

The Economic Rationale For Investing in Children: A Focus On Child Care:

Appendix D

What Can We Learn about Child Care Policy from Public Investments in Children's Health?

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Abstract

This paper attempts to draw lessons from evaluations of health care policy for the debate over child care policy. Conclusions include: The desirability of setting clear goals for policy; the importance of liquidity constraints, information failures, and externalities in the market for child care; the fact that eligibles may not participate (low takeup), that publicly provided programs may "crowdout" private childcare, and that

outreach to eligible non-participants may be necessary; the need for rigorous evaluation of child care quality and its long-term effects; and the fact that since the family is still the primary supplier of child care, policies that support good parenting are likely to be an important component of sound child care policy.

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I. Introduction

Many public policies affect child well-being. These policies are generally analyzed in isolation, although the issues involved are often similar. This paper draws lessons from evaluations of health care policy for the debate over child care policy. It begins with a discussion of the goals of child health policy, and the theoretical economic justifications for government intervention in this market. At each stage, the implications for the child care market are highlighted. I then turn to a discussion of the evidence regarding the effectiveness of recent expansions of public health insurance for pregnant women, infants, and children, again with a view towards drawing out implications for child care policy.

One of the most noteworthy child health initiatives over the past 20 years has been a series of expansions of public health insurance to low income children, which culminated in the \$40 billion Child Health Insurance (SCHIP) initiative of 1997. These initiatives received a remarkable degree of bipartisan support, and have sparked a great deal of research. Hence, much of this review focuses on lessons from the evaluation of these insurance extensions.

The conclusions include: The desirability of setting clear goals for policy; the likely importance of liquidity constraints, information failures, and externalities in the market for child care; the fact that eligibles may not participate (low takeup) or that publicly provided programs may "crowdout" private childcare and that outreach to eligible non-participants may be necessary; the need for rigorous evaluation of child care quality and its long-term effects; and the fact that since the family is still the primary supplier of child care, policies that support good parenting are likely to be an important component of sound child care policy.

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II. What Are the Goals of Public Investments in Children?

By focusing exclusively on measures of the utilization of health care, much of the discussion of child health programs implicitly assumes that the goal of such programs should be to equalize access to health care across groups of differing socioeconomic status. According to this viewpoint, additional doctor visits for poor children are desirable, if wealthier children are obtaining these services. Alternatively, one may take a different approach, and assume that the goal of public policy should be to improve health. Given this point of view, additional doctor visits for children who are already healthy and who are receiving adequate preventive care are socially wasteful, and not a desirable outcome of health policy, regardless of the socioeconomic status of the children who receive them.

The idea that child health policy should aim to improve child health is supported by increasing evidence that adult outcomes are affected by child health. Adult health may be directly affected by child health. For example, David Barker and his colleagues have linked a number of adult disorders, including heart disease, to under-nutrition of the mother during critical gestational periods (c.f. Barker and Martyn, 1992). Since health affects wages and labor force participation (c.f. Currie and Madrian, 1998), poor

health in childhood can lead directly to lower future wages and participation. Child health may also be linked to adult labor market success, through its effects on schooling attainment (c.f. Grossman, 2000). Some of the effect of health on schooling is through mechanisms such as days lost. Some of it is also likely to be through effects on cognition. Currie (2000) provides a review of some of the large literature linking indicators of child health status to cognitive outcomes. Thus the evidence suggests that investments in child health pay off in the form of better adult health, and superior educational outcomes, labor force participation, and wages.

This discussion has several implications for child care policy. First, there may be similar confusions or conflicts regarding the goals of child care policy. These goals may include: The provision of early intervention services to disadvantaged children; support of working mothers; enhancement of child cognitive skills; and socialization of children. Policies that provide services to the maximum number of mothers may not be those that most effectively enhance child development. Targeting needy children for services may miss other children who could also benefit from quality child care. And child care centers that promote social skills may not be the most effective at also enhancing the cognitive skills necessary for success in life. While it may be unrealistic to expect unanimous agreement on the priority that should be given to different child care policy goals, a recognition that goals can conflict is likely to be helpful to policy discussion and evaluation. Second, hard evidence that quality child care matters for future outcomes is likely to be essential to building and maintaining support for child care programs.

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III. What is the Economic Case for Governmental Investment in Children?

A. Equity

An economic case for government intervention in child health programs can be made on the grounds of equity. People who start out with very unequal endowments are likely to end up with very unequal allocations, even if the outcome is efficient (Inman 1986). A government that is concerned with equity can compensate for differences in final outcomes, attempt to equalize initial endowments, or both. In principal, spending on programs of each type can be increased until the marginal benefit associated with an additional dollar of spending is equalized.

However, equalizing early endowments through provision of appropriate preventive care may be a superior approach to the problem of unequal allocations, both because it avoids many of the moral hazard problems that arise when society attempts to compensate those with poor outcomes, and because prevention may be a more cost-effective way of promoting equity than compensating for unequal outcomes ex poste. In many cases, an ounce of prevention is worth much more than a pound of cure. For example, lead abatement and the treatment of lead poisoning prevents permanent brain damage, and abstention from alcohol during pregnancy prevents retardation caused by fetal alcohol syndrome (the leading preventable cause of mental retardation in developed countries).

Similarly, Furstenberg, Brooks-Gunn, and Morgan (1987) present evidence that it is important for children to get "off on the right foot" in school, and that children who lived in disadvantaged families when they started school had worse average performance than other children even if their parents' situation improved subsequently. The difficulty of overcoming poor endowments later in life, for example through job training programs for high school dropouts, makes early intervention through quality child care attractive as well⁽¹⁾. The fact that so much policy emphasis has been placed on

providing health care to uninsured children probably reflects concerns about equity, much more than it reflects concerns about the existence of the possible "failures" in the market for health care which are discussed in the next section.

B. Market Failures: Liquidity Constraints, Information Problems, and Externalities

A second broad justification for government intervention in child health programs is that there is a market failure in this area that the government might be able to address. Indeed, several market failures are likely to be important, including liquidity constraints, information failures, and externalities.

Liquidity constraints may prevent parents from making optimal investments in the human capital of children. It is worth pointing out that liquidity constraints are likely to be much more binding in the case of child care than in the case of basic preventive medical services for children. For example, it may cost \$50 to \$100 to take a child for a checkup, but Blau (2000) reports that in 1993, the average employed mother spent \$80.57 (1999 dollars) per week on child care while working, if she made any payment. Moreover, high quality child care is much more expensive, with some parents paying \$8,000 per year or more for center-based care.

However, liquidity constraints alone would only justify financial assistance to certain parents, not direct government intervention in the provision of health services. But information failures are also likely to be important. For example, studies of the content of prenatal care have indicated that one of the most important aspects of care is advice regarding appropriate weight gain, and abstention from smoking, alcohol, and illegal drugs (Kogan et al., 1994). The existence of information failures suggests that providing financial relief alone is unlikely to bring about optimal health outcomes.

Information failures are also likely to be important in the market for child care. For example, there is increasing evidence that parents find it difficult to evaluate the quality of child care centers, and that some parents pay for care of such low quality that it may be harmful to their children (Helburn and Howes, 1995; U.S. Department of Health and Human Services, 1998). This finding suggests that government may be able to improve quality by developing, publicizing and enforcing standards (see Klein and Leffler, 1981 for a theoretical development of this argument).

Finally, even altruistic parents may not take into account the consequences of the effects of their child raising decisions on those outside the family. For example, a child who is not immunized and later becomes hospitalized with a preventable illness, and/or infects others, imposes a burden on other citizens, a cost which may not be considered by the parents when they decide on their own investments in the child's human capital. Similarly, a child who becomes a welfare mother or a criminal creates negative externalities which may not be considered by the parents when they make child care decisions, while a successful child may create positive externalities in the form, for example, of higher tax revenues.

Externalities provide perhaps the strongest theoretical justification for direct government investments in the human capital of children. However, even the best justifications in terms of equity or market failures are moot if it is not actually possible to improve children's outcomes through intervention. Also, the theoretical literature is largely silent on the important question of whether government should focus primarily on improving the quantity or quality of child care. This question is really an empirical one in that the answer depends on whether government investments in quantity or quality have larger positive impacts. The next several sections draw out lessons regarding the effectiveness of child health policy that may have implications for child care policy.

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IV. Did Public Health Insurance Extensions Improve Children's Utilization of Health Care?

Although it is argued above that the goal of child health policy should be to improve health rather than merely to increase the utilization of care, in some cases, improvements in health are most likely to be obtained through increases in the use of medical care. Hence, this section considers the evidence regarding the effectiveness of the public health insurance expansions in increasing the utilization of care.

The first subsection offers a brief overview of these expansions. The second section deals with the problem of "takeup." The implication of this discussion for child care policy is that a policy that was like Medicaid, in that it made some children eligible for free or reduced price child care, would presumably also fail to achieve full takeup among eligibles, and might have particularly low takeup among some groups, such as immigrants.

As in Medicaid, low takeup might be due to the transactions costs associated with establishing eligibility for means-tested programs; to lack of information about eligibility for the programs or about the benefits of the programs (problems which could be addressed via outreach); or to a lack of supply of providers in some areas or for some children, at the government mandated price. A state-sponsored universal child care program (such as the system of creches in France) would overcome many of these problems since parents would know about it; transactions costs associated with enrolling would be minimal; and supply would be assured by the state as it is for public schools.

The third subsection deals with the problem of crowd out of private health insurance by the Medicaid program. Similarly, a large-scale publicly funded child care program is likely to replace a good deal of current private spending on child care. From a social perspective, one's view of such crowdout may differ depending on whether the care crowded out is better or worse on average than the care provided by the government. This issue may be politically charged in the case of child care, since some of the care "crowded out" is likely to be mother care.

A. An Overview of Recent Extensions of Eligibility for Health Insurance to Low Income Pregnant Women, Infants, and Children

The United States does not have universal health insurance coverage, but does have public insurance programs which cover the elderly, the disabled, and some women and children in poor families. Medicaid is the government program that covers the latter group. Medicaid was implemented in the late 1960s and early 1970s and was phased in at different rates across the states. From its inception until the mid-1980s, Medicaid coverage was tied to the receipt of cash welfare benefits. Income thresholds for welfare varied widely across states, but in general only female-headed households were eligible for benefits. Hence, as many as 30 percent of poor children lacked health insurance coverage (Bloom, 1990). A good deal of research has established that uninsured children have lower utilization rates, a less efficient distribution of utilization across sites of care, and worse health outcomes than other children (c.f. Kasper, 1986; Short and Lefkowitz, 1992).

In response to this lack of coverage and to rates of mortality and morbidity among U.S. children that were higher than in many other developed countries, the U.S. government began expanding Medicaid eligibility to previously uncovered groups of pregnant women and children in the mid-1980s. By July 1, 1991, states were required to cover all children born after Sept. 30, 1983 whose family incomes were

below the poverty line. Currie and Gruber (1996a) estimate that these Medicaid expansions roughly doubled eligibility for Medicaid coverage among women of child bearing age from 15 to 35 percent, while Currie and Gruber (1996b) find that eligibility among children increased from 15 to 30 percent. It may surprise readers who think of the U.S. medical insurance system as primarily private to learn that approximately 40 percent of births were paid for by Medicaid in 1995 (National Governor's Association, 1997).

Typically, states were first given the option of extending coverage to specific groups, and then required to do so. The important point is that since states took up these options at different rates, and programs varied tremendously in terms of generosity to begin with, there has been a great deal of variation across states in both the income thresholds and the age limits governing Medicaid eligibility⁽²⁾. This variation in eligibility across states, years, and child age groups, can be used to identify the effects of eligibility for public insurance among the poor and near-poor children who became eligible.

As discussed above, SCHIP is the most recent in this line of federal initiatives. It is aimed at covering children in somewhat higher income families (families with incomes up to 200 percent of poverty). States have the option of continuing to expand their Medicaid programs, or of creating a new program.

B. Takeup, Transactions Costs, and the Importance of Outreach

Many analysts have shown that children with Medicaid coverage tend to have higher rates of utilization of care than uninsured children (c.f. Weisman and Epstein, 1990), though it is difficult to determine whether this relationship is causal. Currie and Thomas (1995) use data from the National Longitudinal Survey of Youth (NLSY), which has followed the children of the initial female respondents since 1986. The longitudinal nature of the data allows them to include a fixed effect for each child, which controls for any unobserved, constant, characteristics of the home environment and of the child that might be correlated with Medicaid status. Their estimates indicate that both private insurance coverage and Medicaid coverage are associated with a higher number of visits for illness among white children, while for African-American children, insurance coverage has no significant effect on the number of sick child visits. Both white and African-American children receive more preventive care on Medicaid than with private health insurance.

However, there is no guarantee that increases in eligibility for health insurance will be translated into increases in coverage. Studies of the first years of these expansions of the income cutoffs show that despite the high fraction of births that are being paid for by the Medicaid program, many newly eligible, uninsured, pregnant women did not take up coverage in time to benefit from improved prenatal care. For example, Currie and Gruber (1996a) suggest that as many as half of newly eligible women did not take up coverage in time. These rates of non-participation are higher than those that have been estimated for AFDC and Food Stamps (Blank and Ruggles, 1996), or unemployment insurance (Blank and Card, 1991). Moreover, non-participation was concentrated among women who were not income-eligible for AFDC, suggesting that simply increasing the income eligibility cutoff did not break the link between receipt of cash welfare and Medicaid coverage. However, Currie and Gruber (2000) find that increases in Medicaid eligibility were associated with increases in the utilization of obstetric procedures, which is consistent with the view that when women did finally become covered (sometimes when they arrived at the hospital to deliver) they received more services.

Similarly, Currie and Gruber (1996b) analyze data from the Current Population Surveys and National Health Interview Surveys and find that about half of newly eligible children took up their Medicaid benefits, and that increases in eligibility were associated with increases in the utilization of care. For example, the probability that a child did not receive a doctor's visit in the past year fell 10 percentage

points from a baseline level of 19 percent. That is, becoming eligible for Medicaid was estimated to reduce the probability of going without a doctor's visit by more than half.

Currie (1999) reports evidence that for immigrant children, eligibility may be associated with increased utilization of care even when coverage does not rise. This result seems to be attributable to the fact that in some cases providers can obtain reimbursement *ex poste* for treating Medicaid eligibles who are not covered at the time of service. Also, parents of eligible children may minimize the transactions costs associated with becoming covered by obtaining coverage only when they need services. Currie (1999) reports that Medicaid enrollments follow a seasonal pattern, rising in the summer (when children are presumably preparing for school) and falling to their lowest level in the winter when parents would be required to recertify them.

Most states have tried to encourage takeup by adopting administrative measures designed to simplify the Medicaid application process, especially for pregnant women. Common reforms include: presuming that pregnant women are eligible for Medicaid while their applications are being processed and/or expediting the processing of applications for pregnant women; dramatically shortening and simplifying application forms; and eliminating the requirement for face-to-face interviews by allowing mail-in applications from pregnant women. At the same time, recent declines in welfare caseloads may have caused many pregnant women and children to lose their Medicaid coverage. Many poor women obtained Medicaid coverage "automatically" when they enrolled in the Aid to Families with Dependent Children (AFDC) program. Thus, the loss of AFDC (now the Temporary Assistance for Needy Families or TANF program) effectively raised the administrative bar for women seeking Medicaid coverage, by requiring them to go through a separate and unfamiliar application process (Ellwood and Kenney, 1995)⁽³⁾.

Currie and Grogger (2000) conduct a comparative evaluation of the effects of three types of policies (changes in income eligibility, administrative reforms, and changes in welfare caseloads) on the use of prenatal care and infant health using data from birth certificates covering all U.S. births between 1990 and 1996. They find that increases in income cutoffs were associated with increased use of prenatal care, while decreases in welfare caseloads were associated with reduced use of prenatal care, especially among African-Americans. The administrative reforms they considered had little effect. The fact that welfare caseloads continue to be linked to Medicaid takeup suggests that transactions costs or informational problems remain an important barrier to Medicaid coverage, despite the administrative reforms that have been undertaken. Low takeup of the Medicaid expansions have inspired other types of state efforts. For example, many states have conducted outreach programs designed to get women into prenatal care (Utah ran one of the earliest campaigns, called "Baby Your Baby"), and the new SCHIP program requires states to submit an outreach plan to the Health Care Financing Administration in order to receive federal matching funds. However, there has been little systematic attempt to evaluate these outreach efforts, or even to determine whether lack of information is the main reason that Medicaid eligibles remain unenrolled. In one of the few studies to examine characteristics of state outreach programs, Aizer (2001) reports that states that contracted out outreach efforts had higher enrollments in public health insurance than states that did not.

Even those who are covered by Medicaid may have difficulty obtaining preventive care, since Medicaid typically pays about half of what private health insurance would pay. One study of new mothers who had arrived in emergency rooms to deliver with "no physician of record" found that 64 percent of the women cited their inability to find a doctor willing to accept them as the largest barrier to obtaining prenatal care (Aved et al., 1993). Baker and Royalty (1996) use data from a longitudinal survey of California physicians observed in 1987 and 1991 and find that expansions of Medicaid eligibility to previously uninsured women and children increased the utilization of care provided by public clinics and hospitals but had little effect on visits to office based physicians. This is consistent with much previous

evidence that many providers either do not accept Medicaid payments, or limit the amount of time that they spend with Medicaid patients (Sloan, Mitchell, and Cromwell, 1978; Decker, 1992). These problems may be even more severe for minority mothers. American cities are highly segregated by race and income (Massey and Denton, 1993). Urban minorities often live in parts of the city that are shunned by physicians in private practice and hence are more likely to be served by large urban teaching hospitals (Fossett et al., 1992).

It is worth considering the one instance of great success in terms of takeup: the fact that most eligible pregnant women now have their deliveries paid for by Medicaid. While it may be quite difficult for individuals to overcome barriers to obtaining coverage, hospitals have both the incentive and the means to help women gain coverage since they must provide care to women in labor (Saywell, 1989). Many hospitals have established Medicaid enrollment offices on site. These offices assist people in completing applications and tell them how to obtain necessary documentation (GAO, 1994). Hospitals in at least 32 states and the District of Columbia also employ private firms to help them enroll eligible patients in the Medicaid program. Thus, it is not surprising that many births are covered by Medicaid even when prenatal care is not. This example indicates that takeup is likely to be higher when: a) the service is one that everyone wants; b) providers have incentives to facilitate takeup; and c) individual transactions costs are minimized.

C. Crowdout

In 1993, 67 percent of U.S. children were covered by private health insurance provided primarily by their parent's employers, 20 percent were covered by Medicaid, and 13.5 percent were uninsured (U.S. General Accounting Office, 1995b). A good deal of recent research focuses on the issue of whether public insurance tends to crowd out private insurance. The figures on insurance coverage for children are extremely suggestive: Despite the dramatic increases in public insurance coverage discussed above, the fraction of children without insurance coverage has stayed remarkably constant in recent years because private health insurance coverage has fallen by the same amount that public insurance coverage has risen (U.S. General Accounting Office, 1995b). However, private health insurance coverage has also been falling among groups that one would not expect to be affected by the Medicaid expansions, such as single men. Thus, it is not obvious to what extent the relationship between increases in public insurance and decreases in private insurance is causal.

Estimates of the extent of crowdout are sensitive to the methods used to control for possibly pre-existing trends in the provision of private health insurance coverage. At the high end of the spectrum of estimates, Cutler and Gruber (1996, 1997) estimate that for every two people covered by the Medicaid expansions, one person lost private health insurance. However, some of these people (such as household heads who decided they would no longer purchase health insurance once their children became eligible) were not themselves eligible for Medicaid — so not all of the people crowded out ended up getting insurance at public expense. They calculate that in fact about 40 percent of those crowded out ended up on Medicaid. Other observers have posed the question somewhat differently, and come up with correspondingly different estimates. For example, Dubay and Kenney (1997) find that about 22 percent of the increase in Medicaid coverage came from people who used to be privately insured. Since not everyone who became eligible for Medicaid did so as a result of the expansions, this number is necessarily smaller than Cutler and Gruber's estimate. Finally, one might ask what share of the overall decline in private insurance coverage is a result of the Medicaid expansions. The answer to this question is about 15 percent which suggests that a great deal of research remains to be done on the causes of this decline.

One issue obscured by the focus on crowdout is the fact that Medicaid insurance coverage may be better

than what is privately available to many families. For example, many private policies do not cover routine pediatric preventive care such as immunizations, and most have copayments and limits on what they will pay. Hence, the substitution of Medicaid for private insurance coverage may improve children's health care, and this improvement should be valued when the costs and benefits of the expansions are weighed. Also, from a societal point of view, it does not matter whether private or public insurers pay for health care, except in so far as taxation creates a dead-weight loss, and public insurance transfers resources to families with children. Still, policy makers reluctant to raise (or eager to cut) taxes remain deeply concerned about crowdout.

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V. Does Public Investment in Health Care Improve Child Health?

This section continues the discussion of expansions of health insurance for low-income women and children, and also discusses recent progress in improving compliance with vaccination schedules among preschoolers. An important lesson for child care policy which can be drawn from these two examples is that factors that limit takeup may also limit the cost-effectiveness of child care programs. Suppose for example, that the children who would gain the most from quality child care are the least likely to enroll. This could occur if disadvantaged parents are most likely to be put off by complicated applications or most likely to lack information about programs that might be beneficial for their children. More research on takeup of existing child care programs is necessary to assess the extent to which these concerns are valid.

The immunization example also illustrates the fact that simply eliminating financial barriers is not sufficient to insure that the most needy children receive services. Moreover, it illustrates the importance of outreach to providers as well as eligible families in order to insure that quality care is received.

Finally, the evidence suggests that while health insurance expansions improved child health, they did so in the most cost-effective way possible. This conclusion may also have implications for child care policy although it would be very difficult to assess the cost effectiveness of child care policy at present given the lack of systematic information about a broad range of child outcomes and/or costs. Greater attention should be paid to rigorous evaluation of child care policy. It is conceivable that some policies (such as encouraging very young children to use computers, or encouraging the placement of infants in center-based care) may turn out to do more harm than good on average. It would be wise to remember the physician's motto of "First, do no harm"!

A. Effects of the Expansions in Eligibility for Insurance on Child Health

The least controversial measure of health is mortality. Mortality is affected both by underlying health status and by medical care received, and it is not possible to separate out these factors using mortality data alone. In the case of infants, it is possible to proxy underlying health status using birth weight. Currie and Gruber (1996a) focus on the recent extensions of Medicaid eligibility to pregnant women and infants and ask whether these extensions reduced the incidence of low birth weight in addition to reducing the infant mortality rate. They use state rules to calculate the fraction of 15 to 44 year old women in the March CPS who would be eligible for Medicaid coverage in the event of pregnancy in each state and year from 1979 to 1990. They then estimate models in which the fraction of low birth weight infants in the state, and the state infant mortality rates, are functions of the fraction of women who are potentially eligible. State and year dummies are included in the models in order to control for

any state or year specific determinants of mortality⁽⁴⁾.

They find that the observed 20 percentage point increase in Medicaid eligibility over the 1980s reduced the incidence of low birth weight by two percent and the incidence of infant mortality by 8.5 percent. Cole (1994) reports similar results regarding the incidence of low birthweight using county-level data. This finding supports an earlier study by Hanratty (1992) which showed that the introduction of universal health insurance in Canada was associated with a decrease in the infant mortality rate. As in the U.S., public health insurance was adopted by the Canadian provinces at different rates.

Currie and Gruber (1996b) estimate models in which aggregate state-level child mortality rates depend on the fraction of children eligible in each state, year, and age group. Using this objective measure of child health they find that the 15 percentage point increase in the fraction of children eligible for public insurance between 1984 and 1992 was associated with a .2 percentage point decline in child mortality, which translates into a 5.1 percent decrease in child mortality. Moreover, this difference is statistically significant for deaths from internal causes such as disease (which one might expect to be affected by medical intervention), but not for external causes such as accidents and homicides.

Thus, the evidence suggests that the expansions of public health insurance of the 1980s and 1990s were effective in reducing infant and child mortality. However, they probably did not achieve this goal in the most cost effective way. For example, some of the infants saved by Medicaid coverage of their births, might have been better served by earlier access to prenatal care. Moreover, as discussed above, Medicaid does not necessarily give children access to private physicians, and it is much costlier to treat children in settings such as emergency rooms. Children served in emergency rooms and outpatient clinics are more likely to be hospitalized (Gold and Greenlick, 1981) and audits of hospital records suggest both that 20 to 30 percent of pediatric hospitalizations are medically unnecessary, and that Medicaid coverage increases the probability of unnecessary hospitalization (Kemper, 1988). Medicaid coverage also seems to be associated with an increase in necessary hospitalizations for conditions that could have been prevented with adequate primary care. Both uninsured and Medicaid patients are more likely than privately insured patients to be hospitalized for chronic conditions such as asthma, and communities in which people report barriers to medical care also have higher rates of such hospitalizations (Bindman et al., 1995; Weisman et al., 1992).

B. Immunizations

While much of the attention of the public health community has been focused on expansions of public health insurance to low income women and children, there are other public health measures aimed at improving utilization of care which have had a significant impact. One of the most notable of these was the national effort to increase childhood immunization rates during the 1990s.

Immunizations are one of the few health care services to have been unambiguously shown to be cost effective. Some estimates suggest that a dollar spent immunizing a child can save up to \$14.00 in future costs. Yet, a measles epidemic among preschoolers in the early 1990s highlighted the fact that immunization rates for preschoolers in the U.S. remained disturbingly low as of 1991 and 1992. Initial inquiries into the question suggested that one possible suspect should be ruled out. It is sometimes argued that relative to European countries, for example, the U.S. faces special public health problems because of a relatively large minority population. However, immunization rates were low even if one focused only on white children. For instance among three year old white children only 69 percent were up-to-date on Diphtheria, Polio and Tetanus immunizations (Harvey, 1990).

Financial barriers seemed a more likely suspect, especially given the evidence that many American

children were uninsured. The hypothesis that poverty might play a role prompted the federal government to develop the Vaccine for Children program in 1993. This program provides free vaccines to all children 18 and younger who are eligible for Medicaid, uninsured, under-insured (i.e. their private insurance coverage does not cover vaccines), or Native American. The aim of the program is to provide states with vaccines for free distribution to eligible children. However, four studies conducted by the Centers for Disease Control and Prevention concluded that vaccine costs had not been a major barrier to immunizations in the past because most children already had access to free vaccines through Medicaid or public health clinics.

The CDC concluded instead that many children were not immunized because their doctors failed to vaccinate them! "Missed opportunities" to vaccinate occur when a child who is eligible for a vaccination sees a provider and is not vaccinated, even though there are no valid contraindications. Researchers found that a high fraction of under-immunized children had in fact seen a provider recently (U.S. GAO, 1995a). For example, data from the 1988 National Maternal and Infant Health Survey suggested that 60 percent of inadequately immunized children in this national survey were reported to have received three well child visits by eight months of age (Mustin, Holt, and Connell, 1994).

The last few years have seen dramatic declines in the incidence of vaccine preventable diseases. In contrast to the thousands of cases of vaccine-preventable disease that occurred annually in the early 1990s, there were no cases of tetanus among children in 1996, or of polio, and only 4 cases of diphtheria (U.S. DHHS, 1997). Moreover, indigenous transmission of measles has been interrupted, meaning that all new cases are brought in from outside the country (Orenstein, 2000). This tremendous improvement has been attributed to the Childhood Immunization Initiative (CII) launched by the federal government in 1993.

This initiative had many different components. First, new federal resources were given to state and local agencies to enable them to develop computerized tracking systems. Second, a national outreach program aimed at both parents and providers was launched. For example, providers can obtain a kit from CDC called "Make Every Visit Count" that enables them to assess their immunization practices. Third, the Centers for Disease Control undertook to develop a National Immunization Survey of preschool children which would allow them to identify problem areas. Fourth, efforts were made to coordinate the activities of federal agencies that provide vaccines or have access to high-risk populations of children (such as the Special Supplemental Feeding Program for Women Infants and Children (WIC), which serves approximately 44 percent of the U.S. birth cohort) so that it would be possible to keep better track of immunizations. Finally, funding was set aside for research into improved vaccines (such as new combination vaccines) which would make it easier to comply with immunization schedules. The initiative also included the federal Vaccine for Children Program discussed above, as well as funds to hire personnel and extend immunization clinic hours (U.S. Centers for Disease Control 1994, 1997).

This example suggests that even in the case of an intervention that is known to be cost effective, and is widely accepted as being beneficial by parents, it takes a concerted and multi-pronged effort to make sure that the intervention is delivered to everyone who needs it. The elimination of financial barriers was not sufficient to get every child immunized. It was also necessary to undertake outreach to both providers and parents, and to track children in order to insure that they were getting the needed immunizations.

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VI. The Importance of Non-Medical Threats to Health

Although the bulk of this essay focuses on the effects of recent extensions of health insurance coverage, it is important to remember that health care is only one input into the production of child health, and there is overwhelming evidence that in most cases it is far from the most important input. Improvements in standards of living, advances in knowledge about disease and hygiene, and public health measures such as improved sanitation and the provision of clean drinking water have done more to improve child health in the past 150 years than even the most spectacular advances in personal medical care (Preston, 1977). Today, accidents and violence are the major killers of young children in wealthy countries after the first year of life (Unicef, 2001). Accidents are often viewed as unavoidable and violence is seen as a problem for the criminal justice system rather than a public health problem. Yet variation in rates of death from these causes across countries suggests that many deaths could be prevented. For example, in the U.S. there were approximately 25 accidental deaths per 100,000 children 1 to 14 per year in the 1990s compared to 13 deaths per 100,000 in Sweden over the same period. Moreover, substance abuse and poor eating habits threaten children from conception and into adulthood.

Currie and Hotz (2001) show that some types of child care regulation, and particularly minimum educational requirements for care givers in day cares, are effective in preventing accidental deaths in children. Thus, there may be some scope for child care policy to directly affect health outcomes, although most accidents occur outside child care settings.

Similarly, although quality child care may improve child outcomes (and poor quality child care can harm children), it is important to remember that families are the most important overall contributors to child well-being. The NICHD Study of Early Child Care found that child care situations with better "structures" as measured by safer, cleaner, more stimulating environments and better child-staff ratios also tended to be better in terms of "classroom process" — that is, caregivers who were more sensitive to the children and provided more cognitively stimulating care (NICHD Early Child Care Research Network, 1999). However, the study found that family income, maternal vocabulary, home environment and maternal cognitive stimulation were much stronger predictors of children's behavior problems and cognitive development than any characteristics of the child care they were in (NICHD Early Child Care Research Network, 2000). Thus, programs such as Head Start, which emphasize a holistic approach to assisting preschool children from needy families, may be on the right track, though this aspect of Head Start has not been subject to rigorous evaluation.⁽⁵⁾

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VII. Conclusions

The rationale for government involvement in child care policy is similar to that for investment in child health in that it rests on a commitment to equity as well as the existence of market failures such as liquidity constraints, imperfect information, and externalities associated with sub-optimal investment in children by parents. The two types of interventions share a fundamental goal, which is to improve short and long-term child outcomes. Moreover, quality child care may play a direct role in the promotion of child health by preventing injury, abuse, and neglect.

Given these similarities and the relatively long involvement of government in efforts to improve child health, some important lessons can be drawn for child care policy. First, it is important for the goals of particular policy recommendations to be explicit, since goals may conflict. Second, there is a tradeoff between the problems of takeup faced by means-tested programs, and the much larger amount of crowdout that is likely to be created by universal programs. Third, there is a great need for rigorous evaluation of all aspects of child care policy. That is, we need to know more about the long-term effects of child care as well as about issues surrounding takeup, crowdout, etc. Finally, we need to remember

that just as the family is the most important mechanism for safeguarding child health, the family is likely to remain the most important supplier of child care. Hence, policies that support good parenting are likely to be an important component of sound child care policy.

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Endnotes

1. Evaluations of public sector efforts to train low-skilled adult workers have generally found very small returns. Lalonde's (1995) survey of the training literature points out that most training programs for adult males and youths have been ineffective (the exception for youths being the costly Job Corps

program). And among poor adult women, the evidence shows rapidly diminishing returns to training investments suggesting that it may not be possible to raise earnings a great deal.

2. This point can be illustrated with reference to 11 of the largest states. As of January 1988, 8 of these states had taken advantage of the option to extend Medicaid coverage to previously ineligible children. By December 1989, all 11 of them had done so. However there was still a great extended coverage to children up to 6 years old in families with incomes below 100% of the poverty line, while New York only covered children up to one year old, but extended coverage to infants in families with incomes up to 185% of the poverty line.

3. Pregnant women who are not automatically eligible for Medicaid may be required to show birth certificates and/or citizenship papers, rent receipts and utility bills to prove residency, and pay stubs as proof of income. Many states have a time limit on the number of days the applicant can take to provide documentation — for example, Georgia gives 10 working days. Applicants are often required to return for several interviews. The available evidence suggests that up to a quarter of Medicaid applications are denied because applicants do not fulfill these administrative requirements: They cannot produce the necessary documentation within the required time or fail to attend all of the required interviews (GAO, 1994).

4. A possible drawback to this strategy is that since Medicaid is means-tested, the actual fraction eligible for Medicaid may depend on business cycle effects, or on omitted variables specific to states and years. It is possible to construct an eligibility measure that reflects only variations in state rules by using a nationally representative sample and calculating the fraction of women in this sample who would be eligible for Medicaid in each state and year. This "simulated eligibility" measure will be exogenous as long as state rules can themselves be treated as exogenous variables. The plausibility of this assumption is bolstered in this case by the fact that much of the change in legislation (though not all) was in response to federal mandates, and thus not directly under the control of state legislators. An additional advantage of this procedure is that sampling variation due to the fact that there are small cell sizes in some states and years is eliminated. This procedure was used to obtain the estimates discussed this section.

5. Head Start is a preschool program for disadvantaged children which aims to improve their skills so that they can begin schooling on an equal footing with their more advantaged peers. In addition to quality center-based care, Head Start offers training to parents and referrals to other community services. Currie (2001) provides an evaluation of the existing evidence regarding Head Start and other early intervention programs.

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