Update Evaluation of the Bright Start Demonstration Program

Prepared for the State of Washington Department of Social and Health Services

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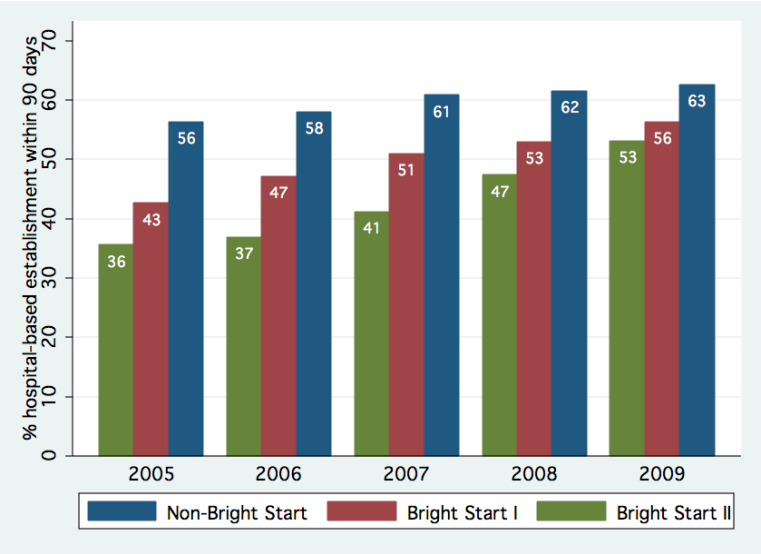
Executive Summary

In 2008, ECONorthwest (ECO) completed an evaluation of the 16-hospital demonstration project at the conclusion of the three-year funding cycle for the grant (2005-2008) entitled *Evaluation of the Bright Start Demonstration*. In May of 2009, the Department of Social and Health Services engaged ECO's services to update the original report in order to: (1) update the year three evaluation findings on the determinants of paternity establishment and Bright Start impacts, and (2) to examine impacts of the program on the new cohort of hospitals added to the program in 2007. We advise readers not already familiar with the Bright Start program and evaluation to read the 2008 report before this update. The earlier report describes the Bright Start program in great detail, providing valuable context for the updated findings presented below.

For the pre- and post-implementation period, we examined changes in paternity establishment over time across all hospitals in the state (divided into Bright Start I, Bright Start II, and non-Bright Start cohorts), changes in demographic characteristics of unmarried mothers over time across all hospitals in the state, and the impact of the Bright Start Program on the rate of paternity establishment.

Figure ES-1 summarizes the total hospital-based paternity establishment over time, by hospital cohort. During the analysis time period (2005 – 2009), the voluntary paternity establishment rate grew steadily in each of the three hospital cohorts. By design, the Bright Start II hospitals were lower performers to begin with, as clearly illustrated in the figure. They also caught up more quickly than did the Bright Start I hospitals.

Figure ES-1: Hospital-based paternity establishment within 90 days of birth, over time and by hospital cohort

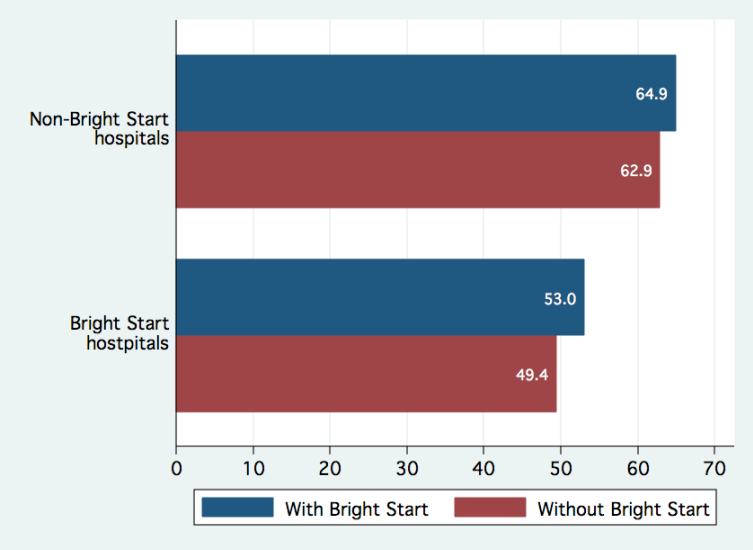


Source: ECONorthwest analysis of Washington Department of Health birth record data

The upward trend in paternity establishment across the state indicates that we cannot attribute the entire change in establishment rates at Bright Start hospitals to the program. Our analysis nonetheless supports a strong program impact.

Figure ES-3 displays actual and simulated paternity establishment rates for all Bright Start hospitals combined and for all non-Bright Start hospitals. Because our analysis identifies a strong dependence of program impact on a hospital's prior performance and because the Bright Start hospitals were frequently relatively poor performers prior to implementation, Bright Start had a larger impact on these hospitals as a group than we would predict for all non-Bright Start hospitals as a group.

Figure ES-3: Actual and simulated hospital-based paternity establishment, January-May 2009



Source: ECONorthwest analysis of Washington Department of Health birth record data

Our analysis suggests that the Bright Start program has a significant impact on the rate of paternity establishment, increasing hospital-based establishment by an average of four percentage points during the Bright Start period. Hospital performance prior to Bright Start drives significant variation in estimated program impacts across demonstration hospitals. Previously low-performing Bright Start hospitals showed the greatest gains during the demonstration. We predict smaller, but still positive gains would have been made at non-Bright Start hospitals had they been part of the demonstration.

Chapter 1

Introduction

BACKGROUND

In 2005, the federal Office of Child Support Enforcement (OCSE) awarded Washington State's Division of Child Support (DCS) a Section 1115(a) demonstration grant to implement and rigorously evaluate enhancements to its pioneering work in voluntary paternity establishment. This demonstration project, called Bright Start, sought to demonstrate that a renewed and reinvigorated relationship with hospital staff could measurably improve rates of in-hospital paternity establishment. In 2008, ECONorthwest (ECO) completed an evaluation of the 16-hospital demonstration project at the conclusion of the three-year funding cycle for the grant (2005-2008), entitled *Evaluation of the Bright Start Demonstration*. In 2007, the Department of Social and Health Services added an additional cohort of 14 underperforming hospitals to the demonstration project.

In May of 2009, the Department engaged ECO's services to update the original report. The purposes of this report are twofold: (1) provide an update to the year three evaluation findings on the determinants of paternity establishment and Bright Start impacts and (2) examine impacts of the program on the cohort of hospitals added to the program in 2007. We advise readers not already familiar with the Bright Start program and evaluation to read the 2008 report before this update. The earlier report describes the Bright Start program in great detail, providing valuable context for the updated findings presented below.

The results summarized in this report primarily compare pre- and post-implementation time periods. The Bright Start demonstration program was initiated in 2005 and was implemented between 2006 and 2008. The "pre" time period was therefore selected as June 2004- May 2005. The "post" time period was selected as June 2008 – May 2009, as this was the most recent 12-month period for which data were available.

Each Washington birthing hospital belongs to one of three cohorts: (1) Bright Start I: includes the 16 hospitals included in the original demonstration project; (2) Bright Start II: includes the 14 hospitals added to the program in 2007 (3) non-Bright Start hospitals: includes all other hospitals in the State of Washington. Table 1-1 includes a list of the Bright Start I and II hospitals.

Table 1-1: Bright Start cohort hospitals

Bright Start I	Bright Start II
Kittitas	Evergreen Healthcare*
St. John	Swedish Hospital
Good Samaritan	Providence Everett
Legacy Salmon Creek	Providence Centralia*
Harrison	Capital Medical Center
Auburn	Central Washington Hospital
St. Joseph	Prosser Memorial
Sunnyside	Group Health Cooperative Central
Skyline	University of WA Medical Center
Klickitat	Valley Hospital
St. Francis	Sacred Heart
Toppenish	Samaritan Hospital
Tacoma General	Kennewick General
Yakima Valley	Lourdes Medical Center
Madigan	
SW Washington	

*Evergreen Healthcare and Providence Centralia had not received Bright Start training by the end of the demonstration. We do not consider these hospitals to have implemented the program.

REPORT ORGANIZATION

This report is organized into the following sections:

- **Chapter 2: Changes in paternity establishment over time** describes the changes in the percent of births for which paternity was established (both hospital and community-based) pre- and post-implementation of Bright Start. This section presents the changes across regions and three different cohorts. These results describe recent trends in paternity establishment.
- **Chapter 3: Changes in the demographic characteristics of unmarried mothers over time** describes the changes in demographic characteristics of unmarried mothers pre- and post-implementation of Bright Starts across regions and within the three hospital cohorts. These characteristics were identified as the most important predictors of paternity establishment identified: mother's age, residential tenure, number of other living children, race, ethnicity, education, source of payment for birth, employment status, and completeness of birth record data relating to these indicators. These results shed additional light on the trends described in Part 1.
- **Chapter 4: Impact estimates** describes the impact of the Bright Start Program on the rate of paternity establishment. These findings indicate the extent to which Bright Start improved outcomes at the demonstration hospitals and suggest the impact the program would have if implemented statewide.
- **Chapter 5: Conclusions** summarizes our analysis in Chapters 1, 2, and 3.

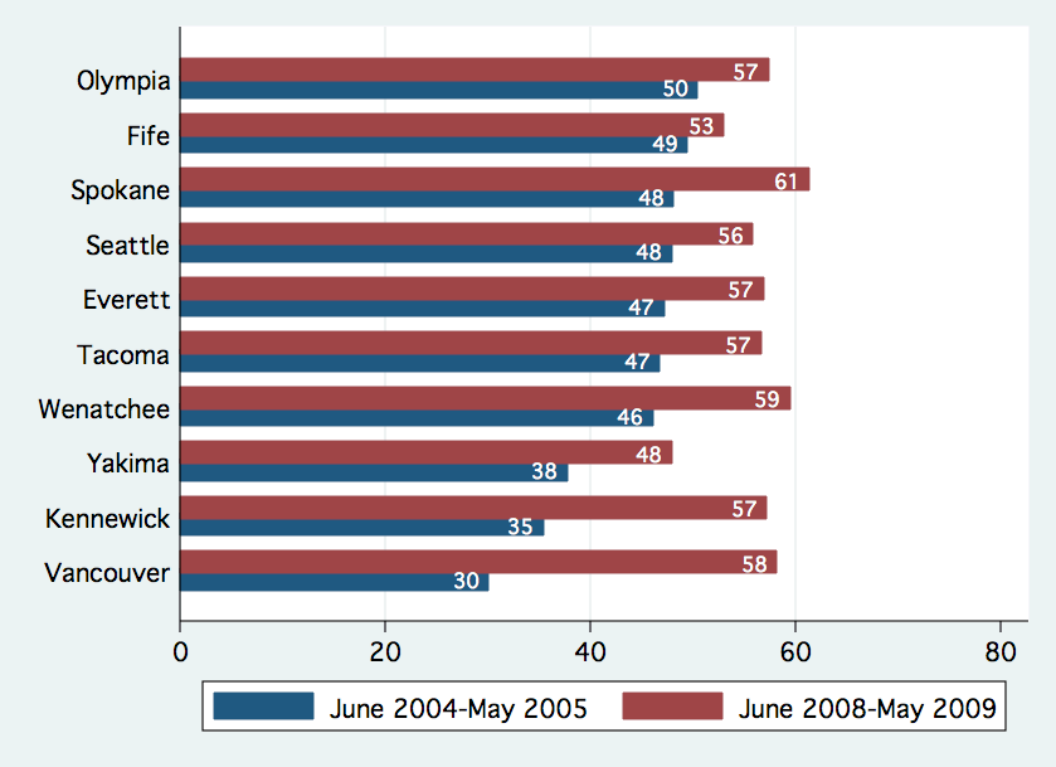
Chapter 2 Changes in Paternity Establishment

Paternity is officially established when an affidavit acknowledging the identity of the biological father is filed with the Department of Health (DOH). Below, we discuss two types of affidavits: (1) hospital-based affidavits, which are prepared and submitted by the hospital, and (2) community-based affidavits, which are filed through another source, such as a child support office. Although parents can file a paternity affidavit at any time after a child's birth, we restrict attention to affidavits filed within 90 days of birth. Most affidavits for newborns are in fact filed during this period, and the 90-day cutoff allows us to appropriately compare paternity establishment outcomes for recent births to those from earlier years.

HOSPITAL-BASED PATERNITY ESTABLISHMENT

Figure 2-1 shows the in-hospital paternity establishment, pre- and post-implementation of Bright Start for all hospitals in all DCS regions. There were increases in all regions, although there were significant increases in Vancouver, Kennewick, and Wenatchee (we note that hospitals in those regions started with lower rates of paternity establishment). Every region included at least one Bright Start hospital by the end of the demonstration program.

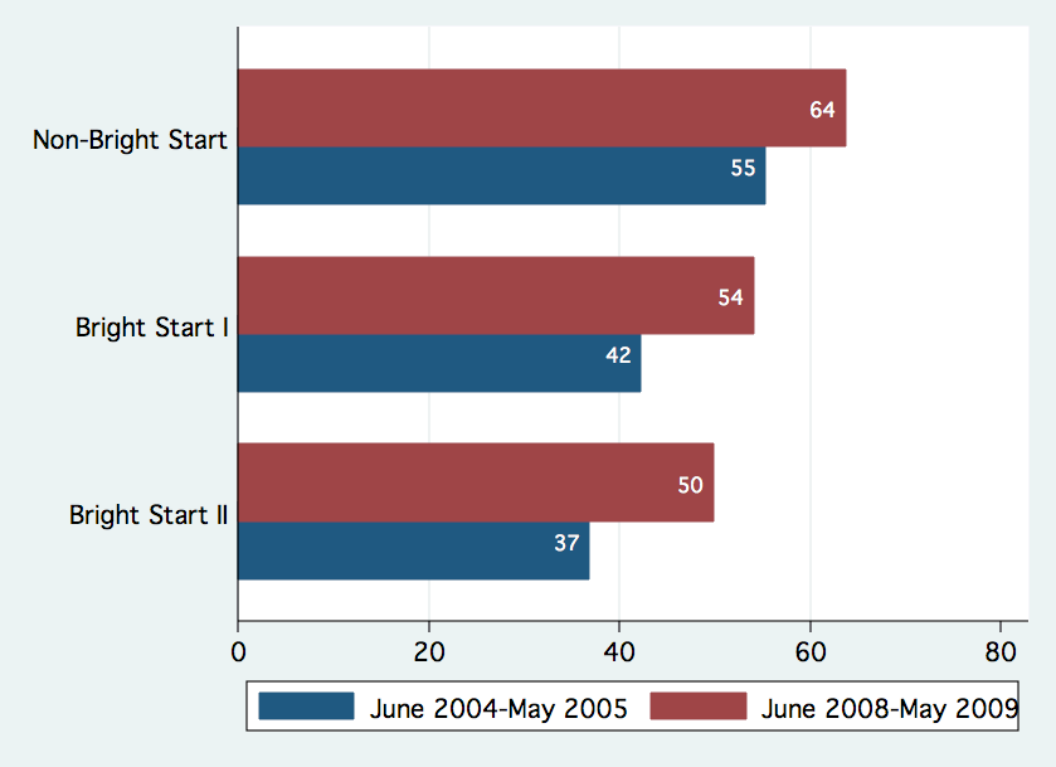
Figure 2-1: Hospital-based paternity establishment by region, as a percentage of unmarried births



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 2-2 shows the in-hospital paternity establishment pre- and post-implementation, by hospital cohort. Hospitals in the Bright Start II cohort started out with lower percentage of paternity establishment (by design) than the Bright Start I or non-Bright Start cohorts, but experienced a larger increase in paternity establishment. The Bright Start I and II cohorts achieved 12 and 13 percentage point increases between the pre- and post-implementation of the program, compared to a 9 percentage point increase for the non-Bright Start cohort hospitals for the same time period.

Figure 2-2: Hospital-based paternity establishment by hospital cohort, as a percentage of unmarried births



Source: ECONorthwest analysis of Washington Department of Health birth record data

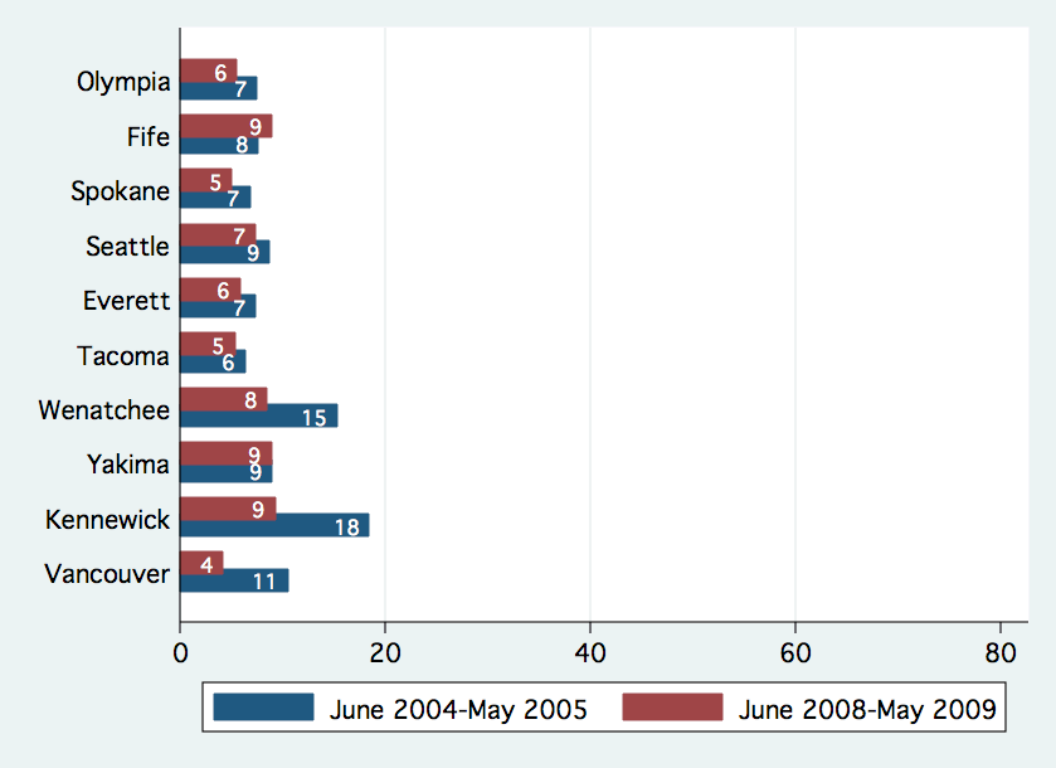
COMMUNITY-BASED PATERNITY ESTABLISHMENT

Figure 2-3 shows that community-based paternity establishment declined in almost every region between the pre- and post-implementation time periods (with the exception of Fife).

Figure 2-4 illustrates community-based paternity establishment by hospital cohort, which demonstrates declines between pre- and post-implementation for the three hospital cohorts. This is consistent with Figures 2-3 and 2-4, as *increased* hospital-based paternity establishment may come at the expense of some community-based paternity establishment. We might expect the results to show that regions experiencing increases in hospital-based paternity establishment would experience decreases in other kinds of paternity establishment.

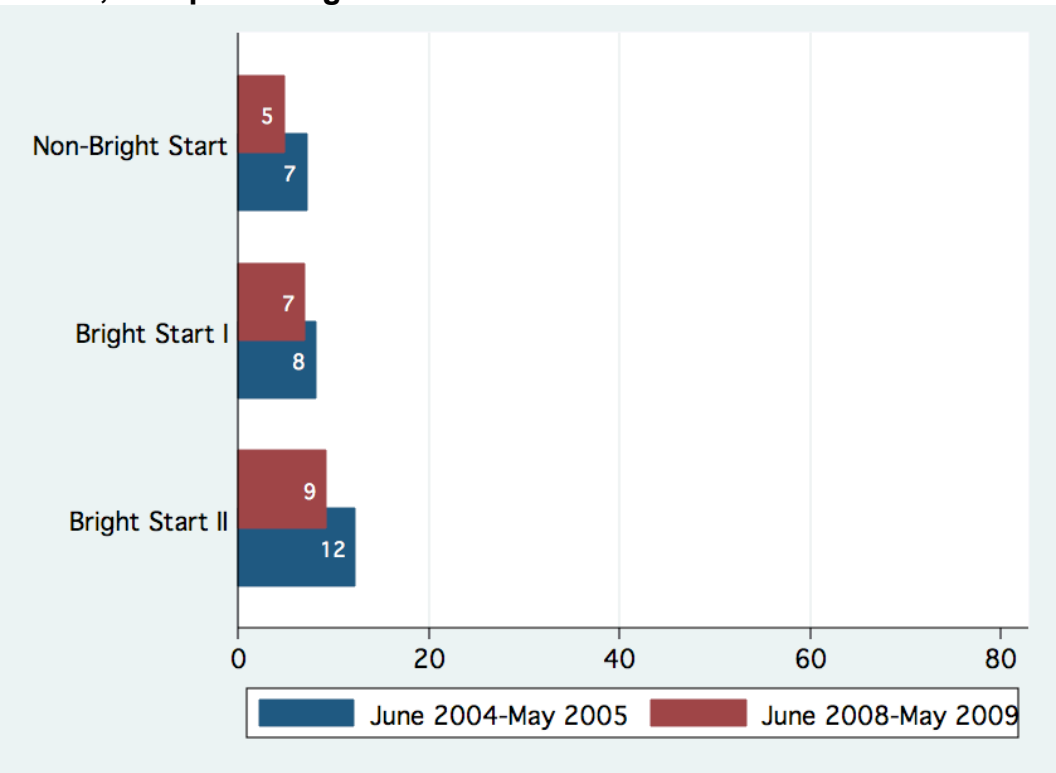
It is important to note, however that while community-based paternity establishment has decreased, it has decreased in nearly every region while *total* paternity establishment rates increased. Thus, shifts between community-based and hospital-based paternity establishment do not account for the total increase in hospital-based establishment.

Figure 2-3: Community-based paternity establishment by region as a percentage of unmarried births



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 2-4: Community-based paternity establishment by hospital cohort, as a percentage of unmarried births



Source: ECONorthwest analysis of Washington Department of Health birth record data

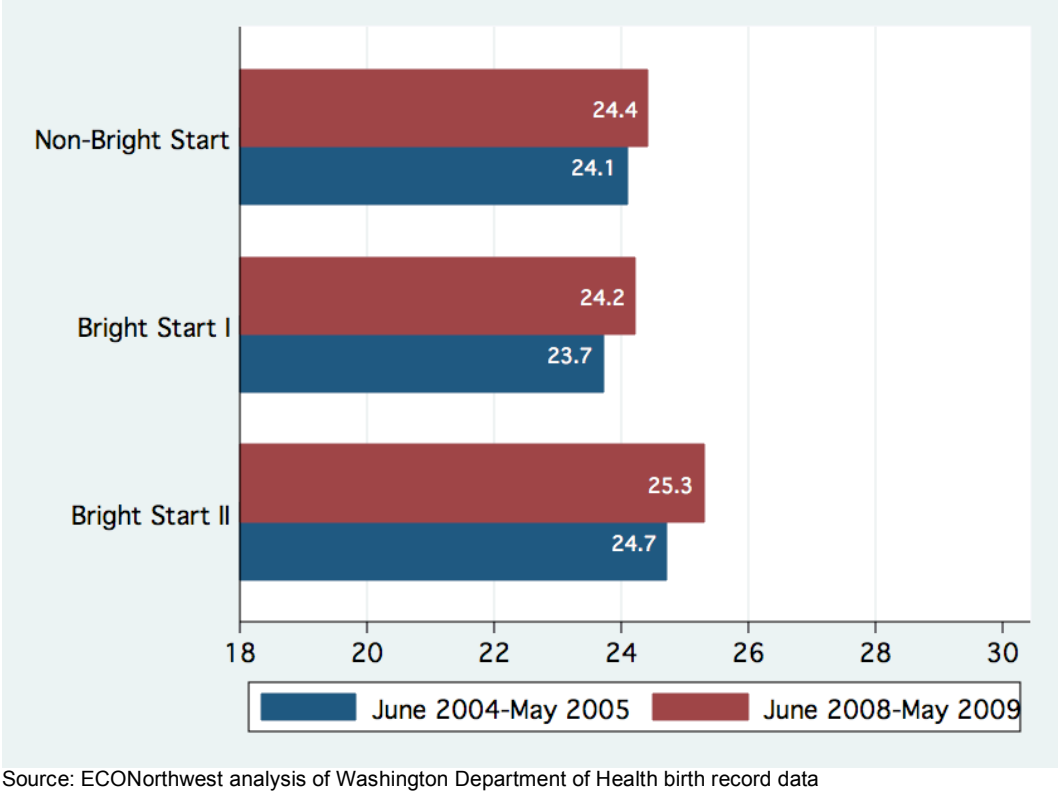
Chapter 3 Changes in Demographics

This section illustrates the changes in demographics across regions and within three different hospital cohorts, pre- and post-implementation of the Bright Start program in eight of the most important predictors of paternity establishment identified: (1) mother's age, (2) residential tenure, (3) number of other living children, (4) race, ethnicity, (5) education, (6) source of payment for birth, (7) employment status, and (8) completeness of birth record data relating to these indicators. Understanding how these factors have changed over time in Washington provides some insight into changing trends in paternity establishment. We also show changes in these factors over time separately for Bright Start and non-Bright Start hospitals. Throughout, the reported statistics exclude births for which data are missing. For example, the education section excludes births for which the hospital failed to record the mother's education.

MOTHER'S AGE

Figure 3-1 shows the average age of mothers at the time of birth, pre- and post-implementation, for each hospital cohort. The average age in the Bright Start II cohort was slightly higher than the other two cohorts. Overall, average age did not change significantly between the pre- and post-implementation time periods.

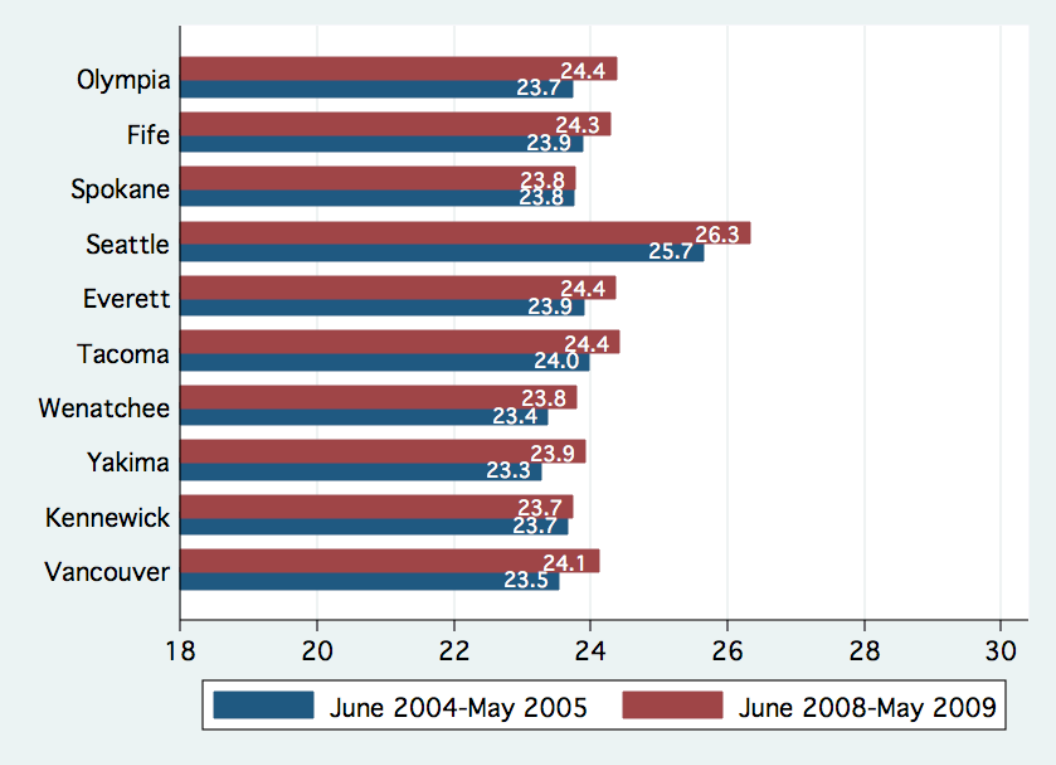
Figure 3-1: Average age of unmarried mothers at time of birth by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-2 shows the average age of a mother at the time of birth, pre- and post-implementation, by DCS region. Across all regions, the average age of mothers at the time of birth did not change significantly pre- and post-implementation. Mothers in the Seattle region are older, on average, than mothers from other regions. In general, however, as noted in earlier reports, the age of unmarried mothers does not vary dramatically across hospitals and therefore does not contribute greatly to differences in hospital-based paternity establishment rates.

Figure 3-2: Average age of unmarried mothers at time of birth, by region



Source: ECONorthwest analysis of Washington Department of Health birth record data

EMPLOYMENT STATUS

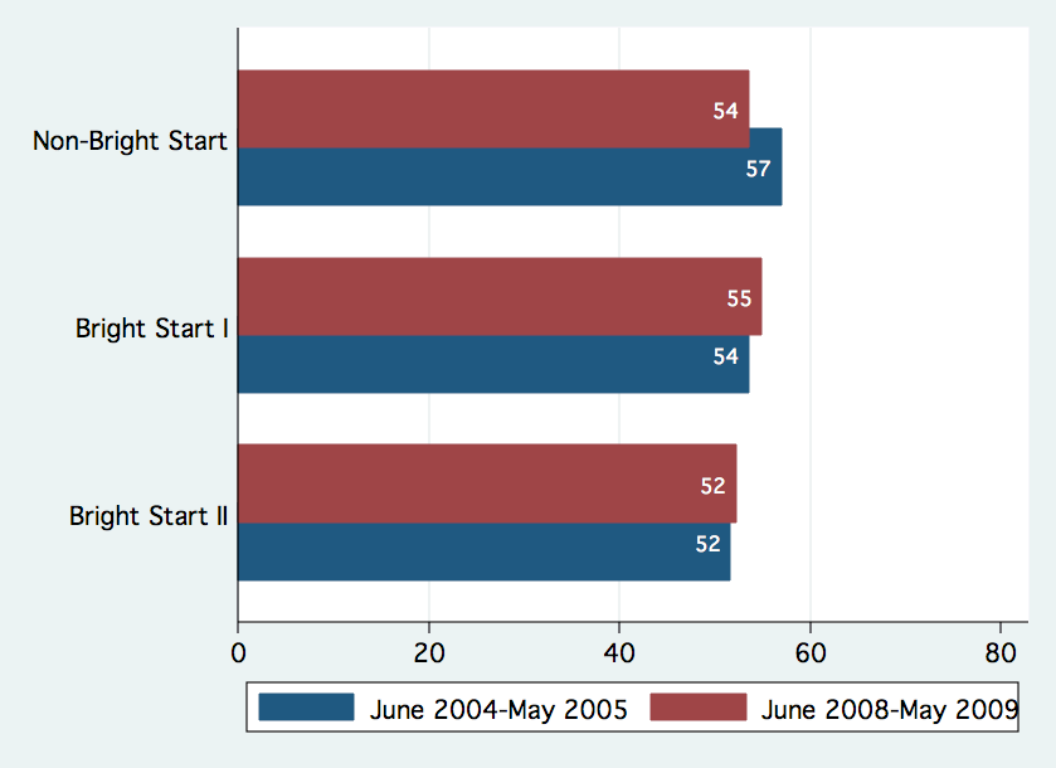
Employment status is the most obvious indicator of socioeconomic status. While DOH birth records include a field for the mother's specific occupation and industry of employment, there did not appear to be a standardized classification system for occupation or industry, such as the North American Industry Classification System (NAICS) or the Standard Occupational Classification System (SOC). The employment data ECO analyzed included thousands of distinct values for these data elements. We therefore relied on a simple indicator of employment: whether the birth record listed an industry or occupation that suggested employment (e.g., we excluded occupations listed as a variation on "homemaker").

Figure 3-3 shows the employment status of unmarried mothers, pre- and post-implementation, for each hospital cohort. The Bright Start I cohort experienced a

slight increase in the share of employed mothers while the non-Bright Start cohort saw a slight decline. The Bright Start II cohort stayed the same.

Given the decrease in employed mothers, the non-Bright Start hospitals might expect to have a slightly lower rate of paternity establishment. The Bright Start I cohort might expect to have slightly higher rate of paternity establishment, due to the increase in employed mothers.

Figure 3-3: Percentage of unmarried mothers giving birth who were employed, by hospital cohort

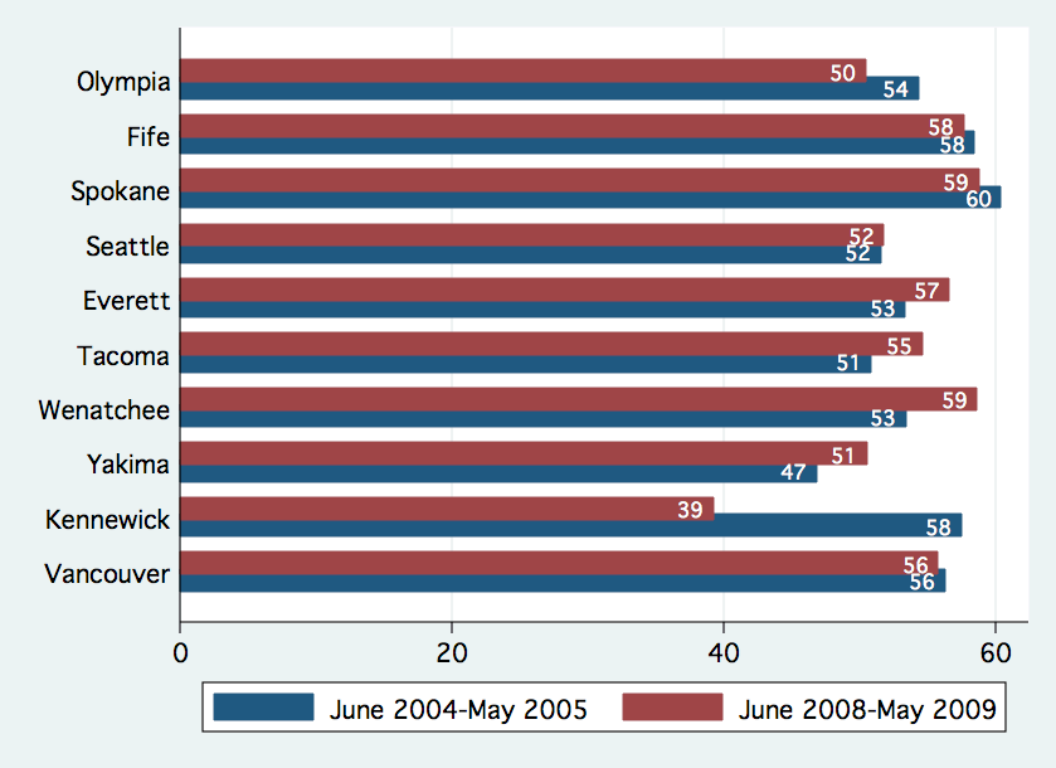


Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-4 shows the status of employment for unmarried mothers by region. Between pre- and post-implementation, some regions saw increases in the share of mothers giving birth who were employed (Everett, Tacoma, Wenatchee, and Yakima) while others saw decreases in the share of mothers who were employed (Kennewick, Olympia, Fife).

Our regression results indicate that regions with a greater share of employed mothers will have higher paternity establishment rates, all else equal. Because of the variation in how carefully hospitals fill out birth record data, however, some of the observed change may reflect changing data entry procedures, rather than a true shift in the employment status of unmarried mothers.

Figure 3-4: Percentage of unmarried mothers giving birth who were employed, by region



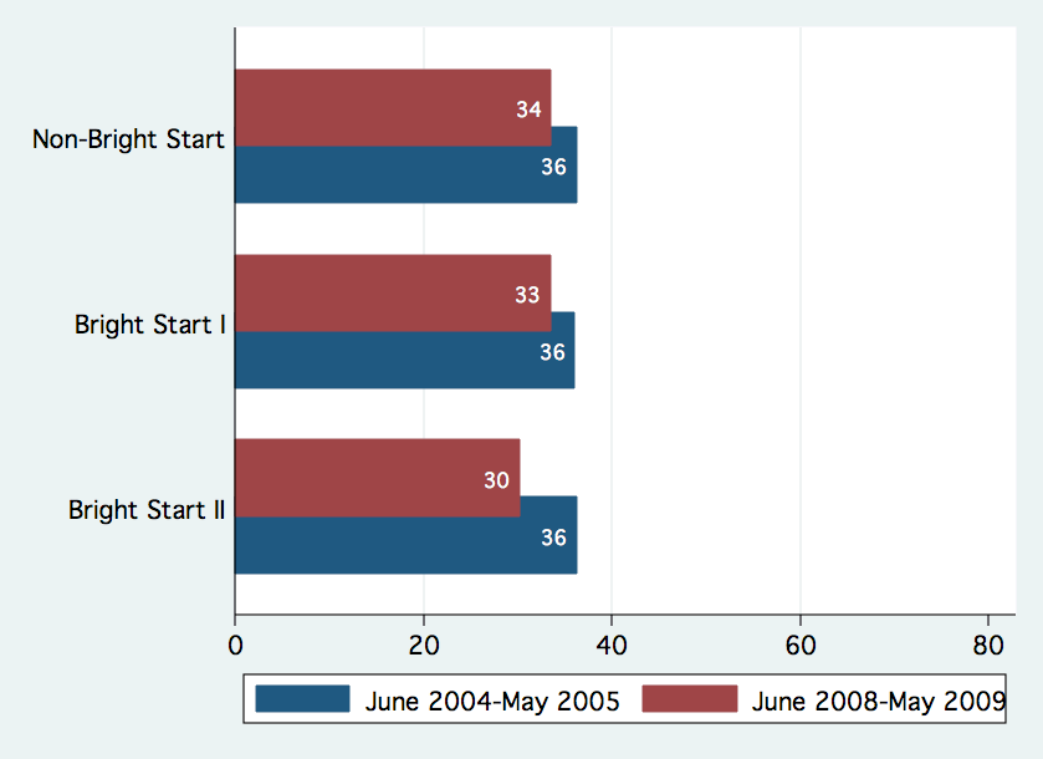
Source: ECONorthwest analysis of Washington Department of Health birth record data

RESIDENTIAL TENURE

Figure 3-5 and 3-6 present data about a characteristic often related to labor market engagement: the length of time a mother had lived at her place of residence at the time of her child's birth. Residential tenure suggests the relative stability of a mother's living situation and tends to be longer the older the mother. Our analysis indicates that a mother who had lived at her residence for six months or less had a decreased likelihood of hospital-based paternity establishment. Figure 3-5 shows the share of unmarried mothers who had lived at their residence for six months or less at the time of birth, by hospital cohort. Figure 3-6 is organized by region. All three cohorts and all regions saw declines in the share of mothers with relatively short tenure.

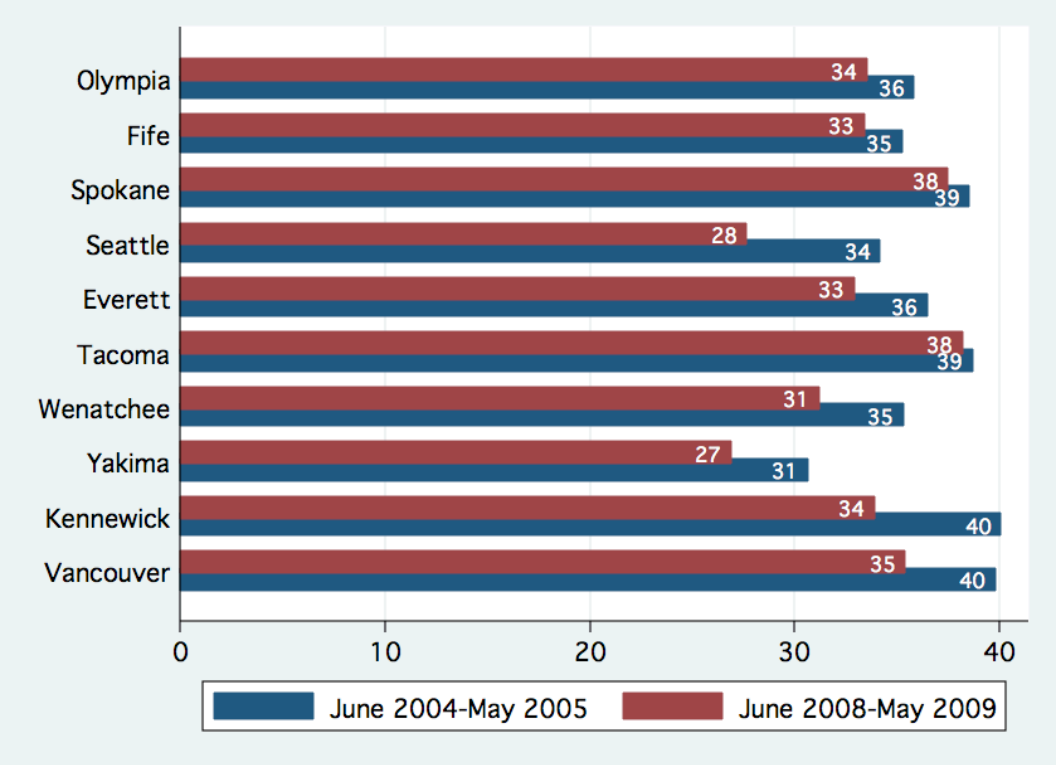
A decrease in the share of mothers who lived at their residence for a short period of time suggests increased stability in the living arrangement. These results suggest that this change has contributed to an increase in paternity establishment.

Figure 3-5: Percentage of unmarried mothers who had lived at their residence for six-months or less at the time of birth, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-6: Percentage of unmarried mothers who had lived at their residence for six-months or less at the time of birth, by region



Source: ECONorthwest analysis of Washington Department of Health birth record data

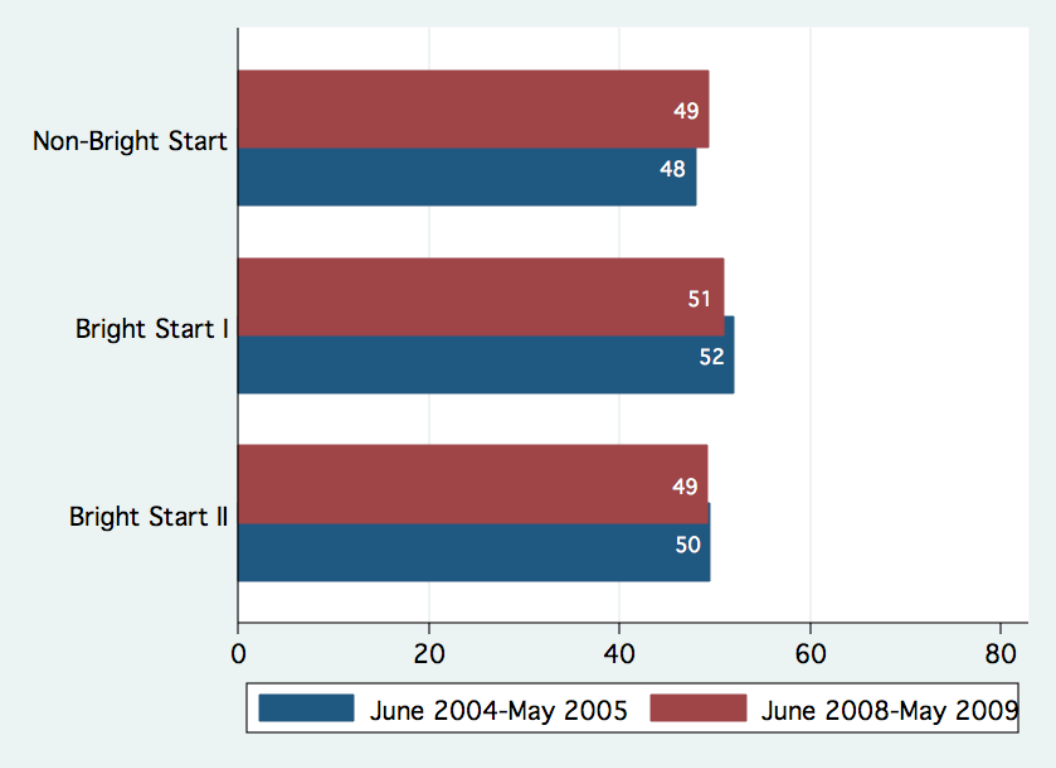
OTHER CHILDREN

Another indicator of attitudes with respect to paternity is whether a mother had other living children at the time of her new baby's birth. Regardless of the paternity status of earlier children, these mothers likely have less concern about establishing paternity immediately after birth than mothers giving birth for the first time, and babies born to these mothers are indeed less likely to have paternity established through hospital-based paternity programs.

Figure 3-7 shows the share of unmarried mothers who reported having other living children at the time of birth. The Bright Start I and II cohorts saw one percentage point declines in the share of mothers who had other living children between pre- and post-implementation, while the non-Bright Start cohort saw a one percentage point increase.

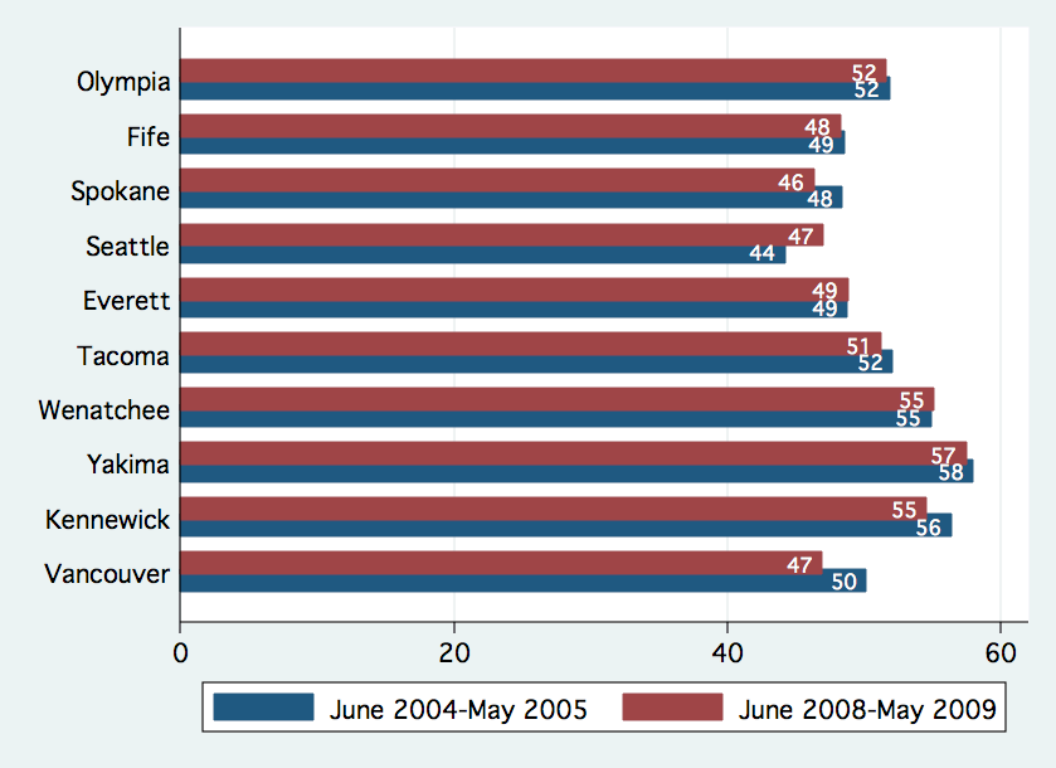
Figure 3-8 shows the share of unmarried mothers who reported having other children at the time of birth, by region. Some regions saw no change, others saw slight declines (Vancouver, Spokane) while the Seattle region saw an increase. A decline in the share of mothers with other living children indicates a higher percentage of first births in some regions. These results suggest that this change has contributed to the overall increase in paternity establishment.

Figure 3-7: Percentage of unmarried mothers who have other living children, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-8: Percentage of unmarried mothers who have other living children, by region

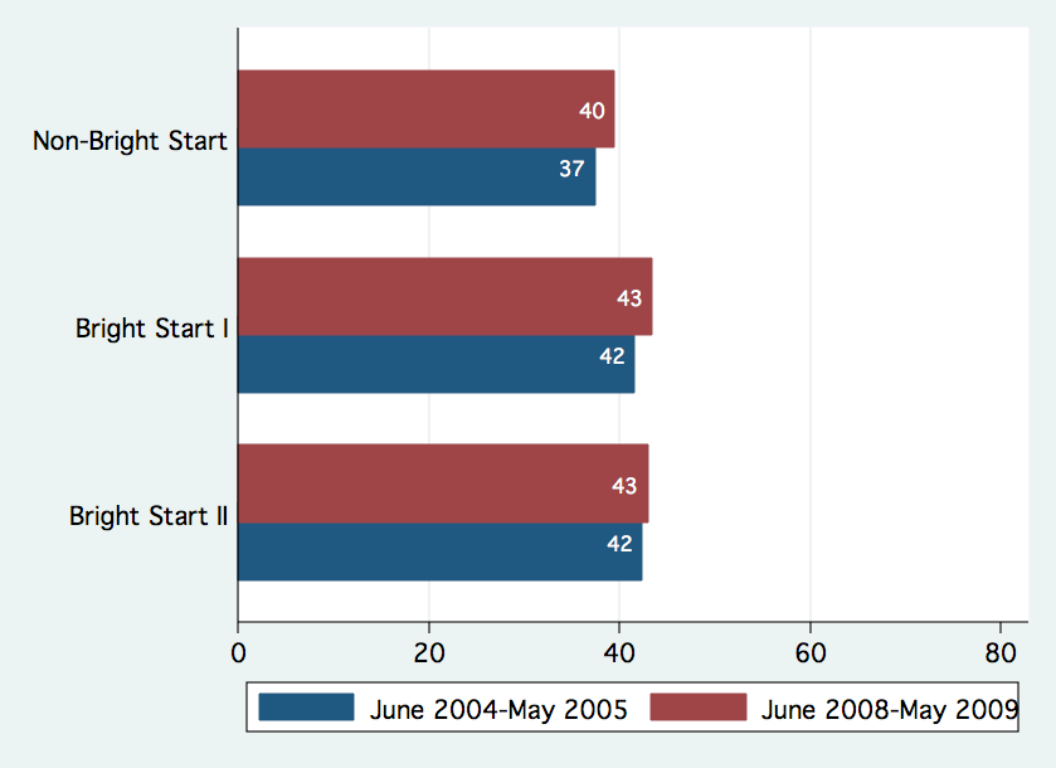


Source: ECONorthwest analysis of Washington Department of Health birth record data

RACE AND ETHNICITY

Figure 3-9 shows the share of unmarried mothers who identified as non-white, pre- and post-implementation, for the three hospital cohorts. Of the characteristics analyzed in our regression analysis, the largest effect corresponds to the race of an unmarried mother. As described in our original report, unmarried African American mothers give birth to children who are, all else equal, over 16 percentage points less likely to have paternity established through the birth hospital. The children of mothers who identify as American Indian or a combination of races are also less likely to have paternity established, but the impacts are smaller, at an average of two to five percentage point reductions. The share of mothers who are non-white varies considerably across and within each DCS region, with a non-trivial impact on paternity establishment rates. Figure 3-9 shows a slight increase in mothers who identify as non-white between pre- and post-implementation for each hospital cohort.

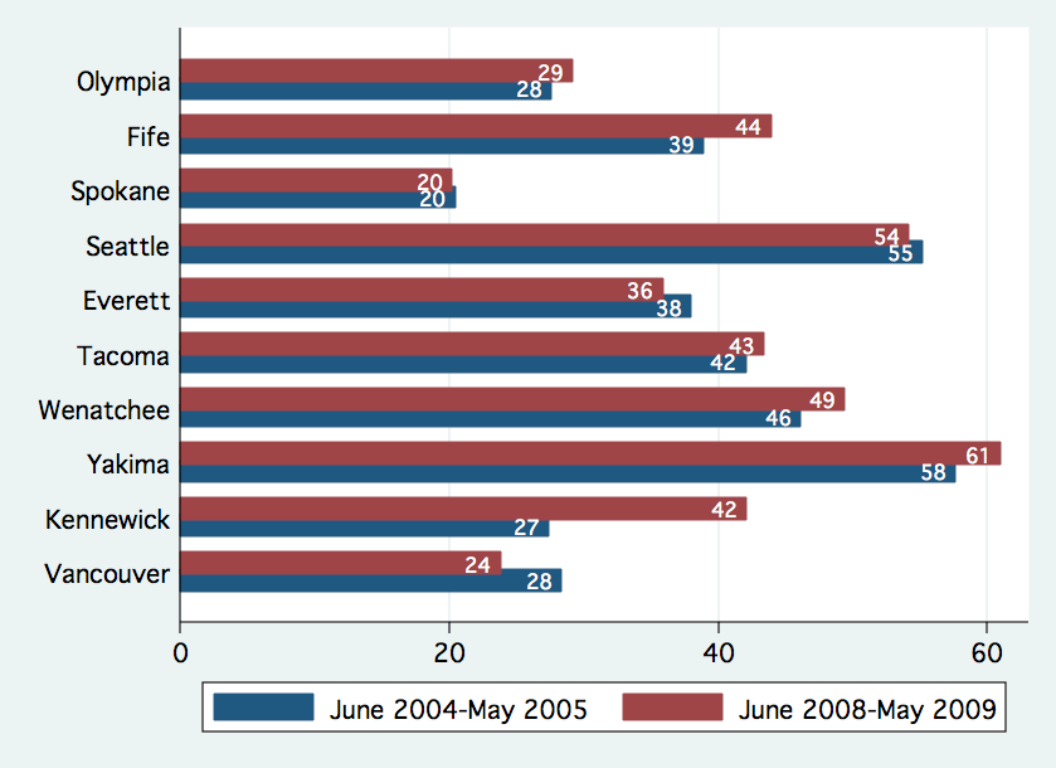
Figure 3-9: Percentage of unmarried mothers who identified as non-white, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-10 shows the share of mothers who identify as non-white, pre- and post implementation for all DCS regions. It shows increases in six of the ten DCS regions, with significant increases in the Kennewick and Fife regions. In most cases, the impact of even these changes on paternity establishment, however, has likely been less than that of the variation across regions and individual hospitals within regions.

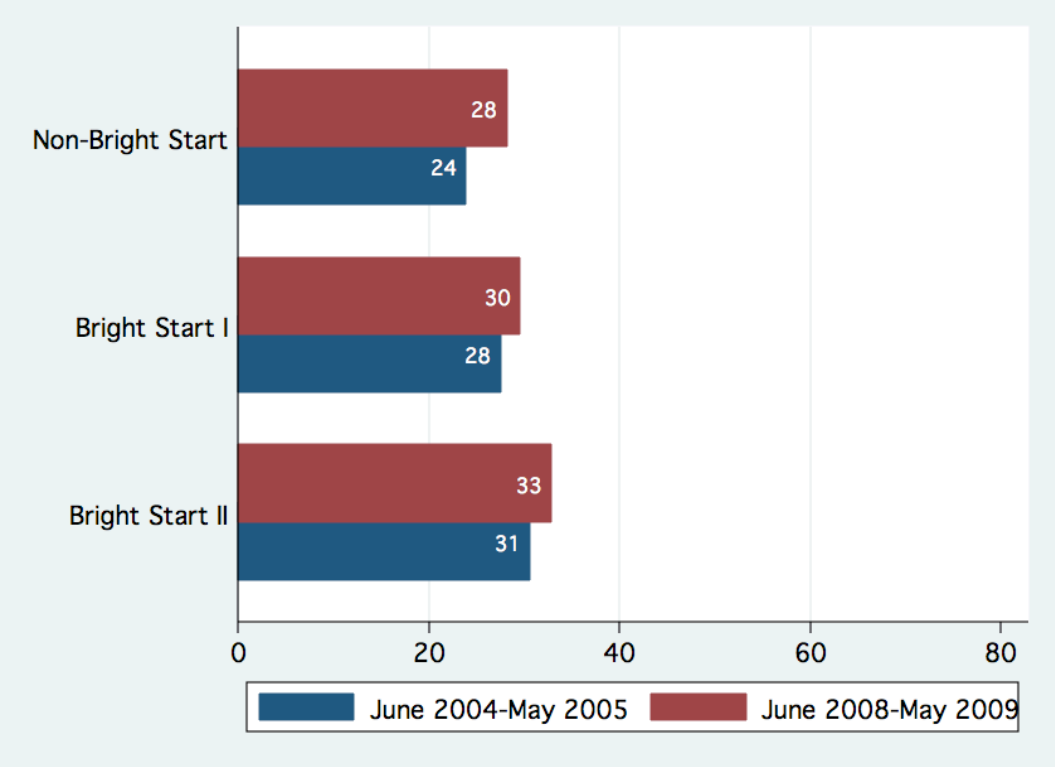
Figure 3-10: Percentage of unmarried mothers who identify as non-white, by region



Source: ECONorthwest analysis of Washington Department of Health birth record data

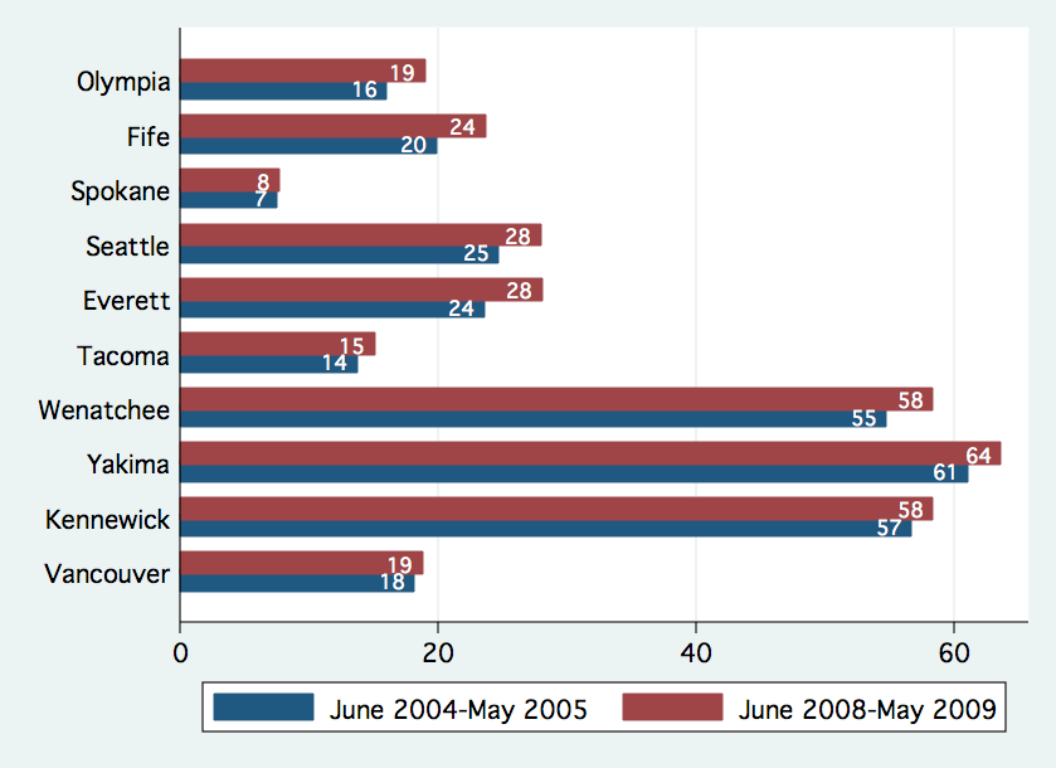
Figures 3-11 and 3-12 show the share of unmarried mothers who identified as Hispanic for the three hospital cohorts and by DCS region. All three cohorts and all regions saw an increase between pre- and post-implementation of Bright Start. Our regression results imply that this shift has increased the in-hospital paternity establishment rate slightly.

Figure 3-11: Percentage of unmarried mothers who identified as Hispanic, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-12: Percentage of unmarried mothers who identified as Hispanic, by region



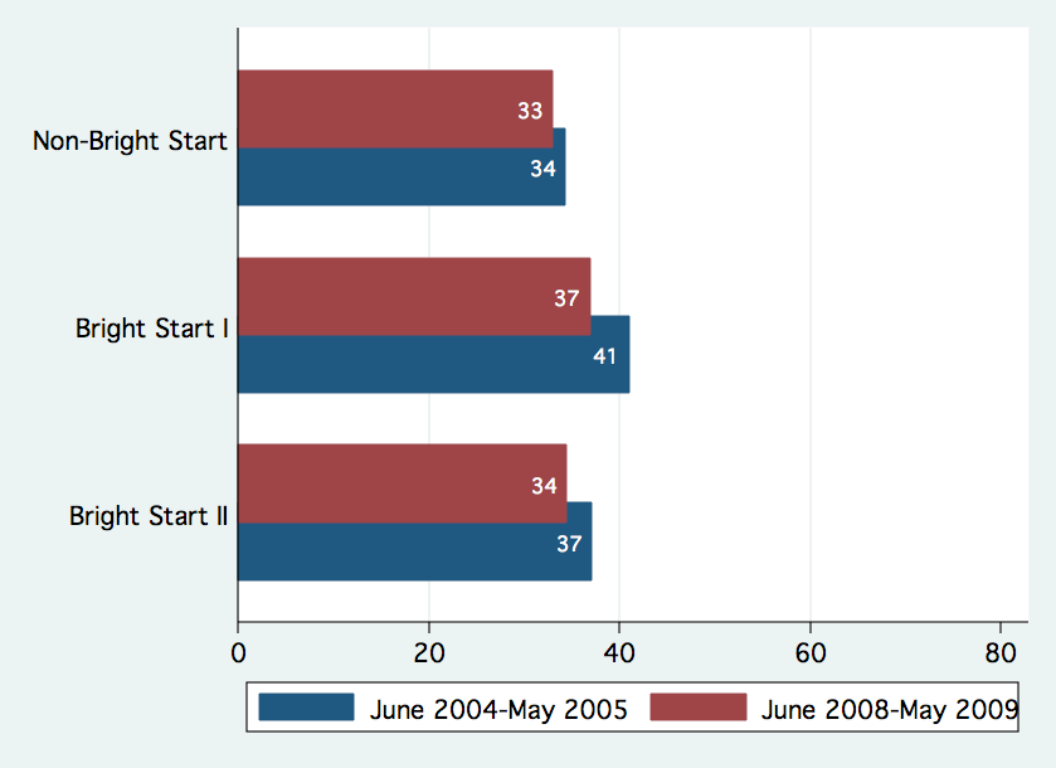
Source: ECONorthwest analysis of Washington Department of Health birth record data

EDUCATIONAL ATTAINMENT

In our original report, we noted that a mother's educational attainment produced an effect on the probability of a hospital-based paternity establishment. Mothers without a high school diploma were six percentage points less likely to have paternity established for their children than were mothers with a high school education or better. The effect was smaller than that of being African American, but mothers without a high school diploma accounted for a larger share of unmarried mothers.

Figure 3-13 shows the share of unmarried mothers who had not graduated from high school, pre-and post-implementation of Bright Start, by hospital cohort. All three cohorts saw a decline in the share of mothers without a high school diploma.

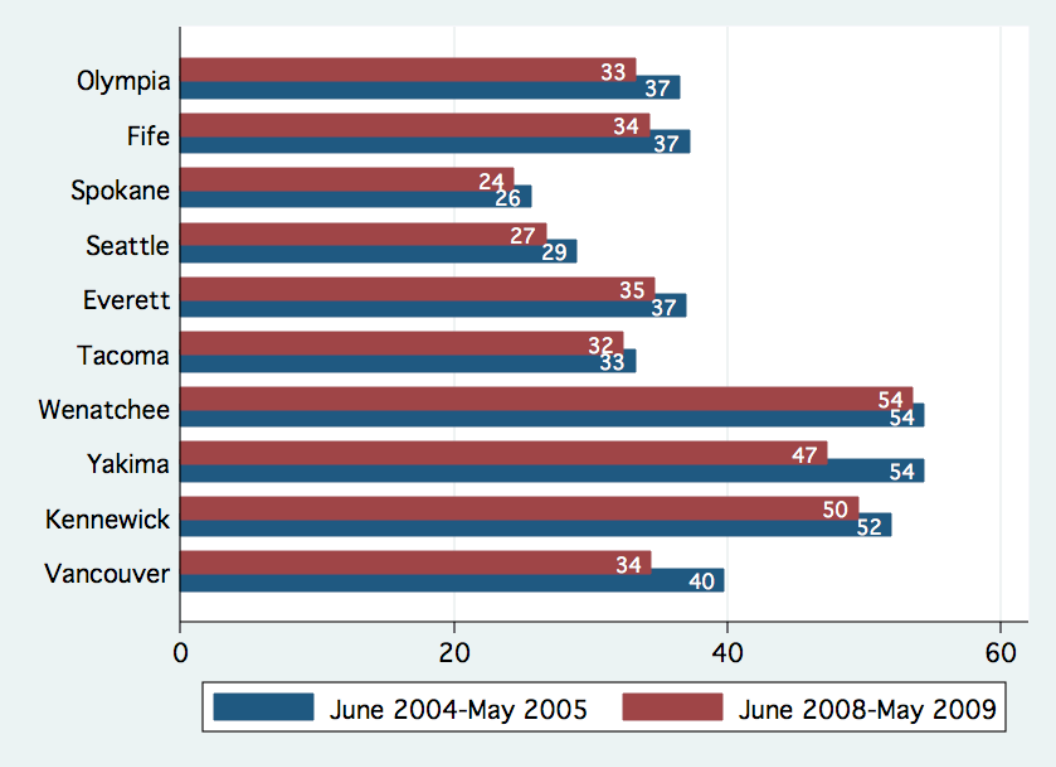
Figure 3-13: Percentage of unmarried mothers who had not graduated from high school, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-14 shows the share of unmarried mothers who had not graduated from high school, pre- and post-implementation of Bright Start for all DCS regions. The share of mothers without a high school diploma decreased in all regions. These results suggest that changes in this demographic indicator have contributed to the overall increase in paternity establishment.

Figure 3-14: Percentage of unmarried mothers who had not graduated from high school, by region



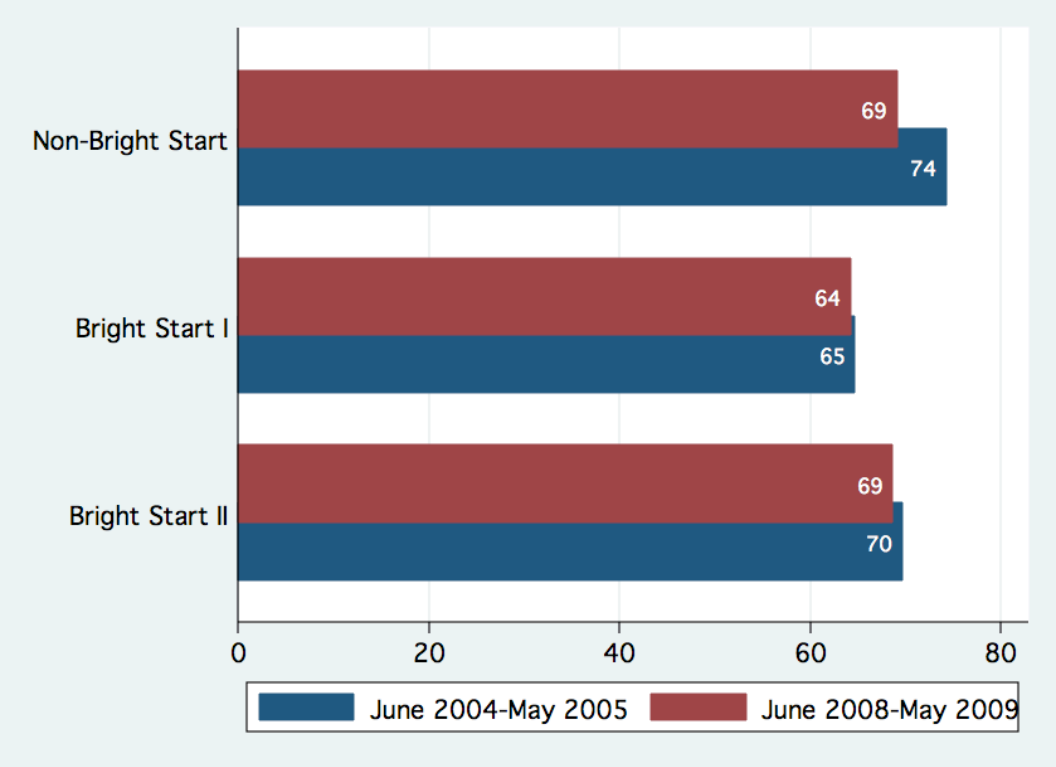
Source: ECONorthwest analysis of Washington Department of Health birth record data

MEDICAID

Concentrations of poverty and low educational attainment often coincide, with the result that low educational status typically correlates with participation in public assistance programs as well. In our original report, we found that low socioeconomic status, as measured by employment, educational attainment, and receipt of Medicaid all have independent, statistically significant impacts on paternity establishment. The impact of receiving Medicaid benefits was small compared to that of race and ethnicity, about equal in magnitude to the impacts of unemployment or short residential tenure. But the relatively large number of Medicaid recipients compared to the number of, for example, African American suggested a large role for Medicaid receipt in predicting paternity establishment. Of course, Medicaid itself is not likely to cause a decrease in paternity establishment. Instead, some unobserved factor common to many Medicaid mothers likely drives the Medicaid impact estimate.

Figure 3-15 shows the share of mothers receiving Medicaid benefits, pre- and post-implementation of Bright Start for each hospital cohort. The three hospital cohorts saw slight declines in the share of mothers receiving Medicaid benefits, likely pushing paternity establishment up slightly.

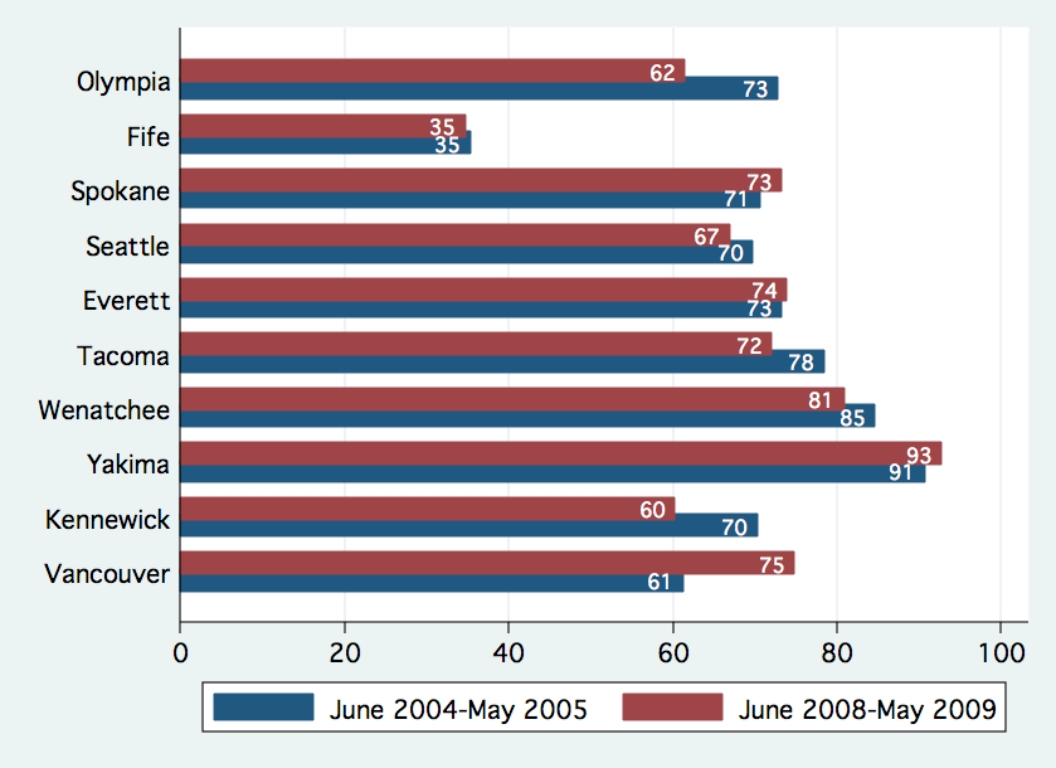
Figure 3-15: Percentage of unmarried mothers receiving Medicaid benefits, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

Figure 3-16 shows the share of mothers receiving Medicaid benefits, pre- and post-implementation of Bright Start for all DCS regions. Three regions saw increases (Vancouver, Yakima, and Spokane). While not consistent across all regions, a decline in mothers receiving Medicaid benefits may contribute to the overall increase in paternity establishment.

Figure 3-16: Percentage of unmarried mothers receiving Medicaid benefits, by region



Source: ECONorthwest analysis of Washington Department of Health birth record data

HOSPITAL OPERATIONS

The characteristics discussed above are all attributes over which hospitals have little direct control. Understanding differences in these characteristics and their impact on paternity establishment helps to develop appropriate hospital performance benchmarks, and may help individual hospitals better focus paternity outreach, but do not explain all of the dramatic disparities in paternity establishment rates observed across Washington.

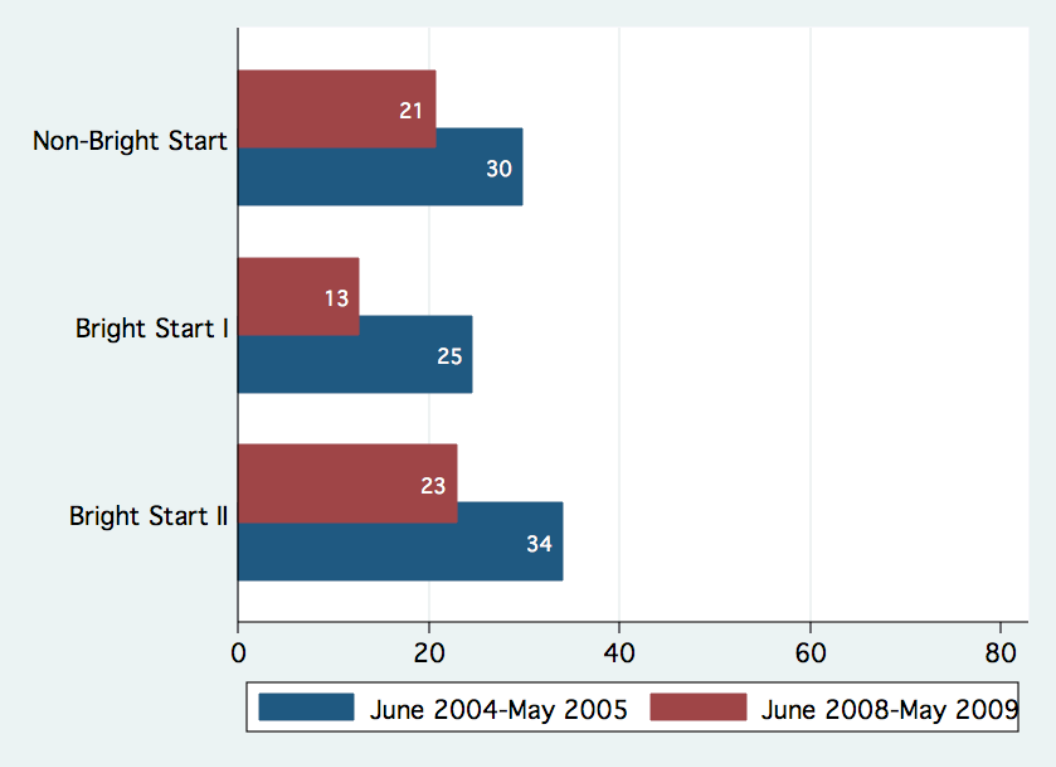
One indicator that does help to explain the remaining variation in performance is the relative completeness of birth record information from each hospital. Missing data does not cause changes in how parents approach paternity establishment. Rather, omissions suggest either that parents were uninterested or unwilling to answer certain questions or that hospital staff were less than thorough in filling out birth record forms. We have not conducted a detailed investigation into hospital recordkeeping for the Bright Start evaluation, so we do not attempt to explain why specific data are, or are not recorded. But we can measure the completeness of the data and observe how completeness has changed over time.

Regardless of the underlying cause, however, the pattern of missing data observed across hospitals suggests two important conclusions: (1) fathers of children whose birth records lack data for one or more of the characteristics discussed here are less likely to establish paternity through the hospital-based program and (2) birth

records associated with low-performing hospitals tend to have more missing data than those associated with better-performing hospitals.

Figure 3-17 shows the number of birth records with missing data fields for the three hospital cohorts. All three cohorts showed significant declines between pre- and post-implementation of the Bright Start Program. We note that some of the observed changes in demographics described above may reflect improvements in the data entry rather than actual shifts on the demographics. Such improvements in data entry may correspond to greater attention to paternity, increasing the rate of paternity establishment, consistent with our regression results.

Figure 3-17: Percentage of birth records with one or more key data fields coded as missing or unknown, as a percentage of all unmarried births, by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

REGRESSION ANALYSIS

As part of the evaluation, we developed individual hospital performance benchmarks that predicted an in-hospital paternity establishment benchmark based on the demographic characteristics of a hospital's unmarried mothers. We established the benchmark to indicate what hospital performance would be if the hospital's paternity affidavit program were operating at the 75th percentile of "effort"—our catchall term for the institutional characteristics that lead to successful paternity programs. Constructing these performance benchmarks requires understanding how much of the observed performance variation is due to patient characteristics and how much to hospital processes and effort. Doing so requires using statistical analysis to isolate the independent impact of key

characteristics. Our approach is to estimate a *probit* regression model to uncover the relative importance of patient characteristics and hospital effort. In broad terms, our results demonstrate that demographics matter, that missing data indicate something important, and that, even after controlling for all of these effects, unmarried births at some hospitals are much less likely to have paternity established than births at other hospitals.

The residual hospital impact is due to a combination of all characteristics other than the demographic characteristics explicitly included in the regression model, although site visits and other information strongly suggest that a major component of this residual is indeed related to hospital processes and the enthusiasm with which hospital staff approach paternity establishment for newborns—in other words, hospital "effort."

Our estimates for the impact of demographics on paternity establishment have not changed significantly from our 2008 report. Table 3-1 displays the estimated impact of each characteristic identified in Section 1, and shows the percentage of the births analyzed with the associated characteristic.

Table 3-1: Impact of selected characteristics on hospital-based paternity establishment and percentage of unmarried births with each characteristic, January 2004 to April 2008

Characteristic	Impact (percentage point change relative to baseline)	Percentage of unmarried births with characteristic*
Age <18	-15.4	7.2%
Age 18-21	-3.7	30.0%
Age 22-30 (baseline)	0.0	47.6%
Age 31-40	-2.6	14.3%
Age 41+	-9.9	1.0%
Employment	3.2	52.8%
Residence tenure 0-6 months	-2.6	34.7%
Other living children	-4.3	49.8%
African American	-15.1	6.3%
American Indian	-4.3	4.1%
Asian/Pacific Islander	0.0	5.2%
Other race or combination	-1.3	25.4%
Hispanic	7.9	28.7%
No HS diploma	-5.5	36.1%
Medicaid	-3.3	68.6%
One or more data elements missing	-2.3 to -7.2	23.6%

Source: ECONorthwest analysis of Washington Department of Health birth record data

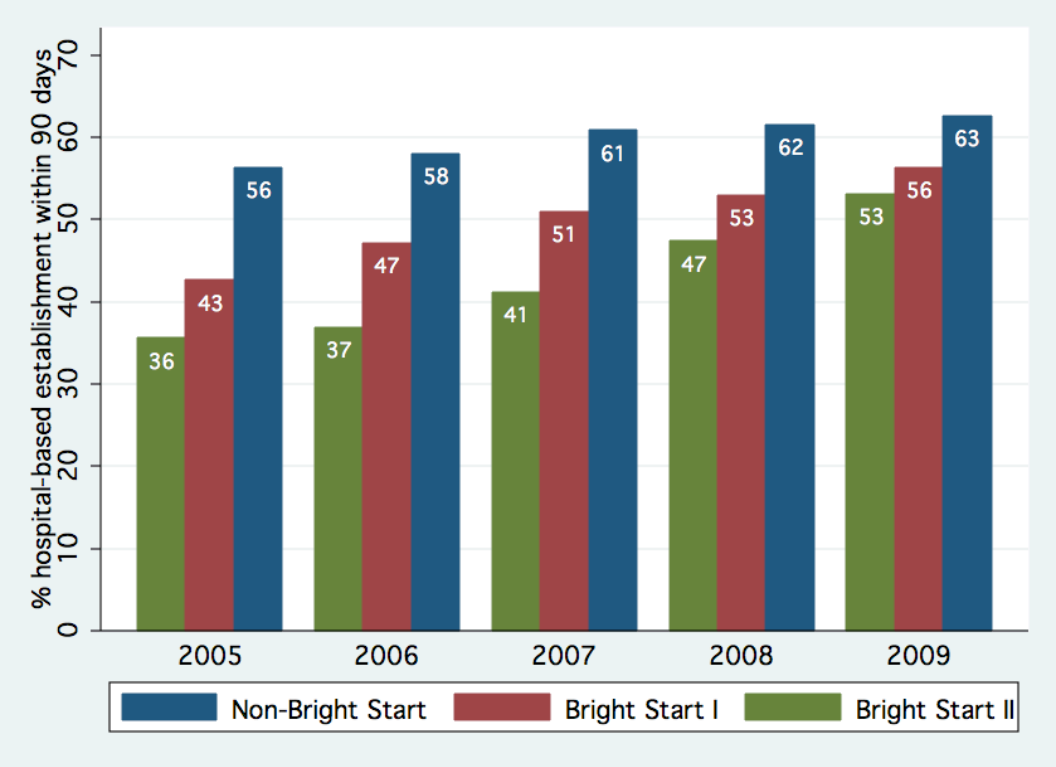
As in the earlier report, we identify the impact of Bright Start on hospital-based paternity establishment by statistically accounting for differences in mothers'

demographic characteristics across hospitals. In essence, we use the regression model to identify any systematic difference in hospital effort common to Bright Start hospitals, but not present prior to Bright Start or in non-Bright Start hospitals. We attribute this difference to the program.

Chapter 4 Impact Estimates

Figure 4-1 summarizes the total hospital-based paternity establishment over time, by hospital cohort. During the analysis time period (2005–2009), the voluntary paternity establishment rate grew steadily in each of the three hospital cohorts. By design, the Bright Start II hospitals were lower performers to begin with, as clearly illustrated in the figure. They also caught up more quickly than did the Bright Start I hospitals, demonstrating a 17 percentage point increase in paternity establishment, compared to 13 percentage points in the Bright Start I hospitals, and a seven percentage point increase in non-Bright Start hospitals statewide.

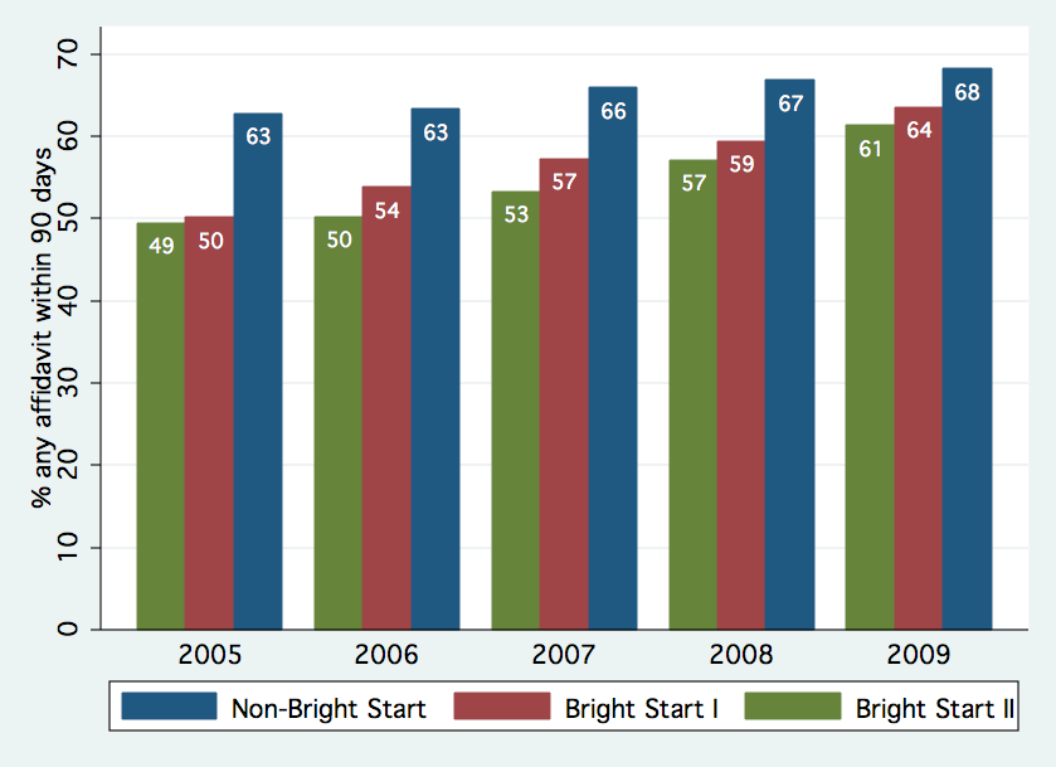
Figure 4-1: Hospital-based paternity establishment within 90 days of birth, over time and by hospital cohort



Source: ECONorthwest analysis of Washington Department of Health birth record data

As noted earlier, one possibility is that Bright Start has increased hospital-based establishment by reducing other types of administrative establishment. While this may have occurred to some extent, Figure 4-2 demonstrates that trends in overall administrative establishments closely resemble those of hospital-based establishment, indicating that the programs still generated a net increase in establishments. Hospital-based establishments typically occur earlier, as well, suggesting benefits of a strong hospital-based program even if the result is fewer signed paternity affidavits from other sources.

Figure 4-2: Administrative paternity establishment rate within 90 days of birth, over time and by hospital cohort

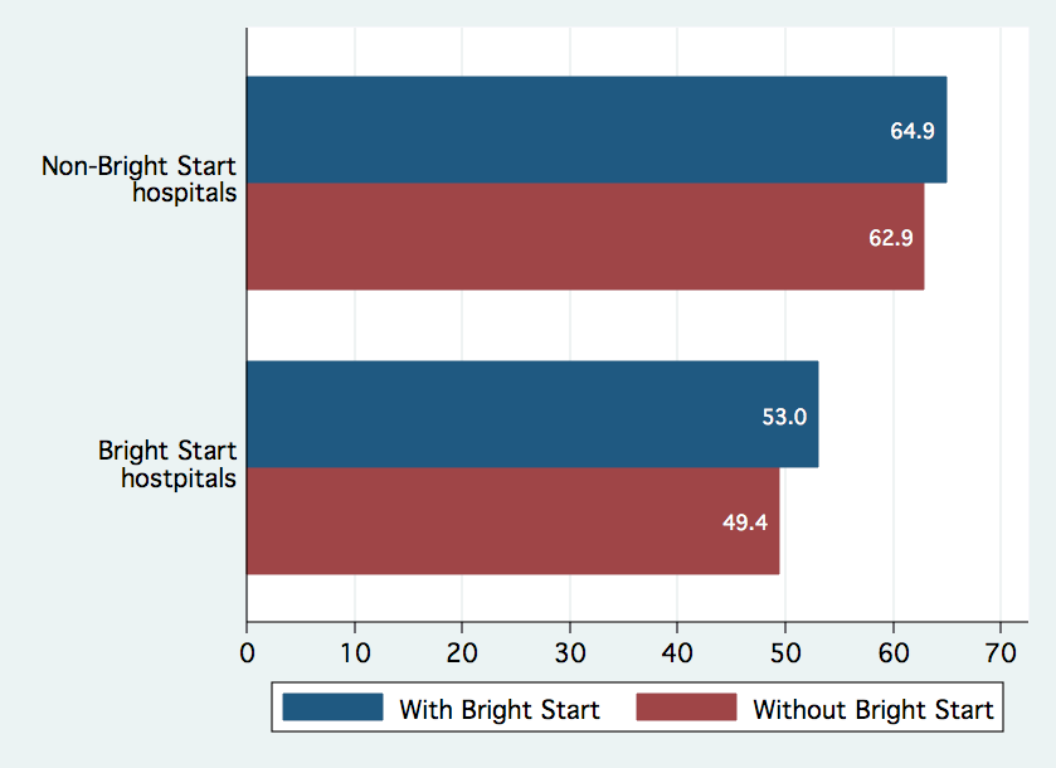


Source: ECONorthwest analysis of Washington Department of Health birth record data

The upward trend in paternity establishment across the state indicates that we cannot attribute the entire change in establishment rates at Bright Start hospitals to the program. The regression analysis nonetheless supports a strong program impact. Figure 4-3 displays actual and simulated paternity establishment rates for all Bright Start hospitals combined and for all non-Bright hospitals.

Because our analysis identifies a strong dependence of program impact on a hospital's prior performance and because the Bright Start hospitals were frequently relatively poor performers prior to implementation, Bright Start had a larger impact on these hospitals as a group than we would predict for all non-Bright Start hospitals as a group. Nonetheless, expanding Bright Start services statewide would likely improve paternity establishment rates at many of the Non-Bright Start hospitals. As illustrated in Figure 4-3, we predict that hospital-based paternity establishment at non-Bright Start hospitals would have been two percentage points higher during the early months of 2009 had the hospitals been part of the demonstration.

Figure 4-3: Actual and simulated hospital-based establishment, January-May 2009



Source: ECONorthwest analysis of Washington Department of Health birth record data

About 37,000 babies were born to unmarried mothers at Bright Start hospitals during the demonstration (May 2006-May 2009). Of these, 54.9 percent (about 20,350 in total) had paternity established through the birth hospital within 90 days of birth. We attribute 1,343 (3.6 percent of the total unmarried births) of these signed paternity affidavits to the implementation of Bright Start. We further expect program benefits to continue to accrue as long as these hospitals are able to maintain their current focus on paternity establishment.

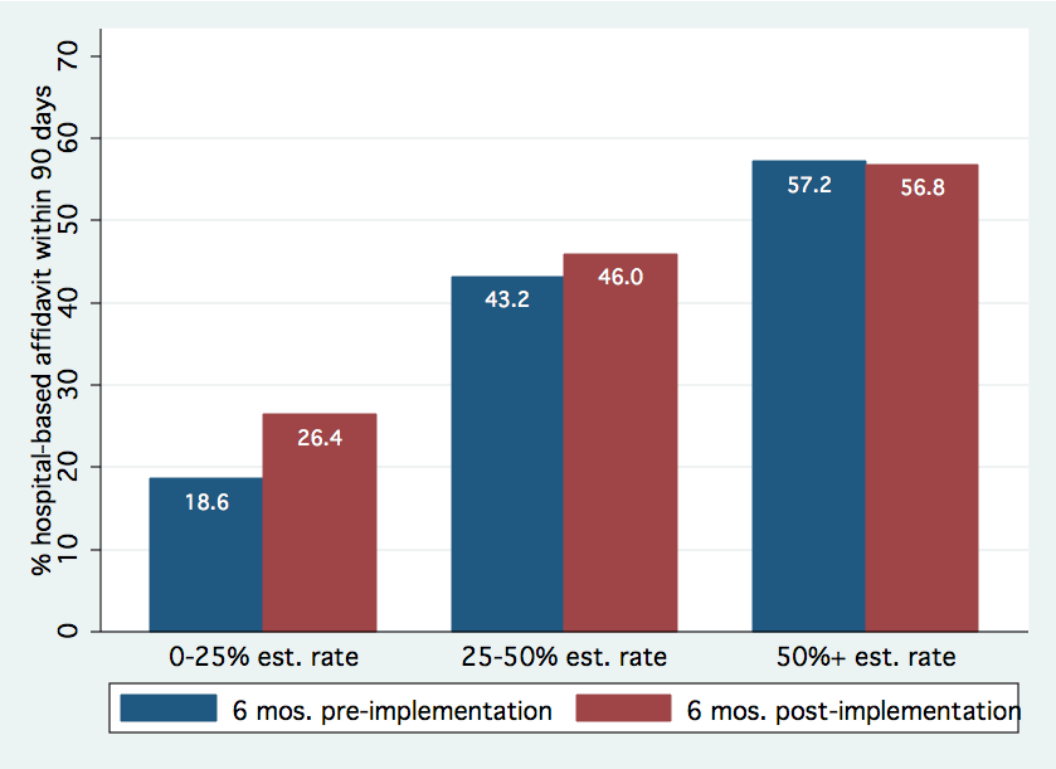
At present, DCS has decentralized responsibility for the paternity affidavit program to the field offices. Differences in how individual field offices approach the program seems to drive some of the differences in hospital performance. Based on our observations of Bright Start, we believe that a centralized program would provide program staff with greater ability to consistently encourage hospital efforts statewide and increase the likelihood that the impact of Bright Start extends well into the future.

We employed statistical analysis to control for other factors that might have differed between Bright Start and non-Bright Start hospitals. Our results support two conclusions: (1) full program implementation takes time and (2) the program impact varied considerably across hospitals. The first conclusion applies fairly generally to implementation of social programs. We estimate that the Bright Start impacts began about six months after hospitals were introduced to the project. That said, data for Bright Start II hospitals suggests that the implementation

period shortens once program staff have an established procedure for approaching hospitals about improving their paternity programs.

The second conclusion is also intuitive. Not surprisingly, previously low-performing Bright Start hospitals showed the greatest gains during the demonstration. Thus, pre-Bright Start performance drives much of the variation in estimated Bright Start impacts. Figure 4-4 compares the in-hospital paternity establishment rates pre- and post-implementation of the Bright Start demonstration program, according to the average hospital establishment rate before implementation. Hospitals with lower establishment rates pre-implementation showed the largest percentage increase, in part because high-performing hospitals had less room for improvement. This result drives the findings illustrated in Figure 3-3 that improvements at non-Bright Start hospitals would have been more modest had they participated in the program.

Figure 4-4: Hospital-based paternity establishment rates during six months pre- and post-implementation, by average hospital establishment rate during 12 months pre-implementation



Source: ECONorthwest analysis of Washington Department of Health birth record data
Note: Bright Start Hospitals only

Chapter 5 Conclusions

This report updates our evaluation findings for the first three years of Bright Start. We focus on the determinants of paternity establishment and Bright Start impacts and on the impacts of the program on each cohort of Bright Start hospitals. The bullets below summarize our findings:

- **Hospital-based paternity establishment.** Total paternity establishment increased during the demonstration. During the analysis time period (2005–2009), the rate of paternity establishment grew steadily in each of the three hospital cohorts, with faster growth at Bright Start hospitals.

- **Hospital vs. Community-based paternity establishment.** Hospital-based paternity establishment increased in all cohorts and regions, while community-based paternity establishment declined in all three cohorts and most regions. Although it is important to note that the overall increase suggests that the decline in community-based paternity establishment is not simply a result of a shift to hospital-based paternity establishment.

- **Changes in demographics.** Demographics did not change significantly over time, although there were some exceptions in a small number of regions. The combined impact of the observed changes in some demographic indicators (employment status, time at residence, educational status) may explain some of the increase in paternity establishment across the state. We also note, however, that some of these demographic changes may reflect improvements in the data entry rather than actual shifts on the demographics—a possible beneficial side effect of Bright Start.

- **Impact of Bright Start.** The analysis suggests that the Bright Start program has a significant impact on the rate of paternity establishment, increasing hospital-based establishment by an average of four percentage points during the Bright Start period. Hospital performance prior to Bright Start drives significant variation in estimated program impacts across demonstration hospitals. Previously low-performing Bright Start hospitals showed the greatest gains during the demonstration. We predict smaller, but still positive gains would have been made at non-Bright Start hospitals had they been part of the demonstration.

- **Recommendations.** The results of this analysis support the recommendations from ECO's 2008 report, with even stronger evidence that focusing on paternity establishment in low-performing hospitals significantly improves performance. Our earlier report expands on our main conclusions:

  - Reestablish a role for a centralized paternity affidavit program and clarify the associated responsibilities of local paternity coordinators.
  - Initiate annual hospital trainings in conjunction with the Department of Health.

- Maintain hospital benchmarking.
- Continue Bright Start's subsidy of notary training costs.
- Help hospitals provide consistent advice about notaries' statutory obligations.
- Continue genetic testing.

The fourth year of data and subsequent analysis has only strengthened our belief. A companion report focused on the genetic testing provides additional analysis of this Bright Start service.