ENGAGING ABSENT FATHERS: LESSONS FROM PATERNITY ESTABLISHMENT PROGRAMS*

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Abstract

This paper provides the first comprehensive analysis of the causal effects of in-hospital voluntary paternity establishment (IHVPE) programs on paternity establishment rates and consequent family structure and behavior. Using variation in the timing of IHVPE program initiation across states and years, I first show that IHVPE programs increase paternity establishment rates by 40 percent. Then, using data from the March and April Current Population Survey Supplements, I show that IHVPE programs reduce the likelihood of marriage post-childbirth. The decrease in marriage leads to an increase in the average characteristics of both married and unmarried fathers. Accounting for selection out of marriage, private health insurance provision for children declines, while maternal labor supply increases. The results from my analysis are consistent with a framework where fathers, who are heterogeneous in quality, must make transfers to mothers in exchange for rights to their children. Maternal utility is more sensitive to father quality in marriage than outside marriage, so a decrease in the cost of paternity establishment induces more mothers to choose higher partial transfers outside marriage over full transfers and interaction with lower-than-desired quality fathers in marriage. I provide evidence that the timing of IHVPE program implementation is uncorrelated with numerous state time-varying characteristics and that the results are not driven by pre-existing trends. My results are robust to the inclusion of numerous controls for maternal, child, and state time-varying characteristics, state and year fixed effects, state-specific time trends, and across several specifications, methods, and data sets.

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I. Introduction

Some of the most disadvantaged children in the United States are in single-mother households. In fact, in 2010, 43% of children in single-mother households lived below the poverty line (U.S. Census Bureau, 2010). As the rate of births by unmarried mothers has been rising over the last several decades – such that in 2007, 40% of all births were out-of-wedlock (National Center for Health Statistics, 2010) – policymakers have become increasingly concerned with alleviating the hardships faced by these families. Since unmarried mothers generally retain physical custody of their children, a central issue is that non-resident fathers are uninvolved with the family and do not provide financial or emotional support for the mother and the child.[1] As a result, public policy has sought ways to encourage fathers to fulfill their paternal responsibilities and stay involved with their children.

Throughout the 1980s and 1990s, the U.S. government implemented several measures in attempts to help single mothers receive a higher and more stable source of income support by strengthening child support enforcement. An important component of these measures has been a push for increased paternity establishment at birth through in-hospital voluntary paternity establishment (IHVPE) programs, as establishing paternity is a crucial prerequisite to obtaining a legal child support order for unmarried mothers. In fact, the paternity establishment rate among children who need paternity established has increased from 29 percent in 1987 to 74 percent in 2002 (U.S. House of Representatives, 2004). There is some evidence that child support payments constitute a substantial fraction of female-headed households' family incomes and that increased child support enforcement and payments lead to greater involvement of non-resident fathers with their children (see Garfinkel *et al.* (1998) for a review).

More recently, policymakers have been focused on "Healthy Marriage" initiatives. The Deficit Reduction Act of 2005 provided $150 million in funding every year for "healthy marriage promotion and father involvement" (Administration for Children and Families, 2011). Most programs funded by these initiatives provide relationship education and counseling and conduct public advertising campaigns on "the value of healthy marriages" (Administration for

[1] According to data from March Current Population Survey supplements over 1989-2010, only 19% of never-married mothers report receiving any child support income.

Children and Families, 2011). Many of these programs are specifically aimed at unmarried pregnant women and expectant fathers.

Yet while the goals of these policies and programs arguably seek to address the best interests of some of the most disadvantaged families in the United States, their effectiveness may be hindered due to the complexities of the trade-offs that unmarried parents face in their decisions regarding involvement with each other and with their children. In this paper, I provide the first comprehensive analysis of one of these measures, the implementation of IHVPE programs, and develop a conceptual framework with which to interpret my findings. The empirical analysis in this paper adds to a large literature on the overall effects of child support enforcement (e.g.: Garfinkel *et al.* (1998); Freeman and Waldfogel (2001); Aizer and McLanahan (2006); Garfinkel and Nepomnyaschy (2007), among others), and improves upon the existing evaluations of IHVPE programs (Turner (2001); Sorensen and Oliver (2002); Mincy, Garfinkel, and Nepomnyaschy (2005)) by using a strategy that can arguably identify the causal effects of IHVPE and by considering a large number of states and several outcomes that impact family well-being in repeated cross-section data spanning more than one decade. The conceptual framework, which draws heavily upon a theoretical literature on the role of paternity rights in marriage largely pioneered and developed by Lena Edlund (see Edlund (2011) for an overview), provides motivation for the empirical findings.

Using data from Office of Child Support Enforcement (OCSE) yearly reports on the number of established paternities in each state and year over 1992-2005 along with information on the year of program implementation across states, I first analyze whether IHVPE programs are in fact effective at increasing paternity establishment rates. While OCSE yearly reports suggest that the substantial increase in paternity establishments during the 1990s was due to IHVPE programs, there could be other factors driving the effect. The same decade experienced a drastic increase in the proportion of births by unmarried mothers, thus inducing nontrivial selection into the population of families likely affected by paternity establishment programs. So, if the types of mothers that are more likely to be unmarried in the late 1990s relative to the early 1990s are also more likely to establish paternity (perhaps as out-of-wedlock childbearing and cohabitation become more common), then the observed increase in paternities could be at least in part driven by the compositional shifts in the distribution of births by unmarried mothers.

My results suggest that IHVPE programs increase paternity establishment rates by about 40 percent. Further, I provide evidence that the timing of IHVPE program implementation is uncorrelated with numerous state characteristics and that my results are not driven by pre-existing trends in paternity establishment rates. Additionally, since my results are robust across several specifications and data sources, to controls for maternal and child characteristics, state time-varying characteristics, indicators for other child support enforcement laws, and indicators for Aid for Families with Dependent Children (AFDC) waivers and Temporary Assistance to Needy Families (TANF) introduction, as well as to the inclusion of state and year fixed effects and state-specific time trends, I conclude that the relationship is causal and not driven by other factors.

I then proceed to analyze the effects of IHVPE programs on several measures of family behavior using data from March/April matched Current Population Survey Child Support Supplements (CPS-CSS) for 1994, 1996, 1998, 2000, 2002, 2004, 2006, and 2008[2]. My results suggest that IHVPE programs have a negative effect on marriage. Specifically, the likelihood that a mother of a child aged 5 years or less is married to the child's biological father is decreased, while the likelihood that she is never-married is increased by about 13 percent at the sample mean. Importantly, I find no effect on the likelihood that a mother is married *at the time of childbirth*, which suggests that paternity establishments that result from IHVPE programs influence marriage behavior *post-childbirth*. Given this finding, any analysis on a sample of mothers eligible to be asked Child Support (CS) supplement questions in the CPS is likely biased because of selection into the sample.[3]

In fact, I find evidence of positive selection: average measures of paternal demographic characteristics, child support agreements and father involvement improve among both married and unmarried (CS-eligible) fathers. Taken together, these findings imply that IHVPE programs lead to an increase in the "marriage threshold" in father quality.

To study the net effects of IHVPE on father involvement, I consider private child health insurance provision, the only measure of involvement available for all children, regardless of

[2] Because of changes to the CPS-CSS in the early 1990s, data collected in or after 1994 are not compatible with those from earlier survey years (Freeman and Waldfogel (2001)).

[3] All household members aged 15 years or older who are a biological parent of a child in the household from an absent parent are asked CS supplement questions.

whether their parents are married or not.[4] I find that overall, IHVPE leads to a 4% (at the sample mean) decrease in children's private health insurance coverage. I also provide some suggestive evidence of negative effects on other measures of father involvement when accounting for selection out of marriage – fathers are marginally less likely to make any or on-time child support payments or to have joint custody, spend fewer days with their children, and are less likely to pay for childcare expenses for their children.[5]

Finally, using data from Annual Demographic Supplements of the March CPS over 1989-2010, I show that IHVPE leads to a 3 percent (at the sample mean) increase in maternal labor supply. This result is consistent with the decrease in marriage as married women are generally less likely to be in the labor force than unmarried women (U.S. Census Bureau, 2011). Further, this finding suggests that IHVPE leads to a net decrease in monetary transfers from fathers to mothers and their children, which mothers must compensate for by working.

My empirical results imply that paternity establishment might constitute a substitute for marriage post-childbirth, at least for some parents. To understand this mechanism further, I develop a simple model of marriage behavior and parental transfers post-childbirth, which is largely based on the theoretical foundations in Edlund (2011).[6] In this model, I make the observation that within marriage, mothers obtain utility both from what the father transfers to the family in financial support and from his parental and partner qualities (which are affected by numerous factors observable by the mother such as his involvement in criminal activity, drug

[4] In the CPS-CSS, all other questions regarding father involvement are only asked of CS-eligible mothers. However, private child health insurance provision can be seen as an important measure of father involvement. As I discuss in more detail in Section VII, the decrease in private health insurance coverage is driven entirely by a decrease in health insurance provision by members of the household, and is not compensated by any changes in children's coverage by members outside the household.

[5] This evidence is only suggestive as I must rely on some assumptions regarding the father involvement variables for families that are not in the CS-eligible sample in order to account for selection out of marriage. Specifically, I assume that marriage to the biological father consists of visitation rights, joint legal custody and complete and on-time "child support payments", and that in marriage the father provides food, clothes, and gifts to the child, covers childcare and medical expenses, and spends the whole year with the child. Section VIII discusses these assumptions in more detail.

[6] The key idea that forms the theoretical backbone of this line of work (which was developed in Edlund (1998), and then served as the basis for the conclusions in several papers including Edlund and Korn (2002), Edlund and Pande (2002), Edlund (2005), Edlund and Lagerlöf (2006), Chiappori and Weiss (2007), Chiappori and Orrefice (2008), Saint-Paul (2008), Francesconi, Ghiglino, and Perry (2010), and Bethmann and Kvasnicka (2011)) is the observation that an unmarried mother is a child's sole parent by default, and therefore marriage serves as a transfer of paternity rights from the mother to the father. In essence, marriage can be seen as a contract for trade in children, where the father must make a positive transfer to the mother in marriage in exchange for rights to his children. Further, rights to children are usually "lumpy", which allows for the possibility of out-of-wedlock fertility (see Edlund (2011) for a detailed discussion of this argument).

use, involvement with other women, and parenting obligations to children from other mothers, among others). On the other hand, as most unmarried mothers retain full custody of their children, a mother's utility outside marriage is less sensitive to the father's quality. Thus, for certain (lower-than-desired) levels of father quality, a mother may value a lower level of support outside marriage more than a higher level of support that the father would have transferred to her within marriage.

Fathers offer transfers to mothers (and their children) in marriage as they can only obtain full utility from their children within marriage.[7] Outside of marriage, fathers can pay a fixed cost to establish paternity, and then gain some partial rights to their children in return for making partial transfers (i.e., child support payments).

IHVPE programs provide an easily accessible and very inexpensive mechanism for paternity establishment, as well as increased education of new unmarried parents about the fathers' rights and responsibilities once paternity is established. Consequently, I model IHVPE introduction as an exogenous reduction in the fixed cost of establishing paternity, which in turn increases the level of partial support that mothers expect to get outside marriage. This results in an increase in the number of parents establishing paternity, which is driven both by parents who would have previously maintained no relationship and parents who would have previously gotten married. The switch out of marriage arises because in a certain range of father quality, it becomes optimal for more mothers to remain unmarried and obtain increased partial transfers instead of obtaining full transfers in marriage but experiencing lower utility from interacting with a lower-than-desired-quality father.[8] In effect, the marriage threshold in father quality increases. This prediction is consistent with Edlund's (2011) conclusions that an increase in the woman's outside option (for example, her relative wage) should decrease marriage and that mothers may opt to share only partial rights with a low-quality father instead of sharing rights equally in marriage (for example, through cohabitation).

The net effect on total transfers from the fathers to the mothers and children is ambiguous in the model. It depends on the relative magnitudes of the decrease in transfers from switchers

[7] This element of the model arises because paternity presumption is an important feature in marriage (see Edlund (2006) for evidence from anthropology, sociology, and family law on this topic).

[8] For example, it may be the case that a father only provides health insurance coverage for his child if he is married and within the household. However, for low levels of partner quality, the mother may be willing to forego the health insurance provision (i.e., "full support") and remain unmarried if she now expects to receive at least partial child support outside marriage.

out of marriage and the increase in transfers from switchers out of no relationship. Thus, this framework suggests that the question of net impacts of IHVPE on measures of paternal transfers to the family (such as involvement with the child and maternal labor supply) is ultimately an empirical one. The model presented in this paper is a simplified version of Edlund's theoretical work; it further makes a novel contribution by explicitly addressing parental transfers through analysis of father involvement and maternal labor supply, and by applying the framework to a specific policy instrument – IHVPE programs.

In summary, this model predicts an increase in the rate of paternity establishments and a decline in parental marriage post-childbirth. The rise in the marriage threshold leads to an increase in the average characteristics of both married and unmarried fathers. Additionally, as the fathers who do not marry as a result of IHVPE would have provided higher transfers within marriage than they do outside marriage, the effects on net levels of father support and involvement when accounting for selection out of marriage are ambiguous and could potentially be negative. Finally, if there is an overall reduction in paternal transfers, mothers may compensate by increasing their labor supply. The results from the main analysis are consistent with the predictions of this model.

The paper proceeds as follows. Section II discusses the IHVPE programs in more detail. Section III reviews the relevant background literature, while section IV presents the conceptual model. Section V discusses the data sources and presents summary statistics, while Section VI discusses the empirical methods. Section VII presents the main results, while Section VIII presents a series of robustness checks. Finally, Section IX concludes.

II. In-Hospital Voluntary Paternity Establishment Programs

The Omnibus Budget Reconciliation Act (OMBRA) of 1993 required all states to establish IHVPE programs, and these programs were then expanded by the 1996 Personal Responsibility and Work Opportunity Act (PRWORA). As a result, all states have initiated an IHVPE program, and all hospitals and birthing centers are currently required to provide adult unmarried new mothers and fathers with an opportunity to sign a voluntary paternity

acknowledgement form.[9] State child support agencies are required to make available materials for educating parents, and hospital staff must provide mothers and fathers with both written materials and oral explanations regarding the rights and responsibilities related to paternity establishment. Additionally, in some states, minor parents are either not allowed to participate in the IHVPE programs, require parental consent to acknowledge paternity, or have more lenient rules for rescinding paternity within a short period after childbirth.[10]

Prior to the federal mandate, most states provided some kind of "voluntary acknowledgement" forms to new unmarried parents, but only in some hospitals. According to a survey of state child support agencies conducted by the Department of Health and Human Services, the forms had "no real legal significance" and many states "only kept forms at the public health office and didn't promote the idea [of paternity acknowledgement]" (Department of Health and Human Services (1997a)). For the purposes of this study, I consider an IHVPE program initiated in a state only when the in-hospital voluntary acknowledgement of paternity process becomes part of the state's legal code and/or the state implements a formal program that targets all hospitals and birthing centers in the state and involves education of new parents about the paternity establishment process (for example, the Paternity Affidavit Program in Washington or the Paternity Opportunity Program in New Jersey).

Despite the federal mandate, the administration of the in-hospital paternity acknowledgement process is largely under state discretion. The variation in the timing of IHVPE program implementation across states stems largely from the length of time necessary to forge relationships between state child support agencies, vital statistics registries, and hospitals (Department of Health and Human Services (1997a)). By 1997, 37 states reported full implementation of IHVPE, while the rest listed reasons such as "too early for the [office of child support] staff to have contacted every state birthing hospital" to explain the delays (Department of Health and Human Services (1997a)). Since identification of the causal effects of IHVPE programs on paternity establishment and family behavior relies on the assumption that the timing of implementation is uncorrelated with other time-varying determinants of these outcomes, it is important to assess whether the differences in timing are related to other potential confounding

[9] Both unmarried parents have to be present at the hospital to participate in IHVPE. According to data from the Fragile Families and Child Well-Being Study, over 1998-2000, 76% of unmarried mothers reported that the child's father came to the hospital at the time of the child's birth.

[10] Specifically, in 2004, the following states had special provisions restricting participation for minors: CA, DE, IL, KS, KY, TN, TX, UT, VA, WI, and WY (Roberts (2004)).

variables. While it may be the case that early IHVPE implementers have more efficient administrative processes and more organized existing networks across state agencies, time invariant differences in these characteristics are absorbed by the inclusion of state fixed effects in my analysis.[11] I also show that none of the results in this analysis is driven by any particular state (all regressions are robust to the exclusion of each state, results available upon request). Finally, given that the empirical evidence shows no correlation between IHVPE program initiation and numerous state time-varying characteristics of interest, it seems unlikely unobserved state time-varying omitted variables pose serious issues.

Unfortunately, a unified source of information on the timing of IHVPE program implementation across states does not exist. For most states, I obtained information on the year (and month if possible) of program implementation from searches of state legal statutes on *LexisNexis Academic*, internet searches of state paternity programs, and direct conversations with officials at state child support agencies and IHVPE programs. Additionally, as Nepomnyaschy and Garfinkel (2007) have collected this information for several states, I use their data as well.[12] Figure 1 shows the variation in the timing of IHVPE program implementation across states, while Appendix Table 1 presents more details for each of the 44 states in my data.[13] Births in these states account for about 96 percent of all births in the United States over the time period of analysis.

Until paternity is legally established, unmarried fathers essentially have no rights or obligations with regard to their children. Following paternity establishment, fathers usually have the right to refuse a requested adoption and block foster care placement for the child. They also have the right to request the court for partial custody and visitation rights. However, fathers have no rights regarding many decisions about their children's well-being (such as consent over medical care) if the mother has sole custody. Finally, fathers are legally obligated to make child support payments once a court order has been established.

Prior to the implementation of IHVPE programs, paternity establishment was a relatively uncommon and costly process that occurred through the court system, and most paternities were only established several years after the child's birth, if ever (Office of Child Support

[11] Further, differences in linear trends in such characteristics across states should be accounted for by the inclusion of state-specific time trends.
[12] I thank Irwin Garfinkel and Lenna Nepomnyaschy for graciously sharing these data with me.
[13] I do not have data for the following states: IA, MT, NH, NM, OK, WV, WY.

Enforcement, 1996). Policymakers speculated that IHVPE programs would be effective as they attempt to reach families during the "happy hour" in the hospital following the birth of the child and encourage the father to stay involved in his family's life (Department of Health and Human Services (1997b)). Figure 2 plots the trend in the total number of paternities established in the United States over 1992-2007, and the substantial increase from about 600,000 to over 1.5 million in the late 1990s coincides with the time when most states implemented IHVPE programs.

However, rigorous research on the causal effects of the IHVPE programs on paternity establishment rates is quite sparse. The existing literature is limited to several reports on individual state programs (for example, Pearson and Thoennes (1996); Ovwigho, Head, and Born (2007); Wisconsin Bureau of Child Support (2010)) and analyses of a few states and over short periods of time (Turner (2001); Sorensen and Oliver (2002); Mincy, Garfinkel, and Nepomnyaschy (2005)). To my knowledge, this paper is the first to examine the effectiveness of these programs for a large number of states and years, and to use methods that can arguably identify true causal effects of the programs that are not confounded by unobservable factors like variation in the composition of unmarried births. By uncovering the causal effects of IHVPE programs, this paper can shed light on how paternity establishment at birth may impact the decisions of unmarried parents regarding involvement with each other and their children. Further, analysis of the causal effects of IHVPE on marriage behavior in particular can reveal the trade-offs in parental marriage decisions and thus have important implications for the impacts of the more recent marriage promotion programs.

III. **Background Literature**

A. Child Support Enforcement Literature

The implementation of numerous child support enforcement measures (which include IHVPE programs, as well as automatic wage withholding, the new hires directory, and license revocation for non-payment among others) throughout the 1980s and 1990s across states created a "natural experiment" for researchers to study their overall effects. As a result, there is a wealth of literature that focuses on the effects of child support enforcement on numerous family and

child outcomes. Garfinkel *et al.* (1998) provide a comprehensive review of this literature. The main conclusions that arise from studies of the 1980s and early 1990s are that 1) child support enforcement tends to increase father-child interactions and father influence in child support rearing, and 2) child support enforcement decreases the likelihood of remarriage and subsequent out-of-wedlock births for low-income non-resident fathers.[14]

More recent research has found that both higher state child support enforcement expenditures and stricter policies lead to increased likelihood of child support payments (Freeman and Waldfogel (2001)). Aizer and McLanahan (2006) consider the mechanisms through which child support enforcement affects child well-being and find that stronger child support enforcement leads men to have fewer out-of-wedlock births and encourages men who do become fathers to do so with higher-educated mothers who are more likely to get prenatal care. They conclude that child support enforcement affects child outcomes both through an increase in financial resources and a birth selection process. Other research has considered additional indirect mechanisms through which child support policies might affect family well-being by studying effects on abortion (Crowley, Jagannathan, and Falchettore (2009)) and domestic violence (Fertig, Garfinkel, and McLanahan (2007)).

Most of the studies in the child support enforcement literature use a combination of variation in child support policy implementation and child support spending across states and years for identification. These approaches may be problematic, as the timing of implementation and the changes in state spending may not be exogenous to child and family well-being. For example, it may be the case that states that spend more on child support enforcement also provide better supports for single-mother households (such as more subsidized childcare options or more lenient Medicaid thresholds). On the other hand, states that spend more on child support enforcement may experience greater increases in single-mother households. All of these factors could bias the estimates from these studies. In this paper, I provide evidence that the particular timing of IHVPE program implementation is uncorrelated with many observable state characteristics (including the proportion of births by unmarried mothers and the implementation of other child support laws), and conduct numerous robustness checks to support the causal

[14] Studies in this review consider the effects of child support enforcement on remarriage of divorced non-resident fathers rather than effects on first-time marriage for never-married fathers. These studies generally focus on the 1980s and early 1990s – a time period prior to widespread paternity establishment for fathers who are unmarried at the time of childbirth. Hence, effects for never-married fathers are rarely considered as child support enforcement cannot affect them if they do not establish paternity.

interpretation of my identification strategy. Further, I include controls for other child support laws in all of the analyses.

Additionally, while the literature on the overall effects of child support enforcement is abundant, it generally does not consider the different measures separately. IHVPE programs are distinct from other child support enforcement measures (such as automatic wage withholding, for example) in that they do not seek to "punish" absent fathers by forcing them to pay. Instead, these programs attempt to connect with the father at the time of his child's birth and effectively encourage him to stay involved with his child and family on his own accord (given that paternity establishment at the hospital is voluntary). Further, the universal implementation of IHVPE programs across all hospitals and birthing centers creates a new default in paternity establishment. Whereas prior to IHVPE existence, paternity establishment was a rare and costly process of which many were parents were not aware (Department of Health and Human Services, 1997b), IHVPE programs created a culture in which paternity establishment at childbirth became considered a new standard for unmarried parents. Consequently, these programs may change the behavior and well-being of affected families differently from other child support enforcement measures.

To my knowledge, only one study has considered the effects of IHVPE programs in isolation from other child support enforcement measures. Mincy, Garfinkel, and Nepomnyaschy (2005) find that establishing paternity in the hospital is associated with increased formal and informal child support payments and father-child visitation among children born out-of-wedlock using data from the Fragile Families and Child Well-Being Study. However, they rely on cross-sectional and cross-city variation in in-hospital paternity establishment rates, which could be correlated with other factors that affect family well-being. Thus, despite controlling for a wide range of observable characteristics, their work is limited in its ability to establish a causal effect due to potential omitted variables bias.

This study attempts to fill a gap in the existing literature by improving upon the identification of causal effects IHVPE programs in isolation and by considering a large number of states and a wide range of outcomes that impact family well-being. Further, it is the first paper to take advantage of the state-year variation in IHVPE program initiation using repeated cross-section data that span more than one decade. The simple model that ties the existing theoretical

literature to the novel empirical findings on marriage, father involvement, and maternal labor supply is an additional contribution.

B. Literature on Marriage Behavior, Paternity Rights, and Non-Marital Childbearing

There exists an extensive theoretical literature on marriage markets, which are typically modeled as matching equilibria (Becker (1973, 1974, 1993); Mortensen (1988); Roth and Sotomayor (1990); Iyigun and Walsh (2004); Choo and Siow (2006); Chiappori, Iyigun and Weiss (2006)) or within search models (Burdett and Coles (1997); Ayiagari, Greenwood and Guner (2000); Chiappori and Weiss (2003, 2007)). More closely related to the current study, a substantial amount of work in the anthropological and legal literature emphasizes that an important feature of marriage is the transfer of custodial rights on children to the father (Bohannan (1949); Bohannan and Middleton (1968); Grossbard (1976); Posner (1992); Edlund (2006)). In economics, this feature has been modeled most explicitly by Edlund (1998), which then served as a basis for a number of theories on: why prostitution is a well-paid profession (Edlund and Korn (2002)); the political gender gap resulting from a decline in marriage and the subsequent decline in private transfers from men to women (Edlund and Pande (2002)); the surplus of young women in urban areas resulting from the presence of high-wage men (Edlund (2005)); why women have higher status in individual-consent regimes where they are the recipients of the bride-price instead of their fathers (Edlund and Lagerlöf (2006)); why an improvement in birth control technology increases the power of all women, including those who are not interested in the technology (Chiappori and Orrefice (2008)); why marriage affects returns to human capital differently for for men and women (Saint-Paul (2008)); why the institution of marriage reduces cheating in society (Bethmann and Kvasnicka (2011)); and why humans predominantly live in families instead of in promiscuous arrangements (Francesconi, Ghiglino, and Perry (2010)). In recent work, Edlund (2011) provides a comprehensive overview of the main theoretical consequences of this feature, noting that marriage is in effect a contract for trade in children which transfers a defined share of rights to children from a woman to her husband. As a result, men must pay for marriage in exchange for custodial rights, hypergamy can exist where women marry up and men marry down, and out-of-wedlock fertility can occur when trade is not possible (due to the lumpy nature of custodial rights).

A related influential line of work treats children as collective goods, which has important implications for parental allocations of resources towards their children in and out of marriage. Weiss and Willis (1985) present a model to explain why following divorce, non-custodial fathers pay lower-than-optimal amounts in child support. They show that after divorce, the non-custodial parent suffers a loss of control over the allocative decisions of the custodial parent, and thus it is not possible for the parents to achieve a Pareto-optimal allocation of their joint resources, resulting in under-provision of support from the father. More recently, Chiappori and Weiss (2007) show that high expectations of remarriage can lead to an equilibrium in which divorced fathers commit to make more generous transfers as long as their ex-wives remain single.[15]

Taken as a whole, this theoretical literature provides motivation to consider the effects of IHVPE programs, which enable fathers to obtain partial rights to their children in exchange for child support provision, on parental marriage behavior and transfers from the father to the mother and child.

Additionally, important contributions in anthropological and sociological work describe the motivations and perspectives of parents who bear children out-of-wedlock. According to this research, many poor women have children before marriage because of the very high value they place on their roles as mothers against the backdrop of dire circumstances that present them with few opportunities to attain higher education or to have meaningful career aspirations. Although not all out-of-wedlock pregnancies are planned, they are usually not accidental either, as many poor women perceive few disadvantages to bearing children while unmarried – "children offer a tangible source of meaning, while other avenues for gaining social esteem and personal satisfaction appear vague and tenuous" (Edin and Kefalas (2005)). However, Edin and Kefalas find that poor women do not reject marriage – on the contrary, marriage is a revered goal of lifetime commitment that should occur with the right person and at the right time. Most unmarried couples are romantically involved at the time of childbirth and aspire to get married eventually (McLanahan *et al.* (2001)). However, men are more favorably disposed to the idea of marriage and are more likely to raise the question of marriage than women are (Edin and Kefalas (2005)). On the other hand, many women are cautious about marriage as they do not want to commit to something that could jeopardize their well-being and the well-being of their children.

[15] In related work, Ayiagari, Greenwood, and Guner (2000) construct and simulate a model of the marriage market, where for certain parameters, an increase in mandated child support raises overall welfare.

The men in their lives are often involved in criminal behavior, and exhibit patterns of "intimate violence, chronic infidelity, and an inability to leave drugs and alcohol alone" (Edin and Kefalas (2005)), and thus do not constitute ideal child-rearing partners. Disadvantaged women interviewed in recent years view marriage as being about "adult fulfillment; it is something that [they] do for themselves, and their dreams about marriage are a guilty pleasure compared to the hard tasks of raising a family" (Edin and Kefalas (2005)). Thus, for many poor women, the meaning of marriage has changed over the last few decades from being an institution primarily about childbearing and childrearing to being an elusive dream of personal fulfillment. One can argue that the widespread practice of paternity establishment at childbirth for unmarried parents has contributed to this change as mothers no longer feel the need to rely on support from the fathers within marriage in order to raise their children, and can decline marriage offers in hopes of better future partners and life circumstances.[16]

There is also a large strand of empirical literature that has focused on how various policies incentivize individuals to either marry or not. Some of this literature has specifically considered the incentives that women face to bear children out-of-wedlock, in particular due to welfare policies, as standard economic theories have clear predictions that greater financial benefits for single mothers should reduce marriage (Becker (1993)). Empirical studies of the effects of welfare generosity yield mixed results. Some studies of the effects of welfare reform on marriage find that the reduced generosity of the reform led to an increase in marriage (Schoeni and Blank (2000)), others find a negative effect on marriage (Rosenbaum (2003); Bitler *et al.* (2004); Fitzgerald and Ribar (2004)), while still others find insignificant effects (Ellwood (2000); Kaestner and Kaushal (2005)). All of these studies consider the woman as the primary unit of observation, and do not directly address the welfare of her children. In contrast, Bitler, Gelbach, and Hoynes (2006) find that welfare reform policies led to a decrease in the likelihood that children live with an unmarried parent.

To my knowledge, only one study has explicitly considered the effects of government policies on marriage behavior post-childbirth specifically. Using data from the Fragile Families

[16] It is important to note that Edin and Kefalas (2005) conduct their study on 160 especially disadvantaged single mothers in inner-city Philadelphia. Consequently, these women's experiences are probably not representative of the experiences of average women, or even all unmarried mothers likely affected by IHVPE programs. However, given that 30 percent of single mother households live below the poverty line (U.S. Census Bureau, 2010), it may be that at least some of the mothers in my data share similar experiences and attitudes with the poor women interviewed by Edin and Kefalas. Nevertheless, Edin and Kefalas (2005) provide, at least, anecdotal motivation for studying the effects of IHVPE programs on marriage behavior.

and Child Well-Being Study, Knab *et al.* (2008) find that more generous welfare benefits are associated with a reduction in the likelihood of marriage to the biological father post-childbirth. This finding is similar in spirit to my results, as an increase in welfare benefits leads to higher income for mothers outside marriage, which may allow them to increase the marriage threshold in father quality. However, a major limitation of the Knab *et al.* (2008) study is that the authors are only able to rely on cross-city variation in welfare generosity, and thus their results cannot be reliably interpreted as causal. No studies have considered the impacts of increased paternity establishment rates at childbirth due to IHVPE programs on subsequent marriage behavior.

Given the potential for welfare and child support policies to affect marriage behavior, it is important that I account for them in my specifications. Thus, I include controls for the welfare benefit for a 4-person family, indicators for various child support laws, and indicators for the implementation of Aid to Families with Dependent Children (AFDC) waivers and Temporary Assistance to Needy Families (TANF) in each state and year. My results are robust to the inclusion of all these controls. Further, I find no correlation between the timing of IHVPE program initiation and welfare generosity across states and years.

Taken together, the economic theory and the anthropological and sociological evidence provide motivation for constructing a simple conceptual framework with which to interpret the results on the effects of IHVPE on marriage and paternal transfers to the mother and child. Further, this paper contributes to the empirical literature on the effects of government policies on marriage behavior by studying the previously unconsidered IHVPE programs.

C. Literature on Female Labor Supply

This paper also relates to a vast literature on the determinants of female labor supply. While a full review of this literature is beyond the scope of this paper (see Blundell and MaCurdy (1999) for a survey), I attempt to highlight some relevant studies here.

In general, the literature has focused on estimating labor supply elasticities separately for married and unmarried women (for example, Blau and Kahn (2007), and Bishop, Heim, and Mihaly (2009), respectively). Additionally, a number of studies are concerned with the effects of various public programs, such as the Earned Income Tax Credit (EITC), welfare, and childcare subsidies, on single mothers' labor supply (Berger and Black (1992); Eissa and Liebman (1996);

Keane and Moffitt (1998); Meyer and Rosenbaum (2001); Ellwood (2000); Hotz, Mullin, and Scholz (2002); Moffitt (2002), among many others). However, by considering married and unmarried women separately, these studies do not fully address the potential relationship between income shocks, *transitions in and out of* marriage, and women's labor supply.

From a theoretical perspective, an intra-household bargaining framework has important predictions on the effects of changes in married women's outside options on their labor supply – if leisure is a normal good, then an increase in a married woman's relative bargaining power should lead to reduced labor supply (see Lundberg and Pollack (1994, 1996, 2007); Gray (1998); Chiappori, Fortin, and Lacroix (2002); Voena (2011), among others). Similar to studies mentioned above, since this literature focuses on bargaining within married households, the interaction between bargaining power, marriage, and overall female labor supply for both married and unmarried women is understudied.

I seek to add to this literature by analyzing how IHVPE affects all mothers' labor supply, regardless of marital status. This is necessary, as the effects on marriage induce selection into the samples of married and unmarried families. Note that among mothers who would have remained unmarried in the absence of IHVPE, one might expect that IHVPE leads to reduced labor supply. Since IHVPE programs increase unmarried mothers' expectations of child support and arguably improve their bargaining power, this should lead to a substitution of more leisure relative to labor supply. However, the effects on all mothers are complicated by the fact that IHVPE reduces marriage. One might expect an overall increase in maternal labor supply if net transfers from fathers to mothers and children decline.

IV. **Conceptual Framework**

A. Overview of Model

I present a simple model to motivate how IHVPE programs can impact paternity establishment, marriage behavior and overall transfers from the father to the mother and child. This framework is a simplification of many of the arguments developed and summarized most recently by Edlund (2011), with a specific application to studying IHVPE programs. The key backbone of the model – that fathers must offer transfers to mothers in exchange for rights to

children – was originally developed by Edlund (1998), and then served as the foundation for a wealth of theoretical literature in economics (e.g. Edlund and Korn (2002); Edlund and Pande (2002); Edlund (2005); Edlund and Lagerlöf (2006); Chiappori and Weiss (2007); Chiappori and Orrefice (2008); Saint-Paul (2008); Francesconi, Ghiglino, and Perry (2010); Bethmann and Kvasnicka (2011)).

In this model, mothers and fathers make decisions about whether to enter marriage, establish paternity, or have no relationship after the birth of their children. Clearly, individuals' decisions to marry and be involved with their families are incredibly complex and rely on many quantifiable and non-quantifiable factors, which I do not attempt to model here. However, to the extent that at least some aspects of these decisions are related to individuals' valuations of their potential partners' qualities, to their desires to have rights to their children,[17] and to the costs and benefits of providing support for their partners and children, this model serves to highlight how these particular mechanisms might be affected by the implementation of IHVPE programs (see Edlund (2006) for further motivation about why these factors are particularly important in marriage).

In this model, fathers give transfers to mothers both in marriage and in paternity. However, since marriage provides fathers with full rights to their children, while paternity only grants partial rights, the transfers in marriage should be higher than the transfers in paternity for any given father.

The key ingredient of the model is the assumption that the mother's utility in marriage depends directly on the father's quality, while her utility outside marriage does not. This seems like a reasonable assumption given that within marriage, the parents share decision-making power over household affairs and the well-being of their children, and usually interact with each other on a daily basis. On the other hand, since most unmarried mothers retain full custody of their children and do not cohabit with their children's father, they are less sensitive to the father's partner qualities. Thus, for low levels of father quality, the mother may value a lower transfer outside marriage more than a higher transfer within marriage. For example, if a mother thinks that having a father who deals drugs in the home is detrimental to her own and her child's well-being, then the costs of this behavior might outweigh any benefits of increased involvement and

[17] In this context, I use "rights" to the child as a broad term that essentially encompasses the ability of a parent to make decisions about the welfare of their children as well as the right to enjoy their relationship with them.

support that he would have provided within the household. To the best of my knowledge, this particular feature has not been previously explicitly modeled in past work, and its introduction allows for specific predictions for the net effects of IHVPE on transfers from the father to mother and child.

In this framework, there can be several consequences when costs to establishing paternity are lowered. First, parents who would have maintained no relationship previously are now induced to establish paternity: among them, the mothers now benefit from increased partial support, while the fathers benefit from partial rights to children. Second, some parents who would have married previously may now be induced to establish paternity if mothers value the increased partial support in paternity greater than their utility from full support and interaction with a lower-than-desired quality father in marriage. Note that the net effect on total expected transfers from the father to the mother and child depends on the relative magnitudes of these two effects. In particular, if the decrease in support from fathers who would have married previously outweighs the increase in support from fathers who would have maintained no relationship before, the net effect on overall transfers can be negative.

B. Model Set-Up

To focus the model on father quality and paternal transfers, I make the simplifying assumption that all mothers are homogeneous. Thus, I assume all mothers obtain $Q > 0$ in utility from their children. Further all mothers obtain the same utility from children regardless of whether they are married, establish paternity, or maintain no relationship with the father. On the other hand, fathers only obtain full utility from their children in marriage. This asymmetry stems from the fact that most unmarried mothers retain full custody of their children and thus essentially maintain complete decision-making power over their children's well-being outside of marriage.[18] Since a mother can enjoy her full utility from her child outside marriage, she will only agree to marriage if she receives a non-negative transfer, *t*, from the father.

Fathers are heterogeneous in partner quality, denoted by *q*, which is distributed according to a cumulative distribution function, *F(q)*, with a support of $[0, \overline{Q}]$. For simplicity, I assume that

[18] This assumption is the same as in most papers motivated by the theory originally developed by Edlund (1998).

a father's valuation of his children is the same as his quality, q.[19] Intuitively, lower-quality fathers value their time and resources allocated to other activities (such as drug use, time spent with friends or other women, etc. (Edin and Kefalas (2005)) more than to children and hence experience a lower utility from their children than higher-quality fathers.

The amount of parental rights that a father has to his child depends on the relationship that he has with the mother. Specifically, fathers obtain $\alpha_j q$ in utility from their children (for some constant $0 \leq \alpha_j \leq 1$), where j denotes three possible states – m (marriage), p (paternity), or n (no relationship). I assume that in marriage, fathers have full rights to their children ($\alpha_m = 1$), while outside marriage, fathers have partial rights if they establish paternity ($0 < \alpha_p < 1$) or no rights if they maintain no relationship ($\alpha_n = 0$). Note that this feature is similar to the "cohabitation" state described in Edlund (2011), although the framework presented here accommodates cases where a mother may not want to share a household with the father through cohabitation but can still transfer a fraction of custodial rights to him.

Each father chooses the level of transfer to offer to the mother and child, $t_j(q)$ in states $j \in \{m, p\}$, in exchange for parental rights. I assume that to establish paternity outside marriage, fathers must pay a fixed cost, $c_p > 0$. This means that if a father maintains no relationship with the mother, then he receives no rights to his child and also incurs no costs.

The key element of this model is that the mother's utility in marriage depends directly on the father's quality, while her utility outside marriage does not. Consequently, I assume the following utility functions for the parents:[20]

For the mother, $M\left(Q, t_j(q), \theta_j(q)\right) = Q + t_j(q) + \theta_j(q) \qquad for\ j = m, p, n,$

and for the father, $F\left(q, t_j(q), c_j\right) = \alpha_j q - t_j(q) - c_j \qquad for\ j = m, p, n,$

where $\theta_p(q) = \theta_n(q) = 0$ for all q, and $c_m = c_n = 0$. Here, $\theta_m(q)$ is a function that represents the mother's utility from directly interacting with a q-quality father in marriage. I assume that $\theta_m'(q) > 0$ for all q and that the support of $\theta_m(q)$ includes both positive and negative values. This implies that for certain (lower) values of q, mothers may experience a disutility in marriage

[19] One could also assume that a father's valuation of his children is a direct function of his quality, $Q(q)$, where $Q(q)$ is monotonically increasing and $Q(0) = 0$. However, since this model is not attempting to address the relationship between father quality and valuation of children, I simply assume $Q(q)=q$.

[20] I assume quasi-linear utility functions, which follows Edlund (2011) and Chiappori and Orrefice (2008), among others.

that they would otherwise have not experienced outside marriage. Consequently, we can represent the realizations of these utility functions in each of the possible states as follows: [21]

	Marriage	**Paternity**	**No Relationship**
Mother	$Q + t_m(q) + \theta(q)$	$Q + t_p(q)$	Q
Father	$q - t_m(q)$	$\alpha q - t_p(q) - c$	0

C. Equilibrium

To solve for the equilibrium of this model, I make the assumption that the mother has full bargaining power.[22] I first solve for the father's indifference condition to find the transfers $t_m(q)$ and $t_p(q)$ that will make the father indifferent between marriage, paternity, and no relationship. The father's indifference condition is:

(1) $0 = \alpha q - t_p(q) - c = q - t_m(q)$

It follows that fathers with $q \leq \frac{c}{\alpha}$ will transfer nothing and maintain no relationship with the mother. Fathers with $q > \frac{c}{\alpha}$ will be indifferent between offering $t_p(q)^* = \alpha q - c$ in paternity and offering $t_m(q)^* = q$ within marriage. Denote the paternity threshold as $q_p = \frac{c}{\alpha}$. Note that for all fathers with $q > q_p$, mothers will agree to paternity over no relationship.

The marriage decision is determined by the mother's utility. The mother will agree to marriage if:

(2) $Q + t_m(q)^* + \theta(q) \geq Q + t_p(q)^*$

(3) $\rightarrow q + \theta(q) \geq \alpha q - c$

(4) $\rightarrow (1 - \alpha)q + \theta(q) + c \geq 0$

[21] From here on, I drop the subscripts on α, $\theta(q)$ and c, since the values for each parameter for two out of the three states are determined by assumptions discussed above.

[22] This is the same assumption as in Edlund (2011) for the case where both the woman and man are of "low" quality. This assumption is certainly strong, although it reflects the qualitative evidence that low-income mothers tend to refuse marriage more often than fathers do (Edin and Kefalas (2005)).

The marriage threshold, q_m will be a value of q that will satisfy (4) = 0. Additionally, I assume that $q_m > q_p$ so no mothers prefer marriage with a father who does not want to establish paternity. The expected amount in transfers to all of the mothers is determined by:

$$(5)\ T = \int_0^{q_p} 0\ dF(q) + \int_{q_p}^{q_m} t_p(q)^*\ dF(q) + \int_{q_m}^{\bar{Q}} t_m(q)^*\ dF(q)$$
$$= \int_{q_p}^{q_m} (\alpha q - c)\ dF(q) + \int_{q_m}^{\bar{Q}} q\ dF(q)$$

D. Comparative Statics

IHVPE programs introduce an easily accessible and inexpensive way to establish paternity along with widespread education of fathers about their parental rights and obligations at the time of their child's birth. Consequently, I model the introduction of IHVPE programs as an exogenous decrease in *c*, the fixed cost of paternity establishment.[23]

Let us consider what happens when c decreases. First, the threshold for paternity, q_p, will also decrease as $\frac{\partial q_p}{\partial c} = \frac{1}{\alpha} > 0$. To calculate the effect on the marriage threshold, q_m, I use the implicit function theorem:

For $G(q_m, c) = (1-\alpha)q_m + \theta(q_m) + c = 0$, it holds that:

$$(6)\ \frac{dq_m}{dc} = -\frac{\frac{\partial G}{\partial c}}{\frac{\partial G}{\partial q_m}} = -\frac{1}{(1-\alpha)+\frac{\partial \theta}{\partial q_m}} < 0 \qquad \text{(since } \frac{\partial \theta}{\partial q_m} > 0 \text{ and } \alpha < 1\text{).}$$

Consequently, as *c* decreases, the threshold for marriage, q_m, will increase. This suggests that as the costs to establishing paternity are lowered, more parents choose this option. The switchers into paternity include both parents who would have previously maintained no relationship and parents who would have previously married.

[23] One could also model IHVPE introduction as an exogenous increase in α_p, the partial rights that the father expects to receive in the state of paternity. The predictions of the model would be the same.

Note that the increase in q_m also implies that we should see positive selection both in and out of the samples of married parents – the average q of unmarried fathers ($0 \leq q < q_m$) and the average q of married fathers ($q_m \leq q < \bar{Q}$) will rise as q_m rises.

To study the effects on the expected amount in transfers to the mothers, *T*, I make the simplifying assumption that q is distributed uniformly over [0, $\bar{Q}$]. Consequently, the total amount in transfers to all mothers is:

$$(7)\ T = \frac{1}{\bar{Q}}\left[\left(\frac{1}{2}\alpha q^2 - cq\right)\Big|_{c/\alpha}^{q_m} + \frac{1}{2}q^2\Big|_{q_m}^{\bar{Q}}\right]$$

$$= \frac{1}{\bar{Q}}\left[\frac{1}{2}{q_m}^2(\alpha - 1) - cq_m + \frac{c^2}{2\alpha} + \frac{1}{2}\bar{Q}^2\right]$$

We can then solve for the derivative of *T* with respect to *c*:

$$(8)\ \frac{\partial T}{\partial c} = \frac{1}{\bar{Q}}\left[\frac{\partial q_m}{\partial c}(\alpha - 1)q_m - c\frac{\partial q_m}{\partial c} + \frac{c}{\alpha} - q_m\right]$$

The sign of the right-hand side in (8) is ambiguous. Note that the first three terms in the brackets are positive, while the last term is negative. Clearly, the relationship between *T* and *c* depends on the parameters. The reason for this is that the decrease in *c* leads to an increase in the proportion of parents establishing paternity relative to both marriage and no relationship. Among fathers who would have remained unmarried in the absence of IHVPE, there is a positive effect on expected transfers. However, the switchers out of marriage transfer less than what they would have transferred in marriage ($\alpha q - c$ instead of q). Thus, the net effect on *T* depends on the relative magnitudes of these opposing effects. Ultimately, we must turn to data to understand what happens to *T* when costs of establishing paternity are lowered.

This framework yields four predictions: 1) IHVPE programs should increase paternity establishment rates; 2) IHVPE programs should reduce marriage through an increase in the marriage threshold, q_m; 3) there should be positive selection both in and out of marriage as q_m rises; and 4) the effect on the total amount of transfers from the father to the mother and child is ambiguous and can be negative if the decrease in transfers by switchers out of marriage outweighs the increase in transfers by fathers who would have never married previously.

V. Data and Summary Statistics

A. Paternity Establishment Data

The data for this paper come from a variety of sources. Data on the number of paternity establishment rates over 1992-2005 in each state and year come from OCSE reports. Beginning in 1996, each report contains a table on the total number of paternities established in each state for five consecutive years (so, the 1996 report contains information for 1992-1996). Unfortunately, there is no concrete information on the number of paternities established in-hospital for all states (some OCSE reports contain a table on in-hospital paternity establishments, but these data come from voluntary reports by states and information is missing for many states and years). However, given that IHVPE programs could only increase paternity establishment rates at the hospital, we can interpret the changes in the total number of paternity establishments following IHVPE implementation as being driven by changes in in-hospital paternity establishments.[24] For the analysis, I use paternity data for the 43 states for which I have information on the year of IHVPE initiation and which initiated their programs in 1993 or later, which results in 601 state-year observations.[25]

B. Data on Maternal and Child Characteristics

In all analyses of effects on paternity establishment rates, I control for a number of maternal and child characteristics. These data come from the National Center for Health Statistics (NCHS) Vital Statistics on the universe of birth certificates in the United States over 1992-2005, collapsed into state-year cells. I include the log number of births, the percentage of births by unmarried mothers, the percentage of mothers in five age categories (<20 years, 20-24 years, 25-34 years, 35-44 years, 45+ years), the percentage of mothers in four education

[24] In fact, in the long run, we should expect paternity establishment rates outside the hospital to decrease as a result of IHVPE programs, as some families that would have established paternity later on instead establish it at the time of the child's birth.

[25] I exclude Washington, which initiated its IHVPE program in 1989. Additionally, Nevada is missing data on paternity establishments in 2000, so I exclude this state-year observation.

categories (<high school, high school, some college, college+), the percentage of mothers who are non-Hispanic white, black, and Hispanic, and the percentage of male births.[26]

C. Data on State Time-Varying Characteristics

Data on various economic and program transfer variables comes from a database maintained by the University of Kentucky Center for Poverty Research. These data are available for 1980-2010, and are compiled from numerous sources including the U.S. Census Bureau, the Bureau of Labor Statistics, the Urban Institute, the Department of Agriculture, and the Council of State Governments among others. As controls, I include the unemployment rate, the poverty rate, the minimum wage, the percent of the population that receives AFDC/TANF benefits, the welfare benefit for a 4-person family, the percent of the population that is on Medicaid, an indicator for a Democratic governor, and the percent of the state house that is from the Democratic Party in each state in the year before.[27] Additionally, I weight the regressions on paternity establishments using state-year populations that come from these data.

Table 1 presents summary statistics for the entire United States and for the 43 states included in my analysis on paternity establishments. These statistics suggest that the 43 states in my analysis are fairly representative of the whole country. This is not surprising as only eight relatively small states are missing from the data. In these states, the average yearly ratio of the total number of paternities established to the total number of unmarried births is 0.89. Note that this is an overestimate of the proportion of unmarried births with paternities established in-hospital, as my data is on paternities established for all children in each state and year (and not just newborns).

[26] It is important to note that including the percentage of births by unmarried mothers as a control would be problematic if IHVPE programs had an effect on the likelihood of marriage at the time of birth. However, as discussed in more detail in Section VII and as shown in Tables 12 and 13, there is no statistically significant correlation between IHVPE program initiation and the proportion of unmarried births. This finding is reassuring, as IHVPE programs should only affect outcomes post-childbirth, and hence suggests that IHVPE influences parental marriage behavior after childbirth. Finally, I show in Section VII that the results are not sensitive to the exclusion of the state time-varying controls.

[27] The state time-varying controls are lagged because some of them could be considered endogenous if included concurrently. For example, if IHVPE programs affect the fraction of the population receiving AFDC/TANF benefits, then this control is potentially endogenous. Thus, lagged variables are included as IHVPE programs cannot affect any of these variables in the previous year.

When I split the sample into state-year cells that do and do not have an IHVPE program in place, important differences emerge. Most strikingly, the ratio of paternities established to the number of unmarried births is more than twice as large in IHVPE state-year cells as in the rest of the sample. However, the rest of the statistics suggest that some of this difference may be driven by selection. In fact, IHVPE state-year cells tend to have higher-educated and older mothers who are less likely to smoke during pregnancy, lower unemployment and poverty rates, and higher welfare benefits. The IHVPE state-year cells also tend to have more Hispanic mothers, more mothers who drink alcohol during pregnancy, and are less likely to be Democratic. The reason for these differences is that some states that implemented IHVPE programs early are more represented in the IHVPE state-year cells, while other states that implemented IHVPE programs late are more represented in the no-IHVPE state-year cells. Consequently, these differences imply that cross-sectional comparisons of states that do and do not have IHVPE programs in any given year are likely to be biased, as these states differ along numerous dimensions.

My analysis can arguably overcome this problem as the identification strategy is based on the *changes* in outcomes (such as paternity establishment rates, marriage behavior post-childbirth, etc.) within state that are due to IHVPE program implementation. State fixed effects absorb any variation across states that is time-invariant, while year fixed effects absorb any overall time trends that affect all states. Further, the inclusion of state-specific time trends allows for unique linear trends in outcomes in each state, and thus changes in outcomes are identified as deviations from the trend. Thus, my identification of a causal effect of IHVPE relies on the assumption that IHVPE program implementation is uncorrelated with other state time-varying characteristics that do not follow a linear trend, and I show that this is the case for a number of characteristics that likely matter.

D. CPS Child Support Supplement Data

To analyze the effects of IHVPE programs on marriage behavior and measures of father involvement, I use data from the biannual March/April matched CPS supplements over 1994-2008 on child support. These data include households that were surveyed both in the March Annual Demographic File and in the monthly April CPS. In April, in addition to the standard CPS questions, all members of a household aged 15 and above who have a child in the household

with a parent that lives outside the household are asked detailed questions regarding child support agreements, payments, and the involvement of the other parent.

A crucial element for my analysis is information on the child's birth year. Unfortunately, the CPS-CSS does not ask the parent any direct questions about his/her children's birth years. However, given that it is possible to link family members to each other in the data, I proceed as follows. First, I create a "youngest child" data set by considering all individuals who are the youngest within their household and who are aged 5 years or less.[28] I drop all children who have been adopted and all children who have a parent that died. I also drop all children who live with either no biological parent or only a father. All children who live with at least one parent have information on the line number of his/her parent in the household (which can be a mother or a father). Thus, I am able to merge children who list their mothers' line numbers directly to their mothers. Then, I merge children who list their fathers' line numbers to their fathers and merge the fathers to their spouses in the household to obtain information on the mothers. I drop all father-child pairs in which the father cannot be merged to a spouse in the household.[29] This results in a data set of mother-child pairs, and I use the mother as the unit of observation in all analyses.

Using the child's age at the time of the survey, I calculate the child's approximate birth year: *birth year = survey year – child age – 1*. I also calculate the mother's age at the time of childbirth: *mother's age at childbirth = mother's age at survey – child age – 1*. Since there is some variation in how minors are treated in IHVPE programs, I limit my analysis to mothers aged 18-45 at the time of childbirth. Finally, I drop all mothers who moved from outside the US in the last year and all mothers who are missing the CPS person weights. This leaves me with 37,901 mothers of youngest children aged 5 years or less in the CPS-CSS data. Out of them, 8,957 mothers are asked the CS supplement questions.

[28] I randomly pick one child if there are multiple children that satisfy this condition (i.e., non-singleton children.).

[29] I do this because I want to use the mother as the unit of observation and data limitations prevent me from observing information on the child's mother when the father is listed as the child's parent and the parents are not married. As a result, all mother-child pairs in which the unmarried parents are cohabiting and the child's parent is listed as the father are dropped. This results in only about 1% of the sample being dropped. This may still be problematic if there is an effect of IHVPE programs on the likelihood that unmarried parents cohabit. However, I can check this given that I do observe mother-child pairs in which the unmarried parents are cohabiting and the child's parent is listed as the mother. There is no statistically significant effect of IHVPE on cohabitation for these mothers – the coefficient of interest is -0.000082 with a standard error of 0.0005. Thus, I can conclude that this omission is likely negligible.

In this sample, a mother can be categorized as married to the biological father in two cases: 1) if she is listed as the child's parent, is married, and the child is coded as living with both parents in the household, or 2) if she is the wife of the child's father who is listed as the child's parent, and the child is coded as living with both parents in the household. A mother is categorized as married to someone other than the biological father if she is married, but the child is coded as living with only a mother in the household. Mothers who are married to the biological father are by construct ineligible to be asked CS supplement questions.

Table 2 presents some summary statistics on the mothers included in my sample of analysis from 44 states, weighted by the provided CPS person weights.[30] Most mothers were aged 25-34 years at the time of childbirth and have a high school education. Sixty-three percent of mothers are non-Hispanic white, while 14% are black and 18% are Hispanic. A little more than half of all children are male, and the average age of children is 2.18 years. About 78% of mothers are married – 77% are married to the father of the child, while 1% are married to someone else. Overall, about 89% of children have any health insurance coverage, with 68% having private coverage. About 24% of all mothers are eligible to be asked CS supplement questions. Out of mothers who are asked CS supplement questions, 58% have any child support agreement, where 51% have a legal agreement (or a legal agreement pending) and 7% have an informal agreement. Only 36% of mothers received any child support payments in the year prior to the survey, and some of this is driven by the fact that they do not have any legal or informal form of agreement with the father. About 70% of mothers, however, state that the father has legal visitation rights, and 14% state that the father has joint custody. On average, fathers outside the household spend about 16% of the year with their children.

When I split the sample by whether or not an IHVPE program exists in a given state and child's birth year, it is evident that there are some differences. Most notably, children born in states and years with no IHVPE program tend to be older, but this is likely due to the fact that more states implemented IHVPE programs as time went on and so older children are more likely to have been born in a state and year without a program. Because of this, I include indicators for the children's single years of age in all specifications. In the crude comparison of state-year cells that do and do not have IHVPE programs, mothers in state-year cells with IHVPE programs are

[30] Since I have observations on children born in 1988 or later, I can include mothers from Washington in my analysis, as Washington initiated its IHVPE program in 1989. Thus, the total number of states in the CPS-CSS analysis is 44.

actually more likely to be married and more likely to be married to the child's father. However, more rigorous regression analysis presented in section VII suggests that this is due to positive selection into these cells. As soon as basic maternal and child characteristics and state and year fixed effects are included, the effect is actually in the other direction. Again, this implies that it is important to identify the effects of IHVPE programs from changes in outcomes within state rather than by comparing outcomes in a cross-section of states.

E. Data on Maternal Labor Supply

To study effects of IHVPE on maternal labor supply, I take advantage of the larger sample sizes in the March CPS Annual Demographic Supplement files relative to the CPS-CSS. I use March CPS data for 1989-2010, and follow the same method as in the CPS-CSS (described above) to link mothers to their youngest children and to calculate their children's birth years. As before, I limit my analysis to mothers aged 18-45 at the time of childbirth and drop all mothers who moved from outside the US in the last year and all mothers who are missing the CPS person weights. The resulting sample size is 212,504 women with youngest children aged 5 years or less in the household.[31]

F. Data on State Laws and Policies

Since past research finds effects of child support enforcement and welfare policies on some of the outcomes of interest, it is crucial to control for these laws. I include controls for whether an automatic wage withholding policy, genetic testing for paternity establishment, a new hires directory, or a license revocation for non-payment policy are in place in each state and year of observation. These data come from Nepomnyaschy and Garfinkel (2007) for states that established these policies prior to 1994, and from my own searches of state statutes for the other states using *LexisNexis Academic*.[32] Additionally, I include controls for whether AFDC waivers

[31] Results using 1994-2008 March CPS data are very similar to the ones presented in this paper, and are available upon request. Further, results on maternal labor supply using CPS-CSS data are qualitatively similar but not statistically significant, perhaps due to power issues. They are also available upon request.

[32] I thank Irwin Garfinkel and Lenna Nepomnyaschy for sharing these data with me.

or the TANF program has been implemented in each state and year. These data come from Table 1 in Bitler, Gelbach, and Hoynes (2006).

VI. **Empirical Methods**

Since states had jurisdiction over when to implement IHVPE programs, there is substantial variation in the timing of program initiation. This variation provides a natural experiment to identify the causal effects of IHVPE programs. Using state-year paternity establishment data from 43 states, I estimate a "first-stage" relationship between paternity establishment rates and IHVPE programs:

$$(9)\ LOGPAT_{sy} = \beta_0 + \beta_1 * IHVPE_{sy} + \gamma' X_{sy} + \phi' C_{sy} + \mu_s + \alpha_y + \delta_s * t + \varepsilon_{sy}$$

for each state *s* and year *y*. $LOGPAT_{sy}$ is the log total number of paternities established in state *s* and year *y*,[33] $IHVPE_{sy}$ is an indicator for whether an IHVPE program operating in state *s* in year *y*, X_{sy} is a vector of maternal and child characteristics, including the log number of births, the proportion births by white, black, and Hispanic mothers, the proportion births by unmarried mothers, the proportion male births, and the proportion births by mothers in different educational and age groups. C_{sy} is a large vector of other state time-varying characteristics, including the state unemployment rate, the state minimum wage rate, the state poverty rate, the average AFDC/TANF benefit for a 4-person family, the proportion of the population receiving welfare benefits, the proportion of the population receiving Medicaid benefits, an indicator for whether the state's governor is Democratic, and the fraction of the state house that is Democratic in the year before, as well as indicators for whether different child support enforcement laws are in effect and indicators for whether an AFDC waiver or the TANF program have been implemented. μ_s is a state fixed effect, α_y is a year fixed effect $\delta_s * t$ is a state-specific time trend, and ε_{sy} is a state-year error term. Note that the inclusion of state and year fixed effects allows me to control for any time-invariant state-level variables and overall time trends that might affect paternity establishment rates. Further, the inclusion of state-specific time trends allows me to account for differential linear trends in paternity establishments across states over the time period

[33] As discussed in section VII, results using the ratio of paternities established to the number of unmarried births as the dependent variable are very similar.

of analysis.[34] The key coefficient of interest is β_1, which measures the percentage change in the number of paternities established as a result of the IHVPE program.

The analysis of the CPS-CSS data is on the individual level instead of the state-year level. Consequently, I estimate the following equation:

$$(10) \quad Y_{isty} = \beta_0 + \beta_1 * IHVPE_{sy} + \gamma' X_{isty} + \phi' C_{st} + f(t) + \mu_s + \alpha_y + \delta_s * t + \varepsilon_{isty}$$

for each mother *i*, in state *s*, survey year *t*, with a youngest child born in year *y*. Here, Y_{isty} is an outcome of interest, such as an indicator for whether the mother is married to the father of her child. In this specification, X_{isty} contains individual maternal and child characteristics, including indicators for maternal age group at birth, indicators for maternal education groups, indicators for maternal race, an indicator for child sex, and indicators for the child's single years of age. I include state and child birth year fixed effects, as well as state-specific time trends, as before. Additionally, since including indicators for the survey year induces multicollinearity with indicators for the child's age and birth year, I include a quadratic polynomial in the survey year instead. All the state time-varying controls are the same as in equation (9). Again, the key coefficient of interest is β_1, which measures the effect of the existence of an IHVPE program in the child's state and year of birth on the outcome of interest.

Note that since the CPS-CSS does not contain information on the child's state of birth, I assign the child's state of residence in the year before the survey as the child's state of birth (for non-movers, this variable is also the state of residence in the year of survey). This may be a problematic assumption if paternity establishment due to IHVPE program implementation is correlated with the likelihood of a mother moving out of her child's state of birth. One might imagine that a mother whose child's father does not establish paternity is more likely to move to a different state and away from the father. However, I find no statistically significant effect in any specifications on the likelihood of the father living in the same state as the child at the time of the survey.[35] Further, my calculations suggest that only about 4% of my sample is likely

[34] In Section VII, I show that the results are not sensitive to the inclusion of the state time-varying controls and state-specific time trends.

[35] The key coefficient from estimating regression (7) with an indicator for the father living in the same state as the child as the dependent variable is -0.0132 with a standard error of 0.0263.

subject to this measurement error, so any selection posed by this issue is negligible.[36] Finally, similar assumptions are often used in the literature that studies the long-run effect of prenatal and early childhood interventions – in fact, an individual's county of residence during high school is often assumed to be his/her county of birth or of residence during early childhood (Ludwig and Miller (2007); Sanders (2010)). Such assumptions are likely subject to more measurement error than the assumption that I rely on in this paper.

VII. **Results**

A. Effects on Paternity Establishment

I first present some graphical evidence on the relationship between IHVPE program implementation and the paternity establishment rate. Figure 3 plots the average number of paternities established relative to the number of unmarried births by the number of years from IHVPE program initiation.[37] There is a substantial jump in the paternity establishment rate in the first year that the program is in effect. The reason that I plot the number of paternities as a ratio relative to the number of unmarried births instead of only considering the numerator is because different numbers of states contribute to different points along the x-axis, so it is important to control for the underlying population that could potentially be affected by IHVPE programs at each point. For example, only states that implemented IHVPE relatively early contribute to points associated with high positive numbers, while only states that implemented IHVPE relatively late contribute to points associated with low negative numbers. Consequently, points at the far left and far right ends of the graph are somewhat noisier than points closer to zero. Unfortunately, lack of earlier paternity data prevents me from creating a graph in which equal numbers of states contribute to each point that represents all the states in my sample. As a result,

[36] In particular, in my sample, about 3% of mothers moved across states in the year before the survey. Given that I observe the state of residence in the last year, this is not a problem for mothers of children aged 1 year or less. In the sample, 17% of all mothers have a youngest child aged 2, 15% have a youngest child aged 3, 13% have a youngest child aged 4, and 12.5% have a youngest child aged 5. Assuming an annual rate of migration across states of 3%, this implies that the proportion of the sample affected by the migration issue is:
0.03*0.17+0.06*0.15+0.09*.13+0.12*0.125 = 0.0408.

[37] Specifically, I assume that the first year the program is in effect (equal to 0 in the graph) is the same as the year listed in Appendix Table 1 if only the year is listed or if the month of initiation is June or earlier. If the month of initiation is known and it is July or later, then I assume the first year the program is in effect is the following year.

in Figure 4, I limit my analysis to states that initiated IHVPE in 1996 or later, and include 4 years before and 7 years after program initiation for each state, effectively creating a symmetric graph in which equal numbers of states contribute data to each point. The pattern in Figure 4 is very similar to the one in Figure 3, suggesting that the lack of a balanced panel in the full dataset should not pose serious problems.

Table 3 presents regression results on the effects of IHVPE programs on the log number of paternities established, which support the graphical evidence. In this table, the units of observation are state-year cells, robust standard errors are clustered on the state level, and all regressions are weighted by state-year populations.[38] The results suggest that IHVPE program implementation led to an increase of 0.34 log points (or, about 40%) in the yearly number of paternities established.[39] Notably, once controls for maternal and child characteristics and state and year fixed effects are included, the inclusion of state time-varying characteristics, controls for child support laws and AFDC/TANF implementation, and state-specific linear time trends does not substantially alter the key coefficient of interest, providing some support for the validity of the identification strategy.[40]

B. Effects on Marriage in CPS-CSS Data

After confirming that IHVPE programs in fact lead to a substantial increase in paternity establishment rates, I turn to analysis of marriage behavior in the CPS-CSS data. Table 4 presents the results from estimating equation (10) on the sample of all mothers with a youngest child aged 5 years or less with an indicator for being married to the father of the child as the dependent variable. All regressions are weighted by the provided CPS person weights, and robust standard errors are clustered on the state level. As in the regressions for paternity establishments, the key coefficient of interest does not vary significantly as state time-varying characteristics, controls for child support laws and AFDC/TANF implementation, and state-

[38] The unweighted regressions yield very similar results, which are available upon request.
[39] To interpret the coefficients in percentage terms, the dependent variable is in logs. However, results using the ratio of paternities established to the number of unmarried births as the dependent variable are very similar and available upon request.
[40] The sample size changes once controls for state time-varying characteristics are added as some of the variables are missing for certain state-year cells, and because I am missing data on the year of implementation for some child support laws for Kentucky and South Dakota.

specific time trends are included, providing further support for a causal interpretation of my identification strategy.

The results suggest that IHVPE programs reduce the likelihood of marriage to the biological father by about 3% at the sample mean. However, this estimate is an underestimate of the magnitude of the decrease in marriage *post-childbirth*, as the CPS-CSS data do not have information on the percentage of parents who marry after childbirth.[41] To assess this magnitude, I turn to data from the Fragile Families and Child Well-Being Study, which suggests that about 13 percent of parents who were unmarried at childbirth will marry by the time their child turns 5 years old. With this estimate as a baseline, the approximate upper bound in the magnitude of the decrease in marriage post-childbirth is 20% (0.0265/0.13).[42]

Figure 5 presents some graphical evidence of the effects of IHVPE on marriage. I plot the key coefficients from estimating a version of equation (10) that includes indicators for 5 years before and 8 years after IHVPE implementation relative to the child's birth year.[43] The figure suggests that there is a drop in marriage rates for parents of children born within the first few years post-IHVPE implementation. While the graph suggests an increasing trend in marriage rates several years after IHVPE implementation, these coefficients are imprecisely estimated as there are relatively fewer children born as more time from IHVPE implementation passes in my data.

In Table 5, I consider the effects of IHVPE on other marriage behavior outcomes. I find that there is no statistically significant effect on the likelihood of marriage to a man other than the child's father. This finding implies that mothers do not substitute marriage to the biological father with marriage to another man. In fact, there is a statistically significant 13 percent increase (at the sample mean) in the likelihood that a mother is never married.

C. *Positive Selection In and Out of Marriage*

[41] As discussed in more detail in Part F of this section, I find no effects on the likelihood of marriage at the time of childbirth using data on the universe of all births in the sample states. This suggests that the effects of IHVPE operate through marriage behavior post-childbirth.

[42] Note that the Fragile Families and Child Well-Being Study follows cohorts of births in 1998-2000. Most states had implemented IHVPE by this time. Consequently, it is likely that the baseline post-childbirth marriage rate prior to IHVPE was larger than 13%. This would imply that the true magnitude of the effect is somewhat lower than 20%. One can view the 3 and 20 percent effect sizes as lower and upper bounds, respectively, for the true effect size.

[43] Specifically, I estimate: $Y_{isty} = \beta_0 + \sum_{k=-5}^{k=8} \theta_k IHVPE_{syk} + \gamma' X_{isy} + \phi' C_{st} + f(t) + \mu_s + \alpha_y + \delta_s * t + \varepsilon_{isty}$, where $IHVPE_{syk}$ is an indicator for k years from IHVPE implementation in state s and child's birth year y. Figure 5 plots the θ_k coefficients.

To test the implications of my conceptual framework and study selection into the sample of unmarried fathers, I turn to the CS-eligible sample. However, it is important to note that in these analyses, I cannot separate out the behavioral effects of fathers who would have never married in the absence of IHVPE from the selection effects due the decline in marriage. For example, a finding of increased father involvement in the CS-eligible sample could be driven either by the positive selection effect as fathers who would have married the mothers in the absence of IHVPE may be more likely to stay involved with their child and are now more likely to be included in the CS-eligible sample, or by a direct effect of IHVPE on the father-child relationship for parents *who would have remained unmarried in the absence of IHVPE*.[44]

The first column in Table 6 documents selection into the CS-eligible sample. Specifically, consistent with the negative effect on marriage, IHVPE programs lead to a 1.7 percentage point (7% at the sample mean) increase in the likelihood of being in the CS-eligible sample. The other columns in Tables 6 and 7 present the results from estimating regression (10) on the CS-eligible sample only. The regressions include all maternal and child controls, state time-varying controls, indicators for child support laws and AFDC/TANF implementation, a quadratic polynomial in the survey year, state and child birth year fixed effects, and state-specific time trends. The regressions are weighted by the CS supplement weights and robust standard errors are clustered on the state level.

The results in Table 6 suggest that IHVPE programs lead to an increase in the number of informal child support agreements, which is offset by a decrease in legal agreements. This finding is interesting given that, in theory, since paternity establishment is a mandatory prerequisite to obtaining a legal child support order, one would expect the opposite effect. However, analysis of the reasons for why mothers choose to not establish a legal agreement suggests that perhaps IHVPE programs encourage a more cordial and informal relationship

[44] It is impossible to separate these effects in the data as I lack any counterfactual information on what would have happened to any particular set of parents in the absence of IHVPE. However, to assess the behavioral effects to the best of my ability, I estimate a probit model on the likelihood of marriage using only pre-IHVPE implementation data. As a result, I obtain a measure of the predicted probability of marriage for all mothers. Then, I estimate regressions for outcomes in the CS supplement using only data on mothers with a predicted probability of marriage lower than the median. Results from these regressions can shed light on the likely behavioral impacts on fathers who were least likely to marry prior to IHVPE. Unfortunately, sample size limitations reduce the power of my analysis so none of the coefficients is significant at the 5% level (results available upon request). Thus, while I cannot rule out the possibility of behavioral effects on fathers who would have never married, it is likely that these effects are small.

between the parents. For example, reasons such as "the child spends some of the time with the father", "the father provides what he can", and the mother "did not feel the need to get legal" are more likely, while there is no effect on the mother stating that she did not want contact with the father.[45] These results suggest that fathers who are in the CS-eligible sample post-IHVPE are more likely to maintain an agreeable relationship with the mother.

The results in Table 7 present the relationship between IHVPE programs and measures of formal and informal father involvement for CS-eligible mothers. Some of the coefficients are not statistically significant, perhaps due to low sample sizes. However, there are positive and statistically significant coefficients for the likelihood of the father making all child support payments, providing health insurance for the child, and covering medical expenses, and a marginally significant increase in the likelihood that a father provides food for his child. These results suggest that fathers in the CS-eligible sample tend to be somewhat more involved (or, "higher quality") after IHVPE.

Finally, since the conceptual framework predicts an increase in the marriage threshold in paternal quality, we should expect positive selection into the sample of married fathers as well. Appendix Table 2 provides some evidence of this effect. Results in this table are from estimating equation (10) on the sample of all married households with a youngest child aged 5 years or less using paternal characteristics as dependent variables. The results suggest that following IHVPE implementation, married fathers tend to be older and less likely to be receiving any public assistance.

D. Effects of IHVPE on Father Involvement

Studying the overall effects on father involvement with variables in the CS supplement is problematic due to selection into the CS-eligible sample induced by the decline in marriage. Hence, I consider private health insurance provision, which is available for children in both the CS-eligible and CS-ineligible samples, in Table 8. I find that IHVPE programs lead to a 4

[45] Mothers who do have a legal agreement are not asked questions regarding the reasons for why they do not. For two of the reason variables ("no legal agreement because mother did not feel the need to get legal" and "no legal agreement because mother did not want contact with father"), I assign a value of zero for all mothers with a legal agreement, given that these factors cannot be true for them by virtue of them having a legal agreement. However, the other reason variables ("no legal agreement because child is with father some of the time", "no legal agreement because father provides what he can", and "no legal agreement because the father cannot afford child support") remain missing for mothers with legal agreements.

percent reduction in the likelihood that a child has private health insurance. As with the results on paternity establishment and marriage, the inclusion of state time-varying controls and state-specific time trends does not significantly alter the coefficients.

To better understand the effect on health insurance coverage, I distinguish between private coverage provided by individuals in and outside the household, and coverage through public health insurance programs such as Medicaid, Medicare, and CHIP. In Table 9, I show that the negative effect on private health insurance coverage is driven entirely by a reduction in coverage provided by members of the household. There is no change in health insurance provision by individuals outside the household. This suggests that there are some fathers who only provide health insurance for their children if they are in the same households (and married to the mothers). Further, this is evidence for the fact that, at least for the outcome of health insurance provision, the decline in father transfers due to a reduction in marriage outweighs any increases in transfers due to behavioral effects of IHVPE on fathers who would have never married the mothers previously.

It is important to note that there is no effect on overall child health insurance coverage. This is likely due to the fact that mothers substitute public child health insurance coverage (such as CHIP) to compensate for the reduction in private coverage provided by the fathers. However, this speculation is merely suggestive, as the coefficient for CHIP coverage is positive but not statistically significant.[46]

One concern is that the result on health insurance could be driven by spurious correlation between IHVPE implementation and changes in public health insurance access. Throughout the 1990s and 2000s, many states changed their Medicaid eligibility thresholds, and all states implemented CHIP after October 1997. In part F, I show that IHVPE is uncorrelated with the proportion of the population receiving Medicaid. Further, as I discuss in section VIII, there is no correlation between IHVPE implementation and state spending on CHIP. These findings are consistent with an interpretation of private child health insurance provision as a measure of father involvement and suggest that the results are not driven by spurious correlations between public health insurance program changes and IHVPE.

As another solution to the issue of selection in studying father involvement in the CS supplement, I include women married to the biological father by assuming that marriage is a

[46] Information on CHIP coverage is only available in the CPS-CSS in 2002, 2004, 2006, and 2008.

form of a "legal child support agreement". I also assume that married fathers "make all child support payments", "make child support payments on time most or all of the time", have legal visitation rights and joint legal custody, spend the whole year with the child, provide food, clothes, and gifts for the child, and cover childcare and medical expenses. Clearly, these assumptions may not hold true for all married fathers. However, given that a vast literature finds that married resident fathers have higher quality parenting skills and greater degree of involvement with their children than non-resident fathers (Cooksey and Craig (1998); Kalmijin (1999); Carlson, McLanahan, and Brooks-Gunn (2008)), these assumptions are not entirely unreasonable. However, the results from this analysis are merely suggestive and should be interpreted with caution.

Appendix Table 3 shows that when mothers married to the biological father are included in the analysis, the effects on any and timely child support payments are negative and marginally significant, while the effects on all child support payments is negative and insignificant. Further, fathers now spend fewer days with their children and are less likely to cover childcare expenses.[47] These findings provide suggestive evidence that net father involvement along measures other than private health insurance provision declines.

E. Effects on Maternal Labor Supply

I next turn to analysis of maternal labor supply in Tables 10 and 11. Table 10 shows that IHVPE leads to a 3 percent increase in the likelihood that a mother reports working any hours in the last year in the March CPS, and the coefficient is consistent across specifications. Note that the results using data from the CPS-CSS data are similar in magnitude, but the coefficients are not statistically significant likely due to much smaller sample sizes.[48]

[47] One potential worry with this analysis is that the negative effects on father involvement are mechanically driven by the way I control for selection out of marriage – specifically, there are mechanically fewer fathers with a value of "1" for the indicator variables on father involvement due to the negative effect on marriage. To address this issue, I provide evidence below that treating the private child health insurance variable in the same mechanical way (by assigning a value of 1 to all married households) does not alter the results substantially, indicating that my procedure for accounting for selection out of marriage is not especially flawed.

[48] Additionally, the results on marriage using annual March CPS data over 1989-2010 are very similar to the ones presented in this paper. The marriage results from the March CPS and the labor supply results from the CPS-CSS are available upon request.

In Table 11, I show that the labor supply effect is consistent across different definitions (mother is employed, mother is in the labor force, mother had any own wage income last year, and mother worked any hours last year). There is no effect on wages or hours worked on the intensive margin. This suggests that the effect of IHVPE operates on the extensive margin by inducing more mothers of young children to enter the workforce.

The increase in maternal labor supply is consistent with the idea that net transfers from fathers to mothers and children have decreased as a result of IHVPE. Mothers are more likely to need to earn income as a result of the decline in father support.[49]

F. IHVPE Program Initiation and Other Factors

The crux of my identification strategy relies on the assumption that the timing of IHVPE program implementation across states is uncorrelated with changes in other factors that are not captured by a linear time trend. While I cannot rule out the possibility that there are some unobservable variables that fail this assumption, the evidence suggests that this is unlikely. In particular, Table 12 presents the β_1 coefficients from regressions that use various maternal, child, and state time-varying characteristics as dependent variables in the estimation of equation (9). Out of 16 coefficients, none is statistically significant at the 5% level.[50] The timing of IHVPE program initiation is uncorrelated with numerous factors, including the total number of births, the educational and age distributions of mothers, and state economic, political, and program transfer variables. Importantly, IHVPE program initiation is uncorrelated with the proportion of births by unmarried mothers. This result is critical given that I find that IHVPE programs decrease the likelihood of marriage in the CPS-CSS data. A potential concern with this finding is that it may be driven by selection – i.e., states that implemented IHVPE programs earlier also had higher growth rates in unmarried births. However, the fact that I find no effect of IHVPE

[49] It is also possible that mothers are more likely to take-up public assistance income as a result of the decline in transfers from fathers. However, I find no statistically significant effect on welfare receipt among mothers in the March CPS.

[50] The only marginally significant coefficient is a negative effect on the likelihood of the mother being white. Minority mothers have higher rates of births out-of-wedlock – for example, in 2007, while overall, 40% of all births were by unmarried mothers, 71% of all births by black mothers were by unmarried mothers (National Center for Health Statistics, 2010). Thus, one concern might be that the negative effect on marriage in the CPS-CSS data is spuriously driven by the relative increase in non-white mothers. To address this issue, I estimate the effects on marriage behavior in the CPS-CSS omitting all white mothers. The results from this exercise are very similar to the main results, and are discussed more in section VIII.

programs on the proportion of births by unmarried mothers (if anything, the insignificant coefficient has the opposite sign than what would be consistent with selection), implies that the effects on marriage operate through behavior post-childbirth.[51] Additionally, I find no correlation between IHVPE program initiation and the AFDC/TANF benefit in the previous year, which suggests that the effects on marriage are not driven by potential impacts of welfare generosity. Finally, the lack of correlation between IHVPE implementation and the percentage of the population on Medicaid in the previous year suggests that the effects on child health insurance provision are not driven by changes in public health insurance generosity.

Another way to address this issue is to ask which state time-varying characteristics predict IHVPE implementation. To answer this question, I regress an indicator for IHVPE being in existence on all available state time-varying characteristics in my data and include state and year fixed effects. The results from these regressions are presented in Table 13. Noticeably, almost all coefficients are statistically insignificant. The only statistically significant determinant of IHVPE implementation seems to be the political party affiliation of the state's governor – states with Democratic governors are less likely to implement IHVPE. In my data, the averages of the outcomes of interest are not statistically significantly different between Democratic and Republican governor state/year cells. Further, none of the results is affected by the inclusion of this control. Taken together, tables 12 and 13 suggest that the timing of IHVPE implementation is likely uncorrelated with other determinants of paternity establishment rates and family behavior, and hence can be used as a valid natural experiment for identification of causal effects.

VIII. **Robustness Checks**

An estimation strategy that relies on state-year variation is akin to a difference-in-difference (DD) type regression. In effect, I compare the difference in outcomes before and after

[51] One might also imagine that if knowledge about IHVPE spreads, individuals may change their marriage behavior prior to childbirth, in anticipation of IHVPE. This would imply that we should expect decreases in marriage rates *at childbirth* in years following IHVPE implementation. However, results from estimating equation (9) for the proportion of unmarried births as the dependent variable with a flexible specification that includes indicators for 5 years after IHVPE initiation suggest that this is not the case. There are no statistically significant coefficients on any of the indicators for years after IHVPE initiation (results available upon request). Consequently, it seems that most people are likely not aware of the existence of IHVPE until the time of childbirth, and my effects on marriage, father involvement, and maternal labor supply are truly driven by behavior post-childbirth rather than through selection effects due to changes in the proportion of unmarried births over time.

IHVPE program implementation in each state, where the states that do not implement IHVPE in the same year serve as a control group. This analysis thus relies on the central DD assumption – that the treatment and control states would have had similar trends in outcomes in the absence of IHVPE program implementation. Given that all states in my sample eventually implement an IHVPE program over the time period of analysis, it is unlikely that control and treatment states at any point in time follow substantially different trends in paternity establishment rates. However, to assess this issue further, I estimate a regression for the log number of paternities established where I include indicators for 3 years before and 5 years following IHVPE program initiation. The results from this exercise are presented in Appendix Table 4. Reassuringly, none of the coefficients on the indicators for the years before IHVPE is statistically significant, while the coefficients in the years following IHVPE initiation are positive, statistically significant, and increasing in magnitude. These results suggest that differential trends in paternity establishment rates prior to IHVPE should not pose serious concerns.

To further check the first stage effects on paternity establishment rates, I turn to a different source of data – micro data from the universe of US birth certificates. Appendix A discusses the issues in these data and the estimation methods that I use. I find that IHVPE leads to an increase in the likelihood that a father's information is listed on his child's birth certificate (a proxy for paternity establishment). This finding is reassuring because it implies that my results on paternity establishment rates are robust across different data sets and methods.

The births data allow me to do another robustness check. Since IHVPE programs reach parents at the hospital immediately following childbirth, we should not expect to see any effects of IHVPE on pregnancy behaviors or birth outcomes.[52] Appendix Table 5 presents the results from estimating equation (9) in the 43 main sample states with various pregnancy and birth outcomes as dependent variables. In these regressions, units of observation are state-year cells and the regressions are weighted by the number of births in each cell. Out of coefficients for nine different outcomes, none is statistically significant at the 5% level, providing further indication that my main results reflect true causal effects.

[52] One might expect to see effects on pregnancy behaviors and birth outcomes if anticipation effects exist as knowledge about IHVPE programs spreads. So, one might expect that unmarried parents may change their behavior before childbirth in anticipation of IHVPE. However, the fact that I find no effects on pregnancy or birth outcomes suggests that anticipation effects are not particularly prevalent in this case.

I also conduct numerous robustness checks that test the validity of the result on marriage in the CPS-CSS data. I include indicators for pre-trends in marriage, I limit observations to mothers of children born within a 3-year window around IHVPE program implementation, I omit white mothers (as results in Table 12 suggests a marginally significant negative correlation between IHVPE initiation and births by white mothers), and I estimate regressions omitting one state at a time. The results from these exercises are summarized in Appendix Table 6. Importantly, there are no statistically significant coefficients on marriage prior to IHVPE initiation, and the negative effect of IHVPE on marriage to the biological father is robust to the exclusion of children born more than 3 years before or 3 years after IHVPE implementation and to the exclusion of white mothers (despite reductions in sample size). Additionally, the effect is not driven by any particular state – the results from regressions that omit one state at a time are all very similar and statistically significant (results for states other than CA, NY, and TX are available upon request).

I perform a robustness check to address the concern that the effects on private child health insurance coverage may be spuriously driven by a correlation between IHVPE program implementation and changes to public health insurance program benefits. As shown in Table 12, there is no correlation between IHVPE program implementation and the percent of the population on Medicaid, the major public health insurance program for low-income children in the 1990s. Since CHIP benefits became available after October 1997 and only eight states in my sample implemented IHVPE in 1998 or later, it is unlikely that IHVPE program implementation is correlated with CHIP availability at the time of childbirth. However, given that the CPS-CSS data spans 1994-2008, it is important to check the correlation between IHVPE implementation and CHIP benefits available at the time of observation in the data. Appendix Table 7 presents the results from estimating equation (10) with the log total and state spending in the year of and the year before observation as dependent variables.[53] None of the coefficients is statistically significant, suggesting that correlation between IHVPE program implementation and CHIP generosity is an unlikely issue.

As another robustness check for the results on private child health insurance coverage, I estimate the relationship between IHVPE initiation and concurrent adult male health insurance

[53] Data on annual state and total spending on CHIP for 1998-2008 comes from the Henry J. Kaiser Family Foundation state health facts.

coverage using data from the March CPS annual demographic file for 1989-2002.[54] While one might expect IHVPE to influence parental behavior and consequent child health insurance coverage, there should not be any effect on average adult male health insurance coverage. However, if a spurious relationship between IHVPE and trends in access to health insurance in the US drives the effect on child health insurance coverage, then we may also see a correlation between IHVPE and adult health insurance. For example, if changes in employer-provided health insurance availability are correlated with IHVPE initiation, then the decrease in child health insurance may be driven by a decrease in their fathers' access to health insurance, and would not be a marker of lower father involvement. Appendix Table 8 presents the results from estimating equation (10) with an indicator for any health insurance coverage in the year of observation as the dependent variable for a sample of all males aged 18-64 in the analysis states. The large sample sizes permit precise estimation of the coefficients of interest, which are reassuringly not statistically significant and very close to zero. This provides further support for the findings on private child health insurance coverage and facilitates their interpretation as lowered father involvement.

Finally, to check the reliability of my method for accounting for selection out of marriage for variables that are unavailable in the CS-ineligible sample, I treat the only variable available for both married and unmarried parents – private health insurance coverage of the child – in the same way by assigning a value of 1 for all married parents. Clearly, this is not an accurate assumption as only 78% of children in married households have private health insurance. However, as notable in Appendix Table 9, analysis with this imputed health insurance variable yields results very similar to those from using the true child private health insurance coverage variable.[55] This suggests that while it may not be true that all married fathers provide complete involvement and support for their children, as long as married fathers are more likely than unmarried fathers to do so, the method of assigning values of 1 for measures of father involvement for married fathers is not a poor approximation and arguably a passable way to account for selection out of marriage.

[54] In this analysis, variation in IHVPE implementation is at the state/survey-year level (rather than the state/child-birth-year level used in the rest of the regressions). Hence, I use data through 2002 only because all states in my sample initiated IHVPE by 1999.

[55] More formally, I conduct a test of equality of regression coefficients across the two models (one with the dependent variable being the true in-household health insurance coverage, and the other with the dependent variable being the imputed health insurance coverage). The p-value on the F-test for equality of coefficients across the models is 0.5451, suggesting that the coefficients in the two models are not statistically different from each other.

Taken together, all of these findings support the main results presented in section VII. In particular, the first stage effects of IHVPE program initiation on paternity establishment rates and the consequent effects on marriage behavior, private health insurance provision, and maternal labor supply post-childbirth are robust across many specifications. Further, the first stage effects are fairly consistent across different data sources and empirical methods. Finally, there is no evidence that the timing of IHVPE program initiation is correlated with other factors that could bias the results.

IX. **Conclusion**

As more than one third of all babies in the US are born to unmarried mothers every year, there is a clear need for policies that address the needs of these children and their families. The fact that children raised in two-parent households tend to fare better along numerous measures of well-being has prompted many policymakers to focus on ways to encourage absent fathers to become more engaged with their families. These sentiments underlie many child support enforcement efforts and have motivated the recent growth in marriage promotion programs through "Healthy Marriage Initiatives".

Yet rigorous research on the effects of such measures, which specifically considers the trade-offs that unmarried parents face in their decisions to stay involved with each other and with their children, is often lacking. Moreover, while a wealth of literature studies the overall effects of child support enforcement measures on various family and child outcomes, few studies consider different policies separately. In this paper, I attempt to fill this gap by analyzing the causal effects of IHVPE programs on paternity establishment rates and consequent family structure and behavior post-childbirth.

Using variation in the timing of IHVPE program implementation across states and years, I show that IHVPE programs increase paternity establishment rates by about 40 percent. I provide evidence that the timing of program initiation is uncorrelated with numerous state time-varying characteristics and that the results are not driven by pre-existing trends in paternity establishment rates. Further, I show that the effects are robust to the inclusion of controls for maternal, child, and state time-varying characteristics (including controls for other child support enforcement policies and the timing of welfare reform), state and year fixed effects, state-

specific time trends, and across many different specifications, methods, and data sets. This analysis provides confidence for the ability to interpret my results as causal.

I then proceed to study the effects of IHVPE programs on marriage and father involvement post-childbirth using data from CPS-CSS. I find that IHVPE programs lead to a decrease in marriage – for mothers whose youngest children are aged 5 years or less, the likelihood of marriage to the child's biological father decreases while the likelihood of remaining never-married increases. Importantly, I show that there are no effects on the likelihood of being married *at the time of childbirth*, which suggests that all of the effects are concentrated on parental marriage behavior *post-childbirth*. I also find that the negative effect on marriage leads to an increase in the average characteristics of both married and unmarried fathers. Specifically, unmarried fathers are more likely to have cordial informal relationships with the mothers, to make all of their child support payments, and to provide health insurance for their children, while married fathers tend to be older and less likely to be receiving public assistance after IHVPE implementation.

Accounting for selection out of marriage, I show that IHVPE programs lead to net negative effects on measures of father involvement, such as private health insurance provision. I further show that IHVPE leads to an overall increase in maternal labor supply.

The results from my analysis are consistent with a framework in which fathers, who are heterogeneous in quality, can only obtain equal rights to their children within marriage. On the other hand, mothers can enjoy full rights to their children outside marriage, and hence require a non-negative transfer from the father in exchange for marriage (Edlund (1998); Edlund and Korn (2002); Edlund and Pande (2002); Edlund and Lagerlöf (2006); Chiappori and Orrefice (2008); Edlund (2011)). IHVPE programs provide an easily available and inexpensive mechanism for paternity establishment at childbirth along with widespread education of fathers about their rights and responsibilities regarding children. Consequently, fathers see a decrease in the cost of establishing paternity, and mothers can expect increased partial transfers outside marriage. For certain levels of father quality, mothers may value child support payments outside marriage more than higher levels of support and involvement within marriage because they experience disutility from marriage to a father who is, for example, involved in crime, addicted to drugs, or unfaithful. Accordingly, expectations of higher child support outside marriage lead more mothers to reject marriage to low-quality fathers resulting in an increase in the marriage threshold in father

quality. Further, the net effect on paternal transfers can actually be negative, if the decline in transfers due to the decrease in marriage outweighs any increases in transfers by fathers who would have remained unmarried in the absence of IHVPE. The decline in private health insurance provision for children and the increase in maternal labor supply provide evidence for this effect.

The results from this analysis suggest that parents who bear children out-of-wedlock face many complex trade-offs in their decisions to be involved with each other and their children. As a result, a paternity establishment program that arguably seeks to engage absent fathers and increase child support payments and father involvement can actually have the opposite effects by discouraging marriage. My findings also shed light on the possible unintended consequences of marriage promotion programs, as some women may experience disutility from marriage to the men in their lives.

Ultimately, most women who bear children out-of-wedlock arguably have the best interests of their own and their children's well-being at heart, given their often disadvantaged life circumstances and dearth of opportunities. Thus, policies that only serve to increase the engagement of absent fathers may sometimes turn out to be misguided, as not all fathers provide positive influences on their children or greater welfare for the mothers. Perhaps the hardships for mothers who bear children out-of-wedlock and their children can only be truly alleviated when economic opportunities for both poor men and women improve. Greater opportunities for women may lead them to delay childbearing until they are better able to provide for their children, while greater opportunities for men may increase the pool of marriageable partners who support and engage with their children and bring fulfillment to their wives.

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Appendix A

Given that my data on paternity establishments are at an aggregate state-year level, the micro birth certificate data would seem like an ideal source for examining heterogeneous effects of IHVPE programs across different demographic groups. These data do not contain information on paternity establishment, but an indicator for whether the father's information appears on the

birth certificate may seem like a natural proxy. Unfortunately, the law that states that a father's information cannot appear on a child's birth certificate unless paternity is established only went into effect following PRWORA (Mincy, Garfinkel, and Nepomnyaschy (2005)). Additionally, conversations with IHVPE program officials suggest that this law was not fully enforced until IHVPE programs were established. As a result, IHVPE programs had potentially offsetting effects on the likelihood of a father's information appearing on the birth certificate – on the one hand, there is a negative effect as it became more difficult to record a father's information on the certificate because paternity now needed to be established, while on the other hand, there is a positive effect as IHVPE programs encouraged paternity establishment and made it significantly less costly.

However, research about the IHVPE program in Arizona suggests that there is potential for overcoming this issue in this state. In particular, prior to IHVPE implementation in late 1996 (the program was in effect in all Arizona hospitals by January 1997), unmarried fathers were required to fill out a "paternity presumption" form in order to be added to the child's birth certificate. Thus, unlike in many other states, mothers could not simply fill in the father's information on their own. "Paternity presumption" was not a legal form of paternity establishment, and there were no coordinated efforts by hospital staff to encourage fathers to sign the form and to consequently appear on their children's birth certificates. Once IHVPE programs were implemented, fathers had to sign a voluntary acknowledgement of paternity form (which legally established their paternity) in order to appear on the child's birth certificate. Additionally, as a result of these programs, all unmarried parents were approached and fathers were in effect encouraged to sign the form and appear on the child's birth certificate. Consequently, IHVPE programs did not substantially affect the difficulty of the father appearing on his child's birth certificate – he was required to sign a form both before and after the program. However, they did affect the likelihood of paternity establishment since all unmarried fathers were now presented with the option to sign the form.[56] All of these institutional factors allow me to estimate the effects of IHVPE program implementation in Arizona using a regression discontinuity (RD) framework.

[56] Information about Arizona's IHVPE program comes from personal communications with Marjorie Cook (Outreach and Community Initiatives Manager in Arizona's Division of Child Support Enforcement) and Patricia Martinez (Arizona's Hospital Paternity Program Supervisor). I am grateful to both of them for sharing this information with me.

Appendix Figure 1 presents the graphical evidence of an RD in Arizona. Notably, there is about a 10 percentage point jump in the likelihood of the father's information appearing on the birth certificate among children of unmarried mothers at the time of IHVPE implementation.[57] Appendix Table 10 presents the results from estimating different parametric RD equations, in which the running variable is the child's year-month of birth and the dependent variable of interest is an indicator for whether the father's non-imputed education, race, or age is recorded on his child's birth certificate. Following standard RD methodology (Imbens and Lemieux (2008)), I include different order polynomials in the running variable, which are interacted with an indicator for being born in or after January 1997 (when all of Arizona's hospitals had an IHVPE program in place). The results are generally similar across the specifications and suggest that IHVPE led to about a 22% increase in the likelihood of the father being listed on his child's birth certificate in Arizona. I have also estimated non-parametric RD regressions (Lee and Lemieux (2010)) using different size bandwidths ranging from 3 to 25 months around the cutoff. The results from non-parametric RD specifications are similar and available upon request. Finally, standard checks for discontinuities in other variables suggest that there are no discontinuities in observable characteristics of unmarried mothers in Arizona at the time of IHVPE implementation (available upon request).

As another check for consistency of results, I consider the nine states in my sample in which minor parents are largely exempt from IHVPE program participation. In these states, minors were subject to the same negative effect of IHVPE as all fathers were now required to establish paternity before being added to the child's birth certificate. However, given that minors were either forbidden from participating, required parental consent, or had very lenient rules for paternity rescission, the effect on paternity establishment for minors should be effectively close to zero. Thus, comparing adult mothers to minor mothers in a difference-in-difference-in-difference (DDD) framework allows one to net out the effect of IHVPE on paternity establishment rates.[58] Using this strategy, I estimate the DDD effects of IHVPE for adult mothers relative to minor mothers on the likelihood of the father's information appearing on the child's

[57] The indicator for the father's information appearing on the birth certificate is equal to 0 if the father's non-imputed age, race, and education are all missing, and 1 otherwise.

[58] Given that I do not observe the father's age unless his information is on the birth certificate, I can only compare minor mothers (<18 years) to adult mothers. The law regarding minors applies to parents as long as at least one parent is a minor. To the extent that some adult mothers have minor partners, this analysis might slightly underestimate the true effects of IHVPE.

birth certificate. Importantly, these regressions allow me to include a full set of state-year interactions, and effectively control for any observed and unobserved state time-varying factors. The results from this analysis suggest that IHVPE programs lead to a 6% increase in the likelihood of the father's information appearing on his child's birth certificate in the nine sample states, and are available upon request.

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Table I. Summary Statistics on State Characteristics: 1992-2005

	ALL STATES			43 SAMPLE STATES			43 SAMPLE STATES	
	N	Mean	SD	N	Mean	SD	IHVPE Program Does Not Exist	IHVPE Program Exists
Number Paternities Established Relative to Number Unmarried Births	714	**0.891**	0.437	602	**0.898**	0.433	**0.487**	**1.072**
Proportion Births by Unmarried Mothers	714	**0.333**	0.051	602	**0.334**	0.050	**0.321**	**0.340**
Proportion Male Births	714	**0.512**	0.002	602	**0.512**	0.002	**0.512**	**0.512**
Proportion Mothers Aged <20	714	**0.216**	0.065	602	**0.217**	0.066	**0.228**	**0.213**
Proportion Mothers Aged 20-24	714	**0.326**	0.041	602	**0.325**	0.040	**0.355**	**0.312**
Proportion Mothers Aged 25-34	714	**0.220**	0.029	602	**0.218**	0.027	**0.212**	**0.221**
Proportion Mothers Aged 35-44	714	**0.239**	0.061	602	**0.240**	0.061	**0.205**	**0.254**
Proportion Mothers Aged 45+	714	**0.075**	0.021	602	**0.075**	0.021	**0.087**	**0.070**
Proportion Mothers with Education: <HS	714	**0.292**	0.051	602	**0.290**	0.050	**0.298**	**0.287**
Proportion Mothers with Education: HS	714	**0.504**	0.040	602	**0.505**	0.039	**0.506**	**0.505**
Proportion Mothers with Education: Some College	714	**0.127**	0.035	602	**0.128**	0.035	**0.109**	**0.137**
Proportion Mothers with Education: College+	714	**0.001**	0.001	602	**0.001**	0.001	**0.001**	**0.001**
Proportion Non-Hispanic White Mothers	714	**0.609**	0.174	602	**0.599**	0.170	**0.624**	**0.588**
Proportion Black Mothers	714	**0.156**	0.101	602	**0.164**	0.099	**0.174**	**0.159**
Proportion Hispanic Mothers	714	**0.186**	0.166	602	**0.190**	0.167	**0.164**	**0.201**
Proportion Mothers who Smoked During Pregnancy	711	**0.128**	0.049	599	**0.125**	0.048	**0.143**	**0.117**
Proportion Mothers who Drank Alcohol During Pregnancy	714	**0.041**	0.160	602	**0.043**	0.165	**0.020**	**0.052**
Proportion Mothers who Initiated Prenatal Care in 1st Trimester	714	**0.819**	0.045	602	**0.820**	0.044	**0.801**	**0.828**
Unemployment Rate	714	**5.454**	1.379	602	**5.464**	1.371	**6.303**	**5.107**
Poverty Rate	714	**13.009**	3.242	602	**13.012**	3.178	**14.366**	**12.436**
State Minimum Wage	714	**4.869**	0.864	602	**4.854**	0.855	**4.122**	**5.165**
Welfare Benefit for 4-Person Family	714	**480.196**	180.220	602	**478.103**	183.740	**446.200**	**491.684**
Governor is Democratic	700	**0.415**	0.493	588	**0.399**	0.490	**0.475**	**0.366**
Fraction State House that is Democratic	686	**0.544**	0.125	574	**0.546**	0.124	**0.579**	**0.532**

Notes: Units of observation are state-year cells. Means are weighted by state-year populations. The sample states are: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin.

Table II. Summary Statistics for CPS-CSS Data: 44 States in 1994, 1996, 1998, 2000, 2002, 2004, 2006, and 2008

	WHOLE SAMPLE			IHVPE Program Exists in Child's State and Year of Birth	IHVPE Program Does NOT Exist in Child's State and Year of Birth
	N	Mean	SD		
Mother's Age at Birth <20	37,901	**0.043**	0.204	**0.042**	**0.045**
Mother's Age at Birth 20-24	37,901	**0.201**	0.400	**0.194**	**0.210**
Mother's Age at Birth 25-34	37,901	**0.560**	0.496	**0.551**	**0.574**
Mother's Age at Birth 35-45	37,901	**0.194**	0.395	**0.209**	**0.170**
Mother's Education: <HS	37,901	**0.144**	0.351	**0.142**	**0.146**
Mother's Education: HS	37,901	**0.295**	0.456	**0.273**	**0.330**
Mother's Education: Some College	37,901	**0.290**	0.454	**0.285**	**0.298**
Mother is Non-Hispanic White	37,901	**0.627**	0.484	**0.612**	**0.651**
Mother is Black	37,901	**0.144**	0.351	**0.138**	**0.155**
Mother is Hispanic	37,901	**0.179**	0.383	**0.191**	**0.158**
Child is Male	37,901	**0.510**	0.500	**0.511**	**0.506**
Child's Age	37,901	**2.182**	1.682	**1.894**	**2.634**
Mother is Married	37,901	**0.779**	0.415	**0.790**	**0.763**
Mother is Never Married	37,901	**0.135**	0.342	**0.136**	**0.133**
Mother is Married to Someone Other than Biological Father	37,901	**0.010**	0.101	**0.011**	**0.009**
Mother is Married to Biological Father	37,901	**0.769**	0.421	**0.779**	**0.753**
Child Has Any Health Insurance Coverage	37,901	**0.887**	0.317	**0.898**	**0.868**
Child Has Private Health Insurance Coverage	37,901	**0.675**	0.468	**0.673**	**0.680**
Mother is Eligible to be Asked CS Supplement Questions	37,901	**0.239**	0.426	**0.231**	**0.251**
Any CS Agreement	8,957	**0.583**	0.493	**0.575**	**0.594**
Legal CS Agreement (exists or pending)	8,957	**0.509**	0.500	**0.500**	**0.522**
Informal CS Agreement	8,957	**0.074**	0.262	**0.075**	**0.072**
Father Paid Any CS in Last Year	8,051	**0.358**	0.479	**0.359**	**0.357**
Father Paid All CS in Last Year	8,051	**0.222**	0.415	**0.222**	**0.222**
Father Paid On Time All or Most of the Time	6,614	**0.295**	0.456	**0.295**	**0.296**
Father Provided Child's Health Insurance	8,069	**0.145**	0.352	**0.143**	**0.149**
No Legal Agreement b/c Child is with Father "Some of the Time"	4,019	**0.127**	0.333	**0.156**	**0.082**
No Legal Agreement b/c "Father Provides What He Can"	4,271	**0.071**	0.258	**0.074**	**0.067**
No Legal Agreement b/c Mother "Didn't Feel the Need to Get Legal" (=0 if legal agreement)	8,658	**0.167**	0.373	**0.178**	**0.151**
No Legal Agreement b/c "Mother Didn't Want Contact with Father" (=0 if legal agreement)	8,658	**0.101**	0.302	**0.100**	**0.103**
Father Has Legal Visitation Rights	8,957	**0.704**	0.457	**0.702**	**0.705**
Father Has Joint Legal Custody	8,957	**0.143**	0.350	**0.147**	**0.137**
Number Days Father Spent with Child in Last Year	8,279	**60.265**	93.726	**63.571**	**55.428**
Father Provided Any Gifts, Clothes, Food, Childcare or Medical Help	8,957	**0.558**	0.497	**0.567**	**0.547**

Notes: The sample of analysis includes all women with a youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The sample omits all individuals who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. Mothers are coded as married to the biological father if they are married and their child is coded as living with both parents in the household. Mothers are coded as married to someone other than the biological father if they are married, but their child is coded as living with one parent in the household. The summary statistics are weighted by the provided CPS person weights.

Table III. Effects of In-Hospital Voluntary Paternity Establishment Programs on Paternities Established in 43 States: 1992-2005

	Dependent Variable: Log Number Paternities				
	(1)	(2)	(3)	(4)	(5)
In-Hospital Paternity Program Exists in State and Year	0.3838***	0.3384**	0.3347**	0.3244**	0.3375**
	(0.1071)	(0.0993)	(0.1145)	(0.1175)	(0.1173)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
State FEs	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	Yes	Yes	Yes	Yes
State-Specific Time Trends	No	No	Yes	Yes	Yes
Child Support Laws Controls	No	No	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	Yes	Yes
N	601	573	545	573	545
R-squared	0.9404	0.9452	0.9588	0.9600	0.9595

Notes: Each column is a separate regression. Units of observation are state-year cells consisting of the following states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin. Each of the listed states implemented an in-hospital paternity establishment program during this time period with information on the year of initiation. The maternal and child controls include controls for the proportion of births with the following characteristics: mother's age (<20, 20-24, 25-34, 35-44, 45+), mother's education (less than HS, HS, some college, college+), mother's race (white, black, Hispanic), mother's marital status and child sex. The controls for state characteristics in the year before include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. The child support laws controls are indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revocation for non-payment. The AFDC/TANF implementation controls are indicators for whether an AFDC waiver or TANF has been implemented in the state and year of observation. All regressions are weighted by the state-year populations. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table IV. Effects of In-Hospital Voluntary Paternity Establishment Programs on Likelihood of Being Married to Biological Father in 44 States: CPS-CSS 1994, 1996, 1998, 2000, 2002, 2004, 2006, and 2008

	Dependent Variable: Mother Married to Biological Father						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0038	-0.0302***	-0.0254**	-0.0259**	-0.0265***	-0.0253**	-0.0265**
	(0.0086)	(0.0079)	(0.0072)	(0.0073)	(0.0072)	(0.0084)	(0.0084)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
Quadratic Polynomial in Survey Year	No	Yes	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	No	No	Yes	Yes
N	37,901	37,901	36,930	35,738	35,738	36,930	35,738
R-squared	0.2155	0.2211	0.2216	0.2212	0.2212	0.2225	0.2221

Notes: Each column is a separate regression. The sample of analysis includes all women with a youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth inAlabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The sample omits all individuals who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. Mothers are coded as married to the biological father if they are married and their child is coded as living with both parents in the household. The mother and child controls include controls for the woman's age at childbirth (<20, 20-24, 25-34, 35-44), woman's education (less than HS, HS, some college, college+), woman's race (white, black, Hispanic, other), child sex, and indicators for child's single years of age. The time-varying state characteristics include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. The controls for child support laws are indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revokation for non-payment. The AFDC/TANF implemenation controls are indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table V. Effects of IHVPE Programs on Marriage Behavior: CPS-CSS 1994-2008

	Mother is Married	Mother is Never Married	Mother is Married to Biological Father	Mother is Married to Someone Other than Biological Father
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0218**	0.0178**	-0.0265**	0.0047
	(0.0081)	(0.0060)	(0.0084)	(0.0029)
N	35,738	35,738	35,738	35,738

Notes: Each coefficient is from a separate regression. Please refer to Table 4 for details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table VI. IHVPE Programs and Child Support Agreements: CPS-CSS 1994-2008, CS-Eligible Sample

	Mother Eligible to be Asked CS Supplement Questions	Any CS Agreement	Any Legal CS Agreement	Any Informal CS Agreement	No Legal Agreement b/c Child Spends Some of the Time with Father	No Legal Agreement b/c "Father Provides What He Can"	No Legal Agreement b/c Mother "Didn't Feel the Need to Get Legal"	No Legal Agreement b/c Father "Can't Afford Child Support"	No Legal Agreement b/c Mother Didn't Want Contact with Father
In-Hospital Paternity Program Exists in State and Year of Child's Birth	0.0174**	-0.0285	-0.0576**	0.0292**	0.0746**	0.0392+	0.0580**	-0.0518	0.0240
	(0.0079)	(0.0294)	(0.0257)	(0.0123)	(0.0217)	(0.0221)	(0.0170)	(0.0344)	(0.0183)
N	35,738	8,349	8,349	8,349	3,733	3,969	8,067	3,733	8,067

Notes: Each coefficient is from a separate regression. The sample of analysis includes all women with a youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The sample omits all women who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. Mothers are eligible to be asked child support supplement questions if they have a biological child whose father lives outside the household. The regressions control for the woman's age at childbirth (<20, 20-24, 25-34, 35-44), woman's education (less than HS, HS, some college, college+), woman's race (white, black, Hispanic, other), child sex, and indicators for child's single years of age. All regressions include controls for state characteristics in the year before; these include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. All regressions include indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revocation for non-payment. All regressions include indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. The regression in the first column is weighted by the provided CPS person weights, while all other regressions are weighted by the CPS-CS supplement weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table VII. IHVPE Programs and Formal and Informal Father Involvement: CPS-CSS 1994-2008, CS-Eligible Sample

Dependent Variable	N	Coefficient	SE
Father Made Any CS Payments in Last Year	7,494	0.0082	(0.0204)
Father Made All CS Payments in Last Year	7,494	0.0484**	(0.0196)
Father Paid On Time All or Most of the Time in Last Year	6,131	0.0163	(0.0306)
Father Provided Health Insurance for Child	7,511	0.0467**	(0.0197)
Father Has Court-Ordered Visitation Rights	8,349	-0.0050	(0.0276)
Father Has Joint Legal Custody	8,349	-0.0021	(0.0184)
Number Days Father Spent with Child	7,722	5.7284	(5.4125)
Father Provided Gifts for Child	8,349	0.0389	(0.0350)
Father Provided Clothes for Child	8,349	0.0300	(0.0222)
Father Provided Food for Child	8,349	0.0403+	(0.0218)
Father Covered Childcare Expenses for Child	8,349	0.0246	(0.0160)
Father Paid for Medical Expenses for Child	8,349	0.0504**	(0.0182)

Notes: Each coefficient is from a separate regression. Please refer to Table 6 for details about the CS-eligible sample, sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS-CS supplement weights. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table VIII. Effects of IHVPE Programs on Private Child Health Insurance Provision in 44 States: CPS-CSS 1994-2008

	Dependent Variable: Child Has Private Health Insurance						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0123+	-0.0234**	-0.0202**	-0.0200+	-0.0197+	-0.0253**	-0.0259**
	(0.0063)	(0.0105)	(0.0100)	(0.0105)	(0.0105)	(0.0102)	(0.0102)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
Quadratic Polynomial in Survey Year	No	Yes	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	No	No	Yes	Yes
N	37,901	37,901	36,930	35,738	35,738	36,930	35,738
R-squared	0.2513	0.2584	0.2596	0.2606	0.2607	0.2606	0.2617

Notes: Each column is a separate regression. Please refer to Table 4 for more details about sample restrictions and controls. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table IX. Effects of IHVPE Programs on Child Health Insurance Coverage: CPS-CSS 1994-2008

	Child Has Private Health Insurance Coverage	Child Has Health Insurance Coverage by Member of Household	Child Has Health Insurance Coverage by Person Outside Household	Child is Covered by Medicaid or Medicare	Child is Covered by CHIP	Child Has Any Health Insurance Coverage
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0259**	-0.0302**	0.0043	0.0059	0.0232	-0.0087
	(0.0102)	(0.0112)	(0.0038)	(0.0112)	(0.0209)	(0.0101)
N	35,738	35,738	35,738	35,738	14,971	35,738

Notes: Each coefficient is from a separate regression. Please refer to Table 4 for more details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Information on CHIP coverage is only available in 2002, 2004, 2006, and 2008 in the CPS-CSS. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table X. Effects of In-Hospital Voluntary Paternity Establishment Programs on Any Usual Hours Worked in 44 States: March CPS 1989-2010

	Dependent Variable: Any Hours Worked (Mean=0.678)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
In-Hospital Paternity Program Exists in State and Year of Child's Birth	0.0046	0.0166**	0.0191**	0.0206**	0.0205**	0.0190**	0.0200**
	(0.0075)	(0.0070)	(0.0079)	(0.0080)	(0.0078)	(0.0075)	(0.0077)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
Quadratic Polynomial in Survey Year	No	Yes	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	No	No	Yes	Yes
N	212,504	212,504	190,249	184,562	184,562	190,249	184,562
R-squared	0.0555	0.0640	0.0644	0.0641	0.0642	0.0655	0.0652

Notes: Each column is a separate regression. The sample of analysis includes all women with a biological youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in the Annual March CPS over 1989-2010. The sample omits all individuals who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. The mother and child controls include controls for the woman's age at childbirth (<20, 20-24, 25-34, 35-44), woman's education (less than HS, HS, some college, college+), woman's race (white, black, Hispanic, other), child sex, and indicators for child's single years of age. The time-varying state characteristics include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. The controls for child support laws are indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revokation for non-payment. The AFDC/TANF implemenation controls are indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions are weighted by the provided CPS March Supplement weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table XI. Effects of IHVPE Programs on Mother's Labor Supply: March CPS 1989-2010

	Any Hours Worked	Mother is Employed	Mother is in Labor Force	Any Wage Income	Log Wage	Usual Hours Worked
Mean of Dependent Variable	0.678	0.582	0.628	0.643	9.427	23.600
In-Hospital Paternity Program Exists in State and Year of Child's Birth	0.0200**	0.0189**	0.0162**	0.0230**	0.0253	0.5676+
	(0.0076)	(0.0085)	(0.0075)	(0.0079)	(0.0165)	(0.3187)
N	187,326	187,326	187,326	187,326	120,034	187,326

Notes: Each coefficient is from a separate regression. Please refer to Table 10 for details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table XII. Robustness Check - IHVPE Programs and Maternal and State Characteristics in 43 States: 1992-2005

	Total Number Births	Proportion Births by Unmarried Mothers	Proportion Births with Mother's Age <20	Proportion Births with Mother's Age 45+	Proportion Births with Mother's Ed: <HS	Proportion Births with Mother's Ed: College+	Proportion Births by Non-Hispanic White Mothers	Proportion Births by Black Mothers
In-Hospital Paternity Program Exists in State and Year	508.4947	-0.0121	0.0002	-0.0000	-0.0002	0.0006	-0.0022+	0.0010
	(1068.3877)	(0.0081)	(0.0006)	(0.0000)	(0.0007)	(0.0007)	(0.0012)	(0.0007)

	Proportion Births by Hispanic Mothers	State Unemployment Rate in Previous Year	State Poverty Rate in Previous Year	State Minimum Wage in Previous Year	Percent of Population Receiving Welfare Benefits in Previous Year	Welfare Benefit for 4-Person Family in Previous Year	Percent of Population on Medicaid in Previous Year	Governor is Democratic in Previous Year
In-Hospital Paternity Program Exists in State and Year	-0.0002	-0.0772	0.0672	-0.0738	-0.0003	-4.2877	-0.0043	-0.1218
	(0.0008)	(0.1102)	(0.2165)	(0.0586)	(0.0008)	(5.5170)	(0.0031)	(0.0819)

Notes: N = 546 state-year cells. Each coefficient is from a separate regression. The states included in the analysis are: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin over 1992-2005. Each of the listed states implemented an in-hospital paternity establishment program during this time period with information on the month and year of initiation. All regressions are weighted by state-year populations. All regressions include controls for other state-year characteristics, state and year fixed effects, and state-specific time trends. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Table XIII. Which Time-Varying Characteristics Predict IHVPE Adoption in 43 States? 1992-2005

	Dependent Variable: IHVPE Implemented			
	(1)	(2)	(3)	(4)
Proportion Mothers Aged <20	138.4580	122.8209	121.0434	107.7368
	(104.3879)	(95.1422)	(92.7312)	(94.2832)
Proportion Mothers Aged 20-24	138.7829	118.5291	116.4720	102.0943
	(105.0161)	(95.7227)	(93.6775)	(95.7650)
Proportion Mothers aged 25-34	134.2764	116.3953	114.4025	99.2859
	(104.0263)	(95.2115)	(92.9946)	(94.9876)
Proportion Mothers Aged 35-44	134.8280	114.5441	112.0616	96.5997
	(106.4256)	(97.2009)	(94.9777)	(97.1554)
Proportion Mothers <HS Ed	1.5469	-0.1330	-0.7521	-0.3952
	(4.2564)	(3.6028)	(3.5638)	(3.7220)
Proportion Mothers HS Ed	1.8161	1.2793	0.9049	0.7079
	(3.8721)	(3.1708)	(2.9350)	(2.9264)
Proportion Mothers Some College	3.7754	3.5141	3.3729	3.0950
	(3.0193)	(2.3571)	(2.2483)	(2.2882)
Proportion Mothers Non-Hispanic White	-0.6014	-2.7682	-3.8038	-3.7406
	(2.0567)	(2.4252)	(2.6689)	(2.8312)
Proportion Mothers Black	0.2460	-1.3855	-2.3250	-3.1988
	(1.9514)	(2.1391)	(2.1411)	(2.3340)
Proportion Mothers Hispanic	2.6764	0.4742	-0.0142	-0.3217
	(2.6771)	(2.8177)	(2.8573)	(3.3978)
Proportion Male Births	9.6380+	8.9200+	9.5768+	10.3135+
	(5.3343)	(5.1814)	(5.2474)	(5.9557)
Proportion Unmarried Births	-2.1771	-2.6366+	-2.4365	-2.4297
	(1.4385)	(1.4588)	(1.4988)	(1.4719)
Log Total Births	-0.2867	-0.3056	-0.3216	-0.2600
	(0.5033)	(0.5141)	(0.5141)	(0.5200)
Unemployment Rate Last Year		0.0144	0.0136	0.0093
		(0.0271)	(0.0260)	(0.0283)
Poverty Rate Last Year		0.0097	0.0088	0.0100
		(0.0094)	(0.0090)	(0.0099)

State Minimum Wage Last Year		-0.0497	-0.0471	-0.0489
		(0.0443)	(0.0416)	(0.0415)
Percent Welfare Recipients Last Year		-2.7415	-4.2522	-4.0582
		(3.5870)	(3.2701)	(3.2487)
Average Welfare Benefit for 4 Person Family		-0.0002	-0.0001	-0.0002
		(0.0005)	(0.0005)	(0.0005)
Governor Democratic Last Year		-0.0893**	-0.0751**	-0.0794**
		(0.0351)	(0.0350)	(0.0363)
Fraction State House Democratic Last Year		-0.2284	-0.1168	-0.1525
		(0.3469)	(0.3636)	(0.3666)
AFDC waiver implemented			0.1392	0.1360
			(0.1230)	(0.1233)
TANF implemented			-0.0860	-0.1014
			(0.1673)	(0.1710)
Universal Wage Withholding Implemented				-0.0110
				(0.0955)
Genetic Testing for Paternity Implemented				0.0000
				(0.0001)
New Hires Directory Implemented				0.0451
				(0.0553)
License Revocation for Non-Payment Implemented				-0.0659
				(0.0881)
N	602	574	574	546
R-squared	0.7528	0.7622	0.7678	0.7702

Notes: Each column is a separate regression. Units of observation are state-year cells consisting of the following states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin. Each of the listed states implemented an in-hospital paternity establishment program during this time period with information on the year of initiation. All regressions include state and year fixed effects and are weighted by the state-year populations. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table I. Timing of In-Hospital Voluntary Paternity Establishment Program Initiation

State	Year (and Month) of Initiation	Source	Minors Can Participate?
Alabama	1994	Alabama Code Section 26-17-22, part c)	
Alaska	1997	Alaska Statutes 18.50.165	
Arizona	July, 1996	Marjorie A. Cook, Arizona Department of Economic Security Division of Child Support Enforcement. Personal communication: 12/27/2010	
Arkansas	1993	Arkansas Code 9-10-120	
California	January, 1995	California Family Code 7571	Can rescind easily
Colorado	June, 1996	C.R.S. 25-2-112, Sec. 3.5	
Connecticut	July, 1994	Conn. Gen. Stat. Sec. 17b-27	Yes
Delaware	January, 1995	http://www.paternitynet.com/art04.html	Can rescind easily
District of Columbia	2/27/1998	D.C. Code Sec. 16-909.03	
Florida	August, 1997	Fla. Stat. Sec. 742.10	Yes
Georgia	1999	OCGA 19-7-27	
Hawaii	1996	HRS 584-3.5	
Idaho	May, 1998	http://www.healthandwelfare.idaho.gov/portals/_rainbow/manuals/cs/chapter_3/3.8_voluntary.htm	
Illinois	1997	Garfinkel & Nepomnyaschy (2007)	Can rescind easily
Indiana	1997	Angelica Carter, Attorney with the Indiana State Child Support Bureau. Personal communication: 4/13/2011	
Kansas	1997	KSA 38-1137	Can rescind easily
Kentucky	7/15/1996	KRS 406.025	No
Louisiana	July, 1998	La.R.S. 40:46.1	
Maine	1996	22 M.R.S. Sec. 2761-B	
Maryland	1997	Garfinkel & Nepomnyaschy (2007)	
Massachusetts	1994	Garfinkel & Nepomnyaschy (2007)	Yes
Michigan	1/21/1993	Public Health Code - Act 368 of 1978	
Minnesota	6/15/1995	Molly Mulcahy Crawford; Paternity Program Administrator, Minnesota Department of Human Services, Child Support Enforcement Division. Personal communication: 4/20/2011	Yes
Mississippi	1995	www.acf.hhs.gov/programs/cse/pubs/1998/best_practices/bppat98.htm	
Missouri	July, 1994	R.S. Mo 193-087	
Nebraska	1995	R.R.S. 43-1408.01	
Nevada	1995	Nev. Rev. Stat. Ann. 449.246	
New Jersey	July, 1996	Paternity Opportunity Program: http://pop.njchildsupport.org/	
New York	March, 1995	www.lawny.org/index.php/advocate-page-attorney-resources-119/38-public-advocate-information/171-paternity-for-advocates	
North Carolina	1997	GS 110-132	
North Dakota	1996	N.D. Cent. Code 14-19-06	Yes
Ohio	1999	ORC Ann. 3111.71	Yes
Oregon	November, 1995	Or. Admin. R. 333-011-0048	
Pennsylvania	January, 1998	23 PA Cons. Stat. Sec. 5103	
Rhode Island	January, 1995	R.I. Gen. Laws § 40-6-21.1	
South Carolina	1994	S.C. Code Ann. § 44-7-77	
South Dakota	1994	S.D. Codified Laws § 25-8-50	
Tennessee	1994	Garfinkel & Nepomnyaschy (2007)	Require parental consent
Texas	1999	Kevin O'Keefe, Texas Office of the Attorney General Child Support Division. Personal communication: 10/8/2010	Can rescind easily
Utah	1995	Utah Code Ann. 26-2-5	Require parental consent
Vermont	1997	Vermont Statutes Title 15, Ch. 5, § 307	

Virginia	1995	VA Code 63.2-1914	Can rescind easily
Washington	July, 1989	Paternity Affidavit Program: www.dshs.wa.gov/dcs/services/providers.asp	
Wisconsin	May, 1998	Wisconsin Bureau of Child Support (2010), Department of Children and Families Report, "Voluntary Paternity Acknowledgement"	Require parental consent

Notes: Searches of state statutes were conducted using *LexisNexis Academic.* Information on minors comes from Roberts (2004).

Appendix Table II. Effects of IHVPE Programs on Married Fathers' Characteristics: CPS-CSS 1994-2008

	Father's Age	Father's Age <20	Father's Age 20-24	Father's Age 45+	Father's Ed: <HS	Father's Ed: HS degree	Father's Ed: some college	Father Receives Any Public Assistance
In-Hospital Paternity Program Exists in State and Year of Child's Birth	0.2783**	0.0008	-0.0200**	0.0149**	-0.0054	0.0074	0.0011	-0.0036**
	(0.1106)	(0.0010)	(0.0059)	(0.0073)	(0.0077)	(0.0127)	(0.0135)	(0.0016)
N	28,024	28,024	28,024	28,024	28,024	28,024	28,024	28,024

Notes: Each column is a separate regression. The sample of analysis includes all married women with a youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The sample omits all women who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. All regressions are weighted by the CPS person weights. The regressions control for the woman's age at childbirth (<20, 20-24, 25-34, 35-44,), woman's education (less than HS, HS, some college, college+), woman's race (white, black, Hispanic, other), child sex, and indicators for child's single years of age. All regressions include controls for state characteristics in the year before; these include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. All regressions include indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revocation for non-payment. All regressions include indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table III. IHVPE Programs and Formal and Informal Father Involvement: CPS-CSS 1994-2008 - Accounting for Selection Out of Marriage

Dependent Variable	N	Coefficient	SE
Father Made Any CS Payments in Last Year	34,001	-0.0144+	(0.0074)
Father Made All CS Payments in Last Year	34,001	-0.0118	(0.0081)
Father Paid On Time All or Most of the Time in Last Year	32,820	-0.0162+	(0.0091)
Father Has Court-Ordered Visitation Rights	34,794	-0.0100	(0.0072)
Father Has Joint Legal Custody	34,794	-0.0224**	(0.0076)
Number Days Father Spent with Child	34,251	-6.5629**	(2.6423)
Father Provided Gifts for Child	34,794	-0.0063	(0.0086)
Father Provided Clothes for Child	34,794	-0.0100	(0.0070)
Father Provided Food for Child	34,794	-0.0096	(0.0081)
Father Covered Childcare Expenses for Child	34,794	-0.0164**	(0.0078)
Father Paid for Medical Expenses for Child	34,794	-0.0091	(0.0094)

Notes: Each coefficient is from a separate regression. The sample of analysis includes all women with a youngest child aged 5 years old or less in the household who were between the ages of 18 and 45 at the time of childbirth in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1994, 1996, 1998, 2000, 2002, 2004, 2006 and 2008. The sample omits all women who moved from abroad last year and assigns the state of last year's residence as the state of child's birth. Marriage is defined as a legal agreement between the mother and father. Married fathers are also assumed to have "visitation rights" and have "joint legal custody", and are assumed to have spent 365 days with the child in the past year. They are assumed to have provided gifts, food, clothes, childcare, and medical help for the child. The regressions control for the woman's age at childbirth (<20, 20-24, 25-34, 35-44, 45+), woman's education (less than HS, HS, some college, college+), woman's race (white, black, Hispanic, other), child sex, and indicators for child's single years of age. All regressions include controls for state characteristics in the year before; these include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. All regressions include indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revokation for non-payment. All regressions include indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table IV. Effects of IHVPE Programs on Paternities Established in 43 States by Year: 1992-2005

	Dependent Variable: Log Paternities				
	(1)	(2)	(3)	(4)	(5)
3 Years Before In-Hospital Paternity Program Initiation	-0.2503	-0.0018	0.0169	0.1160	0.1272
	(0.1690)	(0.1001)	(0.1018)	(0.0964)	(0.1009)
2 Years Before In-Hospital Paternity Program Initiation	-0.3113	0.0559	0.0825	0.1598	0.1720
	(0.2502)	(0.1442)	(0.1399)	(0.1598)	(0.1616)
1 Year Before In-Hospital Paternity Program Initiation	-0.2884	0.0887	0.0823	0.2032	0.2287
	(0.2382)	(0.1754)	(0.1695)	(0.2385)	(0.2373)
Year of In-Hospital Paternity Program Initiation	-0.0596	0.2610	0.2257	0.4074	0.4258
	(0.2398)	(0.2172)	(0.1978)	(0.2963)	(0.2875)
1 Year After In-Hospital Paternity Program Initiation	0.2710	0.4967+	0.4513+	0.6780+	0.6954**
	(0.2387)	(0.2472)	(0.2264)	(0.3623)	(0.3507)
2 Years After In-Hospital Paternity Program Intiation	0.3823	0.5914**	0.5093+	0.7576+	0.7975**
	(0.2552)	(0.2870)	(0.2602)	(0.4091)	(0.3983)
3 Years After In-Hospital Paternity Program Initiation	0.4242	0.5042	0.4223	0.6716	0.7045
	(0.2532)	(0.3230)	(0.2900)	(0.4664)	(0.4544)
4 Years After In-Hospital Paternity Program Initiation	0.6618**	0.6347+	0.5584+	0.8217	0.8759+
	(0.2802)	(0.3488)	(0.3149)	(0.5071)	(0.4944)
N	601	601	573	545	545
R-squared	0.0875	0.9363	0.9392	0.9580	0.9597
Mother and Child Controls	No	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes
AFDC/TANF Implementation	No	No	No	No	Yes

Notes: Units of observation are state-year cells. Please refer to Table 3 for details about sample restrictions and controls. All regressions are weighted by state-year populations. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table V. Robustness Check - IHVPE Programs and Pregnancy Behavior and Birth Outcomes in 43 States: 1992-2005

	1st Trimester Prenatal Care Initiation	Child is Male	Mother's Weight Gain during Pregnancy (lbs)	Birth Weight (g)	Low Birth Weight (<2500g)	Very Low Birth Weight (<1500g)	Gestation (weeks)	Any Complications During Pregnancy or Delivery	Any Abnormal Conditions of Newborn
In-Hospital Paternity Program Exists in State and Year of Birth	-0.0024	0.0005	-0.1197	-0.4098	0.0003	0.0000	-0.0116+	0.0070	0.0010
	(0.0026)	(0.0003)	(0.0851)	(0.8672)	(0.0003)	(0.0001)	(0.0066)	(0.0062)	(0.0038)
N	546	546	546	546	546	546	546	546	546

Notes: Units of observation are state-year cells. Each coefficient is from a separate regression. The states included in the analysis are: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin over 1992-2005. Each of the listed states implemented an in-hospital paternity establishment program during this time period with information on the month and year of initiation. All regressions are weighted by the number births in each cell. All regressions include controls for other state-year characteristics, state and year fixed effects, and state-specific time trends. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table VI. Effects of IHVPE Programs on Likelihood of Being Married to Biological Father in 44 States: CPS-CSS 1994-2008 - Robustness Checks

	Dependent Variable: Mother Married to Biological Father					
	Pre Trends	3-Year Window	No White Mothers	Omit CA	Omit NY	Omit TX
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0407**	-0.0261+	-0.0386**	-0.0252**	-0.0288**	-0.0258**
	(0.0190)	(0.0153)	(0.0135)	(0.0088)	(0.0086)	(0.0098)
Child Born Within 2 Years Before Program Initiation	-0.0152					
	(0.0157)					
Child Born 2-4 Years Before Program Initiation	0.0002					
	(0.0121)					
N	35,738	14,814	12,030	32,089	33,415	33,350

Notes: Each column is a separate regression. Please refer to Table 4 for details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table VII. Robustness - Correlation Between IHVPE Programs and CHIP spending: CPS-CSS 1998-2008

	Log State Spending on CHIP in Year of Observation	Log Total (State + Federal) Spending on CHIP in Year of Observation	Log State Spending on CHIP in Year Before Observation	Log Total (State + Federal) Spending on CHIP in Year Before Observation
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.1365	-0.0755	-0.0865	-0.0672
	(0.2908)	(0.3422)	(0.1916)	(0.1946)
N	25,444	25,708	21,258	21,393

Notes: Each coefficient is from a separate regression. Please refer to Table 4 for details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table VIII. Robustness - IHVPE and Health Insurance Coverage of Adult Males, CPS 1989-2002

	Dependent Variable: Respondent Has Health Insurance Coverage						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
In-Hospital Paternity Program Exists in State of Residence and Year of Interview	0.0052	-0.0037	-0.0018	-0.0018	-0.0009	-0.0033	-0.0036
	(0.0061)	(0.0043)	(0.0036)	(0.0038)	(0.0036)	(0.0032)	(0.0033)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	No	No	Yes	Yes
N	508,950	508,950	422,378	409,474	409,474	422,378	409,474
R-squared	0.1246	0.1304	0.1322	0.1327	0.1328	0.1327	0.1332

Notes: Each column is a separate regression. The sample of analysis includes all men ages 18-64 in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, DC, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin in 1989-2002. The demographic controls include controls for age (<20, 20-24, 25-34, 35-44, 45-54, 55-64), education (less than HS, HS, some college, college+), race (white, black, Hispanic, other), an indicator for being married, and an indicator for being currently employed. The time-varying state characteristics include the unemployment rate, the poverty rate, the state minimum wage, the percent of the population that receives AFDC/TANF benefits, the AFDC/TANF benefit for a 4-person family, the percent of the population on Medicaid, an indicator for a Democratic governor, and the fraction of the state House that is Democratic. The controls for child support laws are indicators for whether the following child support enforcement laws are in place in the state and year of observation: universal wage withholding, genetic testing for paternity, new hires directory, and license revokation for non-payment. The AFDC/TANF implemenation controls are indicators for whether the AFDC waiver or the TANF program is implemented by the state and year of observation. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.

Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table IX. Effects of IHVPE Programs on Imputed Private Child Health Insurance Provision: CPS-CSS 1994-2008

	Dependent Variable: Child Has Private Health Insurance (=1 if married parents)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
In-Hospital Paternity Program Exists in State and Year of Child's Birth	-0.0046	-0.0217**	-0.0181**	-0.0179**	-0.0183**	-0.0188**	-0.0190**
	(0.0076)	(0.0067)	(0.0058)	(0.0062)	(0.0062)	(0.0063)	(0.0067)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
State FEs	No	Yes	Yes	Yes	Yes	Yes	Yes
Quadratic Polynomial in Survey Year	No	Yes	Yes	Yes	Yes	Yes	Yes
State Time-Varying Characteristics Controls	No	No	Yes	Yes	Yes	Yes	Yes
Child Support Laws Controls	No	No	No	Yes	Yes	No	Yes
AFDC/TANF Implementation	No	No	No	No	Yes	Yes	Yes
State-Specific Time Trends	No	No	No	No	No	Yes	Yes
N	37,901	37,901	36,930	35,738	35,738	36,930	35,738
R-squared	0.1884	0.1940	0.1950	0.1948	0.1949	0.1958	0.1957

Notes: Each column is a separate regression. Children of married parents are coded as having private health insurance. Please refer to Table 4 for details about sample restrictions and controls. All regressions include mother and child controls, controls for state time-varying characteristics, controls for child support laws, and controls for AFDC/TANF implementation. All regressions include state and child birth year fixed effects, a quadratic polynomial in the survey year, and state-specific time trends. All regressions are weighted by the provided CPS person weights. Robust standard errors are clustered on the state level.

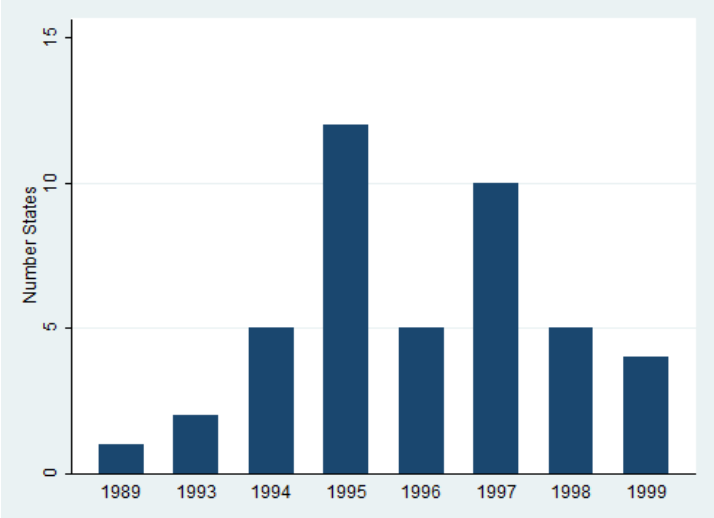
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Appendix Table X. Parametric Regression Discontinuity Effects of IHVPE Program on Fathers on Birth Certificates in Arizona: Unmarried Mothers, 1994-1999

	Dependent Variable: Father's Info is on Birth Certificate				
	1st Order Polynomial	**2nd Order Polynomial**	**3rd Order Polynomial**	**4th Order Polynomial**	**5th Order Polynomial**
	Mean of Dependent Variable = 0.357				
Post In-Hospital Paternity Program Initiation	0.0747***	0.0755***	0.0953***	0.0321	0.0820**
	(0.0075)	(0.0111)	(0.0166)	(0.0203)	(0.0265)
Mother and Child Controls	Yes	Yes	Yes	Yes	Yes
Year and Month FEs	Yes	Yes	Yes	Yes	Yes
N	69,279	69,279	69,279	69,279	69,279
R-squared	0.0659	0.0668	0.0668	0.0672	0.0675

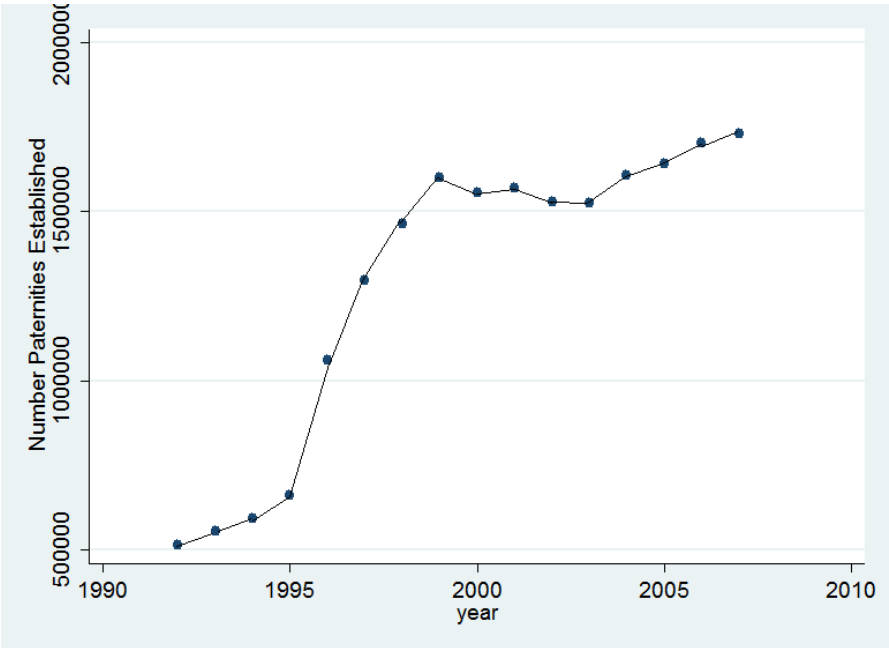
Notes: Each column is a separate regression. The running variable is the year-month of birth. The sample of analysis includes the universe of 1st parity births that occurred in hospitals by adult unmarried mothers in Arizona in 1994-1999. The mother and child controls are controls for the mother's age (<20, 20-24, 25-34, 35-44, 45+), mother's education (less than HS, HS, some college, college+), mother's race (white, black, Hispanic), and child sex. Standard errors are robust to heteroskedasticity.
Significance levels: +p<0.10 ** p<0.05 *** p<0.001

Figure 1. Variation in IHVPE Program Initiation Across States



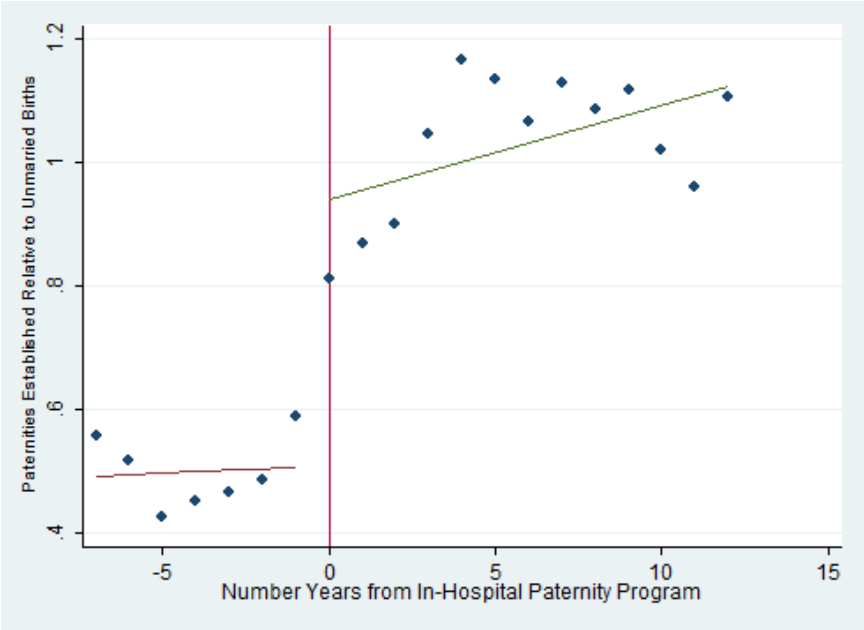
Notes: This figure plots the number of states that initiated IHVPE in each year. Forty-four states are included in the figure.

Figure 2. Number Paternities Established in the United States: 1992-2007



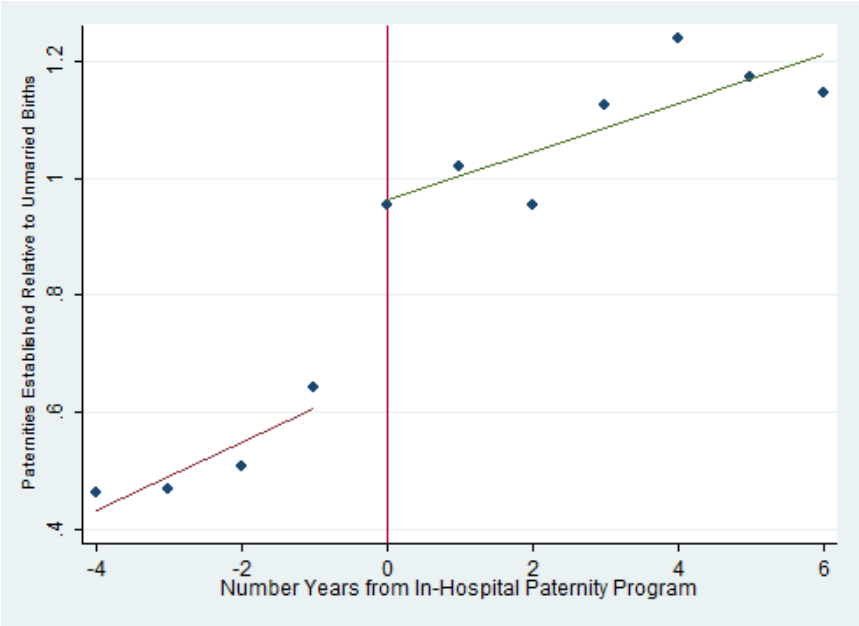
Notes: This figure plots the total number of paternities established in the US in each year.

Figure 3. Number Paternities Established Relative to Number of Unmarried Births: 1992-2005



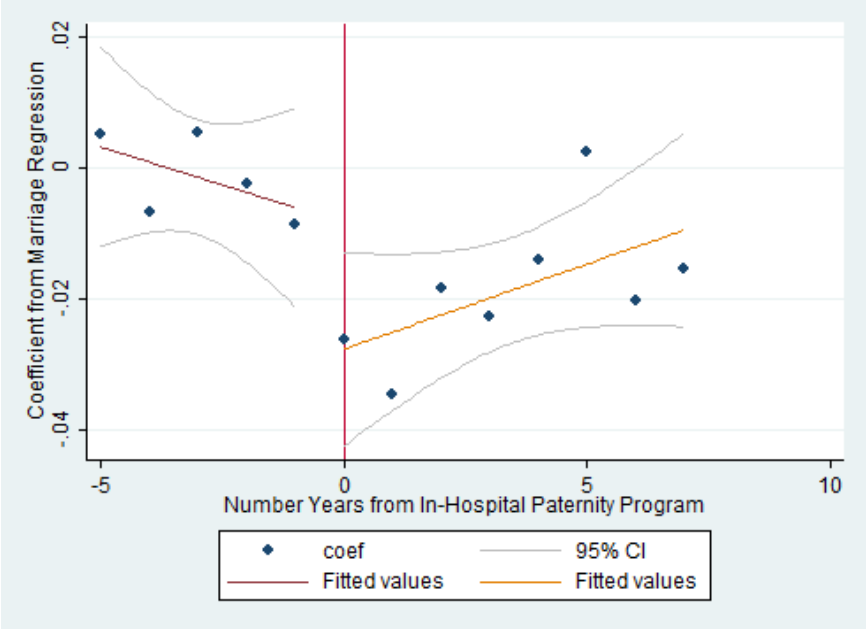
Notes: This figure plots the average of the total number of paternities established divided by the total number of unmarried births across states in each year before and after IHVPE program implementation.

Figure 4. Number Paternities Established Relative to the Number of Unmarried Births: 1992-2005, States that Initiated IHVPE in 1996 or Later



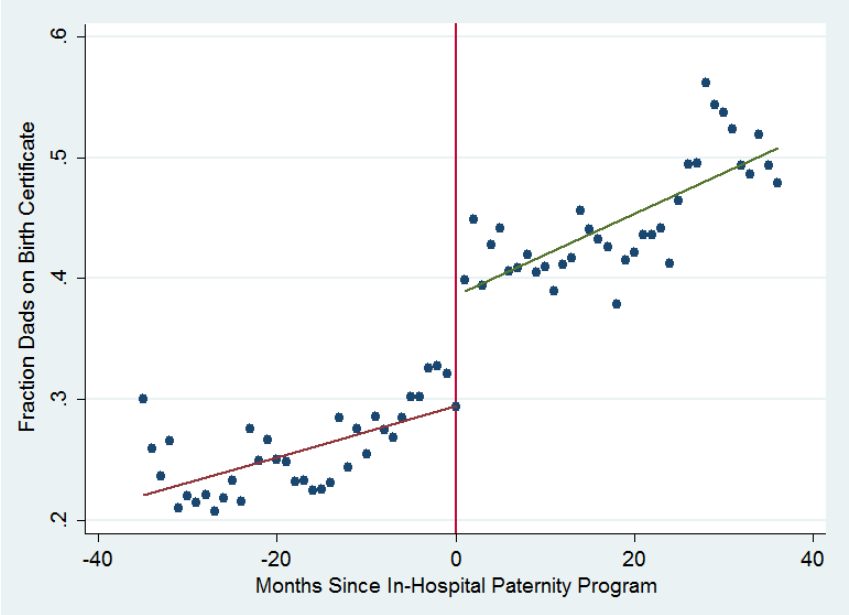
Notes: This figure plots the average of the total number of paternities established divided by the total number of unmarried births across states in each year before and after IHVPE program implementation for states that initiated IHVPE in 1996 or later.

Figure 5. The Effects of IHVPE on Marriage to the Biological Father by Year



Notes: This figure plots θ_k coefficients from estimating the following equations: $Y_{isty} = \beta_0 + \sum_{k=-5}^{k=8} \theta_k IHVPE_{syk} + \gamma' X_{isy} + \phi' C_{st} + f(t) + \mu_s + \alpha_y + \delta_s * t + \varepsilon_{isty}$, where $IHVPE_{syk}$ is an indicator for k years from IHVPE implementation in state s and child's birth year y.

Appendix Figure 1. Fraction Fathers with Information on Birth Certificates in Arizona: Unmarried Mothers, 1994-1999



Notes: This figure plots the proportion of births by unmarried mothers which have the father's information included on the birth certificate by month since IHVPE program initiation in Arizona in January 1997.