care systems. It is also essential to consider the independent effects of various factors on the adequacy as well as the accessibility of prenatal care. This perspective is missing from
virtually all past studies, which have assumed that external factors influence birthweight only through decisions made by the mother—decisions about when to become pregnant, when to seek care, and what health behaviors to follow—and which have ignored influences on decisions made by providers. Our study sheds some initial light on the factors affecting this overlooked aspect of the process of prenatal care.

**Research methods.** Data for this study were drawn from a 1986-1987 survey of 1,157 uninsured women or Medicaid recipients conducted by the U.S. General Accounting Office (GAO). Thirty-two localities were selected in eight states. The states were chosen to include large Medicaid programs, provide a mix of programs with different standards for eligibility and levels of benefits, and cover most regions in the country. The communities were selected to provide a mix of community size, as well as a representative sample of racial groups. The sample was selected from women giving birth at the hospital or hospitals in the community that had the largest number of Medicaid-reimbursed and uninsured births.

GAO staff contacted all women who delivered in the hospital over a predesignated period, typically a week. In all, 84 percent of the women identified in this way consented to participate. Respondents were questioned about their experience with prenatal care, including the number of visits, their timing, and the barriers and problems encountered.

The accessibility of prenatal care was measured by the month in the pregnancy when care was initiated and the number of visits over the course of the pregnancy. Following D.M. Kessner, these have been combined into an index with a correction for the total length of gestation. Birth outcomes were measured using birthweight as a second dependent variable. To assess the relationship between access and outcomes, we estimated a two-stage regression model, the first examining the determinants of access; the second, the effects of access on outcome. Each regression controlled for the other factors presented below. Controlling for access, the results from the birthweight regressions should identify factors affecting the adequacy of prenatal care. These might include individual patient characteristics capturing aspects of patient compliance, predisposing risks, and provider/patient interactions, as well as health system characteristics that influence provider behavior, including the time, effort, and resources devoted to carefully diagnosing high-risk pregnancies and guiding maternal behavior.

The explanatory variables in the regression models reflect characteristics of pregnant women, medical providers, the local health care system, and participation in public programs. Women who are poor, less educated, members of minority groups, unmarried, in their teens, or over age forty-five tend to receive inadequate prenatal care. While financial
barriers undoubtedly are important, we believe that the relative importance of other attitudes, motivations, and constraints on women’s behavior during pregnancy has not been adequately assessed. Motivation and knowledge were measured here by two variables: whether the woman reported that she had not sought prenatal care earlier or more often because she “did not think it was important,” and by the month of pregnancy that she considered to be the “right time for someone to start seeing a doctor, midwife, or nurse for pregnancy checkups.” Attitudes about being pregnant, including fear of being pregnant or unwillingness to report a pregnancy, were consolidated into a single index measuring “conflicted” attitudes toward the pregnancy. Respondents on the GAO survey were also asked whether financial concerns, problems of geographic access (transportation difficulties or lack of local doctors), or time pressures had made it more difficult for them to seek or obtain care.

Variables are included to capture whether a woman was covered by Medicaid or participated in a state-based outreach or case management program. The effectiveness of these interventions will be affected by characteristics of the programs. In particular, providers’ willingness and ability to treat Medicaid enrollees (and thus the impact of eligibility on access and adequacy of care) will be influenced by the generosity of Medicaid payment, measured here by the ratio of Medicaid reimbursements to prevailing private charges for general practitioners.

Total program enrollment can also affect both measured and actual program effectiveness. If there are economies of scale for providers in their dealings with these programs (such as in processing Medicaid paperwork), then providers might be more willing to treat participants in a larger program. On the other hand, if only more highly motivated women use small programs, then the better outcomes for program participants would actually be due to favorable selection rather than real program effects. To test for scale effects, we measured the extent of participation by the proportion of low-income women in each state who are covered by Medicaid and the percentage of women interviewed in each community who were enrolled in a prenatal outreach program.

To study how the characteristics of the local health care system affect the accessibility and adequacy of prenatal care, women were classified here by their principal source of care: private physician offices, neighborhood health centers, hospital outpatient departments, and “no regular source of care.” We also examine the extent of competition using three different community characteristics as proxies: the ratio of primary care physicians to the fertile-aged female population, the prevailing charges for general practitioners, and the extent of entry by HMOs. Measures of the availability of care in government-owned facilities included the per
capita number of National Health Service Corps sites in the community and the proportion of the community’s hospital outpatient departments at government hospitals.

Study Findings

Can government interventions enhance prenatal care? Our analyses suggest that government can improve both access to prenatal care and birth outcomes. Enrollment in Medicaid and participation in state prenatal outreach programs increase both access and birthweight (Exhibit 1). But our analyses also highlight several important caveats to this otherwise optimistic conclusion.

First, expanding Medicaid is a less effective means of improving either prenatal care or birthweight than is enrollment in a state prenatal outreach and case management program. These differences are substantial. Compared to uninsured women who participated in neither type of program, participants in state outreach programs had twice as large an improvement in their Kessner index of access than did Medicaid enrollees. They had five times as large an improvement in average birthweight.

To understand better the sources of these differences, we separately analyzed the factors that affected the month when care was started and those that determined the number of prenatal visits once care had begun. While Medicaid eligibility significantly increased the number of visits (an

Exhibit 1
Government Programs To Enhance Prenatal Outcomes

<table>
<thead>
<tr>
<th>Percent change</th>
<th>Access to care</th>
<th>Direct birthweight</th>
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<td>10</td>
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Source: Based on data from U.S. General Accounting Office, Prenatal Care, GAO/HRD-87-137 (1987), calculated by the authors.

a Direct effect of program on birthweight.

b Indirect effect on birthweight due to change in access.
average of one additional visit relative to uninsured women), it did little to encourage earlier care. This is not surprising, since there are likely to be delays in enrollment in Medicaid. Even where these are avoided, by guaranteeing providers payment through presumptive eligibility, the stigma that remains around Medicaid does little to encourage women to enthusiastically seek care under Medicaid auspices, nor does it offset the conflicted attitudes that they may have about their pregnancy. State outreach programs, in contrast, actively encourage women both to enroll and to seek timely prenatal care. Participants in these programs started care two weeks earlier than did nonparticipants and averaged 2.5 more visits over the course of their pregnancy. Those who initially enrolled in an outreach program and then switched to Medicaid had outcomes in between those who participated solely in either program.

The second caveat is that improvements in birthweight were only in part attributable to increased access. As Exhibit 1 suggests, less than a quarter of the increased birthweight was due to enhanced access. The rest was associated with what we term the “direct effect” of the programs—the extent to which participation in the program in itself changed women’s behavior in ways that enhance outcomes. Case managers could facilitate enrollment in nonmedical programs such as WIC or help to educate women about healthy behavior during pregnancy. Though uninsured women who are not enrolled in these programs are still seen by providers, they likely receive little time and attention, so that they are less well informed and their health conditions less effectively diagnosed. With existing data, we are unable to determine which of these factors is most responsible for the improved birth outcomes experienced by the women who participated in these programs.

A third caveat is that the relative effectiveness of these policy interventions, particularly Medicaid, depends on both the size of the program and the generosity with which it pays providers. Increases in aggregate enrollment lead to greater access and better outcomes, perhaps because providers find it more profitable to accept and carefully treat Medicaid recipients when there are more of them in the community. (In contrast, expanding enrollment in outreach programs has a much smaller, and slightly negative, effect on access and outcomes.) Broader eligibility significantly encourages early prenatal care. This is probably because women in states with broader eligibility were more likely to be enrolled in Medicaid before they became pregnant, eliminating the delays in enrollment and allowing them to have already found a provider who participates in Medicaid. Equally striking effects are associated with the generosity of Medicaid payments to providers. A 10 percent increase in Medicaid generosity, relative to prevailing private fees, is associated with
a 1.5 percent increase in average birthweight.

What barriers must access-promoting programs overcome? Although recent policy-oriented reviews have focused attention primarily on financial barriers to prenatal care, our analyses suggest that a number of other factors are of equal importance (Exhibit 2). Ambivalent feelings about pregnancy, as well as the combination of beliefs and knowledge about prenatal care, had a large effect on access to care. For younger (teenage) women, these nonfinancial barriers were particularly salient. These factors, as well as transportation problems, all significantly inhibited access to prenatal care; however, they had no independent effect on birth outcomes, apart from those produced by limited access.

One striking finding was that even after taking into account the differences in individual circumstances and attitudes, minority women had substantially worse access to prenatal care (Exhibit 3). Since this analysis controls for the attitudes, beliefs, and circumstances that affect women’s decisions to seek prenatal care and for the aggregate availability of primary care providers in the community, these persisting racial differences must be attributable to either (1) limited numbers of providers in local neighborhoods where these women live, or (2) providers’ being unwilling to treat minority women. The latter could reflect simple

Exhibit 2
Barriers To Access To Prenatal Care For The Uninsured

<table>
<thead>
<tr>
<th>Percent decline in access</th>
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<td>18</td>
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<tr>
<th>Financial problems</th>
<th>Transportation</th>
<th>Time conflicts</th>
<th>Ambivalent feelings</th>
<th>Belief that care not important</th>
<th>Lack of knowledge</th>
</tr>
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<tbody>
<tr>
<td>18</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>0</td>
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</table>

Source: Based on data from US. GAO, Prenatal Care, GAOHRD-87-137 (1987), calculated by the authors.

Note: The effect of knowledge reflects a one-month delay in seeking care. For the other barriers, the exhibit indicates the effect of the presence of the barrier.
Exhibit 3
Racial And Ethnic Differences In Access And Birthweight, Relative To Whites

<table>
<thead>
<tr>
<th>Percent difference</th>
<th>Access to care</th>
<th>Indirect birthweight</th>
<th>Direct birthweight</th>
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Blacks
Hispanics

Source: Based on data from U.S. GAO, Prenatal Care. GAO/HRD-87-137 (1987), calculated by the authors.

a Indirect effect on birthweight due to change in access.
b Direct effect of factors correlated with race/ethnic background on birthweight.

prejudice or a more subtle economically rational sort of discrimination. If minority women are perceived as being at greater risk of poor birth outcomes, providers may avoid treating them to reduce the risk of malpractice suits. As documented in past research, however, we find that Hispanic women have higher-birthweight babies than do either black or white women, in spite of Hispanics' reduced access to care. Factors not measured here-including perhaps family stability, nutrition, or lower use of tobacco, alcohol, and illicit drugs—offset limited access to care for Hispanics. For many low-income black women, in contrast, these same factors lead to worse outcomes. For them, reduced access makes already risky pregnancies more problematic.

Do characteristics of the local health care system affect prenatal care and birth outcomes? In general, the availability of medical providers and the prices those providers charge had little effect on the accessibility of prenatal care. The one exception was a patient's regular source of care. Women who reported that a hospital outpatient department or community clinic was their regular source of care had somewhat higher Kessner scores than did women using private physicians, even though the latter set of women began their prenatal care on average somewhat earlier in their pregnancy (Exhibit 4). Even though they began care later, women using outpatient departments or community clinics had a larger number
of prenatal visits (1.8 and 1.5, respectively). Women with no regular source of care had by far the worst access to care. Women living in cities with more publicly operated hospital outpatient departments or clinics with National Health Service Corps staff had somewhat better access than women in other communities.

The greater access at clinics and outpatient departments was associated with even larger differences in birthweight: women who had these settings as a regular source of care had babies who averaged 4 to 6 percent heavier than those whose care had been through a private physician. The only other characteristic of the local health system to affect birth outcomes was the extent of competition among local providers. All three measures of competition—more primary care providers, lower prevailing private charges, more entry by HMOs—were associated with significantly lower average birthweight. For example, a 10 percent decline in prevailing fees for office visits was associated with a 2.3 percent decline in average birthweight of women receiving care in that community.

Interpreting The Findings And Public Policy

These analyses suggest that access to and adequacy of prenatal care are influenced by the attitudes and motivations of pregnant women, the extent and generosity of public interventions, and characteristics of
medical providers and the local health system. Individual traits of the pregnant women and public programs have an impact on access, while public interventions, the type of medical providers, and conditions in local health markets have significant independent effects on adequacy.

**Limitations.** Because a number of our findings are likely to prove controversial, it is important to assess carefully the limitations of the methods and data and confounding factors. The GAO survey may not be representative of overall conditions in the United States, and respondents were not necessarily representative of all births to uninsured women and Medicaid recipients. In some of the thirty-two cities surveyed, only a limited number of individuals were interviewed. This reduces the power of this study to detect significant effects related to local health systems, although it should not bias the results.

The GAO survey instrument included no information on income, marital status, family living arrangements, or health-related behavior during pregnancy, such as use of drugs, cigarettes, or alcohol. We do not anticipate, after controlling for the sociodemographic factors and attitudes, that these omitted variables will be correlated with either public interventions or health system characteristics. Consequently, the results reported for these factors should be unbiased.

Perhaps the most serious threat to the validity of the results reported here is the potential for self-selection. If women who participated in outreach programs were already the most motivated to seek care or follow other recommended prenatal practices, these programs would appear more effective than they actually were. To address this issue, we estimated some multistage regression models that control for the factors that influence women’s participation in both outreach programs and Medicaid. Since these regressions include variables measuring the importance that the woman assigned to prenatal care and the information she had about appropriate timing of care, we believe that this adequately captured possible self-selection. The results of these analyses indicate that although access was unrelated to program size, the direct effects of outreach programs on birthweight did decline as the program was expanded to the entire low-income population. The women who first enrolled in outreach programs were actually those at risk of the worst outcomes, perhaps because these programs are being well targeted to women with high-risk pregnancies. Though average effectiveness declines as participation rates increase, it remains substantial-improvements of 200-400 grams in birthweight even in programs in which 50 percent of the low-income women in a community participate. (Participation rates of 50 percent are considerably larger than in most existing programs.)

**Failure of current policies.** Given the limitations of the data, it is
important to interpret our findings with due caution. Nevertheless, they highlight a number of important issues for policymakers. They suggest that recent Medicaid expansions will not significantly reduce low birthweight and infant mortality, even after states fully implement these reforms. Medicaid eligibility increases prenatal visits, but Medicaid's beneficial effects are limited by the program's inability to encourage women to seek care earlier and its failure to induce better birth outcomes, once access has been established. In contrast, state programs of prenatal outreach and case management have access effects twice as large as those of Medicaid coverage. In addition, they improve birth outcomes, above and beyond those produced by better access to care.

But the limited direct benefits of Medicaid coverage are only a part of the story. States with the most generous eligibility provisions have often had the least generous provider reimbursement. (In our sample, this included Massachusetts, California, and New York.) By mandating expanded Medicaid eligibility, Congress has placed state Medicaid programs under additional budgetary pressure. It would not be surprising to see many states respond by further reducing their payments to providers or at least failing to raise reimbursement levels to keep pace with inflation.

Our analysis suggests that this could have serious consequences for the adequacy of prenatal care received by Medicaid-covered women, since states that paid providers less had substantially poorer birthweight outcomes. If our estimates are accurate, should a state reduce its Medicaid payments only 10 percent relative to prevailing charges, the average birthweight for Medicaid babies would decline by 165 grams. This is almost four times as large as the predicted improvements from making uninsured women eligible for Medicaid. And it would affect all Medicaid-covered women, not just those covered by expanded eligibility.

We are unable to determine, through this study, the cause of this relationship between Medicaid reimbursement and birthweight outcomes. There are two possible explanations. First, as programs pay less generously, the best-qualified providers may disproportionately withdraw from the program. Second, providers may continue to offer prenatal care but may feel that because they are so poorly paid they cannot afford to spend much time on each visit.

Our findings favor the second of these two hypotheses. We observed no apparent relationship between Medicaid generosity and the accessibility of prenatal care. This suggests that as private practitioners in these communities withdrew from the program, pregnant women were able to shift to neighborhood clinics or hospital outpatient departments. Since our results indicate that the accessibility and adequacy of care at these sites was generally as good as or better than that in the offices of private practitioners.
practitioners who do treat low-income women, it would appear that reduced participation by private practitioners did not in itself reduce the quality of prenatal care. The lower birthweights observed in states with low Medicaid payments thus likely reflect differences in the practices of providers who continue to participate in the program. However, additional research is required to verify this possible relationship.

The apparent relationship between Medicaid generosity and adequacy of prenatal care is consistent with the finding that competition in the local health care system adversely affects adequacy of care without independently affecting access. The regressions contained three independent measures of the competitiveness of local health care markets: prevailing charges, physician-to-population ratios, and the extent of entry by HMOs. The coefficients on all three show a statistically significant link between increased competition and poorer birthweight outcomes, although not on access. This again suggests that the content of the care being provided appears more sensitive to diminishing financial rewards than does access to care.

This aspect of our findings may in part reflect differences between prenatal care and other forms of medical care. As providers face more pressure to cut costs, the aspects of care that will deteriorate the most are those for which professional norms are least well defined.\textsuperscript{30} Prenatal care is somewhat unusual in that there is considerable professional consensus over how often pregnant women should visit a health care provider but limited consensus on the content of that care.\textsuperscript{31} Consequently, if a provider has a shrinking pool of resources with which to subsidize the care of uninsured or unprofitable pregnancies, the content of the visit may be more susceptible to cost-cutting pressures.

\textbf{Potential For Improving Policy}

The results presented here point to several directions for more effective public policy. These fall into three broad categories: developing comprehensive programs of prenatal outreach and case management, addressing current failings in Medicaid-based policies, and recognizing the deleterious side effects of current procompetitive policies.

\textbf{Prenatal outreach and case management programs.} Prenatal outreach programs have considerably larger effects on both access to and adequacy of care than expanded Medicaid eligibility. Many of these gains come after controlling for access, suggesting that these programs do considerably more than simply opening doors to providers’ offices. These programs must be either altering the content of care (or directing women to higher-quality providers) or establishing linkages to other services such
as WIC or substance abuse treatment. To put these benefits into perspective, the improvements in access and birthweight due to these programs would be more than sufficient to offset the relatively worse experience of black women in prenatal care. Consequently, we believe that policymakers should look beyond Medicaid reform to establish more comprehensive and universal participation in prenatal outreach programs.

Many states have already established programs of this sort, but few cover more than a small portion of the low-income population. Our results suggest that although these programs are most effective when targeted to high-risk pregnancies, their benefits remain substantial when expanded to up to 50 percent of all low-income women. This is five times the average participation rate in the thirty-two cities in the GAO survey. Since that survey was conducted, a number of states have cut back on their outreach programs, seeing Medicaid expansion as a cheaper alternative for improving prenatal care (given federal cost sharing). This is ironic, since state outreach programs not only should significantly improve outcomes (even for women who are Medicaid-eligible) but will probably save money as well. Providing the additional case management and social services is more expensive than simple Medicaid coverage, but these additional costs are relatively modest. Expenditures on case management averaged about $122 per client in California, $146 in Illinois, $140-$300 in New York, and $350 in Maine. The additional costs of program administration ranged from $54 per case in Illinois to $95 per case in California. The congressional Office of Technology Assessment has estimated that covering prenatal care under Medicaid (an estimated cost of $400-$500 per pregnancy) at a minimum yields equal savings in terms of reduced hospital and medical costs for low-birthweight babies, and may even save money. Given the relatively small additional costs and substantially greater efficacy for existing state outreach programs, these will almost certainly prove cost-effective also.

Separate prenatal care programs have sometimes been opposed on the grounds that they increase the fragmentation of government initiatives, interfere with efforts by Medicaid to "mainstream" recipients, or are inappropriate because they treat prenatal care as separate from the other health needs of women and children. These are valid concerns. However, it is noteworthy that many countries with universal national health insurance have special programs to promote maternal and child health. A de facto system of clinic-based prenatal care has evolved in this country for women with limited incomes. Our findings suggest that the accessibility and quality of the care provided in hospital outpatient departments or community clinics is comparable to or better than that available from private physicians who now treat these women. Formaliz-
ing such a system, and providing through it a guarantee of access to all women from low-income communities, would almost certainly improve this country’s record in prenatal care and low birthweight.

In other countries, comprehensive prenatal clinics are available to middle-class women as well as poorer women. Our results suggest that the value of these outreach efforts is probably lower for women not at risk of poor birth outcomes. But more universal enrollment carries other indirect benefits. It reduces the potential stigma of participation and broadens the political support for these programs. In addition, bringing articulate, middle-class consumers into these programs on sliding fee scales can aid efforts to safeguard the quality of services.

**Medicaid reform.** The results presented here suggest a strong link between the generosity of Medicaid payment and the adequacy of prenatal care. One strategy for improving prenatal care would therefore be to establish federal guidelines for minimum levels of Medicaid reimbursement. Alternatively, prenatal care reforms could be coupled with more general reforms of physician payment. It is not enough, however, to suggest that quality of care be maintained solely through generous payments to providers. Cost-saving initiatives are inevitable in the current political and budgeting climate, but they must be buffered by a greater emphasis by state Medicaid programs on maintaining quality.

Greater efforts must be made to refine professional standards for the content of prenatal care. An expert panel convened by the U.S. Public Health Service recently reported on the content and efficacy of prenatal care, but this report has received relatively little publicity or attention from policymakers. These findings should be incorporated into the standards promulgated by professional associations and more formal quality assurance programs run by state Medicaid agencies.

**Side effects of policies.** As competition for privately insured women intensifies, charges for their care will be bid down, reducing the surplus available to subsidize unprofitable patients. This is a particularly important problem for uninsured women. These concerns would be reduced if all pregnant women had insurance (or Medicaid) coverage, but not entirely eliminated. Payments for prenatal care are based on the average cost of providing that care, but women with relatively high-risk pregnancies will be more costly to treat. Even where states have adopted special bonuses for providers treating high-risk women, some patients will be predictably unprofitable to treat. The less generous the state’s Medicaid payments to physicians, the larger this group will be.

Policymakers can respond to these concerns either by reducing competitive pressures on providers or by allowing increased competition but expanding public-sector providers to absorb potentially unprofitable
patients. The former might take the form of more comprehensive uncompensated care pools, fully extended to incorporate primary care providers. The latter might involve federal subsidies to support state and locally owned community hospitals or a revitalization of the National Health Service Corps. Our findings suggest that expanding this program could provide some buffer for the prenatal care of women from low-income households, though probably not in itself sufficient to offset some of the growing barriers to accessible and adequate prenatal care.

**Concluding thoughts.** In recent years, the United States has fallen short in its efforts to reduce infant mortality. The resulting flurry of reports and legislative initiatives has in large part been predicated on the belief that initial access to the health care system was the critical determinant of good outcomes and that reducing financial barriers would thus significantly improve prenatal care. These beliefs have led advocates to focus on Medicaid expansion as a remedial policy, encouraged by other goals and constraints on current federal policies. The results presented here, though, suggest that this was too simple and too optimistic a picture. Although Medicaid coverage does enhance access by reducing financial barriers, it has only a small fraction of the benefits of programs that incorporate more active outreach and case management.

These are somewhat controversial findings, and they will require verification by additional research. But while awaiting more complete research, policymakers must become aware of the apparent consequences of their current policies. Piecemeal reforms hold benefits that are more illusory than tangible. Real improvements in prenatal care in low-income communities await more substantial and comprehensive new programs, though these can build on existing state models. Equally important, policymakers must recognize how current efforts to hold down health care costs through cutting Medicaid reimbursements and promoting competition are likely to spill over to reduce the adequacy of care to our most vulnerable citizens. Certainly cost containment is important. But with current initiatives, the price of cost saving is counted in terms of death and disability among children who are already the most disadvantaged. This seems a price almost certainly too high for this country to pay.

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NOTES

5. IOM, Prenatal Care; and OTA, Healths Children.
6. Hughes et al., The Health of America’s Children.
12. IOM, Prenatal Care.


24. The thirty-two cities were: Birmingham, Huntsville, Montgomery, Selma, and Troy, Alabama; Los Angeles, Bakersfield, Sacramento, El Centro, and Ukiah, California; Atlanta, Columbus, Savannah, Americus, and Brunswick, Georgia; Carbondale, Chicago, Peoria, Rockford, and Mattoon, Illinois; Augusta and Bangor, Maine; Boston, Massachusetts; New York City, Buffalo, Syracuse, Kingston, and Auburn, New York; and Charleston, Huntington, Bluefield, and Clarksburg, West Virginia. Women were interviewed at thirty-nine different hospitals.

25. To estimate the impact of reporting bias, we used the difference between actual and reported visits as a measure of the “regret factor,” where women with poor birth outcomes may have overstated barriers as a form of rationalization. Women with lower-weight babies were in fact more likely to overstate the number of their prenatal visits, suggesting that a regret factor may have affected the results reported earlier. To control for the effects of this reporting bias on other variables, we reestimated the regression models reported later in the article, including this measure of self-reporting bias. Although the magnitude of some of the barriers to care changed slightly, their relative importance and statistical significance generally remained unchanged.


28. J.E. Wennberg, “Dealing with Medical Practice Variation: A Proposal for Action,” *Health Affairs* (Summer 1982): 6-32. To control for these variations, a variable was calculated measuring the average timing and frequency of prenatal care for privately insured women in each community in the study. This variable was included in an alternative specification of the access and birthweight regressions. Including this variable in the regression models did not significantly alter the reported results.


32. Personal communications with program directors in the five states in the GAO survey that operated prenatal outreach programs with substantial case management.