Connecticut's Perinatal and Infant Oral Health Quality Improvement Project: Pregnancy Risk Assessment Monitoring System Data for Evaluation

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INTRODUCTION

The US Department of Health and Human Services (HHS) Health Resources and Services Administration (HRSA) funds state level projects aimed at improving maternal and infant oral health. Connecticut's Perinatal and Infant Oral Health Quality Improvement Project (PIOHQIP) was funded in the first round of the five-year HRSA grant period (2013-2017). The Connecticut Department of Social Services (DSS) conducts this project with its administrative services contractor, the Connecticut Dental Health Partnership (CT DHP).[i] PIOHQIP in Connecticut is focused on improving oral health among pregnant women in low-income families with HUSKY Program (Medicaid and CHIP) coverage.

As part of the project's evaluation, Connecticut reviews data from the Pregnancy Risk Assessment Monitoring System (PRAMS), a periodic survey conducted by the Connecticut Department of Public Health (DPH) in collaboration with the Centers for Disease Control and Prevention (CDC). DPH recently released Connecticut-specific data for births in 2013 and in 2014. These surveys coincide with the very earliest phase of PIOHQIP implementation in Connecticut. However, the data are useful for comparison of statewide oral heath utilization by payer source and as an adjunct to ongoing analyses of Medicaid and HUSKY Program enrollment and claims data.

What is PRAMS?

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing, population-based surveillance system that is administered by the CDC and participating states. Since 1987, PRAMS surveys of new mothers have been an integral part of the CDC's efforts to reduce infant mortality and low birthweight. State-specific PRAMS data are used by state health officials to supplement data from birth certificates for monitoring maternal health and birth outcomes. PRAMS data can be used to measure progress toward program and policy goals for improving maternal and infant health.

The PRAMS survey sample in each state is drawn from among new mothers who had live births in the index year. In each participating state, 1300 to 1400 women are surveyed each year, beginning two to four months after the birth, with oversampling among smaller but higher risk populations (mothers with low weight births, for example). Mothers' responses are added to demographic and medical information from the birth certificate for analysis. The survey is conducted in English and Spanish, by mail (self-administered questionnaire), with telephone follow-up of non-respondents (interviewer-administered questionnaire). PRAMS methodology is standardized to allow for comparisons between states. The sample is large enough for estimating statewide risk factor proportions within 3.5% at the 95% confidence level and for proportions within strata within 5% at the 95% confidence level.

The PRAMS questionnaire generates information that is not available from birth certificates or other readily available sources, based on responses to 59 core questions on the following topics:

- Attitudes and feelings about the most recent pregnancy;
- Content and source of prenatal care;
- Maternal alcohol and tobacco consumption;
- Physical abuse before and during pregnancy;
- Pregnancy-related morbidity;
- Infant health care;
- Contraceptive use after pregnancy; and
- Mother's knowledge of pregnancy-related health issues, such as adverse effects of tobacco and alcohol, benefits of folic acid, and risk of HIV.

Among the core questions, there is one question about oral health knowledge and care during pregnancy. States can add questions of interest from a pretested list of 185 standard questions developed by the CDC and/or questions developed by the state. Among the standard optional questions, there are six questions about oral health and health care.

PRAMS in Connecticut

To supplement data from vital records, the Connecticut Department of Public Health (DPH) began conducting additional maternal health and birth surveillance over ten years ago. The Pregnancy Risk Assessment Tracking System (PRATS) survey was a state-only project developed by DPH and modeled after the CDC's PRAMS survey. The first rounds of the survey were conducted in February-May 2002 and September 2003-January 2004. These two surveys did not include questions about maternal oral health or health care. The third round of PRATS was for births in 2003 and did include questions about oral health and health care.

In 2011, Connecticut was one of three new states funded for PRAMS participation, bringing the total number of participating states to 40, the District of Columbia, and New York City. DPH conducted the its first two PRAMS surveys for Connecticut mothers who gave birth in 2013 and in 2014. If Connecticut receives funding for the next five-year funding cycle, the survey will be conducted annually through 2021.

The PRAMS surveys of Connecticut mothers who gave birth in 2013 and in 2014 included questions on maternal oral health and health care (see text box on the following page). Some of these questions were the same or similar to questions on the 2003 PRATS Round 3 survey of mothers who gave birth in 2003. For additional information about Connecticut PRAMS methods and results, contact Jennifer Morin, PRAMS Project Director-Coordinator, Connecticut Department of Public Health (jennifer.morin@ct.gov).

Connecticut's PRAMS Questions on Maternal Oral Health

Q7: At any time during the 12 months before you got pregnant with your new baby, did you do any of the following things?

h. I had my teeth cleaned by a dentist or dental hygienist.

Q28: This question is about the care of your teeth during your most recent pregnancy. For each item, check No if it is not true or does not apply to you or Yes if it is true.

a. I knew it was important to care for my teeth and gums during my pregnancy
b. A dental or other health care worker talked with me about how to care for my teeth and gums
c. I had my teeth cleaned by a dentist or dental hygienist
d. I had insurance to cover dental care during my pregnancy
e. I needed to see a dentist for a problem
f. I went to a dentist or dental clinic about a problem

Q29. Did any of the following things make it hard for you to go to a dentist or dental clinic about the problem you had during your most recent pregnancy? (Note: skip pattern associated with this question—only mothers reporting that they had a problem with their teeth or gums during pregnancy are included in this analysis).

I could not find a dentist or dental clinic that would take pregnant patients.
I could not find a dentist or dental clinic that would take Medicaid (HUSKY) patients.
I did not think it was safe to go to the dentist during pregnancy.
I could not afford to go to the dentist or dental clinic.

Source: Connecticut Department of Public Health

Births in Connecticut

In Connecticut, the Department of Public Health (DPH) is responsible for birth surveillance and reporting. Each year, vital records provide data used by DPH, state policy makers, and program planners for tracking trends in maternal health (maternal age, prenatal care, complications of pregnancy, mode of delivery, etc.) and birth outcomes (preterm birth, low birthweight, complications of the newborn period, etc.). Birth records do not, however, provide data on other important aspects of pregnancy and birth, such as preconception health, behavioral risk factors, health care during the prenatal and postpartum period, intendedness of pregnancy, or postpartum care.

As part of a larger state-funded program of independent performance monitoring in the HUSKY Program, Connecticut Voices for Children linked birth records with Medicaid and CHIP data for thirteen consecutive years.[ii] Analyses of linked records were used to monitor maternal health and birth outcomes for mothers who gave birth while enrolled in the HUSKY Program or were otherwise covered by Medicaid. Summary data from this record level match show that an increasing percentage of Connecticut births are to mothers with HUSKY Program/Medicaid coverage (Table 1).

Table 1. Connecticut Births

Year	State of Connecticut Number of Live Births to Connecticut Residents[a]	Births to Connecticut Mothers with HUSKY Program (Medicaid & CHIP) Coverage[b]
2000	44,949	25.6%
2001	43,793	26.6%
2002	43,344	27.6%
2003	42,826	28.4%
2004	42,004	30.7%
2005	41,725	32.2%
2006	41,789	33.4%
2007	41,597	34.6%
2008	40,388	37.4%
2009	38,857	37.8%
2010	37,711	38.4%
2011	37,278	40.4%
2012	36,512	40.2%*
2013	36,085	Data not available
2014	36,130	Data not available
2015	Data not available	Data not available
2016	Data not available	Data not available

[a] **Source:** Connecticut Department of Public Health Office of Vital Records annual registration reports.
[b] **Source:** Birth-HUSKY enrollment data linkage, conducted by Connecticut Voices for Children as part of state-funded independent performance monitoring in the HUSKY Program. Reports for 2002-2012 are available at: www.ctvoices.org. Since state funding for this project ended in July 2016, birth and HUSKY Program data have not been linked for monitoring maternal health, birth outcomes, and HUSKY Program performance.
* Percent of in-state births to Connecticut residents (35,595 of 36,085 births).

Maternal Oral Health and Health Care in Connecticut's Medicaid/HUSKY Program

Connecticut's Perinatal and Infant Oral Health Quality Improvement Project (PIOHQIP) was funded by HRSA for a four-year period beginning in October 2013. The project builds on local pilot projects in Waterbury and Norwich that were conducted by CTDHP, beginning in 2009. PIOHQIP identified towns with 80 or more births to mothers with Medicaid coverage and implemented a plan for rolling out the project in those towns over the four-year study period. The aim of the project is to increase access to care and utilization for Connecticut's low-income families through Intensive Community Outreach to trusted people with whom they have a relationship for ongoing care (pediatric primary care physicians, obstetricians/gynecologists, nurse-midwives, and health care providers in community-based clinics). Throughout the grant period, Dental Health Care Specialists contact professional offices and community clinics to inform providers about the project and to urge them to refer their patients to CTDHP for information and assistance (written materials, referrals, supplies for new mothers and infants, etc.), with the objectives of increasing awareness about maternal oral health and providing support for referrals during pregnancy.

PRAMS RESULTS

The PRATS survey and subsequent PRAMS surveys collected information about payer source for births in 2003, and in 2013 and 2014, respectively. These data allow for comparison of utilization for mothers with Medicaid/HUSKY coverage to utilization by privately-insured and uninsured mothers, as well as investigation of trends for mothers with publicly-funded health insurance, including coverage for dental care.[iii] The 2003 PRATS findings pre-date significant changes in Medicaid/HUSKY dental coverage that occurred in 2008.[iv] The 2013-2014 PRAMS findings coincide with the very early phase of PIOHQIP implementation in Connecticut. Data were provided by DPH for evaluation of PIOHQIP project.

The results of the 2003 PRATS survey and pooled results for the 2013-2014 PRAMS surveys are compared in Table 2 for mothers with Medicaid/HUSKY coverage.[v] In both time periods, about two of every three mothers reported having had dental cleanings prior to the pregnancy. Questions about care during pregnancy differed, so the higher rate for mothers in 2013-2014 is likely due to counting care prior to *and* during pregnancy. Only the earlier PRATS survey in 2003 asked about dental cleaning during the postpartum period when about 44 percent of mothers reported having had such care. The percentage of mothers with dental cleanings in 2013 was about the same as in 2014 for those with Medicaid/HUSKY coverage before pregnancy and during pregnancy (data not shown).

PRAMS data for oral health and health care are shown by payer source in Tables 3 and 4 for mothers who gave birth in 2013 and 2014. Insurance status was significantly associated with the likelihood of getting routine dental care (cleanings). Publicly-insured mothers were more likely than uninsured mothers to have had dental cleanings before or during pregnancy. [vi] Publicly-insured mothers were less likely than privately-insured mothers to have had this care. The association with insurance status is born out in questions about knowledge and care among those with health insurance for prenatal care, though some of the differences are not significantly different at the 95% confidence level. Far greater percentages of publicly-insured and uninsured mothers, compared with privately-insured mothers, reported having had dental problems. Correspondingly, more publicly-insured and uninsured mothers reported having had care for a dental problems. Of note, nearly 15 percent of mothers with Medicaid/HUSKY coverage apparently did not know that they had dental insurance while pregnant.

Among <u>all</u> mothers--including those who were uninsured and those with public or private coverage--access to care was a problem for some of those who had trouble with their teeth or gums during pregnancy. Eleven percent of those with oral health problems reported that they could not find a dentist or clinic that would take pregnant patients and 9 percent reported that they could not find a dentist or clinic that would take Medicaid/HUSKY patients. About 25 percent reported that they did not think it safe to get dental care during pregnancy. About 18 percent reported that they could not afford dental care. The number of respondents who reported having had problems was not great enough to allow for comparison by payer source.

Table 2. Routine Oral Health Care for Connecticut Mothers with Medicaid/HUSKY Coverage

	PRATS 2003[a]	PRAMS 2013-2014[b]
HAD Medicaid/HUSKY PRIOR TO PREGNANCY		
Received dental cleaning … prior to pregnancy	**66.4%** (NA)	**64.9%** (59.8-69.9%)
HAD Medicaid/HUSKY FOR PRENATAL CARE		
Received dental cleaning … during pregnancy	**37.6%** (NA)	NA
Received dental cleaning … prior to or during pregnancy	**NA**	**71.7%** (67.7-75.7%)
HAD Medicaid/HUSKY FOR DELIVERY		
Received dental cleaning … after pregnancy [c]	**43.8%** (NA)	NA

[a] The Pregnancy Risk Assessment Tracking Survey (PRATS) was a survey of new mothers in Connecticut that was modeled after the CDC's Pregnancy Risk Assessment Survey and conducted by the Connecticut Department of Public Health for births that occurred in 2003.

[b] The Pregnancy Risk Assessment Monitoring Survey (PRAMS) was conducted by the Connecticut Department of Public Health in conjunction with the CDC for births that occurred in 2013 and in 2014. DPH averaged response rates over the two surveys and reported in terms of percent of new mothers who did not receive dental care. For the purposes of this report, the percent of mothers who did receive care was calculated and is shown in this table with the corresponding 95% confidence limit.

[c] Mothers with Medicaid/HUSKY coverage are automatically eligible for coverage until 60 days postpartum; when they had care after giving birth and whether they had coverage after 60 days is unknown.

Source: Connecticut Department of Public Health, 2017.

Table 3 . Routine Oral Health Care by Payer Source: PRAMS, 2013-14

	HEALTH INSURANCE PRIOR TO PREGNANCY		
	Private [a]	**Medicaid/HUSKY**	**Uninsured**
Received dental cleaning … *prior to* pregnancy	**78.6%** (75.7 - 81.5%)	**64.9%** (59.8 - 69.9%)	**47.1%** (40.7 – 53.6%)
	HEALTH INSURANCE FOR PRENATAL CARE		
	Private [a]	**Medicaid/HUSKY**	**Uninsured**
Received dental cleaning … *prior to or during* pregnancy	**82.1%** (79.3 – 85.9%)	**71.7%** (67.7-75.7%)	53.3% (43.4 – 63.1%)

[a] 88.6% of privately insured mothers reported having had insurance to cover dental care.

Source: Connecticut Department of Public Health, 2017. The Pregnancy Risk Assessment Monitoring Survey (PRAMS) was conducted by the Connecticut Department of Public Health in conjunction with the CDC for births that occurred in 2013 and in 2014. DPH averaged response rates over the two surveys and reported in terms of percent of new mothers who did not receive dental care. For the purposes of this report, the percent of mothers who did receive care was calculated and is shown in this table with the corresponding 95% confidence limit.

Table 4. Oral Health Care Knowledge and Experience by Payer Source: PRAMS, 2013-14

	HEALTH INSURANCE FOR PRENATAL CARE:		
	Private [a]	**Medicaid/HUSKY**	**Uninsured**
I knew it was important to care for teeth and gums during pregnancy.	**92.6%** (90.8 – 94.3%)	**87.2%** (84.4 – 90.0%)	**77.6%** (70.3 – 84.9%)
Dental or other health care worker talked with me about how to care for my teeth and gums.	**60.3%** (56.7 – 63.9%)	**57.4%** (53.2 – 61.6%)	**42.0%** (31.7 – 52.3%)
I had my teeth cleaned by a dentist or dental hygienist.	**69.5%** (66.1 – 72.8%)	**54.1%** (49.8 – 58.3%)	**36.4%** (26.1 – 46.7%)
I had insurance to cover dental care during my pregnancy.	**88.6%** (86.4 – 90.8%)	**86.1%** (83.2 – 88.9%)	**11.8%** (5.6 – 17.9%)
I needed to see a dentist for a problem.	**13.3%** (10.9 – 15.8%)	**22.7%** (19.1 – 26.4%)	**26.8%** (16.7 – 37.0%)
I went to a dentist or dental clinic about a problem. [b]	**11.6%** (9.4 – 13.9%)	**19.1%** (15.7 – 22.5%)	**18.2%** (8.5 – 27.9%)

[a] 88.6% of privately insured mothers reported having had insurance to cover dental care.
[b] Subset of respondents who reported having "…needed to see a dentist for a problem."
Source: Connecticut Department of Public Health, 2017. The Pregnancy Risk Assessment Monitoring Survey (PRAMS) was conducted by the Connecticut Department of Public Health in conjunction with the CDC for births that occurred in 2013 and in 2014. The percent of mothers who received care is shown in this table with the 95% confidence limit.

DISCUSSION

Public health insurance is available for Connecticut's pregnant women who are most likely to be uninsured, that is, single women, adolescents and parents in low-income families. Therefore, the impact of Medicaid/HUSKY Program coverage on access to care is best measured by comparing access and utilization rates for uninsured women.

PRAMS data for 2013 and 2014 show that Connecticut mothers with Medicaid/HUSKY Program coverage were significantly more likely than uninsured mothers to have had *routine care* (dental cleanings) prior to or during pregnancy, a sure measure of access to care. Among mothers with Medicaid/HUSKY coverage who needed to see a dentist for a problem (22.7%), only about one in five (19.1%) got care.

Recent national data are not useful for determining the effect of Medicaid/CHIP coverage because payer-specific rates are reported for all non-elderly adults (male and female), regardless of whether their states of residence expanded Medicaid eligibility since 2014 or cover dental care in the Medicaid program. [vii]

Connecticut PRAMS data showed that nearly nine out of ten privately insured women (88.6%) reported having had dental insurance to cover care during pregnancy. Among those who needed to see a dentist for a problem (13.3% of privately insured women), only about one in ten actually got care (11.6%), a rate significantly less than the corresponding rates for Medicaid/HUSKY-insured women (19.1%) and uninsured women (18.2%) who had dental problems.

It is as yet too soon to rely on PRAMS data for evaluating the impact of PIOHQIP on access to care and utilization in Connecticut. Grant-funded operations began at the same time as the surveys. In Year One (FFY2014), outreach began in nine of 169 towns, representing about 25% of HUSKY births.[viii, ix] The 2013-2014 results for the state, and specifically for mothers with Medicaid/HUSKY coverage, are thus somewhat more of a baseline for evaluation of PIOHQIP. Subsequent PRAMS surveys may reveal the impact of the project as it was implemented in communities across the state. As provider awareness increases and as referrals for dental care increase, it may be possible to detect an upward trend in later PRAMS data for measures of access (received a dental cleaning prior to or during pregnancy, received information about how to care for teeth and gums during pregnancy, got care for problems during pregnancy).

There are several limitations to relying solely on PRAMS data for evaluation of Connecticut's project:

- PRAMS survey design does not allow for analyses at a local level, so statewide trends, if any, may not be entirely attributable to this project, even for mothers with Medicaid/HUSKY coverage. PIOHQIP did not approach statewide reach in Connecticut until Funding Year 4.
- PRAMS data do not capture the effect, if any, of efforts to improve infant oral health care.
- PRAMS data cannot be used to account for the effects of other contemporaneous efforts to elevate oral health as a key component of good maternal health.
- PRAMS data for assessing statewide impact of the project will not be available until 2019 or later, long after the PIOHQIP project comes to a close.

IMPLICATIONS

The PRAMS data can be used now to improve operations in the last year of the funded project:

- **Raising awareness of oral health problems among prenatal care providers.** When conducting outreach to prenatal care and dental care providers, the fact that a relatively large percentage of Medicaid/CHIP-insured women reported dental problems and needed care should be emphasized. The fact that such a small percentage of them actually got care suggests that CTCHP and providers can do more to link women with participating providers.
- **Ensuring that pregnant women know that the HUSKY Program covers dental care.** While 100 percent of pregnant women with Medicaid/HUSKY Program coverage had comprehensive dental insurance coverage, 14 percent didn't know it. This fact should be conveyed to prenatal care providers, dental care providers, social service providers, state agency personnel and health policy advocates who are involved in or concerned with improving Connecticut's maternal and infant health.

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References and resources:

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Connecticut Pregnancy Risk Assessment Tracking System (PRATS) Round 2, April 2006.

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The Centers for Disease Control and Prevention (www.cdc.gov/prams):

About PRAMS and Participating PRAMS States

PRAMS Model Surveillance Methodology, 2009.

PRAMS Questionnaires
- Phase 7 Core Questionnaire—FINAL, 1/30/2012
- Phase 7 Standard Questions—FINAL 1/30/2012

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GLOSSARY

CDC	Centers for Disease Control and Prevention
CTCHP	Connecticut Dental Health Partnership
DPH	Connecticut Department of Public Health
DSS	Connecticut Department of Social Services
HHS	US Department of Health and Human Services
HRSA	Health Resources and Services Administration
HUSKY	Connecticut's Medicaid and CHIP Program for children, families and pregnant women
PIOHQIP	Perinatal and Infant Oral Health Quality Improvement Project
PRAMS	Pregnancy Risk Assessment Monitoring System
PRATS	Pregnancy Risk Assessment Tracking System

[i] The Connecticut Dental Health Partnership (CTDHP) is operated by BeneCare Dental Plans, under a contract with the Connecticut Department of Social Services (DSS) for administrative services related to dental care for all Medicaid and CHIP program beneficiaries. Dental care providers are reimbursed fee-for-service by DSS.

[ii] See reports on births to mothers with Medicaid and HUSKY Program coverage for 2000 to 2012, issued annually by Connecticut Voices for Children, available at: www.ctvoices.org. State-funding for independent HUSKY Program performance monitoring and this data linkage project ended in 2016.

[iii] Payer source is self-reported by the respondent.

[iv] The changes came about as part of the settlement agreement n the case of Carr v. Wilso-Coker, No. 3; 00CV1050 (D. Conn., Aug 26, 2008). This case was brought in 1999 by Greater Hartford Legal Assistance on behalf of children in the Medicaid program who were unable to obtain the preventive dental services and treatment guaranteed to them under federal law in Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) program [42 U.S.C.§§ 1396D(r)(3)]. The settlement agreement included an end to managed dental care, with adoption of an administrative services model and fee-for-services payment; increased provider reimbursement for 60 essential children's dental services; commensurate increases in reimbursement for selected adult services; intensified provider recruitment; improved customer service; and special initiatives to increase utilization among selected Medicaid and CHIP beneficiaries. Provider reimbursement has not been increased or otherwise adjusted since 2008. The settlement agreement expired in August 2012, but other program changes are still in effect.

[v] Pooling the results for subsets of 2013 and 2014 PRAMS respondents allows for greater confidence in comparisons of utilization associated with payer source.

[vi] Self-reported health insurance status, with results pooled over 2013 and 2014. Mothers with Medicaid or CHIP coverage would most likely have been uninsured but for the HUSKY Program, so their utilization is best compared to the uninsured for understanding the impact of the public coverage. Among mothers who reported having had private insurance, it is not possible to determine which of them had dental insurance or medical insurance only.

[vii] Hinton E, Paradise J. Access to dental care in Medicaid: Spotlight on non-elderly adults. Kaiser Commission on Medicaid and the Uninsured, March 2016. Available at: kff.org.

[viii] Lee MA, Federer K. Births to mothers with HUSKY Program and Medicaid coverage: 2010. New Haven CT: Connecticut Voices for Children, February 2013. Available at: http://www.ctvoices.org/sites/default/files/h13birthsreport10.pdf.

[ix] Connecticut Dental Health Partnership. Statewide implementation plan: Target and neighboring towns with 80% Medicaid births by mother's residence. Available from Connecticut PIOHQIP project director Marty Milkovic (marty.milkovic@ctdhp.com).