CONNECTICUT PLAN TO IMPROVE BIRTH OUTCOMES

Fall 2015

ABSTRACT

In December 2012, Connecticut was one of four states selected to participate in the National Governor's Association (NGA) Learning Network on Improving Birth Outcomes. In the same year, Commissioner Jewel Mullen, on behalf of the Connecticut Department of Public Health (DPH) accepted the Association for State and Territorial Health Officials (ASTHO) President's challenge to improve birth outcomes by reducing preterm birth (PTB) in Connecticut. The Commissioner also included a second challenge to reduce racial and ethnic disparities in early PTB. Both of these events set the stage for DPH to establish the State Coalition to Improve Birth Outcomes (the Coalition) in March 2013. The Connecticut Plan to Improve Birth Outcomes is intended as a dynamic working document, and is the result of a highly participatory and systematic process that allowed over 80 Coalition members to come together and identify the recommendations and strategies believed to have the greatest potential for impact and feasibility. This Plan is intended as an initial roadmap to support the coordination and integration of cross-sectoral efforts needed to support a comprehensive and holistic effort to improve birth outcomes in our state.

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The Plan to Improve Birth Outcomes (PIBO): purpose and goals

Health Disparities are "differences in health outcomes between groups that reflect social inequalities."[1]

Given the current perinatal landscape (find a detailed overview here), it is evident that there are significant health disparities in birth outcomes in Connecticut. Only by acting on reducing and ultimately eliminating health disparities, will we be able to significantly improve birth outcomes in our state.

In 2012, Commissioner Jewel Mullen, on behalf of the Connecticut Department of Public Health (DPH) accepted the Association for State and Territorial Health Officials (ASTHO) President's challenge to improve birth outcomes by reducing preterm birth (PTB) in Connecticut by 8% by 2014 (from 10.2% to 9.3%). The Commissioner also included a second challenge to reduce racial and ethnic disparities in early PTB. Two goals were identified to accomplish this:

Goal 1: By June 30, 2014, reduce singleton PTB statewide in Connecticut from 8.1 per 100 to 7.7 per 100, a decrease of 5%.

Goal 2: By June 30, 2014, reduce the percent of very low birth weight (VLBW) among singleton and low birth weight (LBW) deliveries statewide in Connecticut within the Black/African American community from 28% to 23%, and reduce the percent within the Hispanic/Latino community from 20% to 18% respectively.

In the same year, Connecticut was one of four states selected to participate in the National Governor's Association (NGA) *Learning Network on Improving Birth Outcomes*. The *Learning Network* is an initiative by the NGA to assist states with developing initiatives and policies to improve birth outcomes, particularly concerning PTB and infant mortality. To facilitate this, the NGA convened in-state sessions with selected states to encourage interagency collaboration, share lessons learned, further the state's planning processes, and identify and share best practices.

Following this learning network, in March 2013, DPH invited state and local organizations serving women of reproductive age to participate in the Connecticut Coalition to Improve Birth Outcomes. The purpose of the Coalition was to develop the state's Plan to Improve Birth Outcomes to promote an integrated approach to reducing perinatal health disparities, while sustaining the momentum and political will to meet and exceed the goals set forth with the ASTHO Challenge.

Progress towards the ASTHO Challenge goal is measured from the 2009 baseline preterm birth rate according to data from the National Center for Health Statistics (NCHS) and calculated by the March of Dimes Perinatal Data Center. At the time of this writing, final birth data for 2013 showed Connecticut to be on its way to reducing the overall preterm birth rate from 10.2% in 2009 to 9.8% in 2013. Data for the 2014 year will be forthcoming.

Listing of organizations represented on the Connecticut Coalition to Improve Birth Outcomes

Aetna
African-American Affairs Commission
American College of Nurse Midwives
Bridgeport Hospital
Carey Consulting
Central Area Health Education Center
Child Development Infoline
Community Health Center and the Women's Health Subcommittee
Community Health Center, Inc.
Community Health Network of CT
Community Health Services
ConnectiCare, Inc & Affiliates
Connecticut Perinatal Association
Cornell Scott - Hill Health Center
Court Support Services Division
CT Chapter, Postpartum Support International
CT Children's Medical Center
CT Coalition Against Domestic Violence
CT Dental Health Partnership
CT Hospital Association
CT Office of Rural Health
CT Oral Health Initiative
CT Women's Consortium
Danbury Hospital
Department of Children and Families
Department of Developmental Services/CT Birth to Three System
Department of Public Health
Department of Social Services
East Shore District Health Department
Eastern CT Health Network
Eastern Highlands Health District
Governor's Office
Hartford Hospital
Head Start State Collaboration Office/SDE
Hispanic Health Council
Ledgelight Health District
Madonna Place
March of Dimes Connecticut Chapter
Middlesex Hospital
Naval Submarine Base
New Britain's Nurturing Families
New Haven Health Department

New Haven Healthy Start/Community Foundation of Greater New Haven
New Opportunities
Northeast District Department of Health
Nurturing Families Network, The Hospital of Central CT
Office of Early Childhood
Office of the Child Advocate
Permanent Commission on the Status of Women
Real Dads Forever
Saint Francis Hospital and Medical Center
State Department of Education
The Village for Children
UCONN Health Center
UCONN School of Social Work
United Community and Family Services
United Way of CT/2-1-1
Value Options/Behavioral Health Partnership
Visiting Nurse Association of Southeastern Connecticut
Yale New Haven Hospital
Yale School of Medicine
Yale School of Nursing
Yale University Child Study Center

The Connecticut Coalition to Improve Birth Outcomes at work: using policy analysis tools to identify priorities and recommendations.

The Coalition developed the Plan in collaboration with the Governor's Office; Connecticut March of Dimes; New Haven Healthy Start; the Department of Social Services; and over 80 members representative of the several maternal and child health (MCH) stakeholders and initiatives in the state of Connecticut. During the process of developing policy recommendations for inclusion in the Plan, three workgroups composed of coalition members were convened around three focus areas: mental health, oral health, and reproductive health.

After defining the problem, based on a thorough assessment of the Connecticut perinatal landscape, and following an initial brainstorming that generated over 70 diverse recommendations, the Coalition engaged in a prioritization effort. In order to use a systematic process that was verifiable, driven by evidence, and that could be aligned with current national MCH frameworks, the Coalition planning committee proposed to use the *Shaping Policy for Health* (SPH) policy analysis tools developed through a cooperative agreement between Directors of Health Promotion and Education (DHPE) and the Centers for Disease Control and Prevention (CDC).[2]

Two members of the Coalition's planning committee, Jordana Frost and Tiffany Cox, attended the 5-part SPH training program and served as technical assistants (TAs) for the Coalition workgroups. After sharing a brief overview and orientation to the tools with Coalition members, technical assistants met with individual workgroups as they followed the process outlined in the SPH policy analysis tools, utilizing the Impact Analysis Matrix and the Stakeholder Power Analysis Matrix.

The first step involved developing impact categories. These are outcomes that the workgroup members would like to realize. They then categorized these outcomes into overarching goals, and connected them to the potential strategies generated by the Coalition brainstorming session. Guided by a review of the literature and evidence-based practices, workgroup members began the impact analysis process, which involved consideration of how each potential strategy might impact each desired outcome. By assigning weighted impact scores to each potential strategy based on its possible impact on the desired outcomes, the workgroups were able to prioritize their best recommendations from those that received the highest scores.

A stakeholder analysis followed, in which workgroup members compiled a list of possible stakeholders in their focus area. Using this list, they identified which stakeholder or partners would likely be in support of each potential strategy, neutral, or opposed to it. They also assigned a value representing the level of power that stakeholder groups might have and in what sphere of influence, i.e. public, political and bureaucratic. This allowed the workgroups to predict how feasible a potential strategy might be, based on the amount of support or opposition it may receive.

The final step in the process was to combine all the previous work into one document for review by the full coalition. Using this document **the planning committee identified the highest ranked potential strategies, and analyzed them in terms of alignment and synergy with state and national frameworks, plans, and theories** (i.e. the Twelve Point Plan to Close the Black-White Gap in Birth Outcomes, Healthy Connecticut 2020: Connecticut's State Health Improvement Plan, the AMCHP Comprehensive Compendium of Initiatives to Improve Birth Outcomes and Reduce Infant Mortality).[3–5]

To allow for a greater degree of organization and further synergy identification, the **potential strategies were then organized into tiers based on Frieden's Health Impact Pyramid**. Frieden's Health Impact Pyramid provides a framework for understanding the impact of different types of public health interventions.[6] The 5-tier pyramid starts with Tier 1 at the base which represents interventions that impact the largest number of people with the least amount of individual effort required. These are interventions that address socioeconomic factors and other social determinants of health. Each tier has potential to impact a smaller number of people ascending up the pyramid. Tier 2 represents interventions that strive to change environments, making healthy choices the easier choices. Tier 3 represents long-lasting and protective clinical interventions for individuals. Tier 4 is where ongoing clinical interventions can be found; and Tier 5 interventions, which impacts the smallest number of

people, includes education and counseling. Having a balanced mix of interventions will help to achieve the best outcomes.[6]

It was during this categorization process that the planning committee realized that **the work of Coalition members had led to an overwhelming focus on broad population-based efforts that improve all families' overall quality of life, health, and wellbeing and less on individual-based clinical and health counseling interactions. This inclination is very much in line with the most current research literature suggesting strong connections between cumulative stress and health throughout one's life course.**

The collective strategies developed by the individual workgroups were presented at a Coalition meeting in May 2014. Each Coalition member present voted on which top three strategies should be given priority during upcoming Coalition efforts. **To avoid duplicative approaches, a concerted effort was put forth to identify organizations in the state that may be already pursuing some of the strategies and whose work could be supported and enhanced by the Coalition. This approach also affords the Coalition the opportunity to partner with other stakeholders in the state that may be able to take the lead on strategies that did not rise to the top of the Coalition's list of recommendations, yet have the potential to significantly impact our shared goal of improving birth outcomes through the reduction and ultimate elimination of disparities.**

Collaborative Improvement and Innovation Network (COIIN)

In 2012, Dr. Michael Lu, Associate Administrator of the Maternal and Child Health Bureau with the help of the MCH Training program and the US Department of Health and Human Services (HHS), launched the **Collaborative Improvement and Innovation Network (CoIIN)** in the thirteen southern states that make up Public Health regions IV and VI. The goal of the CoIIN as a National Strategy is to reduce infant mortality and improve birth outcomes utilizing multiple strategies. This collaborative leverages expert knowledge to create innovations that are based on sound science and innovative policy. This monumental call to action included a partnership with State officials "to find out what works [to reduce infant mortality] and scale up the best interventions to the national level." While much work has been completed, there is still more to be done to inform and advance this National Strategy, as well as state/local infant mortality reduction strategies (e.g., Title V MCH Block Grant, Healthy Start, Maternal, Infant, and Early Childhood Horne Visiting, etc.). Therefore, the Infant Mortality Collaborative Improvement and Innovation Network (CollN) was expanded to include the remaining HHS Regions, Regions I-III and Regions VII-X. **Connecticut, as one of the Region I states, is now participating in CollN at no cost to the State. The Infant Mortality Summits for Regions I-III and VII-X were held in July 2014, and served as Phase One of the national expansion of the Infant Mortality CoIIN to these Regions.**

The CT CoIIN Team includes Deputy Commissioner Katherine K. Lewis and Marcie Cavacas (CT's Title V Director) as the co-leads with an additional 6 members including Jennifer Morin (CT DPH MCH Epidemiologist), Erin E. Jones (CT March of Dimes), Kenn Harris (New Haven Healthy Start), Kate McEvoy, Esq. (Department of Social Services), Attilio Granata, MD and Mary Ann Cyr (Community Health Network of CT, Inc.). The CT team participates in conference calls and webinars as well as submits required project documents outlining decisions on the activities and strategies CT will utilize with the goal of reducing infant mortality. **The CT CoIIN team supports the strategies and recommendations outlined in this CT Plan to Improve Birth Outcomes, as they provide great synergy and sustainability potential to the efforts that will be moved forward during the CoIIN initiative project period.**

How to use this plan

At the request of Coalition members, this Plan has been designed and written as a "go to" resource. In addition capturing the **Coalition's priorities** and providing a **roadmap to guide its work**, this document also cites and provides, under each recommendation, links to **examples of emerging and promising practices.**

This document is intended to:

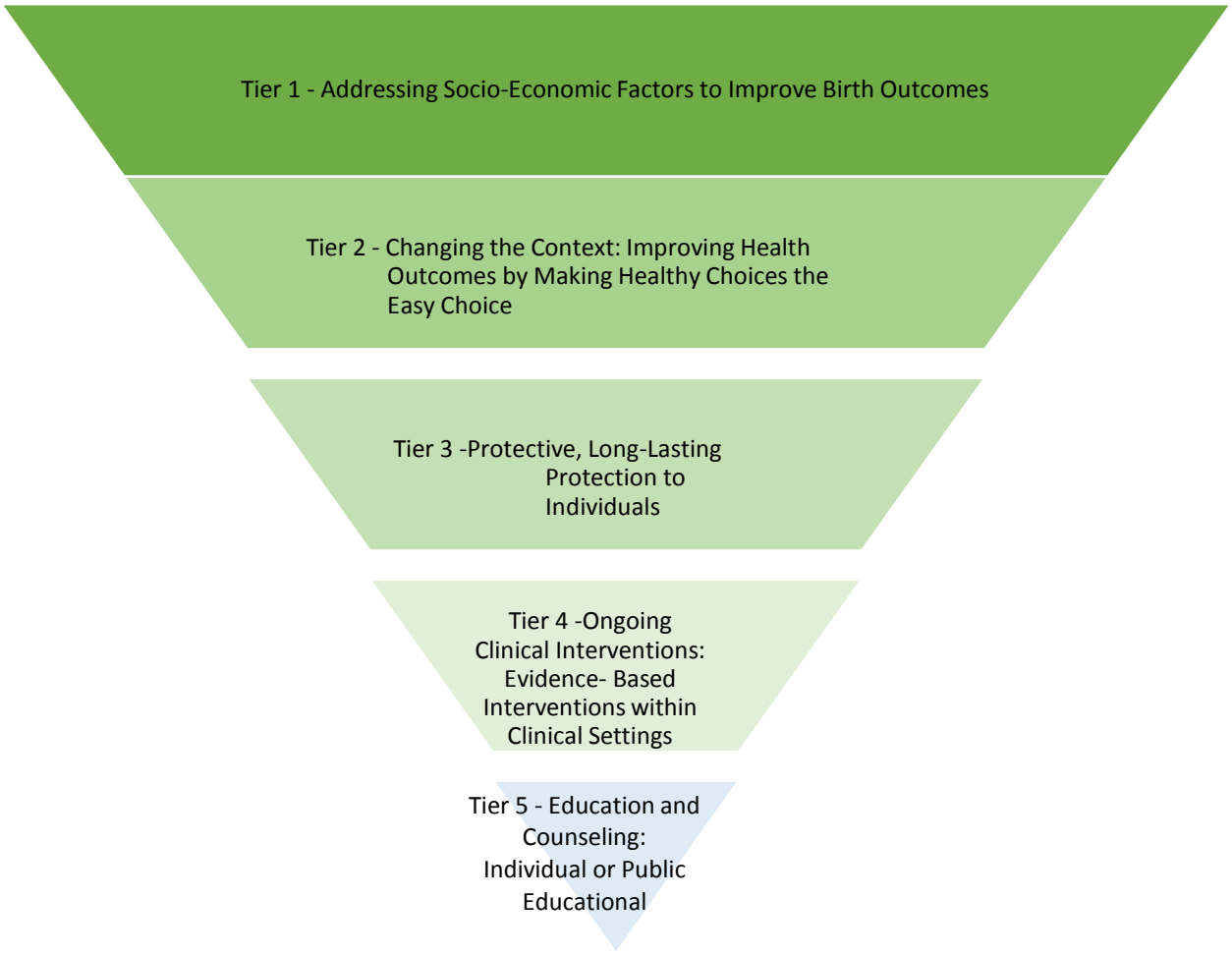
- Reflect the work of the Coalition,
- Set priorities to achieve improved birth outcomes,
- Serve as resource for information on and links to promising and emerging practices, within Connecticut, in other states and on a national level,
- Inform and align the work being done on the state level within the Department of Public Health and in collaboration with other state entities that have a role in improving Connecticut's birth outcomes, and
- Inform and align the work being done by Coalition members within their communities.

To track and measure how this report is being used and in an effort to keep it current, a feedback/update form has been developed and can be found at the end of the plan. Sharing how groups and individuals are using this Plan will help guide, not only the work of the Coalition, but will also inform how this document is being used on an ongoing basis.

Recommendations at a glance.

The AMCHP (Association of Maternal and Child Health Programs) Compendium identifies recommendations for improving birth outcomes in seven broad areas, and aligns them with the Frieden's Health Impact Pyramid. This approach was taken in order to present a comprehensive, multi- level framework that states can use in their efforts to improve birth outcomes.[4]

In looking at the recommendations identified by the Coalition, there was clear symmetry in how they aligned with the AMCHP Compendium. The Coalition wanted to utilize a framework that would ensure a comprehensive approach that would impact different levels of community and multiple populations. To that end, the Coalition grouped its priority recommendations based on the different tiers and recommendations in the AMCHP Compendium. This also became a strategy for implementation as the Coalition will recommend the implementation of a multi-tiered approach tier to deliver a comprehensive initiative to improve birth outcomes in the state of Connecticut. Following is a complete listing of recommendations and strategies organized by tiers. Those that were selected for priority action are depicted in boxes and elaborated on in the main part of the Plan. The other ones are briefly elaborated on in the Appendices section of the Plan.



Tier I: Addressing Socio-Economic Factors to Improve Birth Outcomes Recommendations

1A: Raise awareness among legislators, leaders, and administrators about social determinant of perinatal health and the Life Course perspective

1B: Invest in preventing and mediating early life trauma and violence

1C: Identify opportunities to reduce stressors affecting families during the interconception period

1D: Increase provider knowledge of community resources addressing social needs (housing, food, childcare, legal aid, and transportation)

1E: Identify and implement strategies aimed at reducing/eliminating institutionalized racism

1F: Create supportive housing initiatives for pregnant women and their families

1G: Integrate financial literacy into family planning and counseling services, as well as in other relevant programs serving MCH populations

Tier 2: Changing the Context: Improving Health Outcomes by Making Healthy Choices the Easy Choice Recommendations

2A: Establish and evaluate pilot projects involving holistic MCH medical home models

2B: Integrate mental health, oral health, and wellbeing into hospital-based perinatal education models, group prenatal care, as well as home visiting programs

2C: Create trauma-informed environments for pregnant women, Infants, and their families

2D: Establish a statewide community health worker system similar to the one in Massachusetts: this can include models involving lay home visitors, community doulas, preconception peer educators, peer breastfeeding counselors, oral health, etc.

2E: Engage in a broad effort to reduce maternal fear and stigma about the spectrum of emotional and psychological complications of pregnancy and childbirth by increasing provider-patient communications, including perinatal mental health in childbirth education programs, raising public awareness, and developing a coordinated system of treatment and care

2F: Expand person-centered care model (PCCM) to include women's health, including oral and mental health, with a Life Course approach

2G: Expand state Husky to undocumented women and families

Tier 3: Protective, Long-Lasting Protection to Individuals Recommendations

3A: Support the provision of preconception health care throughout the childbearing years.

3B: Integrate Life Course education into provider training.

Tier 4: Ongoing Clinical Interventions: Evidence-Based Interventions within Clinical Settings Recommendations

4A: Support the provision of behavioral health services and oral health care throughout the life course and during the perinatal period

4B: Integrate into provider training mental health, social stressors, and trauma education relevant to infants and families

4C: Increase access to midwifery care for all women considered low-risk (medically)

4D: Increase access to childbirth and postpartum doula services (Medicaid reimbursement; adding doula care to existing home visiting services)

Tier 5: Education and Counseling: Individual or Public Educational Messages and Support Recommendations

5A: Scale up (or continue investing) in fatherhood initiatives to increase social support within the family and home environment

5B: Integrate education and preconception and interconception health including mental and oral health, into hospital-based prenatal education models, group prenatal care, as well as home visiting programs

5C: Integrate mental health and well-being into the State Department of Education school health curriculum

5D: Integrate Life Course education into the State Department of Education school health curriculum

5E: Engage in a broad effort to raise awareness of the important relationship between emotional and psychological wellbeing and physical wellbeing

5F: Raise consumer awareness about the midwifery model of care and available midwifery options.

Addressing socio-economic factors to improve birth outcomes in Connecticut

Promoting a "whole person, whole family, whole-community systems approach"[7] to improving birth outcomes, Coalition members recommend expanding efforts from traditional healthcare-centric approaches to multi-level cross-sector interventions and policies that aim to prevent health inequities by acting in the very community settings in which daily life occurs (i.e. schools, day care centers, workplaces, WIC offices, parks and recreational facilities, churches, dining facilities, detention centers, courthouses, housing units, etc.) By addressing socio-economic conditions such as poverty, racism, education, housing, isolation, fractured families, food security, trauma and violence; legislators, providers, leaders, and community members can build upon protective factors and mitigate risk factors affecting the life course of women, children, and their families, positively impacting birth outcomes and the health trajectory of generations to come.[5,8]

Tier 1 Recommendations: Addressing Socio-Economic Factors

A. Raise awareness among legislators, leaders, and administrators about social determinants of perinatal health (intended holistically to include oral and mental health[9]), and the Life Course perspective
B. Invest in preventing and mediating early life trauma and violence
C. Identify opportunities to reduce stressors affecting families in the inter-conception period

Recommendation 1A: Raise awareness among legislators, leaders, and administrators about social determinants of perinatal health and the life course perspective.

The Life Course Perspective offers an opportunity to view health as an integrated continuum across a person's life course, rather than a series of disconnected stages unrelated to each other. This perspective, supported by the most current research, highlights the complex interactions of environmental, biological, social, psychological, and behavioral factors contributing to a person's health across his/her life and, through resulting genetic modifications, the health outcomes of the offspring.[7]

The Life Course Perspective, therefore, encourages an intergenerational and multi-sectoral approach to improving the health and wellbeing of our communities. To this aim, non-traditional holistic approaches to improving perinatal health disparities are essential, as is the need to successfully integrate policies, systems, funding streams, and organizational partners from diverse sectors serving families in all aspects of their lives.

The state of Connecticut has a number of organizations and agencies that have been working tirelessly to improve the health and wellbeing of families across our territory. Yet, too many times, efforts and successes have been "siloed", at times duplicated, and often challenged by limited resources. Coalition members, supported by current research, believe that for birth outcomes to improve in our state, we must act on interventions and policies that require much greater systems integration.

Effective systems integration calls for nontraditional partners from a number of sectors, public and private, to engage in a common agenda, with shared measurement systems, integrated funding streams, clear ongoing communications, mutually reinforcing activities, and clearly identifiable lead organizations that can mobilize financial resources and political will, coordinate community outreach and cross-agency communications, champion an overall strategic direction, and manage data collection and analysis.[10]

Since the early stages of implementation of the Patient Protection and Affordable Care Act (PPACA), Connecticut has been at the forefront of redesigning a statewide integrated healthcare system with the aim of improving the delivery, efficiency, and efficacy of health care services. **Maternal and Child Health (MCH) practitioners and advocates in Connecticut have the opportunity to engage with legislators, leaders, and administrators in the conversation about systems integration (vertical, horizontal, and longitudinal)[8,10] to go beyond the traditional health care services, minimizing isolated impact, and capitalizing on evidence supporting the Life Course Perspective and the role that social determinants play in shaping health inequities and preventing growing health care costs.**

Recommendation 1A: Emerging and promising examples

A New Way to Talk about Social Determinants

When planning to advocate for policies impacting social determinants of health, Connecticut practitioners may consider the work completed by the Robert Wood Johnson Foundation. This organization has shared research-based resources on effective message framing on social determinants that resonate across the political spectrum.

Measuring Life Course Indicators

As more strategies to improve perinatal health outcomes become guided by the Life Course Perspective, national agencies have found it necessary to define effective ways to measure success. After a lengthy multi-state collaborative project, the Association of Maternal and Child Health Programs (AMCHP) has now become the official repository for the materials produced under the umbrella of the Life Course Metrics Project. Connecticut legislators, leaders, and administrators may appreciate learning about the growing prominence of data tied to early childhood and early life services, family and community wellbeing, economic experiences, discrimination and segregation, and their association with birth and lifelong health outcomes across generations. Another similar effort at the national level is the Child Opportunity Index hosted by diversitydatakids.org and mapping diverse levels of opportunities for child wellbeing across major metropolitan centers in the United States (US), including the greater Hartford, New Haven, and Bridgeport metropolitan areas. There have also been valuable efforts made to increase the usability and access of publicly available data in State of Connecticut. An example is DataHaven.org, a member organization of the Connecticut Data Collaborative, which seeks to compile and share data in visually compelling ways to inform decision- making and policy initiatives. Another effort aimed at linking health outcomes data, including perinatal health outcomes specifically, with social determinants such as housing, environmental quality, employment, community safety, education, economic security, and civic

involvement at the community level, is the Health Equity Index. Efforts should be made to sustain this Connecticut- focused and Connecticut-made tool, which was the first of its kind in the nation, and which allows users to visually identify, through GIS mapping, the geographic communities most impacted by social determinants of health.

Using Health Information Technology (IT) to Go Beyond Electronic Medical Records

Well before becoming the current Maternal and Child Health Bureau (MCHB) Associate Administrator, Dr. Michael Lu was the lead author on an article titled "Innovative Strategies to Reduce Disparities in the Quality of Prenatal Care in Underresourced Settings." where he advocated for, among other strategies, the use of health IT to improve continuity of patient medical records, promote spatial mapping of access gaps, enhance health education, and facilitate service integration.

One promising example of health IT solution that may facilitate service integration and promote a "whole person, whole family, whole community" throughout the life course approach is the WellFamily System developed by Go Beyond. By securely sharing one standard system of input, accountability and flow, social service agencies, schools, court systems, medical providers, and other partners providing services to individuals and families across the life course, can seamlessly ensure a greater level of integration of wrap-around services, avoiding costly duplication and time delays, and potentially improving outcomes.

Recommendation 1B: Invest in preventing and mediating early life trauma and violence.

The effort of addressing socio-economic factors impacting the health and wellbeing of the state's population would not be complete without making a concerted effort to prevent and mediate early life trauma, violence, and discrimination that are particularly prevalent in some communities. Cumulative traumatic events, such as witnessing or being a victim of violence or abuse, can lead to alterations of the central neurobiological system and has been associated with higher chances of developing mental health disorders in childhood, as well as long after entering adulthood.[11–13] Substance abuse, alcoholism, family dysfunction, sexual risk-taking behaviors, depression, and anxiety are but some of the lifelong consequences of early life exposure to adverse experiences and cumulative traumatic stress. Additionally, research has demonstrated links between early life trauma and inflammatory responses giving rise to autoimmune diseases, as well as higher propensity to suffer from obesity, heart disease, cancer, and other illnesses. Cumulative stress experienced from the early stages of life and throughout a woman's lifetime has been increasingly linked to poor birth outcomes, through a biological mechanism known in the Maternal and Child Health (MCH) community as "weathering." [8,14–22]

While the Adverse Childhood Experiences Survey (ACES) has been a powerful tool used to build a strong body of research surrounding the importance of preventing and mediating early life trauma, critics of ACES argue its potential shortcomings where issues such as experiencing chronic or episodic poverty, food and housing insecurity, are not included in the list of adverse experiences but should.[23] **Coalition members are cognizant of the powerful data provided by ACES, yet are also focused on elevating and contributing to**

the defeat of poverty affecting children and their families, as they understand the intricate connection and vicious cycle permeating the daily reality of poverty interlaced with and often fueled by mental illness, violence, trauma, and poor physical, emotional, behavioral, and social wellbeing.

In a state that ranks as one of the wealthiest in our country, nearly a third of its children are living at or below 200% of the federal poverty level, with as much as half of urban core children experiencing poverty and family economic insecurity.[24] **Members of the Coalition to Improve Birth Outcomes feel strongly about the need to scale up evidence-based efforts to reduce poverty and economic inequality, increase housing stability, and reduce exposure to other critical sources of early life trauma such as domestic violence, family dysfunction, emotional, sexual, and physical abuse, child neglect, discrimination, and neighborhood violence.**

Recommendation 1B: Emerging and promising examples

Roca Intervention Model

Based out of Massachusetts, this evidence-based intervention model seeks to interrupt the vicious cycles affecting youth at high risk for incarceration and recidivism. Through cognitive-restructuring and skills development during an initial two year program, participants then benefit from a subsequent two year period of supportive follow-up. This model provides services to at-risk young males, as well as to at-risk young mothers. Roca's model is based on the theory that "*when young people are re-engaged through positive and intensive relationships they can gain competencies in life skills, education and employment that keep them out of prison and move them toward living out of harm's way and toward economic independence.*" The program outcomes are promising in terms of program engagement, reduced incarceration, and continued employment and self-sufficiency.[25]

Nurturing Families Network (NFN)

The Nurturing Families Network (NFN) is a free, voluntary resource for first time parents offered through three options: 1) home visits for new parents who are at risk for abusing/neglecting their child; 2) parenting support groups designed to identify and address challenges and celebrate the successes of parenting; and 3) Nurturing Connections that match new parents with over the phone support and assistance.

Connecticut Home Visiting Plan

Families in Connecticut with young children often struggle to overcome challenges. The state helps provide supports to many of these families in their homes through funding, program support and oversight, and coordination or delivery of services. Legislation in Public Act 13-178 required the OEC, through the Early Childhood Education Cabinet, to provide recommendations for implementing the coordination of home visiting programs within the early childhood system by December 1, 2014. To view the report, click here.

Recommendation 1C: Identify opportunities to reduce stressors affecting families in the inter-conception period.

The early postpartum period, as well as the time between pregnancies (a.k.a. interconceptional period) have been documented as being critical periods for children, their parents, and the family unit as a whole. Stressors are not uncommon, and in fact can be heightened during this period, especially when parents of young children are not embedded in a strong social support network, and when they do not have access to comprehensive family-supportive policies and programs such as paid parental leave, affordable and high quality childcare, breastfeeding-friendly workplaces/schools, and safe communities ripe with opportunities for families to positively impact and support each other.

> Whenever the employer required the workers to work overtime, the group of women [factory workers] had their babysitters drop their children off at their workplace. When the security guards saw the children, they were dumbfounded, and when the women were confronted by their managers, they said, "I would be put in prison and my children would be taken away from me if I leave them home alone — I cannot do that. You told me to stay, so they're going to come here."
>
> *One Sick Child Away From Being Fired: When Opting Out is Not an Option (2006)*

Despite the dramatic changes in workforce composition in our country, with many more dual income families and single parents working outside the home, very few changes have occurred at the societal level to align workers' needs with organizational and workplace policies. For example, typical school days still end hours before parents return from work and summer breaks continue to be longer than most workers' yearly paid time off.[26] Situations are further aggravated when parents need to entertain more than one low-paying job, in order to make ends meet. Role strain and work-related stress continue to be a documented factor impacting marital relationships, child development, and household stability, as well as a contributor to the development of chronic stress affecting physiologic and emotional health, including preconception and interconception health.[26,27]

At the current moment, some working families in Connecticut are able to take advantage of the federal Family and Medical Leave Act (FMLA), which became effective in 1993, and allows eligible employees to take up to 12 weeks of annual job-protected unpaid leave to bond with a new child.[28] Unfortunately, the loss of income has been cited as a common reason for not taking advantage of this important benefit.[29] Additionally, strict FMLA eligibility criteria have limited its reach to approximately 50% of workers in the US, often leaving a large proportion of working poor without coverage, in fact, as documented by the Commission on Family and Medical Leave, "employees who fare best in covering lost income during leave-taking are employees with high family incomes, salaried employees, union members, highly educated employees and white employees."[30]

Not having adequate and equitable access to family-supportive policies can place working families at a substantial disadvantage when it comes to maintaining a balance between keeping a steady job and paying the bills, and establishing important foundations for healthy family dynamics throughout the life course.[30] This inevitably sets the stage for a broad range of preventable socio-economic and health

inequities. Family Medical Leave Insurance, currently being considered in the state of Connecticut, has the potential to significantly reduce the number of families who fall into poverty shortly after the birth of a child, while also facilitating conditions for the initiation and establishment of optimal breastfeeding, and parent-infant bonding.[28,31]

Coalition members, supported by current research, believe that for birth outcomes to improve in the state, we must expand access to family-supportive policies and programs that reduce stressors in the interconceptional period, allowing new parents to continue being productive members of their communities, while also enhancing and not sacrificing their own health and wellbeing, and that of their young children.

Recommendation 1C: Emerging and promising examples

Time-flexible Work Policies

Data from a large national representative sample of employees from a variety of different types of employment, show that employers offering the most time-flexible work policies registered the highest proportions of employees with greater levels of job satisfaction and loyalty, as well as fewer unplanned absences, missed deadlines, and tardiness, along with fewer reported symptoms of stress.[26] Flexible work policies come in a variety of configurations, and include among others: flexible start and end times, compressed workweeks, job sharing, part-year work, telecommuting, predictable schedules, and alternative worksites.[32,33]

Leveraging Smart Phone Technology and Social Networking to Increase Social Capital

Aimed at facilitating the mother-infant bond, along with increasing social connectedness amongst local New Haven mothers, MoMba is a modern and creative social networking-based solution developed by the New Haven MOMS Partnership.

Building Community Connectedness and Reducing Parental Isolation

Connecticut has a track record of establishing dynamic community-based resource centers serving families across the state. These Family Resource Centers, usually located in public schools, offer parents and caregivers of young children opportunities for social interaction, education on child development, resource and referral services, family literacy programs, playgroups, and childcare. The Brighter Futures Family Centers located in six Hartford neighborhoods, offer similar services to families even during weekend and evenings hours, thus expanding access to much needed resources and support.

Choosing to intervene even earlier in a family's lifespan, the Developing Families Center located in Washington D.C., provides access to group prenatal care, midwifery services, and a stand-alone birth center, in addition to more traditional family resource center services, thus helping women and their families to establish social ties and reduce isolation even before their children are born.

Taking a different spin on traditional family resource centers typically located in neighborhood schools or community centers, the Moms HUBS in New Haven will be located in local businesses (i.e. grocery stores), and will be branded as a "one-stop solution center" where mothers can consult with

Community Mental Health Ambassadors; be connected to employment and job training resources; receive diapers and other basic need items.

Paid Parental Leave

Actively supported by the Connecticut Association for Human Services (CAHS), Connecticut Women's Education and Legal Fund (CWEALF) the Permanent Commission on the Status of Women (PCSW), among others, the 2013 Legislative Session ended with the establishment of a Task Force charged with studying the feasibility of offering short-term paid benefits to working individuals and families under the Connecticut Family and Medical Leave Insurance (FMLI) program. The implementation of FMLI would allow Connecticut to join the ranks of other progressive family-supportive states such as California, New Jersey, and Rhode Island. The Task Force voted to provide recommendations that include:

- Expanding the reach of FMLI to all employers (not just those with 50 or more employees)
- Expanding access to more employees by making an employee eligible for the leave once they have earned $9,300 in a 12-month period – even if some of the earnings were from a different employer
- Providing employees out on leave 66% of their base weekly salary
- Allowing up to six weeks of paid leave per year

These recommendations are expected to become a top issue in the 2015 legislative session, with businesses and organized labor advocates becoming very engaged on the topic. Coalition members may want to consider how involved they intend and are able to be, as they strive to improve birth outcomes by, among other means, relieving financial stressors, enhancing parent-infant bonding opportunities, and facilitating optimal breastfeeding conditions for families in the early postpartum period.

Refer to Appendix A for additional Tier 1 strategies supported by Coalition members.

Changing the context: Improving health outcomes by making healthy choices the easy choice.

When we change the environment to promote and encourage healthy behaviors we not only impact individuals, we also improve the overall health of our communities. Interventions that change the environmental context to make healthy options the de- fault choice, regardless of education, income, service provision, or other societal factors have the potential to greatly improve the health of expectant mothers, infants and families the most. The defining characteristics of these interventions are that individuals would have to expend significant effort not to benefit from them.

It is unreasonable to expect behavior so easily when so many forces in the social, cultural, and physical environment conspire against change.
-Institute of Medicine (IOM)

Tier 2 Recommendations: Changing the context

A. Establish and evaluate pilot projects involving holistic MCH medical home models
B. Integrate mental and oral health into hospital-based perinatal education models, group prenatal care, as well as home visiting programs.
C. Create trauma-informed environments for pregnant women, infants, and their families.

Recommendation 2A: Establish and evaluate pilot projects involving holistic MCH medical home models.

A patient-centered medical home for pregnant women and their children is not a new concept, yet it continues to be a powerful one ripe with potential for sustaining healthy families. In the 2012 compendium, AMCHP recommends service integration for women and infants that provide comprehensive, coordinated, culturally sensitive care where a trusting partnership can develop between a patient and their health care providers. Having medical, mental and oral health services at one location, sharing medical records, and integrating services, provides easy access to a coordinated system of care. Modifying processes in an effort to eliminate scheduling, reimbursement, and information sharing-related barriers that currently contribute to a separation of care between a mother and her children, as well as between disciplines and providers, can also provide an opportunity to better care for families across the continuum of time and along the wide spectrum of developing needs. The holistic medical home model also provides more opportunities to integrate other services such as prenatal education, support groups and wrap-around services for housing, transportation, childcare, active living, healthy eating, or other "whole person, whole community" needs.

Recommendation 2A: Emerging and promising examples

DC Developing Families Center (DFC)

The Developing Families Center (DFC) promotes the empowerment of low-income families through the collaboration of three nonprofit service providers: the Community of Hope/Family Health and Birth Center, the Healthy Babies Project and the United Planning Organization Early Childhood Development Center. The DFC offers comprehensive, one-stop, family-centered women's and children's health care, child care services, family resource and support services, confidential counseling, and adult education. Some of the services offered are prenatal and birth care, immunizations, childbirth education, optional out-of-hospital birth settings, Medicaid enrollment, postpartum care, breastfeeding education, family planning, STI screening, case management, nurse home visits, teen and Black Parenting programs, fatherhood programs, social service assistance and early childhood age-appropriate education. The model also incorporates community members through a Community Advisory Board that meets monthly to recommend changes and discuss new policies.

PCC Community Wellness Center

Located throughout the Westside of Chicago and nearby suburbs, the PCC Community Wellness Center network of community-based wellness centers provides comprehensive coordinated care to families regardless of ability to pay. Services and programs include primary care, midwifery, oral health care, behavioral health care, Centering Pregnancy, Reach Out and Read, outreach and enrollment, and a local fresh produce market.

Clifford Beers Clinic: Integrated Family Center for Chronically Stressed Families, New Haven, CT

The Clifford Beers Clinic is adopting an integrated approach to the delivery of pediatric and family focused health and mental health to reduce the lifelong health implications of stress. By utilizing a comprehensive, trauma-informed care model, providers will be able to efficiently integrate the social, mental and physical health needs of children and families. This allows them to account for past experiences that may be affecting health by applying aspects of Life Course Theory and the Health Home model.

Community Health Centers Leveraging the Social Determinants of Health.

Community-based health centers have enormous potential when it comes to engaging local communities across the life course continuum and with a holistic, wrap-around approach. In partnership with the National Association of Community Health Centers and with support from the Kresge Foundation, the Institute for Alternative Futures developed a report, a database of efforts, case studies, and a set of recommendations for CHCs and others on how to support and expand efforts to leverage the social determinants of health. For a 2-page handout about the project and report, click here. You may also find the full report and a literature review from the Clinical Directors Network.

Recommendation 2B: Integrate mental health, oral health and wellbeing into hospital-based perinatal education models, group prenatal care, as well as home visiting programs.

Integrating mental health, oral health and wellbeing into hospital-based perinatal education models, group prenatal care and home visiting programs will raise awareness about the importance of screening for and addressing these needs in pregnant women. This integration supports the continuum of care model that has proven effective in improving the health of the patient, patient satisfaction, and a reduction in per capita cost (IOM.gov).

Home visiting programs build upon decades of scientific research, which shows that home visits by a nurse, social worker, or early childhood educator during pregnancy and in the first years of life improve child and family outcomes. Home visits prevent child abuse and neglect, encourage positive parenting, and promote child development and school readiness. According to a recent Pew Charitable Trusts study, every dollar invested in home visiting yields up to a $9.50 return to society.[34]

Home visiting programs provide an unprecedented opportunity to reach families and communities at- risk for health disparities. Evidence-based home visiting models address physiological, social, psychological, economic, family and other factors that influence children's health and development.

Recommendation 2B: Emerging and promising examples

The Nurse-Family Partnership (NFP)

NFP is designed for first-time, low-income mothers and their children. It includes one-on-one home visits by a trained public health registered nurse to participating clients. The visits begin early in the woman's pregnancy (with program enrollment no later than the 28th week of gestation) and conclude when the woman's child turns 2 years old. NFP is designed to improve (1) prenatal health and outcomes, (2) child health and development, and (3) families' economic self-sufficiency and/or maternal life course development. The US Department of Health and Human Services (DHHS) created the Home Visiting Evidence of Effectiveness (HomVEE) in 2009 to conduct a thorough and transparent review of the home visiting research literature. In 2013, HomVEE reviewed the evidence of effectiveness for specific home visiting program models. The NFP model had favorable impacts in 7 of the 8 outcome domains, the second highest rating of the 14 DHHS approved evidence-based home visiting program model. The State of Connecticut chose NFP as one of the evidence-based models to be supported through the Maternal, Infant and Early Childhood Home Visiting (MIECHV) Programs federal funding initiative. To learn more about how NFP is being implemented in Southeastern Connecticut, visit VNA of SC.

The Perinatal & Infant Oral Health Quality Improvement Intensive Community Outreach Project (PIOHQI/ICO)

A collaboration between the CT Dental Health Partnership and the CT Department of Social Services, the PIOHQI/ICO project's purpose is to provide a coordinated approach across Connecticut that addresses the comprehensive oral health needs of pregnant women and infants most at risk, supporting an environment that seeks to eliminate oral health barriers and disparities.

The CT Dental Health Partnership (CTDHP) currently provides outreach to at-risk pregnant women and young children in Connecticut who are not in regular preventive oral health care through an existing, state-supported pilot project that serves women and children in two cities. This pilot, which works through medical providers as well as oral health providers, is based on the Trusted Person model, will be expanded statewide, and has the potential for national replication.

The New Haven Mental Health Outreach for Mothers (MOMS) Partnership is a community-academic partnership between All Our Kin, Clifford Beers Clinic, New Haven Health Department, New Haven Housing Authority, New Haven Healthy Start, The Diaper Bank, The CT Department of Children and Families, and Yale School of Medicine, with input from families and providers that seek to achieve the highest possible standards of mental health and well-being for New Haven women and their families. The MOMS theory of change rests on the premise that improvements in mental health for Mothers vastly improve outcomes for their children. Additionally, they believe that improvement in mental health is connected to addressing issues of lasting poverty alleviation and improving access to basic need resources and economic security.

DAWN (Depression Attention for Women Now)[35]

For many women, and particularly for underserved women, or those from socially disadvantaged backgrounds, their Ob-Gyn provider serves as their primary care provider. While Ob-Gyn providers increasingly accept their role as primary care providers, many feel they have inadequate training to screen and treat depression and that they lack adequate resources for follow-up care. Having a depression intervention based in Ob-Gyn clinics is an important and effective way to meet the health care needs for women. The key difference between DAWN and usual care/referral to specialty services is the integrated team approach, a standardized symptom assessment and tracking system, and the population-based view of care. The DAWN consultant team consists of the care manager, an Ob-Gyn provider and psychiatrist. This team reviews every patient on the care manager's caseload each week. By discussing each patient, focusing on depression symptoms and behavioral changes, the team can be very responsive in making suggestions about additional behavioral techniques or modifications to medications. This intense approach provides consistency in review, and ensures that patients do not "fall through the cracks" because the care manager is contacting them frequently. This comprehensive approach does not rely on the patient making an appointment to come into the clinic, but on the care manager reaching out to the patient.

CenteringPregnancy SmilesTM (CPS)[36] is a partnership between the University of Kentucky, Trover Health System, and Hopkins County Health Department. The purpose of the partnership is to: (1) establish an infrastructure to address health problems requiring research-based solutions, (2) develop a model for community partnership formation, and (3) address problems related to preterm births and low birth-weight infants and early childhood caries in a rural, seven-county region in western Kentucky. This area is below state and national norms in education level of the population, income, and oral and general health. The partnership implemented a new prenatal care model that significantly reduced preterm and low birth-weight births for participating women, thus significantly improving the infants' health while saving an estimated $2.3 million dollars in health care costs for acute care of

premature infants in this population and enabling the expansion of dental outreach services for children in Hopkins county.

Maternal and Infant Outreach Program (MIOP) and Comadrona

Administered by the Hartford Department of Health and Human Services (HDHHS) and the Hispanic Health Council, the Maternal Infant Outreach Program (MIOP), and its sister program Comadrona, provide outreach and prenatal care education and support in the Hartford community with the aim of identifying pregnant women early in their pregnancy and engage them in developing individualized care plans in partnership with other involved clinical partners. Pregnant and postpartum women are connected to the services they need. Home visits continue a minimum of one year after birth and children and their families are linked to pediatric care and other developmental and family resources.

MIOP has documented success in addressing key pregnancy and birth challenges:

- Ninety percent (90%) of clients served in the HDHHS MIOP program initiated prenatal care during the first trimester compared to 77 % of all Hartford mothers who delivered in 2012;

- The infant mortality rate (IMR) is consistently lower for MIOP participants than that of overall Hartford residents. From 2001-2012, the average IMR for women enrolled in the MIOP program is 1.8 infant deaths per 1,000 live births compared to the City's average of 9.9 per 1,000 live births.

- The low birth weight rate (<2,500 grams) among MIOP clients who delivered from January to September 2013 is approximately 10%, lower than the city's annual rate of 11.3%.

Minding the Baby Home Visiting Program

Minding the Baby (MTB) is an intensive home visiting intervention working with first-time young mothers and their families in New Haven, CT. First developed in 2002, the program is interdisciplinary and brings together a home visiting team including a pediatric nurse practitioner and a licensed clinical social worker to promote positive health, mental health, life course, and attachments outcomes in babies, mothers, and their families. MTB clinicians provide direct service for your families while MTB researchers conduct ongoing research with both intervention and control families. MTB is a collaborative effort of the Yale Child Study center, Yale School of Nursing, Fair Haven Community Health Center, and Cornell Scott Hill Health Center.

In September 2014 MTB met the rigorous criteria required to be recognized by the Department of Health and Services (DHHS) as an evidence based early childhood home visiting model. This criteria has been established through DHHS' Home Visiting Evidence of Effectiveness (HomVEE) review process. MTB is now sanctioned as an approved Maternal, Infant and Early Childhood Home Visiting (MIECHV) model that states can implement with federal Affordable Care Act funds that have been allocated to

support home visitation programs. Minding the Baby joins Child FIRST as an early childhood home visiting model that was developed in Connecticut and recognized by HomVEE as being evidence based.

Recommendation 2C: Create trauma-informed environments for pregnant women, infants and their families.

Developments in neuroscience have taught us that adverse childhood experiences cause an outpouring of stress hormones that, over time, change the way the brain grows, develops, and reacts to the environment and to other people – even years down the line. Traumatic stress can create problems with forming relationships, regulating and controlling emotions, perceiving danger where there is none, and even physical health in adult life.

Currently, behavioral health and physical health treatment exist in separate treatment silos; clinical services and prevention services are fragmented and the individual is viewed in isolation from his/her family, environment and historical experiences. Adults and children referred for treatment often go untreated, in part due to missed appointments and poor follow up. Current medical and clinical services are not designed to address the complex needs of families living under chronic stress. A comprehensive and integrated model of trauma, and resilience-informed health care is needed to reduce the psychological, as well as biological stressors related to trauma, violence, and grief, and to stabilize families' health and promote resilient environments for positive development.[37]

A trauma-informed approach to the delivery of health services includes an understanding of trauma and an awareness of the impact it can have across settings, services, and populations. It involves viewing trauma through an ecological and cultural lens and recognizing that context plays a significant role in how individuals perceive and process traumatic events, whether acute or chronic. The four key elements of a trauma-informed approach are: (1) realizing the prevalence of trauma; (2) recognizing how trauma affects all individuals involved with the program, organization, or system, including its own workforce; (3) responding by putting this knowledge into practice; and (4) resisting re-traumatization.[38]

Trauma-informed care (TIC) is a strengths-based service delivery approach that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment. TIC is an approach to engaging individuals with histories of trauma that recognizes the presence of trauma symptoms and acknowledges the role that trauma has played in their lives. **The Coalition recommends the strengthening of a health care and supports system that promotes healing environments through embracing "key" trauma-informed principles of safety, trust, collaboration, choice, and empowerment. In addition, there must be the availability of evidence-based trauma-specific services and treatments to meet these needs throughout a person's life course.**[38]

Recommendation 2C: Emerging and promising examples

Clifford Beers Clinic: Integrated Family Center for Chronically Stressed Families, New Haven, CT

The Clifford Beers Clinic is adopting an integrated approach to the delivery of pediatric and family focused health and mental health to reduce the lifelong health implications of stress. By utilizing a

comprehensive, trauma-informed care model, providers will be able to efficiently integrate the social, mental and physical health needs of children and families. Accounting for past experiences that may be affecting patients' health care is applied through the lenses of the Life Course perspective and within a trauma-informed Health Home model.

Adverse Childhood Experiences Screening Tool (ACEs)

Adverse childhood experiences (ACEs) are potentially traumatic events that can have negative, lasting effects on health and overall well-being. These experiences include, for example, abuse (physical, emotional, or sexual), parental divorce, and the incarceration of a parent or guardian. The National Survey of Children's Health (NSCH) routinely collects ACEs data from a nationally-representative sample.39 The American Academy of Pediatrics (AAP) supports the use of the ACEs screening tool within the context of the pediatric medical home.40 To this end, it has launched the Resilience Project supporting pediatric primary care physicians in identifying, treating, and referring children and youth, who have experienced toxic stress.

The Department of Mental Health and Addiction Services - Women's Services Practice Improvement Collaborative (WSPIC)

The goal of WSPIC is to improve the quality of services for women receiving substance abuse treatment in Connecticut, and thus the treatment outcomes, by participation in a recovery-oriented treatment system of care, incorporating current best practices in gender-responsive and trauma-informed programming. Through this initiative, there was increased interaction and knowledge exchange between community-based service providers, persons in recovery, the research community and policy-makers. Through the WSPIC initiative, three products have been developed.

- Gender Responsive Treatment Guidelines
- Gender Responsive Program Self-Assessment Tool
- Outcomes Tool and Research Methodology
- Women's Services Practice Improvement Collaborative (WSPIC) ***VIDEO!***

Bayview Child Health Center, San Francisco, CA

The Bayview Child Health Center has taken a comprehensive approach of trauma-informed care to treat residents of a low-income area. After identifying the many social and emotional experiences affecting many of the patients of the clinic, they developed an interconnected model of care that recognizes trauma and social stressors as risk factors, and analyzes them in conjunction with physical presentation of illness. This comprehensive approach stimulated the development of the Center for Youth Wellness where they continue to practice trauma-informed interventions. This may serve as a model for other Connecticut providers serving similar populations.[41]

Developing Trauma-Informed Organizations

The Institute for Health and Recovery offers a toolkit designed to help organizations improve the quality of services by integrating an understanding of the impact of trauma and violence into their policies and procedures. For information on the new second edition of this toolkit, go to IHR's website www.healthrecovery.org/toolkit

Please refer to Appendix B for additional Tier 2 strategies supported by Coalition members.

Protective, long-lasting protection to individuals

Long lasting protective interventions have broad population impact, but do require outreach to individuals.

Tier 3 Recommendations: Protective, long lasting
A. Support the provision of preconception health care throughout the childbearing years. B. Integrate Life Course education into provider training.

Recommendation 3A: Support the provision of preconception health care throughout the childbearing years.

The goal of preconception health care is to promote the health status of women, men, and couples prior to a first conception or subsequent pregnancies.[42,43] Preconception health care interventions allow providers to screen, identify, and treat childbearing women and men for biomedical, behavioral, and social risks that could negatively impact the outcomes of a future pregnancy.[42]

Although preconception care guidelines exist, there is no standardized model for delivering preconception/interconception care and many barriers to implementations still exist.[44] Documented barriers include: lack of access to care between pregnancies, loss of insurance coverage postpartum, maternal focus on the infant to the exclusion of her own health care needs, lack of awareness about preconception/interconception health care guidelines among providers, increasingly limited clinician time, and the lack of an established model for delivery of interconception care (ICC).[45]

In order for preconception/interconception health care to become an integral part of routine care within different health care settings and interactions, new tools, structures, and processes need to be created, disseminated, and institutionally supported. Clinicians belonging to the Coalition have shared the challenges tied to including meaningful screening, education, and counseling opportunities within the limited parameters of medical visits. While payment incentives tied to performance may have the potential of increasing the implementation of preconception health care interventions, providers have indicated that identifying strategies to appropriately modify the visit flow so that it can seamlessly include preconception health care education, counseling, screening, and treatment, may be a more promising way of supporting greater widespread provision of preconception health care in the state of Connecticut.

Recommendation 3A: Emerging and promising examples
Before, Between, and Beyond Pregnancy Before, Between and Beyond was created as a key component of the national Preconception Health and Healthcare Initiative. It is designed to be a "one stop" resource for clinicians and others who want to learn more about preconception health, its history, the evidence supporting it and strategies for

incorporating relevant content into daily clinical practice. It includes CME opportunities, articles, clinical guidance, news, and a clinical toolkit that can be used as a reference or as an educational tool when engaging with women of reproductive age during routine care with the one single assessment question: "Are you hoping to get pregnant in the next year?" Based on the desires and likelihood of pregnancy in the next year, the online toolkit offers specific clinical recommendations for ten components of routine primary care: family planning guidance, nutrition, infectious diseases and immunizations, chronic diseases, medication use, substance use, previous pregnancy outcomes, genetic history, mental health, and intimate partner violence.

The IMPLICIT Network

The IMPLICIT Network, a family medicine residency collaborative with members in the Northeastern US, including the Family Medicine Residency Program at Middlesex Hospital in Connecticut, tested the impact of an innovative approach to interconception care (ICC) delivered during well child visits by family physicians.[46] First created in 2003, the IMPLICIT Network set out to educate family medicine residents and practicing physicians on the primary and secondary prevention of low birth weight and preterm birth, as well as their role in reducing preventable adverse birth outcomes through the delivery of preconception and interconception care. Through a Continuous Quality Improvement (CQI) approach, the nineteen network members, developed a replicable 5-minute model that makes use of maternal contact during well child visits to screen for and address four primary risks for poor outcomes in subsequent pregnancies: smoking, depression, contraception use, and multivitamin intake.[45] In addition to documented increases in screening rates, reductions in preterm births have also been observed.[47]

Recommendation 3B: Integrate life course education into provider training.

The Life Course Perspective suggests that many facets of life contribute to health outcomes across the course of one's life. It is substantiated by public health and social science research literature highlighting the influence of each stage of life on the next and showing how social, economic, and physical environments interact with the biological domain to have a profound impact on individual and community health.[48] Anecdotal evidence from clinicians across Connecticut has shown a need to increase training opportunities for clinical providers about social determinants of health and the life course perspective. Published literature on the topic supports the benefits of integrating life course education into provider training.[49,50] For example, after the introduction of a social determinants of health curriculum, pediatric residents reported increased knowledge of key issues and community resources, along with an increased level in self-confidence regarding their ability to integrate social determinants of health assessments into routine care visits with their patients.[51,52] The American Association of Family Physicians (AAFP) also supports the recommendation that physicians be trained and skilled in knowing how to identify and address social determinants of health. [53]

Recommendation 3B: Promising and emerging examples

The MCH Navigator

An online portal created as a training repository for educational webinars, podcasts, and training modules on Maternal and Child Health concepts and competencies, the MCH Navigator site also has a section dedicated to the Life Course perspective and Social Determinants of Health.

MCHB Training Programs

A branch of the Health Resources and Services Administration (HRSA), the Maternal and Child Health Bureau (MCHB) invests in lifelong learning, from pipeline programs to encourage high school and college students to enter Maternal and Child Health (MCH) professions to continuing education for practicing MCH professionals and clinicians. In Fiscal Year 2013, the Division of MCH Workforce Development awarded 151 grants, an investment of $47 million. Grants are awarded to develop trainees for leadership roles in the areas of MCH clinical practice, teaching, research, public health administration and policy making, and community-based programs. A complete description of all training programs is available at the MCH Training website.

The MCH Life Course Toolbox

Hosted on the CityMatCH website, the MCH Life Course Toolbox is a repository for training modules, research, policy, and practice-related examples and documents concerning the Life Course perspective. This online resource also includes an interactive teaching tool that can be used as part of any Life Course curriculum: the Life Course Game. As described on the website where anyone can download the game materials, free of charge: "in the Life Course Game, participants are led through an interactive experience, designed to illustrate key concepts of the life course framework. Specifically, participants receive birth certificates at the start of the game that identify socially- and biologically-based historical factors that help determine their course in life. As they work their way through the game board, each person's roll of the dice identifies risk factors and protective factors that either push down or lift up their overall health trajectory and life course."

Residency Program in Social Medicine

Serving low-income families in the Bronx seeking services at the Montefiore University Hospital, primary care residents enrolled in the Albert Einstein College of Medicine Yeshiva University Residency Program in Social Medicine (RPSM) are specifically trained for practice in underserved communities. The program combines a community-oriented primary care (COPC) curriculum with a biopsychosocial approach, preparing residents to deliver excellent clinical care that encompasses all spheres of their patients' lives, throughout the life course.

Ongoing clinical interventions: evidence-based Interventions within clinical settings

In addition to ensuring that women are healthier throughout their life course and within their communities, an effective maternity health care system should be adequately equipped with the tools and processes necessary to provide equitable access to evidence-based interventions within clinical settings. **Ensuring that pregnant women are able to initiate early holistic prenatal care and be connected to other services, continues to be a priority for the state Connecticut.**

To this end, Medicaid payment policies that incentivize early initiation into prenatal care have been highly successful. Many programs, like California's Comprehensive Perinatal Services Program (CPSP) pay participating providers a bonus for eligible patients who enter prenatal care before 16 weeks.

Health Information Technology (HIT) tools such as electronic medical records (EMRs) or patient registries that document and track prenatal care entry and support data reporting have also been successful in getting women enrolled in prenatal care early in their pregnancy. Moses Lake Community Health Center, a large rural FQHC in Washington, uses its EMR system to facilitate early entry into prenatal care by recording pregnancy diagnoses, tracking prenatal care initiation and pregnancy risk status, and facilitating follow-up with patients to ensure care is timely and comprehensive.

In 2013, the Connecticut Department of Social Services introduced a Pay for Performance (P4P) Program in obstetric care. The purpose of this program was to improve the care for pregnant women and the outcomes of their newborns covered under the HUSKY Health programs. A total of $1.2 million was appropriated by the Connecticut General Assembly (CGA) to be paid to providers of obstetric care in the state fiscal year 2015. Obstetrical P4P payments are in addition to current fee for service payments. Connecticut focused on the following: timely completion (within 14 days) of online obstetrics prenatal and post-partum notification forms, first obstetric visit within 14 days after confirmation of pregnancy, at least one postpartum visit within 21 – 56 days after delivery, full-term, vaginal delivery after spontaneous labor whenever medically possible and the appropriate use of 17-alpha hydroxyl- progesterone when there is a prior history of spontaneous singleton preterm birth (prior to 37 weeks.) The temporary nature of this trial program contributed to the termination of reporting, once funding elapsed in 2014. **The Coalition is recommending that providers be encouraged to reinstate their notification efforts so that Husky-covered pregnant clients may be connected to needed services and care in a timely manner.**

Tier 4 Recommendations: Ongoing Clinical Interventions

A. Support the provision of behavioral health services and oral health care throughout the life course and during the perinatal period.
B. Integrate into provider training mental health, social stressors, and trauma education relevant to infants and families.

Recommendation 4A: Support the provision of behavioral health services and oral health care throughout the life course and during the perinatal period.

One in four adults in the US suffers from mental health disorders, often presented with preventable physical comorbidities.[54] When primary care and behavioral health care are not integrated, people suffering from these conditions may not receive effective quality care and treatment. Research has shown that a number of people with diagnosable mental illness are reticent to seek services in behavioral health care facilities because of the stigma associated with mental health disorders.[54]

Practices that have been able to successfully co-locate services, have documented increases in behavioral health care utilization rates.[54] Evidence supports the integration of primary and behavioral healthcare as a means for increasing access to whole-person quality care and improving overall health outcomes.[55] Similar patterns have been observed in regards to oral health care, particularly as it relates to lack of access to quality and affordable oral health care on the part of women during the perinatal period. Research suggests that poor oral health care during pregnancy can increase the risk of poor birth outcomes, including low birth weight and preterm birth, as does untreated mental illness or behavioral health issues such as drug and alcohol abuse.[56] Additionally, conditions affecting women during the perinatal period, and not dealt with appropriately have been shown to increase health risks for young children as well.[57]

In addition to continuing to support health promotion efforts targeting consumers, **the Coalition recommends that Connecticut providers, health care payers, leaders and legislators engage in processes intended to ensure that the person-centered medical home model include the provision of integrated holistic care, inclusive of oral and behavioral health care, throughout a person's life course in order to increase access to a high quality integrated care system, while reducing preventable poor birth outcomes associated with suboptimal access to quality behavioral and oral health care.**[57,58]

Recommendation 4A: Promising and emerging examples

SAMHSA-HRSA Center for Integrated Health Solutions (CIHS)

CIHS collects and shares a host of evidence-based information, tools, and promising models for provider organizations to draw upon as they design and implement integrated primary and behavioral health care services in their communities.

HRSA Integration of Oral Health and Primary Care Practice

The Integration of Oral Health and Primary Care Practice initiative seeks to expand oral health clinical competency among primary care providers as a means to improve access to early detection and preventive interventions.

National Network of Oral Health Access (NNOHA)

Through the collection and sharing of promising practices, NNOHA promotes greater integration between safety-net providers and health care centers to reduce disparities and improve oral health among vulnerable populations.

Recommendation 4B: Integrate into provider training mental health, social stressors, and trauma education relevant to infants and families.

There is increasing awareness that numerous factors can contribute to health and well-being other than physical maladies and individual behaviors. Often times, there is a story behind the physical presentation of illness, especially with populations at greatest risk such as low-income and minority populations. Mental health, social stressors and trauma are the pictures that tell that story. There is documented research that the aforementioned can significantly impact health and well-being, particularly when experienced as a child, the lasting effect can impact adult health. [59–61] This includes mental illness, stress and trauma experienced by mothers that can impact the health of their children or unborn baby. In Connecticut, more than 25,000 children per year experience some type of significant trauma, and 80% of children screened in juvenile detention report a history of trauma.[62] According to a study done by the Mental Health Outreach for Moms (MOMS) Partnership, 67% of the 898 mothers screened in New Haven stated they needed help coping with traumatic events.[63] 75% of mothers reported needing help to manage feelings of sadness or depression, controlling stress, and coping with traumatic events. Of the one third that stated they received care for any of the aforementioned, some found it difficult to get the help they needed.[63]

Integrating mental health, social stressors and trauma education relevant to infants and families into provider training will prepare providers to effectively treat patients presenting with a myriad of cofactors affecting their health. It provides a perspective that not only improves health, but truly works toward well-being which includes social, emotional and spiritual health. It will help to prepare providers that are trained in ameliorating these issues which will lead to healthier moms and ultimately healthier babies.

Recommendation 4B – Promising and emerging examples

The Institute for Health and Recovery (IHR) strives to incorporate an understanding of the significant impact of violence and trauma, especially on substance use and recovery, in the design and delivery of human services. IHR's Trauma Integration Specialists provide training and technical assistance to service providers on how to integrate knowledge of trauma, domestic violence, and sexual assault into the provision of local and national services. Specialists work with service providers to integrate an understanding of trauma into their existing programs and activities, addressing trauma for women, men, children and youth, and using evidence-based practices. IHR trains staff of Early Intervention, Head Start, and other early childhood programs on the impact of trauma on young children and of substance use on families. IHR staff also participates in interagency task forces and coalitions to promote trauma integration in human services.

Connecticut Health and Development Institute of Connecticut, Inc. (CHDI), Farmington, CT

CHDI has been working to institute a trauma-informed system of care in Connecticut for over 10 years. They have done so by developing tools for providers such as a trauma screening tool for children, and by providing training for professionals on evidence-based trauma informed care models and tools. They work with state and local partners and have made recommendations on how to continue implementing and sustain a trauma informed care environment. This is an example of efforts that are already in place and working. Supporting and partnering with efforts like this can help the state and all

its providers work toward trauma informed care for all residents, particularly those suffering from traumatic experiences that are often overlooked.[60,62,63]

Handbook on Sensitive Practice for Health Care Practitioners: Lessons from Adult Survivors of Childhood Sexual Abuse

This handbook presents information that will help health care practitioners practice in a manner that is sensitive to the needs of adult survivors of childhood sexual abuse and other types of interpersonal violence. It is intended for health care practitioners and students of all health disciplines who have no specialized training in mental health, psychiatry, or psychotherapy and have limited experience working with adult survivors of childhood sexual abuse.

Refer to Appendix C for additional Tier 4 strategies supported by Coalition members.

Education and counseling: Individual or public educational messages and support

Tier 5 Recommendations: Education and Counseling

A. Scale up (or continue investing) in fatherhood initiatives to increase social support within the family and home environment.
B. Integrate education about preconception and interconception health including mental and oral health, into hospital-based prenatal education models, group prenatal care, and home visiting programs.
C. Integrate mental health and well-being into State Department of Education school health curriculum.

Recommendation 5A: Scale up (or continue investing) in fatherhood initiatives to increase social support within the family and home environment.

Fatherhood intuitively provides important support to mothers and children. Written and oral history of fatherhood provides evidence to support the role of men in raising children and in family development.[64] With regards to birth outcomes, infants born to single mothers are more likely to have low birth weight and fathers participation in prenatal activities are associated with higher birth weights.[65] Having partner support or involvement during a teenager's pregnancy may reduce the likelihood of having a poor birth outcome.[66] Fathers can influence moms to quit smoking during pregnancy,[67] as well as influence the breastfeeding decision and when he is involved, mothers are more likely to breastfeed.[68] Conversely, when fathers are not involved, mothers are more likely to smoke during pregnancy.[69] This factor can be critical when considering that there is a 30% lower risk of sudden infant death syndrome (SIDS) if mom is not smoking.

Research demonstrates that a father's absence can have an impact on maternal and birth outcomes, childhood obesity, education outcomes, drug and alcohol use, child abuse, teen pregnancy, crime, and incarceration. The importance of father involvement among low-income, minority fathers is also evident in the child maltreatment literature. Child abuse is associated with father absence and is one of the most common predictors. When fathers are not involved in their children's lives the risk of neglect is also doubled.[70]

Fathers also influence cognitive and emotional development. When fathers are not involved, children experience more developmental delays while premature infants whose fathers spent more time playing with them had better cognitive outcomes at age 3.[67] The first two years of young males lives are critical when it comes to father involvement because of the risk of experiencing "father hunger", which can lead to mental health and behavioral problems in early years,[71] whereas there are lower occurrences of psychological distress in teens whose fathers were present and involved.[72]

Fatherhood initiatives built on an understanding of life course theory and its implications for maternal and child health increase viability and success especially as a complimentary service in existing MCH programs.[70] Dr. Michael Lu and colleagues in their paper, "Where is the F in MCH? Father Involvement in African American Families"[73] emphasize the need for a multi-level, life-course approach to strengthen the capacity of African American men to promote greater involvement in pregnancy and parenting as they become fathers. The paper explored several historical developments (slavery, declining employment for Black men and increasing workforce participation for Black women, and welfare policies that favored single mothers) that led to generations of father absence from African American families.[73]

Investing in fatherhood initiatives is crucial in ensuring that men are connected with their children and families, enhancing their important role as a protective factor. Father support increases social support to mothers and children, strengthening family resilience. Fatherhood initiatives priority goals are to improve the well-being of children by increasing the proportion of children growing up with involved, responsible, and committed fathers. This includes involving fathers in providing practical support during pregnancy and in raising children, as well as helping parents develop supportive and effective relationships with each other and their children.

Many fatherhood initiatives engage fathers who may have a history of incarceration; therefore specific outreach is needed to engage fathers and connecting them with needed "parenting" and "co-parenting" support. New Haven Family Alliance's Male Involvement Network (MIN) program in New Haven[74] is an example of a successful and innovative approach being implemented that engages low-income, non-custodial fathers in an effort to improve child development outcomes. The MIN is an initiative that consists of a partnership with the federally-funded New Haven Healthy Start program and The Community Foundation for Greater New Haven. The city's premiere MCH program and the city's first fatherhood program took the lead in creating better outcomes for children and their mothers and fathers. This best practice model has been endorsed by the CT DSS and replicated in fatherhood programs across the state. It is a federally recognized model and has been the sustained over 17 years. The model provides a comprehensive service delivery system that helps empower fathers to become nurturing and responsible forces in their children's lives that impacts policy and that promotes advocacy. This best practice service

delivery model is comprehensive, collaborative, strategic, outcome driven and has a strong evaluation component.

Engaging community partners in creating outreach and engagement strategies has helped increase father involvement. Partners like direct service providers, administrators, funders, policy-makers, practitioners, and consumers should come together to collaborate in a true working partnership in order to ensure that services to this population are community-based, coordinated, comprehensive and culturally competent and responsive. Engagement strategies must include engaging men "where they are" by building their strengths and addressing their needs. Based on an examination of evidenced- based national programs, the case management model should clinically informed, and address their physical, emotional, mental, economic and spiritual health needs. The relational approach and social modeling should include skill development in education, economic stability, family/child support, and mental and physical health.

Programs like NHHS and MIN implement engagement strategies that represent innovative approaches for men and fathers that incorporate lessons learned from engaging multi-sector partners, and confirm that individual, family, community, societal and policy factors play a role in barring or diminishing the involvement of fathers during pregnancy. Targeting these factors and their interaction can increase fathers' involvement and thereby improve pregnancy outcomes. NHHS designed and implements Barbershop Quartet workshops, an 8-week session conducted right in the neighborhood barbershops, which covers topics from preconception through interconception care. New Haven is also one of two communities piloting the "Dads and Diamond are Forever".

The MCHB recently awarded Healthy Start programs that include provisions for projects to focus on paternal involvement. There are 101 projects across the country with two in CT: New Haven and Hartford.

The Coalition recommendation to continue investing in fatherhood initiatives to increase social support within family and home environment involves investigating more programs to which MCH programs can be aligned, integrating "father inclusion" into existing/current MCH practices, and initiating services for men to ensure their health.

Recommendation 5A - Emerging and Promising Examples

Real Dads Forever

In 1996 the Real Dads program started at Manchester Hospital. The following year a Real Dads curriculum was developed and with it the establishment of Real Dads Forever. This comprehensive and holistic curriculum incorporates the emotional, physical, social and spiritual aspects of relationships that fathers have with their children. Fathers who have been involved in Real Dads Forever groups have been referred from a number of entities including the Departments of Social Services and Children and Families, schools, churches and other agencies.

National Fatherhood Initiative (NFI)

The National Fatherhood Initiative (NFI) was established in the early 1990's in response to statistics showing that a record number of children throughout the country were growing up in father-absent homes and to the research documenting the negative impact this has when compared to children living in two-parent families. The first decade of NFI's work focused on research and public education.

Building on its research and public education efforts, in the early 2000's, the National Fatherhood Initiative® began to create skill-building materials and offering training to programs throughout the country that are working with fathers.

CT Fatherhood Initiative

The John S. Martinez Fatherhood Initiative of Connecticut has been in existence for 15 years and strives to support dads by providing the skills they need to get and stay involved with their children. It operates through 10 Department of Social Services certified fatherhood programs, which provide a range of services including intensive case management, economic stability services and group sessions.

Male Involvement Network (MIN)

This network was established in 1997 by the following New Haven based providers: the Family Alliance, the Community Action Agency, and the New Haven Healthy Start, which operates within the Community Foundation of Greater New Haven. The model was developed to address the unique needs of low income noncustodial fathers and is funded by the Community Foundation for Greater New Haven in partnership with New Haven Healthy Start, Empower New Haven and the State of Connecticut Department of Social Services. It operates on an individual, family and community level and has 9 core intervention strategies that are used by MIN member agencies. The core intervention strategies are: 1) education; employment and career development; family and child support; health; housing; legal services; mediation, access and visitation; economic stability and self-sufficiency; and outreach and case management.

Core Adaptive Model (CAM©) for Fatherhood Programs

The National Healthy Start Association (NHSA) has long recognized the important role fathers have, with or without marriage, to their children. This recognition has led to the Association's current initiative, *Where Dads Matter* that has brought together representatives from Healthy Start projects who have joined with the NHSA to ensure the fatherhood remains a visible priority that is reflected in the work done by Healthy Start projects throughout the country. NHSA has set three fatherhood-related goals to accomplish within the next few years, including: 1) create an "attitude of inclusion" action plan; 2) establish a baseline for marketing materials in order to measure the impact of promotion resources and activities; and 3) measure, by developing a research design, the impact of male involvement on the family.

National Responsible Fatherhood Clearinghouse

This national clearinghouse is a federally funded program through the Department of Health and Human Service Administration (HRSA) Administration for Children and Families'(ACF) Office of Family Assistance (OFA). It is a resource for fathers, those working with fathers and those who support and advocate for strong fathers and families. Services include: a national toll free line (1-877-4DAD411) for dads and practitioners; the website www.Fatherhood.gov; print materials on responsible fatherhood; a responsible fatherhood media campaign; utilization of social media; and virtual trainings.

Recommendation 5B: Integrate education about preconception and interconception health including mental and oral health, into hospital-based prenatal education models, group prenatal care, as well as home visiting programs.

The evolution and validation of the positive impact that education provided about preconception and interconception has had on birth outcomes is evidenced historically in various models currently utilized in practice. As a standard within practice, the education model should include mental health and oral health and integration into hospital-based prenatal education models, group prenatal care and home visiting programs to maximize opportunities for optimal outcomes.

Education opportunities will emerge across the lifecourse as the needs of families become more evident. The needs of fragile families are multifaceted and varied. Many times these needs are challenging to meet but the value of the long-term impact of education on these topics should not be underestimated. Providing an opportunity for interaction between patients and clinician increases patient's knowledge and enhances and strengthen patient relations that can result in better outcomes.

Recommendation 5B: Emerging and promising examples

National Healthy Start Association

The federal Healthy Start initiative began in 1991 when the US Department of Health & Human Services' Resources and Services Administration (HRSA) funded 15 sites in locations where the infant mortality rates were 1.5 - 2.5 times the national average. Twenty three years later, on September 2, 2014, the Department of Health & Human Services announced its latest round of Healthy Start grants that have expanded to 87 organizations throughout the country, including two in Connecticut.

The New Haven Healthy Start (NHHS) project operates under the auspices of The Community Foundation for Greater New Haven. It has been in operation for over 17 years exemplifying successful implementation measured by federal National Performance Measures. Its longevity and leadership is reflected in its role as consultant to other Healthy Start programs and its leadership role in the National Healthy Start Association, which is the membership association for the federal Healthy Start programs. With the new grant (2014-2019), **NHHS will increase its emphasis on addressing social determinants of health for areas with high concentrations of maternal and child health disparities; work collaboratively with other New Haven based organizations to strengthen family resiliency; participate in New Haven's community-wide trauma coalition designed to address and to reduce the impact of adverse childhood experiences; and support father engagement, preconception health for men, and establish The Men's Consortium**.

The other Connecticut site is Hartford which operates through the State Department of Public Health. This latest competitive round of federal grant awards is Hartford's second cycle of funding, which will allow for a continuation of the work started under the previous grant that includes: **1) ensuring that Black-African American pregnant women enter prenatal care early and receive adequate prenatal care services; 2) increasing interconception care among program participants; 3) increasing the number of women who are screened for perinatal depression; 4) increasing outreach and enrollment**

in health coverage under the Affordable Care Act; and 5) increasing the number of program participants who have a medical home.

Over the years Healthy Start has made significant contributions around the causes of infant mortality particularly for minority populations that continue to have disproportionately high rates of adverse perinatal outcomes. **This federal initiative has been addressing issues that were been given a high priority ranking by the Coalition and therefore offers opportunities to benefit from their work.** Common areas of focus are: addressing the social and economic factors contributing to negative birth outcomes; increasing awareness around the benefits of the preconception/interconception health and health care; acknowledging the impact of trauma on women and their families; and recognizing the importance of fathers in the lives of their children.

CT Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program

The Patient Protection and Affordable Care Act passed in March 2010 included funding to establish the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. MIECHV is administered by the Health Resources and Services Administration (HRSA) within the US Department of Health and Human Services. The goals of the MIECHV Program are to "strengthen and improve the programs and practices carried out under Title V, improve coordination of services for at-risk communities, and identify and provide comprehensive services to improve outcomes for families who reside in at-risk communities."

In order to be eligible for MIECHV funding, states needed to conduct a statewide needs assessment. Connecticut's needs assessment was completed and submitted in September 2010. Through this needs assessment the state's high needs communities were identified. In addition to identifying the high needs communities, the legislation defined eight categories of priority populations of families living in a high needs communities. Based on the targeted communities and priority populations within each community, the Department of Public Health with guidance from the Home Visiting Advisory Committee, invited selected high need communities to participate in the MIECHV program by selecting one (or more) of evidence based MIECHV approved home visiting programs through the Home Visiting Evidence of Effectiveness study. Through formula (non-competitive) and competitive grant awards, Connecticut currently has the following MIECHV programs operating in the state:

- ChildFirst in Ansonia/Derby, Bloomfield, Bristol, Danbury, East Hartford, Killingly, Meriden, Plainfield, Putnam, Torrington/Winchester, and Windham
- Early Head Start Home-based Option in Ansonia/Derby
- Nurse Family Partnership (NFP) in New London
- Parents as Teachers in Bloomfield, Bridgeport, East Hartford, East Haven/West Haven, Griswold, Killingly, Manchester, Meriden, New Britain, Norwich, Plainfield, Sprague, Torrington/Winchester, Vernon and Windham.

MIECHV and the home visiting programs funded through this initiative provide resources and lessons learned through program implementation, the experiences of the home visitors and families visited, and the data collection required for funding.

Recommendation 5C: Encourage local school districts to integrate mental health and well-being into school health curriculum.

The World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[75] This definition shows that health is comprehensive and multi-faceted. By this truth, it is inherent that mental health and well-being be incorporated into school health education. It is particularly important in school health as those are the stages of life that can strongly impact a person's health beliefs and behaviors, which has a strong impact on their future health choices and outcomes.[61]

The Connecticut Department of Education provides guidelines and recommendations for local school districts on developing and implementing evidence-based curricula to meet national and state standards.[76] Connecticut General Statutes section 10-16b[58] mandates that all public schools include in their program of instruction *"health and safety, including, but not limited to, human growth and development, nutrition, first aid, disease prevention, community and consumer health, physical, mental and emotional health."*[77] Given this information, the Department of Education is in a unique position to encourage the integration of mental health and well-being as a key component of school health education.

Recommendation 5C: Promising and emerging examples

Healthy and Balanced Living Curriculum Framework, Hartford, CT

The Healthy and Balanced Living Curriculum Framework was developed by the Connecticut Department of Education as a framework for local school districts to use when developing health education curricula. It incorporates the concepts of mental, emotional and social health as applied to benchmarks for what children should be expected to learn about their health by different grade years. This is an established framework that Connecticut schools can adopt, utilize and build on.[78]

Scarsdale Public Schools Health Curriculum, New York

Scarsdale Public Schools utilizes a comprehensive health education curriculum that incorporates various facets of mental and social health and well-being. It includes objectives tailored for different levels of learning and understanding at different grade levels, with associated outcomes. Some included topics are stress management, social skills, self-esteem, healthy relationships, wellness, family life and sexual health (including parenting), and various subtopics within the topics of mental health, emotional health and social health.[79]

Maryland State Health Curriculum

The Maryland State Health Curriculum includes "Mental and Emotional Health" as one of six standards. Within this standard they include a topic area on mental illness, depression and suicide.[80]

The current Connecticut perinatal landscape

To understand the current perinatal landscape and the benchmarks to measure the impact of the Coalition's work, this section provides background information on the following focus areas:

- Fetal and infant mortality
- Preterm birth and low birth weight
- Teen births
- Prenatal care
- Unintended pregnancies
- Preconception health

Connecticut is among the wealthiest states in the United States and fares better overall in terms of perinatal health and birth outcomes compared to the nation. However, there are significant and persistent disparities by race, ethnicity, age, geography, and socioeconomic status. Below are selected findings from the 2014 Connecticut State Health Assessment, which were used to inform the process and efforts involved with the development of this Plan.[3] These data indicate that, although perinatal programs in Connecticut appear to be having a positive effect on the maternal, infant and child population, much remains to be done to achieve optimal outcomes for all Connecticut mothers and babies.

The lifetime effects of race, racism, social class, poverty, stress, environmental influences, health policy, and other social determinants of health are reflected in the elevated rates of adverse outcomes and persistent disparities. **The continuation of evidenced-based programs, coupled with efforts to increase health equity and address social determinants of health, is essential to achieving improved birth outcomes and eliminating disparities. The strategies outlined in this plan are intended to move Connecticut toward this goal.**

Fetal and Infant Mortality

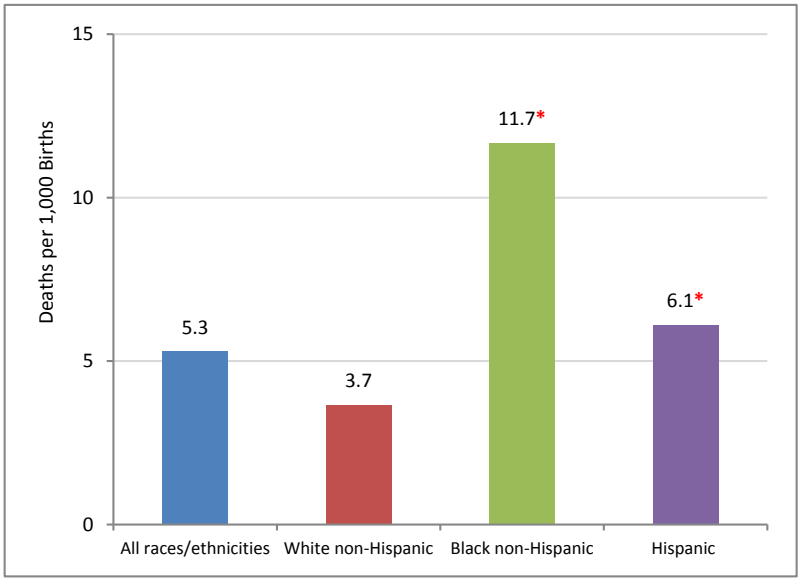


Figure 1: Infant Mortality Rate, by Race and Ethnicity, Connecticut (2008-2010)

Note: * Indicates significantly higher infant mortality rate for black non-Hispanics and Hispanics (p<0.05). Source: Connecticut Department of Public Health.

Infant mortality is defined as the death of a baby before his or her first birthday. The infant mortality rate (number of infant deaths per 1,000 live births) is widely accepted as an indicator of the health and well-being of a society. Although the rate of infant mortality in Connecticut is lower than the rate for the U.S. and many other states, significant disparities persist for various segments of Connecticut's population.

The infant mortality rate for black non-Hispanics (11.7 per 1,000 live births) was 3.2 times higher than that for white non-Hispanics (3.7 per 1,000) and the infant mortality rate for Hispanics (6.1 per 1,000 live births) was 1.7 times higher than that for white non-Hispanics in 2008-2010. These differences in the infant mortality rate by race and ethnicity were statistically significant. Infant mortality rates have continued to decline over the last 20 years (1990-2011) in Connecticut. Infant mortality rates among singleton births have declined at a rate of 2.4% per year. Rates among multiple gestation deliveries have declined at a more modest 1.9% per year.

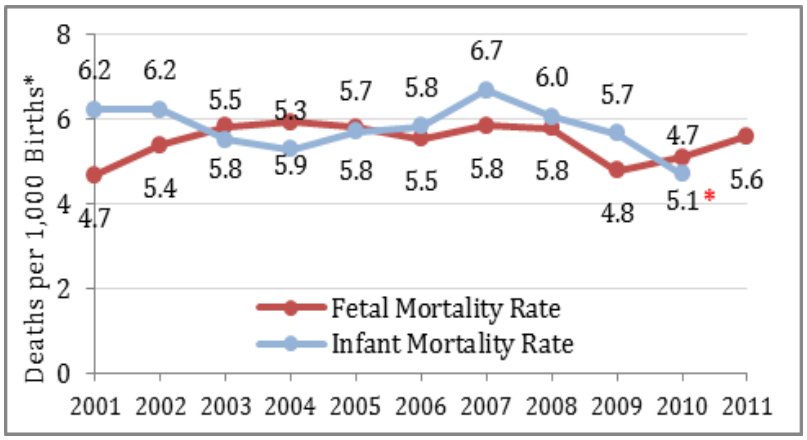


Figure 2: Fetal and Infant Mortality Rate, Connecticut (2001-2011).

Note: Indicates significant decline in infant mortality rate over this period for singleton and multiple gestation deliveries (p<0.05). Source: Connecticut Department of Public Health.

Often overlooked, fetal mortality is a prevalent public health issue.[81] Fetal death refers to the spontaneous intrauterine death of a fetus at any time during pregnancy. Only fetal deaths at 20+ weeks' gestation are reported in most states, including Connecticut. Unlike the rates of infant mortality, fetal mortality rates have not changed significantly in Connecticut over the last 20 years. The disparities in fetal mortality are similar to those for infant mortality. In 2008-2010, the fetal mortality rate for black non-Hispanics and Hispanics was significantly higher than that for white non-Hispanics. For black non- Hispanics (9.3 per 1,000

live births plus fetal deaths), the fetal mortality rate was 2.4 times the fetal mortality rate for white non-Hispanics (3.9 per 1,000 live births and fetal deaths). The fetal mortality rate for Hispanics (5.3 per 1,000 live births plus fetal deaths) was 1.4 times higher than that for white non-Hispanics.

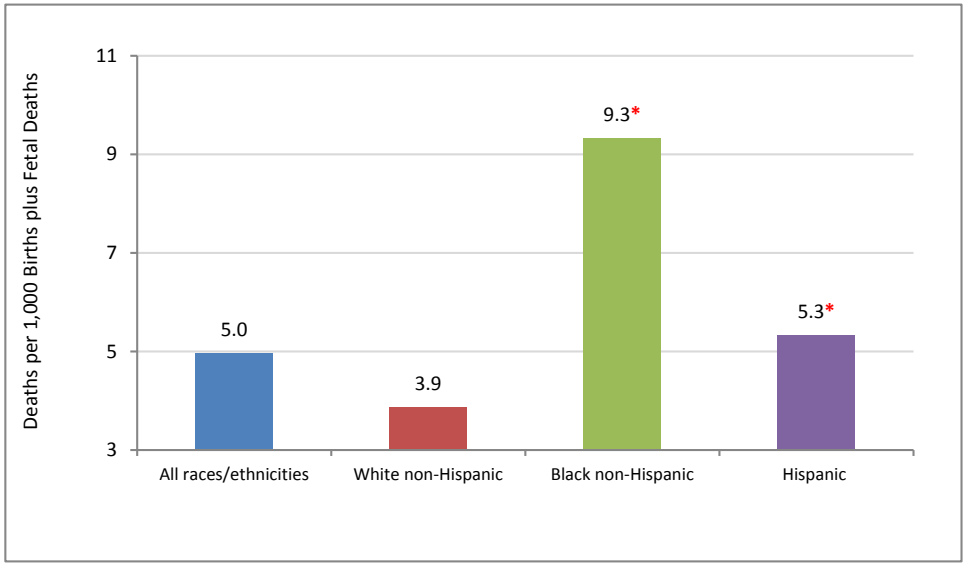


Figure 3: Fetal Mortality Rate, by Race and Ethnicity, Connecticut (2008-2010)

Note: * Indicates significantly higher fetal mortality rate for black non-Hispanics and Hispanics (p<0.05).
Source: Connecticut Department of Public Health.

Preterm Birth and Low Birth Weight

Preterm (<37 weeks gestation) and low birth weight (<2,500 g) births are important predictors of infant survival, child development, and well-being. Preterm birth is the leading cause of infant deaths, accounting for approximately 35% of infant deaths in the United States. In Connecticut, almost half of infant deaths in 2008-2010 were preterm-related.[82] Infants born prematurely are also at risk for neurological disabilities, respiratory conditions, or developmental delays. The risk for infant morbidity and mortality also increases with lower birth weight, which is associated with gestational age. Twin or higher multiple-birth pregnancies increase the risk of low birth weight and preterm births.

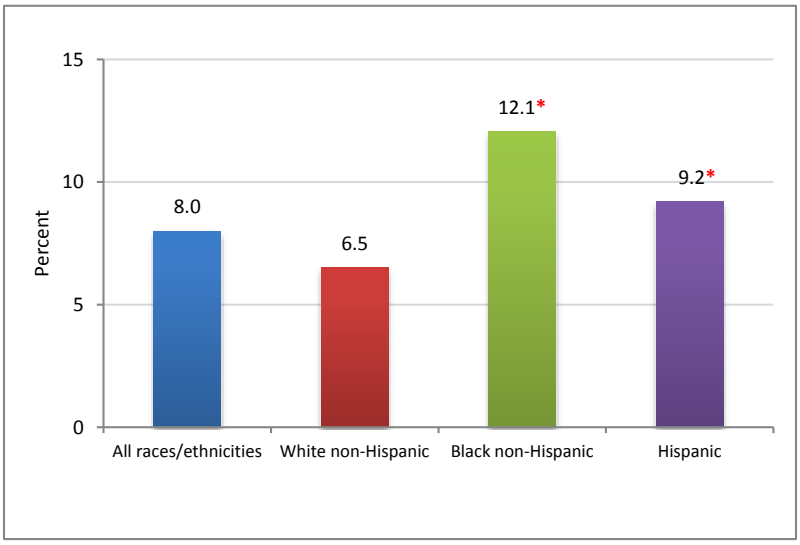


Figure 4: Percent of Singleton Preterm Births, by Race and Ethnicity, Connecticut (2011).

Note: * Indicates significantly higher percent preterm birth for black non-Hispanics and Hispanics (p<0.05).
Source: Connecticut Department of Public Health, Vital Statistics Registration Reports, 2011, Table 3.

In 2011, 8.0% of Connecticut singleton births were preterm. The proportion of preterm births for black non-Hispanic and Hispanic women was significantly higher than that for white non-Hispanic women. The percent of singleton preterm births among black non-Hispanic women was 1.9 times higher than that for white non-Hispanic women. For Hispanics, the proportion of singleton preterm births was 1.4 times higher than that for white non-Hispanics in 2011. From 2000 to 2011, there was little change in the percent of preterm births for the total population and Connecticut's largest racial and ethnic groups, suggesting that the gap in preterm births between black non-Hispanics and white non-Hispanics is not improving.

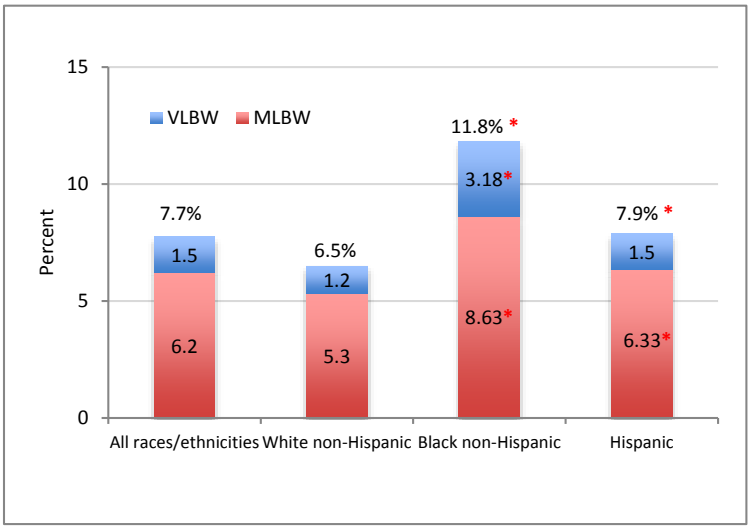


Figure 5: Percent of Low Birth Weight Births, by Low Birth Weight Status and Race and Ethnicity, Connecticut (2011)

Note: VLBW indicates very low birth weight and MLBW indicates moderate low birth weight. * Indicates significantly higher VLBW and MLBW for black non-Hispanics and significantly higher MLBW for Hispanics ($p<0.05$).

Source: Connecticut Department of Public Health.

In 2011, 5.6% of Connecticut singleton births were low birth weight. The proportion of low birth weight births among black non-Hispanics (9.6%) and Hispanics (6.4%) was significantly higher than that for white non-Hispanics (4.1%). From 2000 to 2011, there was no improvement in the proportion of low birth weight births for the total population or by race and ethnicity, suggesting that disparities in low birth weight births have not improved.

Teen Births

Substantial social and economic costs are associated with teen pregnancy and childbearing.[83] Teen pregnancy and birth are significant contributors to lower educational attainment and income. As compared with their peers, teen parents are less likely to graduate from high school or college, or to be fully employed as adults and more likely to experience an intergenerational cycle of teen parenting.[83–87] Children of teen mothers are more likely to experience adverse outcomes that increase public sector costs, such as higher rates of dependence on public health care and welfare. As adolescents, children of teen mothers have higher incarceration rates and lower earnings.

In 2010, Connecticut had the fourth lowest teen birth rate of any U.S. state.[88] Nationally and in Connecticut, the teen birth rate has fallen substantially since its peak in 1991.[89] From 2000 to 2011, there was a significant annual 4.2% decrease in the rate of births per 1,000 teen women. The overall rate of teen births in Connecticut declined by nearly 50% over the past decade, fueled by significant declines for each racial or ethnic group (ranging from -4.6% to -10.5% per year).

Despite this considerable progress, the importance of making further improvements is still compelling. In 2011, nearly 1 in 4 Connecticut teen mothers delivered a second pregnancy while still a teenager.[90] Expectant teen mothers are at greater risk for poorer prenatal care and perinatal health habits, and higher

rates of adverse outcomes such as low birth weight and premature delivery. In 2011, 27% of Connecticut teen mothers initiated prenatal care late or not at all compared with 12% of non-teen mothers.[90]

Even with the substantial reduction in teen birth rates, Hispanic (47.2 per 1,000) and black non-Hispanic (29.1 per 1,000) mothers had significantly higher rates in 2011 as compared with white non-Hispanic mothers (5.8 per 1,000). The high teen birth rate for Hispanic women may be consistent with younger age-specific birth rates among Hispanic women relative to other racial and ethnic groups and to the high birth rates among Hispanics overall.

Prenatal Care

The health and well-being of mothers, infants, and children are important for our nation's future health, well-being and prosperity. Poor preconception health and inadequate access to prenatal care can influence the risk of adverse birth outcomes and later life health. Early entry into prenatal care allows providers to treat pre-existing conditions early in pregnancy and establishes a relationship that lasts throughout the pregnancy.

In 2011, 13.0% of pregnant women received late or no prenatal care, and 77.8% received adequate prenatal care. The percent of women receiving non-adequate prenatal care increased significantly from 2000 through 2005, with an 8.9% annual increase over this period. From 2006 to 2011, the proportion of women receiving non-adequate prenatal care leveled off, with a 1.0% annual increase over this period.

In 2011, more than double the proportion of black non-Hispanic mothers (20.9%) and Hispanic mothers (19.4%) received late or no prenatal care relative to white non-Hispanic mothers (8.8%). These differences were statistically significant. In 2011, a significantly smaller percent of black non-Hispanic mothers (71.5%) and Hispanic mothers (73.8%) received adequate prenatal care, compared to white non-Hispanic mothers (80.7%).

Both white non-Hispanic and black non-Hispanic women experienced significant and high annual percent increases in non-adequate prenatal care for the first part of the decade (2000-2004 and 2000-2005, respectively). The rate of increase in non-adequate prenatal care slowed among white non- Hispanic women after 2004, but still continued to increase steadily from 2005 to 2011. The percent of Hispanic mothers receiving non-adequate prenatal care also increased significantly from 2000 to 2005, but then leveled off from 2006 to 2011.

Unintended Pregnancies

An unintended pregnancy is a pregnancy that is mistimed, unplanned, or unwanted at the time of conception.[91] Unintended pregnancy is associated with an increased risk of problems for a woman and her infant. If a pregnancy is not planned before conception, a woman may not be in optimal health for childbearing and may also delay prenatal care.

Slightly more than one-third of Connecticut women (34.5%) reported that they had an unplanned pregnancy in 2010-2011 (combined). Black non-Hispanic (60.6%) and Hispanic (46.5%) women were more likely to report that they had an unplanned pregnancy compared to white non-Hispanic women (25.4%).

Preconception Health

Preconception health is the health of men and women during their reproductive years, prior to conception. Because such a large proportion of pregnancies are unplanned, preconception health is important regardless of whether men or women plan to have children. Preconception health care is health care that focuses on conditions that may influence the likelihood of having a healthy baby.[92]

In 2010-2011, 44.7% of Connecticut women reported that they discussed preconception health with a health care provider prior to their pregnancy. Black non-Hispanic and Hispanic women were less likely to report having had these discussions with a health care provider. More than half of white non-Hispanic women discussed preconception health with their health care provider prior to pregnancy, compared to only 28.9% of black non-Hispanic women and 34.0% of Hispanic women in 2010-2011.

Emerging issues

Two significant emerging issues are not reflected in the Plan but that warrant being acknowledged and factored into the Coalition's work are Neonatal Abstinence Syndrome (NAS) and Assisted Reproductive Technology (ART) Use. They underscore the need to be fluid in addressing the needs of women, children and families within the policies and programs that are established to improve birth outcomes.

Neonatal Abstinence Syndrome (NAS)

Neonatal Abstinence Syndrome (NAS) is the medical term used to describe babies born dependent to medications, typically narcotics, that they were exposed to in utero. The syndrome is the newborn's response to the quick withdrawal of medication that occurs after birth and can include excessive crying, tremors, vomiting, diarrhea, trouble sleeping as well as delays in motor and social development. Over the past ten years, there has been a nationwide rise in the incidence of neonates that must be kept in the hospital for extended stays due to their dependence on maternal narcotics. Extended hospital stays often interrupt the normal positive bonding between infant and mother and greatly increase medical costs. In Connecticut there has been a 2.7-fold increase in babies born with neonatal abstinence syndrome over the past 9 years, costing the state over 22.8 million dollars in direct Medicaid expenses in 2011.

There has been an epidemic increase in the use, and subsequent abuse, of opioids in pain control therapy as the demand for new pain management strategies has grown. In the United States, between 1991 and 2010, prescriptions for opioid pain relievers grew from about 75.5 million to 205.5 million. The tremendous growth in availability of narcotic pain relievers has led to increased diversion for non- medical use in the general population. Prescription drug abuse affects both men and women and has cascaded into the maternal population. The increased incidence of NAS is a direct result of this occurrence.

The steep climb in the diagnosis of NAS has been a tremendous challenge to our healthcare system. Medical complications due to NAS include low birth weight, respiratory complications, feeding difficulties and slow weight gain, vomiting, tremors and seizures. Although incidence has increased there is no specific standard of care for the neonate with NAS and a full 50% of hospitals treating newborns do not have a protocol in place for treatment of NAS. Commonly, babies with NAS are kept in the neonatal intensive care

unit (NICU) for monitoring. This separation can have a negative effect on both breastfeeding and mother-infant bonding.

When assessing infant outcomes the first step is prevention of harmful conditions. In Tennessee linking long-term opioid use (over 30 days) to contraception is being explored. Connecticut is also beginning to implement policy changes, including prescription drug monitoring programs aimed at preventing the illicit use of opioid medications.

Once a child is diagnosed with NAS many supportive techniques may be employed which may empower families and decrease the symptoms of NAS. Breastfeeding and any other behavior that encourages skin-to-skin touching can encourage mother-infant bonding and can have a positive effect on both the mother and the neonate. Infants who room-in with mothers, instead of being transferred to a NICU, had an increased likelihood of being discharged home with their mother and a decreased need for NAS drug therapy. Other non-invasive techniques include: minimizing stimuli such as light and sound, avoiding infant movement by careful swaddling, responding early to an infant's signals, adopting infant positioning and comforting techniques such as swaying, rocking, and pacifier use, and providing frequent small volumes of breast milk or formula to encourage adequate growth.

The rapid emergence of NAS necessitates an increase in understanding by the medical community about all types of treatment and its efficacy. The dramatic increase in the level of opioid addiction seen in Connecticut, as well as across the country, signals the need for public health to take a much stronger preventative role to improve infant outcomes.

Assisted Reproductive Technology (ART)[1]

One in every eight (12.9%) adult women of reproductive age (18 to 50 years old) in Connecticut during 2013 reported having infertility or difficulty carrying a pregnancy.[93] The U.S. Centers for Disease Control and Prevention estimates that in 2010, Connecticut ranked fifth among all states in the country for *per capita* use of assisted reproductive technology (ART) to aid couples with fertility problems (4,996 per million women between 15 and 44 years of age *versus* 2,331 per million nationwide).[94] The per capita rate in Connecticut during 2010 was over 6-fold higher than that during 2005, when the rate was only 783 per million.[95] Over 3.5% (1,404) of all births in the state were attributed to ART usage during 2010. During 2011, the most recent year for which data are available, the *per capita* use of ART in Connecticut remained high among other state, at 4,708 per million.[96]

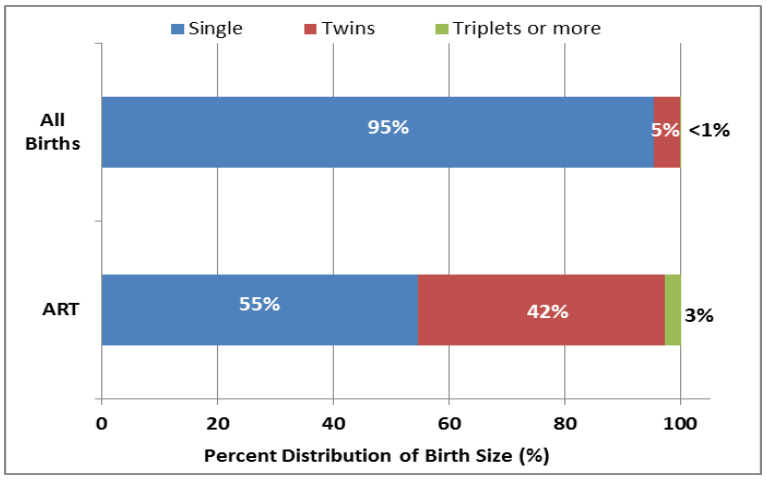


Figure X: Percent distribution of single, twin, and higher order births, all births *versus* births attributed to assisted reproductive technology, Connecticut, 2010.

Source: CT Department of Public Health, Health Statistics and Surveillance Section; Centers for Disease Control and Prevention, Women's Health and Fertility Branch.

[1] Although various definitions have been used for assisted reproductive technology (ART), the technique generally involves surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman. ART generally does NOT include treatments in which only sperm are handled (i.e., intrauterine—or artificial—insemination) or procedures in which a woman takes medicine only to stimulate egg production without the intention of having eggs retrieved. ART has been used in the United States since 1981 to help women become pregnant, most commonly through the transfer of fertilized human eggs into a woman's uterus (*in vitro* fertilization).

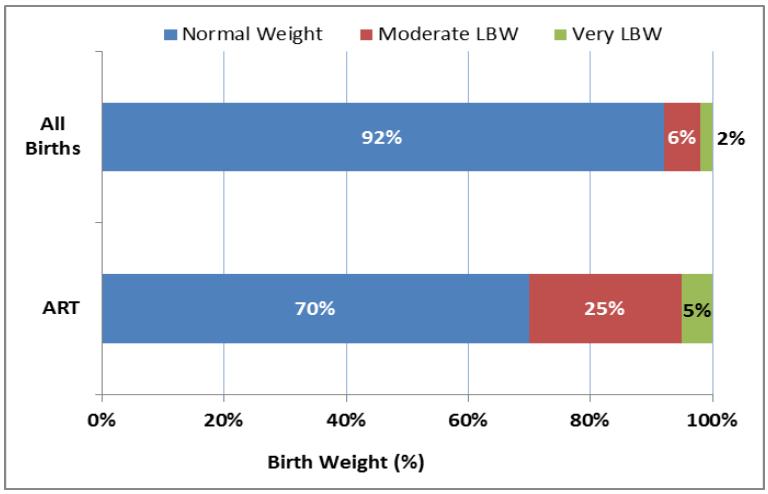


Figure Y: Percent distribution of birth weight outcomes, all births *versus* births attributed to assisted reproductive technology, Connecticut, 2010.

Source: CT Department of Public Health, Health Statistics and Surveillance Section; Centers for Disease Control and Prevention, Women's Health and Fertility Branch.

Nearly half of every ART birth in Connecticut during 2010 (45%) resulted in twins, triplets, or higher order births (see Figure X), and 30% of ART births were either moderate or very low birth weight (see Figure Y).[97] In sharp contrast, among all births in Connecticut during 2010, only 5% resulted in multiple births, and only 8% resulted in reduced low birth weight. Among all low birth weight events in the state during 2010, 14% were attributed to ART.

The statewide statistics in multiple births and low birth weight during 2010 represented a high over the past decade of increasing multiple births and low birth weight rates,[3,90] suggesting that ART usage in Connecticut is at least in part driving the rate of multiple births. Some experts predict that the increasing trend in ART usage across the country will continue, and that future efforts to conceive may not be limited to couples with fertility problems.[98,99] Yet, since birth of the first child conceived by ART was only 36 years

ago, the long term health effects of ART remain unknown.[100] The state must develop mechanisms for tracking ART usage and its impact on health outcomes.

Recent advances in ART techniques make possible procedures that reduce the likelihood of multiple births and low birth weight.[101] Elective single embryo transfer (eSET) is a highly successful procedure for most women with a favorable prognosis,[102] which is less likely to result in low birth weight.[103] Whereas over 70% of ART treatments were eSET during 2010 in Sweden, and Australia and New Zealand (D.

Kissin, CDC, *personal communication*), however, only 6.7% of ART treatments were eSET in Connecticut during the same period. Within the U.S., Connecticut ranked 18th among all states for eSET usage in 2010, well behind states such as Delaware, which ranked first with 45.0% eSET usage. These data indicate that much of the low birth weight experienced in the state as a result of ART is preventable, and that consumer awareness is needed to encourage women to select eSET, when clinically appropriate. Efforts are also needed among fertility clinics in the state to encourage widespread use of eSET, especially among women with favorable prognosis.

Recognizing the statewide contribution of ART to low birth weight, as well as the need to track ART activity and its impact within the state, DPH joined a collaborative of other states in 2013. The States Monitoring Assisted Reproductive Technology (SMART) Collaborative, with partners that include CDC, Massachusetts, Michigan, and the Society of Assisted Reproductive Technology, seeks to strengthen the capacity of states to evaluate ART-related maternal and perinatal outcomes through state-based public health surveillance systems. Through the SMART Collaborative, DPH plans to link information from ART surveillance at CDC with state birth records, infant and fetal death records, hospital discharge registries, birth defects registries, and cancer registries. The linked datasets will create a population-based data registry of ART and non-ART births that can be used to monitor and examine ART pregnancy outcomes.

The Association of State and Territorial Health Officers recently joined the SMART Collaborative, making possible a broader approach to developing strategies that improve birth outcomes. The DPH is also in partnership with the state March of Dimes on ART issues in the state, as well as the Medical Director for the state Medicaid program. These state and federal partnerships will allow DPH to broaden its surveillance activities to include low-income families, raise awareness of the impact of ART on public health in the state, and ensure that surveillance efforts in Connecticut are incorporated into strategies that encourage the use of eSET. These strategies would significantly reduce low birth weight rates in the state and could allow the state to meet the challenge of the Healthy Babies Initiative.[104]

Appendix A - Additional tier 1 strategies supported by coalition members

Additional Tier 1 Strategies Supported by Members of the Coalition: Addressing Socio-Economic Factors

D. Increase provider knowledge of community resources addressing social needs (housing, food, mental health, childcare, transportation).

E. Identify and implement strategies aimed at reducing/eliminating institutional racism.

F. Create supportive housing initiatives for pregnant women and their families.

G. Integrate financial literacy into family planning and counseling services, as well as in other relevant programs serving MCH populations.

Strategy 1D: Increase provider knowledge of community resources addressing social needs (housing, food, childcare, legal aid, and transportation.)

Clinical providers recognize the importance of patients' social needs and often identify their interactions within the clinical setting as an opportunity to address them. Too often, because of system-related issues such as time constraints, billing considerations, staffing issues, or lack of knowledge of available resources, this opportunity becomes a missed one.[8,10] Coalition members have raised the need to identify promising strategies to provide holistic care that also addresses patients' socio-economic needs, building on, enhancing, and optimizing existing resources such as the 2-1-1 Connecticut service.

Strategy 1D: Examples from the ground

2-1-1 Connecticut

Since 1991, via a contract with the Department of Public Health, 2-1-1 CT has been serving as the federally mandated access point for the state's MCH population. Anyone can dial 2-1-1, 24 hours a day 7 days a week, or search the online 2-1-1 database that features over 4,600 agencies, providing 48,000 programs and services organized by location, service category, or agency. Specialized directories, including one specifically developed for the Coalition to Improve Birth Outcomes provides in-depth information and resources specific to concerns commonly faced by women, children and their families. The 2-1-1 system includes specialized call centers including 2-1-1 Child Care, which is a free, confidential, and statewide service that helps match the requests of parents with child care providers and programs. Child Care Referral Specialists help parents learn about options in their community and understand what to look for in selecting a quality child care arrangement. Child Development Infoline (CDI) is another specialized 2-1-1 call center. CDI care coordinators provide education on development, behavior management strategies and programs, make referrals to services, and provide

advocacy and follow-up as needed. The CDI call center also serves as an access point for information on and referrals to home visiting programs for pregnant women and young children.

Healthy City

Taking the traditional database concept of the 2-1-1 service, Healthy City of California harnesses the power of Geographic Information System (GIS) technology, public datasets, and social connectivity tools to empower communities to not only access information of available resources and services, but also to participate in Community Based Participatory Action Research (CBPAR) to "build a better community." Connecticut residents and practitioners can find a similar tool in the Connecticut Nonprofit Strategy Platform website.

HealthLeads

Currently operating in clinics and hospitals in a handful of major cities in the US, the HealthLeads model partners trained college student advocates with clinical providers to ensure the writing and fulfillment of prescriptions for patients' basic needs, such as shelter, food, and heat. The model allows healthcare organizations to provide a valuable service to its patient base through a cost-contained mechanism that, on the other hand, invests in youth wishing to develop valuable experience in the social services and healthcare fields.

M**edical-Legal Partnerships (MLPs)**

MLPs place lawyers and paralegals at healthcare institutions to help patients address legal issues and social policies that are linked to poor health outcomes, such as income supports and insurance, personal and family stability, legal status, education and employment, and housing and utilities. For many patients, MLPs can provide much needed guidance and assistance in cases involving complicated bureaucracies, unenforced laws, and wrongfully denied benefits and rights. To learn more about which MLPs exist in Connecticut, click here.

Strategy 1E: Identify and implement strategies aimed at reducing/eliminating institutionalized racism.

Informed by increasing research surrounding experienced discrimination and negative birth outcomes,[105,106] members of the Coalition acknowledge the need to further identify and invest in emerging and best practices for the elimination of racism in our communities. Racism is a complex and insidious phenomenon, very well explained in Dr. Camara Jones' allegory of the Gardener's Tale, which conveys the multi-level nature of racism in our society (i.e. institutionalized racism, personally-mediated racism, and internalized racism.) Scholars of the intersection between racism and health outcomes purport that institutionalized racism (a.k.a. structural racism) significantly compounds the effect of poverty, perpetuating segregation, chronic stress, and disparities.

Strategy 1E: Examples from the ground

New Haven Action Learning Collaborative - Supported by the Partnership to Eliminate Disparities in Infant Mortality (PEDIM), the State of Connecticut was able to begin efforts to explore issues tied to racism in our state, and more specifically within the Greater New Haven area. Members from other Action Learning Collaborative (ALC) groups around the nation, shared valuable lessons learned and tools created as a result of the process. One such tool may be useful for local coalitions, organizations, and groups planning to move forward with initiatives aimed at reducing and eliminating racism: Exercises for Team-Building and Community Action Planning: A Toolkit for MCH Leaders Addressing Racism's Impacts on Infant Mortality.

The Center for Health Equity and Social Justice - This Boston-based center, combines the efforts of the REACH Coalition and the Office of Healthy Equity to expand its impact in achieving health and racial equity in the City of Boston (MA), through the promotion of community mobilization, community-based participatory research, program development and evaluation.

The W.K. Kellogg Foundation has been a leader in funding initiatives aimed at healing racial inequities and eradicating institutionalized racism.

Black Males Achievement Data Dashboard

The Institute for Black Male Achievement (IBMA) is committed to tackling long-standing systemic barriers to black male achievement so all black boys and men have equal opportunity to lead successful and meaningful lives. The IBMA provides capacity building support and resources to the many organizations belonging to its national network. It has also recently unveiled the Black Male Achievement Data Dashboard which features 17 indicators that track measures of opportunity for black men over the course of their lives, often highlighting striking disparities and providing a data-driven launching pad for action aimed at tackling systemic barriers. While no communities in Connecticut are currently included in this dashboard, it may be worthwhile exploring opportunities to expand the dashboard's reach to include large urban centers in our state to help propel Connecticut's concerted efforts to eliminate institutionalized racism affecting families of color.

Strategy 1F: Create supportive housing initiatives for pregnant women and their families.

Homelessness often occurs in conjunction with experiences of violence, poor nutrition, adverse mental health, substance use, and prior trauma, placing homeless pregnant women at particularly increased risk for physiologic and psychological stress, impacting overall health outcomes. Homelessness alone has been documented as being independently associated with poor perinatal health outcomes, including preterm birth and low birth weight.[107] Studies concerned with substance use by pregnant women have shown higher treatment success rates in domiciled women, compared to homeless women, and therefore advocate for housing needs to be addressed as part of effective comprehensive treatment approaches.[108]

Unstable housing during pregnancy has also been associated with reduced rates of compliance with the recommended postpartum visit, which usually occurs four to six weeks postpartum and is often used to evaluate a mother's overall physical and mental wellbeing as well as to initiate a family planning method.[109] Housing insecurity is also associated with lower rates of breastfeeding initiation and continuation, suboptimal compliance with well-baby checkups, and higher rates of asthma and chronic health conditions that extend throughout childhood and adult life.[110]

Strategy 2F: Examples from the ground

Healthy Start in Housing (HSiH)

Implemented in Boston (MA) HSiH is an innovative program that seeks to use housing as a strategy to improve birth outcomes among populations disproportionately affected by socio-economic risk factors.[110] Through a collaboration of non-traditional partners with seemingly different missions, the Boston Housing Authority and the Boston Public Health Commission were able to prioritize placement of pregnant women in supportive housing that provided stable shelter as well as ongoing case management and support from Healthy Start staff. Preliminary evaluation results indicate significant improvements in maternal physical and mental health.[111]

Strategy 1G: Integrate financial literacy into family planning and counseling services, as well as in other relevant programs serving MCH populations.

In keeping with the Coalition's focus on improving social determinants of health, as a means of improving birth outcomes, innovative cross-sector approaches are needed to reach the population of interest and address inequities. One such approach, is the integration of strategies addressing poverty reduction, with wrap-around services targeting MCH populations (i.e. home visiting, family planning, WIC, etc.) While funding sources and logistical considerations may need to be restructured to allow for non-traditional MCH services to be integrated into MCH programs, the colocation of such services allows for a more streamlined and non-duplicative approach. Promising examples of such approaches have shown that colocation and integration of such services can more effectively reach families, while reducing the burden on families who selectively choose to engage with supportive systems and programs, given their limited time and resources. This planned integration can also serve as a way to advance research about the effectiveness of novel approaches addressing social determinants of health, while also more explicitly educating stakeholders about the connection between income inequality, poverty, and health outcomes.

Strategy 1G: Examples from the ground

Building Economic Security Today (B.E.S.T.)

Partnering with a local home visiting service and the Women, Infants, and Children (WIC) program, the Contra Costa Family, Maternal and Child Health (FMCH) Programs Life Course Initiative implemented a program focused on family financial literacy as a way to improve birth outcomes and family health.[112] Program evaluation results showed that clients increased their awareness of financial issues, as well as their confidence in regards to their ability to improve their financial situations. A welcomed unintended consequence of the program was also an increase in knowledge

about community financial resources among program staff. WIC and FMCH staff members valued the opportunity to engage in non-traditional, cross-sector partnerships to address clients' pressing social determinants of health.[112] The referenced article also shares lessons learned in terms of actual implementation logistics.

Appendix B - Additional tier 2 strategies supported by coalition members

Additional Tier 2 Strategies Supported by Members of the Coalition: Changing the Context
D. Establish a statewide community health worker system similar to the one in Massachusetts: this can include models involving lay home visitors, community doulas, preconception peer educators, peer breastfeeding counselors, oral health, etc. E. Engage in a broad effort to change the language of mental health to reduce fear and increase incidence of provider-patient communications about mental health needs, "stress", "stressors", and "stressful events/situations." F. F. Expand the Person-Centered Care Model (PCCM) to include women's health, including oral health, with a Life Course approach. G. G. Expand state Husky to undocumented women and their families.

Strategy 2D: Establish a statewide community health worker system similar to the one in Massachusetts: this can include models involving lay home visitors, community doulas, preconception peer educators, peer breastfeeding counselors, oral health, etc.

Massachusetts is the first state in the country, via the Economic Opportunities Act of 1964, to recognize and support the unique role community health workers offer isolated families and/or those confronting language and cultural barriers. Community health workers are employed by a number of organizations to work within the neighborhood in which they live. They reflect their neighbors' ethnicity and culture, which helps to establish trusted communication and relationships. In addition to navigating various health and human service systems to ensure that children and families have access to needed resources, they also help facilitate communication between health care providers and their patients. In Massachusetts some of the organizations that employ community health workers include: the Boston Association for Child Birth Education; the Lowell Community Health Center; The YWCA of Central Massachusetts; the Stanley Street Treatment and Resources (STARR); The Pioneer Valley Area Heath Education Center, a program of the Springfield Department of Health and Services. Connecticut, the country (specifically through provisions contained in the Affordable Care Act), and global public health initiatives have recognized the value of community health workers. This awareness is reflected in the On the Ground Examples listed below and offer the Coalition the opportunity to explore the feasibility of creating opportunities for community health workers and to determine the infrastructure needed to support them.

Strategy 2D: Examples from the ground
Connecticut's Area Health Education Center's (AHECs) Support of Community Health Workers (CHWs) Connecticut AHECs recognize the important role community health workers provide in linking those in need of care and services to the resources available in a timely and supportive manner. Over the years, AHECs' support of community health workers have included:

- Developing a curriculum for community health outreach workers;
- Surveying, via the Southwest AHEC, CHWs and their employers. These surveys were done in order to obtain information on the roles, activities, training needs and employment security of CHWs in Connecticut; and
- Identifying potential employment opportunities for CHWs under health care reform legislation as well as through other federal initiatives, such as The Center for Medicare & Medicaid Innovation (the Innovation Center) and state policy initiatives through the Centers for Disease Control and Prevention (CDCP) and Health Resources and Services Administration (HRSA).

The New Haven MOMs Partnership

"Community Ambassadors" are mothers from New Haven trained in brief mental health intervention, key principles to promote health, development and achievement across generations, act as referral sources to the MOMS hubs which 12 different areas of New Haven that were identified as having the most need for services. A comprehensive workforce development strategy will be utilized to train all outreach workers at existing neighborhood and citywide agencies in key principles of a two generation strategy to promote health, development and achievement. All neighborhood business professionals frequently interacting with mothers (referred to as "door openers" (e.g. nail technicians, hair dressers, and laundromat owners) will be trained on brief "touch points" to use to engage mothers with the neighborhood MOMS hubs. In this way, a large portion of the neighborhood or community would become "mom informed" and filter families at risk or in need to the MOMS hubs.

The Bridgeport Alliance for Young Children (BAYC)

BAYC is a city-wide collaborative of parents, residents, elected officials, and providers. BAYC helps families find community resources; advocates for families with young children; and acts as a source of knowledge and experience on early childhood topics. "Community Messengers" is a BAYC program that provides parents with the opportunity to help other parents across the city through face-to-face communication. The Community Messengers program was started as a city-wide grassroots vehicle of communication across neighborhoods. Agencies use multiple means of communication…telephone, newspapers, computers, radio and television but parents have said the best way to communicate is by talking…to neighbors, to children, to doctors, teachers and family. Bridgeport parents are trained to know about community resources and educated about early childhood topics so they in turn can teach other parents.

Strategy 2E: Engage in a broad effort to reduce maternal fear and stigma about the spectrum of emotional and psychological complications of pregnancy and childbirth by increasing provider-patient communications, including perinatal mental health in childbirth education programs, raising public awareness, and developing a coordinated system of treatment and care.

The perceived stigma of having a mental health challenge is particularly difficult for pregnant women or new mothers, who may be reluctant to disclose feelings of depression, dependence on substances and/or living in an abusive situation for fear of being considered an "unfit" mother. In addition to changing the

language and understanding of mental health disorders, it is equally important that those to whom women may disclose are knowledgeable and trained in providing support, care and the services that are needed.

There are a number of resources addressing the stigma of mental health and offering support and guidance around provider/patient communication related to issues of toxic stress, maternal depression, and trauma.

Strategy 2E: Examples from the ground

Connecticut Chapter of the National Alliance on Mental Illness (NAMI)

CT NAMI has been operating in the state for over 30 years. It offers support, education and advocacy related to mental health concerns to family members, people living with mental health challenges and the community at large. Trainings offered by CT NAMI include:

Perspectives – a free one-day course focuses on mental illness education and client/provider/family member collaboration skills. The program targets "front-line" mental health provider staff and presents family members as key natural supports to enhance a treatment plan and is aligned with the recovery model supported by DMHAS.

Sharing Hope – a free interactive educational presentation that aims to decrease mental health stigma in the African-American faith community and the Latino community in general to increase awareness of mental health recovery, and to introduce NAMI education and support programs. The program is presented by a panel of individuals with the lived experience of mental illness and family member experience. This presentation is available in both English and Spanish.

The following strategy goals were cited in the organization's 2013 Annual Report:

- Reach out to underserved areas and constituencies, increase engagement and participation.
- Strengthen advocacy around mental health. Expand advocacy . . . in the private mental health system as well as the public.
- Fight stigma.
- Develop mission-focused marketing and communications to raise visibility.
- Improve reach, quality and impact of marketing and communication, including social media.

The Connecticut Women's Consortium

This organization strives to ensure that the behavioral health system responds to the needs of women and the people and organizations that affect them. The Consortium is recognized for the trainings it offers in all aspects of the behavioral health needs of women with a particular focus and expertise in trauma. In addition to the trainings, the Consortium produces a Trauma Matters newsletter. Since 2002, the Trauma Matters newsletter has provided information about trauma and trauma-informed care by examining best practices and efforts in behavioral health in the state of Connecticut.

Strategy 2F: Expand person-centered care model (PCCM) to include women's health, including oral and mental health, with a lifecourse approach.

The state of Connecticut was among the sixteen state recipients of a multi-million dollar, multi-year State Innovation Model (SIM) grant from the Centers for Medicare and Medicaid Innovation (CMMI) with the purpose of improving health care outcomes and eliminating health inequities, while reducing health care costs. As part of this innovation-driven funding opportunity, Connecticut is positioned to shift from a volume-based system to a value-based payment system for medical care reimbursed by Medicare, Medicaid, and private insurers. The vision for the Connecticut SIM project strives to achieve a "whole-person-centered system" that integrates and coordinates primary care, oral health, behavioral health, consumer engagement, community support, and public health. The concept of "whole person- centered care model" includes comprehensive assessments of the individual person and of her family to identify strengths, capacities, risk factors, behavioral health, comorbidities, and the ability to manage self-care. It also addresses cultural, linguistic, health literacy barriers to care in order to develop an appropriate person-centered care plan by using shared decision making tools.

It is with our shared public and clinical health expertise that **members of the Coalition to Improve Birth Outcomes recommend that the Connecticut SIM project actively seek to include women's health issues and related supports and care throughout the life course**, **in an effort to align clinical care recommendations with evidence-based public health strategies to improve birth outcomes and reduce disparities.** By leveraging innovative health information technology and coordinated health care processes, to include critical and holistic women's health outcomes, care, and services throughout a woman's life course, the Connecticut health care system can increase its effectiveness in preventing and treating early-stage conditions that have the potential of deteriorating, while significantly impacting women, the health of their offspring, and the overall burden on our state's health care system.

Strategy 2F: Examples from the Ground
Given the innovative and recent nature of the State Innovation Model project, there are currently no distinguishable examples that can be shared at the time of this writing. Evaluation results from similar projects in Connecticut and other states will be shared as they become available.

Strategy 2G: Expand state Husky to undocumented women and their families.

There are over 11 million people in the US who are unable to purchase health insurance from the state exchanges, under the Patient Protection and Affordable Care Act of 2010. Many of these individuals, who are undocumented immigrants, also continue to be excluded from Medicaid coverage and most other entitlement programs.[113] Approximately 4 million US-born children have undocumented parents.[113] Health care providers are continually faced with ethical dilemmas when it comes to caring for members of these

populations, and countless women continue not to have access to valuable preconception, prenatal care, postpartum, and interconception health care services, despite the best available evidence and recommendations supporting the value of such care.

In order to get federally- and state-funded Medicaid and Children Health Insurance Program (CHIP) coverage, most Legal Permanent Residents (LPRs) or green card holders have a 5-year waiting period. States may remove the 5-year waiting period and cover lawfully residing children and/or pregnant women.

The state of Connecticut has joined the 25 other US states that chose to provide Medicaid coverage to lawfully residing immigrant children and/or pregnant women without a 5-year waiting period. People who aren't eligible for Medicaid because they don't have eligible immigration status may get Medicaid coverage for limited emergency services, if they otherwise meet other Medicaid eligibility criteria. Women who fall into this category in Connecticut can receive intrapartum care during labor and delivery under this provision, but are not able to receive prenatal or postpartum care coverage.[114]

In the absence of an established safety-net for uninsured individuals who do not otherwise have access to health insurance coverage or affordable care, efforts have sprung up across the nation and our state to attempt to fill a gap in the provision of preventive and acute care. An example is the HAVEN Free Clinic which has been operating since 2005 as a student-run primary care clinic partnered with Fair Haven Community Health Center (FHCHC) and Yale University. Operating four hours per week, the model includes volunteer students and providers across the disciplines of medicine, nursing, physician's associates, and public health, and is able to serve individuals between the ages of 18 and 65 living in the Fair Haven neighborhood. While women served by tis clinic cannot receive prenatal care, they can receive other reproductive health care services including family planning education and counseling, screenings for sexually transmitted infections, and more. **While the effort is laudable, its reach is limited and too many still remain without access to care. To further ensure that birth outcomes improve for all populations in our state, including for those Connecticut newborns whose mothers are foreign-born and lack legal residence or American citizenship status, the Coalition recommends that actions be considered at the state level to ensure that ALL women have access to care throughout their life course, regardless of documentation status.**

Strategy 2G: Examples from the Ground

Prenatal Care Services through Medicaid

New York State has developed a comprehensive prenatal care program that offers complete pregnancy care and other health services to women and teens who live in New York State and meet Medicaid income guidelines. Health insurance is available for *pregnant women regardless of their immigration status.* Under Prenatal Care Services, pregnant women receive prenatal health services, such as lab tests, HIV tests, nutrition screenings, and other services related to their pregnancy and for at least two months after delivery. Babies receive health care services for at least one year after birth.

Family Planning Extension Program

The Family Planning Extension Program (FPEP) extends access to family planning services to postpartum women residing in the state of New York, regardless of immigration status, for up to 26 additional months. Women are eligible if they were on Medicaid while they were pregnant, but lost Medicaid coverage when the pregnancy ended.

Appendix C - Additional Tier 4 strategies supported by coalition members

Note: There are no additional Tier 3 Strategies.

Additional Tier 4 Strategies Supported by Members of the Coalition: Ongoing Clinical Interventions
C. Increase access to midwifery care for all women considered low-risk (medically) D. Increase access to childbirth and postpartum doula services (Medicaid reimbursement; adding doula care to existing home visiting services)

Strategy 4C: Increase access to midwifery care for all women considered low-risk (medically).

In a recent series of evidence-based papers published in the Lancet, midwifery was identified as a underutilized high quality, high value intervention to help improve maternal and infant health outcomes in the short-, medium-, and long-term.[115] A review of the scientific literature associates care provided within the scope of midwifery with reduced maternal and neonatal morbidity and mortality, reduced stillbirth and preterm birth, improved psychosocial health outcomes, and decreased use of unnecessary, and often costly, interventions.[115] Increased access to midwifery care can contribute to a paradigm shift from pregnancy being viewed as a pathological event to being viewed and supported as a normal stage in a woman's physiological development and reproductive life, which necessitates management of complications only when the need arises and when women have been identified as medically high-risk. The profound changes in the US health care delivery system, fueled by the Patient Protection and Affordable Care Act (ACA) passed in 2010, can be leveraged by the increasing delivery of inter- professional collaborative care: a model of care with a track records of excellent outcomes and cost- efficiency.[116] In this model, akin to the team –based model known as the patient-centered medical home, midwife/obstetrician/primary care teams can provide seamless access to patients as their health care needs change over the course of their childbearing years.[116]

The Connecticut Coalition to Improve Birth Outcomes is supportive of programs, policies, and initiatives aimed at increasing the availability and accessibility of midwifery care services for all childbearing women, regardless of socio-economic status and geographic location. We also recommend formally increasing opportunities for seamless inter-professional collaboration for the benefit of childbearing families in our state.

Strategy 4C: Examples from the Ground
Integrated and Collaborative Model at Santa Clara Valley Medical Center A pilot project funded by the Lucina Health Foundation sought to improve birth outcomes in Los Gatos, CA by supporting a collaborative model of care that integrated midwifery into the standard maternity care team. This model achieved a significantly lower cesarean birth rate (6% vs. the hospital's average

of 16.3% and the national average of 33%). Data also showed no induction, no prematurity, and a patient satisfaction rate of over 98%. Inspired by the success of the Lucina Maternity pilot program at Bay Area Maternity, Valley Medical Center Foundation is bringing this model to Santa Clara Valley Medical Center to improve infant morbidity and mortality rates and reduce costs to public and private payers. This model demonstrated profitability and positive outcomes within six months of implementation.

Coalition for Quality Maternal Care (CQMC)

CQMC advocates for the establishment of national strategies to ensure access to affordable, high quality maternity care for all childbearing women: "It seeks to achieve this goal by removing barriers to optimal maternal health practice, promoting models of care that are evidence-based, improving maternity care choices for women, and reducing disparities in maternal and newborn health outcomes." The strong focus on advancing midwifery care is evidenced by the steering committee and founding members of CQMC: the American Association of Birth Centers; American College of Nurse-Midwives; Amnesty International USA; Association of Women's Health, Obstetric and Neonatal Nurses; Black Women's Health Imperative; Childbirth Connection; International Center for Traditional Childbearing; Midwives Alliance of North America; and the National Association of Certified Professional Midwives.

Strategy 4D: Increase access to childbirth and postpartum doula services (medicaid reimbursement; adding doula care to existing home visiting services).

Childbirth can be viewed as a critical period in a person's life, ripe with opportunities for renewal and growth, emotional and physical empowerment, as well as the strengthening of one's self-confidence and self-efficacy to parent.[117] That said, the event of childbirth has joined the ranks of events that can be experienced as traumatic by as many as 4 out of 10 women in the US, and in up to 9% of births give rise to symptoms that meet all qualifying criteria for post-traumatic stress disorder (PTSD).[118,119] A history of trauma places women at a higher risk of re-traumatization during childbirth[120], making the quality and continuity of care and supports provided to at-risk women during the perinatal period, a priority from the Coalition's perspective.

While many low income families in Connecticut can count on the support of home visitors prenatally and postpartum, few can take advantage of continuous informational, physical, and emotional support during labor and delivery, as well as during the immediate early postpartum days, effectively experiencing a break in valuable services during the continuum known as the perinatal period. Studies have shown that such support provided by a trained professional (a.k.a "doula"), who is not affiliated with the birthing hospital, nor a member of the birthing woman's immediate social support network, can significantly reduce the length of labor, as well as the rate of interventions such as the use of epidurals, forceps, and cesarean surgery.[121] Doula support can also significantly increase the woman's feeling of satisfaction with the birth experience, and improve the odds of successful breastfeeding initiation and duration.[122]

These outcomes have been observed across different populations, including those impacted by low socio-economic status. In fact, after adjusting for clinical and socio-demographic factors, one prominent study found that the odds of cesarean birth were nearly 41% lower for doula-support births, translating in potential healthcare savings as well as reduced iatrogenic repercussions potentially caused by high intervention labor management practices.[123]

Members of the Coalition to Improve Birth Outcomes recommend that access to doula support during the perinatal period is expanded to ensure increased equity, reduce the incidence of traumatizing childbirth experiences, and improve overall perinatal health outcomes associated with the critical window of opportunity that comes with providing trauma-informed intrapartum care. Because coordination and integration of services is paramount to improving our perinatal health care system, we do not necessarily recommend that new programs be instituted, but rather that thought be provided into integrating trained doula support into existing home visiting teams, as well as exploring the possibility of making doula care provided by community health workers and other trained doulas more accessible through Medicaid and private insurance reimbursements.

Strategy 4D: Examples from the ground

Doula Training and Certifying Organizations

There are many organizations that train and certify doulas. They generally differ, though not extensively, in terms of certification requirements, fees, philosophy, scope of practice, and extent of support and mentorship provided. In addition to the more mainstream DONA International and CAPPA, there are also other organizations that have become more specialized in training doulas intent on serving families from underserved communities. These include the International Center for Traditional Childbearing and Health Connect One (see below). Other organizations that MCH professionals may want to explore include, but are not limited to: Birthing From Within, ToLabor, and Doula Trainings International.

Health Connect One

Over 6,000 low-income families have received services through the nationally replicated community doula program designed and administered by the Chicago-based organization Health Connect One. Outcome data support the published literature about the benefits of doula care, and add additional data that are of particular interest when serving at-risk populations. These include lower rates of preterm birth, higher birth weight, reduced hospital stays, and increased use of preventative and primary care services.[124]

ECHN Mentor/Doula Program

In 2002 the Connecticut Chapter of the March of Dimes awarded a one-year grant in the amount of $14,953 to ECHN. The funds were used to develop a Mentor/Doula Program, which to this day, provides supportive services to high-risk women during pregnancy, labor and birth, and in the initial postpartum period. Many women with high-risk pregnancies do not have a stable support system – the volunteer mentor/doula can fill that gap, serving as a role model and advocate, assisting the

women so they can receive individualized care based on their circumstances and preferences. Formally trained doulas who complete certification and receive positive evaluations from both patients and staff are then considered for the ECHN Preferred Doula Referral Program, which then allows the more experienced doulas to receive compensation for each supported client. The network of independent doulas who practice at ECHN have the added value of being part of an established group for back-up support and mentoring. For more information contact the Perinatal Education Department at Manchester Memorial Hospital Family Birthing Center.

Young Adult Services (YAS) program

The Connecticut Department of Mental Health and Addiction Services (DMHAS) offers the Young Adult Services (YAS) program to help young adults (ages 18-26) transition successfully from the Department of Children & Families (DCF) to the adult mental health system and to ensure continuity of care as they journey into adulthood. As part of the program, pregnant participants can take advantage of valuable doula care and support prenatally, intrapartum, and during the early postpartum period. Doula care fits well with the YAS model of trauma-informed care, as it understands the intimate and possibly trauma-triggering aspects of clinical care during pregnancy and childbirth. Doulas are professionally trained and can partner with the woman's clinical team to help alleviate trauma symptoms, while providing emotional, informational, and physical assistance and support to childbearing women with a potential history of neglect and physical and/or sexual abuse. With funding from the CT Department of Public Health, this program has been able to expand its impact to a longer period postpartum (up to age 3 of the child), and to provide additional group-based and in-home parenting support through the use of Parents As Teachers (PAT) curriculum and the relationship-based Circle of Security program that seeks to enhance parent-child attachment.

Medicaid Reimbursement for Doula Care in Oregon and Minnesota

In 2011, the Oregon legislature passed a bill (H.B. 3311) that required the state's health authority to explore the viability of expanding access to doula care as a means to improving birth outcomes and reducing perinatal health disparities. In 2012, an implementation committee issued a report recommending that doula care be indeed covered not only by Medicaid, through the CMS waiver program, but also by private insurers in the state, in an effort to reduce disparities and improve birth outcomes for all women in the state of Oregon. Oregon has since implemented said call to action, joining the state of Minnesota, in making doula care more equitably accessible for all childbearing women. Medicaid reimbursement for doula care is permitted under the 2013 CMS ruling allowing states to reimburse for preventive services that have been recommended by a licensed medical provider.

Appendix D - Additional Tier 5 strategies supported by coalition members

Additional Tier 5 Strategies Supported by Members of the Coalition: Education and Counseling
D. Integrate Life Course education into Department of Education school health curriculum.
E. Engage in a broad effort to raise awareness of the important relationship between emotional and psychological wellbeing and physical wellbeing.
F. Raise consumer awareness about the midwifery model of care and available midwifery options.

Strategy 5D: Encourage local school districts to integrate life course education into school health curriculum.

As mentioned in previous sections of the plan, the Life Course perspective treats the health of individuals and communities as a collective experience over the span of life.[125] Health and well-being happens over the life course, with different implications at different interconnected stages.[125,126] School ages, birth to 19 years, comprise two critical stages of life, childhood and adolescence.[126] According to the World Health Organization, these stages are considered sensitive developmental stages when different exposures can have a long-term effect on a person's health potential. These stages also represent a time when social, cognitive and coping skills are formed, as well as behaviors and values.[126]

This presents a prime opportunity to educate students on positive health choices and behaviors that they will carry on into adulthood and older adulthood. Additionally, this will perpetuate the exchange of positive health messaging throughout generations. This becomes even more important when considering the impact of preconception health on future birth outcomes. If young women learn to make healthy choices early in life, this will have a positive impact on their preconception health which leads to healthy babies.

Integrating life course education into our local school health curricula will help to accomplish these aspirations by providing students the opportunity to understand how their environment, culture, behavior and other factors can impact their health throughout their life. Connecticut is already working to ensure proper health education in school curriculum. Currently, three state statutes mandate health and safety education for Grades K-12: 1) Connecticut General Statutes (CGS) section 10-16b[77] requires a planned, ongoing and systematic program of study in health and safety including various health topics; 2) CGS section 10-19(a)[77] requires instruction on the use of alcohol, nicotine, tobacco and drugs; and 3) CGS section 10-19(b)[58] requires instruction on HIV/AIDS. Additionally, *The Healthy and Balanced Living Curriculum Framework*,[78] developed by Connecticut Department of Education, is designed to help students develop and apply skills that will help them to lead a life of health and well-being. It focuses on a continuum of health education that builds upon itself beginning in pre-Kindergarten, continuing through

Grade 12. Building upon these foundational efforts by adding life course education will only strengthen health education in schools. It will create an even more lasting understanding of health as a life-long concept, the different needs and priorities at different ages, and the impact the social and physical environment can play.

Strategy 5D: examples from the ground

Preconception Peer Educators Program

The Preconception Peer Educators Program is a component of the federal Office of Minority Health's A Healthy Baby Begins with You campaign. The program enlists college students to complete training and become peer educators on college campuses and in the community. The trainings include key concepts on preconception health and how it relates to healthy birth outcomes.[127] Connecticut local school districts may benefit from this example when thinking of ways to include a life course perspective in school health education.

North Carolina Preconception Health Campaign (Every Woman NC)

The North Carolina Preconception Health Campaign, a program of NC March of Dimes, has developed a preconception health curriculum called "Healthy Before Pregnancy." This curriculum was developed in response to poor birth outcomes, and used to capitalize on state legislation mandating abstinence- until-marriage and comprehensive sexuality education for Grades 7-9. The curriculum has 3 major goals: 1) Increase students' knowledge of the various pathways that can lead to poor birth outcomes; 2) Increase students' knowledge about how their current lifestyle and health choices can impact their future reproductive outcomes; and 3) Give students the knowledge and skills they need to plan their "healthy" reproductive lives. Connecticut schools may benefit from this example as a model because it is evidence-based, has proven success and aligns with state school health education mandates.[128]

Strategy 5E: Engage in a broad effort to raise awareness of the important relationship between emotional and psychological wellbeing and physical wellbeing.

Stigma whether real or perceived can be a paralyzing barrier for those struggling with mental health issues. Eliminating the stigma applied to mental illness requires a long term commitment and a comprehensive approach reflected in all aspects of society, including social, economic, educational, recreational, cultural and religious systems. Many organizations, groups and individuals have accepted the challenge to address the "mental health" stigma and are sharing their endeavors with others who wish to join the effort. Friends, family members, employers, teachers, and active citizens are contributing to a creating a socially inclusive society where those in recovery are able to actively participate and thrive in their communities. The following Examples from the Ground describe some of those efforts.

Strategy 5E: Examples from the Ground

The Connecticut Alliance for Perinatal Mental Health

The Connecticut Alliance for Perinatal Mental Health is a multidisciplinary collaborative formed in 2013 to address gaps in mental health supports and services for perinatal women and their families. The mission of the Connecticut Alliance for Perinatal Mental Health is to develop a safety net of supports and services for pregnant and postpartum mothers and their families to enhance family well-being and functioning. The goals of the Alliance are to:

1) Build capacity to offer perinatal mental health support groups statewide;
2) Identify and network mental health clinicians specializing in working with perinatal mothers by developing county-level resource and referral guides and engaging providers in coalition-building activities;
3) Identify professional training needs and coordinate training opportunities;
4) Expand Postpartum Support International in Connecticut;
5) Develop a cohesive coalition to address the ongoing needs of Connecticut's mothers and service delivery system; and
6) Develop public awareness including a legislative agenda.

MotherWoman

Founded in neighboring Massachusetts, MotherWoman *"supports and empowers mothers to create personal and social change by building community safety nets, impacting family policy and promoting the leadership and resilience of mothers."* Programs offered by MotherWoman include:

Mothers' Support Groups - Led by trained facilitators, our groundbreaking support groups offer mothers a chance to talk openly about the challenges of parenting, to gain support and build community.

Facilitator Training – Comprehensive training that provides diverse community leaders and professionals with the skills needed to offer new MotherWoman Support Groups.

Professional Training – Teaches medical and social service providers about the complex mental health and socio-political factors involved in the crisis of postpartum emotional complications.

Postpartum Support Initiative – Builds comprehensive, multi-disciplinary safety nets for mothers in the four counties of Western MA by creating Perinatal Support Coalitions of professionals who serve mothers.

Policy and Advocacy – Nonpartisan advocacy program which raises awareness about social and economic justice issues, and organizes mothers, fathers and caregivers to take action on issues impacting families.

New Haven MOMS Partnership Project

The mission of the New Haven MOMS Partnership is to transform service delivery systems for mothers and children through community and neighborhood-based resources dedicated to wellness; thereby strengthening generations of families to flourish and succeed. The MOMS Partnership is a collaboration of agencies across the City of New Haven that work together to support the wellbeing of mothers and families living in the city.

Services offered by New Haven MOMS includes:

- *Stress Management Classes* - An 8 week course that meets once per week. The class teaches mothers skills and technique needed for managing and coping with chronic and toxic stress.
- *Community Ambassadors* are mothers from New Haven trained in mental health intervention, key principles to promote health, and development and achievement across generations.
  They act as referral sources to the MOMS Partnership and as care extenders. They are trained as outreach workers to promote health, development and achievement of moms and families.
- *M-POWER workshops* are groups where mothers across the city are invited to come together to share, learn and discuss topics of importance to them as mothers.

National Alliance on Mental Illness (NAMI)

NAMI is the nation's largest grassroots mental health organization dedicated to building better lives for the millions of Americans affected by mental illness. NAMI advocates for access to services, treatment, supports and research and is steadfast in its commitment to raise awareness and build a community for hope for all of those in need.

Postpartum Support International (PSI)

The purpose of PSI is to increase awareness among public and professional communities about the emotional changes that women experience during pregnancy and postpartum.

PSI offers:

- A website that offers support, education and local resource information.
- A toll free Help Line in English and Spanish 800.944.4PPD (4773) that refers - callers to appropriate local resources including emergency services.
- PSI Newsletter that gives up-to-date information on worldwide news, conferences, resources, research and events.
- Area PSI Support Coordinators in all 50 U.S. states, Canada, and Mexico, and more than 36 other countries around the world. These support volunteers provide telephone and email support, information, and access to informed local resources.
- Standardized Training and Education for hospitals, public health systems, clinical providers, support group leaders, social support volunteers, and others.
- PSI Educational DVD for families and providers.
- Free Phone "Chat with the Experts" First Mondays for Dads and every Wednesday for Moms, facilitated by PSI Professionals.
- Resources for Women, Families, Students, and Professionals.

Strategy 5F: Raise consumer awareness about the midwifery model of care and available midwifery options.

There are approximately 15,000 midwives practicing in the United States, providing expert clinical care to women prenatally, as well as attending approximately 10% of all US births across all settings, including hospitals, birth centers, and home births. Research has repeatedly found that midwives are skilled and prepared to provide care for normal physiological birth, ensuring excellent outcomes for women experiencing low-risk pregnancies, and often resulting in health care savings tied to lower rates of interventions during labor and birth.

Women in Connecticut have choices when it comes to midwifery care, yet that choice often varies depending on insurance coverage. At the current moment, Husky-covered women wishing to be cared for by a midwife can do so only if the midwife is a Certified Nurse Midwife (CNM). This can pose an issue, if the woman desires a home birth, as most CNMs in the state of Connecticut only attend hospital births, with only a small number of CNMs attending homebirths in the state. As an alternative pregnant women in Connecticut may choose to give birth in the only free-standing birth center in the state which is located in Danbury, staffed by nurse midwives and accredited by the American Association of Birth Centers.

Women who are either covered by private insurance or have the means to self-pay for care, also have the option to choose homebirths attended by Certified Professional Midwives (CPMs) whose practice is legal and has been found to be distinct from that of nurse-midwifery.

While the midwifery model of care has been touted for its excellent outcomes, safety, reduced costs, increased savings, and increased consumer satisfaction, it still remains grossly underutilized by the vast majority of women whose pregnancies are considered to be low-risk and who could greatly benefit from such care.[115] For this reason, the **Coalition is recommending that strategies be employed to raise consumer awareness about the benefits of midwifery care, to increase utilization, and improve birth outcomes for low-risk pregnant women across all socio-economic levels.**

Strategy 5F: Examples from the ground

"I am a midwife" campaign

The Midwives Alliance of North America has created a video-based campaign to help families learn more about midwifery care and the value that midwives bring to women, families, and communities.

"Our moment of truth" campaign

The purpose of *Our Moment of Truth*™ is to improve women's health and maternity care in the United States by promoting a renewed understanding of midwives and midwifery care as important options for women's health care services throughout their life course.

Citizens for Midwifery

A consumer-led organization aimed at increasing awareness about the midwifery care model, Citizens for Midwifery hosts a website with valuable information about midwifery care-related research, news, and resources.

Midwives Association of Washington State

An example of state-based organization focused on increasing consumer awareness about midwifery care, the Midwives Association of Washington State actively engages its midwifery community, consumers, professional allies, and supporters.

The Connecticut Plan to Improve Birth Outcomes utilization feedback form

Indicate by checking off in front of each recommendation those that were/are being used by your organization. Email completed form to Marijane Carey at mjcarey95@aol.com. Additional comments and feedback would be appreciated.

This information will help inform and guide ongoing work of the Coalition on a statewide and in local communities.

Tier I: Addressing Socio-Economic Factors to Improve Birth Outcomes Recommendations

____1A: Raise awareness among legislators, leaders and administrators about social determinants of perinatal health and the Life Course perspective
____1B: Invest in preventing and mediating early life trauma and violence
____1C: Identify opportunities to reduce stressors affecting families in the interconception period.
____1D: Increase provider knowledge of community resources addressing social needs (housing, food, childcare, legal aid, and transportation)
____1E: Identify and implement strategies aimed at reducing/eliminating institutionalized racism
____1F: Create supportive housing initiatives for pregnant women and their families
____1G: Integrate financial literacy into family planning and counseling services, as well as in other relevant programs serving MCH populations

Tier 2: Changing the Context: Improving Health Outcomes by Making Healthy Choices the Easy Choice Recommendations

____2A: Establish and evaluate pilot projects involving holistic MCH medical home models
____2B: Integrate mental health, oral health and wellbeing into hospital-based perinatal education models, group prenatal care, as well as home visiting programs
____2C: Create trauma-informed environments for pregnant women, infants, and their families
____2D: Establish a statewide community health worker system similar to the one in Massachusetts: this can include models involving lay home visitors, community doulas, preconception peer educators, peer breastfeeding counselors, oral health, etc.
____2E: Engage in a broad effort to change the language of mental health to reduce fear and increase incidence of provider-patient communications about mental health needs, “stress”, “stressors”, and “stressful events/situations”
____2F: Expand person-centered care model (PCCM) to include women’s health, including oral and mental health, with a Life Course approach
____2G: Expand state Husky to undocumented women and families

Tier 3: Protective, Long-Lasting Protection to Individuals Recommendations

____3A: Incentivize the provision of Life Course/preconception health (Pay for Performance for education, screening, referrals and treatment)
____3B: Integrate Life Course education into provider training

Tier 4: Ongoing Clinical Interventions: Evidence-Based Interventions within Clinical Settings Recommendations

____4A: Incentivize the provision of behavioral health services and oral health care (Pay for Performance for education, screening, referrals and treatment)

____4B: Integrate into provider training mental health, social stressors, and trauma education relevant to infants and families
____4C: Increase access to midwifery care for all women considered low-risk (medically)
____4D: Increase access to childbirth and postpartum doula services (Medicaid reimbursement; adding doula care to existing home visiting services)

Tier 5: Education and Counseling: Individual or Public Educational Messages and Support Recommendations

____5A: Scale up (or continue investing) in fatherhood initiatives to increase social support within the family and home environment
____5B: Integrate education and preconception and interconception health including mental and oral health, into hospital-based prenatal education models, group prenatal care, as well as home visiting programs
____5C: Integrate mental health and well being into Department of Education school health curriculum
____5D: Integrate Life Course education into Department of Education school health curriculum
____5E: Engage in a broad effort to reduce mental health discrimination among families and communities and increase people's awareness of the important connection between emotional well-being and physical well-being
____5F: Raise consumer awareness about the midwifery model of care and available midwifery options.

Emerging Issues

____ Neonatal Abstinence Syndrome (NAS)
____ Assisted Reproductive Technology (ART) use

Comments/Feedback

Name, Title, Organization/Group, Phone # and Email of Person Completing Form

Name:

Title:

Organization/Group:

Phone #: Email:

Date:

Return completed form to Marijane Carey by email at MJCarey95@aol.com or faxing to 203 288-1560.

Thank you.

The Connecticut Plan to Improve Birth Outcomes update form

Please help us keep this Plan as a reliable "go to" resource for the Coalition to Improve Birth Outcomes and for all others who are involved in systems that contribute to improved birth outcomes in our state. **By utilizing this form to provide updated information on resources cited in the Plan and/or new relevant resources, programs, services, research and reports, you will contribute to ensure that the Plan stays updated and relevant, truly becoming the "living and breathing" document we envisioned it to be.**

Tier I: Addressing Socio-Economic Factors to Improve Birth Outcomes
New/Updated information *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Tier 2: Changing the Context: Improving Health Outcomes by Making Healthy Choices the Easy Choice
New/updated information *(include either a link for more information and/or a contact resource (name, phone number/email address)*.

Tier 3: Protective, Long-Lasting Protection to Individuals
New/Updated information *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Tier 4: Ongoing Clinical Interventions: Evidence-Based Interventions within Clinical Settings
New/Updated information *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Tier 5: Education and Counseling: Individual or Public Educational Messages and Support
New/Updated information *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Emerging Issues

Neonatal Abstinence Syndrome (NAS) *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Assisted Reproductive Technology (ART) Use *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Other Emerging Issue *(include either a link for more information and/or a contact resource (name, phone number/email address)*

Additional Comments

Name, Title, Organization/Group, Phone # and Email of Person Completing Form

Name:

Title:

Organization/Group:

Phone #: Email:

Date:

Return completed form to Marijane Carey by email at MJCarey95@aol.com or faxing to 203 288-1560.

Thank you.

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