Dental Care for Pregnant Women in HUSKY A

CONNECTICUT'S PERINATAL AND INFANT ORAL HEALTH QUALITY IMPROVEMENT PROJECT

September 2017

INTRODUCTION

Good oral health is important for women during pregnancy and throughout their lives. Normal physical changes in pregnancy increase the risk of dental caries, periodontitis, pregnancy gingivitis, and other oral health conditions. Some studies have shown an increased risk for preterm birth associated with periodontal infections. Mothers with good oral health are less likely to transmit cariogenic bacteria to their babies and toddlers.

Background

Consensus about the importance of good oral health in pregnancy has been building for two decades. In 1996, researchers at the University of North Carolina identified periodontal disease as a risk factor for preterm and low birthweight.[i] Over the following decade, the majority of subsequent studies described an association between periodontal disease and increased risk for adverse pregnancy outcomes, especially among low income women; however, other studies did not.[ii] In 2000, the US Surgeon General released a report on "Oral Health in America," drawing attention to the disproportionate burden of poor oral health for socially disadvantaged Americans.[iii] The Health Resources and Services Administration (HRSA) Maternal and Child Health Bureau (MCHB) worked with the American College of Obstetricians and Gynecologists (ACOG) and the American Dental Association (ADA) to develop a national consensus statement in support of improving women's oral health for themselves and for their children.[iv] The consensus statement stresses the importance and safety of providing oral health services to women during pregnancy. In 2013, ACOG issued a bulletin to its members, stressing the importance of good oral health throughout women's lives, as well as the safety of oral health care during pregnancy.[v] In 2014, the Connecticut State Dental Association issued guidance to for state dentists who provide oral health services to pregnant women.[vi] Both dental and maternity care providers recommend a good diet, good oral hygiene practices, and dental visits during pregnancy, with professional teeth cleaning and treatment as needed.[vii]

Medicaid eligibility in Connecticut: In 2007, the income eligibility threshold for parents was raised from 155% of the federal poverty level (FPL) to 185% FPL, then dropped back to 158% FPL in 2015. In 2008, the income eligibility threshold for pregnant women was raised from 185% FPL to 250% FPL. Since enactment of the Affordable Care Act in 2010, Connecticut expanded Medicaid to cover for childless adults with income less than 138% FPL. With the exception of the cut for parents in 2015, these changes in the income eligibility threshold have meant that more women were eligible for comprehensive dental services before, during and after pregnancy. These eligibility expansions are important for maternal oral health because a

large percentage of Connecticut's babies are born to mothers with public health insurance (in 2012, the most recent year for which data are available: 40.2% [viii]).

Medicaid dental benefit in Connecticut: Under federal law, dental care for adults is an optional Medicaid benefit.[ix] In Connecticut, comprehensive dental care has long been considered part of essential coverage for all adults Medicaid beneficiaries, including pregnant women. In years when the state budget is tight, this benefit has been threatened but has endured; however, Connecticut has adopted some limits for adult coverage (see text box).

Recent Changes to Adult Dental Benefits in Connecticut's Medicaid Program

Effective 7/1/2011

- Limited to one adult dental exam, cleaning, and x-ray per year
- Prior authorization required for adult fluoride varnish application
- Periapical x-rays limited to four per year
- Posterior composite restorations not reimbursed
- New dentures covered no more frequently than seven years, up from five years
- Comprehensive examination (D0150) limited to once per lifetime for adults
- Panoramic x-ray (D0330) limited to once every 36 months at most

Effective 6/13/2013

- Prior authorization required for second or more cleaning per year with periodic examination (D0120)

Effective 9/1/2014

- Reimbursement for periodic examination (D0120) limited to general dentists and pediatric dentists only
- Problem-focused examination (D0140) limited to four times per year for adults and children
- Tobacco counseling (D1320) added as a benefit

Effective 10/1/2014

- Reimbursement for amalgam filling limited to one per year per tooth per provider.

Effective 8/1/2016

- Amalgam and composite fillings limited to no more than once in two years per surface

Summary provided by the Connecticut Dental Health

Managed care in Connecticut: In the past twenty years, Connecticut's HUSKY Program has changed in ways that affect access to care and the delivery and financing of dental services. In 1995, the Medicaid program changed from fee-for-service to mandatory managed care for children and families, with 11 for-profit and not-for-profit managed care organizations under contract to provide services to their members, including dental care. Utilization increased very slightly over time, but the program was plagued with complaints from members about lack of access to care and from providers about barriers to participation, including low reimbursement rates.

In 1999, Greater Hartford Legal Assistance filed a lawsuit on behalf of children who were unable to obtain the preventive dental services and treatment that are guaranteed to them under federal Medicaid law.[x] Nine years later, the State of Connecticut entered into a settlement agreement that included significant changes to the program.[xi] Conditions of the settlement included increased provider reimbursement for children's services (effective April 1, 2008) and carve-out of dental care from the HUSKY Program's managed care contracts (effective

September 1, 2008). Reimbursement for adult care also increased. Customer service and provider recruitment intensified under the Connecticut Dental Health Partnership (CT DHP), the state's administrative services provider.[xii] These changes and others led to increased access to care for HUSKY families. Recently, the American Dental Association's Health Policy Institute cited Connecticut's Medicaid program for its extensive benefits package for adults, relatively high reimbursement rates, and near-universal geographic access to care.[xiii, xiv]

Perinatal outreach in Connecticut: Towards the end of calendar year 2009, CT DHP implemented a pilot perinatal outreach project in two communities. CT DHP obtained identifying information from three remaining participating managed care plans and employed dental health care specialists to work with pregnant women and their local providers. When managed medical care ended in 2012, CT DHP implemented a data-sharing plan with the Department of Social Services' administrative services organization for medical care to identify pregnant women and conduct outreach. A report on utilization among pregnant women who gave birth in 2010 showed remarkable improvement over utilization in 2005, prior to program enhancements.[xv] These findings were consistent with reports on increased utilization of oral health services overall for adults and children, compared with previous years under risk-based managed care.[xvi]

In 2013, Connecticut was one of the first three states selected by the federal Health Resources and Services Administration (HRSA) to participate in the Perinatal and Infant Oral Health Quality Improvement Project (PIOHQIP). With HRSA funding and technical support for the federal fiscal years 2013-2017, the Department of Social Services and CT DHP, its dental administrative services contractor, built on the pilot project begun in 2009, with the objective of going statewide with perinatal outreach and support for maternity care and dental providers.

METHODS

The purpose of this study is to estimate the impact of the PIOHQIP on dental services utilization by pregnant women in Connecticut's HUSKY Program. The results show utilization during grant-funded years, compared to utilization before and after the major program changes in 2008.

Data

PIOHQIP baseline (2005 and 2010): The utilization analyses for CY 2005 and CY 2010 built on data from state-funded independent performance monitoring in Connecticut's HUSKY Program.[xvii] For thirteen consecutive years, Connecticut Voices for Children reported to the Departments of Social Services and Public Health on maternal health and birth outcomes in the HUSKY Program. Reports on utilization during and after pregnancy were useful for determining the impact of program changes and for establishing baseline utilization prior to initiation of the PIOHQIP initiative.

With approval from the Connecticut Department of Public Health (DPH) Human Investigations Committee, Connecticut Voices linked birth certificate data with HUSKY Program enrollment

and Medicaid eligibility data to identify mothers and newborns with Medicaid coverage for monitoring maternal health and birth outcomes. These data were linked with personal identifiers common to both records (social security number, date of birth, name; verification of mother's enrollment on newborn's date of birth) using a deterministic algorithm that is described in detail in Connecticut Voices' report on 2010 births.[xviii]

Mothers who gave birth in the latter half of the year and were continuously enrolled for 6 months before the birth and 12 months postpartum (18 months total) were included in the sample.

PIOHQIP project period (2014 – 2015): When state funding for independent performance monitoring ended in July 2016, the birth certificate-HUSKY enrollment record linkage also ended. Data analyses for PIOHQIP evaluation were brought in-house at CT DHP for the remainder of the grant period.

CT DHP analysts developed and implemented the following methods for identifying women who gave birth while enrolled in HUSKY A, B, C or D in the respective grant-funded calendar years 2014 and 2015:

- Searched the HUSKY institutional and professional claims database for records indicating billing for maternity care;[xix]
- Identified the corresponding date of birth from the claims payment system for mothers with claims indicating maternity care;[xx]
- Identified the subsets of women that were continuously enrolled during pregnancy for the perinatal period, including six months prior to the birth and 12 months postpartum (18 months total).

We are unable to report on dental care utilization during project calendar year 2016 because the upcoming end of the grant period precludes determining who was continuously eligible during pregnancy and the first year postpartum (though end of calendar year 2017).

Dental claims: HUSKY Program claims data were searched for records corresponding to dental care for pregnant women and new mothers who were identified by the methods described above.[xxi] Dates of services were used to determine whether mothers had care at least once during pregnancy, during the year following the birth, or during the perinatal period (before or after the birth or both).

Analytic Approach

Dental services utilization was reported in terms of unadjusted utilization rates, calculated by comparing the numbers of women with dental care to the numbers who were continuously enrolled during the periods of interest. We calculated rate ratios to determine whether utilization rate differences were statistically significant during project years, compared to the 2010 baseline.[xxii]

Limitations

The findings are subject to certain limitations associated with secondary analysis of administrative data and availability of data for this study. The data were not audited for completeness or accuracy. To the extent that the counts and rates reported herein might differ from counts and rates in other reports, the differences may be due to methods (i.e., continuously enrolled v. ever enrolled, calendar year v. federal fiscal year) and/or when and how the Department of Social Services or its contractor created the datasets for the respective analyses. It was not possible to determine which if any of the HUSKY enrollees had dental services that were covered by third party payers or delivered by providers who did not submit claims.

This report does not include counts of ever-enrolled HUSKY A mothers who had services nor does it include a count of all services delivered in the respective one-year periods. The results do not include a cost analysis for services rendered. Utilization rates for 2005 and 2010, calculated by Connecticut Voices for Children, are based on individuals who were continuously enrolled in HUSKY A for the study period (18 months) and received care. Utilization rates for 2014 and 2015, calculated by Connecticut Dental Health Partnership, are based on individuals who were continuously enrolled in HUSKY A, B, C or D for the study period (18 months) and received care.[xxiii] Even though the vast majority of the births are to mothers enrolled in HUSKY A, the findings for the later years are not strictly comparable to results from 2005 and 2010. Further, individuals who were continuously enrolled may not be representative of all those who were ever enrolled during the year, including those who experienced gaps or lost coverage. Research has shown that first-time mothers who qualify for coverage during pregnancy are more likely to lose coverage in the postpartum period than new mothers who were already enrolled (parents, adolescents) when they became pregnant.[xxiv] We were unable to compare utilization rates in the postpartum and perinatal periods for mothers who gave birth in 2016 because we cannot yet determine which of them were continuously enrolled in the year after giving birth.

The different methods for identifying pregnant women and new mothers may affect comparability of utilization rates in the baseline period and the PIOHQIP project period. An earlier study sheds light on the effect of claims-based v. vital record-based approaches to identifying pregnant women in the HUSKY Program.[xxv] Using administrative data, a search for claims for maternity or delivery care identified 87 percent of mothers who were otherwise identified when 2010 birth and HUSKY enrollment records were linked. The claims-based approach used by CT DHP for this study was far more rigorous than the earlier study, however. While the claims-based approach may not be suitable for outreach or program management in real-time (claims for maternity care are typically filed after the birth), it is useful for monitoring dental care utilization over time.

Despite these limitations, conclusions drawn from these analyses are complimentary to other approaches used to evaluate the impact of PIOHQIP efforts to improve oral health for pregnant women and infants in Connecticut's Medicaid program.

RESULTS

Births and Enrollment in HUSKY A

The number of mothers identified by claims data analysis who gave birth in the latter half of calendar years 2014 and 2015 was half again as many as the number identified by linking vital records and HUSKY enrollment records in 2005 and 2010 (Table 1). In addition, the percentages of mothers that were continuously enrolled in the perinatal period (6 months before and 12 months after the birth) varied widely, from a high of 68 percent in 2010 to a low of 31 percent in 2015 (Table 1). Changes in income eligibility and administrative changes in eligibility processing may have significantly affected enrollment patterns and comparability of findings across the time periods of interest.

Dental Services Utilization

Preventive care and treatment rates are shown in Table 1 and represented graphically in Figure 1. Findings:

- Utilization increased dramatically in the baseline period, between 2005 and 2010, when preventive care and treatment rates more than doubled after HUSKY Program enhancements were put in place.[xxvi]

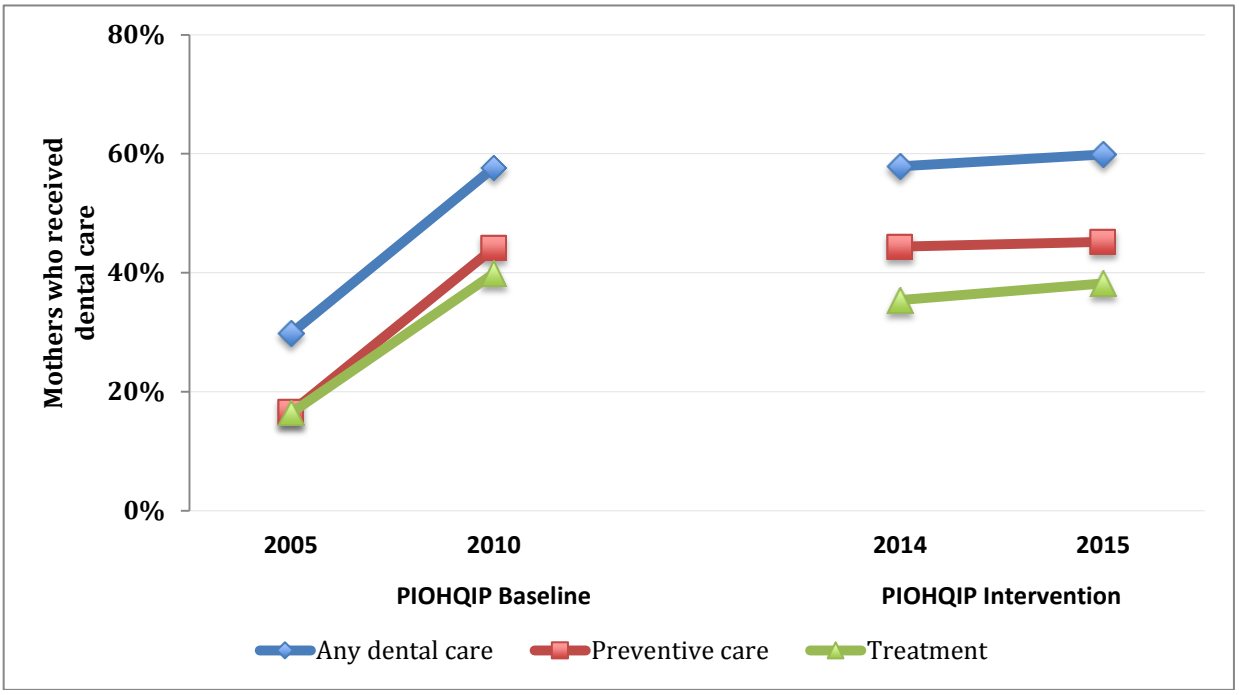
- Preventive care utilization was significantly higher during pregnancy in 2015, compared to the 2010 baseline rate.[xxvii] However, rates for new mothers in the postpartum period and rates for the entire perinatal period were essentially unchanged.

DISCUSSION

PIOHQIP funding and technical assistance have supported Connecticut's efforts to increase access to dental care and utilization during pregnancy and early motherhood. As the program rolled out to more communities over the grant period, early indications are that utilization during pregnancy increased. Results for 2016 will be useful for determining whether the utilization trend continues upward.

It is readily apparent in Figure 1 and Table 1 that the dental program enhancements adopted in 2008 (increased reimbursement, intensified provider recruitment, improved customer services) increased access to care and utilization for pregnant women and new mothers in the HUSKY Program. PIOHQIP built on these successes and on a pilot program for improving perinatal oral health. These efforts coincided with growing professional consensus about the importance of maternal oral health. In addition, increased access to care will help to ensure that women begin pregnancy with good oral health and up-to-date with recommended care.

Figure 1. Dental Services for Mothers in the Perinatal Period



Source: Analyses of HUSKY Program data by Connecticut Voices for Children (HUSKY A in 2005, 2010) and Connecticut Dental Health Partnership (HUSKY A, B, C, and D in 2014, 2015).

Access to care and utilization is also affected by coverage trends. State law, program policy, and administrative practices affect who is eligible and whether those who are eligible can maintain continuous coverage. Differences from year to year in the birth counts and the percentage of mothers who were continuously enrolled suggest that eligibility policy and enrollment patterns can have a significant effect on monitoring utilization trends and evaluation.

This approach to using administrative data for tracking utilization (v. just counted billed services in something approaching real-time) necessitates allowing for periods of continuous enrollment to ensure uniform exposure to the intervention, in this case PIOHQIP. Were the grant period to be extended, the PIOHQIP impact on access to care and utilization would be more evident.

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[ii] Xiong X, Buekens P, Fraser WD, Beck J, Offenbacher S. Periodontal disease and adverse pregnancy outcomes: a systematic review. BJOG 2006; 113: 135-143.
[iii] US Department of Health and Human Services. Oral health in America: a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.
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[vi] Connecticut State Dental Association. Considerations for the dental treatment of pregnant women. 2013. Available at: www.csda.com.
[vii] http://www.ada.org/media/ADA/Publications/Files/for_the_dental_patient_may_2011.ashx
[viii] Lee MA, Feder K. Births to mothers with HUSKY Program coverage: 2012. New Haven, CT: Connecticut Voices for Children, 2015. www.ctvoices.org.
[ix] Four states do not cover any dental services for adults. Some states limit dental coverage to emergency treatment or trauma care only. Some states that cover dental services cap the number and type of services or set annual limits. In states with limited coverage for adults, some states provide more generous dental coverage for pregnant women. Source: www.statehealthfacts.org.
[x] 42 U.S.C. §§ 1396d(r)(1)(B), d(r)(3)(B).
[xi] *Carr v. Wilson-Coker*, No. 3; 00CV1050(D.Conn., Aug. 26, 2008).
[xii] The Connecticut Dental Health Partnership is operated by Benecare Dental Plans, Inc., under a contract with Connecticut's Medicaid agency.
[xiii] Gupta N, Yarbrough C, Vujicic M, Blatz A, Harrison B. Medicaid fee-for-service reimbursement rates for child and adult dental care services for all states, 2016. Chicago IL: American Dental Association Health Policy Institute, 2017. Available at: www.ada.org/HPI.
[xiv] Vujicic M, et al. Measuring what matters: A new way of measuring geographic access to dental care services (webinar). Chicago, IL: American Dental Association Health Policy Institute, May 31 2017. Vujicic M, et al. Geographic access to dental care: Connecticut (fact sheet and infographic). Chicago, IL: American Dental Association Health Policy Institute, May 31 2017.
[xv] Lee MA, Feder K. Births to mothers with HUSKY Program and Medicaid Coverage: 2010. New Haven, CT: Connecticut Voices for Children, 2013. Available at http://www.ctvoices.org/publications/births-mothers-husky-program-and-medicaid-coverage-2010.
[xvi] See e.g., Connecticut Voices for Children. Dental services for children and parents in the HUSKY Program in 2012: Utilization is improved over 2008 but unchanged from 2011. New Haven CT: Connecticut Voices, 2014. Available at: http://www.ctvoices.org/sites/default/files/h14dentalcare2012.pdf.
[xvii] From 1995 to 2016, the State of Connecticut funded independent performance monitoring in the HUSKY Program (Medicaid and CHIP), with a focus on maternal and child health and health services. This project operated under a contract between the Connecticut Department of Social Services and the Hartford Foundaation for Public Giving. Under a grant from the Hartford Foundation, Connecticut Voices for Children conducted the performance monitoring and reported to agency staff, legislators and other key stakeholders. MAXIMUS, Inc., subcontracted with Connecticut Voices for data management and analysis. In 2013, Connecticut Voices for Children agreed to serve as Lead Evaluator for the HRSA-funded Perinatal and Infant Oral Health Quality Improvement Project operated by the Connecticut Dental Health Partnership. Beginning in January 2017, the Connecticut Dental Health Partnership contracted directly with MaryAlice Lee, Ph.D., formerly of Connecticut Voices, to serve as Lead Evaluator and work with CT DHP analysts.
[xviii] For a detailed description of the data linking methods and results for 2010, see: Lee MA. Births to mothers with HUSKY Program and Medicaid coverage: 2010. New Haven CT: Connecticut Voices for Children, February 2013. http://www.ctvoices.org/publications/births-mothers-husky-program-and-medicaid-coverage-2010.
[xix] Current Procedural Terminology codes: 59400-59430, 59510-59515, 59610-59622.
[xx] To verify that the date of delivery is the service date on the claim, CT DHP analysts pulled a random sample of 200 records and 1) checked enrollment files for new additions to the household (child) associated the respective

head-of-household (mother), and 2) checked enrollment files to verify that the date of birth for the new household member (child) was indeed the same as the service date shown on the claim.

[xxi] **Preventive dental care:** Encounter records or claims with HCFA Common Procedure Coding (HCPC) system code ranging from D1000 - D19999 or ADA codes 01000 – 01999. **Dental treatment:** Encounter or claims records with a HCPC code ranging from D2000 – D9999 or ADA codes 02000 – 09999. **Any dental care:** Encounter or claims records with a HCPC code ranging from D100 – D19999 or ADA codes 0100 – 019999. This definition for "any care" includes all preventive dental care and dental treatment codes (above) plus additional HCPC codes for D0100 – D0999 and ADA codes 0100 – 0999 and T1015 code for clinic visit.

[xxii] In this study, the rate ratio is used to compare the person-time rates of two groups that are differentiated by exposure to the intervention (PIOHQIP). The rate ratio = (utilization rate during project year) / (utilization rate in baseline year). Rate ratio = 1.0 indicates no difference; rate ratio greater than one indicates increased utilization in the group tht gave birth during the project years and a rate ratio less than one indicates utilization that is less during the project years.

[xxiii] Using HUSKY Program inpatient claims with an ICD-9 diagnosis code in the 650 range (normal delivery and other indications for care in pregnancy, labor and delivery), Christopher Savold, Director of Operations and Compliance at the Connecticut Dental Health Partnership determined that in CY2013 there were a total of 12,848 births, including 12,484 births in HUSKY A (97.2%), 8 births in HUSKY B (0.1%), 139 births in HUSKY C (1.1%) and 217 births in HUSKY D (1.7%). The HUSKY Program: HUSKY A (Medicaid for children, families and pregnant women), HUSKY B (Children's Health Insurance Program), HUSKY C (Medicaid for aged, blind and disabled) and HUSKY D (Medicaid for low income adults).

[xxiv] Lee MA, Esty S. Gaps in coverage for pregnant women and new mothers in HUSKY A. New Haven CT: Connecticut Voices for Children, October 2012. http://www.ctvoices.org/sites/default/files/h12huskycoveragegapsmoms.pdf.

[xxv] Lee MA. Using HUSKY A claims data to identify pregnant women and new mothers for outreach. Baseline for Perinatal and Infant Oral Health Quality Improvement Project. October 2014. Available from Marty Milkovic, Director, Connecticut Dental Health Partnership.

[xxvi] 2010 v. 2005: $RR_{\text{preventive care}} = 2.72$; 95% CI: 2.42, 3.06. $RR_{\text{treatment}} = 2.34$; 95% CI: 2.08, 2.64.

[xxvii] 2015 v. 2010: $RR_{\text{preventive care}} = 1.24$; 95% CI: 1.07, 1.43.

Table 1. Dental Care for Pregnant Women and New Mothers in HUSKY A (Medicaid)

	PIOHQIP Intervention Period				PIOHQIP Baseline			
	CY2015[a]		CY2014[a]		CY2010[b]		CY2005[b]	
Mothers who gave birth July-December...	7,586		7,155		4,073		5,674	
...and were continuously enrolled in the perinatal period[c]	2,330	30.7%	2,937	41.0%	2,771	68.0%	2,318	40.8%
	Had Care During Pregnancy				**Had Care During Pregnancy**			
Any dental care	607	26.1%	729	24.8%	601	21.7%	NA	NA
Preventive dental care	377	16.2%	471	16.0%	362	13.1%	NA	NA
Treatment	218	9.4%	257	8.8%	275	9.9%	NA	NA
	Had Care After Pregnancy				**Had Care After Pregnancy**			
Any dental care	1,187	50.9%	1,463	49.8%	1,439	51.9%	NA	NA
Preventive dental care	848	36.4%	1,028	35.0%	1,072	38.7%	NA	NA
Treatment	790	33.9%	926	31.5%	991	35.8%	NA	NA
	Had Care During the Perinatal Period				**Had Care During the Perinatal Period**			
Any dental care	1,375	59.9%	1,701	57.9%	1,598	57.7%	691	29.8%
Preventive dental care	1,053	45.2%	1,304	44.4%	1,224	44.2%	385	16.6%
Treatment	895	38.4%	1,041	35.4%	1,106	39.9%	380	16.4%

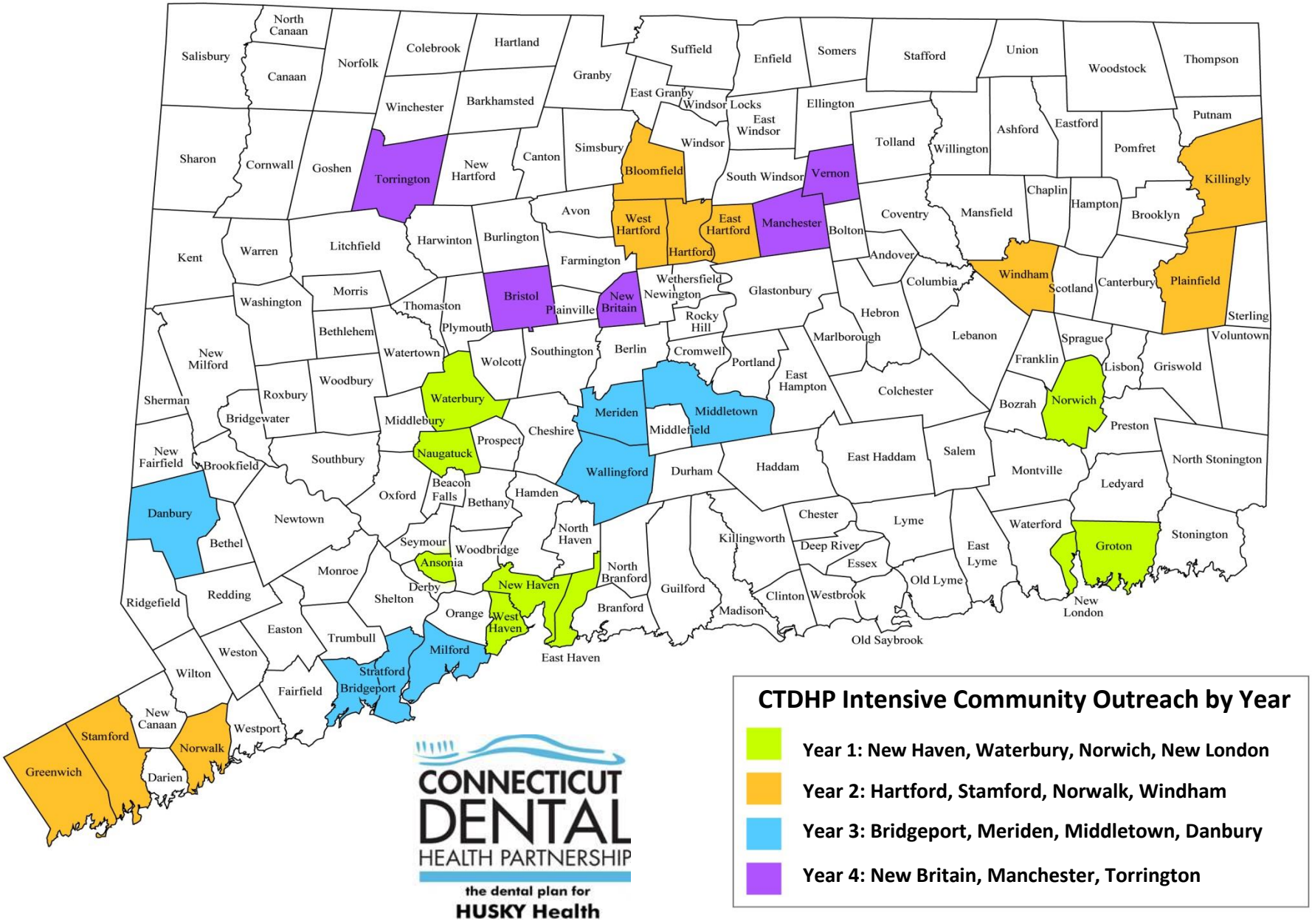
[a] Mothers identified by Connecticut Dental Health Partnership analysts using administrative data (HUSKY claims and enrollment records).

[b] Mothers identified by Connecticut Voices for Children using vital records linked with HUSKY enrollment data and claims.

[c] Perinatal period in this study is defined as 6 months before and 12 months after giving birth.

Source: Analyses of Connecticut's HUSKY Program enrollment and claims data by Connecticut Dental Health Partnership (2014-16) and Connecticut Voices for Children (2005, 2010).

Statewide Implementation Plan: Target and Neighboring Towns with 80% Medicaid Births by Mother's Residence
Intensive Community Outreach



CONNECTICUT DENTAL HEALTH PARTNERSHIP
the dental plan for HUSKY Health

CTDHP Intensive Community Outreach by Year

- **Year 1: New Haven, Waterbury, Norwich, New London**
- **Year 2: Hartford, Stamford, Norwalk, Windham**
- **Year 3: Bridgeport, Meriden, Middletown, Danbury**
- **Year 4: New Britain, Manchester, Torrington**